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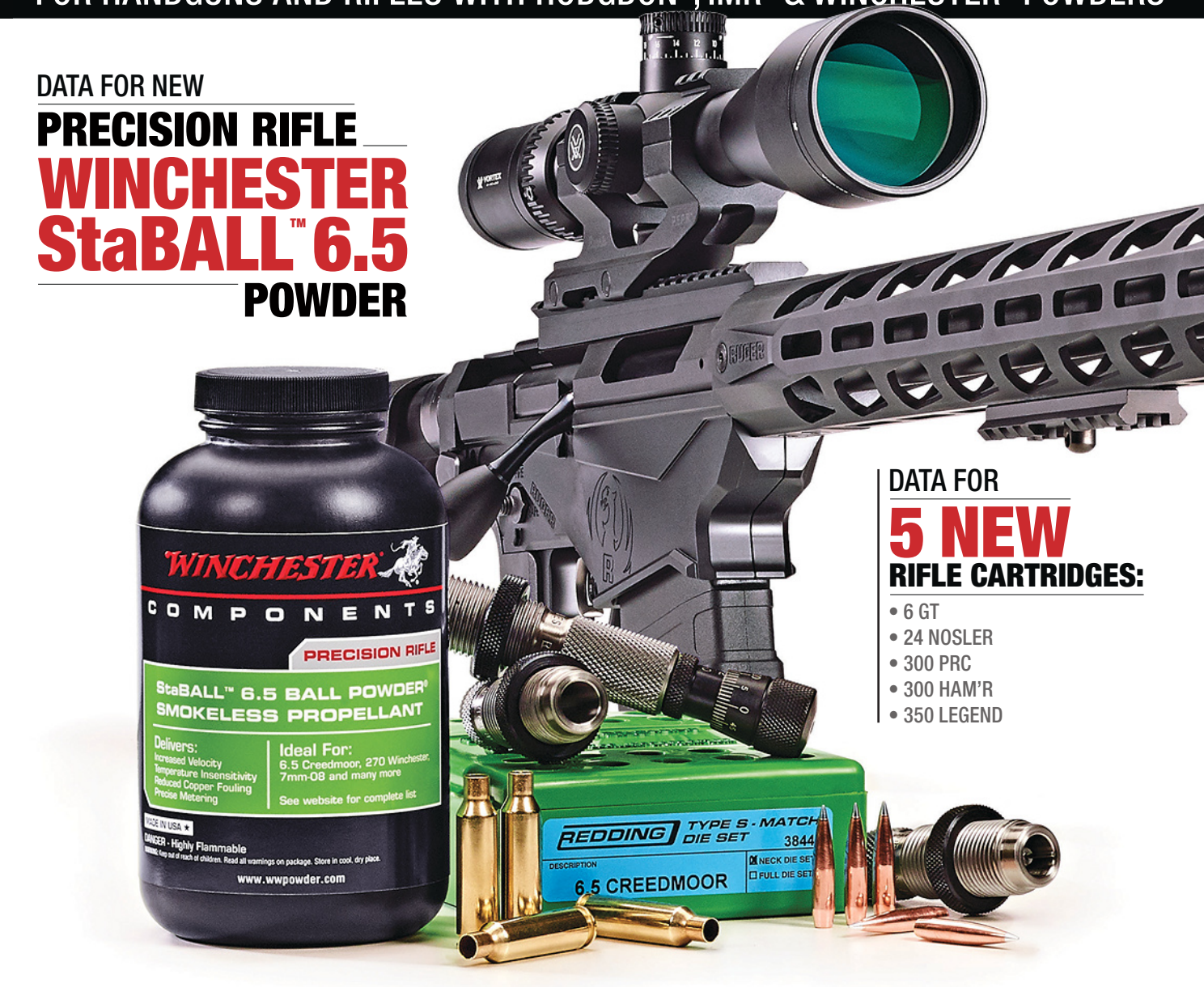


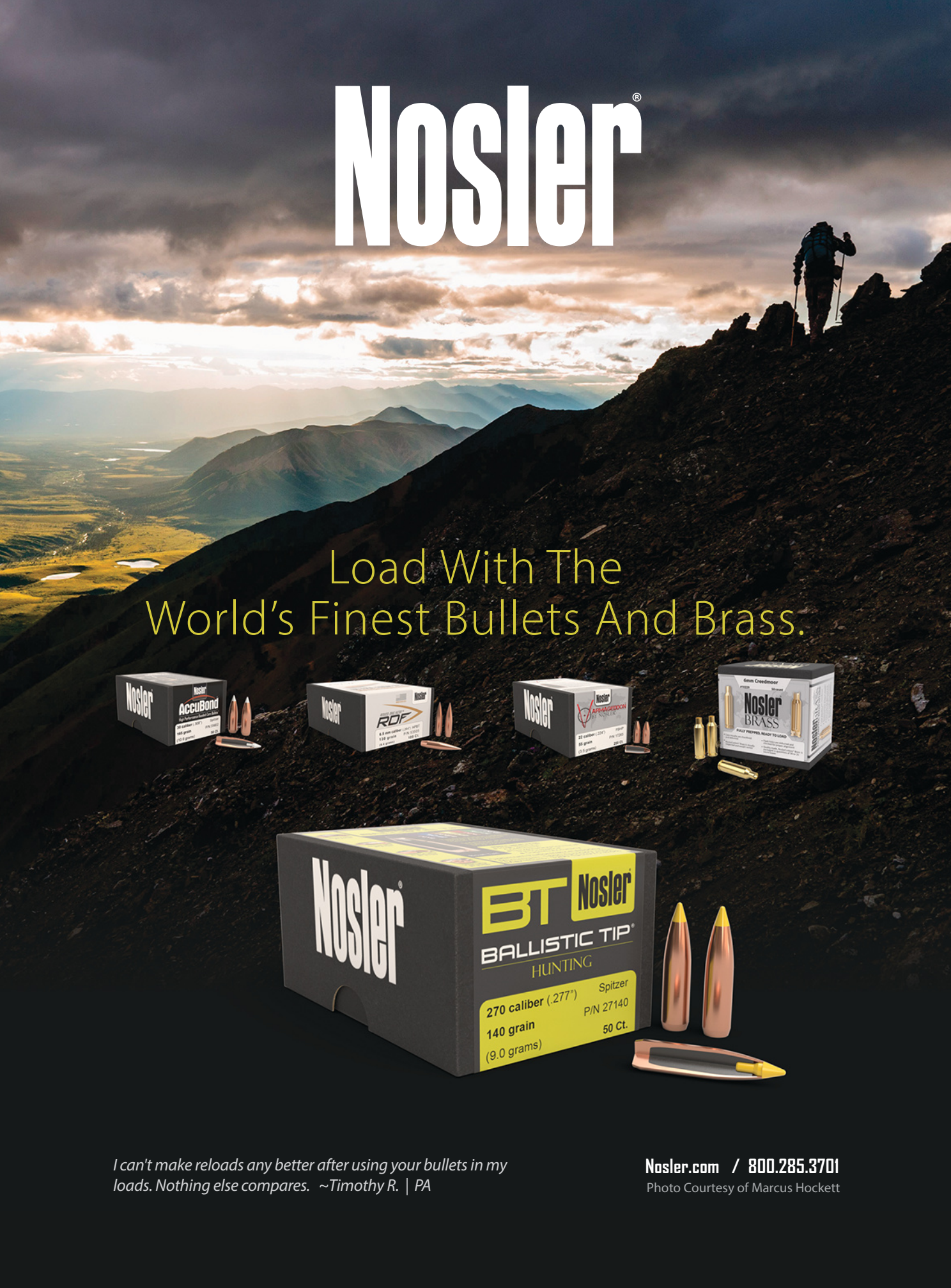
DATA FOR

5 NEW RIFLE CARTRIDGES:

- 6 GT
- 24 NOSLER
- 300 PRC
- 300 HAM'R
- 350 LEGEND

UPDATED DATA FOR

18 RIFLE & PISTOL CARTRIDGES



I can't make reloads any better after using your bullets in my loads. Nothing else compares. ~Timothy R. | PA

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Photo Courtesy of Marcus Hockett

Welcome to the 2020 *HODGDON ANNUAL MANUAL*

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THE HODGDON TEAM HAS BEEN hard at work this year getting ready to roll out an exciting new powder for precision shooters (see the article beginning on p.8 for more details) and updating data for new loads, such as the 6mm GT, 24 Nosler, 300 PRC, and 350 Legend. We hope you will enjoy this year's edition of our annual effort to keep our customers up to speed on what's new in reloading.

After admiring Hodgdon as a company for most of my career, I joined Hodgdon a couple years ago and received pretty immediate confirmation that I joined an "old-school" company that lives and breathes the shooting sports. Our slogan is "The Gunpowder People," and we clearly live up to our moniker. Different examples of shotguns, rifles, and handguns are displayed throughout the office. We have a reloading room just off our HQ lunchroom for loading up a quick box of ammo for a trip to the range. Fliers advertising summer clays leagues hang on our lunchroom bulletin board.

Visitors to our Kansas City-area headquarters immediately see our logo under a massive Alaskan moose shoulder mount hanging just inside the front door. More taxidermy of whitetail, elk, turkey, antelope, bison, and lots of African animals are distributed throughout the office. Most days you can find several bird dogs in the office as well—in fact, we are currently running a series on the "Dogs of Hodgdon" on our social media feeds. Visitors to our Kansas Hodgdon facility or our Louisiana GOEX plant will find much the same at these locations. You can tell Hodgdon team members are shooters and hunters!

We like to think our company is full of experienced and passionate shooters and hunters who work diligently to solve our customers' handloading questions or challenges. One of our bedrock values is that "we use what we sell," and whether you visit with one of our team at a Reloading Roadshow event or you call, write, or email Hodgdon for assistance, you can be assured that you will be connected to a company representative who shares your passion for the shooting sports.

We trust you are as excited about our new products and loads as we are. I hope to see you at the range or in the field this year.

Shoot Straight,
Steve Kehrwald
President & CEO

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FEATURES

COVER PHOTO BY MICHAEL ANSCHUETZ

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WARNING:

Ballistic data shown in this manual was obtained in the Hodgdon laboratory under strictly controlled conditions.

Your reloads must contain the exact combinations listed in this manual. **NEVER EXCEED** charge recommendations in this manual.

Ballistic data varies considerably depending on many factors, including components used, how such components are assembled, the type of firearm used, and the reloading techniques and safety precautions utilized by the individual.

NEVER mix any two powders regardless of type, brand, or source. **NEVER** substitute any smokeless powder for black powder, Pyrodex®, or Triple Seven®.

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The individual assumes the risk of safe loading practices. Failure to do so or violation of any of the above warnings could result in severe personal injury (including death) or gun damage to the user or bystanders.

USE THIS DATA WITH HODGDON, IMR, AND WINCHESTER BRAND POWDERS ONLY. DO NOT EXCEED THE LOADS SHOWN IN THIS GUIDE.

MISSION STATEMENT

Hodgdon Powder Company operates following Biblical principles to honor God. Our mission is to provide quality products and services in a manner which enhances the lives of our employees, families, customers, suppliers, and our communities. In doing so, we will deal with integrity and honesty, reflecting that people are more important than dollars and that our purpose is to bring credit to our Lord Jesus Christ.

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WINCHESTER'S NEW StaBA

Who says you can't have everything?

BY STEVE GASH

HANDLOADERS HAVE NEVER HAD IT SO GOOD. NOT only are there all manner of high-tech bullets, cases, tools, and scads of specialized components from which to choose, but also there seems to be a never-ending font of new powders to make reloading even better.

A few years ago Hodgdon introduced the Extreme series of extruded powders that are insensitive to temperature changes, so the prairie dog load you worked up in February isn't going to pop primers in Wyoming in July.

Next up are the IMR Enduron powders that have chemicals to reduce copper fouling and that cover a rather wide burning rate, so there is a powder (or two) for just about any cartridge around. The Endurons are great powders that fill a lot of needs, but they are stick powders, and as such, uniform metering can be a problem.

In 2012 Hodgdon introduced CFE 223, a spherical propellant that incorporates chemical ingredients that retard jacket fouling, allowing shooters to shoot more and clean less. CFE 223 is made in Florida by St. Marks Powder, and its use actually helps remove copper fouling, too. This stuff really works, and such additives had been quietly incorporated into specialized loads for some time, e.g., the 204 Ruger and military rounds.

Like most spherical powders, the itty-bitty flakes of CFE 223 meter through a powder measure like water, further enhancing uniformity, and it produces top velocities and pinpoint accuracy. But there was still that pesky problem of sensitivity to temperature.

Well, fellow hull stuffers, wait no more. New for this year is a Ball powder in the Winchester line called StaBALL 6.5, also from St. Marks. What sets StaBALL 6.5 apart is that it incorporates several highly desirable features in one propellant. StaBALL 6.5 has the uniform metering of other spherical powders, the chemical ingredients that retard copper fouling, and temperature insensitivity. This is the first Ball powder to include all of these qualities. Another great feature of StaBALL 6.5 is that it produces velocities a bit higher and standard deviations a bit lower than most other powders, contributing to pinpoint accuracy.

Let's see…uniform metering, copper fouling reduction, temperature insensitivity, uniform ballistics, higher velocities, and better accuracy. StaBALL's got 'em all.

Winchester's new StaBALL 6.5 Ball powder is suitable for a wide range of cartridges. The author tested loads in (left to right) 6mm Creedmoor, 6.5 Creedmoor, 223 Remington, 22 Nosler, 270 Winchester, 30-06, and 7x57mm Mauser.

LL 6.5

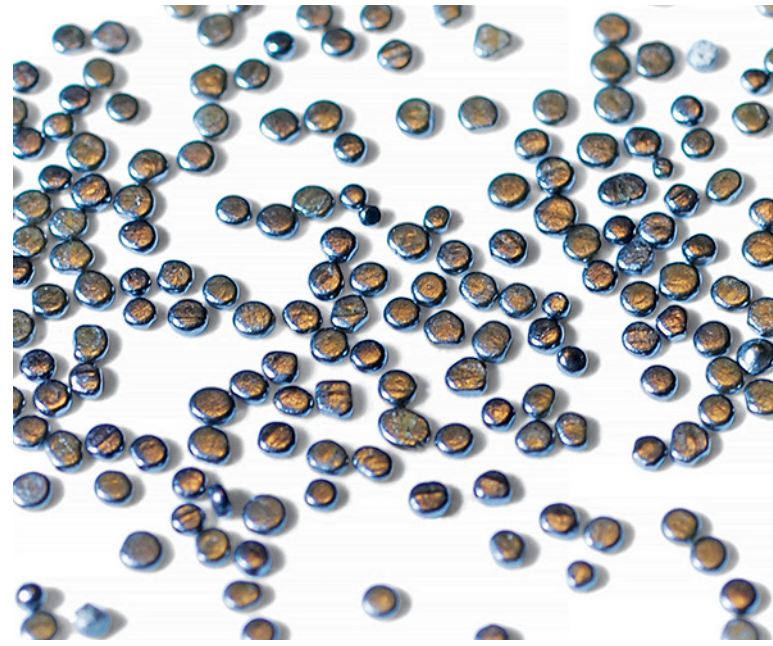
LEAD PHOTO BY MICHAEL ANSCHUETZ

So let's look at some particulars of this new powder. (Take good notes, there'll be a quiz later.) Its burn speed is slightly slower than H4350. On Hodgdon's burn rate chart, StaBALL 6.5 fits in between Hybrid 100V and VihtaVuori N550. Data from the Hodgdon Ballistics Lab compared the new powder with H4350 and IMR 4451 in the 6.5 Creedmoor, and the results are shown in the accompanying Powder Comparison chart. Basically, the new Ball powder bested the velocities of the two extruded powders by a slight margin, at about the same pressures.

The grain size of StaBALL 6.5 is small, with 95 percent passing through a 0.0331-inch hole, and only 5 percent passing through a 0.0139-inch hole. The bulk density varies from 0.980 to 1.035 grams per cubic centimeter (g/cc). By comparison, Hodgdon Benchmark and IMR 8208 XBR both have a density of 0.925 g/cc, and Winchester AutoComp comes in at 0.850 g/cc.

StaBALL 6.5 has the same special copper fouling reducing ingredients as CFE 223 and is designed to work in most of the same cartridges as H4350 but with the attendant higher velocities, lower standard deviations, and excellent accuracy. Load densities for the new powder are 93 to 100 percent, which also helps out with uniform performance. All in all, it shows great potential for the long-range crowd and persnickety hunters who handload.

And I must point out StaBALL 6.5 is "REACH compliant," meaning it's "green to the environment." REACH stands for the "Registration, Revaluation, Authorisation, and Restriction" of substances and is administered by the European Chemicals Agency (ECHA) of the European Union (EU). REACH is a comprehensive regulatory program for virtually all "chemicals." Many Americans have never heard of REACH, but companies in the EU sure have. Suffice it to say that if EU companies are not REACH compliant, well, they're toast. Fortunately, StaBALL 6.5 meets this standard, which is very important for sales in the EU.



Particles of Winchester's new StaBALL 6.5 Ball powder are small, flattened spheres that meter very uniformly.

Charges of StaBALL 6.5 thrown from a powder measure and then weighed on a scale varied by only 0.1 grain during Steve's tests.

Hodgdon notes that in tests StaBALL 6.5 showed great results in the 22-250, 22 Nosler, 6mm GT, 260 Remington, 6.5x47 Lapua, 7mm-08, 7x57mm Mauser, 270 Winchester, 30-06, 375 Ruger, and 375 H&H. The 300 WSM is a good candidate for it, and no doubt there will be others. For example, in the 7mm-08 with 145- through 168-grain bullets, StaBALL 6.5 averaged 106 to 167 fps faster. However, the powder is a bit too fast for most magnum cartridges. Sure, there will be some applications, but it's at its best in cases with midrange capacities.

Probably the best two candidates for the new fuel are the 6mm and 6.5 Creedmoors. StaBALL 6.5 gives velocities 50 fps or faster in both of them with most bullets, but in the 6.5 Creedmoor with 140- and 143-grain bullets, it registered over 100 fps faster than all of Hodgdon's other powders.

POWDER COMPARISON

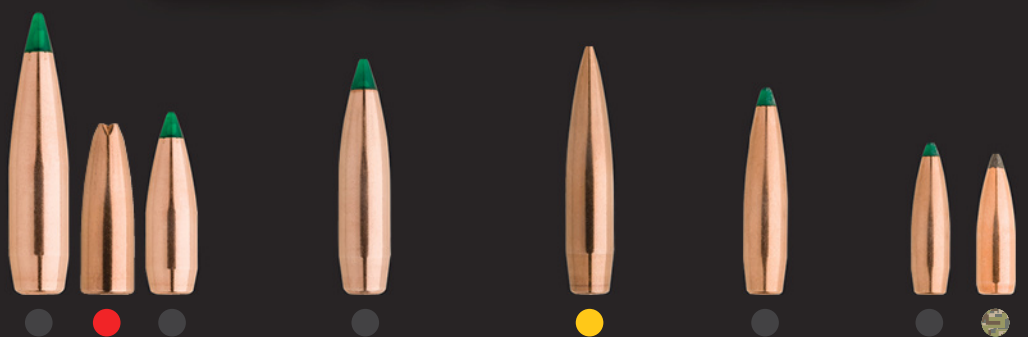
POWDER	STARTING CHARGE (GRS.)	VEL. (FPS)	PRESSURE (PSI)	MAXIMUM CHARGE (GRS.)	VEL. (FPS)	PRESSURE (PSI)
6.5 Creedmoor, Hornady 135-Gr. A-Tip						
StaBALL 6.5	41.4	2633	46,600	45.0	2870	60,800
H4350	38.4	2498	43,300	43.2	2807	61,200
IMR 4451	39.4	2553	48,900	42.8	2775	61,300

Putting StaBALL 6.5 to a Test

Hodgdon has quite a bit of load data for StaBALL 6.5 already on its load data website, with more added as it is developed, and I was itching to try the new powder in a slew of suitable

THERE ARE MANY REASONS WHY YOU RELOAD.

HERE ARE EIGHT MORE TO ADD TO THE LIST...



22 Caliber (.224/5.69mm Diameter)
62 gr. SBT GameKing #9362 BC. .298
64 gr. Tipped GameKing #4062 BC. .323

6mm 243 Caliber (.243/6.17mm Diameter)
100 gr. Tipped GameKing #4110 B.C. .515

6.5mm 264 Caliber (.264/6.71mm Diameter)
130 gr. MatchKing HPBT-CN #1729 B.C. .584
8" TWIST or Faster

7mm 284 Caliber (.284/7.21mm Diameter)
150 gr. Tipped GameKing #4550 BC. .545

30 Caliber 7.62mm (.308/7.82mm Diameter)
125 gr. Tipped GameKing #4625 BC. .318
150 gr. HP Varminter #2136 BC. .334
180 gr. Tipped GameKing #4680 BC. .515

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cartridges. However, a quick glance at the mass of data made it clear that I'd have to pick and choose carefully; there are just too many good load combinations.

As noted, a main reason for this powder are the Creedmoor rounds, so I fetched my wife's Ruger American Predator 6mm Creedmoor and my Ruger Hawkeye in 6.5 Creedmoor out of the safe for some extensive testing. To this pair of rounds, I added a couple of varmint calibers, plus a representative cross-section of my hunting guns—some old, some new, but all proven performers.

The first thing I did to evaluate StaBALL 6.5 was to fill my RCBS powder measure with it and check thrown charges for uniformity. I set it to throw 40 grains, and then I carefully weighed the charges. The average of 10 charges was 40.1 grains, with a range of 40.0 to 40.2 grains, and the standard deviation was a miserly 0.07 grain. Consequently, I used the powder measure for test loads, checking weights along the way.

All loads were assembled in RCBS, Redding, and Hornady dies in my Redding T-7 Turret press. Cartridge overall lengths (COL) were determined with Hornady's Lock-N-Load gauge (one of the handiest little gadgets I've ever used). I fired three, five-shot groups at 100 yards from a benchrest inside my shooting building. Velocities were measured with an Oehler Model 35P chronograph with the midpoint of the skyscreens 12 feet from the guns' muzzles.

My next test was with what I call "calibration loads." For these, I found the powder that gave the highest velocity for each of bullets in Hodgdon's pressure-tested load data for the 6mm and 6.5 Creedmoors. I duplicated Hodgdon's test conditions with as many of the same bullets as I had with the starting and maximum loads and compared my results to Hodgdon's. This provided a good frame of reference for subsequent handloads and showed how much, if any, difference in velocities there might be between the minimum-spec S.A.A.M.I. pressure barrels Hodgdon used and the barrels of typical field guns.

The results of the calibration loads are listed in the chart on the next page. Overall, there were only very modest differences in velocities in both cartridges. The 6mm lost an average of 4.37 percent, and the group sizes of those five loads averaged 0.65 inch. In the 6.5 Creedmoor, the velocity difference was only 2.21 percent, and its eight groups averaged 0.76 inch. Things were looking good.

The other cartridges I selected pretty much cover the bases from prairie dogs to various big-game critters. For varmints, I used the ever-popular 223 Remington and the spectacular 22 Nosler. For big-game loads, I loaded StaBALL 6.5 in the 270 Winchester, 7x57mm Mauser, and

The 6mm Creedmoor handloads were tested in a Ruger American Predator with a 22-inch barrel and 1:8-inch twist.

The 6.5 Creedmoor handloads were tested in a Ruger Hawkeye with a 26-inch barrel and 1:8-inch twist.

The 223 Remington handloads were tested in a Springfield SAINT AR with a 16.1-inch barrel and 1:8-inch twist.

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30-06 Springfield. It did well in all of them. My load development produced more than 40 loads for the seven test guns, and the average group size for all of them was an impressive 0.72 inch. The average standard deviation (S.D.) was 18 fps. These data are shown in the StaBALL 6.5 Load Data chart on page 16.

Let's look at the results cartridge by cartridge, starting with the immensely popular Creedmoors. For these, I worked up close to or at Hodgdon's maximum charges, unless a slightly lower charge showed better accuracy.

Overall, the Ruger American in 6mm Creedmoor liked just about every load I tried. I fired 14 different loads, and the group average was just 0.64 inch (the average S.D. was 19 fps). The largest group averages were 0.94 inch, hardly "bad," and the smallest was a spectacular 0.41 inch. This was with a charge of 49.5 grains and the Barnes 62-grain Varmint Grenade bullet. Velocity was a sizzling 3,631 fps. Right on the heels of that load was the Berger 95-grain Classic Hunter with a dose of 44.0 grains. The velocity was 3,022 fps, and group average was 0.42 inch. Varmints beware.

The 22 Nosler handloads were tested in Steve's CMMG Target Match AR-15 with a 22-inch barrel and 1:8-inch twist.

For deer and such, 85-, 95-, and 100-grain bullets performed well. The Nosler 85-grain Partition over 47.9 grains averaged 3,425 fps (with an S.D. of 19 fps) and 0.94 inch. With the 95-grain Ballistic Tip, a dose of 44.8 grains gave 3,028 fps and a 0.83-inch group average. The reliable Sierra 100-grain Spitzer favored 44.6 grains for a speed of 3,014 fps (S.D. was 18 fps) and groups under 0.5 inch. There were plenty of other good loads, too.

If there is a cartridge that's taken the shooting world by storm since its introduction, it's the 6.5 Creedmoor—and for good reason. Its careful case and chamber design, case size, powder efficiency, and mild recoil make it the go-to round for long-range target shooting and for hunting medium-size big game. I have used rifles chambered for the round on several hunts, and it has simply flattened critters up to the size of a 186-pound axis buck.

Test data show that StaBALL 6.5 is a perfect fit for the 6.5 Creedmoor, so I fired 16 different handloads. They averaged 0.73 inch, and the S.D. was only 17 fps. Several groups measured about 0.5 inch; acceptable accuracy was obtained with all bullets tested. The velocities of 129- to 143-grain hunting bullets is right in the "sweet spot" that delivers reliable expansion, deep penetration, and great accuracy, all with modest recoil.

The Nosler Partition is always a good choice, and the 6.5mm 125-grain version registered 2,804 fps with 0.79-inch groups over 43.6 grains of StaBALL 6.5. Not to be outdone, the 100-grain Ballistic Tip, the Nosler 130-grain AccuBond, the ever-reliable Sierra 120-grain Spitzer, and the Speer 140-grain Hot-Cor SP game bullets also shot well.

A bevy of new high-tech bullets have been developed by the 6.5 Creedmoor's huge following. A good example is Hornady's

CALIBRATION LOADS

CASE	PRIMER	POWDER	CHARGE (GRS.)	BULLET	COL (IN.)	HODGDON'S VEL. (FPS)	STEVE'S VEL. (FPS)	S.D. (FPS)	100-YD. ACC. (IN.)
6mm Creedmoor, Ruger American Predator, 22-in. Barrel									
Hornady	WLR	StaBALL 6.5	47.3	Sierra 60-gr. HP	2.410	3605	3440	24	0.55
Hornady	WLR	StaBALL 6.5	44.0	Nosler 85-gr. Partition	2.580	3194	3032	23	0.67
Hornady	WLR	StaBALL 6.5	47.9	Nosler 85-gr. Partition	2.580	3511	3415	19	0.94
Hornady	WLR	StaBALL 6.5	41.0	Sierra 100-gr. SPT	2.650	2910	2818	21	0.63
Hornady	WLR	StaBALL 6.5	44.6	Sierra 100-gr. SPT	2.650	3217	3014	18	0.47
6.5 Creedmoor, Ruger Hawkeye, 26-in. Barrel									
Hornady	Fed. 210M	StaBALL 6.5	45.0	Nosler 100-gr. Ballistic Tip	2.760	3015	2992	22	1.20
Hornady	Fed. 210M	StaBALL 6.5	48.8	Nosler 100-gr. Ballistic Tip	2.760	3297	3250	14	0.96
Hornady	Fed. 210M	StaBALL 6.5	40.5	Sierra 123-gr. HPBT	2.670	2656	2562	24	0.87
Hornady	Fed. 210M	StaBALL 6.5	44.9	Sierra 123-gr. HPBT	2.670	2980	2900	22	0.55
Hornady	Fed. 210M	StaBALL 6.5	39.9	Nosler 130-gr. AB	2.750	2582	2524	24	0.75
Hornady	Fed. 210M	StaBALL 6.5	44.3	Nosler 130-gr. AB	2.750	2889	2793	10	0.83
Hornady	Fed. 210M	StaBALL 6.5	39.5	Hornady 143-gr. ELD-X	2.800	2485	2446	5	0.59
Hornady	Fed. 210M	StaBALL 6.5	43.5	Hornady 143-gr. ELD-X	2.800	2772	2713	10	0.35

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new 143-grain ELD-X. It has earned its stripes on game, and in my test with a charge of 43.5 grains it came in at 0.35 inch, 2,772 fps, with an S.D. of 10 fps. Also excellent was the Nosler 142-grain AccuBond Long Range with 42.6 grains, averaging 0.98 inch at 2,685 fps and with an S.D. of 16 fps. The tough Swift 140-grain A-Frame over 42.0 grains had a speed of 2,620 fps and averaged just a hair over an inch.

But there are many "winners" in this race. In the ubiquitous 223 Remington, StaBALL 6.5 is best with heavier bullets, so I tried the Berger 73-grain Target HP and the Sierra 77-grain MatchKing HP in my Springfield SAINT AR with its 16.1-inch barrel and a 1:8-inch twist, making it suitable for longer bullets. Powder charges were 26.5 and 26.2 grains respectively. Velocities were around 2,400 fps for each load, and accuracy was 0.59 and 0.88 inch respectively.

I really like the 22 Nosler; it gives .22-caliber bullets a real boost in speed. My CMMG AR has a 22-inch barrel, which also contributes to higher velocities. Again, I stuck with heavier bullets for the rifle's 1:8-inch twist. The Hornady 70-grain GMX hunting bullet showed minute-of-deer accuracy at almost 3,000 fps with 33.3 grains of powder. The company's 73-grain Match BTHP and 33.1 grains was chronographed at 3,032 fps (S.D. was 18 fps) and shot a little over 0.5 inch. For long-range paper punchers, the Nosler 77-grain with 32.4 grains of StaBALL 6.5 gave a velocity of 2,897 fps and a group average of 0.73 inch.

The 270 Winchester needs little fanfare as a game cartridge. In my Winchester Pre-'64 Model 70, the Sierra 140-grain Spitzer Boat Tail and 53.5 grains gave an average velocity of 2,896 fps and grouped into 0.57 inch. The S.D. was 12 fps. But alas, my Pre-'64 Model 70 didn't cotton to the Norma 150-grain Oryx Bonded and averaged 1.14 inches.

My 7x57mm Mauser rifle is an Interarms Mark X Continental with a 20-inch barrel, and it has slain a lot of deer and elk in its lifetime. My favorite bullet weight for this cartridge is 145 grains, and the Speer Grand Slam liked 46.6 grains of StaBALL 6.5 for an average velocity of 2,413 fps and an accuracy average of 0.61. Not far behind, Nosler's 140-grain AccuBond with 47.5 grains and the company's 140-grain AccuBond Long Range with 46.6 grains averaged under an inch. The S.D.s of these last two loads were 17 and 16 fps respectively.

We cannot overlook the 30-06, "America's cartridge," and StaBALL 6.5 did this veteran proud. With 57.8 grains, the Nosler 165-grain Ballistic Tip deer bullet registered 2,738 fps and slightly over an inch out of my Ruger Model 77RL with its skinny 20-inch barrel. Bullets weighing 180 grains are almost the de facto

The 270 Winchester handloads were tested in a Pre-'64 Winchester Model 70 with a 24-inch barrel and 1:10-inch twist.

The 7x57mm Mauser handloads were tested in an Interarms Mark X Continental Carbine with a 20-inch barrel and 1:9.5-inch twist.

The 30-06 handloads were tested in a Ruger Model 77RL with a lightweight 20-inch barrel and 1:10-inch twist.

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WINCHESTER STABALL 6.5 LOAD DATA

CASE	PRIMER	POWDER	CHARGE (GRS.)	BULLET	COL (IN.)	VEL. (FPS)	S.D. (FPS)	M.E. (FT-LBS)	100-YD. ACC. (IN.)
223 Remington, Springfield SAINT AR, 16.1-in. Barrel									
Nosler	CCI 400	StaBALL 6.5	26.5	Berger 73-gr. Target HP	2.260	2401	24	935	0.59
Nosler	CCI 400	StaBALL 6.5	26.2	Sierra 77-gr. MatchKing HP	2.260	2361	19	952	0.88
22 Nosler, CMMG AR, 22-in. Barrel									
Nosler	CCI 400	StaBALL 6.5	33.3	Hornady 70-gr. GMX	2.260	2994	23	1394	1.10
Nosler	CCI 400	StaBALL 6.5	33.1	Hornady 73-gr. Match BTHP	2.260	3032	18	1491	0.55
Nosler	CCI 400	StaBALL 6.5	32.4	Nosler 77-gr. Custom Competition	2.260	2897	22	1435	0.73
6mm Creedmoor, Ruger American Predator, 22-in. Barrel									
Hornady	WLR	StaBALL 6.5	47.3	Sierra 60-gr. HP	2.410	3440	24	1577	0.55
Hornady	Fed. GM210M	StaBALL 6.5	49.5	Barnes 62-gr. Varmint Grenade	2.410	3631	11	1816	0.41
Hornady	Fed. GM210M	StaBALL 6.5	49.0	Barnes 68-gr. Burner HP	2.520	3516	12	1867	0.63
Hornady	WLR	StaBALL 6.5	44.0	Nosler 85-gr. Partition	2.580	3032	19	1736	0.67
Hornady	WLR	StaBALL 6.5	47.9	Nosler 85-gr. Partition	2.580	3425	19	2215	0.94
Hornady	Fed. GM210M	StaBALL 6.5	46.9	Sierra 85-gr. HPBT	2.580	3270	24	2019	0.94
Hornady	Fed. GM210M	StaBALL 6.5	44.4	Nosler 90-gr. Ballistic Tip	2.770	3052	26	1862	0.75
Hornady	Fed. 210	StaBALL 6.5	44.0	Berger 95-gr. Classic Hunter	2.615	3023	13	1928	0.57
Lapua	Fed. 205	StaBALL 6.5	44.0	Berger 95-gr. Classic Hunter	2.615	3022	14	1927	0.42
Hornady	Fed. GM210M	StaBALL 6.5	44.8	Nosler 95-gr. Ballistic Tip	2.700	3028	15	1935	0.83
Hornady	Fed. GM210M	StaBALL 6.5	43.7	Nosler 100-gr. Partition	2.730	2986	28	1960	0.47
Hornady	WLR	StaBALL 6.5	41.0	Sierra 100-gr. Spitzer	2.650	2818	21	1764	0.63
Hornady	WLR	StaBALL 6.5	44.6	Sierra 100-gr. Spitzer	2.650	3014	18	2018	0.47
Hornady	Fed. GM210M	StaBALL 6.5	42.5	Nosler 105-gr. RDF	2.770	2870	26	1921	0.73
6.5 Creedmoor, Ruger Hawkeye, 26-in. Barrel									
Hornady	Fed. GM210M	StaBALL 6.5	47.8	Nosler 100-gr. Ballistic Tip	2.650	3140	21	2190	0.67
Hornady	Fed. GM210M	StaBALL 6.5	48.8	Nosler 100-gr. Ballistic Tip	2.760	3250	14	2346	0.96
Hornady	Fed. GM210M	StaBALL 6.5	48.0	Sierra 100-gr. HP	2.616	3194	24	2266	0.62
Hornady	Fed. GM210M	StaBALL 6.5	44.1	Sierra 120-gr. Spitzer	2.726	2818	17	2117	0.94
Hornady	Fed. GM210M	StaBALL 6.5	40.5	Sierra 123-gr. HPBT	2.670	2562	24	1793	0.87
Hornady	Fed. GM210M	StaBALL 6.5	44.9	Sierra 123-gr. HPBT	2.670	2900	22	2298	0.55
Hornady	Fed. GM210M	StaBALL 6.5	43.6	Nosler 125-gr. Partition	2.759	2804	22	2183	0.79
Hornady	Fed. GM210M	StaBALL 6.5	43.4	Hornady 129-gr. SST	2.818	2779	17	2213	0.75
Hornady	Fed. GM210M	StaBALL 6.5	39.9	Nosler 130-gr. AccuBond	2.750	2524	24	1839	0.75
Hornady	Fed. GM210M	StaBALL 6.5	44.3	Nosler 130-gr. AccuBond	2.750	2793	10	2252	0.83
Lapua	Fed. 205	StaBALL 6.5	43.0	Berger 135-gr. Classic Hunter	2.750	2692	11	2173	0.43
Hornady	Fed. GM210M	StaBALL 6.5	43.1	Speer 140-gr. Hot-Cor SP	2.721	2696	22	2260	0.59
Hornady	Fed.GM210M	StaBALL 6.5	42.0	Swift 140-gr. A-Frame	2.663	2620	13	2134	1.01
Hornady	Fed. GM210M	StaBALL 6.5	42.6	Nosler 142-gr. AccuBond LR	2.860	2685	16	2274	0.98
Hornady	Fed. GM210M	StaBALL 6.5	39.5	Hornady 143-gr. ELD-X	2.800	2445	5	1899	0.59
Hornady	Fed. GM210M	StaBALL 6.5	43.5	Hornady 143-gr. ELD-X	2.800	2772	10	2440	0.35
270 Winchester, Winchester Model 70, 24-in. Barrel									
Federal	Fed. 210	StaBALL 6.5	53.5	Sierra 140-gr. Spitzer BT	3.220	2896	12	2608	0.57
Federal	Fed. 210	StaBALL 6.5	51.0	Norma 150-gr. Oryx Bonded	3.220	2645	21	2331	1.14
7x57mm Mauser, Interarms Mark X, 20-in. Barrel									
Norma	Fed. 210	StaBALL 6.5	47.5	Nosler 140-gr. AccuBond	3.000	2487	17	1923	0.74
Norma	Fed. 210	StaBALL 6.5	46.6	Speer 145-gr. Grand Slam	2.945	2413	23	1875	0.61
Norma	Fed. 210	StaBALL 6.5	46.6	Nosler 150-gr. AccuBond LR	3.000	2488	16	2062	0.90
30-06 Ruger Model 77RL, 20-in. Barrel									
Federal	Fed. 210	StaBALL 6.5	57.8	Nosler 165-gr. Ballistic Tip	3.300	2738	24	2747	1.15
Federal	Fed. 210	StaBALL 6.5	55.0	Sierra 180-gr. Spitzer	3.300	2520	11	2539	0.69
Federal	Fed. 210	StaBALL 6.5	51.8	Hornady 220-gr. RN	3.213	2301	10	2587	0.83

NOTES: Accuracy is the average of three, five-shot groups fired from a benchrest. Velocity is the average of five rounds measured 12 feet from the guns' muzzles. Range temperature was 71 to 93 degrees Fahrenheit.

standard .30-caliber bullet, and the Sierra Spitzer averaged 0.69 inch with an S.D. of 11 fps. For elk in the black timber, the good old 220-grain roundnose is tough to beat. Hornady's version and 51.8 grains of powder shot under an inch. Velocity was modest (2,301 fps), S.D. was great (10 fps), but recoil in the lightweight Ruger rifle made my eyes cross!

Okay, how about copper fouling? At first, I cleaned the rifles' bores after every 15 rounds, but inspection with my Gradient Lens Hawkeye borescope showed so little fouling that I just blazed away, with no discernible degradation in accuracy. For example, in one session with the 6mm Creedmoor I fired 55 rounds without cleaning, and the group sizes of the last few groups were every bit as good the first ones. After this marathon, there was very little copper fouling in the bore. Pretty impressive, I'd say. I loathe cleaning out copper fouling, so this is a major bonus for me.

Based on my preliminary results, it appears that this new powder is geared toward the heavier bullets in a given caliber, delivering good velocities and excellent accuracy across a broad spectrum of cartridges, from varmints to large-hoofed critters.

It's easy to whip up great handloads with StaBALL 6.5, as it flows through a powder measure with great uniformity, and the powder's density helps out a lot, leaving plenty of room in most cases to seat long-for-caliber bullets without compressing the powder charges. Accuracy was excellent for selected loads in every cartridge I fired, and there was very little, if any copper fouling in any of my test rifles, a boon for all shooters. Overall, StaBALL 6.5 delivered the goods across the board, and I predict it will become the darling of both long-range shooters and big-game hunters alike.

Winchester's new StaBALL 6.5 powder is the shooter's ace in the hole. It produces superb accuracy across a broad range of cartridges and higher velocities with low standard deviations. It is temperature insensitive, limits copper fouling, and meters uniformly.

Okay, here's the quiz I promised. What's the only Ball powder that has uniform metering, produces low standard deviations, is temperature insensitive, has additives to limit copper fouling, gives higher velocities in its burn-speed class, and produces superb accuracy across a broad range of cartridges? If you answered "StaBALL 6.5," go to the head of the class.


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LOADS FOR THE 6MM GT

Created to be the optimal long-distance PRS cartridge, the 6mm GT is flat-shooting and super-accurate, plus it burns powder efficiently. **BY LAYNE SIMPSON**

THE 6MM GT WAS CREATED BY GEORGE GARDNER AND Tom Jacobs. In addition to owning GA Precision, George is an avid participant in Precision Rifle Series (PRS) competition, where steel targets are engaged out to 1,000 yards and sometimes farther. Tom is a champion 600- and 1,000-yard benchrest competitor.

The 6mm GT is new on the scene, but its roots go back to 1999 and the introduction of the 6mm Dasher by 100- and 200-yard benchrest competitors Dan Dowling and Al Ashton. The Dasher is basically the older 6mm BR Remington case with the shoulder moved forward for additional powder capacity and the shoulder angle increased to 40 degrees. It pushes 107-grain match bullets about 200 feet per second faster than the 6mm PPC.

While the 6mm Dasher has proven to be equal to the 6mm PPC in accuracy, and has won its share of matches in short-distance benchrest competition through the years, it never proved to be a serious threat there. But due to its ability to launch heavier bullets faster while being easier on barrel life than bigger cartridges, it has become one of the more popular cartridges used by competitors in PRS, F-Class, and long-distance benchrest competitions. As good as the 6mm Dasher has been—and still is—George and Tom are convinced their 6mm GT is better.

During a conversation with George, I asked him why he believed that to be true. He mentioned that the 6mm Dasher is too short to reliably feed from high-capacity magazines commonly available for the .308 Winchester. (In case you don't know it already, PRS competitions call for a high-capacity magazine.) Second, when loaded to maximum chamber pressure, the 6mm Dasher struggles to reach George's desired velocity range of 3,000 to 3,100 fps with bullets weighing from 105 to 110 grains. (Maximum velocity allowed in PRS competition is 3,200 fps.) In other words, the 6mm Dasher case needed to be a bit longer and capable of burning a pinch or two more powder.

When I mentioned the 6mm Creedmoor, George said that due to a shorter and wider powder column, the 6mm GT burns powder more efficiently, and that makes it easier to develop handloads with the narrow velocity spread needed to achieve the level of accuracy required for successfully competing at long distances. The Creedmoor case is also too capacious to achieve 100-percent-density loadings of the powders considered by George to be the best choices for cartridges of 6mm caliber.

And how did the 6mm GT case come to be? Prior to its development, extensive testing had convinced George that Varget

While the 6mm Dasher (left) is quite popular among PRS and F-Class long-distance competitors, George Gardner wanted a bit more powder capacity to achieve a slight increase in velocity. Since making the Dasher case longer was not possible, he shortened the 6x47 Lapua case (right) to come up with his 6mm GT (center).

was the best choice in powders available at the time for pushing 105- to 110-grain bullets to the desired velocity range. Because the case capacity of the 6mm Dasher was a bit small for accomplishing that at acceptable chamber pressures, he turned to the 6x47 Lapua, which is the 6.5 Lapua case necked down. Like the 6mm Dasher, the 6x47 Lapua is extremely popular in various long-distance competitions.

The larger 6x47 case easily reached George's velocity goal, but load density with Varget was less than 100 percent, and that put shot-to-shot velocity variation higher than is acceptable for shooting small groups at extreme distances. So the 6x47 case was shortened just enough for the charge of Varget producing the desired velocity level to fill the case to 100-percent load density with a bullet seated.

I compared capacities of the 6mm Dasher, 6mm GT, and 6x47 Lapua by weighing the cases and then weighing them again after they were filled to the brim with water. The averages were 40.2 grains for the 6mm Dasher, 45.2 grains for the 6mm GT, and 46.8 grains for the 6x47 Lapua. (The 6mm Creedmoor and 243 Winchester, both also popular in the long-distance shooting games, have respective capacities of 52.6 and 55.2 grains.)

When measured from head to body/shoulder juncture, the 6mm GT is 0.100 inch longer than the 6mm Dasher, and its neck is 0.050 inch longer. Respective shoulder angles are 35 and 40 degrees, and the slightly milder angle should make the 6mm GT feed a bit more smoothly from various types of magazines. There is one other difference. The 6x47 Lapua case is pocketed for Small Rifle primers, and flash-hole diameter is around 0.060 inch, which is the same as the 6mm PPC that started that trend. The 6mm GT case also uses the Small Rifle primer, but flash-hole diameter is the more standard 0.080 inch.

The new Winchester StaBALL 6.5 powder was designed as a substitute for H4350 in the 6.5 Creedmoor, and it works great in other cartridges of various calibers, including the 6mm GT and the 7mm-08.

Many competitors are convinced that various 6mm cartridges are more accurate with Small Rifle primers, but there is another benefit that is seldom mentioned. Due to more beef in the web of the case, primer pockets don't expand as quickly when the case is pounded by maximum-pressure firings. I have seen the results of a maximum-pressure shooting test comparison between 6mm Creedmoor cases with large and small primer pockets, both from the same manufacturer, and the latter withstood almost twice as many full-power firings before expanded primer pockets sent them to the scrap bin.

Alpha Munitions of Salt Lake City, Utah, is manufacturing 6mm GT cases, and they are headstamped "GAP 6mm GT." The company specializes in making match-quality cases for various cartridges that are popular in long-distance competition.

Rather than just dumping them into a box where dents and scratches lurk, the cases are hand-packaged in reusable ammo boxes that protect each case from possible damage. In various precision-shooting disciplines, cases made by Lapua are the standard by which all others are measured, but from what I see, Alpha is giving that company a good run for the money.

Layne used eight different bullets in his 6mm GT handloads. The mark on the ogive of each bullet seated in these dummy rounds is from his method of determining bullet jump.

1. Swift 90-Gr. Scirocco II
2. Berger 105-Gr. Hybrid Target
3. Nosler 105-Gr. CC
4. Nosler 105-Gr. RDF
5. Nosler 107-Gr. CC
6. Sierra 107-Gr. MatchKing
7. Hornady 108-Gr. ELD Match
8. Sierra 110-Gr. MatchKing

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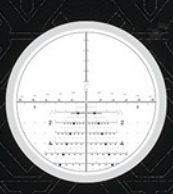

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The New Cartridge Gets a New Propellant

George Gardner started shooting the 6mm GT in PRS competition in 2017, and as mentioned, it was designed for use with Varget. But after trying a new propellant from Hodgdon in early 2019, he was impressed enough by its performance to make the switch. That powder's story begins when Hodgdon Product Manager Ron Reiber sent samples of H4350 to St. Marks Powder in St. Petersburg, Florida, and requested a Ball propellant that would duplicate its performance in the 6.5 Creedmoor. A temperature-insensitive Ball powder had been an elusive goal for many years, and that was added to Reiber's specifications. Another requirement was a copper-fouling reduction additive.

The new propellant has everything Ron asked for, and it was introduced under the Winchester label as StaBALL 6.5. Don't be misled by its name because due to a burn rate similar to that of H4350, along with a 10 percent higher gravimetric density, it is destined to become an excellent choice for cartridges of other calibers. I tried StaBALL 6.5 in a fairly lightweight mountain rifle in 7mm-08 Remington built by Kenny Jarrett, and in addition to impressive velocities, sub-half-MOA accuracy with the Nosler 140-grain Ballistic Tip came easily.

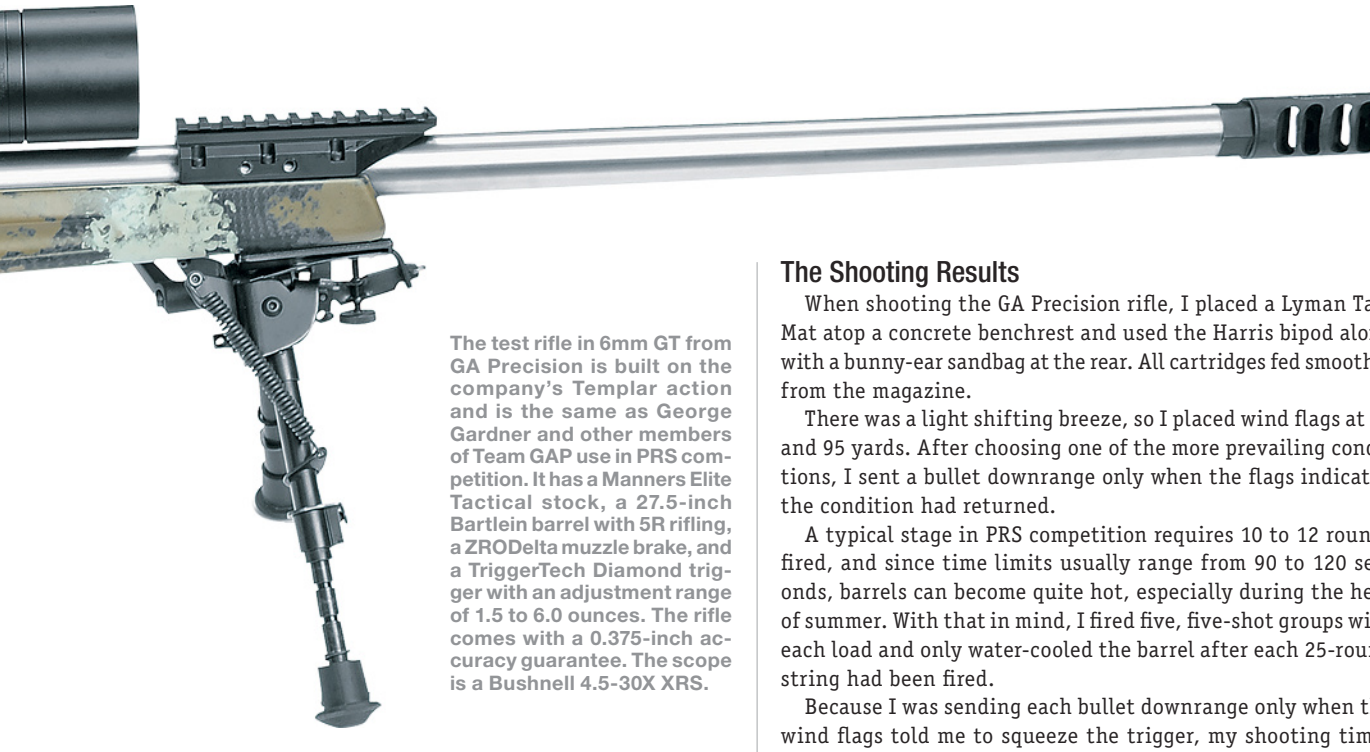
The rifle in 6mm GT featured in this report is the same build as George and other Team GAP members use in PRS matches. I have shot so many fine rifles over the years it takes a lot to impress me, but I have to say quality and workmanship on this rifle rank among the very best. Bolt travel of the Templar action feels like it's on ball bearings, and bolt lift during firing pin spring compression is about 30 percent lighter than on a Remington Model 700 action as it comes from the factory. The bolt has dual-opposed locking lugs, a Sako-style extractor, and a plunger ejector. Locktime is inside 3.0 milliseconds. The heavy 27.5-inch Bartlein stainless-steel barrel with 5R rifling at a twist rate of 1:7.7 measures 0.830 inch at the muzzle. The rifle has a Manners Elite Tactical stock and a two-chamber, eight-port muzzle brake from ZRODelta.

Pushing forward on an ambidextrous magazine release in the front of the trigger guard gravity-drops the empty 12-round magazine. The Diamond trigger from TriggerTech has a two-position safety and an adjustment range of 1.5 to 6.0 ounces. Ten pulls with a Lyman digital gauge ranged from 2.9 to 3.4 ounces for an average of 3.1 ounces. There was no detectable creep or overtravel, and yes, the trigger passed my jar-off test with flying colors. The rifle is equipped with a Bushnell 4.5-30X XRS Elite Tactical scope and a Harris folding bipod, and total weight is 18.25 pounds. It departs the GA Precision shop with a 0.375-MOA accuracy guarantee.

6MM GT LOAD DATA

CASE	PRIMER	POWDER	CHARGE (GRS.)	BULLET	COL (IN.)	JUMP (IN.)	VEL. (FPS)	E.S. (FPS)	100-YD. ACC. (IN.)
GA Precision Templar, 27.5-in. Barrel									
Alpha	Fed. GM205M	StaBall 6.5	40.8	Swift 90-gr. Scirocco II	2.429	0.015	3219	16	0.633
Alpha	Fed. GM205M	StaBall 6.5	39.2	Berger 105-gr. Hybrid Target	2.539	-0.010*	3022	5	0.227
Alpha	Fed. GM205M	StaBall 6.5	40.4	Berger 105-gr. Hybrid Target	2.514	0.015	3114	8	0.364
Alpha	Fed. GM205M	StaBall 6.5	40.1	Nosler 105-gr. CC	2.483	0.015	3071	14	0.405
Alpha	Fed. GM205M	StaBall 6.5	40.4	Nosler 105-gr. RDF	2.472	0.015	3091	11	0.524
Alpha	Fed. GM205M	StaBall 6.5	40.2	Nosler 107-gr. CC	2.465	0.015	3052	10	0.386
Alpha	Fed. GM205M	StaBall 6.5	40.0	Sierra 107-gr. MatchKing	2.469	0.015	3037	15	0.515
Alpha	Fed. GM205M	StaBall 6.5	40.4	Hornady 108-gr. ELD Match	2.459	0.015	3084	12	0.459
Alpha	Fed. GM205M	StaBall 6.5	40.0	Sierra 110-gr. MatchKing	2.575	0.015	3046	9	0.492

***Bullet seated 0.010 inch into the rifling**
NOTES: Accuracy is the average of five, five-shot groups fired from a benchrest. Velocity is the average of 10 rounds measured 12 feet from the gun's muzzle.



The test rifle in 6mm GT from GA Precision is built on the company's Templar action and is the same as George Gardner and other members of Team GAP use in PRS competition. It has a Manners Elite Tactical stock, a 27.5-inch Bartlein barrel with 5R rifling, a ZRODelta muzzle brake, and a TriggerTech Diamond trigger with an adjustment range of 1.5 to 6.0 ounces. The rifle comes with a 0.375-inch accuracy guarantee. The scope is a Bushnell 4.5-30X XRS.

Brass was in short supply when I needed it, so Ron sent a generous batch of once-fired Alpha 6mm GT cases fresh from Hodgdon's pressure gun. After running the cases through an RCBS Ultrasonic cleaner, I annealed their necks and full-length resized with a Redding Type S die. Neck diameter with a 0.243-inch bullet seated was 0.2675 inch, so I installed a 0.265-inch titanium nitride bushing in the die. (Chamber neck diameter of the rifle was 0.273 inch.) Trimming to 1.720 inches came next, followed by chamfering and deburring.

While my report was being written, load data for the 6mm GT had been developed only for the heavier bullets, so I was unable to shoot any of the varmint weights. Based on my experience with other cartridges of the same caliber, I'd say maximum velocities should be in the neighborhood of 3,800 to 3,900 fps for 55-grain bullets and 3,600 to 3,700 fps for those weighing 70 and 75 grains. The lightest bullet shot during my testing was the Swift 90-grain Scirocco II, which is my favorite deer medicine in the 6mm Creedmoor, the 6mm-06, and the 243 Winchester. A chamber throat length of 0.120 inch in the test rifle allowed bullets to be seated fairly long with minimal intrusion on the powder cavity of the case. When seated to the overall cartridge lengths shown in the load data chart, the bases of bullets were no deeper than the body/shoulder juncture of the case. That put load density of StaBALL 6.5 at 100 percent.

One of the more noteworthy characteristics of StaBALL 6.5 is its ability to flow smoothly and accurately through a good powder measure. I used a measure built for me during my short-range benchrest shooting days by Neil Jones of Custom Products, and there was no detectable weight variation among thrown charges.

Maximum charge weights in the data sheets I received from Ron were 40.4 grains for 105- and 110-grain bullets and 40.5 grains for a 107-grain bullet. Those maximums worked fine with three of the bullets I included in my tests, but with the others, pressures were a bit too high in the GA Precision rifle. Charge weights were reduced accordingly. George had mentioned that the rifle sent to me preferred a bullet jump ranging from 0.010 to 0.015 inch, so I went with 0.015 inch for all but one of my handloads.

The Shooting Results

When shooting the GA Precision rifle, I placed a Lyman Tac-Mat atop a concrete benchrest and used the Harris bipod along with a bunny-ear sandbag at the rear. All cartridges fed smoothly from the magazine.

There was a light shifting breeze, so I placed wind flags at 20 and 95 yards. After choosing one of the more prevailing conditions, I sent a bullet downrange only when the flags indicated the condition had returned.

A typical stage in PRS competition requires 10 to 12 rounds fired, and since time limits usually range from 90 to 120 seconds, barrels can become quite hot, especially during the heat of summer. With that in mind, I fired five, five-shot groups with each load and only water-cooled the barrel after each 25-round string had been fired.

Because I was sending each bullet downrange only when the wind flags told me to squeeze the trigger, my shooting times ranged from eight to 10 minutes for each 25-round string. The firing along with an ambient temperature of 94 degrees Fahrenheit got the barrel quite hot, yet there was very little variation in group size.

The accuracy of the GA Precision rifle with all the match bullets I tried proved to be good enough to win PRS matches, and while shooter ability and experience would be far more important than further reductions in group size, I could not resist seeing what the rifle and cartridge were capable of with a bit of precision handloading.

I sorted a batch of Alpha 6mm GT cases by capacity. And while the neck wall is a bit thinner than 6x47 Lapua cases, there is still enough brass to allow outside-turning just enough for uniform thickness, so I did that. Then I annealed the necks, and I also uniformed the primer pockets and flash holes.

On the first go-round, the Berger 105-grain Hybrid Target edged out the other bullets in accuracy, and that, along with a good supply in my reloading room, prompted me to run a batch through a Sinclair Bullet Sorting Stand.

I usually would neck-size cases fired in the rifle, but not having a die for that, I relied on the 0.2434-inch diameter chamber throat of the rifle for the precise alignment of a chambered cartridge. While several different charge weights of StaBALL 6.5 were being tried, the rifle indicated a strong preference for 39.2 grains. The biggest improvement in accuracy came with the Berger bullet seated for 0.010-inch rifling engagement. The rifle came very close to breaking the quarter-minute barrier. I doubt if a PRS competitor would want to jam bullets, but benchrest shooters often do.

I am impressed by the quality and performance of the GA Precision rifle, and I'm equally impressed by the StaBALL 6.5 powder and the 6mm GT cartridge. Match-winning accuracy is there, and extreme velocity spread is where it needs to be for precision shooting at extreme distances. I seldom mention standard deviation because the information is misleading when small samplings of ammunition are tested, but I will say that it ranged from 3 to 7 for the nine handloads.

OLDE EYNSFORD IN THE FIELD

Classic shotguns loaded with Olde Eynsford black powder are pure joy for hunting pheasants and mallards.

BY ROSS SEYFRIED

LAST YEAR IN THE 2019 *ANNUAL MANUAL* WE PLOWED some mostly untouched ground. The basis was a scientific look (with real pressure guns and chronographs) at shotgun shells loaded with black powder. With the knowledge of the true pressure and velocity of the original gun powder, we created similar performance using the latest nitro powders. But while great loading data and scientific information are interesting, the real fun happens when we put it all to work—work that happens in great, wild places—with grand old shotguns and a fine dog. This is in its own way a very real journey back to the future with guns ranging from a petite 18-bore flintlock to 10-gauge hammerless wildfowl guns.

Three of a Kind

One of the guns is of the most pure German kind and actually was part of a collection that, against all odds, survived two world wars in Germany and remained in the original family of the King of Prussia. It is a 16-gauge double, with wonderful Damascus barrels and an opening lever under the forearm and hammers. Its survival, in almost-new condition, hints that it might be inhabited by very happy spirits. The first time I shot it with Longshot and an ounce of #8 shot, a dove that had been screaming across the top of some standing corn folded. The gun did not seem to understand missing.

A month later, the gun and I were following the lead of my dog, Miss Feather, across a half-section of native grass in South Dakota. Most of the day had been spent 20 miles east in a place where a huge thunderstorm had apparently wiped out the pheasant nests. I carried another gun and perfectly missed the only rooster we saw. This was my last day in South Dakota, the end of a week with wonderful success. My intent was to catch one more bird. With the afternoon fading, I returned to a place where I was pretty sure we could find a rooster and with a gun I knew would be unlikely to let him get away if I got the chance. The little 16 was loaded with an ounce of #6 nickel-plated shot and Longshot powder. This is a humble load at just over 1,200 fps and only 6,300 psi chamber pressure—a load that in this time of whizbang does not seem very impressive.

Feather was very birdy. There was game afoot, and she flushed a hen and then another. She gave them a momentary glance and buried her nose in the cover when it all began to happen. A matched pair of roosters exploded about 20 yards in front of me. One went right, and his brother flew left. In much less time than it takes to tell, right and left birds were dead in the air. Miss Feather launched herself to retrieve the left-hand rooster as I drew the hammers to half-cock, swung the lever, reloaded, closed the gun, and looked up to see her veering hard to the left from her retrieve course, on a mission to flush a third cackling jewel. He crossed in front of me and very suddenly quit flying. Miss Feather returned with

the third rooster, and it was over almost before it began. I had not moved my feet and really never dreamed such could happen. This was the seventh bird of the week with the little "German Lady" with as many shells. As the old German gunmaker would say, "Ja, him works."

Once considered death traps, the Damascus barrels on Ross's German 16-gauge double are rare and wonderful "Etoille" (star pattern) and are as safe and deadly as gun barrels can be.

Old 10-Gauge Friends

I have a special soft spot in my heart for old 10-gauge guns, and they have been part of my life for a very long time. Not so very long ago, shotguns with Damascus barrels were pronounced to be death traps. And when they had that stigma and 10-gauge chambers, the finest English doubles often cost less than a Remington pump. They were guns that a $400-per-month cowboy could afford, and along the way, I learned they were the most deadly shotguns ever devised. Their success on pheasants, ducks, geese, quail, and doves is something I truly envy. And I've done it.

They spawned a need for low-pressure nitro loads (this was before I had learned the true magic of real black gunpowder), and recipes found in the very old Lyman manuals fed them well, but that data was with powders that are obsolete now. The mission became to reinvent that wheel with new-generation Hodgdon, IMR, and Winchester powders. So for last year's edition of the *Annual Manual*, we created spectacular nitro-for-black loads in 2⅞-inch 10-gauge cases using Longshot, IMR Blue, and W572. But when the dust settles, if I had to pick a

16-GAUGE LOAD DATA

CASE	PRIMER	POWDER	CHARGE (GRS.)	SHOT WEIGHT (OZ.)	WAD	CRIMP	VEL. (FPS)	S.D. (FPS)	PRESSURE (PSI)
Ched. Plastic 2¾"	Ched. 209	Longshot	22.5	1	BP Sporting16	6-point	1248	2	6300

grand champion load from the dozens we created in all gauges, it would be the 4¼-dram, 1¼-ounce 10-gauge load with Olde Eynsford 1½F black powder. It generates 1,225 fps velocity and only 4,900 psi pressure. While I suspect over the years I have caught more game with a 10 gauge than all the rest, only a small portion was with black powder. But in the way of reverse-progress, I dedicated much of my duck hunting over the last two seasons with that spectacular Olde Eynsford 1½F load (substituting Bismuth for lead shot).

One of the guns, my "oldest" 10-gauge friend, came to me as half of a trade in the mid-1970s. I swapped a Smith & Wesson 22 Jet for a nice German 10 gauge and this W&C Scott Premier gun straight up. The Premier was made in 1878 at the astronomical cost of $295. It's fun to realize that I paid less than that for it 100 years later! It weighs 9½ pounds and has Full chokes. The other "old friend" in this story is a W.W. Greener with 32-inch barrels and Full chokes that weighs almost 10 pounds.

The Greener got the call on a cold, snow-covered day when most of the water was covered with ice. It had been a tough year, when ducks were few and chances were fewer. I used big guns with lots of choke and deadly loads. This Greener fit all the criteria and was a veteran of places like the old South Platte River and the Carolina coast (on sea ducks). One has to go back to Greener's book, *Choke-Bore Guns*, to fully understand patterns thrown by great barrels using felt and card wads instead of plastic. The essence of it all is uniformity from side to side, without

The Greener 10-gauge gun loaded with 4¼ drams of Olde Eynsford 1½ F and 1¼ ounces of #5 shot works perfectly on ducks.

10-GAUGE LOAD DATA

CASE	PRIMER	POWDER	CHARGE (GRS.)	SHOT WEIGHT (OZ.)	WAD	CRIMP	VEL (FPS)	S.D. (FPS)	PRESSURE (PSI)
Fed. Plastic 2"	Fed. 209A	Olde Eynsford 1½F	117.0	1¼	0.135" + ½" OY	Roll	1225	9	4900

the dense centers we know with modern plastic wads. On this day, the Greener was loaded as it would have been when Greener bored it more than a century ago: 4¼ drams of the best powder available with a card wad and 1/2 inch of best quality white felt soaked in Ox Yoke Wonder Lube, pushing on 1¼ ounces of #5 shot.

The lone drake came high, out of the northwest. He put on the brakes and made a pass over the marsh, pulled up hard, and returned for a second pass much like the first. He then made a long turn to the east and shed about 40 yards of altitude, but when I thought I was going to get him with his feet down, he went into another power climb. I did not like the shot, but if Miss Feather was going to have a duck to carry home, it was likely going to be this one, and it was now or never. I pushed the big barrels way ahead and above him and squeezed the trigger. The smoke momentarily hid him, but the next time I saw him, he was tightly folded and headed for the ground. I think the pattern hit him at about 60 yards, and his body caught six pellets.

Made in the 1870s, this W&C Scott Premier 10-gauge gun has been the author's friend for almost 50 years.

A week later, and about 30 degrees warmer, I decided to take the old Scott, with the same shells. The ducks moved more, and the entire marsh was open water. Even though the first few I saw did not offer a shot, there were more to come. The first ones to really decoy came in a flock of five: four drakes and a Suzie. They came in quickly, banking over the oak timber and turning into the stiff south breeze. When I stood, they all had their feet down about 25 yards in front of me. The right barrel swatted the lead drake, and the left caught up with one of the middle ones as he turned left and towered. The first shot was at 30 yards, and the second was at about 45. Neither offered any fun for the retriever, even though she poked them with her nose, hoping they would try to get away.

The next ducks were a pair that landed very quickly about 100 yards away in a place where I could not see them, and they could not see me. About 10 minutes later, a lone drake made a good turn over the decoys and ran into the pattern. Miss Feather was off to retrieve him, and I had the breech open to reload when I realized the previous pair was coming my way. They were leaving, under full power and at the edge of reality, but that old Scott was a serious duck gun, made for this kind of serious situation and dropped one duck into the soybean field on the other side of my permanent water-supply pond.

The World-Record Rooster

The North Dakota pheasants had not been easy, and I had avoided the least efficient gun of all, for four days, to do my very best to catch birds for Miss Feather, but now the time had come. It had been a grand week, every bird hard won, so it was no longer possible to fail. Tomorrow I would carry a 200-year-old Joe Manton 18-bore flint gun. We went to new places, old farmsteads, and margins of fine lakes but did not get a chance. We hunted harvested grain fields and saw nothing at all. It was if every pheasant on earth had disappeared. By midafternoon it was time for the last-ditch plan. The old homestead had treated us well the day before. There were miles of fields bordering the cattail swamp, weed patches, and some high mounds. The odds had to be best there.

A 200-year-old Joe Manton 18-bore flintlock gun stoked with 1⅛ ounces of #6 shot, 3 drams of Olde Eynsford 3F, and a priming charge of GOEX FFFFg accounted for Miss Feather's world-record rooster.

The first two hours were again blank as we turned back and headed into the lowering sun. We were most of the way back to the pickup when, for the first time that day, Miss Feather really lit up on a bird and began to push. After 50 yards there was little doubt that this was not a hen but an old, wild-running rooster. All rules of pointing dogs and such were cast aside. I would not interfere. She would hunt, and it was my job to keep up and shoot when the time came. Miss Feather crowded him at an almost run, zigzagging with his elusive trail, and I followed

18-BORE FLINTLOCK LOAD DATA

PRIMING POWDER	POWDER	CHARGE (DRAMS)	SHOT WEIGHT (OZ.)	WAD
Goex FFFFg	Olde Eynsford 3F	3	1⅛	0.062" overshot + ¼" felt

almost as fast. He was paralleling the 500-yard-wide, 3-mile-long cattail swamp.

I felt like the time had come at last, but my heart fell when Miss Feather made a sharp left turn and headed out into the "jungle." The old rooster would beat us out there; our odds were almost zero. Worst of all, I could see the cattails moving from her pursuit right in line with a 12-foot-tall cane break. It had all gone from difficult to hopeless when suddenly, with a roar and cackle, he flushed out of the right side of the cane. He was level with the top of the cattails, flying dead broadside at about 40 yards and screaming.

It was a tough shot with a good live pigeon gun and almost folly for my hands and flint. I swung the Manton and pressed the trigger when the front sight passed his beak. I fired the flint gun just because I had to, knowing the probable result would be to see him fly out of the right side of the smoke. The old gun snapped to life as, I have come to learn, few flint guns can; it was almost as fast as a breechloader. The whole process is wonderful: that magical arc of flint kicking the hammer out of the way, the bits of white-hot steel exploding the priming powder, and that transition from the pan through the breech to light the main charge. I had sent 1⅛ ounces of #6 shot after him, and to my absolute disbelief, instead of clearing the smoke to the right, he tumbled out the bottom!

In my elation, there also was concern. Miss Feather had been in that cane break when she flushed him. It would have been impossible for her to see the sky, let alone the rooster. The sun was setting, the swamp was endless, and if the rooster was not stone dead, the odds of catching him were zero. How could I direct her to him? In less time than it took to think about a plan, I saw her, only 10 yards from where he fell, four feet high, leaping over a dense pile of cattails, in flat-out pursuit like a greyhound. She did not fiddle and enjoy him, but instead came at a dead run to me with her rooster. Now, she would not hand him to me, he was hers alone to hold with her paws, while she panted trying to catch her breath. There were little bleeding patches below both of her eyes where cane and cattails had cut her, and we were both about as happy and proud as it is possible to be.

I have had great moments in my life with a gun in my hands, and this humble pheasant is right at the top of the list. Yes, right beside, perhaps even beyond, the elephant. I would not trade this moment and its one single bird for every one of the tens of thousands that Lord Ripon killed.

The rooster's skin hangs on the old barn wood at the end of my library. Perhaps the most uncanny part of it all is that now, more than two years later, every month or so I will hear Miss Feather squeaking below him. I take the skin down for her, but she does not try to take it. Instead she just buries her nose in the feathers and sniffs deeply. While I know it is impossible, I am also perfectly sure she remembers that afternoon and the world-record rooster.

LEAD PHOTO BY MICHAEL ANSCHUETZ

350 HANDLOADING THE LEGEND

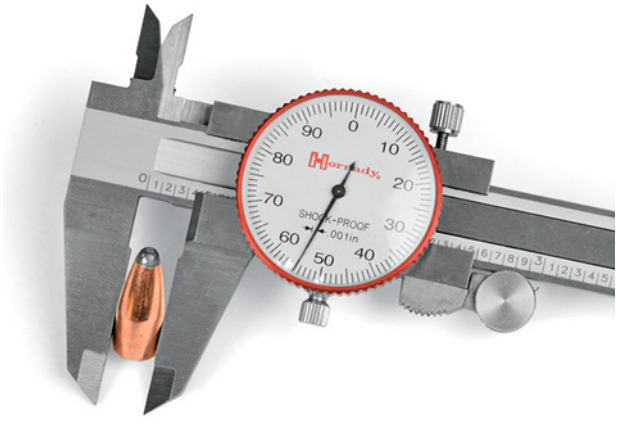
The new 350 Legend straight-wall hunting cartridge can be a challenge to handload, but these tips will help you build accurate, consistent, and effective ammo.

BY BRYCE M. TOWSLEY

IT'S LIKE BOBBY SAID SO LONG AGO, "THE TIMES THEY ARE a-changin'."For generations many Midwestern states have dictated shotguns-only for deer hunting. Recently, and fairly rapidly, many of those states are moving to allowing straight-wall rifle cartridges. The first new cartridge introduction that has resulted from those changes is the 350 Legend from Winchester. The round's recoil is very mild, and it's a great cartridge for youth and recoil-sensitive hunters.

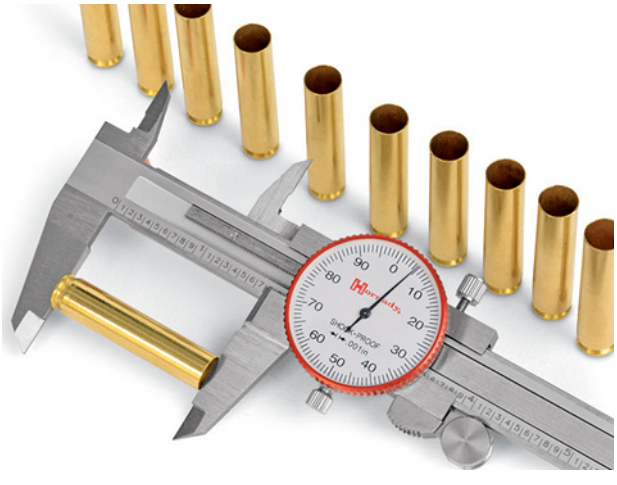
The new 350 Legend is, more or less, the 223 Remington case straightened and trimmed to 1.710 inches, so it's a good fit with many existing rifles, including the AR-15 platform. There are some subtle differences between 223 Remington and 350 Legend cases, but the differences are small. They both use a 0.378-inch rim diameter, but the 350 Legend uses a slightly larger case diameter, measuring 0.390 inch at the base. This results in a rebated rim. The two are not interchangeable, and you cannot make 350 Legend brass from 223 Remington cases. Also, magazines designed for the 223 Remington/5.56 NATO will not work, so the 350 Legend requires a dedicated magazine.

In the world of straight-wall rifle cartridges, the 350 Legend is on the smaller end. The three most popular straight-wall rifle cartridges are the 450 Bushmaster, 444 Marlin, and 45-70 Government. The 350 Legend case is substantially smaller than any of them. If you subscribe to the theory of 1,000 foot-pounds (ft-lbs) of bullet energy on impact as a minimum for deer-size game—and I do—the 350 Legend is a 100-yard cartridge. It's capable of hitting things much farther, of course, and I have shot targets out to 300 yards. It is easy enough to hit a large steel target, but the energy level is down to the 500 ft-lbs range, and the velocity at that distance is approaching the minimum needed to ensure expansion. Bottom line: To be sure of a clean kill, the 350 Legend is a 150-yard deer cartridge.



The specifications list 0.357 inch minus 0.003 inch as the 350 Legend's bullet diameter, but the correct working bullet diameter is 0.355 inch.

At 0.011 inch, the Winchester brass case walls were about 0.001 inch thicker than Hornady and Starline cases. Those brands measured 0.010 inch.



For best accuracy and performance, the cases must all be the same length. Any variation can result in erratic accuracy.

As I write this in late summer 2019, the 350 Legend is the hottest cartridge in the shooting industry. Just about every gun and ammo company is racing to introduce it into their product lines in time for the fall hunting season. However, it has not been without controversy. Much of that revolves around bullet diameter and has kept the technical gun nerds busy on the internet. (For the record, I self-identify as a technical gun nerd.)

Winchester's engineers cribbed many of the existing numbers from the 357 Magnum and 357 Maximum cartridge drawings and used them for the 350 Legend. As with those cartridges, the bore diameter is listed at 0.346 inch and the groove diameter at 0.355 inch. Just like those cartridges, the bullet diameter specification is listed at 0.357 inch – 0.003 inch.

But make no mistake: The working bullet diameter for the 350 Legend is 0.355 inch. If that seems a bit odd to you, I agree. It limits the cartridge to existing bullets designed to be used in the 9mm Luger or 357 Sig pistol cartridges or bullets specifically designed for the cartridge currently available only from Winchester and Hornady. (There may be more before this publication goes to press as I hear rumors of at least two other companies working on bullets specific to the cartridge.) Of course, the 9mm Luger and 357 Sig bullets are designed for a much lower impact velocity.

One reason for the 350 Legend's odd diameter, I suspect, is that 0.355-inch bullets ensure any feeding issues in AR-15 rifles with other bullets can be brushed off by saying, "Well, that bullet was not designed for the 350 Legend."

No handloader would ever be compelled to follow those rules, and I tried a wide range of bullets for my handloads. The two bolt-action rifles I used had some minor feeding issues with some bullets, but in the end, they both fed and shot all the ammo I tested. Just a few loads were not very smooth when feeding, particularly some of the pistol bullets.

You can expect the AR-15 design might be a little more finicky about which bullets feed well. The Ruger AR-556 I have would not feed the pistol bullets reliably, but it's hard to say what to expect from any other AR-15.

So why not just list the bullet diameter at 0.355 inch with S.A.A.M.I. and be done with it? My guess is because some important hunting states list a 0.357-inch minimum diameter for any straight-wall cartridge to be legal for deer hunting. By listing the bullet at 0.357 inch – 0.003 inch on the S.A.A.M.I. specifications, Winchester has been able to skirt the technicalities of the law. It's foolish to quibble over two-thousandths of an inch in hunting regulations, but quibbling is what many government officials, and some engineers, do best.

Hodgdon has load data for two 0.355-inch bullets designed for handgun cartridges: the Hornady 147-grain XTP and the Barnes 125-grain TAC-XP. Both handgun bullets shot pretty well in my tests, and the velocities were impressive. However, I can't comment on how well the bullets work in terms of terminal ballistics. They are designed for much lower impact velocity, so the results on game might be "interesting" to say the least. I would urge caution in using these bullets on big game until more testing is completed, although I would love to stick one in a coyote's ribs and see what happens.

The other two bullets that Hodgdon tested are designed specifically for the 350 Legend. They are the Winchester 180-grain Power-Point and the new Hornady 170-grain InterLock. Also,

Bryce loaded four 0.355-inch-diameter bullets in his handloads. They were: (left to right) Winchester 180-grain Power-Point, Hornady 170-grain InterLock, Hornady 147-grain XTP, and Barnes 125-grain TAC-XP.

both are offered in 350 Legend factory ammo. They are probably a better choice for hunting big game than the pistol bullets.

There are reports of cartridges loaded with larger-diameter bullets failing to chamber. One note that may be relevant if you are planning to load 0.357-inch bullets is that at this writing, brass was available from Winchester, Hornady, and Starline, and the Winchester case walls measured 0.001 inch thicker than the Starline and Hornady brass. That will add 0.002 inch to the cartridge diameter, which might become an issue with a tight chamber.

To see for myself, I made up dummy cartridges using 0.357-inch and 0.358-inch bullets. I used the thicker Winchester brass and loaded ammo with Speer's 0.358-inch 180-grain bullet that's designed for the 35 Remington and with Hornady's 0.357-inch 180-grain XTP. The cartridges with the Speer bullet chambered in both bolt actions. The Hornady bullet also chambered fine, but its short ogive caused a tight enough fit in the chamber throat that I had trouble getting the cartridges out of my Ruger bolt action. That's a bullet profile issue rather than bullet diameter. Neither of these loads would chamber in the Ruger AR-556 carbine.

So I guess this will vary from gun to gun depending on the tolerances when the chamber was cut. If 0.357-inch bullets chamber okay, they should be fine to use, as the S.A.A.M.I. specifications allow that diameter, assuming you have laboratory-tested load data with that bullet. Also, it would seem that the bolt-action rifles are going to be a lot more forgiving of bullet variation than the AR-15-style rifles.

Based on that, I loaded some of the Hornady 180-grain XTP (0.357 inch) and Single Shot Pistol 180-grain Pointed (0.358 inch) bullets with Hodgdon Lil'Gun powder (I won't give you the charge weight here as it has not been tested with Hodgdon) just to see if the larger bullets would shoot well. They were accurate enough for hunting deer. The results are listed in the chart.

Results

The 350 Legend is a fussy cartridge to handload. I experienced high to very high standard deviations (S.D.) when chronographing many handloads and even some factory loads. (I did not list every load I tested in the accompanying chart, as some were poor performers.) I weighed every single powder charge. I tried switching primers, including Magnum primers. I tried all the suitable propellants. I used larger-diameter bullets, and I added a taper crimp to the case. I was able to get the S.D.s down, but never to a great level. No load tested made it to single digits with the S.D. That probably contributes to the occasional flyer that opens the group average.

Accuracy was also often erratic. The rifles I tested are both capable of MOA accuracy and achieved several groups that size. The issue was inconsistency. Often, I would have two very good groups with the third opening up to twice the size and skewing the results. That goes hand in hand with the high S.D.s.

One thing I found is that case lengths vary a lot. I checked a bag of new Winchester brass, and cases varied from 1.701 to 1.708 inches. The early-production Starline brass I used was all over the place, with a lot of it under the minimum spec. However, I just checked a new batch of Starline brass, and it's consistent to 0.002 inch and right in the middle of the tolerance at 1.705 inches on average.

Case length is important because the cartridge headspaces off the case mouth. This variation in case length is probably a big part of the reason for the high S.D.s and erratic accuracy. The S.A.A.M.I. case length spec is 1.710 inches - 0.010 inch. The chamber length spec for headspacing is 1.710 inches minimum and 1.720 inches maximum. So if you have a maximum chamber and a minimum cartridge case, there is a 0.020-inch gap between the case mouth and the support of the chamber. Any wonder why S.D.s run high and accuracy is erratic?

The best results with 350 Legend handloads came with Hodgdon Lil'Gun powder and the Ruger American bolt-action rifle, and three-shot groups consistently measured about one inch at 100 yards.

I measured 100 new Winchester cases and picked out 60 that measured within one-half thousandth of 1.703 inches—still a bit short, but at least they were consistent. I primed them with Winchester Small Rifle primers and loaded them with 25 grains of Lil'Gun. To be certain, I weighed every charge on two scales. I seated Winchester 180-grain bullets to the Hodgdon recommended cartridge overall length (COL) of 2.110 inches.

I modified a Redding micrometer taper crimp die for 9mm and 38 Super by chucking the reversible insert in my lathe and cutting it off to allow the 350 Legend cartridge to enter far enough to be supported by the die. I put a very heavy taper crimp on every case. The result was my best-performing handload. The S.D. was an acceptable 20, and the average of three, three-shot groups with the Ruger American bolt action was 1.033 inches. More importantly, the accuracy was consistent: 1.0, 1.0, and 1.1 inches.

For best results with this cartridge, sort or trim all cases so they are exactly the same length. Ideally, I would try for the 1.707 to 1.709 inches range and every one trimmed to the same length. Then add a strong taper crimp. Or use a Lee collet crimp die. The crimp adds case tension to the bullet and helps keep ignition consistent.

I modified a case to work with the Hornady Lock-N-Load O.A.L. Gauge, and I was surprised to find that the bullet jump to the rifling was pretty substantial. With a Winchester 180-grain bullet in the Ruger American rifle, the bullet jump was 0.344 inch. The Hornady 170-grain bullet jumped 0.320 inch. That's using the Hodgdon recommended COL. If I use the S.A.A.M.I. COL maximum, the Hornady bullet jumped 0.331 inch.

These bullets are lightweight for the caliber, so they are short. It's not possible to seat close to the lands as that leaves almost no bullet inside the case. This long freebore was probably designed to help achieve higher velocity, but it's likely also a factor in the erratic accuracy that I and a lot of other shooters have experienced with this cartridge.

The 350 Legend should be loaded with Magnum primers. Bryce found the Lee priming tool with a dedicated shellholder worked best.

Tips

Hodgdon has tested five suitable propellants: W296, IMR 4227, H110, CFE BLK, and Lil'Gun. Never monogamous, cartridges are often in love with multiple propellants, but married to one. It's clear when looking at the data that Lil'Gun is the standout powder in terms of producing the highest velocity. In the Hodgdon test data, it produced the fastest velocity with three out of the four bullets tested. Even the lone standout, the Hornady 147-grain XTP, was only off the leader by 40 fps, which is pretty much nothing, statistically speaking.

Lil'Gun is a great place to start, but as any handloader knows, each gun is an individual. It's possible that you will get better accuracy and overall performance with one of the other powders. That's why they test multiple powders and list the data. It is also notable that the Hodgdon data was shot with a 24-inch test barrel. Many of the rifles on the market are using barrels that are much shorter, often 16 inches. The powder that performs the best with a 24-inch barrel may not be the best performer with a short barrel. The only way to know for sure which powder your rifle likes is to load and shoot some ammo. After all, isn't that what we handloaders live to do?

This cartridge should be loaded with Magnum primers. The Hodgdon data lists Winchester Small Rifle primers. I was out of them when I started this project, so I used Federal standard and CCI Magnum primers. Later, I loaded some ammo with Winchester primers. If there is a major difference due to the primers, I could not detect it. That said, it's always best to stick to the recipe and use what Hodgdon recommends.

The first batch of Winchester once-fired brass that I used had a crimp on the primer pocket

350 LEGEND FACTORY LOAD ACCURACY & VELOCITY

AMMUNITION	VEL. (FPS)	S.D. (FPS)	M.E. (FT-LBS)	100-YD. ACC. (IN.)
Ruger American Rifle, 16-in. Barrel				
Winchester 150-gr. EXP	2224	14	1648	1.75
Hornady 170-gr. InterLock	2205	15	1836	1.53
Federal Power-Shok 180-gr. SP	2136	16	1824	1.28
Winchester 180-gr. P-P	2054	16	1687	1.18
Mossberg Patriot, 22-in. Barrel				
Winchester 150-gr. EXP	2237	18	1667	1.85
Hornady 170-gr. InterLock	2159	29	1760	2.00
Winchester 180-gr. P-P	2070	15	1715	1.95

NOTES: Accuracy is the average of three, three-shot groups fired from a benchrest. Velocity is the average of nine rounds.

Care must be taken when reloading the straight-wall 350 Legend. Bryce found that an inside expander die measuring 0.353 inch worked well. He also learned that trying to apply a taper crimp can collapse the case.

which I had to remove. The Winchester unprimed cases that I procured later did not have the crimp. I am not sure if that was just something from the early ammo, but you might encounter crimped primer pockets. If so, remove the crimp before attempting to seat a new primer.

Aligning the case with the resizing die in the press can be a little tricky. With so little case taper, the case must enter a hole in the die that's not much larger than the case mouth. If you try to go fast, you will all but be guaranteed crushed cases. Work slowly and watch your fingers. I got blood on more than one case from a pinched finger.

I also found that the rebated rim and shallow extractor groove did not play well with the universal shellholder in my RCBS priming tool. I ended up using a Lee hand primer with a dedicated shellholder.

Also, when applying a taper crimp, make sure the case is supported and be cautious as it's easy to collapse the case. I tried using a 9mm taper crimp die and ended up destroying a lot of cases.

Like all straight-wall cartridges, the 350 Legend requires three dies: a sizing die, an inside expander die, and a bulletseating die. I used Redding dies. The sizing die puts a small bottleneck on the case that the expander die removes as it expands the inside of the case to the correct diameter. I had my best results using a case neck expander plug that measured 0.353 inch. This helped make sure there was enough case tension on the bullet to keep ignition consistent. This aids in reducing the inconsistent performance leading to high S.D.s and erratic accuracy. The die should also have a case mouth belling function to aid in starting the bullets into the case.

The 350 Legend will no doubt find a home in areas requiring straight-wall cartridges for deer hunting, and it will also likely see a lot of use on hogs. With the 170-grain to 180-grain bullet weights, it should perform well on this size of big game. It might be a bit challenging to handload, but if you pay attention to the details, the cartridge can perform well.

350 LEGEND LOAD DATA

CASE	PRIMER	POWDER	CHARGE (GRS.)	BULLET	COL (IN.)	VEL. (FPS)	S.D. (FPS)	M.E. (FT-LBS)	100-YD. ACC. (IN.)
Ruger American Rifle, 16-in. Barrel									
Starline	CCI 450	W296	26.0	Barnes 125-gr. TAC-XP	2.000	2561	39	1821	1.02
Starline	CCI 450	H110	28.2	Hornady 147-gr. XTP	2.000	2481	39	2010	1.12
Starline	CCI 450	Lil'Gun	28.0	Hornady 170-gr. InterLock	2.240	2353	31	2090	1.03
Starline	CCI 450	Lil'Gun	----	Hornady 180-gr. Single Shot Pistol (0.358 in.)	2.240	2309	49	2131	1.18
Starline	CCI 450	Lil'Gun	----	Hornady 180-gr. XTP (0.357 in.)	2.240	2172	35	1866	1.82
Winchester	WSR	Lil'Gun	25.0	Winchester 180-gr. P-P	2.110	2118	20	1793	1.03
Mossberg Patriot, 22-in. Barrel									
Starline	CCI 450	W296	26.0	Barnes 125-gr. TAC-XP	2.000	2639	42	1934	1.66
Starline	CCI 450	H110	28.2	Hornady 147-gr. XTP	2.000	2543	21	2111	1.46
Starline	CCI 450	H110	26.0	Hornady 170-gr. InterLock	2.240	2252	24	1915	----
Starline	CCI 450	IMR 4227	27.0	Hornady 170-gr. InterLock	2.240	2145	23	1737	----
Starline	CCI 450	Lil'Gun	26.0	Hornady 170-gr. InterLock	2.240	2375	34	2130	----
Starline	CCI 450	Lil'Gun	27.9	Hornady 170-gr. InterLock	2.240	2406	18	2186	1.15
Starline	Fed. 400	Lil'Gun	27.9	Hornady 170-gr. InterLock	2.240	2368	25	2108	1.73
Starline	CCI 450	Lil'Gun	----	Hornady 180-gr. Single Shot Pistol (0.358 in.)	2.240	2312	58	2137	2.43
Starline	CCI 450	Lil'Gun	----	Hornady 180-gr. XTP (0.357 in.)	2.240	2202	28	1938	1.57
Starline	Fed. 400	Lil'Gun	25.5	Winchester 180-gr. P-P	2.110	2225	11	1979	1.18

NOTES: Accuracy is the average of three, three-shot groups. Velocity is the average of nine rounds.

LEAD PHOTO BY MICHAEL ANSCHUETZ

LOADS FOR THE 303 SAVAGE

The 303 Savage was—and is—a fine cartridge, one worthy of being rejuvenated. **BY TERRY WIELAND**

HISTORY RECORDS THAT THE VERY FIRST BIG-GAME animal to fall to the 303 Savage was a whitetail doe, in upstate New York, in the fall of 1893. The hunter was Arthur W. Savage, the inventor of both the cartridge and the rifle in which it was chambered: the Savage Model 1895. The shot may not have been heard around the world, but it certainly reverberated through the American firearms industry, and the echoes persist to this day.

Savage's somewhat messy dispatching of the doe (it took three shots) was more than simply the christening of a new rifle and cartridge. It was also the opening shot in what would develop into a war of words lasting more than 20 years. It also heralded the dawn of a new age of advertising and promotion heretofore unknown in the gun business, applying the proven (if dubious) techniques of P.T. Barnum and Buffalo Bill.

Arguments have raged ever since as to whether the 303 Savage was the first commercial American smokeless big-game cartridge, or whether that honor belonged to Winchester's 30-30 (30 WCF). Because the 30-30 appeared in the Winchester Model 1894, and the 303 in the Savage 1895, most writers give the nod to the 30-30. Either way, it was the beginning of a long rivalry.

The Savage Model 1895 evolved into the Model 1899, and Savage set out to convince American hunters of the worth of both rifle and cartridge by sending hunters around the globe to kill anything and everything and then celebrating their exploits in song, story, and lurid magazine ads. Writer Jim Foral studied original publications from that era and described them in an article in *Gun Digest #57* (2003), and anyone interested in the history of snake oil needs to read it. Another writer who carried out extensive research into the early ballistics, loads, and data for the 303 Savage is Mike Nesbitt, whose article appeared in *Handloader* in May 1985.

At the time, both the 30-30 and the 303 Savage were considered small-bore, high-velocity cartridges. There was considerable skepticism about their effectiveness on game, and Savage realized this would take some selling. Within months, with Savage's backing, reports began to come in about its phenomenal performance. One well-known outdoorsman/writer dropped a "record" elk in Colorado, then took the rifle to Alaska and collected bull moose, Dall sheep, grizzlies, and anything else that crossed his path. A hunter in Africa killed elephant, hippo, and lion. At least one tiger in India dropped to a 303 Savage, and in one verified instance, an Alaskan used one to kill a whale.

Not only was it deadly at close range, so the reports went, it was also a long-range threat, with a pronghorn falling at "480 paces" from the muzzle. Savage trumpeted all these accomplishments in its advertising, with one ad stating the 303 was good for everything from "grizzlies to grouse."

The 303 Savage (center) is always compared to the 30-30 Winchester (left) and the 32 Winchester Special (right). The Savage round is capable of impressive performance and was a favorite of Canadian moose hunters.

Terry's Savage Model 1899 was made in 1912 when the 303 Savage was the company's flagship cartridge.

Obviously, a grizzly and a grouse require quite different loads and projectiles, and 303 Savage ammunition was offered in an astonishing array. There were bullet weights ranging from 100 to 200 grains, in both softnose and "full-patch" variety, as well as the "wire-wound" bullets that enjoyed a brief popularity. Although it was designed and touted as a smokeless cartridge, Savage offered ammunition loaded with black powder for the diehards. There was even a load with a 185-grain paper-patched lead bullet for use in Schützen matches. Arthur Savage believed his 303 could do anything and everything, and the company promoted it as such. One intriguing variation was known as "303 Miniature." This ammunition was loaded with 100-grain bullets at modest velocities, intended for small game, plinking, or finishing shots on big game.

Initially, ammunition was made for Savage by the Union Metallic Cartridge Co. (UMC), and eventually other ammunition manufacturers joined in. This gave rise to one of the enduring problems of the 303 Savage, which is confusion over its actual bullet diameter. Some reports said they were originally made with 0.311-inch bores and gradually changed over to 0.308 inch; others that the bores were 0.308, but the bullets measured 0.311. There was a school of thought at the time—soundly based, as a matter of fact—that using an oversize jacketed bullet would result in higher velocities and greater accuracy. This naturally resulted in higher pressures, but since the Savage 99 action is very strong, it presented no problems.

Bullet diameter (0.308 inch versus 0.311 inch) is the primary question when it comes to handloading the 303 Savage. Plenty in 0.308 diameter are available, including (left to right) Hornady 100-grain Semi-Jacketed (SJ), Hornady 110-grain RN, Hornady 125-grain HP, Speer 130-grain FN, Hornady 150-grain RN, Speer 150-grain RN, and Barnes 190-grain "Original" FN.

Some ammunition makers did use 0.311 bullets, others 0.308 bullets, and some in between. In *Complete Guide to Handloading* (1948), Philip Sharpe includes an appendix showing actual measured diameters of factory bullets. Remington and Savage were both 0.311, Peters was 0.3084, and others were in between. At the beginning, when few if any hunters were reloading their ammunition, this didn't matter. For today's handloader, it does.

Nesbitt has researched this question as much as anyone, and he believes that the 303 Savage, in spite of its name, was always intended to be a .30-caliber cartridge. In fact, some early (1895) rifles were marked 30 Savage, and this in turn led to more confusion when Savage began offering the Model 1899 in 30-30. According to Nesbitt, the early "30 Savage" rifles were, in fact, 303 Savages, and 30-30s made by Savage are always correctly marked.

In 1906, Winchester added the third member of what came to be known as the "30-30 class" cartridges: the 32 Winchester Special. It was the 30-30 necked up to .32 caliber to satisfy lovers of that traditional bore, and it used a bullet with a diameter of about 0.321 inch. Ballistically, it was the twin of the 30-30 and, campfire fistfights notwithstanding, mirrored the 30-30 in accuracy, killing power, and every other category.

Of the three, only the 303 Savage offered anything distinctly different ballistically. It came to be known for its 190-grain load—the other two settled on 170 grains—and this gave it a reputation for great penetration on larger animals like moose and the big bears. The 303 Savage developed a devoted following in Canada, where moose and bears were prevalent, and the Canadian ammunition company Dominion Cartridge (C-I-L) continued to make 303 Savage ammunition for a decade after American companies discontinued it. As recently as 2004, when some original Dominion 303 Savage ammunition surfaced, gun dealers auctioned it off, and it brought up to C$150/box from moose hunters whose old 99s had run dry. The way they looked at it, a box of 20 was 20 years' worth of hunting ammunition, and well worth the price.

Handloading the 303

Although there is a wide variety of bullets that can be used, not all are really suitable. Almost all of the original factory loadings, both practical and fanciful, can be replicated. Of these, the ones I like the best were a couple with very light (100- and 110-grain) bullets, a 130-grain flatnose, a couple of 150-grainers, and—best of all—the Barnes 190-grain flatnose "Original." Ostensibly intended for the 30-30, the Barnes 190-grain bullet allows a handloader to duplicate and exceed the load for which the 303 Savage was renowned.

The limitations of 303 Savage lever-action rifle magazines restrict the use of Spitzer bullets. This round is loaded with the Barnes 190-grain "Original" FN bullet seated to the cannelure, and it is a perfect fit in the Savage 99 box magazine.

Brass is perhaps the hardest component to come by. Norma made a run for Huntington Die Specialties around 2005, and it is still available and eminently affordable.

The bullet question with the 303 Savage is easily resolved; the brass question is not. Although it closely resembles the 30-30 and 32 WS, and has the same size rim, the base of the 303 Savage is slightly greater in diameter, which means it cannot be easily fashioned from any existing case. By 2004, brass had become scarce. The only stuff available was from Bertram, which I tried with poor results. Seven cases out of 10 split on first firing. I prevailed on A-Square to produce a small run, which they did as an experiment. It disappeared quickly, but then so did A-Square. Jamison Industries produced some before going under. That brass, too, was snatched up. Finally, Huntington Die Specialties commissioned a run of brass from Norma of Sweden; it is top quality and still available at a reasonable price.

Since no rifles except the Savage 1895 and 1899 were ever chambered for it, you might ask how much demand there is. In a production life of about a century, Savage produced more than a million 99s in all calibers, of which probably 150,000 were 303s. If even half of those are still in use, that constitutes a pretty fair demand, since handloading is the only way to keep them shooting.

I will add that Buffalo Arms offers 303 Savage brass from Prvi Partizan, as well as some made in the past from reformed 30-40 Krag. This is important to note because, given the wide range of brass available, there could be significant differences in case capacity, with the resulting impact on pressures. Combined with the question of bullet diameter, there is serious potential for such undesirable events as blown primers and case separations.

Kurt Schuttenbergkurt, who is both an engineer and a 303 Savage aficionado, has found that differences in rim thickness can lead to problems with case stretching and suggests seating bullets far enough out to touch the rifling, which will hold the case head against the bolt. After first firing, simple neck sizing will suffice. As long as you keep pressures down, there should be no problem with chambering or extraction, since the 303 Savage has a pronounced taper. If loading for two different rifles, however, it's a good idea to segregate the cases.

When it comes to bullets, there is obviously a wide range available if you think of it as 0.308 rather than 0.311, of which there are relatively few. Incidentally, the bullet-diameter question creates a problem for makers of loading dies. Robin Sharpless at Redding advised me that the company normally supplies 0.308 neck expanders but can provide 0.311 expanders on request. He says this only arises with the Model 1895. Anyone acquiring any rifle in 303 Savage is advised to slug the bore and proceed accordingly. Similarly, however, if buying a set of used dies, it's important to check the size of the expander.

Two factors dictate the best load for the 303 Savage. First is the magazine. Because it's a rotary magazine rather than tubular, like the Winchester '94, it's possible to use Spitzer bullets. Unfortunately, the length of the magazine box limits maximum overall cartridge length to only 2.52 inches, precluding the use of heavier Spitzer bullets unless you are willing to use the rifle as a single shot. Even a 125-grain Spitzer needs to be seated so deeply that the mouth of the case extends out over the curve of the ogive. This is an aesthetic problem; a practical problem is that seating the bullets deeply seriously cuts into powder capacity, thereby limiting velocity.

The second factor to consider is barrel length. Standard lengths ranged from 20 to 26 inches, with both longer and shorter barrels available on special order. A rule of thumb is this: In longer barrels, heavier bullets and slower powders deliver good results, while shorter barrels prefer lighter bullets and faster powders.

All of the data included in this article was produced using Norma brass. Therefore, if you are using any other brand, proceed with caution until you get a feel for how much it will take without telltale pressure signs. None of the loads given here displayed either adverse pressure signs or indications of case stretching, but all were worked up with great caution.

Other than Hodgdon's data, the most recent loading data I can find is in the *Lyman Reloading Handbook, 45th Edition* (1969), in the "Obsolete Cartridges" section. All is still good, but of course, it uses only powders available 50 years ago. What I have tried to do is give a

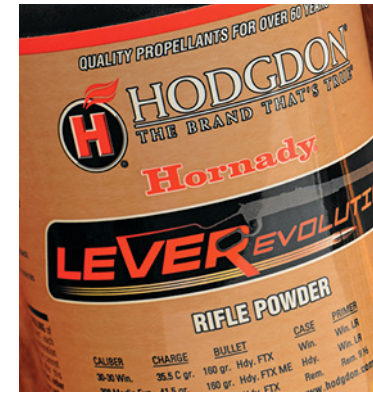
Three modern powders that perform well in the 303 Savage are Hodgdon CFE 223, IMR 8208 XBR, and IMR 4166.

variety of good loads using newer powders. In one instance (IMR 4320), I have included an older load that was the heaviest recommended in 1969 in order to have a comparison.

Older powders still available recommended for the 303 Savage with jacketed bullets are IMR 3031, IMR 4064, IMR 4320, and Hodgdon 4895. The IMR 4320 load of 36.0 grains with a 190-grain bullet is listed as "maximum" in all the old manuals, with a muzzle velocity of 2,145 fps. It is an excellent load.

Several new powders offer potential with this cartridge. These include IMR 4166, CFE 223, IMR 8208 XBR, and Hodgdon LEVERevolution (LVR). H4895, one of my all-time favorite powders, is still useful because it can be reduced substantially and still give a perfectly safe small-game or plinking load with a variety of bullet weights.

Winchester 748 is the powder recommended by Hodgdon for use with a 170-grain softnose bullet. It delivers ballistic performance comparable to the 30-30 combined with low pressure.



If Terry could pick just one new powder to use with the 303 Savage, it would undoubtedly be Hodgdon's LEVERevolution. It delivers good velocity at low pressures and with admirable consistency.

Which brings me to the starting point. One has to start somewhere, and mine was the published loads for these powders in the 30-30, with comparable bullet weights. I tried the Powley Computer, but it advised a load of 4064 that I considered imprudent. There were enough "ifs" in the calculations already. Backing off 10 percent from starting loads, combined with the 303 Savage case's greater capacity, resulted in low velocities, inadequate gas seals, and sometimes wild extreme spreads. But they got me started.

The loads listed in the accompanying chart are all well within safe limits based on observations in my rifle. If I were trying them in a different rifle, I would back off 5 percent with all of them to be on the safe side.

It seemed to me that Hodgdon LVR offered the greatest potential in the Savage 99, which is, after all, a lever rifle. The maximum load given for the 30-30 with a 170-grain bullet is 36.3 grains, and that's compressed. In the 303 Savage, I did not reach a compressed load until well beyond that. Proceeding with my usual excessive (not to say fearful) caution, LVR gave me the best results in three different bullet weights, including the all-important 190-grainer.

A load of 42.0 grains of LVR fills the Norma 303 Savage case to within 0.20 inch of the mouth, and this is compressed quite comfortably with 130- and 150-grain bullets.

My rifle seems particularly fond of three loads: the 130-grain FN at about 2,600 fps, the 150-grain bullet at almost 2,500 fps, and the 190-grainer at 2,250 fps. As you can see, this gives great versatility and a wide range of uses for a cartridge that, after its brief blaze of glory, was consigned to the scrap heap almost a century ago, displaced by its hot-shot stablemates: the 250-3000 and the 300 Savage.

Today, Savage Model 99s chambered for the 303 Savage tend to be underpriced, partly for practical reasons of obtaining ammunition and partly because of the cartridge's perceived ballistic shortcomings. Although many show the scars of a century of hard use, others have been carefully cared for and are in remarkably good condition. It may take a little effort to get them shooting again, but it's well worth it. The 303 Savage is more than "just another 30-30."

303 SAVAGE LOAD DATA

CASE	POWDER	CHARGE (GRS.)	BULLET	VEL. (FPS)	S.D. (FPS)	COMMENTS
Savage Model 1899, 26-in. Barrel						
Norma	BL-C(2)	41.0	Hornady 100-gr. SJ	2499	19	Good small-game load
Norma	Varget	40.0	Hornady 110-gr. RN	2636	21	Compressed
Norma	CFE 223	41.0	Hornady 125-gr. HP	2485	108	
Norma	LEVERevolution	42.0	Speer 130-gr. HCFN	2596	23	
Norma	CFE 223	39.0	Hornady 150-gr. RN	2326	45	Starting load
Norma	H4895	33.0	Hornady 150-gr. RN	2159	33	Starting load
Norma	IMR 8208 XBR	34.0	Hornady 150-gr. RN	2290	32	Starting load
Norma	LEVERevolution	42.0	Speer 150-gr. HCRN	2489	15	Maximum (compressed)
Norma	W748	33.5	170-gr. SP	2090	----	Hodgdon recommendation
Norma	CFE 223	34.0	Barnes 190-gr. "Original" FN	2069	23	
Norma	IMR 4166	32.0	Barnes 190-gr. "Original" FN	2003	14	Near maximum
Norma	IMR 4320	36.0	Barnes 190-gr. "Original" FN	2247	50	Compressed
Norma	LEVERevolution	38.0	Barnes 190-gr. "Original" FN	2240	8	Maximum (compressed)

NOTES: Velocity is the average of five rounds.

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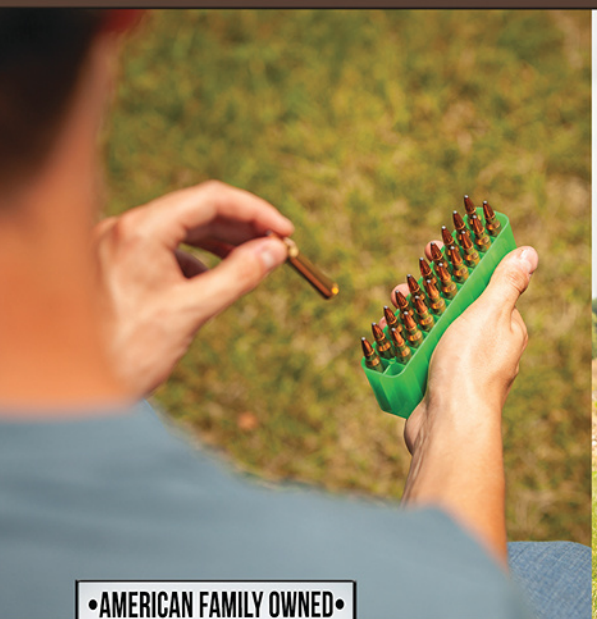

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LOADING THE 24 NOSLER

Originally designed to function in AR-type rifles, the 24 Nosler is one heck of a hunting round in other types of guns, including the Nosler Custom Handgun. **BY STEVE GASH**

NOSLER HAS LONG BEEN KNOWN FOR MAKING superior bullets. Heck, the Partition is legendary, and the new AccuBond Long Range bullets are carving out their niche, too. In 2006 the company introduced a new line of bolt-action rifles called the Model 48, and shortly thereafter, Nosler launched a line of bolt-action handguns based on the Model 48 action called the Nosler Custom Handgun (NCH). The pistol can be ordered in many calibers, including the new 24 Nosler. I used one for this report, and I'll get to the details of the pistol in a bit, but first let's take a good look at the cartridge.

Nosler's Senior Manager of Research and Development Mike Lake designed all the new Nosler cartridges, and in size they run the gamut from prairie dogs to pachyderms. Mike is a serious and knowledgeable gun guy and worked very hard to make sure his creations are ballistically sound and, more importantly, safe.

The three smallest of the new Nosler cartridges are of the most interest to those who hunt varmints and big game with a handgun. They are the 20 Nosler, 22 Nosler, and 24 Nosler. Each is based on the 6.8 Remington SPC case, but they have subtle changes in case dimensions so that other cartridges can't be used in firearms so chambered. The three Nosler cartridges have rebated rims that are the same diameter as the rim of the 223 Remington.

It is said that there is nothing new under the sun, so it is interesting to note the ballistic lineage of the 24 Nosler. It is similar to the 6x47 (the benchrest darling of the 1960s), which is the 222 Remington Magnum necked up to 6mm. Fast-forwarding to the present, we find that the ultra-popular 204 Ruger is also based on the 222 Remington Magnum. A favorite cartridge of an inveterate rock chuck hunter of my acquaintance (Hodgdon's own Ron Reiber) dotes on the 6mm-204 wildcat, in a custom bolt-action pistol no less. This wildcat cartridge is made by necking up the 204 Ruger. I'm sure you see a pattern here.

Nonetheless, the 24 Nosler is, in my opinion, the cream of the crop of the smaller-cased Nosler rounds. It shoots lightweight varmint bullets at maximum warp, but also handles sleek, high-tech bullets for deer- and antelope-sized game. The case, chamber, and throat of the 24 Nosler are designed for maximum efficiency and accuracy. The round gets the most out of every grain of propellant, and it's so accurate that it's downright scary.

The shoulder of the 24 Nosler is pushed back from the 22 Nosler to provide a 0.297-inch neck (1.22 calibers) for good bullet orientation in the case, and the case itself is only 1.600 inches (0.160 inch shorter than the 22 Nosler). The 24 Nosler


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SMOKELESS POWDER
DANGER!
EXTREMELY FLAMMABLE
BEFORE USING SEE PRECAUTIONS ON SIDES
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HODGDON
THE BRAND THAT'S TRUE
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PRECISION TARGET RIFLE POWDER
SMALL EXTRUDED GRAIN FOR UNIFORM METERING
This extruded powder is ideal for use with the calibers listed below. More data is available from our free basic manual or at our website – http://www.hodgdon.com
CALIBER
CHARGE
BULLET
CASE
PRIMER
C.O.L.
MUZZLE
223 Rem.
27.3 gr.
40 gr. Nos. BT
Win.
Win. SR
2.260"
3000 fps
223 Rem.
25.5 gr.
55 gr. Spr. SP
Win.
Win. SR
2.200"
3054 fps
6 mm PPC
29.0 gr.
70 gr. Nos. BT
SAKO (REF)
Rem. 7 1/2
2.100"
3149 fps
7mm-08 Rem.
38.3 gr.
140 gr. Sst. SP
Rem.
Rem. 9 1/2
2.750"
3000 fps
308 Win.
43.0 gr.
155 gr. Sie. HPBT
Win.
Fed. 210 M
2.775"
2702 fps
338 Win.
42.0 gr.
168 gr. Sie. HPBT
Win.
Fed. 210 M
2.800"
2530 fps
MAXIMUM LOADS – DO NOT EXCEED – REDUCE BY 10% TO START
DANGER EXTREMELY FLAMMABLE* • SEE PRECAUTIONS ON SIDE
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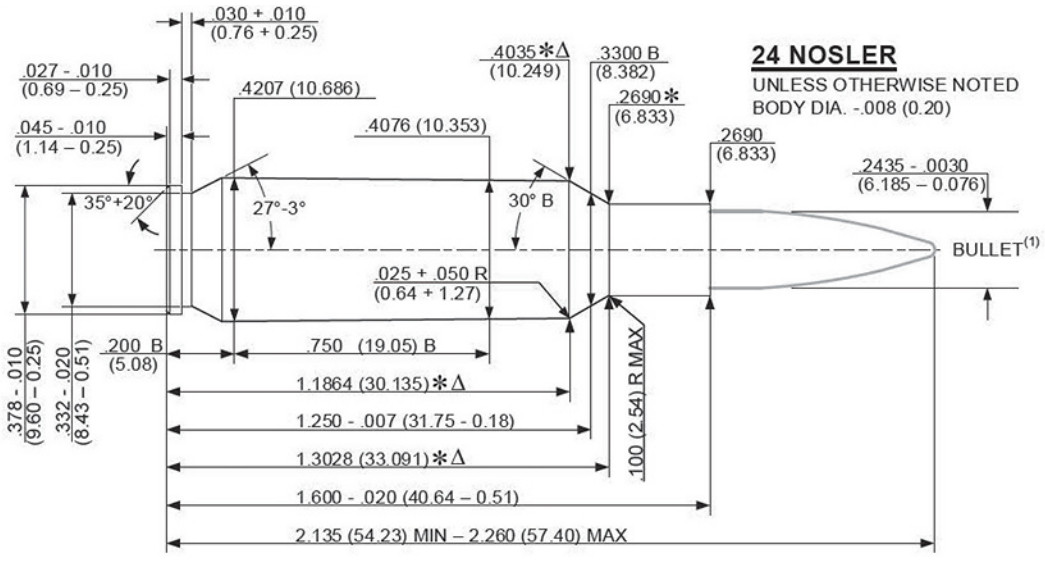


has not been officially "introduced," but it has created enough buzz that I wouldn't exactly faint if it was introduced in the near future. It's that good.

The Nosler Custom Handgun

The NCH is a futuristic custom pistol that is built to order, and it can be had with all sorts of delightful options to suit the customer. The NCH's Model 48 action is converted to single shot, so perhaps the term "handrifle" might be more appropriate. It reminds me of the classic Remington XP-100 bolt-action pistol of years ago. The NCH's barrel length is 16.1 inches.

As you can see, the NCH is a striking gun in the extreme. You either love its looks or hate its looks. But the shooting, ah, just wait until you shoot one! For this report, I installed a brand-new Nikon Force XR 2.5-8X 28mm handgun scope in Leupold mounts. This fine scope has crystal-clear optics, extended eye relief, and a Ballistic Drop compensating reticle. It was a perfect fit for use on the NCH.

Loads for the 24 Nosler

Along with my sample NCH, Nosler also sent a set of Redding reloading dies, which I used in my Redding T-7 Turret press for all load preparation. The 24 Nosler case has the same rim diameter as the 223 Remington rim diameter, so the Redding #10 shellholder works just fine. The round uses Small Rifle Magnum primers. All were seated with a Hornady Handheld Priming Tool. You can't conveniently make 24 Nosler cases out of any other brass, but Nosler makes top-notch cases that last for many, many reloads, and they're readily available.

Never a laggard, the powder wizards at Hodgdon jumped right in and developed a slew of pressure-tested loads for the 24 Nosler—172 loads to be precise. All of those loads are available on the firm's Reloading Data Center website, which is updated regularly, and all that data is free.

Hodgdon shows data for 13 different powders, from IMR 4198 on the fast side (rated at No. 75 on their powder list) to CFE 223 (rated at No. 111) on the slow end. I tried some loads with each of these powders, and while all shot well, my pick of the litter for handloading the 24 Nosler is CFE 223. Velocities were high, groups were small, and this powder metered very uniformly. It ignited easily with Winchester Small Rifle (WSR), CCI 400, and Federal 205 primers, and the copper eraser "pixie dust" they put in CFE 223 reduces jacket fouling substantially.

Just because Hodgdon listed "only" 13 powders in their data doesn't mean that others weren't tried. I have visited the Hodgdon test lab and packaging facility and have been impressed by the mass of very expensive scientific instrumentation. The lab techs there are serious as a heart attack about reloading and ballistics. They check and double-check everything, and I am confident they listed only the "best" powders for this cartridge. They even weigh every can of powder before it leaves the plant. I asked the plant manager what the tolerance range was for the can; I expected to hear something like "plus or minus 1 to 2 percent." Not a chance. It is minus 0 percent to plus 1.5 percent. "We don't want to accidentally cheat a guy out of a couple of ounces of powder," he said.

Many Hodgdon, IMR, and Winchester powders are suitable for handloading the 24 Nosler. Steve used these 12 powders in selected handloads.

Nosler's NCH bolt-action single-shot pistol is a perfect platform for the speedy 24 Nosler cartridge. The pistol's futuristic one-piece synthetic stock is attractive, stable, and highly functional.`

The crop of 6mm bullets is so overwhelming that there is no way one could test them all. Hodgdon shows load data for eight representative 6mm bullets weighing from 55 to 108 grains that the enterprising reloader can use to develop handloads for just about any shooting purpose. To handle the heaviest 6mm bullets available, the standard twist rate for the 24 Nosler is one turn in eight inches.

The 24 Nosler is one of the most rewarding cartridges to reload I've ever worked with. Many Hodgdon powders work well in it, and the resulting rounds offer exceptional ballistic uniformity and accuracy. It just seems to shoot well with about any combination of components you can put together. You can't say that about many cartridges.

The 24 Nosler is approved by S.A.A.M.I., which officially makes it a "factory" cartridge, so any company can make guns and/or factory loads for it as long as they conform to S.A.A.M.I. specs. The MAP (maximum average pressure) for the 24 Nosler is 55,000 psi, just like the 223 Remington. All of Hodgdon's data are within that MAP limit, and a bolt-action gun like the NCH will easily handle them.

For all testing, I fired three, five-shot groups at 100 yards from my indoor benchrest, and the accuracy listed in the load data chart is the average of those groups. Velocity is for five rounds measured with an Oehler Model 35P chronograph with the start screen 10 feet from the gun's muzzle, and the stop screen at 14 feet.

Let's look at some load particulars. Since there is no factory ammo for the 24 Nosler at present, I skipped ahead to the second step in my typical testing protocol, what I call my "calibration loads." These are made from Hodgdon's load data, which were developed in a 24-inch pressure barrel. For the powder that gives the highest velocity with each bullet Hodgdon tested, I loaded five rounds each of the starting and the maximum loads with each bullet. For the Sierra 55-grain BlitzKing, that powder was IMR 4198, which edged out Benchmark by a hair. Benchmark was the highest with the Hornady 65-grain V-Max. For 80- to 108-grain bullets, Hodgdon CFE 223 delivered the highest velocities.

In the calibration loads, I duplicated all of Hodgdon's components and cartridge overall lengths (COL) for the starting and maximum loads with selected powders with each bullet, and the results were compared with Hodgdon's results. This created a good frame of reference and was especially interesting with the NCH, considering its 16.1-inch barrel. The results are shown in the accompanying calibration loads chart. The Nosler pistol handled all loads with aplomb and illustrated two interesting points.

First, both the starting and maximum loads were superbly accurate. (I was to learn later that this wasn't a fluke, but the norm.)

24 NOSLER CALIBRATION LOADS

CASE	PRIMER	POWDER	CHARGE (GRS.)	BULLET	24-IN. BBL. VEL. (FPS)	16.1-IN. BBL. VEL. (FPS)	S.D. (FPS)	VEL. DIFF. (FPS)	VEL. DIFF. (%)	100-YD. ACC. (IN.)
Nosler	WSR	H4198	23.5	Sierra 55-gr. BlitzKing	3330	2866	24	464	13.9	0.43
Nosler	WSR	H4198	25.0	Sierra 55-gr. BlitzKing	3521	2982	13	539	15.3	0.51
Nosler	WSR	Benchmark	25.4	Hornady 65-gr. V-Max	3105	2574	13	531	17.1	0.73
Nosler	WSR	Benchmark	27.0	Hornady 65-gr. V-Max	3222	2818	5	404	12.5	0.59
Nosler	WSR	CFE 223	26.2	Barnes 80-gr. TTSX BT	2695	2317	38	378	14.0	0.49
Nosler	WSR	CFE 223	28.5	Barnes 80-gr. TTSX BT	2913	2599	24	314	10.8	0.78
Nosler	WSR	CFE 223	26.5	Nosler 85-gr. Partition	2711	2412	1	299	11.0	0.64
Nosler	WSR	CFE 223	28.8	Nosler 85-gr. Partition	2906	2646	19	260	8.9	0.66
Nosler	WSR	CFE 223	25.8	Swift 90-gr. Scirocco	2621	2332	17	289	11.0	0.55
Nosler	WSR	CFE 223	28.0	Swift 90-gr. Scirocco	2836	2554	16	282	9.9	0.62
Nosler	WSR	CFE 223	25.0	Sierra 100-gr. SBT	2500	2276	29	224	9.0	0.49
Nosler	WSR	CFE 223	27.2	Sierra 100-gr. SBT	2705	2464	17	241	8.9	0.70
Nosler	WSR	CFE 223	24.8	Nosler 105-gr. RDF	2427	2165	1	262	10.8	0.55
Nosler	WSR	CFE 223	27.0	Nosler 105-gr. RDF	2627	2385	3	242	9.2	0.63
Nosler	WSR	CFE 223	24.6	Hornady 108-gr. ELD Match	2389	2134	13	255	10.7	0.67
Nosler	WSR	CFE 223	26.7	Hornady 108-gr. ELD Match	2606	2360	19	246	9.4	0.68

NOTES: Accuracy is for five rounds fired from a benchrest. Velocity is the average of five rounds measured 12 feet from the guns' muzzles.

While many powders turned in excellent results, Steve says CFE 223 is his pick of the litter.

The average group size of all eight starting loads was a miserly 0.57 inch, and for the maximum loads, it was 0.65 inch. Remember, these loads were not "worked up," just plucked off the Hodgdon website.

The second point of interest was the velocity loss for the eight loads fired in the NCH's 16.1-inch barrel versus Hodgdon's 24-inch pressure barrel. The average velocity loss for the starting loads averaged 338 fps in the shorter barrel. That's 42.2 fps slower per inch. For the maximum loads, it was 316 fps slower, or 39.5 fps per inch. The correlation coefficient for the starting loads was -.8; it was -.9 for the maximum loads. This shows a strong negative correlation in both sets of data, as the velocity loss became somewhat greater as bullet weight increased. The correlation coefficient merely shows the strength of the relationship and implies no cause and effect whatsoever of the two normally distributed variables.

Armed with the calibration data, I made up a broad selection of handloads. I used COLs that placed the bullet ogives 0.010 inch off the lands, as determined by the Hornady Lock-N-Load A.O.L. Gauge, except for the shorter bullets, which I seated to the base of the case neck to provide good neck tension.

Rather than try to test every powder-bullet combination, I randomly chose one or two loads with each powder listed in Hodgdon's data and used slower-burning powders as bullet weights increased. Actually, that worked out pretty well, although I darn near ran out of case volume as I approached the heavier bullets. Then I narrowed the powder list down to the "best" ones, and it soon became apparent that CFE 223 was the red-hot setup for the 24 Nosler.

I also tried a couple loads at different lengths to test the effect of COL on velocity and accuracy. I loaded the Sierra 55-grain BlitzKing over 25.0 grains of IMR 4198 at COLs of 2.104 inches and 2.150 inches. The velocity of the longer load was 199 fps slower than the short load, but groups averaged 0.51 inch, as opposed to 0.83 inch from the shorter COL. However, with the Swift 90-grain Scirocco II and 28.0 grains of CFE 223, the longer load was 51 fps slower, and groups were virtually identical at 0.62 inch (shorter COL) and 0.69 inch (longer COL).

In a nutshell, all of the powders tested did quite well, including standards like IMR 3031, BL-C(2), H322, and Varget.

For pure paper punching, it's hard to beat two relatively new powders that have become stalwarts: IMR 8208 XBR and Benchmark. Both powders have itty-bitty granules that meter very uniformly, provide good load density, and produce great accuracy. With the Hornady 65-grain V-Max, a charge of 27.0 grains of Benchmark gave a velocity of 2,818 fps, and groups averaged 0.59 inch. My favorite load with Benchmark was with the Sierra 85-grain HPBT (always an accurate bullet in my 243 Winchester). A charge of 24.5 grains of this powder put the bullets into an average of 0.57 inch at an average velocity of 2,490 fps. Another great varmint bullet is the Sierra 60-grain HP. It shot into 0.71 inch over 26.5 grains of H322, which has been a great benchrest powder for decades. Another winner was the Hornady 75-grain V-Max with 26.9 grains of H335, which shot into 0.63 inch at 2,758 fps.

But the 24 Nosler isn't just for varmints or targets. It is lethal on larger game, too, and has taken several deer and antelope. In my handloads, a charge of 25.0 grains of IMR 8208 XBR under the Nosler 85-grain Partition produced a velocity of 2,455 fps, and groups averaged 0.68 inch. This should be potent white-tailed deer medicine.

The Speer 90-grain Hot-Cor SP is one of my favorite 6mm game bullets, so I just had to try it in the 24 Nosler. With 24.5 grains of H4895, velocity was 2,406 fps, and accuracy was 0.67 inch. I have taken deer with this bullet (in a 243 Winchester rifle), and performance was all that could be desired.

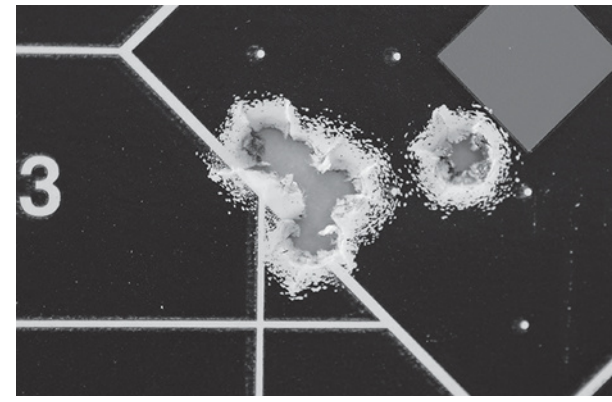
I tried only a few match bullets because I see the 24 Nosler, at least in NCH, as more of a hunting cartridge than a target

While the 24 Nosler's rim is the same size as that of the 223 Remington, the 24 Nosler's case body is larger than the 223 Remington's. The Nosler cartridge is a fine varmint and medium-size game hunting round.

tool, but the Hornady 108-grain ELD Match registered group averages of 0.60 inch and 0.68 inch with IMR 4064 and CFE 223. The Nosler 105-grain RDF HPBT was also excellent, at 0.55 inch with IMR 4895 and 0.63 inch with CFE 223. The Sierra 95-grain MatchKing HPBT averaged 0.55 inch with 24.4 grains of IMR 4166, one of the Enduron powders, but velocity was a rather modest 2,289 fps.

At the end of all the shooting, I tallied up the results of the 25 handloads fired. The average was a remarkable 0.64 inch; the range was from 0.51 inch (with the Nosler 100-grain Partition, 25.5 grains of W748 powder, and a WSR primer) to 0.78 inch (with the Barnes 80-grain TTSX BT, 28.5 grains of CFE 223 powder, and a Federal 205 primer). The standard deviation of the groups was 0.081 inch, so, statistically, it is reasonable to expect 95 percent of all groups (in my gun) to average between 0.48 inch and 0.80 inch.

After all the dust settled, I had a new appreciation of the Nosler Custom Handgun. Candidly, the pistol was hard to hold steady from the benchrest. I made do with my Caldwell DFT Lead Sled that supported the fore-end and the back of the stock. I got along pretty well, but it was a struggle. But you can't argue with the excellent results. For those brave souls who hunt varmints and big game with a handgun of this type, it will deliver the goods. And I confess that I really am impressed with the 24 Nosler cartridge. In fact, I'm having a rifle with a 24-inch barrel chambered for it as I write these lines. Loads stoked with any of the Hodgdon, IMR, or Winchester powders listed in this report will spell jeopardy for all game, large and small, during upcoming hunting seasons.



Steve's 24 Nosler handloads produced outstanding accuracy. All 25 loads averaged less than 1 MOA, and many were very close to 1/2 MOA.

24 NOSLER LOAD DATA

CASE	PRIMER	POWDER	CHARGE (GRS.)	BULLET	COL (IN.)	VEL. (FPS)	S.D. (FPS)	M.E. (FT-LBS)	100-YD. ACC. (IN.)
Nosler NCH, 16.1-in. Barrel, 1:8 Twist									
Nosler	Fed. 205	H4198	25.0	Sierra 55-gr. BlitzKing	2.104	3181	10	1236	0.83
Nosler	Fed. 205	H4198	25.0	Sierra 55-gr. BlitzKing	2.150	2982	13	1086	0.51
Nosler	Fed. 205	H322	26.5	Sierra 60-gr. HP	2.150	2841	26	1076	0.71
Nosler	Fed. 205	Benchmark	27.0	Hornady 65-gr. V-Max	2.080	2818	5	1146	0.59
Nosler	CCI 400	CFE 223	26.0	Hornady 65-gr. V-Max	2.114	2279	24	750	0.61
Nosler	Fed. 205	H335	26.9	Hornady 75-gr. V-Max	2.123	2758	7	1267	0.63
Nosler	CCI 400	CFE 223	28.5	Barnes 80-gr. TTSX BT	2.183	2508	16	1118	0.54
Nosler	Fed. 205	CFE 223	28.5	Barnes 80-gr. TTSX BT	2.135	2599	24	1200	0.78
Nosler	CCI 400	CFE 223	28.8	Nosler 85-gr. Partition	2.180	2646	19	1322	0.66
Nosler	Fed. 205	IMR 8208 XBR	25.0	Nosler 85-gr. Partition	2.093	2455	8	1138	0.68
Nosler	CCI 400	Benchmark	24.5	Sierra 85-gr. HPBT	2.146	2490	29	1171	0.57
Nosler	CCI 400	Varget	26.0	Sierra 85-gr. HPBT	2.146	2492	9	1172	0.61
Nosler	CCI 400	BL-C(2)	26.4	Nosler 90-gr. Ballistic Tip	2.155	2395	15	1147	0.57
Nosler	Fed. 205	H4895	24.5	Speer 90-gr. Hot-Cor SP	2.151	2406	14	1157	0.67
Nosler	CCI 400	CFE 223	28.0	Swift 90-gr. Scirocco II	2.150	2554	11	1304	0.62
Nosler	CCI 400	CFE 223	28.0	Swift 90-gr. Scirocco II	2.230	2503	2	1252	0.69
Nosler	Fed. 205	IMR 4166	24.4	Sierra 95-gr. MatchKing HPBT	2.216	2289	5	1106	0.55
Nosler	WSR	W748	25.5	Nosler 100-gr. Partition	2.093	2338	17	1214	0.51
Nosler	CCI 400	CFE 223	27.2	Sierra 100-gr. SBT	2.082	2413	17	1293	0.66
Nosler	WSR	IMR 3031	22.4	Speer 100-gr. Grand Slam	2.147	2258	8	1132	0.74
Nosler	CCI 400	CFE 223	26.5	Hornady 103-gr. ELD-X	2.250	2374	8	1289	0.69
Nosler	CCI 400	CFE 223	27.0	Nosler 105-gr. RDF HPBT	2.265	2385	3	1327	0.63
Nosler	WSR	IMR 4895	23.5	Nosler 105-gr. RDF HPBT	2.265	2241	15	1171	0.55
Nosler	CCI 400	CFE 223	26.7	Hornady 108-gr. ELD Match	2.250	2360	19	1299	0.68
Nosler	WSR	IMR 4064	23.0	Hornady 108-gr. ELD Match	2.266	2146	21	1074	0.60

NOTES: Accuracy is the average of three, five-shot groups fired from a benchrest. Velocity is the average of five rounds measured 12 feet from the gun's muzzle.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300 LOADS FOR THE NEW PRC

Even though it doesn't have "Magnum" in its name, the new 300 PRC delivers magnum performance.

BY LANE PEARCE

WITH A CASE CAPACITY OF 88 GRAINS of water, Hornady's recently unveiled 300 PRC (Precision Rifle Cartridge) is sized to launch heavy-for-caliber, 0.308-inch-diameter bullets pushing 3,000 fps in a 26-inch barrel. That kind of performance puts it in the "magnum" classification, even if it is missing the ubiquitous belted case head.

I met Joe Thielen, Hornady's assistant director of engineering, several years ago at the SHOT Show. He and Dave Emary, Hornady's former ballistics guru, led the company's cartridge development programs. Three years ago, I visited Grand Island, Nebraska, to learn about Hornady's new ELD bullets and shoot 1,000-yard steel targets on the company's Doppler radar range. On the ride back to the office, Joe and I discussed a wildcat round he had developed based on the 375 Ruger case. He had simply necked it down, retaining the 30-degree shoulder angle and one-caliber neck length of the 300 RCM (Ruger Compact Magnum).

The century-old 30 Newton (right) is 97.44 percent identical to the new 300 PRC (left). Unfortunately, there were no suitable IMR or Hodgdon powders available to properly fuel the Newton cartridge.

However, the unique feature of Joe's wildcat was that he designed the cartridge chamber to accommodate sleek, heavy-for-caliber, high ballistic coefficient bullets seated to a cartridge overall length (COL) of up to 3.700 inches. That meant the bullet base stopped at or just below the case neck, maximizing case/propellant capacity. Joe has competed in 1,000-yard competitions with his 30-375R for several years and has had excellent results. The new 300 PRC is essentially a S.A.A.M.I.-certified twin of Joe's proven wildcat round.

Up until the 1950s, there were only two so-called "magnum" rifle cartridges.

Both were developed by Holland & Holland, and they were readily identified by a prominent belt surrounding the case head. The 375 H&H Magnum debuted in 1912 and soon became the preferred medium-bore choice in the typical African arms battery. In 1925, the Super 30, or 300 H&H Magnum, followed. It gained the attention of U.S. riflemen 10 years later by winning the 1,000-yard Wimbledon Cup at Camp Perry. The classic Winchester Model 70 was introduced soon after, and rifles chambered for both H&H Magnums were offered.

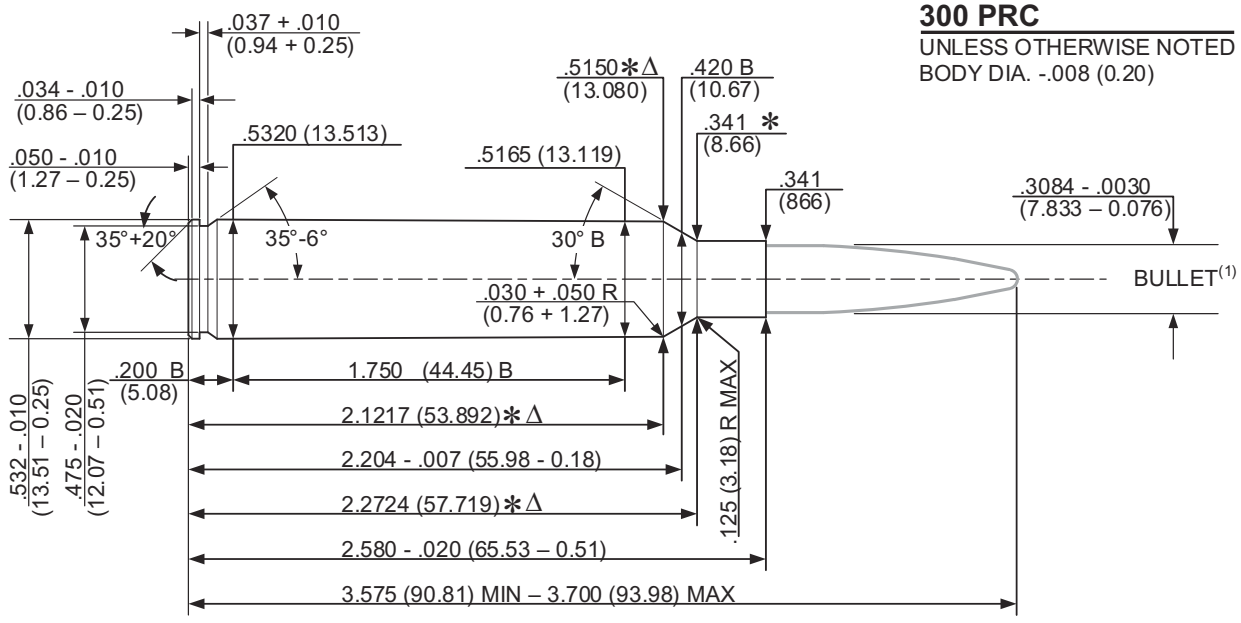
It's easy to assume the extra band of metal around the case head is required to contain the presumed extraordinary pressures of these two powerful magnums. The belt's actual purpose is less dramatic and simply provides a positive headspace datum for these cartridge cases that are both severely tapered and nearly shoulderless.

Notwithstanding that fact, belted cartridge cases became the ubiquitous feature of every magnum rifle round introduced in the next 50 years, except for a couple of overly hyped .22-caliber cartridges. Roy Weatherby successfully adapted the H&H case to form his proprietary 257, 270, 7mm, 300, and 375 Magnum rounds during the mid-1940s to the early 1950s.

As detailed in the main article, the 300 PRC is sort of a hybrid of the full-size 375 Ruger and the short-action 300 RCM cartridges.

The first three were formed from shortened 300 H&H brass and blown out to increase case capacity. They featured a uniquely shaped bottleneck shoulder/neck configuration and sized to fit and feed from a standard 30-06-length action. The latter two were similarly fireformed but from full-length 300 and 375 H&H brass with the same matching shoulder radii at the junctions of the case shoulder and neck. Of course, like the original H&H rounds, rifles chambered for the 300 and 375 Weatherby rounds require a longer magnum-length action.

The 458, 264, and 338 Winchester Magnums debuted in the mid- to late-1950s. In 1962, the 308 Norma Magnum (essentially the 338 Winchester Magnum case necked down to .30 caliber) was introduced in the United States. At first, only cartridge cases were offered to custom riflemakers and handloaders. When the 300 Winchester Magnum ammo and factory rifles followed a year later, the 308 Norma Mag. had little hope of survival.



They all copied the H&H belted case rounds, but like the three smaller-caliber Weatherby rounds, the case/cartridge lengths were shortened to fit standard-length actions. Gun scribes of that period soon designated them as "short" magnums. They all had generous case capacities but retained the conventional sharp shoulders at the case and neck junctions.

So let's consider the obvious question: why? Is there a niche for the 300 PRC to fill? Do we really need another .30-caliber rifle cartridge for hunting and target competition? For many years, knowledgeable riflemen believed the 30-06 Springfield was entirely adequate for hunting most domestic big game. They tuned-up a surplus 1903 Springfield or M1 Garand and dominated all rifle competitions. The 7.62 NATO round and its civilian clone, the 308 Winchester, added a third choice when the military switched from the Garand to the M14 in 1957.

By the mid-1960s, the 30-30, 300 Savage, 308 Win., 30-06, 300 H&H, 300 Win. Mag., and 300 Weatherby were the primary .30-caliber sporting cartridges. Only very peculiar rifle cranks felt constrained as to whether they could efficiently and humanely take any game animal they hunted with those seven factory rounds.

For nearly 40 years, the .30-caliber situation was unchanged except for the arrival of the 307 Winchester in 1982. A rimmed version of the 308 Win., it was chambered in beefed-up lever-action rifles but has achieved very limited interest.

However, long about Y2K, the dam burst. First came the 300 Remington Ultra Mag (RUM). The 300 Winchester Short Mag (WSM) and 300 Remington Short Action Ultra Mag (RSAUM) soon followed. All three new rounds dispensed with the signature belted case head. Talking about filling in the niches, we now have the 30 Thompson Center, 308 Marlin Express, 300 AAC Blackout, 300 RCM, 30 Nosler, and 30-378 Weatherby.

Of course, the Europeans also have several .30-caliber cartridges, including the 303 British, 7.5x55 Swiss, 7.63x53 Belgian Mauser, 7.62x39 Russian, and the 7.62x54R Russian. The 300 Norma Mag., formed by necking down the 338 Norma Magnum case, is another recent option developed for military applications. All told, there's a plethora of viable domestic and foreign .30-caliber options for shooters to choose from.

So the obvious answer to whether there's a niche to be filled is: "Not so you can tell!" However, the question as to whether we need another .30-caliber round fortunately remains quite

300 PRC LOAD DATA

CASE	PRIMER	POWDER	CHARGE (GRS.)	BULLET	COL (IN.)	VEL. (FPS)	E.S. (FPS)	S.D. (FPS)	M.E. (FT-LBS)	100-YD. ACC. (IN.)
Montana M1999 Tactical Hunter, 26-in. Barrel, 1:8.5 Twist										
Hornady	Fed. 215	Retumbo	81.5	Barnes 180-gr. TSX	3.575	3166	66	19	4006	0.97
Hornady	Fed. 215	IMR 7977	79.0	Swift 180-gr. Scirocco II	3.575	3109	28	9	3863	1.34
Hornady	Fed. 215	H4831	78.5	Berger 185-gr. Classic Hunter	3.505	3192	43	15	4185	1.28
Hornady	WLRM	IMR 4955	72.5	Nosler 190-gr. AccuBond LR	3.575	3055	56	19	3937	2.10
Hornady	Fed. 215	H1000	81.0	Speer 190-gr. Impact Big Game	3.575	3096	33	14	4043	0.92
Hornady	Fed. 215	IMR 8133	82.5	Sierra 195-gr. TMK	3.575	2978	70	20	3839	0.73
Hornady	WLRM	IMR 7828 SSC	72.2	Federal 200-gr. EDGE TLR	3.600	2913	48	15	3768	1.32
Hornady	WLRM	H4831	75.2	Hornady 200-gr. ELD-X	3.575	3061	42	13	4160	0.77
Hornady	Fed. 215	H1000	80.0	Sierra 200-gr. GameKing	3.575	2977	35	12	3935	0.72
Hornady	Fed. 215	IMR 7828 SSC	73.0	Nosler 210-gr. RDF	3.575	2846	43	13	3776	0.57
Hornady	Fed. 215	Retumbo	77.5	Hornady 212-gr. ELD-X	3.600	2858	52	18	3844	0.85
Hornady	Fed. 215	H1000	77.0	Hornady 225-gr. ELD Match	3.685	2880	54	17	4143	1.06
Hornady	Fed. 215	IMR 8133	77.0	Hornady 230-gr. A-Tip	3.685	2695	37	13	3709	0.93
Ruger Precision Rifle, 26-in. Barrel, 1:9 Twist										
Hornady	Fed. 215	Retumbo	81.5	Barnes 180-gr. TSX	3.575	3075	64	20	3779	1.39
Hornady	Fed. 215	IMR 7977	79.0	Swift 180-gr. Scirocco II	3.575	3104	32	12	3850	1.72
Hornady	Fed. 215	H4831	78.5	Berger 185-gr. Classic Hunter	3.505	3155	33	11	4088	0.85
Hornady	WLRM	IMR 4955	72.5	Nosler 190-gr. AccuBond LR	3.575	3046	49	15	3914	1.17
Hornady	Fed. 215	H1000	81.0	Speer 190-gr. Impact Big Game	3.575	3048	72	24	3919	0.98
Hornady	Fed. 215	IMR 8133	82.5	Sierra 195-gr. TMK	3.575	2937	40	16	3734	0.69
Hornady	WLRM	IMR 7828 SSC	72.2	Federal 200-gr. EDGE TLR	3.600	2868	25	9	3652	1.20
Hornady	WLRM	H4831	75.2	Hornady 200-gr. ELD-X	3.575	3014	13	4	4034	0.89
Hornady	Fed. 215	H1000	80.0	Sierra 200-gr. GameKing	3.575	2947	20	5	3856	1.21
Hornady	Fed. 215	IMR 7828 SSC	73.0	Nosler 210-gr. RDF	3.575	2829	72	24	3731	1.20
Hornady	Fed. 215	Retumbo	77.5	Hornady 212-gr. ELD-X	3.600	2808	81	23	3711	1.61
Hornady	Fed. 215	H1000	77.0	Hornady 225-gr. ELD Match	3.685	2837	35	13	4020	0.94
Hornady	Fed. 215	IMR 8133	77.0	Hornady 230-gr. A-Tip	3.685	2641	50	14	3561	0.82

NOTES: Accuracy is the average of three, three-shot groups for the Montana M1999 and the average of two, five-shot groups for the Ruger Precision Rifle. Velocity is the average of at least nine rounds measured eight feet from the guns' muzzles.

Hodgdon and IMR have several propellants appropriate for handloading the 300 PRC, and the 300 PRC doesn't require excessive charges to provide excellent ballistic performance.

subjective. My wife routinely poses the "need" inquiry when I'm about to procure yet another firearm. Liberal politicians also often lace their insightful, if uninformed, opinions on new gun-control measures that invariably would constrain our perceived needs.

In either case, my needs are not anyone's business as long as I stay within my financial and legal responsibilities. To me that simply means if I want it and can afford it, the 2nd Amendment in the Bill of Rights guarantees I can have it!

300 PRC Special Features

Let's look at the 300 PRC design features. First, the new 300 PRC is pretty darn close to the century-old 30 Newton. The 300 PRC's beltless case head retains the typical magnum cartridge rim and belt diameter (0.532 inch). The case length is only a bit longer (0.040 inch) than the 270 Winchester. The beltless case tapers to 0.515 inch in diameter before the 30-degree shoulder angle. As stated earlier, the 300 PRC was formed by necking down the 375 Ruger case and pushing the shoulder back nearly 0.0625 inch. Neck length is nominally one bullet diameter.

However, this is where the 300 PRC design differs from most other cartridges. Like with the popular 6.5 Creedmoor and 6.5 PRC, Hornady chose to shorten the case length and seat the bullet "long" so the flat base or top of the boattail is closely aligned with the bottom of the case neck. In other words, the bullet doesn't intrude into the case volume, so there's room for more powder.

The S.A.A.M.I. chamber drawing shown on page 52 shows how this was accomplished. The throat in front of the neck has nearly a quarter-inch of freebore that's only 0.0008 inch larger than the nominal diameter of a .30-caliber bullet. The leade angle is also a generous 1.5 degrees. Regardless of how you seat the bullet, if the round will chamber, the effective total indicated runout (TIR) will be nil, meaning the bullet will be perfectly aligned to engage the rifling.

The S.A.A.M.I. maximum COL for the 300 PRC is 3.700 inches. Almost every other magnum rifle cartridge based on the full-length 300 H&H has a maximum COL of 3.600 inches. Hence the dearth of "standard" factory actions/rifles that can accommodate this round.

Reloading Tips & Techniques

Preparing the cases and assembling 300 PRC handloads is no different than what is typically required for any other rimless, bottleneck rifle cartridge. You start with carefully inspecting both new and fired brass before doing anything else. I've discovered split necks, creased shoulders, out-of-round case mouths, and other defects in bulk-packed new brass. Fired brass can also exhibit split necks, insipient or partial case head separations, and loose or otherwise defective primer pockets. They can also exceed maximum case length.

While new cases are relatively easy to inspect, fired brass should be cleaned in dry or wet media to ensure you don't miss something.

300 PRC FACTORY LOAD ACCURACY & VELOCITY

BULLET	COL (IN.)	VEL. (FPS)	E.S. (FPS)	S.D. (FPS)	M.E. (FT-LBS)	100-YD. ACC. (IN.)
Montana M1999 Tactical Hunter, 26-in. Barrel, 1:8.5 Twist						
Hornady Precision Hunter 212-gr. ELD-X	3.635	2831	77	28	3772	0.78
Hornady Match 225-gr. ELD-M	3.665	2807	41	18	3936	1.02
Ruger Precision Rifle, 26-in. Barrel, 1:9 Twist						
Hornady Precision Hunter 212-gr. ELD-X	3.635	2805	108	28	3703	1.24
Hornady Match 225-gr. ELD-M	3.665	2776	52	19	3849	0.89

NOTES: Accuracy is the average of three, three-shot groups for the Montana M1999 and the average of two, five-shot groups for the Ruger Precision Rifle. Velocity is the average of at least nine rounds measured eight feet from the guns' muzzles.

You can choose to punch out the primers with a dedicated decapping die before tumbling the cases. Although many reloaders skip this step, I always clean and uniform the primer pockets.

Next comes the sizing process. You can full-length or neck-size-only if you're reloading for the same rifle. Since I intended to fire my test loads in two rifles, I chose to full-length size every case. I usually use Redding's Imperial lube and apply it lightly with my fingertips before sizing. Be sure to use a case neck brush to lube/clean inside the case mouth.

Hornady's Custom precision-machined full-length sizer die easily reformed each fired case. There are also premium die sets with interchangeable neck-sizing bushings made in several different diameters. You must select the bushing that matches the case neck thickness so the sizing step reduces the neck diameter just enough to ensure adequate bullet retention.

Competition shooters often also turn each case neck to a uniform wall thickness. This requires special equipment and procedures to ensure the desired results are achieved, but if you use good-quality brass like Hornady makes, this extra step is often not necessary.

After resizing, check case length and trim if required to the specified recommended length. Always deburr and chamfer the case mouths so you avoid damaging the bullet later during seating. Because the 300 PRC has a nominal one-bullet-diameter neck length, crimping the bullets in place is not necessary or recommended.

Magnum rifle primers are recommended in 300 PRC handloads to ensure igniting the generous (up to 80+ grains) charge of single-base or double-base powder. Federal 215 and Winchester Large Rifle Magnum primers will provide reliable and consistent ignition of the relatively slow-burn-rate propellants suitable for this cartridge.

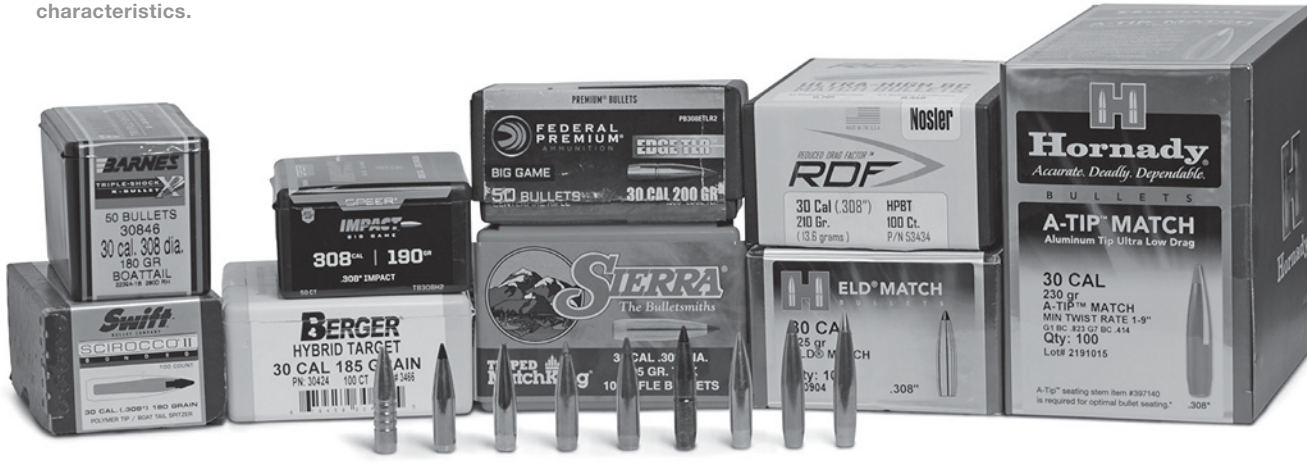
Next is the most important consideration before you continue the reloading process. What is the purpose of the ammo you're about to assemble? If you're reloading to shoot matches, you'll not likely select Hornady GMX, Barnes TTSX, Nosler AccuBond, Speer Impact, or Swift Scirocco II bullets. They are, of course, precisely made and surely accurate enough to consistently strike the kill zone when hunting. In fact, their primary purpose is effective terminal ballistic performance up close and out to extreme range.

Magnum rifle primers are recommended in 300 PRC handloads. Lane used Federal 215 and Winchester Large Rifle Magnum primers, and they provided reliable and consistent ignition.

Bullets designed for competition must deliver optimal external ballistics—flat trajectory, minimum wind drift, and ultimate accuracy. That means they're precisely made and, as closely as possible, exactly alike. The bullet's shape and construction are designed to provide and retain the highest ballistic coefficient at both muzzle and downrange velocities. Hornady ELD Match and A-Tip, Sierra Tipped MatchKing (TMK), Berger VLD Target, Nosler RDF Long Range, and other similar bullets are designed to do just that with sub-MOA or better accuracy.

I included both competition and hunting bullets in my handloads, and I used every Hodgdon and IMR propellant in the appropriate burn rate range, from H4831 (fastest) to IMR 8133

Test loads used only heavy-for-caliber bullets seated "long" to complement the 300 PRC's optimized chamber throat design characteristics.



Because no factory-made rifles were available when Lane started this report, he had an Xtreme Tactical Hunter rifle with a 26-inch barrel built by Montana Rifle Co.

(slowest). Most of the listed test loads are near-maximum recommended charges, so I carefully weighed every one. The results are listed in the chart on page 53.

Before I get to them, however, I'd like to say a few words about the rifles I used. When I was issued this assignment, I found myself in a similar situation John Barsness was in last year when he wrote up the Hornady 6.5 PRC for last year's *Annual Manual*. There were no factory options, so he had a custom rifle built. Pursuing the same plan of action, I ordered a Montana Rifle Co. M1999 from my friend Ron Petty. The action is essentially a Pre-'64 Winchester Model 70 with a Sako-style bolt release.

Montana Rifle Co. borrowed a chambering reamer from Joe Thielen, and six weeks later I received a modified Xtreme Tactical Hunter model with a detachable Magpul, five-round, vertical stack magazine. The straight-grip composite stock features an adjustable cheekrest. I installed a Nightforce SHV 5-20X 56mm scope in Talley mounts. The rifle/scope combo weighs about 9.75 pounds.

The 26-inch, #3 medium sporter-weight barrel is free-floating and fitted with a very effective muzzle brake. The magazine is sized for the 300 Win. Mag. which, unfortunately, is too short for the two Hornady factory loads. It is also too narrow internally to handle more than two 300 PRC rounds with the COL no longer than 3.540 inches.

A few weeks after I got my custom rifle, Ruger came out with its Magnum Precision Rifle chambered in 300 PRC, so I immediately called Mark Gurney, director of product development, and asked specifically about the rifle's magazine. He assured me it would accommodate Hornady's factory ammo and any handload with a COL up to 3.850 inches.

I thought, "Why not include both rifles and double the fun!"

The Ruger Magnum Precision Rifle features a tactical-style chassis with a folding, fully adjustable buttstock and an 18-inch Magpul M-LOK compatible free-float handguard. The stout (0.875-inch muzzle diameter) 26-inch barrel is fitted with what appears to be a scaled-down howitzer muzzle brake. I mounted a Weaver tactical 5-20X 56mm tactical optic in a Weaver AR-style mount. The Ruger rig weighs nearly twice as much as the Montana rifle/scope outfit.

The M1999's Model 70-style trigger pull felt a bit heavy, so my gunsmith adjusted it to release at 3 pounds. The Ruger Precision's trigger pull consistently measured 2.25 pounds, so I left it alone.

300 PRC Military Development

THE UNITED STATES MILITARY IS ALWAYS LOOKING FOR ADVANCEMENTS or improvements to its technology. This is evident with aircraft, watercraft, landcraft, all the way down to small arms. The 300 PRC developed by Hornady is just that: an advancement in technology for the modern-day warfighter. It's not just another platform from which to launch .30-caliber projectiles. During its design, all elements and features were created and evaluated with the end goal being to put bullets on specific targets at distances well beyond 1,000 yards, come rain, shine, heat, or cold.

At first, Hornady simply presented the 300 PRC to a special group within the U.S. military. The presentation was simple: Here is the 300 PRC, and this is what it does and how. From then on, the cartridge wasn't evaluated with words or presentations; it was evaluated with rifles and targets.

The 300 PRC was compared to and evaluated against other cartridges like the 300 Norma, 300 Win. Mag., 338 Lapua, and 375 Cheytac. Groups from all of those cartridges were shot and measured at distances beyond 2,000 yards. In addition to the accuracy, the terminal performance of the projectiles also was evaluated out to 1,200 yards.

When the dust settled and the results were compiled, the 300 PRC stood out above all the other submissions. It is highly accurate and capable of putting bullets on a human-sized target at 2,000 yards, whether it's the first round out of the gun or after a string of 20 shots. When it came to consistency, the 300 PRC ruled. It produced consistent accuracy throughout the course of the barrel's life and consistent muzzle velocities in all environments.

The bottom line is the 300 PRC was built from the ground up to be consistent because consistency is what allows the shooter to make hits at 2,000 yards again and again. In addition to the 300 PRC's stellar performance, marksmen could lie down and shoot the rifles all day long. Add a sound suppressor and the 300 PRC is extremely "shootable" all day.

JOE THIELEN, ENGINEER, HORNADY MANUFACTURING

Even though it doesn't have "Magnum" in its name, the 300 PRC surely delivers magnum performance.
1. 300 Win. Mag.
2. 300 H&H Mag.
3. 300 PRC
4. 300 RUM
5. 30 Nosler

300 PRC Performance

After cleaning the rifles, I fired a box of both types of Hornady factory-loaded ammo in each rifle to sight-in the optics and to get acquainted with the guns and the cartridge. I quickly discovered that trying to fire more than three rounds at a time in the Montana's medium-sporter barrel was futile. However, the Ruger's extra-heavy barrel (it reminds me of a car's axle) easily tolerated firing five rounds about as fast as I could cycle the action and realign the reticle on target. Based on that shooting, I elected to load a box of each test load and fire three, three-shot groups in the Montana rifle and two, five-shot groups in the Ruger rifle for record.

Of the 13 handloads I tested, the Sierra 195-grain TMK bullets ran best in the Ruger Precision Rifle while the Nosler 210-grain RDF scored even better in the Montana Xtreme Tactical Hunter.

It's a given that the 300 Win. Mag. is recognized as the most popular .30-caliber magnum rifle cartridge. No doubt, its ballistic performance stands tall with all of them. However, it was introduced nearly 60 years ago, and there have been myriad new developments in munitions technology since then, a few of which could be implemented to improve the 300 Win. Mag.

The obvious two are doing away with the belt and the noticeably short neck. Eliminating the belt, increasing the case head diameter to at least the same size as a standard magnum rim diameter, and reducing body taper to maximize case capacity are factors that significantly increase the ballistic performance of modern .30-caliber magnums.

However, the real difference in the 300 PRC is the chamber throat criteria so long, sleek, heavy bullets with maximum ballistic coefficients can be seated to extended COLs. They may start out a little slower, but at extreme range, velocities soon catch up, and they fly flatter and drift less than the others.

The 300 RUM and 30 Nosler are both based on the 404 Jeffery parent case. They also meet the criteria mentioned, and both have at least one-caliber necks. The 300 RUM's COL requires a magnum-length action, while the 30 Nosler will fit in a standard 30-06-length action. However, they both require seating heavy-for-caliber bullets rather deeply, thereby reducing effective case capacity.

I have rifles chambered for both rounds and have some knowledge of their ballistic performance. A favorite 300 RUM handload comprises 95 grains of powder under a 180-grain bullet. That load fired in my McMillan-stocked Savage bolt action will routinely put three bullets into a half-inch cluster if I do my part. My Steyr Pro Hunter 300 Win. Mag. is not quite as accurate, but 0.75-inch groups are the norm.

The 300 PRC will easily match, and usually exceed, the 300 Win. Mag.'s ballistics—especially when comparing 200-grain and heavier bullets. So, on paper, it clearly wins the contest. However, considering the number of 300 Win. Mag. rifles out there, the 300 PRC has little chance of supplanting the well-established cartridge.

Hey, but that's why folks pick a Ford, a Chevy, a GMC, or a Ram truck even though they'll all get you from point A to point B. The same analogy applies to rifle/cartridge selection. You can choose your favorite.

.30-CALIBER RIFLE CARTRIDGE COMPARISON

CARTRIDGE	BULLET WT. (GRS.)	VEL. (FPS)	MAP (PSI)	ENERGY (FT-LBS)	THROAT LENGTH (IN.)	THROAT DIA. (IN.)	LEADE ANGLE
30-06 Springfield	180	2860	60,000	3266	0.0208	0.3106	1° 22'
30-06 Springfield	200	2540	60,000	2863	0.0208	0.3106	1° 22'
300 H&H Mag.	180	2870	58,000	3289	0.0158	0.3080	2°
300 H&H Mag.	220	2565	58,000	3211	0.0158	0.3080	2°
300 Wby. Mag.	180	3125	65,000	3900	0.3457	0.3084	1° 02'
300 Wby. Mag.	220	2775	65,000	3758	0.3457	0.3084	1° 02'
300 RCM	180	2980	65,000	3546	0.1241	0.3092	1° 30'
300 RSAUM	180	2950	65,000	3475	0.1100	0.3091	1°
300 WSM	180	2970	65,000	3522	0.1884	0.3099	1° 30'
300 Win. Mag.	180	3080	64,000	3788	0.0129	0.3150	1° 27
300 Win. Mag.	200	2930	64,000	3809	0.0129	0.3150	1° 27
300 PRC	212	2860	65,000	3847	0.2328	0.3088	1° 30'
300 PRC	225	2810	65,000	3941	0.2328	0.3088	1° 30'
30 Nosler	210	2950	65,000	4054	0.1100	0.3091	1° 30'
300 RUM	200	3025	65,000	4060	0.1100	0.3091	1°

10mm AUTO
FOR PISTOLS & REVOLVERS

The 10mm Auto cartridge is experiencing a revival—and not just in autoloading pistols. **BY LAYNE SIMPSON**

THE 10MM AUTO STORY BEGINS IN THE 1960S WHEN John Adams and Whit Collins, with the assistance of gunsmith John French and barrelmaker Irv Stone, decided to develop a cartridge that increased the power of the Browning Hi Power pistol far beyond that of the 9mm Luger for which it was chambered. They started by shortening the 30 Remington case to a bit less than an inch. The initial load pushed a 180-grain bullet made by Remington for the 38-40 Winchester to 1,200 fps for 570 ft-lbs of energy. At that point, the cartridge delivered considerably more punch than the 9mm Luger, but the goal became even greater power.

When the new cartridge proved to be more than the Hi Power could handle on a regular basis, the decision was made to develop a pistol specifically for it. Jeff Cooper, who was fond of the CZ-75, became involved, and the Czech-built pistol strongly influenced the design of a prototype pistol built around the 10mm cartridge by Thomas Dornaus. At the time, Dornaus was a pistolsmith at Pachmayr Gun Works, but he eventually formed a partnership with former police officer Mike Dixon to manufacture the new autoloader under the name of Dornaus & Dixon.

Norma developed the first 10mm Auto ammunition, and it became available in 1983. Early boxes like this one contained 20 rounds, but despite their age, they still delivered excellent accuracy and velocity in Layne's recent testing.

Cooper suggested calling the pistol the Bren Ten, with the acronym "Bren" referencing Brno, the Czechoslovakian armsmaker, and the Enfield Arsenal of Great Britain.

Norma was contracted to load 10mm Auto ammunition. A couple of years after the cartridge was introduced, I was in Sweden for a moose hunt and visited the Norma factory. I met with company ballistician Sixten Holmquist, who was involved with its development from the beginning. According to him, initial Dornaus & Dixon specifications called for 170- and 200-grain bullets at respective velocities of 1,400 and 1,300 fps. Upon receiving the first lot of test ammo, Dornaus & Dixon discovered that chamber pressures were too high for the pistol, so they instructed Norma to back off on the throttle of future shipments. I still have a few 20-round boxes of the early Norma ammo, so I fired a few rounds in the Wilson Combat pistol for this report. As you can see in the factory ammunition accuracy and velocity chart, it was slower than advertised but still quite fast for factory ammo.

The Bren Ten and Norma ammunition were introduced with great fanfare in 1983, but for various reasons, including scarcity of magazines, production of the gun ceased in 1986. Estimates vary on how many were shipped, but it may have been fewer than 2,000. Despite an enormous amount of publicity given to the 10mm Auto by shooting publications around the world, it was suddenly teetering on the brink of failure.

Colt came galloping to the rescue in 1987 by offering the 10mm chambering in the Delta Elite version of the Model 1911 pistol. Soon thereafter, Colt followed up with the double-action Double Eagle pistol in 10mm. Springfield Armory hopped aboard the wagon with a linkless-barrel version of the Model 1911 called the 10mm Omega. Federal Ordnance, Auto-Ordnance, Smith & Wesson, Irwindale Arms, L.A.R. Mfg., Glock, and others eventually followed with 10mm autoloaders. Today, just about all major handgun makers have 10mm guns.

Guns for this Report

When choosing a couple of handguns to shoot for this report, my first move was toward the X-TAC Elite version of the Model 1911 pistol from Wilson Combat. Quality does not get any better, not to mention top-level accuracy and reliability along with a


QUALITY PROPELLANTS FOR OVER 50 YEARS
HODGDON
THE BRAND THAT'S TRUE
TITEGROUP
A LITTLE GOES A LONG WAY
This spherical powder is ideal for use with the calibers listed below. More data is available from our free basic manual or at our website – http://www.hodgdon.com
CALIBER
CHARGE
BULLET
CASE
PRIMER
C.O.L.
VELOCITY
9mm Luger 4.8 gr. 115 gr. Spr. GDHP Win. CCI 500 1.125" 1158 fps
38 Special 3.8 gr. 158 gr. Cast LSWC Win. Win. SP 1.475" 920 fps
357 Magnum 7.5 gr. 125 gr. Hdy. XTP Win. Win. SPM 1.590" 1497 fps
40 S & W 4.7 gr. 180 gr. Hdy. XTP Hdy. Win. SP 1.125" 976 fps
45 ACP 5.5 gr. 185 gr. Hdy. JSWC Win. Fed. 150 1.195" 956 fps
45 Colt 6.2 gr. 250 gr. Cast LRNFP Win. Win. LP 1.600" 881 fps
MAXIMUM LOADS – DO NOT EXCEED – REDUCE BY 10% TO START
DANGER EXTREMELY FLAMMABLE* • SEE PRECAUTIONS ON SIDE
http://www.hodgdon.com
WINCHESTER
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Store in cool, dry place.
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The guns Layne used for this report include a Wilson Combat X-TAC Elite Model 1911 with a 5.0-inch barrel and a Ruger Super Redhawk revolver with a 6.5-inch barrel. He uses Galco shoulder holsters when he's hunting with these handguns.

Three types of bullets are commonly available for the 10mm Auto, including monolithic expanding (Barnes), jacketed lead core (Nosler), and hard-cast (Rim Rock). The Rim Rock hard-cast bullets used in this report have a Brinell Hardness Number of 15.

crisp 3.5-pound trigger pull. Other impressive features include Wilson's Bullet Proof hammer, grip safety, magazine release, and magazine well funnel. Small, diamond-shaped surface cuts on the frontstrap, mainspring housing, and the slide offer no-slip grasping while also being easy on the hands. The top and rear of the slide have 30-lines-per-inch striations. Black G10 grip panels with a starburst surface treatment are held in place by Torx-head screws. A Wilson windage-adjustable Battlesight at the rear with a 0.150-inch notch combined with a 0.126-inch-wide blade up front offers an excellent sight picture. The 5.0-inch, bushing-style, stainless-steel barrel has a dished crown at the muzzle. Empty weight with magazine is precisely 40 ounces when measured on a digital postal scale. The Wilson pistol is also available with a 6.0-inch barrel.

Wilson Combat also has a line of ammunition, and not long after I received the pistol, three 10mm Auto loads arrived. I decided to shoot it and factory loads from other sources to see how accuracy and velocities compared with my handloads. All fared quite well.

While the 10mm Auto is most often thought of as a cartridge for semiautomatic pistols, it has been available in several revolvers through the years. Back in 1990 Smith & Wesson introduced the N-Frame Model 610 with 5.0- and 6.5-inch barrels. It was discontinued around 2009, but the 6.5-inch version was reintroduced in 2019.

Ruger built special-order single-action Blackhawk Convertible revolvers with interchangeable cylinders for the 10mm Auto and 38-40 Winchester in 1990. Not many were produced, and that makes the double-action Super Redhawk and GP100 Match Champion, both introduced in late 2018, the first standard-production revolvers in 10mm offered by that company.

The Super Redhawk featured in this report has a 6.5-inch barrel and weighs 54 ounces. In addition to fully adjustable sights, the top of its extended-length frame has notches for attaching a scope. Due to the rimless 10mm Auto case, the Super Redhawk comes with moon clips. Headspacing shoulders in its chambers make it possible to fire 10mm Auto ammunition without the moon clips with no effect on accuracy. The clips speed up loading, but as I discovered, when a large amount of ammunition is to be fired during accuracy-testing, shooting the Ruger without the clips saves a lot of time because loading live ammunition into and removing fired cases from the moon clips is time-consuming. When not using the moon clips, a fingernail quickly plucks spent cases from the chambers. (The gun also fires 40 S&W ammo, but not without the moon clips.)

Sometime back, I compared 10mm Auto velocities in Model 1911 pistols with 5.0- and 6.0-inch barrels. The expansion ratio of the 10mm Auto is extremely high, so we can't expect a lot of velocity gain with the longer barrel. It also varies depending on the load.

During those previous tests, velocity gain in the longer tube ranged from 12 fps to 39 fps. More important than such a small gain in power is the 6.0-inch gun's longer sight radius, which can make aiming a tad more precise. The extra weight up front also reduces muzzle jump, although I doubt if the difference is enough to be noticed by most shooters.

On the other side of the argument, being a bit lighter and more compact, a 5.0-inch gun holds an edge for field carry, especially if it rides in a shoulder holster. I prefer that type of holster when hunting because the weight of the gun is on the shoulders rather than the waist. Equally important, when worn beneath a weatherproof coat or shirt, the gun is protected from rain, snow, and field

10MM FACTORY LOAD ACCURACY & VELOCITY

AMMUNITION	COL (IN.)	VEL. (FPS)	M.E. (FT-LBS)	25-YD. ACC. (IN.)
Wilson Combat X-TAC Elite Model 1911, 5.0-in. Barrel				
Wilson Combat 140-gr. Barnes TAC-XP	1.255	1239	477	1.25
Wilson Combat 155-gr. Hornady XTP	1.260	1387	662	2.16
Norma 170-gr. JHP*	1.255	1355	693	2.10
Wilson Combat 180-gr. Hornady XTP	1.260	1274	649	1.73
Federal 200-gr. HST HP	1.255	1102	539	1.82
Norma 200-gr. FMJ*	1.255	1248	692	2.20
Buffalo Bore 220-gr. Hard-Cast FN	1.255	1136	631	1.81

*Circa 1980s
NOTES: Accuracy is the average of four, five-shot groups fired from an MTM K-Zone shooting rest. Velocity is the average of five rounds measured 12 feet from the gun's muzzle.

debris. My hunting holsters are from Galco, and in addition to being quite comfortable and secure when walking and climbing many miles day after day, the quality is top notch. My Great Alaskan holster is for 5.0-inch Model 1911 pistols, but it is also available for revolvers. My Kodiak Hunter is for the Super Redhawk wearing a scope, but an open-sight version is also available.

Back to the Wilson and Ruger guns used here, actual bullet travel in the 5.0-inch barrel of the Model 1911 is 4 inches because its chamber is about an inch long. Bullet travel in the Super Redhawk is 6.5 inches, and based on my past velocity tests, I expected to see around 50 fps higher velocities from its barrel. That did not turn out to be true, and the difference varied considerably among the loads used. The handload with the Nosler 135-grain JHP was 39 fps faster in the revolver, whereas the velocity difference between the two guns with the Barnes 140-grain HP load was a mere 6 fps. The average difference between the 11 handloads fired in each gun was only 23 fps in favor of the revolver. Some propellant gas exits the barrel-cylinder gap of a revolver rather than pushing on the bullet, but I have no idea how much that affects velocity.

10MM AUTO LOAD DATA

CASE	PRIMER	POWDER	CHARGE (GRS.)	BULLET	COL (IN.)	VEL. (FPS)	M.E. (FT-LBS)	25-YD. ACC. (IN.)
Wilson Combat X-TAC Elite Model 1911, 5.0-in. Barrel								
Starline	Fed. 150M	CFE Pistol	10.2	Nosler 135-gr. JHP	1.250	1521	694	2.02
Starline	Fed. 150M	W244	6.5	Barnes 140-gr. TAC-XP	1.260	1247	483	2.14
Starline	Fed. 150M	AutoComp	8.9	Nosler 150-gr. JHP	1.260	1356	613	1.87
Starline	Fed. 150M	Universal	7.5	SIG SAUER 165-gr. JHP	1.255	1251	573	2.33
Starline	Fed. 150M	W231	6.7	Lyman #401638 175-gr. TC*	1.260	1244	516	1.79
Starline	Fed. 150M	Longshot	9.5	Hornady 180-gr. XTP	1.260	1322	699	2.24
Starline	Fed. 150M	WSF	7.0	Rim Rock 180-gr. TC**	1.245	1168	545	1.84
Starline	Fed. 150M	800-X	8.7	Speer 180-gr. Gold Dot	1.250	1247	622	1.44
Starline	Fed. 150M	Longshot	8.2	Nosler 200-gr. JHP	1.260	1184	623	1.81
Starline	Fed. 150M	Titegroup	5.4	Rim Rock 200-gr. SWC**	1.250	1155	593	1.79
Starline	Fed. 150M	Longshot	6.8	Rim Rock 220-gr. FP**	1.260	1056	545	1.56
Ruger Super Redhawk, 6.5-in. Barrel								
Starline	Fed. 150M	CFE Pistol	10.2	Nosler 135-gr. JHP	1.250	1560	730	1.68
Starline	Fed. 150M	W244	6.5	Barnes 140-gr. TAC-XP	1.260	1253	488	1.39
Starline	Fed. 150M	AutoComp	8.9	Nosler 150-gr. JHP	1.260	1382	636	1.74
Starline	Fed. 150M	Universal	7.5	SIG SAUER 165-gr. JHP	1.255	1311	630	2.19
Starline	Fed. 150M	W231	6.7	Lyman #401638 175-gr. TC*	1.260	1255	612	1.80
Starline	Fed. 150M	Longshot	9.5	Hornady 180-gr. XTP	1.260	1352	731	2.30
Starline	Fed. 150M	WSF	7.0	Rim Rock 180-gr. TC**	1.245	1206	581	2.01
Starline	Fed. 150M	800-X	8.7	Speer 180-gr. Gold Dot	1.250	1269	644	1.87
Starline	Fed. 150M	Longshot	8.2	Nosler 200-gr. JHP	1.260	1197	636	1.55
Starline	Fed. 150M	Titegroup	5.4	Rim Rock 200-gr. SWC**	1.250	1184	623	1.79
Starline	Fed. 150M	Longshot	6.8	Rim Rock 220-gr. FP**	1.260	1085	575	1.67

*Cast of wheelweight metal with a Brinell Hardness Number of 10, sized to 0.401 inch, and lubed with Lyman Alox.
**Commercially cast with a Brinell Hardness Number of 15 and sized to 0.401 inch.
NOTES: Accuracy is the average of four, five-shot groups with the guns fired from an MTM K-Zone shooting rest. Velocity is the average of five rounds measured 12 feet from the guns' muzzles.

Handloading the 10mm Auto

Loading the 10mm Auto is no different than for other straight-wall pistol cartridges. Keep in mind that the internal diameter of virgin cases can be too large to exert adequate tension on seated bullets, allowing them to be pushed deeper into the case when making their way from the magazine to the chamber in a semiautomatic pistol. This can increase chamber pressure to a dangerous level. When the 10mm Auto is fired in a revolver, bullets can creep forward and tie up cylinder rotation. The internal diameter of cases should be 0.003 to 0.004 inch smaller than bullet diameter. Full-length resizing followed by a trip through an expander die of the correct diameter accomplishes that.

The expander die is also used to flare the mouth of each case just enough to allow a bullet to enter smoothly during seating. The 10mm Auto headspaces on the mouth of its case, so after bullets are seated, the cases should be taper crimped just enough to remove the flare. When loading on a single-stage press, I always seat bullets and crimp in two steps. This is accomplished by backing out the seater stem of the bulletseating die and turning the die into the press far enough to apply a taper crimp. Adding a specific taper-crimp die to the set makes the process more convenient. Seating and crimping in two steps can also be done on a progressive press if it has enough stations for the four dies.

The nominal diameter for jacketed bullets is 0.400 inch, but actual diameters can range from slightly smaller to a bit larger, usually with no negative effect on accuracy. Sizing cast bullets to 0.401 inch or close to it delivers the smallest groups. The Rim Rock bullets I used measured a hair over that and delivered excellent accuracy from both test guns. My 175-grain bullets cast with a Lyman four-cavity mold were equally accurate.

A good hard-cast bullet with a large flat on its nose penetrates deeply and is a great bone-crusher when placed into the shoulder of a deer or wild pig (expanding bullets are better for lung shots). A 200-grain bullet is hard to beat as an all-around weight in the 10mm, but a couple of friends who chase pigs with hounds prefer Buffalo Bore ammo loaded with a 220-grain hard-cast bullet. That prompted me to develop a handload with the Rim Rock 220-grain bullet that has a hardness rating of 15 on the Brinell scale. Starting with 6.3 grains of Longshot, I carefully worked up to 6.8 grains for an average velocity of 1,056 fps from the 5.0-inch Model 1911.

I wanted to include that load in this report, and when I asked Hodgdon Product Manager Ron Reiber about pressure-testing it, he went one better by expanding the 10mm Auto section of the *Annual Manual* to include the Rim Rock 220-grain bullet with several powders. As it turned out, our maximum loads and velocities with Longshot were quite close. The Hodgdon pressure gun clocked 1,053 fps with 6.9 grains. As far as I know, Hodgdon is the first to publish pressure-tested data for a 220-grain bullet in the 10mm Auto.

For those who cast their own, the hardness of the Rim Rock bullet can be duplicated with Lyman's No. 2 alloy by mixing 9 pounds of wheelweights with 0.5 pound of pure lead and 0.5 pound of tin. That should yield around 300, 220-grain bullets. The Lyman alloy can be purchased already mixed in 40-pound lots from Action Bullets & Alloy, Inc. in Quinter, Kansas. For a mold, try Accurate Molds, LLC in Salt Lake City, Utah.

Hodgdon offers a number of great 10mm Auto propellants, and as long as burn rate is a good match for bullet weight, you won't go wrong with any of them. All that I have tried flowed through my Redding Competition Model 10X Pistol/Small Rifle measure with minimal variation in charge weight. For those who cannot afford or don't have room to stock every one of them, I will add that if I could have only two sitting on the shelf in my loading room, they would be CFE Pistol for the lighter bullets and Longshot for those weighing 180 grains and up. Both burn cleanly and deliver excellent accuracy at top velocities. I also prefer Federal 150 and CCI 300 primers. As for 10mm Auto cases, you'll have a hard time finding better than those made by Starline.

Several powders available from Hodgdon are excellent choices for 10mm Auto handloads, and Layne's favorites are CFE Pistol and Longshot. A handloader can get by with a three-die set, but four dies are more convenient.

When loading ammunition for this project, I used a four-die set from Lyman. A shellholder is included in all Lyman die sets, and the 10mm Auto bullet seater die comes with two stems, one for roundnose bullets, the other for flatnose bullets.

Whether you're shooting the 10mm in a Model 1911 (or other pistol) or in one of the several newly introduced revolvers, handloading the cartridge enhances its versatility. It's an excellent handgun-hunting round as well as a dandy defensive cartridge.

RELOADING DATA

Introduction

RIFLE/PISTOL
At the time of this writing, the new *Hodgdon Annual Manual* represents the most complete and up-to-date listing of loading data available. All data are arranged with bullets from lightest to heaviest and powders listed with burning rates from slowest to fastest for quick and easy use. Each cartridge is conveniently indexed for rapid location.

Primarily, the data for this edition were developed through the use of pressure barrels. All loads for standard U.S. cartridges adhere to the guidelines provided by the Sporting Arms and Ammunition Manufacturers' Institute (S.A.A.M.I.). Maximum loads for wildcat cartridges and cartridges not covered by S.A.A.M.I. were obtained by visual case-head signs, such as flat or cratered primers, difficult extraction and measured case heads.

Pressures were gauged by one of two methods: mechanically with Copper Units of Pressure (CUP) or electronically with a transducer as Pounds per Square Inch (PSI). CUP is determined by using a copper slug called a "crusher." The crusher is placed in a fixture over the chamber where a hole passes through the barrel to the chamber. When the cartridge is fired, gases swell and cause the crusher to flatten. The results are compared to a Tarage Table and converted to pressure in CUP. The electronic method utilizes a force transducer, which rests against the cartridge in the chamber. When the cartridge is fired, the gases cause the brass to expand against the force transducer, and the results are measured in pounds per square inch (PSI). The two systems do not provide the same maximum number for each cartridge, so no correlation can be made between systems. However, each cartridge has a standard for both systems, and therefore, actual maximums are physically the same.

When working up a load, the reloader should always begin with the starting load, advance in small increments, watch for pressure signs and begin again if changing components. Generally, the best powder choice is the powder that most nearly fills the case for the intended velocity. Most cartridges have only a certain number of appropriate powders. Those cartridges that are more versatile can use a wider range of burning speeds. For others, lesser numbers of propellants will give optimum results.

Most often, slower-burning powders are more suitable with heavy bullets, while faster powders are better with lighter bullets. Of course, most reloaders like a powder that delivers near-maximum or maximum results throughout the range of bullets, but that is not always obtainable, since some cartridges (like the 30-06) have too wide a range of bullets for any one burning rate to be ideal.

The reloader who seriously loads for any given rifle/pistol will choose different components (primers, powders, bullets, cases) in varying combinations to obtain the best overall performance and accuracy. After all, the reloader reloads to save money, but he also reloads to improve accuracy and performance, creating special loads he cannot find on the dealer's shelves.

Powder Usage

SHOTGUN	TARGET 12 GA	TARGET 20 GA	TARGET 28 GA	TARGET 410 BORE	LIGHT FIELD 12 GA	LIGHT FIELD 16 GA	LIGHT FIELD 20 GA	LIGHT FIELD 28 GA	LIGHT FIELD 410 BORE	HEAVY FIELD 10 GA	HEAVY FIELD 12 GA	HEAVY FIELD 16 GA	HEAVY FIELD 20 GA	HEAVY FIELD 28 GA	HEAVY FIELD 410 BORE
Hodgdon Smokeless Propellant															
Clays	●				●										
Titewad	●				●										
Hi-Skor 700-X	●				●	●									
International	●	●			●		●								
Titegroup	●				●										
Universal	●	●	●		●	●	●	●							
HS-6			●			●	●	●			●				
Longshot	●	●	●							●	●	●	●	●	
H110				●					●						●
Lil' Gun				●					●					●	●
IMR Smokeless Propellant															
IMR RED	●				●										
IMR GREEN	●	●			●										
IMR BLUE	●	●									●	●	●		
IMR 4227				●					●						●
Winchester Smokeless Propellant															
WST	●				●										
Super Handicap	●				●										
WSF	●	●			●	●					●				
572		●	●		●	●	●	●			●	●	●	●	
296				●					●						●

PISTOL	TARGET	LIGHT DUTY	MEDIUM DUTY	MAGNUM
Hodgdon Smokeless Propellant				
Clays	●	●		
Hi-Skor 700-X	●	●		
Titegroup	●	●		
Trail Boss	●	●		
Universal	●	●	●	
HS-6		●	●	
CFE Pistol	●	●	●	●
H110			●	●
Lil' Gun			●	●
IMR Smokeless Propellant				
IMR TARGET	●	●	●	
IMR RED	●			
IMR 4227			●	●
Winchester Smokeless Propellant				
WST	●	●		
AutoComp	●	●	●	
WSF	●	●		
231	●	●	●	
244	●	●	●	
572	●	●	●	
296			●	●

RIFLE	TARGET	SILHOUETTE	LIGHT	MEDIUM	MAGNUM	50 CAL
Hodgdon Smokeless Propellant						
Trail Boss	●		●			
Lil' Gun			●			
CFE BLK	●		●			
H4198	●		●			
H322	●	●	●	●		
Benchmark	●	●	●	●		
H335	●	●	●	●		
H4895	●	●	●	●		
Varget	●	●	●	●		
BL-(C)2	●	●	●	●		
CFE 223	●	●	●	●		
LEVERevolution	●	●	●	●		
H380		●		●		
H4350		●	●	●		
Hybrid 100V		●	●	●	●	
H4831				●	●	
H4831SC				●	●	
Superformance				●	●	
H1000				●	●	
Retumbo					●	
US869					●	●
H50BMG					●	●
IMR Smokeless Propellant						
IMR 4227			●			
IMR 4198	●		●			
IMR 3031	●	●	●	●		
IMR 8208 XBR	●	●	●	●		
IMR 4895	●	●	●	●		
IMR 4166	●	●	●	●		
IMR 4064	●	●	●	●		
IMR 4350		●		●	●	
IMR 4451		●		●	●	
IMR 4831				●	●	
IMR 4955				●	●	
IMR 7828 SSC				●	●	
IMR 7977				●	●	
IMR 8133					●	
Winchester Smokeless Propellant						
748	●	●	●	●		
760		●		●	●	
StaBALL 6.5	●	●		●	●	

RELATIVE BURN RATES FROM FASTEST TO SLOWEST

1	NORMA R1
2	VihtaVuori N310
3	Accurate Nitro 100
4	Alliant e3
5	Hodgdon TITEWAD
6	Ramshot Competition
7	Alliant Red Dot
8	Alliant Promo
9	Hodgdon CLAYS
10	IMR RED
11	Alliant Clay Dot
12	Hodgdon Hi-Skor 700-X
13	Alliant Bullseye
14	IMR TARGET
15	Hodgdon TITEGROUP
16	Alliant American Select
17	Ramshot Silhouette
18	Accurate Solo 1000
19	Alliant Green
20	IMR GREEN
21	Ramshot True Blue
22	Winchester WST
23	Hodgdon Trail Boss
24	Winchester Super Handicap
25	Hodgdon INTERNATIONAL
26	VihtaVuori N320
27	Accurate No. 2
28	Ramshot Zip
29	Winchester 231
30	Alliant 20/28
31	Winchester 244
32	Alliant Unique
33	Hodgdon UNIVERSAL
34	Alliant Power Pistol
35	VihtaVuori N330
36	Alliant Herco
37	Winchester WSF
38	VihtaVuori N340
39	Accurate No. 5
40	Hodgdon HS-6
41	Winchester AutoComp
42	Hodgdon CFE Pistol
43	VihtaVuori 3N37
44	VihtaVuori N350
45	VihtaVuori 3N38
46	IMR BLUE
47	Winchester 572
48	Alliant Blue Dot
49	Accurate No. 7
50	Alliant Pro Reach
51	Hodgdon LONGSHOT
52	Alliant 410
53	Accurate TCM
54	Alliant 2400
55	Ramshot Enforcer
56	VihtaVuori N105
57	Accurate No. 9
58	Accurate 4100
59	Alliant Steel
60	NORMA R123
61	VihtaVuori N110
62	Hodgdon LIL'GUN
63	Hodgdon H110
64	Winchester 296
65	IMR 4227
66	Alliant Power Pro 300-MP
67	Accurate 5744
68	Accurate 1680
69	Accurate LT-30
70	Hodgdon CFE BLK
71	NORMA 200
72	Accurate 2200
73	Alliant Reloder 7
74	Accurate LT-32
75	IMR 4198
76	Hodgdon H4198
77	VihtaVuori N130
78	Alliant Power Pro 1200-R
79	Hodgdon H322
80	Accurate 2015BR
81	Alliant Reloder 10X
82	VihtaVuori N130
83	IMR 3031
84	VihtaVuori N133
85	Hodgdon BENCHMARK
86	Hodgdon H335
87	Ramshot X-Terminator
88	Accurate 2230
89	Accurate 2460
90	IMR 8208 XBR
91	Alliant AR Comp
92	Ramshot TAC
93	Alliant Power Pro Varmint
94	Hodgdon H4895
95	VihtaVuori N530
96	IMR 4895
97	VihtaVuori N135
98	Alliant Reloder 12
99	Accurate 2495
100	IMR 4166
101	IMR 4064
102	NORMA 202
103	Accurate 4064
104	Accurate 2520
105	Alliant Reloder 15
106	NORMA 203B
107	VihtaVuori N140
108	Hodgdon VARGET
109	Winchester 748
110	Hodgdon BL-C(2)
111	Hodgdon CFE 223
112	Alliant Power Pro 2000-MR
113	Hodgdon LEVERevolution
114	Hodgdon H380
115	Ramshot Big Game
116	VihtaVuori N540
117	Alliant Power Pro 4000-MR
118	Winchester 760
119	VihtaVuori N150
120	Accurate 2700
121	IMR 4350
122	IMR 4451
123	Alliant Reloder 16
124	Hodgdon H4350
125	Alliant Reloder 17
126	Accurate 4350
127	Norma 204
128	Hodgdon HYBRID 100V
129	Winchester StaBALL 6.5
130	VihtaVuori N550
131	Alliant Reloder 19
132	IMR 4831
133	Ramshot Hunter
134	Accurate 3100
135	VihtaVuori N160
136	NORMA 205
137	Hodgdon H4831 & H4831SC
138	Hodgdon SUPERFORMANCE
139	IMR 4955
140	NORMA MRP
141	Alliant Reloder 22
142	NORMA MRP2
143	VihtaVuori N560
144	Alliant Reloder 23
145	VihtaVuori N165
146	IMR 7828SC
147	Alliant Reloder 25
148	VihtaVuori N170
149	Accurate Magpro
150	IMR 7977
151	Alliant Reloder 26
152	Hodgdon H1000
153	Ramshot Magnum
154	Hodgdon RETUMBO
155	IMR 8133
156	VihtaVuori N570
157	Alliant Reloder 33
158	Accurate 8700
159	VihtaVuori 24N41
160	Hodgdon H50BMG
161	Hodgdon US869
162	Alliant Reloder 50
163	VihtaVuori 20N29

HODGDON Smokeless Pistol and Shotgun Powders

In Order of Approximate Burning Rate

TITEWAD® Through advanced technology, Hodgdon Powder Co. has produced a superior flattened spherical shotgun powder. Unlike spherical propellants in the past, TITEWAD features low charge weights, mild muzzle report, minimum recoil and reduced residue for optimum ballistic performance. This outstanding propellant designed for 12 ga. only meters superbly and is ideal for ⅞-, 1- and 1⅛-oz. loads. As the name implies, "a little goes a long way!"

» **CLAYS®** Introduced in January 1992, CLAYS has "taken the clay target world by storm." It is the most clean-burning, consistent 12-ga. ⅞-oz., 1-oz. and 1⅛-oz. powder available today. The superb burning characteristics of this powder produce soft, smooth recoil, ultra-clean burning, mild muzzle report and excellent patterns. These features transfer directly to handgun applications where target shooting is the main goal. The 45 ACP and 38 Special are only two of the cartridges where CLAYS provides "tackdriving" target accuracy with flawless functioning.

Hi-Skor 700-X™ This extruded flake powder is ideally suited for shotshells in 12 and 16 gauge where clay target and light field loads are the norm. It doubles as an excellent pistol target powder for such cartridges as the 38 Special and 45 ACP and many more.

TRAIL BOSS® Trail Boss was designed specifically for low-velocity lead bullets suitable for Cowboy Action shooting. It is primarily a pistol powder but has some application in rifles. It is based on a whole new technology that allows very high loading density, good flow through powder measures, stability in severe temperature variation and, most important, additional safety to the handloader.

» **INTERNATIONAL®** INTERNATIONAL is the second in the CLAYS series of powders. It is positioned in burning speed to accommodate 12-ga., 2¾" light, medium and heavy 1⅛-oz. loads, with some very nice 1-oz. listings. Also, it works splendidly in 20 ga., ⅞-oz. target and light field loads. As with CLAYS, clean burning and flawless functioning are the rule.

TITEGROUP® As the name implies, this new spherical propellant was designed for accuracy. Because of the unique design, this powder provides flawless ignition with all types of primers, including the lead-free versions. Unlike pistol powders of the past, powder position in large cases (45 Colt, 357 Magnum and others) has virtually no effect on velocity and performance. Cowboy Action, Bullseye and Combat Shooters should love this one! TITEGROUP has it all: low charge weight, clean burning, mild muzzle report and superb, uniform ballistics.

» **UNIVERSAL®** UNIVERSAL handles the broadest spectrum of cartridges for both pistol and shotgun. From the 25 ACP to the 44 Magnum, UNIVERSAL provides outstanding performance. In shotgun, it produces excellent loads in 28 ga. ¾ oz., 20 ga. ⅞ oz., 16 ga. 1 oz. and even 12 ga. 1¼ oz. As with all the "CLAYS" series powders, clean burning and uniformity are part of its attributes.

CFE™Pistol New in 2014, this excellent spherical pistol propellant utilizes our CFE formula, Copper Fouling Eraser, virtually eliminating copper fouling, plus providing top velocities with clean burning and minimal muzzle flash. For competitive shooters and handloaders seeking the perfect powder for target or self-defense loads, CFE Pistol provides optimum performance in cartridges like the 9mm Luger, 38 Super, 40 S&W, the venerable 45 ACP and many more.

HS-6® HS-6 is a fine spherical propellant that has wide application in pistol and shotshell. In pistol, 9mm, 38 Super, 40 S&W and 10mm Auto are some of the cartridges where HS-6 provides top performance. In shotshell, HS-6 yields excellent heavy field loadings in 10 ga., 12 ga., 16 ga., 20 ga. and even the efficient and effective 28 ga. HS-6 is truly an outstanding spherical propellant.

LONGSHOT® This new spherical shotshell powder is the most versatile heavy field propellant Hodgdon has ever produced. Great field loads in 10 ga., 12 ga., 16 ga., 20 ga. and 28 ga. are shown herein. This propellant provides true magnum velocities with superb patterns. In addition, LONGSHOT is the best choice for those competitors shooting "race" games, such as "Buddy" shoots, "Annie Oakleys" and more.

H110® H110 is the spherical powder that screams "no wimps, please!" It delivers top velocities with top accuracy in the 44 Magnum, 454 Casull and 475 Linebaugh. Silhouette shooters claim it is the most accurate 44 powder they have ever used. In addition, H110 is *the* choice for the minuscule 410 Bore shotgun. It handles all 2½", ½-oz. loads as well as all 1¹⁄₁₆-oz. loads for the 3" version.

LIL' GUN® The 410 Bore has long been difficult to load due to shortcomings in powder fit and metering, along with poor burning characteristics. Not anymore! LIL' GUN was designed to fit, meter and perform flawlessly in the 410 Bore. No more spilled shot or bulged cases. In addition, LIL' GUN has many magnum pistol applications and is superb in the 22 Hornet.

HODGDON Smokeless Rifle Powders

In Order of Approximate Burning Rate

CFE BLK™ This new spherical propellant was designed expressly for the 300 Remington AAC Blackout cartridge. It provides full function of AR-type rifles throughout the range of bullet weights and is perfect for those subsonic reduced loads. In addition to being outstanding in the 300 Blackout, it performs beautifully in many smaller-capacity cartridges, in particular, varmint specials like the 17 Hornet, 17 Ackley Hornet, 218 Bee, 221 Fireball and many more. It also yields top performance in the 6.8 Remington SPC and the 7.62x39mm Russian cartridge. This fine powder meters like a dream and leaves no copper residue, extending accuracy for longer shooting periods and making cleanup quick and easy. It is truly a remarkable new propellant!

» **H4198™** This Extreme Extruded propellant has gone through some changes since its inception, all the time maintaining the same important burning speed of the past. The kernels were shortened for improved metering, and necessary elements were added to make it extremely insensitive to hot/cold temperatures. H4198 is outstanding in cartridges like the 222 Remington, 444 Marlin and the 7.62x39.

» **H322®** This Extreme Extruded powder has won more benchrest matches than all other propellants combined. It provides match-grade accuracy in small- and medium-capacity cartridges like the 223 Remington, 6mm PPC and the 7mm TCU. As a fine extruded powder, it flows through powder measures with superb accuracy.

» **BENCHMARK®** As the name implies, this Extreme Extruded propellant was developed for precision cartridges. As such, it is ideally suited for benchrest and small varmint cartridges like the 6mm PPC, 22 PPC, 6mm BR, 22 BR, 223 Remington and 222 Remington. Additionally, it performs superbly in the 308 Winchester with light match bullets like the 147-gr. and 155-gr. versions. With small, easy-metering granules, competitors will love how it flows through progressive presses.

H335® H335 originated as a military powder, used for the 5.56 NATO, or 223 Remington as handloaders know it. Obviously, it sees endless use in the 222 Remington, 223 Remington and other small cartridges. In particular, prairie dog shooters will find this a favorite, as J.B. Hodgdon has for years!

» **H4895®** H4895 is a most versatile rifle powder. This member of the Extreme Extruded line is great for 17 Remington, 250-3000 Savage, 308 Winchester and 458 Winchester, to name just a few. It is amazingly accurate in every cartridge where it is listed in our data. It had its origin in the 30-06 as a military powder and was the first powder Bruce Hodgdon sold to the loading public.

» **VARGET®** The first of Hodgdon's revolutionary Extreme Extruded Powders, VARGET features small extruded grains for uniform metering, insensitivity to hot/cold temperatures and higher energy for improved velocities over other powders in its burning-speed class. Easy ignition and clean burning are other features that translate into superb accuracy, higher scores and more clean, one-shot kills. Outstanding performance and velocity can be obtained in such popular cartridges as the 223 Remington, 22-250 Remington, 308 Winchester, 30-06, 375 H&H and many more.

BL-C(2)® BL-C(2) is a spherical powder that began as a military powder used in the 7.62 NATO, commonly known as the 308 Winchester. When the powder was first introduced to the handloader, benchrest shooters and other target shooters made it an instant success. BL-C(2) works extremely well in the 223 Remington, 17 Remington, 22 PPC and, of course, the 308 Winchester, plus many more.

CFE™ 223 Introduced in January 2012, this versatile spherical rifle propellant incorporates in its formula CFE, Copper Fouling Eraser. This ingredient, originally used in military propellant, greatly deters copper fouling. It contributes to longer periods of top accuracy with less barrel cleaning time. Being a spherical powder, metering is superbly accurate. CFE 223 yields top velocities in many cartridges, such as the 204 Ruger, 223 Remington/5.56mm NATO, 22-250 Remington and the 308 Winchester/7.62mm NATO, plus many, many more. Match, Varmint and AR shooters will love this one!

LEVEREVOLUTION® Hodgdon® Powder Company and Hornady® Manufacturing have teamed together to answer the frequently asked reloading question: "Can I buy the powder used in Hornady LEVERevolution factory ammunition?" Yes, this is the same spherical propellant used in Hornady's innovative and award-winning high-performance factory ammunition. This fabulous propellant meters flawlessly and makes lever-action cartridges like the 30-30 Winchester yield velocities in excess of 100 fps over any published handloads, with even greater gains over factory ammunition. Other cartridges include the 35 Remington, 308 Marlin Express, 338 Marlin Express and the 25-35 Winchester. The list of cartridges and bullets is limited with this highly specialized powder, but where it works, it really works!

H380® H380 was an unnamed spherical rifle propellant when the late Bruce Hodgdon first used it. When a 38-gr. charge behind a 52-gr. bullet gave one-hole groups from his 22-caliber wildcat (now called 22-250), he appropriately named the powder H380. H380 is also a superb performer in the 220 Swift, 243, 257 Roberts and other fine varmint cartridges.

» **H4350™** The burning speed of this Extreme Extruded propellant has been known to shooters for decades. During that time, Hodgdon has modernized H4350 by shortening the grains for improved metering and making it insensitive to hot/cold temperatures. H4350 is great in such cartridges as the 243 Winchester, 6mm Remington, 270 Winchester, 338 Winchester Magnum and many more. For magnums with light to moderate-weight bullets, it can't be beat!

HYBRID 100V™ This excellent new product is the result of combining the technologies of spherical powders and extruded propellants. The chemistry of a spherical powder is combined with the geometry of an extruded propellant, creating a smooth-metering, super-short-granule, extruded-shaped propellant with high energy. HYBRID 100V has a burn speed between H4350 and H4831, yielding superb performance in such popular calibers as 270 Winchester, 243 Winchester Super Short Magnum, 7mm Remington Magnum, 300 Winchester Magnum and dozens more.

» **H4831®** It is probably safe to say more big game has been taken with H4831 than any other powder. Bruce Hodgdon was the first supplier to introduce this popular burning powder in 1950. Since that time, it has become a favorite for cartridges such as the 270 Winchester, 25-06 Remington, 280 Remington and 300 Winchester Magnum. As an Extreme Extruded propellant, it shares the fine quality of insensitivity to hot/cold temperatures, as well as superb uniformity from lot to lot.

» **H4831SC®** Ballistically, this Extreme Extruded powder is the exact copy of H4831. Physically, it has a shorter grain size and therefore the designation SC, or short cut. The shorter, more compact kernels allow the powder to flow through powder measures more smoothly, helping to alleviate the constant cutting of granules. With the smoother flow characteristics comes more uniform charge weights, while the individual grains orient more compactly, creating better loading density.

SUPERFORMANCE™ This is another of the spherical powders Hodgdon® Powder Company and Hornady® Manufacturing introduced to answer the frequently asked reloading question: "Can I buy the powder used in Hornady Superformance factory ammunition?" Superformance delivers striking velocities in cartridges like the 22-250 Remington, 243 Winchester and the 300 Winchester Short Magnum. Velocities well in excess of 100 fps over the best published handloads and even larger gains over factory ammunition! Because this propellant is tailored for specific applications, the number of cartridges and bullets is limited, but where it works, it really works!

HODGDON Smokeless Rifle Powders (continued)

» **H1000®** This very slow-burning Extreme Extruded powder is perfect for highly overbored magnums like the 7mm Remington Magnum, 7mm STW and the 30-378 Weatherby. In addition, with heavy bullets, H1000 gives top velocity and performance in such cartridges as the 6mm-284, 257 Weatherby, 270 Winchester and 300 Winchester Magnum. In a short period of time this powder has achieved considerable notoriety among long-range match shooters.

» **RETUMBO®** This magnum powder was designed expressly for the really large overbored cartridges such as the 7mm Remington Ultra Mag, 300 Remington Ultra Magnum, 30-378 Weatherby Magnum, etc. RETUMBO adds 40 to 100 fps more velocity to these cartridges when compared with other normal magnum powders. In addition, it is an Extreme Powder, making it perfect for big-game hunting under all types of conditions.

US869™ This spherical powder is superb with heavy bullets in big, overbore, magnum rifle cartridges. Because it is very dense, it allows the shooter to use enough powder to create true magnum loads. US869 is also used in the 50-caliber BMG, where it yields high velocity and great accuracy with 750- to 800-grain projectiles. It's a truly great 1,000-yard competition propellant.

» **H50BMG™** As the name implies, this new-generation Extreme Extruded rifle propellant is a clean-burning powder designed expressly for the 50-caliber BMG cartridge. Because it shares the same technology as VARGET, 50 BMG displays a high degree of thermal stability in temperature extremes. Tests have conclusively proven that H50BMG yields very low extreme spreads in velocity and pressure. All this translates into small groups at extended ranges.

IMR Smokeless Pistol and Shotgun Powders

In Order of Approximate Burning Rate

IMR TARGET™ The first powder in this new family is a fast-burning pistol powder. This fine-grained, small-flake powder meters superbly, providing very precise loads in even the smallest pistol cartridges like the 25 ACP! Performance in match cartridges like 38 Special and 45 ACP is first rate. Target loads for the popular Cowboy Action game are perfect for this propellant, where reduced loads are absolutely necessary. For the shooter wanting competition accuracy in a great pistol powder, this is it!

IMR RED™ This new-technology powder in the IMR Legendary Powder line was designed to be an efficient, clean-burning, 12-gauge target powder. Working throughout the range of shot weights in 12 gauge, from light ⅞-ounce to 1⅛-ounce Handicap Trap loads, this small-flake powder delivers top performance. Efficient low charge weights, mild muzzle report, and minimal recoil are attributes of this fine propellant. Dove and light field loads are additional uses for this great powder. IMR RED™ also performs nicely in various lead pistol target loads, such as match competition loads and Cowboy reduced loads.

IMR GREEN™ The second of the new IMR Shotshell line is slightly slower-burning than IMR RED™, making it an ideal Trap Handicap powder and a favorite with Sporting Clays enthusiasts. It allows the shooter to reach maximum velocity with heavy 1⅛-ounce target loads, yielding excellent patterns in the progress. Also a clean-burning powder, it accommodates loads from ⅞-ounce through 1⅛-ounce 12-gauge loads. And it produces some great light ¾-ounce 20-gauge target loads, especially in Remington STS and Winchester AA HS shells. IMR GREEN™ provides superb target and light field loads for the discriminating reloader.

IMR BLUE™ The slowest burn speed of the five new propellants, IMR BLUE™ has excellent application for heavy 12-gauge 2¾-inch field loads, 1¼ ounces and 1⅜ ounces. In addition, many 3-inch and 3½-inch 12-gauge loads are available for the avid Turkey Hunter. For the "Back Fence" target games, IMR BLUE™ is the ideal burn speed, where, again, 1¼- and 1⅜-ounce loads are the norm. To round out its versatility in hunting loads, data for 10 gauge, 16 gauge, and 20 gauge are available, providing true magnum velocities and performance.

IMR 4227™ This is the magnum pistol powder in the IMR lineup. If it says magnum, IMR 4227™ is the choice for true magnum velocities and performance. In rifles, this powder delivers excellent velocity and accuracy in such cartridges as the 22 Hornet and 221 Fireball.

IMR Smokeless Rifle Powders

In Order of Approximate Burning Rate

IMR 4198™ This fast-burning rifle powder gives outstanding performance in cartridges like the 222 Remington, 221 Fireball, 45-70 and 450 Marlin. Varmint shooters with smallbore cartridges love it.

IMR 3031™ A propellant with many uses, IMR 3031 has long been a favorite of 308 Match shooters using 168-grain match bullets. It is equally effective in small-capacity varmint cartridges from 223 Remington to 22-250 Remington, and it's a great 30-30 Winchester powder.

IMR 8208™ XBR The latest in the versatile IMR line of fine propellants, this accurate-metering, super-short-grain extruded rifle powder was designed expressly for match, varmint and AR sniper cartridges. Ideally suited for cartridges such as the 223 Remington/5.56 NATO, 308 Winchester/7.62mm NATO and the 6mm PPC, shooters will find IMR 8208 XBR totally insensitive to changes in temperature while yielding max velocities and "tackdriving" accuracy. Clearly, it's the competitor's choice and the Varmint Hunter's "dream powder."

IMR 4895™ Originally a military powder featured in the 30-06, IMR 4895 is extremely versatile. From the 17 Remington to the 243 Winchester to the 375 H&H Magnum, accuracy and performance are excellent. In addition, it is a longtime favorite of Match shooters.

IMR 4166® This fine, extruded propellant is the first in the series of Enduron® Technology powders. The main features of the Enduron® series are copper fouling eliminator, insensitivity to temperature changes, ideal loading density and being environmentally friendly. IMR 4166 is the perfect burn speed for cartridges like the 308 Win./7.62mm NATO, 22-250 Remington, 257 Roberts and dozens more. Positively, a versatile, match-grade propellant.

IMR 4064® The most versatile propellant in the IMR spectrum—223 Remington, 22-250 Remington, 220 Swift, 6mm Remington, 243 Winchester Super Short Magnum, 308 Winchester, 338 Winchester Magnum and the list goes on and on. Versatility with uniformity and accuracy.

IMR 4350™ The number one choice for the short magnums, both Remington and Winchester versions. For magnums with light to medium bullet weights, IMR 4350 is the best choice.

IMR 4451® Another new Enduron® extruded powder, IMR 4451 gives top performance in the venerable 30-06, 270 Winchester and 300 WSM, to name just a few. This propellant is ideally suited for many mid-range burn speed cartridges. Simply scroll through the list of cartridges on the Hodgdon Reloading Data Center and see how many of your favorite cartridges are covered with this fine powder. Once the shooter tries this one in that favorite cartridge, the search is over!

IMR 4831™ Slightly slower in burn speed than IMR 4350, IMR 4831 gives top velocities and performance with heavier bullets in medium-size magnums.

IMR 4955® This new Enduron® extruded powder is a top performer with such great cartridges as the 270 Winchester, 25-06 Remington, 280 Remington, 300 Winchester Magnum and many, many more. It falls directly between IMR 4451 and IMR 7977 in burn speed, providing top performance for all such cartridges used for big game. As with all Enduron® powders, it is temperature insensitive and clean burning, minimizes copper fouling and is totally safe for the environment. Adding this propellant to the Enduron® line filled in an important place in the chart. IMR 4955, plus the original three, provides top loading for cartridges from 223 Remington to the massive 500 Nitro Express Magnum.

IMR 7828 SSC™ This magnum rifle powder has exactly the same burn rate as standard IMR 7828 and uses the same data. However, due to the super-short kernels, metering is virtually as good as a spherical powder. This allows up to 4 percent more powder space in the case and in many loads yields more velocity than standard 7828. Such loads are marked with an asterisk in the data to show where standard 7828 will not fit.

IMR 7977® The slowest burn rate Enduron® Technology extruded powder is IMR 7977, and it is a true magnum cartridge propellant. It yields outstanding performance in such cartridges as the 300 Winchester Magnum, 7mm Remington Magnum, 338 Lapua and a host of others. Loading density is perfect for magnums, nicely filling the case at maximum charges, contributing to superb uniformity and accuracy. The 7mm Remington Magnum "never had it so good"!

IMR 8133® The latest IMR Legendary Powder, IMR 8133® is an Enduron® Technology powder. It was designed to provide optimum performance in the large overbored cartridges like the 300 Remington Ultra Mag, 6.5mm-300 Weatherby Magnum, 28 Nosler and a host of other fine magnum cartridges. It provides excellent loading density, copper fouling eliminator, insensitivity to extreme temperature changes, and is environmentally friendly. It is, without equal, the consummate big-game cartridge propellant.

WINCHESTER Smokeless Pistol and Shotgun Powders

In Order of Approximate Burning Rate

WST® The choice for 12-ga. AA duplicate handloads and standard-velocity handgun loads. Ideal for use in 45 Auto match applications. Consistency, clean burn, low flash and less smoke are benefits to the shooter.

231® One of the most popular reload propellants, 231 is a pistol powder ideally suited to the 38 Special, 45 Auto and 9mm standard loads. Consistency, clean burn, low flash and a broad range of applications make this a powder of choice for any pistol cartridge reloader.

SUPER HANDICAP™ Super Handicap is the same propellant used in Winchester's Super Handicap ammunition. This slow-burning, high-energy propellant gives the shooter great handicap or long-range sporting clays loads up to 1,250 fps with a 1⅛-oz. shot charge. Great velocity with excellent patterns!

244™ This new Winchester pistol powder has all the latest features for a mid-range burn speed propellant. Winchester 244 Ball powder is a WINCLEAN® product with a host of attributes, including reduced copper fouling, clean burning, and precise metering. The versatility of this fine powder can be found in 9mm Luger, 45 ACP, 38 Special and many, many more pistol cartridges. From plinking rounds to top competitive target loads, 244 is a "clean" winner!

AUTOCOMP™ This new Winchester powder is perfect for the top target game semiauto pistols. In such cartridges as the 9mm, 38 Super, 40 S&W and the ever-popular 45 ACP, maximum velocities with excellent accuracy are the norm. AutoComp ranks tops in efficiency by achieving maximum performance with .3 to .5 grain less powder. All this with less muzzle flash and clean burning!

WSF® Super-Field propellant is the propellant of choice for Winchester 20-ga. AA Target loads. WSF is an ideal choice to maximize velocities in 12-ga. 1⅛-oz. and 1¼-oz. loads. Super-Field also performs well in 38 Super, 9mm and 40 S&W pistol loads. Excellent propellant for action pistol applications.

572® This new Winchester powder is strategically designed to do a myriad of jobs. First, it has the correct burn rate to create the famous 3¼-dram equivalent, 1¼-oz., 1,330-fps 12-gauge load originated by Winchester. And it does it with any brand case! Back Fence competitors and pheasant hunters will be delighted. Now, that is just one application, and it goes on to provide superb clay target loads in 20 gauge and 28 gauge, top field loads in both, and outstanding field loads for the wonderful 16 gauge. It even is used to duplicate the always-popular 28-gauge WAAHS target load. In addition, 572 has a vast number of pistol applications, ranging from the 25 ACP to the 45 ACP and all popular calibers in between. This is one positively versatile and useful propellant.

296® This propellant was developed for Winchester factory-loaded ammunition for 357 Magnum, 44 Magnum and 410 Bore. Its high loading density provides optimal velocity. 296 is recommended by Winchester for 410 Bore AA loads.

WINCHESTER Smokeless Rifle Powders

In Order of Approximate Burning Rate

748® 748 is the powder of choice for 223 Remington ammunition. The low flame temperature of 748 extends barrel life vs. other similar-speed powders. It is ideal for a wide variety of centerfire rifle loads, including 222 Remington, 30-30 Winchester, 308 Winchester and up to 458 Winchester Magnum.

760® Combine Winchester components with 760 to duplicate 30-06 Springfield factory load ballistics. 760 has ideal flow characteristics that give it an advantage over other propellants with similar burn rates. 760 is an excellent choice for 22-250 Remington, 300 Winchester Magnum and 300 WSM.

StaBALL™ 6.5, BALL Powder® Never before, has a BALL powder propellant been temperature insensitive, but now StaBALL 6.5 is stable in all conditions, hot or cold! Case fill/loading density is 93-100% in all cartridges appropriate for the burn speed, creating the perfect condition for small standard deviations in velocity and pressure, a key element in achieving benchrest accuracy. Like all spherical powders, it meters precisely. It provides speed that eclipses all powders in its burn speed class, (30-200 fps), along with a copper fouling reducing additive. Stability, precision and speed makes Winchester's new StaBALL 6.5 powder the "Best of the Best"!

Top performance is achieved in these cartridges, 6 Creedmoor, 6.5 Creedmoor, 270 Win., 7mm-08 Rem., 375 H&H, plus many, many more. Long Range competitive shooters and hunters will find this is THE powder for top performance at all ranges and all conditions!

LEGEND

BRANDS

ACME	Acme
BAR	Barnes
BTB	Beartooth Bullets
BER	Berger
BERB	Berry's Bullets
BLX	Bull-X
CEB	Cutting Edge Bullets
CPB	Cast Performance Bullets
FA	Freedom Arms
HDY	Hornady
LGH	Lehigh Defense
LY	Lyman SPM
MEI	Meister
NOS	Nosler
PLYCS	Polycase
REM	Remington
SIE	Sierra
SFT	Swift
SPR	Speer
WDLGH	Woodleigh
WIN	Winchester
SFIRE	SinterFire

PRIMERS

LR	Large Rifle
LRM	Large Rifle Magnum
SR	Small Rifle
SRM	Small Rifle Magnum
LP	Large Pistol
LPM	Large Pistol Magnum
SP	Small Pistol
SPM	Small Pistol Magnum

DATA

C	Compressed Powder Charge

BULLETS

AB	AccuBond
ABLR	AccuBond Long Range
AFSP	A-Frame Semi Spitzer
A-MAX	Hornady Match
ARX	Polycase Defense
BK	Blitz King
BR	Bench Rest
BT	Ballistic Tip
BTLF	Ballistic Tip Lead Free
BTSP	Boat Tail Spire Point
CTD	Acme Coated Defense
ELD-M	Extremely Low Drag Match
ELD-X	Extremely Low Drag Expanding
E-TIP	Polymer Tipped Copper Bullet
FBHP	Flat Base Hollow Point
FBT	Flat Base Tipped
FMC	Full Metal Case
FMJ	Full Metal Jacket
FMJBT	Full Metal Jacket Boat Tail
FN	Flat Nose
FP	Flat Point
FPJ	Full Plated Jacket
FS	Fail Safe
FTX	Flextip
GC	Gas Check
GDHP	Gold Dot Hollow Point
GDSP	Gold Dot Soft Point
GMX	Gilding Metal Expanding Bullet
GS	Grand Slam
HAP	Hornady Action Pistol
HB	Hollow Base
HC	Hollow Cavity
HP	Hollow Point
HPBT	Hollow Point Boat Tail
HSP	Hollow Soft Point
IB	Inter Bond
JFP	Jacketed Flat Point
JHC	Jacketed Hollow Cavity
JRN	Jacketed Round Nose
JSWC	Jacketed Semi-Wadcutter
LBBWC	Lead Bevel Base Wadcutter
LCN	Lead Conical Nose
LF	Lead Free
LFN	Lead Flat Nose
LFNPB	Lead Flat Nose Plain Base
LFP	Lead Flat Point
LHBWC	Lead Hollow Base Wadcutter
LRN	Lead Round Nose
LSWC	Lead Semi-Wadcutter
MK	MatchKing
MT-SP	Mag Tip Soft Point
NTX	Non Toxic Expanding
PART	Partition
PSPCL	Pointed Soft Point "Core Lokt"
RAPTOR	CEB All Copper
RN	Round Nose
RNP	Round Nose Frangible
SB	Solid Base
SBT	Spitzer Boat Tail
SCENAR	Lapua Hollow Point
SCENARL	Lapua Hollow Point Long Range
SCIR	Scirocco
SJ	Short Jacket
SMP	Semi-Pointed
SP	Soft Point, Spitzer, Spire Point
SPT	Spitzer
SPBT	Soft Point Boat Tail
SSP	Single Shot Pistol
SST	Super Shock Tip
ST	Silver Tip
SX	Super Explosive
TAC X-BT	Tactical X Bullet Boat Tail
TAC-XP	Tactical X Pistol
TMJ	Totally Metal Jacket
TMK	Tipped MatchKing
TNT	Varmint Bullet
TSX	Triple Shock X Bullet
TTSX	Tipped Triple Shock X Bullet
VG	Varmint Grenade
VLD	Very Low Drag
V-MAX	Varmint Express
WC	Wadcutter
W/GCK	With Gas Check
X	X Bullet
XBT	X Boat Tail
XBTC	X Boat Tail Coated
XD	Extreme Defense
XFB	X Flat Base
XPB	X Pistol Bullet
XTP	Extreme Terminal Performance

WARNING

Hodgdon® Powder, IMR® Powder and Winchester® Powder expressly disclaim any and all warranties with respect to any and all products sold or distributed by them, the safety or suitability thereof, or the results obtained including, without limitation, any implied warranty of merchantability or fitness for a particular purpose and/or any other warranty. Buyers and users assume all risk, responsibility and liability whatsoever for any and all injuries (including death), losses or damages to persons or property (including consequential damages), arising from the use of any product or data, whether or not occasioned by seller's negligence or based on strict liability or principles of indemnity or contribution. Hodgdon®, IMR® and Winchester® powders neither assume nor authorize any person to assume for it any liability in connection with the use of any product or data.

For all powders, use only the components shown. If the reloader makes any changes in components or gets new lot numbers, he should begin again with the starting loads and work up to maximum cautiously. Never exceed maximum charges.

For those loads listed where a starting load is not shown, start 10 percent below the suggested maximum load and then approach maximums carefully, watching for any sign of pressure (difficult extraction, cratered and flattened or blown primers, and unusual recoil).

Never mix any two powders regardless of type, brand, or source. Never substitute any smokeless powder for Black Powder or any Black Powder substitute.

Powder left in the reloader's powder measure hoppers for extended periods, overnight or several days, should be avoided. Powder needs to be stored in original containers ONLY when not in use. Numerous modern smokeless powders are double base in construction, containing both Nitrocellulose and Nitroglycerine. Many powder measures use plastics containing polystyrene, which Nitroglycerine adversely affects when contact is made for extended periods of time, resulting in etching or misshaping the plastic. Normal usage during the reloading process does not provide adequate time for this to occur, so simply draining hoppers into the original containers when the reloading is completed for the day prevents ruining the hoppers.

Trail Boss® was designed to work in specific charge weight ranges. Do not use charges less than the starting load shown, nor greater than the maximum shown.

For plated bullets, such as the fine line of Berry's Bullets, use existing lead data for the same-weight plated bullet.

***When an asterisk (*) appears in the title of the cartridge, or in the data, refer to the warning page. Those warnings are as follows:**

***40 S&W:** This data are intended for use in firearms with barrels that fully support the cartridge in the chamber. Use of this data in firearms that do not fully support the cartridge may result in bulged cases, ruptured cases, case-head separation or other condition that **may result in damage to the firearm and/or result in injury or death of the shooter and/or bystanders.**

***45 Colt:** *45 Colt data are listed in two categories. The first is intended for original Colt revolvers and their replicas. Max pressure: 14,000 CUP. The second category is *45 Colt Ruger Blackhawk, Freedom Arms and Thompson/Center Contender/Encore handguns. Max pressure: 30,000 CUP. **Do not use these data in any other make or model of firearm.**

***45-70 Government data usage:** 45-70 data are listed in the following three divisions based on pressure levels for only the firearms intended:

***45-70 Government (Trapdoor Rifle):** These data are intended for Springfield "Trapdoor," Rolling Block and Antique Replicas. Max pressure: 28,000 CUP.

***45-70 Government (Lever Actions):** These data are intended for the 1895 lever-action Marlin **ONLY**. Max pressure: 40,000 CUP. Do not use these data in any of the firearms listed in the Trapdoor section. Do not use pointed bullets in any rifle with a tubular magazine, unless that pointed bullet was designed with a collapsible tip, made for tubular magazines.

***45-70 Government (Modern Rifles):** These data are only for Ruger No. 1 and No. 3 single-shot rifles, Browning 1885 single shots and Siamese bolt-action rifles. Max pressure: 50,000 CUP. Do not use these data in either of the prior two sections of 45-70 data (Trapdoor and Lever Actions).

***26 Nosler and *6.5-300 Weatherby Magnum:** Do not reduce starting loads, as doing so can result in pressure spikes that may result in damage to the firearm or injury to the user and/or bystanders.

*Max loads listed that show an asterisk (*) following the "C" for compressed load with IMR 7828 SSC will not fit with the standard IMR 7828. Reduce by four percent.

17 ACKLEY HORNET

Case: Winchester (Ref) Twist: 1:10″
Barrel: 24″ Trim: 1.380″ Primer: Remington 7 1/2, Small Rifle Magnum

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Bullet: 20 GR. HDY V-MAX			**Dia: .172″**		**Col: 1.800″**	
CFE BLK	11.7	3443	36,200 PSI	12.8	3736	45,600 PSI
H4198	11.5	3246	32,700 CUP	12.5C	3515	44,400 CUP
H4227	8.5	3080	41,200 CUP	9.2	3238	45,700 CUP
Lil'Gun	9.4	3369	40,600 CUP	10.0	3509	45,300 CUP
Bullet: 25 GR. HDY HP			**Dia: .172″**		**Col: 1.760″**	
H335	12.5	2898	35,500 CUP	13.3	3046	45,400 CUP
H322	12.0	2894	42,500 CUP	13.0C	3153	45,400 CUP
CFE BLK	10.8	3058	39,500 PSI	11.5	3242	45,500 PSI
H4198	10.9	3015	38,800 CUP	11.6	3176	45,900 CUP
Bullet: 30 GR. BER HP			**Dia: .172″**		**Col: 1.800″**	
BL-C(2)	13.0	2795	36,900 CUP	13.5	2922	43,200 CUP
H335	11.7	2752	38,500 CUP	12.5	2894	44,500 CUP
Benchmark	12.2	2900	43,200 CUP	13.0C	2975	44,800 CUP
H322	11.5	2745	36,100 CUP	12.2	2984	45,700 CUP
CFE BLK	10.0	2726	36,900 PSI	10.7	2917	45,400 PSI
H4198	10.0	2711	33,400 CUP	10.7	2923	45,600 CUP

17 HORNET

Case: Hornady Twist: 1:9″
Barrel: 24″ Trim: 1.340″ Primer: Federal 205M, Small Rifle Match

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Bullet: 20 GR. HDY V-MAX			**Dia: .172″**		**Col: 1.715″**	
CFE BLK	11.8	3399	40,300 PSI	12.8	3652	48,100 PSI
H4198	11.0	3226	32,200 PSI	11.8C	3463	39,300 PSI
IMR 4227	9.3	3204	40,700 PSI	10.1	3356	45,400 PSI
296	8.0	3173	40,900 PSI	8.7	3301	45,100 PSI
H110	8.0	3173	40,900 PSI	8.7	3301	45,100 PSI
Lil'Gun	9.7	3538	44,600 PSI	10.0	3629	48,200 PSI
Bullet: 25 GR. HDY V-MAX			**Dia: .172″**		**Col: 1.715″**	
H335	12.4	2984	39,200 PSI	13.2C	3145	45,900 PSI
H322	12.0	3091	30,600 PSI	12.8C	3283	36,200 PSI
CFE BLK	10.7	2996	38,700 PSI	11.6	3263	47,900 PSI
H4198	10.3	2983	34,900 PSI	11.1C	3187	42,500 PSI
IMR 4227	8.5	2856	40,900 PSI	9.3	3032	45,700 PSI
Lil'Gun	8.6	3125	45,000 PSI	8.9	3195	48,000 PSI
Bullet: 30 GR. BER HP			**Dia: .172″**		**Col: 1.715″**	
H335	11.8	2718	36,700 PSI	12.5C	2866	44,000 PSI
H322	11.7	2853	40,500 PSI	12.5C	3020	48,000 PSI
CFE BLK	9.8	2711	42,900 PSI	10.7	2851	47,800 PSI
H4198	10.0	2815	38,700 PSI	10.8C	3024	47,300 PSI

17 REMINGTON FIREBALL

Case: Remington Twist: 1:9″
Barrel: 24″ Trim: 1.400″ Primer: Remington 7 1/2, Small Rifle Magnum

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Bullet: 20 GR. HDY V-MAX			**Dia: .172″**		**Col: 1.830″**	
H335	18.5	3704	40,600 CUP	20.5	4027	50,000 CUP
IMR 8208 XBR	18.0	3636	33,900 CUP	20.2C	4038	44,700 CUP
Benchmark	18.5	3758	40,300 CUP	20.0C	4013	49,100 CUP
H322	18.0	3652	37,500 CUP	19.5C	4019	49,200 CUP
IMR 4198	15.3	3636	37,700 CUP	16.7	4017	50,600 CUP
CFE BLK	15.0	3671	38,700 CUP	17.0	4065	48,600 CUP
H4198	16.0	3811	39,200 CUP	17.3	4037	47,800 CUP
Bullet: 25 GR. HDY HP			**Dia: .172″**		**Col: 1.800″**	
H335	17.7	3510	41,700 CUP	19.4	3744	50,400 CUP
IMR 8208 XBR	17.0	3453	34,900 CUP	19.2	3854	48,900 CUP
Benchmark	17.5	3550	41,900 CUP	19.0	3745	48,500 CUP
H322	17.0	3504	38,500 CUP	18.3	3704	48,900 CUP
IMR 4198	15.0	3463	40,500 CUP	16.2	3692	50,000 CUP
CFE BLK	13.7	3426	42,200 CUP	15.1	3604	49,800 CUP
H4198	15.4	3549	40,500 CUP	17.0	3789	49,900 CUP
Bullet: 30 GR. BER HP			**Dia: .172″**		**Col: 1.800″**	
H335	17.8	3366	39,500 CUP	18.8	3512	49,000 CUP
IMR 8208 XBR	16.5	3316	38,400 CUP	18.6	3634	50,200 CUP
Benchmark	17.0	3307	39,700 CUP	18.7C	3569	49,400 CUP
H322	16.5	3295	38,500 CUP	18.0	3533	49,300 CUP
IMR 4198	14.8	3277	40,600 CUP	15.8	3456	49,000 CUP
CFE BLK	13.2	3114	42,900 CUP	14.5	3291	49,700 CUP
H4198	14.9	3299	42,400 CUP	15.9	3481	50,400 CUP

17 REMINGTON

Case: Remington Twist: 1:9″
Barrel: 24″ Trim: 1.786″ Primer: Remington 7 1/2, Small Rifle Magnum

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Bullet: 20 GR. HDY V-MAX			**Dia: .172″**		**Col: 2.170″**	
CFE 223	25.8	4201	42,200 CUP	27.4	4466	48,100 CUP
Varget	23.5	3936	37,800 CUP	25.5C	4208	45,200 CUP
BL-C(2)	23.5	4049	39,400 CUP	25.0	4213	43,700 CUP
H335	21.0	4132	44,100 CUP	23.5	4290	47,700 CUP
H4895	23.0	4037	37,000 CUP	25.5C	4436	47,500 CUP
IMR 8208 XBR	24.0	4138	40,500 CUP	25.5	4378	48,500 CUP
Benchmark	22.0	3985	38,000 CUP	24.5	4342	50,500 CUP
H322	21.0	3963	37,500 CUP	23.2	4292	49,500 CUP
Bullet: 25 GR. HDY HP			**Dia: .172″**		**Col: 2.150″**	
H414	25.0	3748	39,300 CUP	27.0	3989	48,300 CUP
760	25.0	3748	39,300 CUP	27.0	3989	48,300 CUP
H380	24.5	3756	41,900 CUP	26.0	3950	46,100 CUP
CFE 223	24.4	3882	43,000 CUP	26.0	4109	51,100 CUP
Varget	22.0	3759	39,600 CUP	24.5	4123	50,800 CUP
IMR 4064				24.0C	4005	50,700 CUP
BL-C(2)	22.5	3872	44,000 CUP	24.0	4051	49,000 CUP
IMR 4895				23.5	3995	51,400 CUP
H335	19.5	3811	45,700 CUP	21.0	3963	51,300 CUP
H4895	21.0	3760	40,500 CUP	23.0	4033	48,500 CUP
IMR 8208 XBR	22.7	3882	42,800 CUP	24.2	4072	48,500 CUP
IMR 3031				22.5	4015	51,700 CUP
Benchmark	21.5	3791	43,000 CUP	23.3	4038	50,600 CUP
H322	19.5	3656	40,500 CUP	21.8	3921	49,700 CUP
Bullet: 30 GR. BER HP			**Dia: .172″**		**Col: 2.150″**	
H414	24.0	3487	39,600 CUP	27.0	3839	50,300 CUP
760	24.0	3487	39,600 CUP	27.0	3839	50,300 CUP
H380	22.0	3378	43,300 CUP	24.5	3648	50,500 CUP
CFE 223	22.8	3522	42,700 CUP	24.3	3746	51,700 CUP
Varget	20.0	3405	39,700 CUP	22.5	3742	49,700 CUP
H4895	20.0	3495	44,000 CUP	22.0	3696	49,900 CUP
IMR 8208 XBR	21.2	3527	42,900 CUP	22.6	3700	48,800 CUP
Benchmark	20.0	3444	43,200 CUP	22.0	3709	50,500 CUP
H322	18.0	3311	38,700 CUP	20.0	3594	49,800 CUP

204 RUGER

Case: Hornady Twist: 1:12″
Barrel: 24″ Trim: 1.840″ Primer: Federal 205M, Small Rifle Match

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Bullet: 24 GR. HDY NTX			**Dia: .204″**		**Col: 2.290″**	
H335	27.4	4184	47,100 PSI	29.5	4456	55,200 PSI
H4895	27.0	4061	43,400 PSI	29.5C	4423	54,900 PSI
IMR 8208 XBR	27.0	3997	40,600 PSI	30.0C	4447	56,000 PSI
Benchmark	27.3	4109	45,500 PSI	29.0	4373	54,500 PSI
H322	26.3	4143	48,700 PSI	28.0	4358	56,000 PSI
IMR 4198	23.0	4166	48,200 PSI	24.5	4383	54,900 PSI
H4198	22.6	4294	54,100 PSI	24.0	4400	56,600 PSI

NEVER EXCEED MAXIMUM LOADS

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Bullet: 26 GR. BAR VG FB Dia: .204″ Col: 2.250″						
CFE 223	29.5	4067	46,300 PSI	31.5	4282	52,600 PSI
Varget	27.5	3962	47,500 PSI	30.0C	4110	51,000 PSI
IMR 4166	26.7	3869	49,500 PSI	28.7C	4064	55,500 PSI
BL-C(2)	28.9	4004	47,200 PSI	30.7	4173	52,700 PSI
IMR 4895	27.7	3934	47,100 PSI	29.5C	4169	54,700 PSI
H335	26.8	4149	52,200 PSI	28.5	4278	54,900 PSI
H4895	28.2	4067	48,900 PSI	30.0C	4302	57,300 PSI
IMR 8208 XBR	27.7	4132	48,400 PSI	29.5C	4309	54,900 PSI
Benchmark	27.0	4036	47,600 PSI	28.7	4279	56,700 PSI
H322	25.9	4055	52,200 PSI	27.5	4229	57,100 PSI
IMR 4198	22.7	4015	49,400 PSI	24.2	4257	56,700 PSI
H4198	23.0	4124	54,100 PSI	24.5	4258	57,300 PSI
Bullet: 30 GR. BER FB VAR Dia: .204″ Col: 2.235″						
CFE 223	28.7	3761	40,700 PSI	31.3	4202	57,000 PSI
Varget	27.1	3640	41,300 PSI	29.5C	4028	55,200 PSI
BL-C(2)	28.5	3748	43,300 PSI	30.7	4073	55,200 PSI
IMR 4895	27.4	3687	44,500 PSI	29.5C	4024	56,600 PSI
H335	26.1	3814	48,200 PSI	28.1	4054	57,300 PSI
H4895	26.2	3800	44,500 PSI	28.5	4124	56,800 PSI
IMR 8208 XBR	26.7	3798	44,500 PSI	28.8	4118	56,400 PSI
Benchmark	25.7	3754	44,500 PSI	28.0	4076	56,800 PSI
H322	24.5	3740	44,500 PSI	26.6	4054	56,700 PSI
IMR 4198	21.9	3695	45,900 PSI	23.9	3979	56,600 PSI
H4198	22.2	3789	45,100 PSI	24.2	4073	56,300 PSI
Bullet: 32 GR. HDY V-MAX Dia: .204″ Col: 2.250″						
CFE 223	29.0	3826	45,400 PSI	30.9	4091	55,000 PSI
Varget	27.0	3557	38,300 PSI	29.0C	3798	47,400 PSI
IMR 4166	26.2	3589	47,500 PSI	28.5C	3881	57,400 PSI
BL-C(2)	28.5	3772	43,000 PSI	30.7	4081	55,500 PSI
IMR 4895	27.0	3627	40,500 PSI	29.0C	3949	51,900 PSI
H335	26.0	3703	40,600 PSI	28.3	4044	54,800 PSI
H4895	27.0	3669	40,500 PSI	29.0C	3980	51,100 PSI
IMR 8208 XBR	27.5	3917	47,500 PSI	29.0	4130	56,500 PSI
Benchmark	26.0	3770	45,500 PSI	28.0	4047	57,100 PSI
H322	25.5	3826	48,300 PSI	27.5	4030	56,400 PSI
IMR 4198	22.0	3725	42,700 PSI	23.5	4006	55,400 PSI
Bullet: 35 GR. BER HP Dia: .204″ Col: 2.240″						
CFE 223	28.8	3695	44,500 PSI	30.6	3991	55,600 PSI
Varget	28.0	3705	48,300 PSI	29.0C	3812	53,100 PSI
IMR 4064	26.0	3444	40,000 PSI	27.5C	3728	51,000 PSI
IMR 4166	25.8	3447	46,300 PSI	28.1C	3767	57,300 psi
BL-C(2)	28.5	3734	47,200 PSI	30.7	3937	54,900 PSI
IMR 4895	26.5	3550	43,300 PSI	28.3C	3864	55,500 PSI
H335	25.5	3665	45,400 PSI	27.5	3915	56,600 PSI
H4895	26.0	3576	42,200 PSI	28.2C	3910	55,700 PSI
IMR 8208 XBR	27.0	3830	50,700 PSI	28.2	3961	56,300 PSI
IMR 3031	25.0	3602	44,400 PSI	26.1C	3793	52,800 PSI
Benchmark	25.0	3590	44,100 PSI	26.6	3863	56,600 PSI
H322	24.0	3586	45,600 PSI	26.3	3828	55,400 PSI
Bullet: 40 GR. HDY V-MAX Dia: .204″ Col: 2.250″						
CFE 223	27.3	3518	46,500 PSI	29.0	3769	56,700 PSI
Varget	26.0	3395	44,100 PSI	28.1C	3647	55,100 PSI
IMR 4064	25.5	3379	43,600 PSI	27.5C	3616	52,000 PSI
IMR 4166	24.7	3314	48,000 PSI	26.9	3578	57,300 PSI
BL-C(2)	28.0	3569	47,300 PSI	30.0	3774	56,200 PSI
IMR 4895	26.0	3415	44,700 PSI	27.8C	3695	56,000 PSI
H335	25.0	3508	47,300 PSI	26.8	3738	56,700 PSI
H4895	26.0	3500	45,500 PSI	27.7C	3741	56,000 PSI
IMR 8208 XBR	26.0	3586	48,300 PSI	27.3	3754	56,300 PSI
IMR 3031	24.0	3456	46,300 PSI	25.6C	3694	56,600 PSI
Benchmark	24.0	3419	45,200 PSI	25.7	3646	55,400 PSI
H322	23.0	3319	41,500 PSI	25.1	3639	55,900 PSI
Bullet: 50 GR. BER HPBT Dia: .204″ Col: 2.300″						
CFE 223	25.2	3279	54,400 PSI	26.8	3370	55,700 PSI
Varget	24.0	3071	44,900 PSI	26.0	3287	55,200 PSI
IMR 4064	24.0	3079	44,900 PSI	25.8C	3330	55,800 PSI
IMR 4166	22.9	3007	47,800 PSI	24.9	3237	57,300 PSI
BL-C(2)	25.0	3089	42,900 PSI	27.0	3334	54,500 PSI
IMR 4895	24.0	3092	45,400 PSI	26.2C	3344	56,000 PSI
H335	22.5	3039	43,700 PSI	24.3	3268	54,700 PSI
H4895	24.0	3167	46,900 PSI	25.7	3352	56,000 PSI
IMR 8208 XBR	23.0	3129	47,800 PSI	24.9	3327	56,100 PSI
IMR 3031	22.0	3046	44,500 PSI	24.0	3284	55,100 PSI
Benchmark	22.5	3110	47,800 PSI	24.0	3256	54,300 PSI
H322	22.0	3105	48,300 PSI	23.5	3252	55,100 PSI

22 HORNET

Case: Winchester Twist: 1:16″
Barrel: 24″ Trim: 1.393″ Primer: Winchester SR, Small Rifle

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Bullet: 30 GR. BAR VG FB Dia: .224″ Col: 1.750″						
CFE BLK	12.1	2642	22,900 PSI	13.5C	2819	26,700 PSI
IMR 4227	10.0	2321	37,300 CUP	11.7C	2703	37,600 CUP
296	11.1	2807	33,000 CUP	12.3	3150	41,500 CUP
H110	11.1	2807	33,000 CUP	12.3	3150	41,500 CUP
Lil'Gun	11.7	2863	26,300 CUP	13.0	3055	29,700 CUP
Bullet: 35 GR. HDY V-MAX Dia: .224″ Col: 1.725″						
CFE BLK	12.0	2383	16,900 PSI	13.3C	2650	22,700 PSI
H4198	10.5	2223	23,100 CUP	11.5C	2420	26,300 CUP
H4227	10.5	2630	35,600 CUP	11.6C	2896	42,500 CUP
H110	11.0	2805	32,700 CUP	12.3	3060	41,400 CUP
Lil'Gun	12.0	2694	22,000 CUP	13.0	2842	24,000 CUP
Bullet: 40 GR. SPR SP Dia: .224″ Col: 1.725″						
CFE BLK	12.1	2484	23,200 PSI	13.5C	2684	28,400 PSI
H4198	10.5	2253	26,100 CUP	11.5C	2488	32,800 CUP
H4227	9.0	2421	39,900 CUP	10.2	2567	43,000 CUP
H110	10.0	2569	32,400 CUP	11.2	2795	41,800 CUP
Lil'Gun	12.0	2667	24,900 CUP	13.0	2826	28,400 CUP
Bullet: 45 GR. BAR XBT Dia: .224″ Col: 1.850″						
H4198	10.5	2217	31,500 CUP	11.5C	2390	36,900 CUP
H4227	8.5	2198	37,000 CUP	9.8	2346	42,700 CUP
H110	9.0	2323	35,200 CUP	9.9	2503	40,400 CUP
Lil'Gun	12.0	2641	35,700 CUP	13.0	2770	38,500 CUP
Bullet: 45 GR. HDY SP Dia: .224″ Col: 1.750″						
IMR 4198				10.5C	2010	20,100 CUP
CFE BLK	11.7	2403	25,000 PSI	13.0C	2588	30,800 PSI
H4198	10.5	2239	28,000 CUP	11.5C	2400	32,000 CUP
IMR 4227	8.5	2312	39,900 CUP	9.8	2484	42,000 CUP
H110	9.0	2342	33,500 CUP	10.4	2574	43,000 CUP
Lil'Gun	12.0	2622	26,500 CUP	13.0	2787	31,600 CUP
Bullet: 50 GR. SIE SP Dia: .224″ Col: 1.850″						
CFE BLK	11.7	2338	29,200 PSI	13.0C	2512	33,700 PSI
H4198	10.5	2102	28,200 CUP	11.5C	2296	34,100 CUP
H4227	8.4	2131	39,700 CUP	9.4	2256	41,800 CUP
H110	9.0	2249	37,500 CUP	10.0	2422	42,300 CUP
Lil'Gun	12.0	2556	31,600 CUP	13.0	2713	35,300 CUP
Bullet: 53 GR. BAR XFB Dia: .224″ Col: 1.850″						
H4198	10.0	2025	31,600 CUP	11.0C	2165	40,600 CUP
H4227	8.0	1887	37,600 CUP	8.7	2062	43,000 CUP
H110	8.0	1997	38,300 CUP	9.0	2159	41,000 CUP
Lil'Gun	11.0	2310	32,800 CUP	12.0	2509	39,000 CUP
Bullet: 55 GR. HDY SP Dia: .224″ Col: 1.850″						
CFE BLK	11.7	2340	39,400 PSI	13.0C	2520	45,600 PSI
H4198	10.0	1955	30,000 CUP	11.5C	2273	41,000 CUP
H4227	8.0	1915	41,800 CUP	9.0	2095	43,000 CUP
Lil'Gun	12.0	2551	39,400 CUP	13.0	2652	42,900 CUP

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

22 K HORNET

Case: Winchester (Ref) Twist: 1:14″
Barrel: 24″ Trim: 1.393″ Primer: Winchester SR, Small Rifle

Powder	Starting Grs.	Starting Vel.	Starting Pressure	Maximum Grs.	Maximum Vel.	Maximum Pressure
Bullet: 30 GR. BAR VG FB Dia: .224″ Col: 1.750″						
CFE BLK	14.4	3038	26,300 CUP	16.0C	3219	30,300 CUP
IMR 4227	10.8	2241	27,300 CUP	12.0C	2569	30,600 CUP
296	11.0	2996	40,200 CUP	11.7	3108	43,100 CUP
H110	11.0	2996	40,200 CUP	11.7	3108	43,100 CUP
Lil'Gun	12.7	3150	35,200 CUP	13.5	3332	43,000 CUP
Bullet: 35 GR. HDY V-MAX Dia: .224″ Col: 1.725″						
CFE BLK	14.6	2915	23,400 CUP	15.8	3072	28,100 CUP
H4227	11.0	2809	39,500 CUP	12.3	3023	46,000 CUP
H110	11.5	2901	35,100 CUP	12.8	3137	45,500 CUP
Lil'Gun	12.5	2980	29,900 CUP	13.5	3122	35,300 CUP
Bullet: 40 GR. NOS BT Dia: .224″ Col: 1.900″						
CFE BLK	14.3	2730	21,800 CUP	15.5C	2988	30,200 CUP
H4227	11.0	2684	37,500 CUP	12.2C	2871	45,500 CUP
H110	11.5	2779	33,100 CUP	12.9	3045	45,600 CUP
Lil'Gun	12.5	2891	29,400 CUP	13.5	3001	33,800 CUP
Bullet: 45 GR. BAR XBT Dia: .224″ Col: 1.850″						
H4227	10.5	2524	40,900 CUP	11.3	2633	45,300 CUP
H110	10.5	2578	38,700 CUP	11.2	2686	45,300 CUP
Lil'Gun	12.0	2773	36,700 CUP	13.0	2896	40,200 CUP
Bullet: 45 GR. SPR SP Dia: .224″ Col: 1.750″						
CFE BLK	14.4	2773	27,300 CUP	16.0C	3010	38,500 CUP
H4227	10.7	2574	40,700 CUP	11.7	2747	45,500 CUP
H110	11.5	2684	37,000 CUP	12.4	2841	45,500 CUP
Lil'Gun	12.0	2716	28,100 CUP	13.2	2893	35,800 CUP
Bullet: 50 GR. SIE BK Dia: .224″ Col: 1.900″						
CFE BLK	13.7	2685	31,600 CUP	15.3C	2838	41,000 CUP
H4198	11.5	2246	30,100 CUP	12.5C	2460	38,700 CUP
H4227	10.0	2398	40,200 CUP	11.0	2538	45,700 CUP
H110	10.4	2491	37,900 CUP	11.1	2619	45,800 CUP
Lil'Gun	12.0	2675	34,300 CUP	13.0	2826	40,700 CUP
Bullet: 53 GR. BAR XFB Dia: .224″ Col: 1.850″						
H4198	11.2	2195	30,200 CUP	12.5C	2386	42,600 CUP
H4227	9.5	2208	39,000 CUP	10.5	2366	45,900 CUP
H110	9.5	2274	40,300 CUP	10.2	2379	46,100 CUP
Lil'Gun	11.5	2552	38,700 CUP	12.3	2695	45,700 CUP
Bullet: 55 GR. HDY SP Dia: .224″ Col: 1.850″						
CFE BLK	13.5	2549	37,400 CUP	15.0C	2790	41,400 CUP
H4198	11.5	2223	31,100 CUP	12.5C	2388	39,400 CUP
H4227	10.0	2315	43,400 CUP	11.0	2445	46,100 CUP

218 BEE

Case: Winchester Twist: 1:16″
Barrel: 24″ Trim: 1.335″ Primer: Winchester SR, Small Rifle

Powder	Starting Grs.	Starting Vel.	Starting Pressure	Maximum Grs.	Maximum Vel.	Maximum Pressure
Bullet: 30 GR. BAR VG FB Dia: .224″ Col: 1.680″						
CFE BLK	15.8	3018	25,300 CUP	18.0C	3358	33,500 CUP
IMR 4227	10.1	2521	29,200 CUP	12.4	2914	38,400 CUP
296	11.3	3001	35,500 CUP	12.0	3068	37,200 CUP
H110	11.3	3001	35,500 CUP	12.0	3068	37,200 CUP
Lil'Gun	13.1	3255	35,700 CUP	14.9	3534	38,100 CUP
Bullet: 35 GR. HDY V-MAX Dia: .224″ Col: 1.650″						
H4227	11.0	2656	30,400 CUP	13.3	3035	38,300 CUP
H110	12.5	2974	33,900 CUP	13.2	3066	37,400 CUP
Lil'Gun	12.0	2868	25,400 CUP	14.0	3205	37,100 CUP
Bullet: 35 GR. HDY V-MAX Dia: .224″ Col: 1.650″						
CFE BLK	15.3	2833	22,200 CUP	18.0C	3313	35,700 CUP
Bullet: 40 GR. SIE BK Dia: .224″ Col: 1.820″						
CFE BLK	15.3	2841	27,400 CUP	18.0C	3257	38,600 CUP
H4227	11.0	2608	33,800 CUP	12.8	2865	38,700 CUP
H110	12.5	2866	33,000 CUP	13.3	2981	38,200 CUP
Lil'Gun	12.5	2846	26,500 CUP	14.0	3130	37,400 CUP
Bullet: 46 GR. SPR JFP Dia: .224″ Col: 1.670″						
CFE BLK	13.9	2546	27,500 CUP	16.4	2954	38,100 CUP
H4198	13.5	2417	26,700 CUP	15.0C	2708	37,200 CUP
H4227	9.0	2143	23,300 CUP	10.7	2424	38,200 CUP
H110	8.0	2127	25,400 CUP	9.0	2331	36,400 CUP
Lil'Gun	9.0	2385	29,900 CUP	10.2	2586	37,300 CUP
Bullet: 50 GR. NOS BT Dia: .224″ Col: 1.900″						
CFE BLK	12.8	2436	27,500 CUP	15.1	2757	38,100 CUP
H4198	13.5	2420	29,500 CUP	14.9C	2654	38,500 CUP
H4227	9.5	2195	29,500 CUP	10.8	2421	38,400 CUP
H110	8.5	2174	30,000 CUP	9.4	2332	38,600 CUP
Lil'Gun	9.0	2320	31,500 CUP	10.2	2503	36,400 CUP

221 FIREBALL

Case: Remington Twist: 1:14″
Barrel: 24″ Trim: 1.390″ Primer: Remington 7 1/2, Small Rifle Magnum

Powder	Starting Grs.	Starting Vel.	Starting Pressure	Maximum Grs.	Maximum Vel.	Maximum Pressure
Bullet: 30 GR. BAR VG FN Dia: .224″ Col: 1.790″						
CFE BLK	18.3	3515	37,200 CUP	19.9	3762	46,200 CUP
H4198	18.0	3242	31,900 CUP	20.0C	3636	42,200 CUP
IMR 4227	15.7	3327	45,400 CUP	17.1	3491	49,100 CUP
Lil'Gun	14.2	3485	41,300 CUP	15.9	3791	49,400 CUP
Bullet: 35 GR. HDY V-MAX Dia: .224″ Col: 1.745″						
CFE BLK	18.6	3408	37,500 CUP	20.2	3638	45,800 CUP
H4198	18.0	3056	31,900 CUP	20.0C	3423	44,700 CUP
H4227	14.8	3110	37,500 CUP	16.5	3403	50,600 CUP
Lil'Gun	14.0	3354	47,200 CUP	16.0	3535	49,900 CUP
Bullet: 36 GR. BAR VG FB Dia: .224″ Col: 1.830″						
CFE BLK	17.5	3254	37,700 CUP	19.1	3495	46,300 CUP
H4198	18.0	3177	35,000 CUP	19.0C	3361	41,500 CUP
IMR 4227	15.5	3081	41,300 CUP	16.7	3264	49,100 CUP
Lil'Gun	14.5	3297	41,500 CUP	15.7	3500	48,800 CUP
Bullet: 40 GR. NOS BT Dia: .224″ Col: 1.830″						
H335	20.0	2782	31,500 CUP	22.0	3048	41,200 CUP
H322	19.7	2883	33,200 CUP	21.0C	3087	39,100 CUP
CFE BLK	18.8	3194	36,600 CUP	20.8	3543	45,800 CUP
H4198	17.0	2851	30,000 CUP	19.0C	3195	40,300 CUP
H4227	14.5	3042	43,100 CUP	16.0	3251	50,200 CUP
Lil'Gun	14.5	3172	42,100 CUP	16.0	3384	48,900 CUP
Bullet: 45 GR. BAR X Dia: .224″ Col: 1.830″						
H335	19.8	2783	36,300 CUP	22.0	3077	50,000 CUP
H322	19.0	2762	31,600 CUP	20.5C	2978	39,900 CUP
H4198	17.6	2934	37,200 CUP	19.5C	3184	46,500 CUP
H4227	13.8	2848	43,500 CUP	15.3	3015	48,600 CUP
Lil'Gun	13.4	2944	41,400 CUP	14.9	3155	49,400 CUP
Bullet: 45 GR. SIE SPT Dia: .224″ Col: 1.800″						
H335	20.0	2740	32,600 CUP	22.0	3030	44,300 CUP
H322	19.0	2767	31,400 CUP	20.5C	2955	37,000 CUP
CFE BLK	18.5	3095	37,200 CUP	20.1	3319	45,500 CUP
H4198	17.5	2851	31,700 CUP	19.5C	3178	43,700 CUP
H4227	14.0	2872	40,900 CUP	15.7	3078	49,100 CUP
Lil'Gun	13.8	2964	39,300 CUP	15.3	3202	49,000 CUP
Bullet: 50 GR. SPR TNT Dia: .224″ Col: 1.830″						
CFE BLK	17.9	2881	32,900 CUP	19.8	3202	46,000 CUP
Bullet: 50 GR. SPR TNT HP Dia: .224″ Col: 1.830″						
H335	19.8	2674	33,100 CUP	22.0	3041	48,600 CUP
H322	19.0	2703	31,600 CUP	21.0C	2968	40,100 CUP

NEVER EXCEED MAXIMUM LOADS

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
H4198	16.5	2661	27,800 CUP	18.5C	2996	40,800 CUP
H4227	13.0	2629	36,500 CUP	14.8	2901	51,200 CUP
Lil'Gun	13.0	2835	43,400 CUP	14.6	2994	48,200 CUP
Bullet: 52 GR. SIE HPBT			**Dia: .224″**		**Col: 1.830″**	
H335	19.6	2662	35,500 CUP	21.8	2958	48,200 CUP
H322	18.9	2693	35,100 CUP	21.0C	2987	46,800 CUP
CFE BLK	17.1	2851	39,300 CUP	18.6	3075	46,300 CUP
H4198	16.7	2692	33,700 CUP	18.5C	2967	45,300 CUP
H4227	13.0	2612	40,900 CUP	14.5	2798	48,100 CUP
Lil'Gun	13.0	2768	43,200 CUP	14.5	2951	48,800 CUP
Bullet: 55 GR. HDY SPSX			**Dia: .224″**		**Col: 1.830″**	
H335	19.3	2602	36,700 CUP	21.5	2891	49,400 CUP
H322	18.9	2681	36,000 CUP	21.0C	2944	48,200 CUP
CFE BLK	16.6	2706	37,700 CUP	18.0	2912	45,700 CUP
H4198	16.7	2655	34,100 CUP	18.5	2922	46,800 CUP
H4227	13.5	2643	48,100 CUP	14.5	2742	49,300 CUP
Lil'Gun	13.0	2714	45,200 CUP	14.5	2877	49,800 CUP

222 REMINGTON

Case: Winchester Twist: 1:14″
Barrel: 24″ Trim: 1.690″ Primer: Winchester SR, Small Rifle

Bullet: 30 GR. BAR VG			Dia: .224″		Col: 2.040″	
IMR 8208 XBR	23.0	3234	34,900 PSI	25.0C	3522	42,700 PSI
Benchmark	23.2	3332	35,500 PSI	25.2C	3628	44,200 PSI
H322	23.3	3535	40,300 PSI	25.5C	3817	49,400 PSI
IMR 4198	19.8	3412	37,200 PSI	21.3	3755	48,900 PSI
CFE BLK	19.5	3593	40,900 PSI	21.2	3827	48,500 PSI
H4198	20.3	3500	37,400 PSI	21.9	3817	48,500 PSI
IMR 4227	15.7	3268	40,000 PSI	17.6	3567	48,400 PSI
Bullet: 35 GR. HDY V-MAX			**Dia: .224″**		**Col: 2.025″**	
IMR 8208 XBR	23.0	3181	32,000 PSI	25.0C	3464	40,500 PSI
Benchmark	23.5	3138	33,700 CUP	25.0C	3368	40,900 CUP
H322	23.5	3316	36,500 CUP	25.2C	3591	45,600 CUP
IMR 4198	18.7	3252	34,300 PSI	20.8	3659	47,500 PSI
CFE BLK	19.2	3357	38,900 PSI	21.2	3640	49,300 PSI
H4198	20.5	3366	36,500 CUP	22.0	3591	43,300 CUP
IMR 4227	15.0	3195	38,500 PSI	17.4	3500	46,500 PSI
Bullet: 35 GR. NOS BT LF			**Dia: .224″**		**Col: 2.130″**	
IMR 8208 XBR	22.1	3096	32,500 PSI	24.5C	3516	42,200 PSI
Benchmark	22.5	3316	34,600 PSI	25.0C	3665	48,600 PSI
H322	21.6	3290	39,700 PSI	23.2	3527	47,600 PSI
IMR 4198	18.5	3220	36,800 PSI	19.9	3539	47,800 PSI
CFE BLK	18.6	3372	41,900 PSI	21.0	3633	48,200 PSI
H4198	19.3	3472	44,800 PSI	20.5	3612	47,300 PSI
Bullet: 36 GR. BAR VG FB			**Dia: .224″**		**Col: 2.150″**	
H335	23.0	3293	43,000 PSI	24.5	3472	48,700 PSI
IMR 8208 XBR	22.0	3144	36,700 PSI	25.0C	3582	40,400 PSI
IMR 3031	21.1	3147	40,700 PSI	22.4C	3356	47,000 PSI
Benchmark	22.0	3178	38,500 PSI	24.0C	3471	48,300 PSI
H322	22.3	3331	41,400 PSI	23.7	3535	47,500 PSI
IMR 4198	18.3	3199	40,000 PSI	19.5	3433	48,100 PSI
CFE BLK	17.1	3174	45,000 PSI	19.4	3428	48,600 PSI
H4198	19.3	3277	40,500 PSI	20.5	3470	46,700 PSI
Bullet: 40 GR. SIE HP			**Dia: .224″**		**Col: 2.125″**	
H335	22.5	3125	38,400 CUP	25.0	3371	44,600 CUP
H4895	20.0	2572	23,300 CUP	24.0C	3133	34,200 CUP
IMR 8208 XBR	22.5	3049	30,400 PSI	25.0C	3452	42,800 PSI
Benchmark	23.5	3110	34,800 CUP	25.0	3303	40,700 CUP
H322	20.7	2966	31,700 CUP	23.0	3313	44,000 CUP
IMR 4198	19.0	3226	36,300 PSI	21.2C	3583	48,700 PSI
CFE BLK	18.1	3165	39,900 PSI	20.4	3424	48,400 PSI
H4198	19.5	3201	35,200 CUP	21.4	3480	45,700 CUP
IMR 4227	14.0	2984	38,100 PSI	16.0	3240	45,200 PSI

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Bullet: 45 GR. SPR SP			**Dia: .224″**		**Col: 2.130″**	
748				25.5	3210	41,000 CUP
BL-C(2)	23.0	2774	28,100 CUP	25.5	3100	37,400 CUP
IMR 4895	22.0	2829	33,100 PSI	24.0C	3134	42,800 PSI
H335	21.5	2962	36,500 CUP	24.0	3252	46,200 CUP
H4895	20.0	2510	25,000 CUP	23.8C	3080	35,900 CUP
IMR 8208 XBR	22.2	3121	38,700 PSI	23.6	3327	47,200 PSI
IMR 3031	20.0	2806	31,000 PSI	22.5C	3226	45,800 PSI
Benchmark	23.0	3092	39,700 CUP	24.5	3290	44,900 CUP
H322	20.5	2914	34,600 CUP	22.5	3173	43,600 CUP
IMR 4198	17.8	3083	40,600 PSI	19.8	3311	47,600 PSI
CFE BLK	16.4	2922	41,000 PSI	18.9	3170	48,300 PSI
H4198	18.9	3011	33,400 CUP	21.0	3315	44,800 CUP
H4227	11.0	2259	24,300 CUP	14.5	2863	46,100 CUP
Bullet: 50 GR. HDY SP			**Dia: .224″**		**Col: 2.130″**	
CFE 223	24.1	2970	35,200 PSI	26.2	3268	47,600 PSI
Varget	23.0	2884	33,600 CUP	25.0C	3114	40,600 CUP
IMR 4320	22.5	2802	36,900 PSI	25.0C	3100	47,600 PSI
IMR 4064	21.0	2711	33,500 PSI	23.5C	3065	46,200 PSI
748				24.0	2980	38,000 CUP
BL-C(2)	22.5	2693	25,500 CUP	25.0	3000	38,600 CUP
IMR 4895	22.0	2845	37,800 PSI	24.0C	3106	47,400 PSI
H335	21.3	2861	37,100 CUP	23.6	3120	45,700 CUP
H4895	20.0	2466	23,900 CUP	23.8C	3022	36,500 CUP
IMR 8208 XBR	21.9	3006	39,200 PSI	23.3	3201	47,100 PSI
IMR 3031	20.0	2740	32,000 PSI	22.4C	3156	47,800 PSI
Benchmark	22.5	2994	39,200 CUP	24.0	3168	45,800 CUP
H322	20.2	2810	33,300 CUP	22.2	3079	43,200 CUP
IMR 4198	17.0	2850	37,100 PSI	19.3	3152	49,000 PSI
CFE BLK	15.8	2744	41,500 PSI	18.7	3026	49,400 PSI
H4198	18.5	2890	34,000 CUP	20.5	3160	44,200 CUP
Bullet: 53 GR. HDY HP			**Dia: .224″**		**Col: 2.140″**	
CFE 223	23.7	2904	35,700 PSI	25.8	3211	48,800 PSI
Varget	23.0	2863	33,500 CUP	25.0C	3097	42,700 CUP
IMR 4320	21.5	2670	34,600 PSI	24.1	3033	48,600 PSI
IMR 4064	20.5	2662	33,300 PSI	23.0C	3024	47,400 PSI
748				22.9	2855	36,000 CUP
BL-C(2)	22.0	2639	29,300 CUP	24.5	2967	42,100 CUP
IMR 4895	21.0	2684	34,400 PSI	23.5C	3051	48,200 PSI
H335	20.5	2748	35,900 CUP	23.0	3006	46,000 CUP
H4895	20.0	2585	27,800 CUP	23.5C	3043	41,600 CUP
IMR 8208 XBR	21.4	2844	36,100 PSI	22.8	3117	48,200 PSI
IMR 3031	19.5	2693	33,200 PSI	21.7C	3064	47,600 PSI
Benchmark	21.5	2852	38,800 CUP	23.0	3063	45,500 CUP
H322	19.3	2724	34,900 CUP	21.5	3005	46,000 CUP
IMR 4198	16.5	2742	36,500 PSI	18.7	3025	47,900 PSI
H4198	17.5	2800	35,300 CUP	19.5	3038	45,500 CUP
Bullet: 55 GR. SPR SP			**Dia: .224″**		**Col: 2.130″**	
CFE 223	23.9	2894	35,000 PSI	25.9	3174	47,600 PSI
Varget	23.0	2860	34,500 CUP	25.0C	3095	43,000 CUP
IMR 4320	21.5	2647	34,500 PSI	24.0C	2961	46,000 PSI
IMR 4064	21.5	2739	36,500 PSI	23.0C	2954	44,400 PSI
748				24.0	2900	38,000 CUP
BL-C(2)	22.0	2625	28,200 CUP	24.2	2876	35,400 CUP
IMR 4895	21.0	2632	32,700 PSI	23.5C	3017	47,300 PSI
H335	20.5	2776	35,300 CUP	23.0	3037	45,600 CUP
H4895	20.0	2569	28,900 CUP	23.5C	3023	39,900 CUP
IMR 8208 XBR	21.8	2905	38,400 PSI	23.2C	3120	48,500 PSI
IMR 3031	19.5	2687	33,500 PSI	21.6C	3004	46,300 PSI
Benchmark	21.5	2843	38,100 CUP	23.2	3052	45,100 CUP
H322	19.0	2654	31,600 CUP	21.2	2953	45,100 CUP
IMR 4198	16.5	2722	35,900 PSI	18.7	3017	47,700 PSI
H4198	17.5	2733	33,400 CUP	19.5	3017	45,300 CUP
Bullet: 60 GR. HDY V-MAX			**Dia: .224″**		**Col: 2.160″**	
CFE 223	22.3	2652	33,300 PSI	24.3	2972	47,900 PSI

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Varget	22.0	2734	36,600 CUP	23.5C	2906	42,800 CUP
IMR 4320	20.0	2408	32,400 PSI	23.0C	2805	47,800 PSI
IMR 4064	20.0	2530	34,500 PSI`	22.3C	2862	47,800 PSI
BL-C(2)	22.0	2590	33,200 CUP	23.5	2803	44,000 CUP
IMR 4895	20.0	2573	36,200 PSI	22.4C	2907	49,100 PSI
H335	20.0	2602	34,400 CUP	21.3	2759	42,900 CUP
H4895	21.7	2802	38,500 CUP	23.1C	2937	43,500 CUP
IMR 8208 XBR	20.5	2737	39,200 PSI	21.8	2920	48,200 PSI
IMR 3031	18.5	2476	32,900 PSI	20.6C	2838	48,700 PSI
Benchmark	19.7	2627	35,900 CUP	21.0	2805	42,800 CUP
H322	19.0	2592	34,800 CUP	20.7	2818	42,900 CUP
IMR 4198	15.5	2552	37,100 PSI	17.6	2832	48,400 PSI
H4198	16.9	2633	36,100 CUP	18.0	2771	42,400 CUP
Bullet: 63 GR. SIE SP			**Dia: .224″**		**Col: 2.125″**	
CFE 223	22.8	2724	36,500 PSI	24.8	2986	48,900 PSI
Varget	22.0	2718	34,500 CUP	24.0C	2935	43,800 CUP
IMR 4320	20.5	2450	34,900 PSI	23.0C	2774	48,400 PSI
IMR 4064	20.0	2490	34,400 PSI	22.4C	2812	47,700 PSI
BL-C(2)	22.0	2626	32,600 CUP	24.2	2864	43,200 CUP
IMR 4895	20.5	2485	35,400 PSI	23.0C	2827	49,200 PSI
H335	19.8	2672	37,800 CUP	22.0	2830	45,700 CUP
H4895	20.0	2537	30,300 CUP	23.5C	2965	45,500 CUP
IMR 8208 XBR	20.2	2681	39,300 PSI	21.5	2865	48,400 PSI
IMR 3031	19.0	2527	35,400 PSI	20.9C	2809	48,400 PSI
Benchmark	21.0	2732	39,000 CUP	22.5	2903	45,700 CUP
H322	18.6	2531	33,600 CUP	20.7	2780	44,400 CUP
IMR 4198	16.0	2519	37,600 PSI	18.0	2759	48,500 PSI
H4198	16.9	2597	36,200 CUP	18.8	2793	43,800 CUP

223 REMINGTON

Case: Winchester Twist: 1:12″
Barrel: 24″ Trim: 1.750″ Primer: Winchester SR, Small Rifle

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Bullet: 35 GR. NOS BT LF			**Dia: .224″**		**Col: 2.280″**	
Varget	25.2	3424	38,500 PSI	28.0C	3751	49,300 PSI
IMR 4320	25.5	3313	39,500 PSI	28.0C	3620	49,800 PSI
BL-C(2)	26.6	3430	39,900 PSI	29.5	3740	50,100 PSI
IMR 4895	24.3	3263	36,400 PSI	27.0C	3620	47,700 PSI
H335	25.7	3647	44,600 PSI	27.9	3885	53,200 PSI
H4895	24.3	3522	39,600 PSI	27.0C	3891	53,000 PSI
IMR 8208 XBR	25.2	3560	41,100 PSI	28.0C	3891	53,400 PSI
IMR 3031	23.4	3423	40,000 PSI	26.0C	3771	51,600 PSI
Benchmark	24.5	3555	42,700 PSI	27.2C	3851	52,900 PSI
H322	24.3	3610	43,800 PSI	25.8	3771	50,600 PSI
IMR 4198	20.4	3651	47,600 PSI	21.7	3804	52,100 PSI
H4198	20.4	3599	45,100 PSI	21.7	3780	52,000 PSI
Bullet: 36 GR. BAR VG FB			**Dia: .224″**		**Col: 2.200″**	
Varget	24.8	3278	37,000 PSI	27.5C	3593	47,300 PSI
IMR 4320	25.2	3289	39,700 PSI	28.0C	3653	52,200 PSI
BL-C(2)	26.8	3345	40,400 PSI	28.5	3500	46,000 PSI
IMR 4895	24.8	3289	39,700 PSI	27.0C	3606	50,100 PSI
H335	26.0	3647	48,300 PSI	27.7	3790	53,200 PSI
H4895	25.5	3487	36,500 PSI	27.3C	3755	49,200 PSI
IMR 8208 XBR	25.4	3548	44,500 PSI	27.0C	3728	50,600 PSI
IMR 3031	23.3	3398	41,600 PSI	24.8C	3600	48,200 PSI
Benchmark	24.4	3508	44,100 PSI	26.0	3702	50,800 PSI
H322	24.2	3523	44,300 PSI	25.7	3721	52,700 PSI
IMR 4198	21.2	3579	43,500 PSI	22.5	3834	52,500 PSI
H4198	21.1	3511	36,800 PSI	22.5	3723	51,800 PSI
Bullet: 40 GR. NOS BT			**Dia: .224″**		**Col: 2.280″**	
CFE 223	27.5	3457	40,600 PSI	29.0	3667	48,200 PSI
Varget	25.0	3310	34,400 CUP	28.0C	3674	47,200 CUP
IMR 4320	26.0	3267	43,500 PSI	27.7C	3456	48,900 PSI
BL-C(2)	26.5	3368	35,400 CUP	28.5	3612	45,400 CUP
IMR 4895	24.9	3164	35,200 PSI	26.5C	3390	44,200 PSI
H335	26.0	3299	34,400 CUP	28.0	3572	44,600 CUP
H4895	25.0	3204	32,100 CUP	27.5C	3573	44,500 CUP
IMR 8208 XBR	25.0	3433	41,500 PSI	26.7C	3659	50,400 PSI
IMR 3031	23.5	3291	42,600 PSI	25.2C	3498	46,200 PSI
Benchmark	25.3	3404	39,600 CUP	27.3	3666	51,000 CUP
H322	23.5	3376	34,600 CUP	25.5	3574	48,000 CUP
IMR 4198	19.5	3269	42,500 PSI	22.2	3652	53,400 PSI
H4198	20.5	3147	29,400 CUP	22.5	3601	49,600 CUP
Bullet: 45 GR. SFIRE			**Dia: .224″**		**Col: 2.220″**	
H335	23.0	3172	42,000 PSI	25.3	3428	50,700 PSI
IMR 8208 XBR	23.0	3124	38,800 PSI	26.0C	3491	52,100 PSI
IMR 3031	21.0	2981	37,000 PSI	24.0C	3400	52,300 PSI
Benchmark	22.5	3130	39,600 PSI	25.0	3410	51,000 PSI
H322	22.0	3088	38,900 PSI	24.6C	3399	50,800 PSI
IMR 4198	19.0	3108	41,000 PSI	21.0	3395	52,400 PSI
H4198	19.0	3097	40,200 PSI	21.8	3414	51,400 PSI
Bullet: 45 GR. SIE SP			**Dia: .224″**		**Col: 2.240″**	
CFE 223	27.5	3358	40,800 PSI	29.0	3536	47,200 PSI
Varget	25.0	3071	30,200 CUP	28.0C	3477	43,700 CUP
IMR 4320	25.5	3158	40,300 PSI	27.8C	3342	46,300 PSI
BL-C(2)	26.5	3266	36,000 CUP	28.5	3559	48,000 CUP
H335	24.0	3280	41,500 CUP	26.2	3456	51,000 CUP
H4895	25.0	3211	33,800 CUP	27.5C	3454	43,400 CUP
IMR 8208 XBR	24.5	3287	41,700 PSI	26.8	3550	52,000 PSI
IMR 3031	22.7	3065	37,700 PSI	25.2C	3374	45,800 PSI
Benchmark	25.3	3327	41,100 CUP	27.3	3554	51,100 CUP
H322	23.0	3164	36,000 CUP	25.0	3424	47,400 CUP
IMR 4198	19.5	3205	44,600 PSI	22.1	3495	52,000 PSI
H4198	20.0	3009	28,800 CUP	22.0	3472	49,100 CUP
Bullet: 50 GR. SPR SP			**Dia: .224″**		**Col: 2.210″**	
CFE 223	27.0	3241	41,500 PSI	28.5	3505	53,600 PSI
Varget	26.5	3242	40,800 CUP	27.5C	3383	44,800 CUP
IMR 4320	24.8	3006	39,400 PSI	27.5C	3270	48,900 PSI
IMR 4166	23.9	3026	43,200 PSI	26.2C	3267	51,600 PSI
748				26.0	3200	40,000 CUP
BL-C(2)	26.0	3187	34,200 CUP	28.0	3428	47,100 CUP
IMR 4895	25.2	3118	43,300 PSI	26.7C	3211	45,200 PSI
H335	24.0	3166	43,000 CUP	26.0	3393	51,700 CUP
H4895	25.0	3200	38,300 CUP	27.5C	3468	51,300 CUP
IMR 8208 XBR	23.5	3111	40,500 PSI	25.8	3407	53,300 PSI
IMR 3031	23.5	3169	44,600 PSI	25.0	3268	46,900 PSI
Benchmark	24.0	3139	38,600 CUP	26.5	3396	50,400 CUP
H322	22.0	3018	36,500 CUP	24.0	3301	49,300 CUP
IMR 4198	19.8	3094	42,800 PSI	21.9	3352	52,100 PSI
H4198	19.5	3023	32,400 CUP	21.5	3223	45,900 CUP
Bullet: 53 GR. SIE HP			**Dia: .224″**		**Col: 2.200″**	
CFE 223	27.0	3245	45,900 PSI	28.5	3415	52,900 PSI
Varget	24.0	3026	38,400 CUP	27.0C	3389	47,900 CUP
IMR 4320	24.0	2929	40,400 PSI	27.5C	3273	52,300 PSI
IMR 4064	24.0	2964	41,600 PSI	25.7C	3178	45,600 PSI
IMR 4166	23.4	2936	44,300 PSI	25.6C	3174	52,500 PSI
748				26.0	3200	43,500 CUP
BL-C(2)	26.0	3090	36,600 CUP	28.0	3328	47,600 CUP
IMR 4895	24.5	3012	43,900 PSI	26.4C	3238	52,300 PSI
H335	24.0	3060	44,100 CUP	26.0	3300	52,000 CUP
H4895	25.0	3166	37,400 CUP	27.0C	3383	48,600 CUP
IMR 8208 XBR	23.0	3032	41,400 PSI	25.4	3310	53,400 PSI
IMR 3031	22.0	2959	40,700 PSI	24.5C	3260	53,300 PSI
Benchmark	24.0	3102	39,900 CUP	26.0	3308	49,800 CUP
H322	21.5	2912	39,200 CUP	23.5	3183	48,900 CUP
IMR 4198	19.0	2972	43,800 PSI	21.4	3268	48,200 PSI
H4198	19.5	2986	34,200 CUP	21.5	3188	46,700 CUP
Bullet: 55 GR. BAR TSX FB			**Dia: .224″**		**Col: 2.180″**	
CFE 223	24.7	3065	44,600 PSI	27.4	3317	54,000 PSI
Varget	22.8	2996	47,600 PSI	24.0C	3134	53,300 PSI
IMR 4320	22.1	2805	41,900 PSI	24.6	3078	52,100 PSI

NEVER EXCEED MAXIMUM LOADS

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
IMR 4064	21.2	2871	43,900 PSI	23.5C	3116	52,500 PSI
IMR 4166	22.9	2845	45,600 PSI	25.5C	3096	53,800 PSI
748	22.5	2862	39,200 PSI	25.0	3104	48,500 PSI
BL-C(2)	23.4	2888	41,900 PSI	26.0	3135	50,300 PSI
IMR 4895	21.5	2837	43,000 PSI	23.9C	3107	52,300 PSI
H335	21.3	2920	48,900 PSI	22.7	3063	53,000 PSI
H4895	21.0	2910	43,700 PSI	22.6	3110	51,500 PSI
IMR 8208 XBR	21.5	2949	47,600 PSI	23.0	3105	52,900 PSI
IMR 3031	20.0	2878	46,800 PSI	21.3	3024	52,200 PSI
Benchmark	20.0	2885	47,600 PSI	22.2	3066	52,200 PSI
H322	21.0	2953	48,600 PSI	22.4	3083	51,300 PSI
Bullet: 55 GR. HDY FMJ				**Dia: .224″**		**Col: 2.200″**
Trail Boss				4.0	1074	
Titegroup				3.1	1064	4,000 CUP
Clays				3.2	1060	3,700 CUP
Bullet: 55 GR. SFIRE				**Dia: .224″**		**Col: 2.220″**
Varget	23.5	2990	45,200 PSI	25.1C	3149	51,700 PSI
IMR 4320	23.0	2796	39,300 PSI	25.5	3100	51,100 PSI
IMR 4064	21.0	2711	37,100 PSI	23.0C	2945	44,800 PSI
BL-C(2)	24.0	2937	40,800 PSI	27.0	3220	51,500 PSI
IMR 4895	22.0	2827	40,500 PSI	24.6C	3106	50,700 PSI
H335	21.4	2969	47,000 PSI	22.8	3099	51,800 PSI
H4895	22.0	2941	40,600 PSI	24.6C	3226	53,500 PSI
Benchmark	21.0	2903	42,600 PSI	23.4	3128	51,000 PSI
H322	21.0	2894	42,800 PSI	23.1	3113	51,700 PSI
H4198	18.0	2852	42,700 PSI	20.4	3084	51,400 PSI
Bullet: 55 GR. SPR SP				**Dia: .224″**		**Col: 2.200″**
CFE 223	26.0	3133	43,300 PSI	27.8	3329	51,300 PSI
Varget	25.5	3174	41,300 CUP	27.5C	3384	49,700 CUP
IMR 4320	23.5	2874	41,300 PSI	26.1C	3146	50,700 PSI
IMR 4064	23.0	2867	40,300 PSI	25.7C	3201	52,600 PSI
IMR 4166	24.2	2975	44,900 PSI	26.2C	3195	53,200 PSI
748				26.3	3150	39,000 CUP
BL-C(2)	25.5	3069	37,200 CUP	27.5	3313	48,500 CUP
IMR 4895	23.0	2843	39,500 PSI	26.2C	3219	53,200 PSI
H335	23.0	3018	40,800 CUP	25.3	3203	49,300 CUP
H4895	25.0	3176	39,700 CUP	26.0	3315	49,000 CUP
IMR 8208 XBR	23.0	3024	42,100 PSI	25.3	3268	53,100 PSI
IMR 3031	21.6	2907	41,100 PSI	24.6C	3233	52,500 PSI
Benchmark	24.0	3113	42,600 CUP	25.6	3264	50,000 CUP
H322	21.0	2841	38,600 CUP	23.0	3106	48,900 CUP
IMR 4198	18.8	2885	41,600 PSI	20.4	3122	53,600 PSI
H4198	19.0	2841	34,800 CUP	21.0	3150	47,600 CUP
Bullet: 60 GR. HDY V-MAX				**Dia: .224″**		**Col: 2.250″**
CFE 223	25.0	3007	46,000 PSI	26.7	3176	53,400 PSI
Varget	25.0	2924	40,400 CUP	27.0C	3159	51,900 CUP
IMR 4320	23.7	2860	45,400 PSI	25.3C	3006	52,100 PSI
IMR 4064	23.0	2837	42,500 PSI	24.7C	3055	52,600 PSI
IMR 4166	22.0	2777	45,800 PSI	24.2C	2985	53,100 PSI
BL-C(2)	25.0	2948	44,900 CUP	27.0	3137	51,900 CUP
IMR 4895	23.7	2884	45,000 PSI	25.2C	3052	52,700 PSI
H335	22.5	2910	43,700 CUP	24.0	3075	50,600 CUP
H4895	24.0	2918	37,600 CUP	26.0C	3174	50,100 CUP
IMR 8208 XBR	21.5	2857	43,500 PSI	23.6	3057	51,700 PSI
IMR 3031	21.0	2815	42,500 PSI	22.5	3008	51,700 PSI
Benchmark	23.0	2913	42,500 CUP	24.6	3086	49,900 CUP
H322	22.0	2873	40,300 CUP	23.5	3063	49,800 CUP
IMR 4198	18.3	2795	42,500 PSI	19.5	2945	52,000 PSI
H4198	18.0	2747	42,500 CUP	20.0	2953	47,600 CUP
Bullet: 62 GR. BAR TAC-XBT Col: 2.250″					**Dia: .224″**	
CFE 223	25.3	3059	47,900 PSI	27.0	3200	53,200 PSI
Bullet: 62 GR. SFT SCIR				**Dia: .224″**		**Col: 2.260″**
CFE 223	23.8	2884	44,100 PSI	25.9	3110	53,700 PSI
Varget	22.1	2773	44,700 PSI	24.1	2974	52,600 PSI
IMR 4320	22.7	2729	45,200 PSI	24.4	2920	52,700 PSI
IMR 4064	21.9	2671	42,200 PSI	23.6	2928	53,200 PSI
IMR 4166	21.4	2626	44,000 PSI	23.8C	2890	53,000 PSI
748	22.3	2779	44,600 PSI	24.0	2967	52,400 PSI
BL-C(2)	22.5	2772	45,100 PSI	24.2	2949	52,500 PSI
IMR 4895	22.4	2782	46,900 PSI	24.1	2956	53,400 PSI
H335	19.3	2678	47,500 PSI	21.4	2887	53,600 PSI
H4895	21.0	2740	42,300 PSI	23.0	3004	53,000 PSI
IMR 8208 XBR	21.4	2787	43,400 PSI	23.2	2999	53,000 PSI
IMR 3031	20.3	2700	43,500 PSI	22.0	2940	53,100 PSI
Benchmark	20.8	2755	45,400 PSI	22.7	2948	52,800 PSI
H322	19.5	2717	45,400 PSI	21.2	2904	52,300 PSI
Bullet: 63 GR. SIE SP				**Dia: .224″**		**Col: 2.200″**
CFE 223	25.0	2957	46,300 PSI	26.4	3113	53,500 PSI
Varget	24.5	3000	42,400 CUP	26.4C	3199	50,700 CUP
IMR 4320	23.0	2733	42,500 PSI	25.5	2975	52,900 PSI
IMR 4064	22.5	2765	44,400 PSI	24.8C	3028	52,600 PSI
IMR 4166	21.7	2693	43,800 PSI	23.7	2911	52,600 PSI
748				25.0	2970	47,500 CUP
BL-C(2)	24.0	2847	36,600 CUP	26.0	3054	46,300 CUP
IMR 4895	22.9	2758	42,700 PSI	25.3	3054	53,500 PSI
H335	22.5	2820	41,000 CUP	25.0	3051	50,000 CUP
H4895	23.5	2831	43,300 CUP	25.5	3078	50,000 CUP
IMR 8208 XBR	21.0	2783	43,000 PSI	23.1	2995	52,400 PSI
IMR 3031	21.0	2737	42,900 PSI	23.3	3018	53,000 PSI
Benchmark	22.0	2845	41,800 CUP	24.2	3066	50,500 CUP
H322	20.0	2672	38,100 CUP	22.0	2862	48,400 CUP
IMR 4198	18.5	2756	48,100 PSI	20.0	2946	53,500 PSI
H4198	18.0	2680	33,600 CUP	20.0	2846	44,600 CUP
Bullet: 69 GR. SIE HPBT				**Dia: .224″**		**Col: 2.235″**
CFE 223	23.5	2788	43,800 PSI	25.8	3029	54,600 PSI
Varget	24.0	2784	39,200 CUP	26.0C	3010	50,200 CUP
IMR 4320	23.0	2673	43,500 PSI	24.8	2873	53,100 PSI
IMR 4064	22.5	2690	42,200 PSI	24.0C	2872	50,900 PSI
IMR 4166	21.5	2603	43,000 PSI	24.0	2874	53,900 PSI
748				24.5	2870	51,500 CUP
BL-C(2)	24.5	2833	40,600 CUP	26.5	3029	50,100 CUP
IMR 4895	23.3	2783	44,600 PSI	24.8C	2953	53,600 PSI
H335	22.0	2801	42,400 CUP	24.0	2960	49,500 CUP
H4895	24.0	2870	41,100 CUP	26.0C	3069	49,700 CUP
IMR 8208 XBR	21.0	2696	42,200 PSI	23.8	2959	52,900 PSI
IMR 3031	21.0	2707	42,900 PSI	22.5	2906	52,800 PSI
Benchmark	21.5	2770	39,700 CUP	23.5	2970	49,700 CUP
H322	21.0	2746	40,500 CUP	23.0	2932	49,400 CUP
IMR 4198	18.3	2706	46,300 PSI	19.5	2818	52,300 PSI
Bullet: 70 GR. SPR SP				**Dia: .224″**		**Col: 2.140″**
CFE 223	23.0	2719	45,600 PSI	24.7	2900	53,800 PSI
Varget	23.5	2827	41,000 CUP	26.0C	3024	48,400 CUP
IMR 4320	20.3	2490	38,200 PSI	24.3	2799	52,900 PSI
IMR 4064	19.5	2485	42,000 PSI	23.5C	2831	53,300 PSI
IMR 4166	20.9	2503	42,700 PSI	23.3C	2767	52,900 PSI
BL-C(2)	24.5	2774	41,700 CUP	26.5	2954	50,800 CUP
IMR 4895	20.2	2562	45,700 PSI	24.5C	2917	52,300 PSI
H335	21.0	2520	34,500 CUP	23.5	2867	47,900 CUP
H4895	23.0	2782	40,400 CUP	25.0	2997	50,500 CUP
IMR 8208 XBR	20.0	2621	44,100 PSI	21.8	2797	52,800 PSI
IMR 3031	19.0	2582	47,200 PSI	21.2	2729	50,900 PSI
Benchmark	20.5	2665	45,200 CUP	22.8	2869	51,000 CUP
H322	19.0	2515	37,500 CUP	23.0	2962	51,200 CUP
Bullet: 75 GR. JLK VLD				**Dia: .224″**		**Col: 2.250″**
CFE 223	23.0	2680	45,200 PSI	25.0	2876	54,400 PSI
Varget	22.5	2693	40,600 CUP	25.0C	2907	48,400 CUP
IMR 4320	22.5	2554	39,700 PSI	24.2C	2766	53,200 PSI
IMR 4064	21.0	2531	37,500 PSI	24.0C	2827	53,400 PSI

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
IMR 4166	20.8	2530	45,100 PSI	23.0	2733	53,000 PSI
BL-C(2)	23.0	2646	39,800 CUP	26.0	2858	49,500 CUP
IMR 4895	21.2	2506	41,200 PSI	23.8C	2786	51,800 PSI
H335	21.0	2624	41,300 CUP	23.0	2814	50,000 CUP
H4895	22.5	2696	39,900 CUP	24.5	2905	50,000 CUP
IMR 8208 XBR	20.0	2538	40,800 PSI	22.7	2804	53,900 PSI
IMR 3031	20.0	2543	40,000 PSI	21.8C	2740	53,500 PSI
Benchmark	21.5	2610	41,900 CUP	23.5	2829	49,400 CUP
H322	20.0	2594	40,700 CUP	22.0	2785	48,100 CUP
Bullet: 77 GR. SIE HPBT			**Dia: .224″**		**Col: 2.260″**	
StaBALL 6.5	24.9	2519	45,000 PSI	26.8C	2733	53,800 PSI
CFE 223	22.5	2627	45,400 PSI	24.3	2811	53,500 PSI
Varget	21.0	2528	42,700 CUP	23.7C	2737	50,700 CUP
IMR 4320	20.5	2347	42,000 PSI	23.1C	2654	50,300 PSI
IMR 4064	20.0	2397	42,200 PSI	22.7C	2698	53,000 PSI
IMR 4166	19.9	2452	45,200 PSI	22.0	2663	53,600 PSI
BL-C(2)	23.0	2640	42,500 CUP	24.9	2804	50,700 CUP
IMR 4895	20.0	2379	41,800 PSI	23.0C	2708	53,100 PSI
H335	21.0	2582	44,400 CUP	22.6	2738	51,700 CUP
H4895	20.0	2474	40,300 CUP	22.6C	2727	50,200 CUP
IMR 8208 XBR	20.5	2535	41,800 PSI	23.2	2792	55,000 PSI
IMR 3031	18.5	2365	42,200 PSI	21.3C	2692	53,700 PSI
Benchmark	20.5	2523	37,400 CUP	22.8	2763	50,000 CUP
H322	20.0	2578	44,900 CUP	21.8	2721	50,900 CUP
Bullet: 80 GR. SIE MK			**Dia: .224″**		**Col: 2.380″**	
StaBALL 6.5	23.9	2424	40,800 PSI	26.6	2702	53,200 PSI
CFE 223	23.0	2638	46,700 PSI	24.4	2785	53,600 PSI
Varget	22.0	2547	40,300 CUP	25.0C	2869	51,500 CUP
IMR 4320	21.5	2484	42,600 PSI	23.1	2647	51,700 PSI
IMR 4064	20.0	2415	39,500 PSI	22.7C	2673	51,900 PSI
IMR 4166	20.3	2446	43,400 PSI	22.6C	2704	54,500 PSI
BL-C(2)	23.0	2576	39,700 CUP	25.5	2768	49,400 CUP
IMR 4895	20.0	2346	41,300 PSI	23.0C	2708	53,900 PSI
H335	20.0	2453	39,700 CUP	22.5	2744	50,000 CUP
H4895	21.5	2578	40,100 CUP	24.0	2825	50,000 CUP
IMR 8208 XBR	19.0	2456	44,400 PSI	21.0	2628	52,900 PSI
IMR 3031	18.5	2336	42,600 PSI	21.0	2632	51,500 PSI
Benchmark	20.5	2525	43,900 CUP	22.5	2700	49,600 CUP
H322	20.0	2546	40,700 CUP	22.0	2744	49,000 CUP
Bullet: 82 GR. BER BT TARG					**Dia: .224″**	
Col: 2.375″						
StaBALL 6.5	24.3	2450	43,300 PSI	26.3	2675	53,900 PSI
H414	23.2	2478	44,700 PSI	25.0	2667	53,700 PSI
760	23.2	2478	44,700 PSI	25.0	2667	53,700 PSI
CFE 223	21.7	2518	44,000 PSI	23.5	2724	53,300 PSI
Varget	20.0	2417	44,000 PSI	21.5	2590	52,800 PSI
IMR 4320	20.5	2398	45,000 PSI	22.2	2582	53,300 PSI
IMR 4166	20.3	2461	46,200 PSI	22.5C	2648	53,400 PSI
BL-C(2)	21.1	2429	43,300 PSI	22.9	2617	52,200 PSI
IMR 4895	20.0	2380	43,100 PSI	21.7	2590	52,700 PSI
H4895	18.9	2448	46,500 PSI	20.4	2585	52,700 PSI
IMR 8208 XBR	18.4	2392	44,440 PSI	19.9	2554	52,100 PSI
Bullet: 90 GR. SIE HPBT			**Dia: .224″**		**Col: 2.380″**	
StaBALL 6.5	23.6	2374	44,200 PSI	25.7C	2561	53,400 PSI
H414	22.5	2332	41,700 PSI	24.0	2482	52,100 PSI
760	22.5	2332	41,700 PSI	24.0	2482	52,100 PSI
CFE 223	21.0	2391	45,900 PSI	22.8	2554	53,500 PSI
Varget	21.0	2332	46,700 PSI	22.3C	2447	52,100 PSI
IMR 4320	21.0	2338	47,800 PSI	22.5C	2476	53,800 PSI
IMR 4166	19.3	2272	42,600 PSI	21.4C	2510	53,800 PSI
BL-C(2)	21.0	2291	41,400 PSI	22.5	2491	52,300 PSI
IMR 4895	21.0	2356	46,200 PSI	22.5C	2527	53,000 PSI
H4895	20.0	2352	47,500 PSI	21.5	2481	53,500 PSI
IMR 8208 XBR	18.0	2270	45,600 PSI	19.6	2419	52,800 PSI

224 VALKYRIE

Case: Federal Twist: 1:7″
Barrel: 24″ Trim: 1.590″ Primer: Fed 205M, Small Rifle Primer

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Bullet: 50 GR. SIE BK			**Dia: .224″**		**Col: 2.110″**	
CFE 223	28.8	3285	40,800 PSI	31.1C	3533	49,900 PSI
Varget	26.2	3092	38,300 PSI	28.2C	3359	48,800 PSI
IMR 4166	25.7	3054	40,300 PSI	27.8C	3305	49,800 PSI
BL-C(2)	28.0	3152	39,000 PSI	30.3	3419	50,000 PSI
IMR 4895	25.5	3074	38,400 PSI	27.7C	3379	51,200 PSI
H335	25.9	3213	41,900 PSI	28.2	3480	53,400 PSI
H4895	25.2	3190	39,500 PSI	27.3C	3489	51,700 PSI
IMR 8208 XBR	25.7	3165	38,000 PSI	27.9	3511	53,000 PSI
Benchmark	25.2	3223	40,700 PSI	27.1	3500	52,900 PSI
Bullet: 55 GR. NOS BT			**Dia: .224″**		**Col: 2.180″**	
CFE 223	28.1	3169	40,600 PSI	30.5C	3459	53,800 PSI
Varget	25.7	3069	41,500 PSI	28.0C	3324	52,500 PSI
IMR 4166	25.5	3021	42,500 PSI	27.8C	3268	52,700 PSI
BL-C(2)	27.4	3069	40,700 PSI	29.8	3327	53,400 PSI
IMR 4895	25.4	3048	41,900 PSI	27.7C	3324	53,600 PSI
H335	25.0	3059	44,400 PSI	27.2	3287	53,800 PSI
H4895	24.9	3129	42,300 PSI	27.1C	3374	53,700 PSI
IMR 8208 XBR	25.1	3116	41,700 PSI	27.3	3363	53,100 PSI
Benchmark	24.1	3084	42,800 PSI	26.2	3295	53,600 PSI
Bullet: 62 GR. SFT SCIR			**Dia: .224″**		**Col: 2.180″**	
H414	26.8	2836	40,400 PSI	29.6C	3117	52,500 PSI
CFE 223	26.0	2951	39,800 PSI	29.2	3285	53,500 PSI
Varget	24.1	2886	43,400 PSI	26.2	3108	53,800 PSI
IMR 4064	23.9	2845	43,500 PSI	26.0C	3083	53,300 PSI
IMR 4166	24.6	2884	45,400 PSI	26.7C	3093	53,400 PSI
BL-C(2)	26.0	2926	43,100 PSI	28.3	3166	53,700 PSI
IMR 4895	23.5	2820	41,300 PSI	25.4	3086	53,800 PSI
H335	22.5	2810	44,900 PSI	24.4	3014	53,700 PSI
H4895	22.8	2875	42,500 PSI	24.8	3100	53,100 PSI
IMR 8208 XBR	22.7	2873	42,100 PSI	24.7	3102	53,500 PSI
Benchmark	22.5	2897	44,600 PSI	24.5	3098	53,700 PSI
Bullet: 69 GR. SIE TMK			**Dia: .224″**		**Col: 2.215″**	
Suprform	28.0	2719	41,100 PSI	31.2C	3024	53,900 PSI
H4350	27.8C	2800	43,000 PSI	29.3C	2935	49,400 PSI
IMR 4451	26.7C	2687	40,300 PSI	28.0C	2807	45,300 PSI
H414	26.7	2790	40,700 PSI	29.5C	3059	52,800 PSI
CFE 223	26.3	2891	40,400 PSI	28.8	3177	54,000 PSI
Varget	23.7	2802	41,400 PSI	25.8	3033	53,100 PSI
IMR 4064	23.6	2771	41,400 PSI	25.7	3021	53,300 PSI
IMR 4166	24.0	2810	43,500 PSI	26.1	3016	53,300 PSI
BL-C(2)	26.0	2837	42,300 PSI	28.3	3077	53,600 PSI
IMR 4895	23.5	2791	41,600 PSI	25.4	3017	53,100 PSI
H335	22.9	2799	44,300 PSI	25.0	2996	53,600 PSI
H4895	22.7	2806	42,000 PSI	24.6	3026	53,600 PSI
IMR 8208 XBR	23.1	2824	42,600 PSI	25.1	3031	53,400 PSI
Benchmark	22.5	2830	43,100 PSI	24.5	3029	53,500 PSI
Bullet: 75 GR. HDY ELD-M			**Dia: .224″**		**Col: 2.260″**	
Suprform	27.2	2589	42,500 PSI	29.6C	2828	53,500 PSI
StaBALL 6.5	26.2	2596	39,400 PSI	28.8C	2875	53,100 PSI
H4350	26.8	2656	40,800 PSI	28.5C	2805	47,800 PSI
IMR 4451	26.3	2582	40,700 PSI	27.5C	2720	47,200 PSI
H414	26.4	2717	42,300 PSI	28.7C	2944	53,600 PSI
LVR	23.9	2667	41,400 PSI	26.0C	2899	52,400 PSI
CFE 223	25.4	2760	40,800 PSI	27.6C	3013	53,200 PSI
Varget	23.7	2696	43,200 PSI	25.5C	2853	53,200 PSI
IMR 4166	23.2	2662	44,200 PSI	25.5C	2880	53,600 PSI
BL-C(2)	24.6	2659	40,300 PSI	27.0	2916	53,300 PSI
IMR 4895	23.0	2631	42,000 PSI	25.1	2878	53,600 PSI
H335	22.4	2611	43,000 PSI	24.6	2828	53,300 PSI
H4895	22.5	2698	42,400 PSI	24.5C	2902	53,100 PSI

NEVER EXCEED MAXIMUM LOADS

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
IMR 8208 XBR	22.5	2695	43,600 PSI	24.5	2880	53,700 PSI
Benchmark	21.6	2648	43,200 PSI	23.5	2828	52,900 PSI
Bullet: 80 GR. SIE HPBT			**Dia: .224″**		**Col: 2.260″**	
Suprform	26.9	2549	41,500 PSI	29.3C	2811	53,900 PSI
StaBALL 6.5	26.0	2569	40,100 PSI	28.6C	2838	52,800 PSI
H4350	25.8	2534	41,900 PSI	28.4C	2766	52,400 PSI
IMR 4451	25.3	2476	42,800 PSI	27.5C	2713	53,900 PSI
H414	24.8	2537	40,500 PSI	27.4	2800	53,000 PSI
LVR	23.5	2595	44,100 PSI	25.8	2807	53,700 PSI
CFE 223	24.3	2607	42,100 PSI	26.7	2851	53,600 PSI
Varget	22.2	2511	41,600 PSI	24.4	2744	53,500 PSI
IMR 4166	21.8	2492	44,100 PSI	24.0	2709	53,900 PSI
BL-C(2)	23.7	2538	42,200 PSI	26.1	2774	52,900 PSI
IMR 4895	21.9	2467	40,800 PSI	24.1	2725	53,400 PSI
IMR 8208 XBR	22.1	2571	45,200 PSI	23.8	2735	53,600 PSI
Bullet: 90 GR. FED FUS			**Dia: .224″**		**Col: 2.260″**	
Suprform	26.1	2442	43,000 PSI	28.4C	2654	53,100 PSI
StaBALL 6.5	25.0	2426	40,700 PSI	27.5	2676	53,600 PSI
H4350	24.4	2376	42,600 PSI	26.9C	2591	53,400 PSI
IMR 4451	24.1	2304	43,500 PSI	26.5C	2540	53,600 PSI
H414	24.1	2406	42,800 PSI	26.5	2638	53,800 PSI
IMR 4350	24.8	2396	43,300 PSI	27.2C	2620	53,200 PSI
LVR	22.2	2415	44,300 PSI	24.5	2599	53,400 PSI
CFE 223	22.9	2431	43,400 PSI	25.0	2617	52,700 PSI
Varget	21.6	2404	45,300 PSI	23.6	2573	53,600 PSI
IMR 4166	20.8	2327	44,200 PSI	22.9	2532	53,100 PSI
BL-C(2)	21.9	2380	48,900 PSI	24.1	2525	53,600 PSI
IMR 4895	20.9	2341	43,300 PSI	23.0	2534	53,000 PSI
IMR 8208 XBR	20.3	2330	42,600 PSI	22.2	2525	53,200 PSI

22 NOSLER

Case: Nosler Twist: 1:8″
Barrel: 24″ Trim: 1.750″ Primer: Win SR

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Bullet: 35 GR. NOS BT LF			**Dia: .224″**		**Col: 2.260″**	
IMR 4895	30.7	3619	39,800 PSI	33.2C	3938	50,000 PSI
H335	30.5	3839	47,400 PSI	33.1	4047	52,900 PSI
H4895	30.3	3735	39,100 PSI	32.5C	4043	49,000 PSI
IMR 8208 XBR	31.2	3788	40,400 PSI	33.6	4147	53,400 PSI
IMR 3031	29.2	3676	41,700 PSI	31.8C	3983	52,200 PSI
Benchmark	30.2	3786	41,700 PSI	32.9	4100	53,400 PSI
H322	29.0	3745	41,900 PSI	31.4	4065	53,400 PSI
IMR 4198	25.7	3742	41,600 PSI	27.7	4053	52,400 PSI
H4198	26.2	3888	44,600 PSI	28.0	4119	53,000 PSI
Bullet: 36 GR. BAR VG FB			**Dia: .224″**		**Col: 2.260″**	
Varget	30.2	3643	42,300 PSI	32.7	3951	52,600 PSI
IMR 4895	29.7	3606	43,400 PSI	32.1	3900	52,700 PSI
H335	28.8	3700	45,900 PSI	31.4	3949	53,100 PSI
H4895	28.7	3705	43,000 PSI	31.3	4006	53,100 PSI
IMR 8208 XBR	29.7	3850	46,200 PSI	32.2	4040	53,100 PSI
IMR 3031	28.0	3627	44,200 PSI	30.5	3903	52,200 PSI
Benchmark	28.8	3741	43,700 PSI	31.3	4001	52,700 PSI
H322	27.2	3704	44,000 PSI	29.5	3967	53,400 PSI
IMR 4198	24.4	3657	42,800 PSI	26.7	3964	53,000 PSI
H4198	24.4	3704	42,700 PSI	26.3	3975	53,400 PSI
Bullet: 40 GR. NOS BT			**Dia: .224″**		**Col: 2.260″**	
Varget	30.8	3566	39,300 PSI	33.5C	3915	52,100 PSI
IMR 4895	30.7	3566	41,000 PSI	33.4C	3915	53,000 PSI
H335	29.9	3600	41,700 PSI	32.5	3908	52,200 PSI
H4895	29.9	3626	39,500 PSI	32.5C	3976	52,200 PSI
IMR 8208 XBR	30.5	3673	40,200 PSI	33.1	4027	53,400 PSI
IMR 3031	28.7	3502	40,000 PSI	31.2	3855	52,000 PSI
Benchmark	29.8	3611	40,200 PSI	32.4	3980	53,000 PSI
H322	28.3	3638	42,100 PSI	30.7	3927	53,500 PSI

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Bullet: 50 GR. SPR SP			**Dia: .224″**		**Col: 2.230″**	
CFE 223	31.7	3442	41,400 PSI	34.5	3731	52,700 PSI
Varget	29.6	3315	40,700 PSI	32.2	3618	53,200 PSI
IMR 4064	29.5	3265	40,200 PSI	32.2C	3605	52,700 PSI
IMR 4166	29.4	3303	43,100 PSI	32.0C	3567	53,400 PSI
BL-C(2)	31.3	3343	41,500 PSI	34.0	3617	52,400 PSI
IMR 4895	29.1	3269	40,900 PSI	31.6	3587	52,900 PSI
H335	28.2	3343	45,700 PSI	30.5	3521	51,800 PSI
H4895	28.3	3366	41,700 PSI	30.8	3652	53,000 PSI
IMR 8208 XBR	28.7	3416	43,500 PSI	31.2	3664	53,200 PSI
IMR 3031	27.5	3278	42,200 PSI	29.8	3563	52,700 PSI
Benchmark	28.4	3427	44,200 PSI	30.7	3657	53,400 PSI
H322	27.1	3379	45,400 PSI	29.0	3560	52,600 PSI
Bullet: 52 GR. HDY A-MAX			**Dia: .224″**		**Col: 2.260″**	
CFE 223	31.0	3353	40,700 PSI	33.8	3656	52,000 PSI
Varget	28.7	3262	42,000 PSI	31.2	3534	52,800 PSI
IMR 4064	28.8	3211	41,200 PSI	31.3	3506	52,300 PSI
IMR 4166	28.5	3221	43,600 PSI	31.0	3479	53,000 PSI
BL-C(2)	30.8	3277	42,200 PSI	33.5	3545	52,000 PSI
IMR 4895	28.5	3225	42,000 PSI	30.9	3524	52,600 PSI
H335	27.6	3268	45,100 PSI	30.0	3501	53,000 PSI
H4895	27.5	3301	42,400 PSI	29.9	3561	53,500 PSI
IMR 8208 XBR	27.9	3345	44,000 PSI	30.3	3579	53,100 PSI
Benchmark	27.4	3319	43,600 PSI	29.8	3545	52,600 PSI
Bullet: 55 GR. NOS BT			**Dia: .224″**		**Col: 2.260″**	
StaBALL 6.5	33.9	3148	40,800 PSI	36.7C	3456	52,800 PSI
CFE 223	30.8	3274	41,000 PSI	33.5	3563	52,200 PSI
Varget	28.7	3182	42,200 PSI	31.0	3451	53,400 PSI
IMR 4064	28.5	3138	41,600 PSI	30.9	3433	53,000 PSI
IMR 4166	28.2	3143	43,700 PSI	31.0	3413	53,400 PSI
BL-C(2)	30.3	3170	41,000 PSI	33.0	3457	51,800 PSI
IMR 4895	28.2	3123	41,600 PSI	30.5	3417	53,000 PSI
H335	27.5	3178	46,500 PSI	29.5	3370	53,000 PSI
H4895	27.3	3184	41,600 PSI	29.5	3446	52,400 PSI
IMR 8208 XBR	27.3	3227	43,400 PSI	29.7	3473	53,400 PSI
Benchmark	26.9	3213	43,100 PSI	29.3	3464	53,500 PSI
Bullet: 60 GR. NOS PART			**Dia: .224″**		**Col: 2.260″**	
StaBALL 6.5	33.3	3053	40,600 PSI	36.0C	3368	53,500 PSI
H4350	30.4	3063	44,700 PSI	33.5C	3289	52,900 PSI
IMR 4451	29.4	2941	41,600 PSI	32.7C	3255	53,100 PSI
H414	30.0	3038	42,300 PSI	33.4	3308	52,000 PSI
IMR 4350	29.7	2915	40,100 PSI	33.0C	3251	52,100 PSI
CFE 223	28.5	3155	45,200 PSI	31.5	3367	52,700 PSI
Varget	26.9	3054	43,900 PSI	29.5	3282	52,500 PSI
IMR 4064	26.9	3018	43,300 PSI	29.3	3266	52,100 PSI
IMR 4166	26.8	2998	43,700 PSI	29.2	3250	52,800 PSI
BL-C(2)	27.6	3086	47,700 PSI	30.1	3243	52,000 PSI
IMR 4895	26.7	3031	43,800 PSI	29.0	3284	52,800 PSI
H335	24.0	2857	47,900 PSI	26.1	3129	52,900 PSI
H4895	25.1	3021	42,200 PSI	27.3	3264	53,000 PSI
IMR 8208 XBR	25.3	2993	41,200 PSI	27.5	3262	53,600 PSI
Benchmark	24.8	3006	42,300 PSI	26.9	3241	52,700 PSI
Bullet: 62 GR. SFT SC II			**Dia: .224″**		**Col: 2.260″**	
StaBALL 6.5	32.3	2998	41,000 PSI	34.8C	3321	53,700 PSI
H4350	30.0	2922	40,500 PSI	33.8C	3198	50,100 PSI
IMR 4451	29.6	2854	41,100 PSI	32.8C	3183	52,400 PSI
H414	30.0	2944	40,900 PSI	33.4	3260	51,900 PSI
IMR 4350	30.2	2836	39,400 PSI	33.0C	3148	49,500 PSI
CFE 223	28.2	3019	42,200 PSI	31.3	3313	53,000 PSI
Varget	26.6	2962	42,900 PSI	29.2	3225	53,600 PSI
IMR 4064	26.6	2902	41,700 PSI	29.2	3208	52,700 PSI
IMR 4166	26.5	2907	43,800 PSI	29.0	3189	53,300 PSI
BL-C(2)	28.3	2983	43,600 PSI	31.0	3230	51,600 PSI
IMR 4895	26.3	2918	42,300 PSI	28.8	3212	52,700 PSI
H4895	25.6	2995	43,800 PSI	27.9	3230	53,200 PSI

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
IMR 8208 XBR	25.3	2970	43,300 PSI	27.7	3217	53,000 PSI
Bullet: 70 GR. HDY GMX Dia: .224″ Col: 2.260″						
StaBALL 6.5	31.5	2916	42,200 PSI	34.0	3176	53,500 PSI
H4350	28.8	2787	41,800 PSI	32.5C	3098	53,300 PSI
IMR 4451	28.4	2735	42,100 PSI	31.5C	3046	53,500 PSI
H414	29.2	2828	42,000 PSI	32.3	3101	52,100 PSI
IMR 4350	29.2	2770	41,300 PSI	32.1C	3037	50,800 PSI
CFE 223	26.8	2855	43,900 PSI	29.8	3104	52,600 PSI
Varget	24.8	2755	42,700 PSI	27.6	3014	53,100 PSI
IMR 4064	25.3	2754	42,800 PSI	28.2	3028	52,600 PSI
IMR 4166	24.7	2701	42,400 PSI	27.6	3002	53,300 PSI
BL-C(2)	26.8	2808	44,200 PSI	29.5	3042	52,300 PSI
IMR 4895	24.9	2733	41,300 PSI	27.5	3021	52,700 PSI
H4895	23.8	2757	42,500 PSI	26.4	2996	52,500 PSI
IMR 8208 XBR	24.3	2790	43,800 PSI	26.9	3029	53,500 PSI
Bullet: 75 GR. HDY BTHP Dia: .224″ Col: 2.260″						
StaBALL 6.5	31.8	2885	43,300 PSI	33.8	3104	52,800 PSI
H4350	28.9	2751	41,500 PSI	32.7C	3049	53,700 PSI
IMR 4451	28.5	2701	41,800 PSI	31.8C	3004	53,500 PSI
H414	29.0	2791	41,600 PSI	32.1	3049	52,000 PSI
IMR 4350	29.2	2725	41,200 PSI	32.1C	2976	50,800 PSI
CFE 223	26.3	2761	42,500 PSI	29.5	3032	52,900 PSI
Varget	24.9	2710	40,900 PSI	27.9	2976	53,000 PSI
IMR 4064	25.3	2725	41,700 PSI	28.3	2996	52,600 PSI
IMR 4166	24.8	2719	43,000 PSI	27.9	2987	53,500 PSI
BL-C(2)	27.1	2770	44,600 PSI	29.8	2992	52,700 PSI
IMR 4895	25.2	2725	41,200 PSI	27.9	3002	52,800 PSI
H4895	24.0	2734	42,600 PSI	26.7	2968	53,200 PSI
IMR 8208 XBR	24.1	2721	41,700 PSI	27.0	2969	53,200 PSI
Bullet: 77 GR. NOS HPBT Dia: .224″ Col: 2.260″						
StaBALL 6.5	31.4	2837	43,500 PSI	33.4	3048	53,400 PSI
H4350	28.5	2704	40,900 PSI	32.3C	3014	53,600 PSI
IMR 4451	28.0	2662	41,700 PSI	31.1C	2945	53,300 PSI
H414	28.6	2763	41,700 PSI	31.7	3021	52,500 PSI
IMR 4350	29.0	2709	42,000 PSI	31.9	2969	51,900 PSI
CFE 223	25.9	2737	43,200 PSI	29.1	2979	52,100 PSI
Varget	24.2	2647	40,900 PSI	27.5	2940	53,400 PSI
IMR 4064	24.4	2643	40,300 PSI	27.8	2942	52,600 PSI
IMR 4166	24.3	2640	41,100 PSI	27.4	2930	53,500 PSI
BL-C(2)	26.3	2694	43,200 PSI	29.2	2925	52,400 PSI
IMR 4895	24.8	2679	41,600 PSI	27.4	2922	52,400 PSI
H4895	23.6	2667	41,000 PSI	26.5	2934	52,900 PSI
IMR 8208 XBR	23.8	2691	42,700 PSI	26.5	2914	53,200 PSI
Bullet: 80 GR. SIE HPBT Dia: .224″ Col: 2.460″						
StaBALL 6.5	30.9	2825	43,400 PSI	33.6	3058	53,900 PSI
H4350	27.1	2640	40,700 PSI	30.7	2940	53,400 PSI
IMR 4451	27.0	2601	41,400 PSI	30.4	2910	53,600 PSI
H414	27.5	2686	42,200 PSI	30.8	2940	52,300 PSI
IMR 4350	27.7	2668	43,300 PSI	30.8	2918	52,800 PSI
CFE 223	24.5	2651	45,100 PSI	27.4	2860	52,900 PSI
Varget	23.6	2615	42,600 PSI	26.5	2854	53,300 PSI
IMR 4064	23.9	2620	42,300 PSI	26.8	2872	52,900 PSI
IMR 4166	23.7	2604	42,900 PSI	26.7	2866	53,600 PSI
BL-C(2)	24.5	2619	46,000 PSI	27.4	2820	52,900 PSI
IMR 4895	23.7	2625	42,400 PSI	26.5	2871	52,900 PSI
H4895	22.6	2600	42,400 PSI	25.2	2826	53,200 PSI
IMR 8208 XBR	23.0	2621	42,400 PSI	25.6	2837	53,100 PSI
Bullet: 82 GR. BER BT TARG Dia: .224″ Col: 2.460″						
StaBALL 6.5	30.5	2819	44,500 PSI	33.1	3022	53,000 PSI
H4350	26.5	2586	40,300 PSI	30.0	2873	53,300 PSI
IMR 4451	26.3	2557	41,600 PSI	29.6	2850	53,500 PSI
H414	26.9	2645	42,300 PSI	30.2	2906	53,100 PSI
IMR 4350	27.0	2593	41,500 PSI	30.3	2876	53,100 PSI
CFE 223	23.3	2558	44,400 PSI	26.4	2776	52,000 PSI
Varget	23.1	2569	43,200 PSI	25.8	2789	53,500 PSI
IMR 4064	23.3	2571	42,600 PSI	26.2	2815	53,000 PSI
IMR 4166	23.2	2567	43,100 PSI	26.0	2810	53,100 PSI
BL-C(2)	23.8	2556	45,800 PSI	27.0	2773	52,500 PSI
IMR 4895	23.0	2560	42,300 PSI	25.8	2805	52,500 PSI
H4895	22.2	2573	44,000 PSI	24.8	2788	53,500 PSI
IMR 8208 XBR	22.5	2580	45,200 PSI	25.1	2785	53,400 PSI
Bullet: 90 GR. SIE HPBT Dia: .224″ Col: 2.460″						
StaBALL 6.5	29.3	2649	42,500 PSI	32.3	2889	53,500 PSI
H4350	25.8	2484	41,800 PSI	29.2	2742	53,600 PSI
IMR 4451	25.5	2434	42,100 PSI	28.8	2703	53,500 PSI
H414	25.5	2492	42,800 PSI	29.1	2751	52,900 PSI
IMR 4350	26.1	2477	42,100 PSI	29.4	2742	52,900 PSI
CFE 223	22.0	2380	43,900 PSI	25.0	2589	52,300 PSI
Varget	22.2	2402	42,500 PSI	25.0	2641	53,400 PSI
IMR 4064	22.6	2411	41,500 PSI	25.5	2659	52,200 PSI
IMR 4166	22.5	2432	43,100 PSI	25.4	2660	53,200 PSI
BL-C(2)	22.4	2362	44,300 PSI	25.7	2589	52,400 PSI
IMR 4895	22.5	2439	42,900 PSI	25.3	2663	52,400 PSI
H4895	21.3	2385	42,100 PSI	24.0	2619	53,000 PSI
IMR 8208 XBR	21.6	2402	43,500 PSI	24.3	2624	53,500 PSI

22-250 REMINGTON

Case: Winchester Twist: 1:14″
Barrel: 24″ Trim: 1.902″ Primer: Winchester LR, Large Rifle

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Bullet: 35 GR. NOS LF Dia: .224″ Col: 2.350″						
Varget	35.6	3929	42,900 PSI	39.5C	4421	61,000 PSI
IMR 4320	37.5	4084	50,600 PSI	39.9	4393	61,600 PSI
IMR 4064	34.7	3855	41,200 PSI	38.5C	4342	56,400 PSI
IMR 4166	35.8	3926	46,600 PSI	39.8C	4332	60,300 PSI
IMR 4895	36.8	4087	48,400 PSI	39.2	4396	59,900 PSI
H4895	34.1	4120	47,200 PSI	37.5C	4432	58,200 PSI
IMR 8208 XBR	35.1	4096	46,900 PSI	39.0	4469	60,700 PSI
IMR 3031	32.9	4016	44,300 PSI	35.0	4306	55,600 PSI
Benchmark	35.7	4170	48,700 PSI	38.0	4476	62,600 PSI
Bullet: 36 GR. BAR VG FB Dia: .224″ Col: 2.350″						
Varget	37.8	4061	50,800 PSI	40.2C	4277	59,800 PSI
IMR 4320	37.1	3995	49,800 PSI	39.5	4254	59,600 PSI
IMR 4064	35.7	3976	48,300 PSI	38.0C	4202	55,700 PSI
IMR 4895	37.1	4063	50,900 PSI	40.0C	4367	63,100 PSI
H4895	36.6	4130	50,700 PSI	39.0C	4376	61,400 PSI
IMR 8208 XBR	36.5	4137	50,700 PSI	38.8	4404	62,300 PSI
IMR 3031	33.7	3953	45,500 PSI	35.8	4333	61,500 PSI
Benchmark	35.6	4108	51,700 PSI	37.8	4335	61,100 PSI
Bullet: 40 GR. NOS BT Dia: .224″ Col: 2.350″						
StaBALL 6.5	41.0	3826	45,000 PSI	44.8C	4155	56,600 PSI
H414	38.0	3644	39,600 CUP	41.0	3933	47,100 CUP
760	38.0	3644	39,600 CUP	41.0	3933	47,100 CUP
H380	38.0	3647	34,500 CUP	41.0	3855	39,200 CUP
CFE 223	40.0	4036	47,600 PSI	43.0C	4328	58,300 PSI
Varget	37.5	3936	43,400 CUP	39.5	4135	51,100 CUP
IMR 4320	37.0	3945	52,400 PSI	39.5	4201	62,600 PSI
IMR 4064	36.0	3877	47,700 PSI	38.5C	4187	60,500 PSI
IMR 4166	35.5	3900	52,100 PSI	38.6C	4198	62,300 PSI
IMR 4895	36.0	3807	45,500 PSI	39.0C	4189	60,200 PSI
H4895	34.0	3750	43,800 CUP	37.0	4060	48,700 CUP
IMR 8208 XBR	35.0	3944	47,000 PSI	39.0	4336	63,500 PSI
IMR 3031	34.0	3941	50,200 PSI	36.3	4224	62,100 PSI
Benchmark	34.0	3837	41,600 CUP	36.5	4114	50,100 CUP
Bullet: 45 GR. BAR XBT Dia: .224″ Col: 2.340″						
H414	38.0	3537	40,200 CUP	41.0	3899	47,600 CUP
760	38.0	3537	40,200 CUP	41.0	3899	47,600 CUP
H380	38.0	3612	37,900 CUP	41.0	3839	43,500 CUP
Varget	35.0	3652	46,000 CUP	38.0	3921	49,200 CUP
IMR 4320	36.0	3780	53,100 PSI	38.2	3990	62,500 PSI

NEVER EXCEED MAXIMUM LOADS

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
IMR 4064	35.0	3708	48,700 PSI	38.0C	4042	63,000 PSI
BL-C(2)	32.0	3612	42,600 CUP	35.0	3928	49,100 CUP
IMR 4895	35.0	3666	47,400 PSI	38.0	4007	61,700 PSI
H335	31.5	3593	41,400 CUP	34.5	3908	48,500 CUP
H4895	34.0	3660	47,300 CUP	37.0	3918	49,100 CUP
IMR 3031	33.0	3704	47,600 PSI	35.2	4015	62,300 PSI
Benchmark	33.5	3786	45,300 CUP	36.0	3979	51,000 CUP
H322	31.0	3490	44,600 CUP	32.5	3720	48,500 CUP
Bullet: 50 GR. SIE SP			**Dia: .224″**		**Col: 2.350″**	
StaBALL 6.5	39.5	3690	49,100 PSI	43.0	4001	62,400 PSI
H4350	39.0	3410	43,600 CUP	42.0	3579	48,900 CUP
H414	37.0	3494	41,400 CUP	40.0	3765	48,600 CUP
760	37.0	3494	41,400 CUP	40.0	3765	48,600 CUP
H380	38.0	3562	41,700 CUP	41.0	3742	45,300 CUP
CFE 223	37.0	3702	51,100 PSI	39.8	3968	62,600 PSI
Varget	34.5	3596	43,600 CUP	37.5	3834	50,400 CUP
IMR 4320	35.0	3582	50,200 PSI	38.0	3864	62,800 PSI
IMR 4064	34.5	3560	47,900 PSI	37.0	3866	61,900 PSI
IMR 4166	33.8	3564	51,200 PSI	36.8C	3874	63,200 PSI
BL-C(2)	31.5	3506	43,600 CUP	34.5	3740	48,400 CUP
IMR 4895	35.0	3587	49,100 PSI	37.6	3862	61,500 PSI
H335	31.5	3519	44,400 CUP	34.5	3753	48,700 CUP
H4895	33.5	3530	43,800 CUP	36.5	3827	50,200 CUP
IMR 8208 XBR	33.0	3728	55,200 PSI	36.0	3925	62,900 PSI
IMR 3031	33.0	3601	49,500 PSI	35.0	3862	62,600 PSI
Benchmark	33.5	3718	45,900 CUP	36.0	3903	51,400 CUP
H322	30.0	3441	46,200 CUP	32.0	3628	50,300 CUP
Bullet: 52 GR. HDY A-MAX			**Dia: .224″**		**Col: 2.350″**	
StaBALL 6.5	39.0	3619	48,600 PSI	42.4	3939	62,200 PSI
H4350	39.0	3402	43,800 CUP	41.0	3557	49,400 CUP
H414	37.0	3461	42,000 CUP	40.0	3692	48,900 CUP
760	37.0	3461	42,000 CUP	40.0	3692	48,900 CUP
H380	38.0	3509	41,900 CUP	41.0	3717	46,600 CUP
CFE 223	36.0	3596	47,600 PSI	39.3	3932	63,100 PSI
Varget	34.0	3630	45,500 CUP	36.0	3784	50,000 CUP
IMR 4320	35.0	3550	52,000 PSI	37.5	3789	62,400 PSI
IMR 4064	34.5	3538	50,200 PSI	36.9C	3795	62,400 PSI
IMR 4166	33.3	3537	52,100 PSI	36.2	3805	62,400 PSI
BL-C(2)	31.0	3461	44,600 CUP	34.0	3702	49,700 CUP
IMR 4895	34.5	3509	48,200 PSI	37.0	3808	62,000 PSI
H335	31.0	3417	43,200 CUP	33.5	3657	49,200 CUP
H4895	32.5	3467	44,400 CUP	35.5	3729	49,600 CUP
IMR 8208 XBR	32.5	3612	52,200 PSI	35.5	3837	60,100 PSI
IMR 3031	32.0	3474	48,000 PSI	34.0	3768	62,500 PSI
Benchmark	32.5	3602	45,800 CUP	34.6	3755	49,800 CUP
H322	29.0	3379	45,500 CUP	31.0	3498	48,000 CUP
Bullet: 55 GR. SPR SP			**Dia: .224″**		**Col: 2.350″**	
StaBALL 6.5	39.0	3559	47,700 PSI	42.5	3887	62,700 PSI
Hybrid 100V	36.0	3254	43,500 PSI	39.0	3466	50,600 PSI
H4350	37.0	3296	46,400 CUP	39.0	3490	47,800 CUP
H414	36.0	3324	40,200 CUP	39.0	3582	46,700 CUP
760	36.0	3324	40,200 CUP	39.0	3582	46,700 CUP
H380	38.0	3507	45,400 CUP	41.0	3713	50,700 CUP
CFE 223	36.0	3557	49,300 PSI	39.2	3855	63,500 PSI
Varget	34.0	3490	46,100 CUP	36.5	3664	50,400 CUP
IMR 4320	34.0	3480	52,900 PSI	36.5	3689	62,200 PSI
IMR 4064	34.0	3461	50,000 PSI	36.3	3713	62,000 PSI
IMR 4166	33.3	3454	51,000 PSI	36.2	3751	63,400 PSI
BL-C(2)	31.0	3410	43,800 CUP	34.0	3606	49,600 CUP
IMR 4895	34.0	3486	50,900 PSI	36.5	3725	62,400 PSI
H335	30.5	3400	44,400 CUP	33.0	3589	51,100 CUP
H4895	32.5	3446	45,000 CUP	35.5	3670	49,300 CUP
IMR 8208 XBR	32.0	3514	52,300 PSI	35.8	3768	62,700 PSI
IMR 3031	32.0	3474	51,300 PSI	34.1	3691	62,500 PSI
Benchmark	31.6	3532	46,200 CUP	33.6	3674	50,200 CUP
H322	28.0	3339	46,200 CUP	30.0	3480	49,800 CUP
Trail Boss	9.1	1664	17,200 PSI	13.0	1984	26,600 PSI
Bullet: 60 GR. HDY V-MAX			**Dia: .224″**		**Col: 2.350″**	
Suprform	39.0	3390	45,500 PSI	43.0C	3738	60,000 PSI
StaBALL 6.5	37.3	3391	47,300 PSI	40.6	3715	62,400 PSI
Hybrid 100V	35.0	3168	44,900 PSI	38.0C	3366	50,900 PSI
H4350	39.0	3374	51,600 PSI	41.5C	3570	60,500 PSI
IMR 4451	35.5	3194	47,800 PSI	38.9C	3479	58,800 PSI
H414	37.0	3273	47,600 PSI	40.0	3548	60,300 PSI
760	37.0	3273	47,600 PSI	40.0	3548	60,300 PSI
H380	37.5	3335	51,000 PSI	40.5	3580	62,000 PSI
CFE 223	35.0	3441	51,900 PSI	37.6	3688	63,800 PSI
Varget	33.0	3318	52,200 PSI	35.8	3503	60,400 PSI
IMR 4166	31.4	3280	51,300 PSI	34.2	3555	62,500 PSI
BL-C(2)	34.0	3276	47,100 PSI	37.0	3560	61,000 PSI
H335	31.5	3272	50,800 PSI	34.0	3494	61,400 PSI
H4895	32.0	3340	51,700 PSI	35.0	3551	61,300 PSI
IMR 8208 XBR	31.5	3412	55,600 PSI	34.0	3550	61,000 PSI
Benchmark	29.0	3183	49,000 PSI	32.0	3406	59,900 PSI
H322	29.0	3222	50,900 PSI	31.5	3434	62,000 PSI
Bullet: 62 GR. BAR TAC-X BT					**Dia: .224″**	
Col: 2.385″						
Suprform	38.3	3240	38,900 PSI	42.5C	3628	54,900 PSI
StaBALL 6.5	37.0	3303	45,300 PSI	40.5	3655	62,300 PSI
IMR 4451	36.0	3258	49,200 PSI	39.0C	3468	59,000 PSI
H414	35.8	3247	45,400 PSI	38.9	3537	59,300 PSI
760	35.8	3247	45,400 PSI	38.9	3537	59,300 PSI
CFE 223	34.0	3284	49,200 PSI	37.0	3584	63,600 PSI
Varget	32.9	3354	54,200 PSI	35.0	3500	60,400 PSI
IMR 4064	31.5	3239	47,300 PSI	35.0	3544	61,200 PSI
IMR 4166	31.4	3305	51,900 PSI	34.2	3566	63,200 PSI
IMR 4895	32.8	3312	51,000 PSI	35.6	3549	62,000 PSI
H4895	31.9	3467	57,800 PSI	34.0	3564	60,900 PSI
IMR 8208 XBR	31.6	3367	52,400 PSI	34.0	3554	62,400 PSI
IMR 3031	31.1	3419	54,200 PSI	33.0	3613	62,200 PSI
Bullet: 63 GR. SIE SP			**Dia: .224″**		**Col: 2.350″**	
Suprform	38.0	3294	44,600 PSI	42.7C	3674	61,400 PSI
StaBALL 6.5	37.0	3330	46,700 PSI	40.6	3669	62,300 PSI
Hybrid 100V	35.0	3146	44,700 PSI	38.0C	3382	53,900 PSI
H4350	36.0	3210	45,400 CUP	38.0	3391	48,000 CUP
IMR 4451	35.0	3184	51,700 PSI	38.4C	3441	62,300 PSI
H414	35.0	3262	43,200 CUP	38.0	3432	47,100 CUP
IMR 4350	38.0	3308	52,900 PSI	40.0C	3467	60,300 PSI
760	35.0	3262	43,200 CUP	38.0	3432	47,100 CUP
H380	36.0	3266	46,600 CUP	38.5	3419	51,200 CUP
CFE 223	35.0	3400	53,900 PSI	37.3	3597	64,000 PSI
Varget	29.5	3039	39,500 CUP	34.0	3426	50,400 CUP
IMR 4064	33.0	3269	50,800 PSI	35.3	3499	62,900 PSI
IMR 4166	32.4	3301	52,900 PSI	34.9	3523	62,600 PSI
IMR 4895	33.0	3287	51,500 PSI	35.5	3502	62,700 PSI
H4895	31.5	3317	47,300 CUP	34.0	3486	50,400 CUP
IMR 8208 XBR	30.0	3256	52,400 PSI	33.0	3459	62,100 PSI
IMR 3031	31.0	3284	53,300 PSI	33.1	3457	62,700 PSI
Bullet: 70 GR. SPR SP			**Dia: .224″**		**Col: 2.330″**	
H1000	36.0	3042	41,100 CUP	38.0	3187	47,500 CUP
Suprform	37.0	3206	50,500 PSI	40.8C	3499	63,700 PSI
H4831	35.0	2976	42,000 CUP	38.0	3189	50,300 CUP
StaBALL 6.5	35.0	3168	48,700 PSI	38.6	3460	62,400 PSI
Hybrid 100V	35.0	3091	49,000 PSI	38.0C	3322	58,500 PSI
H4350	34.0	3007	44,800 CUP	36.0	3129	49,600 CUP
IMR 4451	34.0	3012	47,700 PSI	37.5C	3269	59,400 PSI
H414	31.0	2860	42,000 CUP	34.0	3117	49,400 CUP
IMR 4350	36.0	3162	54,500 PSI	38.2C	3324	62,500 PSI
760	31.0	2860	42,000 CUP	34.0	3117	49,400 CUP
H380	33.0	3006	45,200 CUP	35.0	3161	51,500 CUP
CFE 223	33.0	3147	52,600 PSI	35.8	3373	63,200 PSI

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Varget	29.5	3006	44,700 CUP	32.0	3196	50,300 CUP
IMR 4320	31.0	3111	55,000 PSI	33.5	3282	62,600 PSI
IMR 4064	31.0	3106	53,200 PSI	33.5	3298	62,600 PSI
IMR 4166	30.5	3067	50,200 PSI	33.2	3330	61,800 PSI
IMR 4895	31.0	3111	53,500 PSI	33.3	3278	62,300 PSI
H4895	28.0	2933	43,000 CUP	31.5	3196	50,700 CUP
IMR 8208 XBR	28.0	3015	49,800 PSI	31.0	3246	61,600 PSI
IMR 3031	29.0	3068	53,600 PSI	31.5	3248	63,600 PSI

220 SWIFT

Case: Winchester Twist: 1:14″
Barrel: 24″ Trim: 2.195″ Primer: Winchester LR, Large Rifle

Bullet: 35 GR. NOS LF Dia: .224″ Col: 2.680″

H414	41.4	4011	43,600 CUP	45.0	4304	51,800 CUP
760	41.4	4011	43,600 CUP	45.0	4304	51,800 CUP
H380	41.2	3988	41,200 CUP	44.8	4226	47,700 CUP
Varget	38.5	4035	43,500 CUP	41.0	4251	51,100 CUP
IMR 4064	37.8	3955	42,800 CUP	40.2	4238	51,300 CUP
IMR 4895	38.3	3987	47,000 CUP	40.7	4222	52,100 CUP
H4895	37.6	4171	47,400 CUP	40.0	4401	52,300 CUP
IMR 3031	36.2	4019	45,200 CUP	38.5	4248	51,300 CUP

Bullet: 36 GR. BAR VG FB Dia: .224″ Col: 2.635″

Varget	40.0	4076	44,600 CUP	42.5	4306	50,900 CUP
IMR 4064	38.3	3988	43,900 CUP	40.7	4248	51,300 CUP
IMR 4895	38.5	3985	44,300 CUP	41.0	4237	50,700 CUP
H4895	37.6	4002	44,300 CUP	40.0	4251	50,800 CUP
IMR 8208 XBR	38.0	4078	46,800 CUP	40.0	4296	53,000 CUP
IMR 3031	36.0	3983	43,800 CUP	37.9	4252	50,600 CUP

Bullet: 40 GR. SIE HP Dia: .224″ Col: 2.680″

H414	42.5	3928	45,500 CUP	46.0	4213	51,600 CUP
760	42.5	3928	45,500 CUP	46.0	4213	51,600 CUP
H380	40.5	3867	44,400 CUP	44.0	4124	50,000 CUP
Varget	38.0	4007	49,800 CUP	40.5	4113	49,800 CUP
IMR 4064	36.0	3777	44,700 CUP	40.0	4110	51,400 CUP
IMR 4895	36.0	3743	42,500 CUP	40.5	4093	51,300 CUP
H335	37.0	3923	44,400 CUP	40.0	4158	53,100 CUP
H4895	37.0	3768	41,400 CUP	40.0	4126	52,000 CUP
IMR 3031	35.0	3904	48,100 CUP	38.5	4189	52,000 CUP

Bullet: 45 GR. HDY SP Dia: .224″ Col: 2.680″

H414	41.5	3849	48,700 CUP	45.0	4100	51,700 CUP
760	41.5	3849	48,700 CUP	45.0	4100	51,700 CUP
H380	40.5	3784	42,000 CUP	44.0	4041	52,400 CUP
Varget	36.0	3777	47,100 CUP	40.2	4002	52,100 CUP
H4895	36.5	3676	38,400 CUP	39.5	3996	52,100 CUP

Bullet: 50 GR. HDY SP Dia: .224″ Col: 2.680″

H414	40.5	3663	45,900 CUP	44.0	3826	49,600 CUP
760	40.5	3663	45,900 CUP	44.0	3826	49,600 CUP
H380	40.0	3668	41,400 CUP	43.5	3947	53,800 CUP
Varget	34.5	3616	47,200 CUP	36.0	3770	50,200 CUP
IMR 4064	35.0	3640	46,900 CUP	38.4	3905	53,000 CUP
BL-C(2)	35.0	3431	40,200 CUP	38.0	3888	51,000 CUP
IMR 4895	35.0	3661	48,700 CUP	38.7	3868	52,900 CUP
H4895	35.0	3460	39,000 CUP	38.0	3840	51,200 CUP
IMR 3031	33.0	3681	48,600 CUP	36.5	3877	53,100 CUP

Bullet: 52 GR. SIE HPBT Dia: .224″ Col: 2.680″

H414	39.5	3596	43,100 CUP	42.0	3792	49,900 CUP
760	39.5	3596	43,100 CUP	42.0	3792	49,900 CUP
H380	39.0	3632	47,100 CUP	41.5	3792	51,400 CUP
Varget	34.0	3516	42,700 CUP	36.5	3687	50,300 CUP
BL-C(2)	35.7	3546	44,200 CUP	38.0	3801	51,200 CUP
H4895	33.8	3588	45,100 CUP	36.0	3736	50,000 CUP

Bullet: 55 GR. HDY SP Dia: .224″ Col: 2.680″

H4831	41.5	3194	36,600 CUP	46.0	3616	46,600 CUP
Hybrid 100V	38.0	3358	44,700 CUP	42.0C	3627	52,600 CUP
H4350	39.0	3225	42,000 CUP	42.0	3619	50,800 CUP
IMR 4451	38.0	3401	45,600 CUP	40.9	3650	53,800 CUP
H414	40.5	3536	47,300 CUP	44.0	3833	53,700 CUP
760	40.5	3536	47,300 CUP	44.0	3833	53,700 CUP
H380	39.0	3580	45,900 CUP	42.5	3839	53,300 CUP
Varget	34.0	3516	47,000 CUP	36.0	3645	51,900 CUP
IMR 4064	34.0	3498	46,100 CUP	37.5	3742	52,500 CUP
BL-C(2)	34.0	3426	44,400 CUP	36.0	3682	49,900 CUP
IMR 4895	34.0	3546	48,500 CUP	38.0	3739	53,000 CUP
H4895	34.0	3481	45,900 CUP	37.0	3698	52,000 CUP
IMR 3031	32.0	3490	47,300 CUP	35.2	3687	52,700 CUP

Bullet: 60 GR. NOS PART Dia: .224″ Col: 2.680″

H4831	41.5	3252	41,600 CUP	46.0C	3556	51,800 CUP
Hybrid 100V	37.5	3287	44,800 CUP	41.0C	3550	50,900 CUP
H4350	37.0	3230	39,800 CUP	41.0	3527	50,600 CUP
IMR 4451	37.0	3312	45,600 CUP	39.8	3557	53,400 CUP
H414	38.5	3425	43,900 CUP	41.7	3647	51,400 CUP
760	38.5	3425	43,900 CUP	41.7	3647	51,400 CUP
H380	35.0	3188	44,400 CUP	38.0	3413	51,900 CUP
Varget	33.0	3242	40,000 CUP	36.0	3473	49,000 CUP
IMR 4064	33.0	3322	46,600 CUP	36.0	3539	51,800 CUP
IMR 4166	33.6	3359	48,100 CUP	35.8	3525	53,700 CUP
IMR 4895	33.0	3270	44,100 CUP	36.0	3520	53,100 CUP
H4895	30.5	3165	39,200 CUP	33.5	3401	49,600 CUP

Bullet: 62 GR. BAR TAC-X BT Dia: .224″ Col: 2.680″

Hybrid 100V	37.8	3254	42,200 CUP	42.0	3539	51,800 CUP
H4350	37.2	3177	43,500 CUP	40.5C	3389	52,400 CUP
IMR 4451	37.2	3251	46,300 CUP	40.0	3501	53,600 CUP
H414	37.2	3181	42,900 CUP	40.4	3394	51,200 CUP
760	37.2	3181	42,900 CUP	40.4	3394	51,200 CUP
H380	36.7	3160	45,900 CUP	39.0	3338	51,700 CUP
Varget	32.3	3161	44,100 CUP	34.3	3315	50,400 CUP
IMR 4064	33.2	3236	45,300 CUP	35.3	3369	50,000 CUP
IMR 4166	31.9	3131	44,900 CUP	34.0	3328	53,000 CUP
IMR 4895	33.4	3217	46,300 CUP	35.5	3360	50,600 CUP
H4895	31.7	3121	45,700 CUP	33.7	3364	51,400 CUP

Bullet: 63 GR. SIE SP Dia: .224″ Col: 2.680″

H4831	41.5	3180	37,200 CUP	46.0	3586	52,000 CUP
Hybrid 100V	37.5	3269	42,700 CUP	41.0C	3517	51,200 CUP
H4350	37.0	3181	46,000 CUP	39.0	3474	52,000 CUP
IMR 4451	36.2	3237	45,400 CUP	39.6	3499	52,800 CUP
H414	38.5	3339	44,400 CUP	42.0	3595	52,100 CUP
760	38.5	3339	44,400 CUP	42.0	3595	52,100 CUP
H380	38.0	3405	45,900 CUP	41.0	3580	51,900 CUP
Varget	32.0	3181	42,200 CUP	34.0	3407	49,300 CUP
IMR 4166	33.0	3276	46,800 CUP	34.4	3403	53,200 CUP
H4895	32.5	3218	40,800 CUP	35.5	3484	51,000 CUP

Bullet: 70 GR. SPR SP Dia: .224″ Col: 2.680″

H1000	42.0	3149	43,800 CUP	44.0	3317	50,200 CUP
H4831	37.0	2991	45,800 CUP	42.0	3359	52,600 CUP
Hybrid 100V	37.0	3188	44,800 CUP	40.0C	3397	51,800 CUP
H4350	36.0	3027	45,200 CUP	38.0	3313	51,200 CUP
IMR 4451	35.3	3105	45,400 CUP	38.6	3373	53,800 CUP
H414	34.0	2955	44,200 CUP	37.0	3148	50,300 CUP
760	34.0	2955	44,200 CUP	37.0	3148	50,300 CUP
Varget	31.0	3103	46,500 CUP	33.0	3247	49,900 CUP
IMR 4166	32.7	3140	46,200 CUP	34.8	3347	53,600 CUP

6MM PPC

Case: Sako (REF) Twist: 1:14″
Barrel: 24″ Trim: 1.510″ Primer: Remington 7 1/2, Small Rifle Magnum

Bullet: 55 GR. NOS BT Dia: .243″ Col: 2.100″

CFE 223	31.0	3073	36,900 CUP	33.0	3324	44,100 CUP

NEVER EXCEED MAXIMUM LOADS

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
BL-C(2)	31.0	3138	42,600 CUP	33.0	3323	49,900 CUP
H335	28.0	3096	40,100 CUP	30.2	3342	50,700 CUP
Benchmark	28.0	3206	42,100 CUP	30.0	3405	50,000 CUP
H322	27.5	3161	39,100 CUP	29.5	3390	49,600 CUP
H4198	25.0	3281	42,300 CUP	26.7	3443	50,200 CUP
Bullet: 58 GR. HDY V-MAX			**Dia: .243″**			**Col: 2.075″**
CFE 223	30.0	3019	35,900 CUP	32.0	3243	43,400 CUP
BL-C(2)	30.0	3061	42,500 CUP	32.0	3243	49,600 CUP
H335	27.0	2998	38,500 CUP	29.0	3215	49,200 CUP
IMR 8208 XBR	27.5	3084	39,400 CUP	30.0C	3353	49,800 CUP
Benchmark	27.7	3118	39,800 CUP	29.5	3322	50,000 CUP
H322	27.0	3161	42,500 CUP	29.0	3355	50,600 CUP
H4198	24.0	3109	40,200 CUP	25.7	3349	49,300 CUP
Bullet: 60 GR. SIE HP			**Dia: .243″**			**Col: 2.080″**
CFE 223	30.0	2997	38,600 CUP	32.0	3208	46,600 CUP
Varget	27.0	2901	40,200 CUP	29.0	3076	44,100 CUP
BL-C(2)	30.0	2959	44,000 CUP	31.5	3041	46,500 CUP
H335	26.0	2891	45,200 CUP	28.0	3201	49,000 CUP
H4895	27.0	2913	44,500 CUP	29.0	3218	48,500 CUP
IMR 8208 XBR	27.0	3053	40,000 CUP	30.0C	3334	51,100 CUP
Benchmark	26.0	2909	36,100 CUP	29.0	3236	48,600 CUP
H322	26.0	3090	45,000 CUP	27.0	3165	47,000 CUP
H4198	21.0	2856	46,500 CUP	23.0	2973	49,500 CUP
Bullet: 65 GR. HDY V-MAX			**Dia: .243″**			**Col: 2.075″**
CFE 223	30.0	2999	39,200 CUP	32.0	3200	46,000 CUP
BL-C(2)	29.0	2907	40,500 CUP	31.0	3121	49,300 CUP
H335	26.7	2933	41,400 CUP	28.4	3111	49,500 CUP
IMR 8208 XBR	27.0	3064	42,300 CUP	29.5C	3253	50,900 CUP
Benchmark	26.6	3003	42,700 CUP	28.3	3159	49,800 CUP
H322	26.3	2984	38,900 CUP	28.0	3178	49,400 CUP
H4198	23.5	3011	41,700 CUP	25.5	3218	50,500 CUP
Bullet: 70 GR. NOS BT			**Dia: .243″**			**Col: 2.100″**
Varget	27.0	2845	39,800 CUP	29.0	3034	48,000 CUP
BL-C(2)	29.0	2812	42,500 CUP	31.0	3012	47,500 CUP
H335	25.0	2846	44,000 CUP	27.5	3033	48,500 CUP
H4895	26.0	2714	42,000 CUP	28.0	3034	46,500 CUP
IMR 8208 XBR	27.0	2900	47,400 CUP	29.5C	3193	50,300 CUP
Benchmark	26.0	2803	35,500 CUP	29.0	3149	50,500 CUP
H322	25.0	2967	46,500 CUP	26.5	3068	50,000 CUP
H4198	21.0	2745	47,000 CUP	22.0	2839	50,400 CUP
Bullet: 75 GR. SPR HP			**Dia: .243″**			**Col: 2.115″**
CFE 223	29.0	2776	35,700 CUP	31.0	3050	46,000 CUP
Varget	26.0	2737	40,000 CUP	28.0	2906	47,000 CUP
BL-C(2)	28.5	2788	43,400 CUP	30.5	2974	47,800 CUP
H335	24.5	2712	44,000 CUP	27.0	2990	49,000 CUP
H4895	25.5	2740	43,500 CUP	27.5	2981	48,500 CUP
IMR 8208 XBR	26.0	2817	38,400 CUP	28.7	3089	51,200 CUP
Benchmark	25.5	2749	38,900 CUP	28.5	3037	50,100 CUP
H322	24.5	2809	45,000 CUP	26.0	2974	49,500 CUP
H4198	20.0	2661	45,500 CUP	21.0	2780	49,000 CUP
Bullet: 80 GR. SPR SP			**Dia: .243″**			**Col: 2.115″**
CFE 223	28.0	2763	36,300 CUP	31.0	3042	49,100 CUP
Varget	26.0	2689	38,200 CUP	28.0	2843	44,400 CUP
BL-C(2)	28.0	2748	42,500 CUP	30.0	2904	47,500 CUP
H335	24.0	2650	42,000 CUP	26.0	2822	48,500 CUP
H4895	25.0	2641	40,400 CUP	27.0	2904	47,500 CUP
IMR 8208 XBR	26.0	2811	39,700 CUP	28.3	3023	51,400 CUP
Benchmark	25.0	2674	36,400 CUP	28.0	2970	50,400 CUP
H322	23.5	2658	42,000 CUP	25.5	2866	47,500 CUP
H4198	19.0	2359	37,600 CUP	21.0	2641	49,500 CUP
Bullet: 85 GR. SIE HPBT			**Dia: .243″**			**Col: 2.080″**
CFE 223	27.0	2618	34,800 CUP	30.0	2920	46.900 CUP
Varget	26.0	2671	43,400 CUP	28.0	2848	50,000 CUP
BL-C(2)	27.0	2639	43,000 CUP	29.0	2818	48,000 CUP
H335	23.5	2560	42,500 CUP	25.0	2739	47,500 CUP
H4895	24.0	2540	41,500 CUP	26.0	2782	48,000 CUP
IMR 8208 XBR	25.0	2719	41,700 CUP	27.5	2928	52,200 CUP
Benchmark	24.5	2619	38,300 CUP	27.0	2860	50,000 CUP
H322	23.0	2571	44,000 CUP	25.0	2794	49,000 CUP
Bullet: 107 GR. SIE HPBT			**Dia: .243″**			**Col: 2.240″**
CFE 223	26.0	2476	38,700 CUP	28.5	2702	48,600 CUP
Varget	26.0	2503	44,900 CUP	27.7C	2626	50,000 CUP
BL-C(2)	26.3	2463	41,800 CUP	28.0	2599	48,700 CUP
H335	23.1	2359	39,900 CUP	26.0	2582	51,100 CUP
H4895	24.5	2426	41,500 CUP	26.8C	2631	49,700 CUP
IMR 8208 XBR	23.0	2403	42,400 CUP	25.3	2584	51,300 CUP
Benchmark	24.0	2437	43,400 CUP	25.8	2584	51,200 CUP
H322	22.0	2351	42,000 CUP	24.5	2553	51,100 CUP

6MM BR REMINGTON

Case: Remington Twist: 1:9″
Barrel: 24″ Trim: 1.510″ Primer: Remington 7 1/2, Small Rifle Magnum

Bullet: 55 GR. NOS BT			Dia: .243″			Col: 2.080″
CFE 223	34.0	3260	37,300 CUP	36.0	3440	42,500 CUP
Varget	31.0	3043	31,600 CUP	34.0C	3347	41,800 CUP
BL-C(2)	34.0	3234	40,400 CUP	36.0	3406	46,400 CUP
H335	30.0	3201	37,900 CUP	32.5	3464	50,600 CUP
H4895	31.0	3233	37,300 CUP	33.0C	3449	45,300 CUP
IMR 8208 XBR	30.0	3204	33,900 CUP	33.5C	3546	44,800 CUP
Benchmark	31.0	3322	41,200 CUP	33.5C	3557	50,300 CUP
H322	30.0	3333	38,800 CUP	32.5	3604	51,100 CUP
H4198	26.0	3230	37,600 CUP	28.8	3542	51,000 CUP
Bullet: 58 GR. HDY V-MAX			**Dia: .243″**			**Col: 2.140″**
CFE 223	34.0	3271	38,500 CUP	36.0	3484	46,500 CUP
Varget	31.0	3052	34,300 CUP	34.0C	3355	46,100 CUP
BL-C(2)	33.0	3203	41,900 CUP	35.0	3386	48,600 CUP
H335	30.0	3209	41,500 CUP	32.2	3409	51,200 CUP
H4895	31.5	3250	38,000 CUP	33.5	3415	45,100 CUP
IMR 8208 XBR	30.0	3207	36,800 CUP	33.5C	3552	50,000 CUP
Benchmark	30.0	3241	42,000 CUP	32.0	3450	50,600 CUP
H322	29.5	3240	40,100 CUP	31.3	3415	48,400 CUP
H4198	26.0	3205	38,000 CUP	28.5	3454	49,900 CUP
Bullet: 60 GR. SIE HP			**Dia: .243″**			**Col: 2.080″**
CFE 223	34.0	3275	39,800 CUP	36.0	3472	48,000 CUP
Varget	31.0	3161	36,000 CUP	34.0C	3442	48,500 CUP
BL-C(2)	34.0	3154	38,700 CUP	36.0	3375	47,500 CUP
H335	30.0	3184	41,500 CUP	32.0	3411	49,000 CUP
H4895	31.0	3177	42,000 CUP	33.0C	3384	47,000 CUP
IMR 8208 XBR	29.0	3121	36,800 CUP	32.7	3475	48,900 CUP
Benchmark	30.0	3165	41,400 CUP	32.0	3373	49,900 CUP
H322	30.0	3281	42,000 CUP	32.0	3481	49,500 CUP
H4198	25.0	3137	39,600 CUP	27.5	3378	50,700 CUP
Bullet: 62 GR. BAR VG FB			**Dia: .243″**			**Col: 2.140″**
CFE 223	32.0	3033	39,600 CUP	34.0	3183	46,000 CUP
Varget	28.7	3102	45,200 CUP	31.5C	3258	49,200 CUP
BL-C(2)	31.1	2963	42,300 CUP	33.0	3130	48,800 CUP
H335	28.5	2971	41,000 CUP	30.3	3120	48,400 CUP
H4895	29.6	3166	41,500 CUP	31.5C	3349	49,300 CUP
IMR 8208 XBR	29.6	3146	41,600 CUP	31.5C	3307	47,900 CUP
Benchmark	29.1	3060	40,300 CUP	31.0C	3265	48,300 CUP
H322	27.8	3070	42,000 CUP	29.6	3190	47,600 CUP
H4198	24.4	3028	41,800 CUP	26.0	3145	47,700 CUP
Bullet: 65 GR. HDY V-MAX			**Dia: .243″**			**Col: 2.140″**
CFE 223	33.0	3159	37,800 CUP	35.0	3350	46,700 CUP
Varget	31.0	3021	42,200 CUP	33.0	3268	49,900 CUP
BL-C(2)	31.5	3012	38,200 CUP	34.0	3254	48,800 CUP
H335	27.5	2907	36,800 CUP	30.5	3177	48,100 CUP

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
H4895	30.0	3064	37,700 CUP	33.0	3366	49,300 CUP
IMR 8208 XBR	29.0	3084	36,300 CUP	32.3	3397	48,700 CUP
Benchmark	27.0	2997	36,000 CUP	30.5	3205	46,400 CUP
H322	27.0	2978	36,800 CUP	30.5	3303	49,600 CUP
H4198	25.0	3071	42,200 CUP	27.0	3242	49,100 CUP
Bullet: 70 GR. NOS BT			**Dia: .243″**		**Col: 2.100″**	
Varget	31.0	3101	38,900 CUP	34.0C	3342	49,400 CUP
BL-C(2)	33.0	3118	42,500 CUP	35.0	3289	48,000 CUP
H335	29.0	3050	43,000 CUP	31.0	3287	47,000 CUP
H4895	29.0	2895	38,200 CUP	31.0	3188	47,000 CUP
IMR 8208 XBR	29.5	3045	37,100 CUP	32.7	3361	51,600 CUP
Benchmark	29.7	3019	39,900 CUP	31.6	3227	49,000 CUP
H322	28.0	2976	38,700 CUP	30.0	3200	47,000 CUP
Bullet: 75 GR. SPR HP			**Dia: .243″**		**Col: 2.115″**	
CFE 223	33.0	3071	40,900 CUP	35.0	3242	48,000 CUP
Varget	30.5	3057	42,200 CUP	32.5	3239	50,000 CUP
BL-C(2)	31.0	2883	38,200 CUP	33.0	3113	46,000 CUP
H335	28.0	2928	43,000 CUP	30.0	3103	47,000 CUP
H4895	28.5	2980	40,000 CUP	30.5	3129	47,000 CUP
IMR 8208 XBR	28.0	2926	38,900 CUP	30.8	3167	48,800 CUP
Benchmark	29.0	2959	41,700 CUP	31.0	3127	49,600 CUP
H322	26.0	2756	37,100 CUP	28.0	3096	47,000 CUP
Bullet: 80 GR. SPR SP			**Dia: .243″**		**Col: 2.115″**	
CFE 223	33.0	3046	44,200 CUP	35.0	3225	49,900 CUP
Varget	30.5	2999	43,100 CUP	32.5	3159	50,700 CUP
BL-C(2)	31.0	2894	42,500 CUP	33.0	3089	47,500 CUP
H335	28.0	2957	42,000 CUP	30.0	3090	48,000 CUP
H4895	28.0	2945	40,400 CUP	30.0	3100	47,000 CUP
IMR 8208 XBR	27.0	2823	39,800 CUP	30.4	3107	49,500 CUP
Benchmark	28.5	2872	40,900 CUP	30.5	3048	49,400 CUP
H322	26.0	2787	39,300 CUP	28.0	3005	47,000 CUP
Bullet: 85 GR. SPR SP			**Dia: .243″**		**Col: 2.115″**	
CFE 223	33.0	2996	43,300 CUP	35.0	3159	49,900 CUP
Varget	29.0	2840	43,100 CUP	31.0	3007	50,800 CUP
BL-C(2)	29.0	2821	43,000 CUP	31.0	2947	48,500 CUP
H335	24.5	2600	41,000 CUP	26.5	2809	49,000 CUP
H4895	24.5	2590	38,100 CUP	26.5	2770	49,500 CUP
IMR 8208 XBR	27.0	2782	41,400 CUP	29.8	3016	49,900 CUP
Benchmark	27.7	2792	42,100 CUP	29.7	2960	49,800 CUP
H322	22.0	2472	40,400 CUP	24.0	2632	47,000 CUP
Bullet: 90 GR. SPR SP			**Dia: .243″**		**Col: 2.115″**	
CFE 223	30.0	2759	45,100 CUP	32.0	2910	50,600 CUP
Varget	27.5	2674	39,500 CUP	30.2	2886	47,500 CUP
BL-C(2)	29.0	2738	44,000 CUP	31.0	2921	48,800 CUP
H335	24.0	2432	38,200 CUP	26.0	2688	49,000 CUP
H4895	24.5	2560	40,400 CUP	27.0	2743	48,000 CUP
IMR 8208 XBR	25.0	2599	41,500 CUP	28.0	2813	50,000 CUP
Benchmark	27.0	2703	43,200 CUP	29.0	2868	49,300 CUP
H322	22.0	2423	40,600 CUP	24.0	2607	48,000 CUP
Bullet: 100 GR. HDY SP			**Dia: .243″**		**Col: 2.150″**	
CFE 223	28.0	2497	40,000 CUP	30.0	2661	45,200 CUP
Varget	26.0	2491	43,000 CUP	28.0	2649	48,900 CUP
BL-C(2)	27.0	2379	41,500 CUP	29.0	2599	47,000 CUP
H335	24.0	2339	43,000 CUP	26.0	2537	50,000 CUP
H4895	24.5	2423	42,500 CUP	27.0	2603	49,000 CUP
IMR 8208 XBR	24.0	2388	40,500 CUP	27.0	2630	49,800 CUP
Benchmark	26.0	2485	43,100 CUP	28.0	2670	49,500 CUP
H322	22.0	2275	42,000 CUP	23.5	2519	50,000 CUP
Bullet: 107 GR. SIE HPBT			**Dia: .243″**		**Col: 2.250″**	
CFE 223	28.0	2491	44,200 CUP	30.0	2632	49,000 CUP
Varget	26.0	2367	39,800 CUP	29.0C	2620	50,100 CUP
BL-C(2)	28.0	2454	38,100 CUP	30.0	2644	44,200 CUP
H335	26.0	2482	43,200 CUP	28.0	2649	50,400 CUP
H4895	24.5	2329	37,900 CUP	27.5	2605	49,800 CUP
IMR 8208 XBR	24.0	2380	42,700 CUP	26.7	2555	50,400 CUP
Benchmark	26.0	2466	42,000 CUP	28.0	2613	49,800 CUP
H322	23.0	2325	40,800 CUP	25.5	2525	49,200 CUP

6MM DASHER

Case: Lapua (ref) Twist: 1:8″
Barrel: 30″ Trim: 1.540″ Primer: CCI BR4, Small Rifle Match

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Bullet: 58 GR. HDY V-MAX			**Dia: .243″**		**Col: 2.180″**	
CFE 223	38.3	3673	44,000 CUP	40.7	3897	51,300 CUP
Varget	36.4	3668	45,000 CUP	38.7C	3844	51,000 CUP
IMR 4166	33.8	3427	44,800 CUP	37.2C	3671	51,600 CUP
IMR 4895	34.5	3434	41,400 CUP	37.5C	3785	51,800 CUP
H4895	35.1	3682	42,700 CUP	37.0C	3866	48,000 CUP
IMR 8208 XBR	33.5	3508	41,200 CUP	36.3	3819	50,800 CUP
Benchmark	33.0	3546	43,300 CUP	36.3	3847	52,000 CUP
Bullet: 70 GR. NOS BT			**Dia: .243″**		**Col: 2.180″**	
CFE 223	36.0	3333	40,900 CUP	38.8	3633	51,200 CUP
Varget	35.1	3449	43,500 CUP	37.4	3646	51,500 CUP
IMR 4895	33.8	3334	43,300 CUP	36.4C	3611	52,400 CUP
H4895	33.7	3457	44,300 CUP	36.3C	3693	51,800 CUP
IMR 8208 XBR	33.6	3430	44,200 CUP	35.8C	3643	51,400 CUP
Bullet: 90 GR. SFT SCIR			**Dia: .243″**		**Col: 2.280″**	
H4350	35.2	2990	42,200 CUP	38.3C	3220	51,600 CUP
CFE 223	31.6	2931	43,200 CUP	35.6	3209	51,500 CUP
Varget	30.7	2943	43,900 CUP	33.8	3208	52,200 CUP
IMR 4064	31.0	2933	42,500 CUP	34.1	3199	52,100 CUP
IMR 4895	31.3	2991	42,800 CUP	34.0C	3229	52,300 CUP
H4895	30.3	2971	42,300 CUP	32.9C	3182	51,800 CUP
IMR 8208 XBR	29.9	2933	43,100 CUP	32.5	3149	52,400 CUP
Bullet: 100 GR. SPR BTSP			**Dia: .243″**		**Col: 2.360″**	
StaBALL 6.5	33.3	2724	40,800 CUP	37.0	3004	51,600 CUP
H4350	33.4	2836	41,600 CUP	36.8C	3086	51,700 CUP
IMR 4451	33.4	2777	41,900 CUP	36.7	3045	52,100 CUP
CFE 223	30.7	2860	44,800 CUP	33.4	3011	51,900 CUP
Varget	29.5	2820	43,300 CUP	32.5	3023	52,000 CUP
IMR 4064	30.5	2852	43,100 CUP	33.6	3088	52,600 CUP
IMR 8208 XBR	27.9	2756	42,000 CUP	30.4	2928	51,400 CUP
Bullet: 107 GR. SIE HPBT			**Dia: .243″**		**Col: 2.360″**	
StaBALL 6.5	33.2	2644	40,600 CUP	36.9	2943	52,300 CUP
H4350	33.4	2792	44,600 CUP	35.2C	2917	48,800 CUP
IMR 4451	33.0	2740	42,900 CUP	35.6C	2934	51,100 CUP
CFE 223	29.4	2706	43,700 CUP	33.1	2926	51,400 CUP
Varget	29.2	2726	42,900 CUP	31.8	2916	51,900 CUP
IMR 4064	29.8	2746	42,300 CUP	32.8C	2978	52,200 CUP
IMR 8208 XBR	27.4	2647	41,700 CUP	30.2	2836	51,500 CUP

24 NOSLER

Case: Nosler Twist: 1:8″
Barrel: 24″ Trim: 1.590″ Primer: Winchester SR, Small Rifle

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Bullet: 55 GR. SIE BK			**Dia: .243″**		**Col: 2.150″**	
CFE 223	30.5	3251	40,500 PSI	31.5	3341	43,500 PSI
748	29.0	3210	42,400 PSI	30.3	3376	49,100 PSI
BL-C(2)	30.6	3218	41,500 PSI	31.5	3372	46,100 PSI
H335	27.3	3190	42,200 PSI	29.4	3443	53,100 PSI
H4895	27.0	3179	39,600 PSI	28.0C	3322	46,000 PSI
IMR 8208 XBR	27.8	3272	41,900 PSI	29.0C	3429	49,100 PSI
IMR 3031	26.2	3225	44,300 PSI	27.6C	3350	49,600 PSI
Benchmark	27.6	3339	43,700 PSI	29.0C	3500	52,400 PSI
H322	26.0	3247	41,900 PSI	27.5	3444	52,100 PSI
IMR 4198	22.6	3246	42,100 PSI	24.0	3444	52,900 PSI
H4198	23.5	3330	43,000 PSI	25.0	3521	53,100 PSI
Bullet: 65 GR. HDY V-MAX			**Dia: .243″**		**Col: 2.080″**	
CFE 223	28.5	3005	40,700 PSI	30.0	3147	45,800 PSI
Varget	27.0	2975	41,300 PSI	28.2C	3077	45,400 PSI

NEVER EXCEED MAXIMUM LOADS

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
748	26.7	2913	40,000 PSI	28.8	3129	48,200 PSI
BL-C(2)	28.7	3041	44,000 PSI	30.0	3148	48,300 PSI
IMR 4895	26.0	2937	44,000 PSI	27.3C	3088	50,000 PSI
H335	26.3	3040	44,400 PSI	27.9	3213	52,800 PSI
H4895	25.4	2979	42,100 PSI	26.8C	3140	49,300 PSI
IMR 8208 XBR	25.5	2991	42,400 PSI	27.0	3170	52,500 PSI
IMR 3031	24.6	2965	44,100 PSI	26.3C	3159	52,900 PSI
Benchmark	25.4	3105	43,000 PSI	27.0	3222	52,400 PSI
H322	23.9	2957	41,300 PSI	25.8	3193	52,600 PSI
IMR 4198	21.0	2937	42,700 PSI	22.5	3138	52,500 PSI
H4198	21.6	2959	41,000 PSI	23.2	3163	52,000 PSI
Bullet: 80 GR. BAR TTSX BT			**Dia: .243″**		**Col: 2.185″**	
CFE 223	26.2	2695	41,300 PSI	28.5	2913	50,800 PSI
Varget	24.6	2639	43,500 PSI	26.7C	2836	51,600 PSI
748	25.1	2655	42,500 PSI	27.3	2872	52,800 PSI
BL-C(2)	26.0	2644	41,900 PSI	28.2	2886	51,800 PSI
IMR 4895	24.0	2613	43,400 PSI	25.8C	2779	48,800 PSI
H335	23.0	2591	42,900 PSI	25.0	2791	52,500 PSI
H4895	22.9	2593	41,100 PSI	24.9	2820	52,200 PSI
IMR 8208 XBR	23.2	2617	41,500 PSI	25.2	2859	52,000 PSI
IMR 3031	22.1	2555	42,200 PSI	24.0	2776	52,500 PSI
Benchmark	22.7	2645	42,800 PSI	24.7	2841	52,800 PSI
H322	21.6	2581	42,500 PSI	23.5	2783	53,000 PSI
Bullet: 85 GR. NOS PART			**Dia: .243″**		**Col: 2.180″**	
CFE 223	26.5	2711	42,700 PSI	28.8	2906	52,400 PSI
Varget	24.1	2578	40,800 PSI	26.4C	2805	53,100 PSI
IMR 4064	23.0	2487	40,200 PSI	25.0C	2740	52,400 PSI
IMR 4166	23.4	2519	43,700 PSI	25.4C	2731	52,200 PSI
748	25.1	2646	43,500 PSI	27.3	2852	52,900 PSI
BL-C(2)	25.9	2627	42,200 PSI	28.2	2856	52,600 PSI
IMR 4895	23.2	2527	41,600 PSI	25.2	2749	52,200 PSI
H335	22.2	2531	44,500 PSI	24.8	2765	52,800 PSI
H4895	22.7	2601	42,800 PSI	24.7	2787	52,400 PSI
IMR 8208 XBR	23.0	2600	42,400 PSI	25.0	2794	52,000 PSI
IMR 3031	21.9	2525	41,800 PSI	23.8	2744	52,200 PSI
Benchmark	22.5	2605	43,300 PSI	24.5	2791	52,200 PSI
H322	21.3	2568	43,800 PSI	23.2	2729	52,300 PSI
Bullet: 90 GR. SFT SCIR			**Dia: .243″**		**Col: 2.230″**	
CFE 223	25.8	2621	43,100 PSI	28.0	2836	52,300 PSI
Varget	23.0	2482	40,700 PSI	24.9C	2662	52,800 PSI
IMR 4064	22.8	2490	43,300 PSI	24.6C	2637	49,900 PSI
IMR 4166	23.2	2473	42,400 PSI	25.2C	2676	52,200 PSI
748	24.3	2552	43,500 PSI	26.4	2751	52,200 PSI
BL-C(2)	24.8	2495	42,900 PSI	27.0	2704	52,400 PSI
IMR 4895	23.0	2498	43,800 PSI	25.0C	2716	52,800 PSI
H335	22.7	2474	43,300 PSI	24.7	2702	52,900 PSI
H4895	22.6	2547	42,000 PSI	24.6C	2729	52,900 PSI
IMR 8208 XBR	22.6	2550	41,800 PSI	24.6	2685	53,100 PSI
IMR 3031	21.6	2485	42,800 PSI	23.5	2698	53,100 PSI
Benchmark	21.9	2532	41,900 PSI	23.9	2719	53,100 PSI
H322	20.9	2497	44,400 PSI	22.8	2667	52,700 PSI
Bullet: 100 GR. SIE SPBT			**Dia: .243″**		**Col: 2.170″**	
CFE 223	25.0	2500	41,700 PSI	27.2	2705	52,400 PSI
Varget	22.3	2343	40,800 PSI	24.3C	2555	52,600 PSI
IMR 4064	21.9	2315	42,100 PSI	23.6C	2498	50,300 PSI
IMR 4166	22.2	2347	43,100 PSI	24.1C	2532	51,800 PSI
748	23.5	2428	42,800 PSI	25.6	2626	52,500 PSI
BL-C(2)	24.4	2409	42,400 PSI	26.5	2628	52,500 PSI
IMR 4895	22.2	2348	41,100 PSI	24.1C	2566	52,900 PSI
H335	21.4	2342	44,500 PSI	23.4	2497	53,000 PSI
H4895	21.6	2370	42,600 PSI	23.5C	2565	52,300 PSI
IMR 8208 XBR	21.6	2374	42,500 PSI	23.5	2562	52,600 PSI
IMR 3031	20.6	2302	42,700 PSI	22.4	2516	52,500 PSI
Benchmark	21.2	2382	44,400 PSI	23.1	2561	53,200 PSI
H322	19.9	2332	44,700 PSI	21.6	2485	52,800 PSI
Bullet: 105 GR. NOS RDF			**Dia: .243″**		**Col: 2.250″**	
CFE 223	24.8	2427	40,900 PSI	27.0C	2627	51,700 PSI
Varget	22.1	2290	40,700 PSI	24.0C	2467	51,000 PSI
IMR 4064	21.2	2222	40,600 PSI	23.0C	2406	49,300 PSI
IMR 4166	21.7	2253	41,300 PSI	23.6C	2448	51,100 PSI
748	23.5	2376	41,600 PSI	25.5	2565	51,400 PSI
BL-C(2)	24.3	2356	39,800 PSI	26.4	2554	50,600 PSI
IMR 4895	21.6	2262	40,300 PSI	23.5C	2497	53,000 PSI
H335	21.2	2222	40,700 PSI	23.1	2443	51,900 PSI
H4895	21.3	2322	41,900 PSI	23.2C	2505	52,100 PSI
IMR 8208 XBR	21.3	2322	41,900 PSI	23.2	2507	53,200 PSI
IMR 3031	19.8	2209	40,100 PSI	21.5	2422	53,000 PSI
Benchmark	20.9	2335	43,000 PSI	22.8	2494	52,600 PSI
H322	19.5	2252	42,800 PSI	21.2	2428	53,000 PSI
Bullet: 108 GR. HDY ELD-M			**Dia: .243″**		**Col: 2.250″**	
CFE 223	24.6	2389	42,500 PSI	26.7	2606	52,100 PSI
Varget	22.1	2266	41,900 PSI	23.9C	2426	51,600 PSI
IMR 4064	21.2	2193	40,500 PSI	23.0C	2414	51,800 PSI
IMR 4166	21.4	2244	43,900 PSI	23.2C	2431	52,300 PSI
748	23.2	2324	41,900 PSI	25.2	2512	52,500 PSI
BL-C(2)	24.0	2324	42,800 PSI	26.1	2516	52,500 PSI
IMR 4895	21.7	2249	41,200 PSI	23.5C	2469	52,200 PSI
H335	21.2	2238	43,300 PSI	23.0	2438	52,300 PSI
H4895	21.0	2293	42,600 PSI	22.8C	2464	52,900 PSI
IMR 8208 XBR	21.3	2307	42,100 PSI	23.1	2470	52,100 PSI
Benchmark	20.5	2284	43,500 PSI	22.3	2445	52,300 PSI

6 GT

Case: Alpha Twist: 1:7.7″
Barrel: 24″ Trim: 1.720″ Primer: Winchester LR, Large Rifle

Bullet: 95 GR. SIE TMK			**Dia: .243″**		**Col: 2.480″**	
Suprform	38.6	2874	43,800 PSI	42.9	3248	62,000 PSI
StaBALL 6.5	37.6	2811	41,100 PSI	41.8	3240	62,300 PSI
Bullet: 100 GR. SIE SBT			**Dia: .243″**		**Col: 2.390″**	
Suprform	37.6	2838	45,900 PSI	41.8	3165	61,800 PSI
StaBALL 6.5	36.2	2740	42,100 PSI	40.9	3125	61,800 PSI
Hybrid 100V	34.5	2740	44,600 PSI	38.4C	3029	58,700 PSI
H4350	34.8	2726	45,100 PSI	38.7	3044	61,800 PSI
IMR 4451	34.3	2659	45,500 PSI	38.2	3011	62,500 PSI
CFE 223	32.3	2658	43,200 PSI	35.9	3010	61,200 PSI
Varget	30.9	2753	49,900 PSI	34.3	2992	62,500 PSI
IMR 4064	31.4	2722	46,100 PSI	34.9	3019	61,800 PSI
IMR 4166	31.3	2757	49,700 PSI	34.8	2995	61,300 PSI
Bullet: 105 GR. HDY A-MAX			**Dia: .243″**		**Col: 2.500″**	
Suprform	37.0	2770	45,700 PSI	41.2	3097	61,500 PSI
StaBALL 6.5	36.4	2740	44,900 PSI	40.4	3078	62,200 PSI
Hybrid 100V	34.5	2741	47,700 PSI	38.4C	3038	62,200 PSI
H4350	34.3	2702	47,200 PSI	38.1	2973	61,900 PSI
IMR 4451	33.6	2633	47,400 PSI	37.4	2938	62,400 PSI
CFE 223	31.0	2586	44,800 PSI	34.4	2910	61,300 PSI
Varget	29.8	2646	47,400 PSI	33.1	2892	61,200 PSI
IMR 4064	30.1	2617	45,700 PSI	33.5	2903	61,700 PSI
IMR 4166	29.4	2633	48,000 PSI	33.2	2908	62,400 PSI
Bullet: 107 GR. SIE HPBT			**Dia: .243″**		**Col: 2.530″**	
Suprform	37.1	2765	45,400 PSI	41.2	3078	61,700 PSI
StaBALL 6.5	36.4	2728	44,500 PSI	40.5	3062	62,200 PSI
Hybrid 100V	34.5	2700	45,600 PSI	38.4C	3007	61,200 PSI
H4350	34.1	2668	45,400 PSI	38.1	2966	61,500 PSI
IMR 4451	33.9	2631	45,600 PSI	37.8	2936	62,100 PSI
CFE 223	31.6	2691	50,100 PSI	35.5	2949	62,300 PSI
Varget	30.6	2679	48,200 PSI	34.0	2909	61,800 PSI
IMR 4064	30.8	2664	46,800 PSI	34.2	2927	61,400 PSI
IMR 4166	29.5	2608	46,400 PSI	34.0	2926	61,700 PSI

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Bullet: 110 GR. HDY A-TIP Dia: .243″ Col: 2.600″						
Suprform	37.1	2725	43,100 PSI	41.3	3075	62,100 PSI
StaBALL 6.5	36.4	2686	42,400 PSI	40.5	3040	61,900 PSI
Hybrid 100V	34.7	2676	44,100 PSI	38.6C	3002	59,700 PSI
H4350	34.5	2654	43,500 PSI	38.5	2958	62,200 PSI
IMR 4451	34.2	2626	45,400 PSI	38.2C	2936	61,800 PSI
CFE 223	31.7	2537	41,000 PSI	35.6	2911	62,400 PSI
Varget	30.8	2634	47,000 PSI	34.2	2880	62,200 PSI
IMR 4064	30.6	2631	45,600 PSI	34.0	2895	61,600 PSI
IMR 4166	29.7	2596	44,900 PSI	34.2	2924	62,000 PSI

6X47MM LAPUA

Case: Lapua (ref) Twist: 1:8″
Barrel: 30″ Trim: 1.840″ Primer: Federal 205M, Small Rifle Match

Powder	Grs.	Vel.	Pressure	Grs.	Vel.	Pressure
Bullet: 55 GR. NOS BT Dia: .243″ Col: 2.440″						
CFE 223	39.7	3741	43,100 CUP	43.7	4040	51,600 CUP
Varget	39.9	3760	44,400 CUP	41.8C	3979	51,600 CUP
IMR 4064	38.1	3587	43,700 CUP	40.4C	3832	51,100 CUP
IMR 4166	37.0	3531	44,100 CUP	39.7	3801	52,400 CUP
IMR 4895	36.5	3461	43,100 CUP	40.2	3895	52,300 CUP
H4895	36.9	3678	44,400 CUP	40.6	4064	52,100 CUP
IMR 8208 XBR	36.6	3676	43,300 CUP	39.8	3996	52,300 CUP
Bullet: 70 GR. NOS BT Dia: .243″ Col: 2.540″						
H4350	40.0	3274	43,300 CUP	43.7C	3583	51,100 CUP
CFE 223	37.0	3372	42,700 CUP	41.1	3684	51,900 CUP
Varget	35.8	3345	43,700 CUP	39.4	3639	52,000 CUP
IMR 4064	35.3	3442	44,600 CUP	38.9	3591	52,300 CUP
IMR 4166	34.7	3216	43,100 CUP	38.1	3507	52,200 CUP
IMR 4895	34.8	3272	45,000 CUP	38.3	3584	52,500 CUP
H4895	35.0	3400	45,100 CUP	38.5	3684	52,300 CUP
IMR 8208 XBR	34.1	3283	44,600 CUP	37.5	3600	51,900 CUP
Bullet: 75 GR. HDY V-MAX Dia: .243″ Col: 2.505″						
H4350	38.5	3186	43,200 CUP	42.4	3468	52,300 CUP
CFE 223	36.3	3337	45,900 CUP	40.0	3612	51,800 CUP
Varget	34.5	3246	43,500 CUP	38.0	3510	52,100 CUP
IMR 4064	34.0	3169	44,600 CUP	37.5	3458	52,300 CUP
IMR 4166	33.8	3176	45,300 CUP	37.2	3424	52,400 CUP
IMR 4895	33.2	3158	44,200 CUP	36.5	3427	52,500 CUP
H4895	33.6	3265	45,100 CUP	37.0	3531	52,400 CUP
IMR 8208 XBR	33.4	3266	44,200 CUP	36.3	3502	52,000 CUP
Bullet: 80 GR. BAR TTSX-BT Dia: .243″ Col: 2.530″						
H4350	38.2	3111	42,900 CUP	41.9C	3389	51,700 CUP
CFE 223	35.0	3186	46,000 CUP	38.8	3461	52,500 CUP
Varget	33.0	3117	43,300 CUP	36.3	3342	52,300 CUP
IMR 4064	32.5	3022	44,600 CUP	36.1	3307	52,200 CUP
IMR 4166	32.0	2984	45,500 CUP	35.4	3242	52,300 CUP
IMR 4895	32.1	3034	45,300 CUP	35.3	3279	52,100 CUP
H4895	32.3	3132	44,800 CUP	35.8	3401	52,600 CUP
IMR 8208 XBR	32.3	3118	45,500 CUP	35.1	3341	52,000 CUP
Bullet: 85 GR. HDY IB Dia: .243″ Col: 2.515″						
H4350	38.0	3069	44,000 CUP	41.9	3369	52,400 CUP
IMR 4451	36.5	2923	42,800 CUP	40.1	3214	52,300 CUP
CFE 223	35.5	3170	45,200 CUP	39.3	3426	52,500 CUP
Varget	33.5	3096	45,900 CUP	36.8	3307	52,300 CUP
IMR 4064	33.0	2999	43,300 CUP	36.2	3265	52,400 CUP
IMR 4166	32.6	2993	45,000 CUP	35.8	3204	51,600 CUP
H4895	32.8	3087	44,600 CUP	36.0	3319	51,700 CUP
IMR 8208 XBR	32.3	3087	44,200 CUP	35.6	3320	52,400 CUP
Bullet: 90 GR. NOS E-TIP Dia: .243″ Col: 2.515″						
StaBALL 6.5	36.7	2826	44,800 CUP	40.4	3124	52,300 CUP
H4350	36.8	2978	45,900 CUP	40.5	3225	52,200 CUP
IMR 4451	35.5	2836	44,800 CUP	39.1	3117	51,900 CUP
CFE 223	34.3	3023	46,100 CUP	38.4	3300	52,500 CUP
Varget	32.5	2957	44,200 CUP	35.9	3195	52,300 CUP
IMR 4064	31.9	2878	43,900 CUP	35.1	3126	51,800 CUP
IMR 4166	31.6	2831	43,900 CUP	34.8	3079	52,400 CUP
H4895	31.3	2931	45,300 CUP	34.4	3136	51,900 CUP
Bullet: 100 GR. SIE SBT Dia: .243″ Col: 2.500″						
IMR 4955	37.2	2739	43,700 CUP	40.9	3009	52,400 CUP
H4831	38.7	2828	47,200 CUP	42.6C	3042	52,400 CUP
StaBALL 6.5	35.9	2798	43,000 CUP	39.5	3019	51,400 CUP
Hybrid 100V	36.2	2844	46,600 CUP	39.8	3113	52,100 CUP
H4350	36.0	2876	45,300 CUP	39.5	3102	52,500 CUP
IMR 4451	34.5	2663	44,600 CUP	38.0	2912	52,500 CUP
CFE 223	32.8	2860	44,200 CUP	36.5	3139	52,200 CUP
Varget	31.2	2786	46,200 CUP	34.3	2996	52,300 CUP
IMR 4064	30.8	2761	46,000 CUP	33.9	2960	51,200 CUP
IMR 4166	30.2	2709	44,600 CUP	33.2	2907	52,200 CUP
Bullet: 105 GR. LAP SCENAR Dia: .243″ Col: 2.635″						
IMR 4955	36.6	2672	45,900 CUP	40.3	2935	52,600 CUP
H4831	37.3	2717	46,100 CUP	41.0	2959	52,300 CUP
StaBALL 6.5	36.2	2806	46,000 CUP	39.8	3016	52,400 CUP
Hybrid 100V	34.3	2732	45,300 CUP	37.7	2951	51,800 CUP
H4350	34.9	2789	44,200 CUP	38.4	3034	52,700 CUP
IMR 4451	33.5	2652	45,300 CUP	36.8	2893	52,300 CUP
CFE 223	32.5	2770	46,000 CUP	35.2	2979	51,900 CUP
Varget	29.9	2646	46,600 CUP	33.2	2882	51,900 CUP
IMR 4064	30.5	2697	46,800 CUP	33.7	2908	51,900 CUP
IMR 4166	29.3	2637	46,200 CUP	32.2	2846	52,300 CUP
Bullet: 108 GR. BER TGT BT Dia: .243″ Col: 2.635″						
IMR 4955	36.7	2635	46,300 CUP	40.3	2865	52,300 CUP
H4831	37.5	2676	46,200 CUP	41.3	2933	52,300 CUP
StaBALL 6.5	35.8	2728	44,000 CUP	39.8	2996	52,000 CUP
Hybrid 100V	34.4	2697	44,000 CUP	37.5	2890	51,400 CUP
H4350	35.1	2772	48,000 CUP	38.6	2970	51,500 CUP
IMR 4451	33.7	2618	45,400 CUP	37.0	2872	52,500 CUP
CFE 223	31.4	2663	45,900 CUP	34.5	2891	51,900 CUP
Varget	30.1	2661	48,000 CUP	33.1	2856	52,200 CUP
IMR 4064	30.7	2662	47,400 CUP	33.7	2874	52,500 CUP
IMR 4166	29.6	2620	46,800 CUP	32.5	2804	52,400 CUP

6 CREEDMOOR

Case: Hornady Twist: 1:8″
Barrel: 24″ Trim: 1.910″ Primer: Winchester LR, Large Rifle

Powder	Grs.	Vel.	Pressure	Grs.	Vel.	Pressure
Bullet: 55 GR. NOS BT Dia: .243″ Col: 2.490″						
StaBALL 6.5	48.8	3734	46,500 PSI	53.0C	4088	60,000 PSI
H414	46.2	3704	45,300 PSI	50.2	4049	58,500 PSI
CFE 223	44.6	3766	45,200 PSI	48.5	4122	59,100 PSI
Varget	42.0	3730	46,800 PSI	45.7	4057	60,000 PSI
IMR 4064	41.2	3661	45,100 PSI	44.7	4036	59,100 PSI
IMR 4166	41.5	3730	49,300 PSI	45.0	4005	59,800 PSI
BL-C(2)	44.0	3662	44,600 PSI	47.8	4037	58,900 PSI
IMR 4895	41.2	3704	46,800 PSI	44.8	4066	60,200 PSI
H335	41.1	3702	47,100 PSI	44.4	4023	60,200 PSI
H4895	39.9	3736	46,200 PSI	43.4	4074	60,400 PSI
IMR 8208 XBR	40.0	3739	46,900 PSI	43.5	4065	60,400 PSI
IMR 3031	39.1	3700	47,200 PSI	42.5	4034	60,200 PSI
Benchmark	39.3	3742	46,600 PSI	42.8	4055	59,300 PSI
Bullet: 60 GR. SIE HP Dia: .243″ Col: 2.410″						
StaBALL 6.5	47.3	3605	46,800 PSI	51.5C	3947	60,100 PSI
H414	44.8	3536	44,700 PSI	48.7	3893	58,800 PSI
CFE 223	43.1	3630	46,400 PSI	46.8	3965	60,200 PSI
Varget	40.7	3631	49,200 PSI	44.2	3886	59,600 PSI
IMR 4064	40.2	3518	46,100 PSI	43.6	3875	60,000 PSI
IMR 4166	40.2	3563	48,900 PSI	43.6	3865	60,700 PSI
BL-C(2)	42.7	3540	45,400 PSI	46.4	3885	59,600 PSI
IMR 4895	40.1	3550	46,200 PSI	43.5	3913	60,600 PSI

NEVER EXCEED MAXIMUM LOADS

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
H335	39.8	3524	48,700 PSI	43.1	3825	59,800 PSI
H4895	38.8	3634	48,500 PSI	42.2	3909	60,200 PSI
IMR 8208 XBR	38.9	3611	48,100 PSI	42.3	3885	60,000 PSI
IMR 3031	38.1	3584	49,500 PSI	41.5	3867	60,600 PSI
Benchmark	38.3	3665	52,200 PSI	41.7	3852	59,400 PSI
Bullet: 70 GR. SPR HP			**Dia: .243″**		**Col: 2.490″**	
StaBALL 6.5	46.0	3456	46,400 PSI	50.0	3763	59,700 PSI
H4350	44.2	3303	44,700 PSI	48.0C	3590	56,900 PSI
IMR 4451	43.8	3355	48,700 PSI	46.7C	3576	57,400 PSI
H414	43.5	3367	45,700 PSI	47.7	3684	59,400 PSI
H380	43.8	3413	49,000 PSI	47.5	3673	60,300 PSI
CFE 223	42.0	3432	48,500 PSI	45.6	3710	60,500 PSI
Varget	39.7	3437	49,400 PSI	43.2	3680	60,500 PSI
IMR 4064	39.4	3328	44,900 PSI	42.8	3670	60,300 PSI
IMR 4166	39.7	3403	49,300 PSI	43.1	3655	60,500 PSI
BL-C(2)	42.1	3386	47,800 PSI	45.7	3675	60,500 PSI
IMR 4895	39.5	3411	48,400 PSI	42.9	3666	60,000 PSI
H4895	38.0	3429	49,600 PSI	41.3	3652	60,200 PSI
IMR 8208 XBR	37.9	3450	51,700 PSI	41.0	3628	59,100 PSI
Bullet: 80 GR. HDY GMX			**Dia: .243″**		**Col: 2.540″**	
IMR 4955	42.9	3098	47,400 PSI	46.6C	3348	57,600 PSI
H4831	44.0	3106	50,300 PSI	47.2C	3285	58,300 PSI
StaBALL 6.5	42.9	3199	46,800 PSI	46.7	3516	60,200 PSI
IMR 4831	42.5	3112	48,900 PSI	46.0C	3342	58,100 PSI
H4350	40.3	3097	47,800 PSI	44.4	3374	60,000 PSI
IMR 4451	39.8	3072	47,700 PSI	43.9C	3378	60,600 PSI
H414	39.8	3094	45,700 PSI	43.8	3403	59,400 PSI
IMR 4350	41.0	3123	48,700 PSI	44.9C	3396	59,700 PSI
H380	39.6	3125	50,500 PSI	42.7	3353	60,300 PSI
CFE 223	37.4	3114	49,400 PSI	40.7	3345	59,900 PSI
Varget	35.7	3104	50,300 PSI	38.7	3308	59,700 PSI
IMR 4064	36.0	3113	50,200 PSI	39.1	3325	59,700 PSI
IMR 4166	35.8	3094	49,300 PSI	38.9	3331	60,000 PSI
BL-C(2)	37.5	3093	50,500 PSI	40.5	3320	59,700 PSI
IMR 4895	36.2	3134	51,300 PSI	39.3	3341	60,200 PSI
H4895	34.2	3097	52,100 PSI	37.1	3281	60,200 PSI
IMR 8208 XBR	34.0	3106	52,300 PSI	36.7	3264	59,200 PSI
Bullet: 85 GR. NOS PART			**Dia: .243″**		**Col: 2.580″**	
IMR 4955	43.7	3036	43,900 PSI	47.5C	3371	59,000 PSI
StaBALL 6.5	44.0	3194	46,100 PSI	47.9	3511	60,300 PSI
IMR 4831	43.2	3029	43,900 PSI	47.0C	3352	58,000 PSI
H4350	41.1	3061	45,300 PSI	45.7	3390	60,500 PSI
IMR 4451	40.5	3028	44,700 PSI	44.9	3371	60,100 PSI
H414	40.7	3110	47,600 PSI	44.7	3379	59,200 PSI
IMR 4350	41.3	3031	44,800 PSI	45.4	3373	59,500 PSI
H380	40.4	3106	49,600 PSI	43.2	3297	59,000 PSI
CFE 223	38.0	3124	51,500 PSI	41.3	3310	59,600 PSI
Varget	36.8	3128	51,100 PSI	39.9	3316	59,800 PSI
IMR 4064	37.5	3147	50,900 PSI	40.7	3350	60,100 PSI
IMR 4166	37.0	3146	50,700 PSI	40.3	3361	60,100 PSI
BL-C(2)	38.1	3113	51,700 PSI	41.4	3302	59,700 PSI
IMR 4895	37.0	3150	50,800 PSI	40.4	3350	59,700 PSI
H4895	35.2	3093	49,900 PSI	38.3	3301	60,200 PSI
IMR 8208 XBR	34.8	3092	50,800 PSI	37.7	3274	59,500 PSI
Bullet: 90 GR. SFT SCIR			**Dia: .243″**		**Col: 2.725″**	
IMR 4955	42.2	3015	48,800 PSI	46.0	3278	60,700 PSI
H4831	42.9	3001	50,700 PSI	46.6	3208	60,100 PSI
StaBALL 6.5	41.7	3050	46,000 PSI	45.3	3365	60,000 PSI
Hybrid 100V	39.6	2981	45,400 PSI	43.8	3263	56,700 PSI
IMR 4831	41.7	2992	48,000 PSI	45.5	3262	59,300 PSI
H4350	40.2	3039	50,300 PSI	43.7	3261	60,100 PSI
IMR 4451	39.5	3006	48,900 PSI	42.9	3250	60,000 PSI
H414	39.5	3028	50,000 PSI	43.2	3267	59,800 PSI
IMR 4350	40.2	3029	48,800 PSI	43.7	3280	59,500 PSI
H380	38.5	2987	50,500 PSI	41.4	3175	59,100 PSI
CFE 223	36.1	2965	50,900 PSI	39.3	3158	59,000 PSI
Varget	34.8	2969	51,100 PSI	37.6	3170	60,500 PSI
IMR 4064	35.7	2997	50,000 PSI	38.9	3210	59,700 PSI
IMR 4166	34.9	2984	49,900 PSI	37.9	3196	59,500 PSI
BL-C(2)	36.2	3006	53,600 PSI	39.3	3161	60,400 PSI
IMR 4895	34.9	2979	49,900 PSI	37.9	3181	59,500 PSI
H4895	33.3	2925	50,200 PSI	36.0	3107	59,800 PSI
IMR 8208 XBR	32.9	2922	50,900 PSI	35.5	3105	60,100 PSI
Bullet: 95 GR. BER VLD TRGT Col: 2.650″					**Dia: .243″**	
IMR 4955	41.7	2871	43,500 PSI	45.9	3224	60,300 PSI
Suprform	42.1	3021	45,700 PSI	46.3	3314	60,900 PSI
H4831	42.8	2921	47,000 PSI	47.0C	3158	59,700 PSI
StaBALL 6.5	42.3	3061	45,800 PSI	45.7	3342	59,500 PSI
Hybrid 100V	39.2	2944	45,200 PSI	43.1	3233	59,000 PSI
IMR 4831	41.4	2877	43,500 PSI	45.5	3222	60,000 PSI
H4350	39.5	2932	45,700 PSI	44.0	3211	59,300 PSI
IMR 4451	39.3	2916	46,800 PSI	43.2	3201	60,500 PSI
H414	39.5	2965	47,300 PSI	43.4	3227	60,100 PSI
IMR 4350	40.4	2946	45,500 PSI	44.4	3255	60,400 PSI
H380	39.4	2958	49,700 PSI	42.0	3150	59,700 PSI
CFE 223	37.5	2964	49,800 PSI	40.8	3174	60,000 PSI
Varget	34.8	2950	49,500 PSI	37.9	3135	59,500 PSI
IMR 4064	35.9	2984	50,100 PSI	39.0	3179	60,300 PSI
IMR 4166	35.4	2978	49,500 PSI	38.5	3187	60,000 PSI
BL-C(2)	37.2	2953	51,600 PSI	40.4	3139	59,800 PSI
IMR 4895	35.9	3010	51,000 PSI	38.9	3192	60,200 PSI
H4895	33.9	2941	49,400 PSI	36.7	3128	60,200 PSI
IMR 8208 XBR	33.8	2952	51,000 PSI	36.6	3117	59,500 PSI
Bullet: 100 GR. HDY BTSP			**Dia: .243″**		**Col: 2.625″**	
H1000	44.6	2784	41,900 PSI	49.0C	3050	55,300 PSI
IMR 4955	40.9	2775	45,600 PSI	45.0	3073	60,500 PSI
Suprform	41.4	2922	46,200 PSI	45.5	3200	60,600 PSI
H4831	42.0	2853	48,400 PSI	46.2	3070	60,000 PSI
StaBALL 6.5	41.0	2910	43,800 PSI	44.6	3217	59,400 PSI
Hybrid 100V	38.8	2881	46,800 PSI	42.7	3139	59,400 PSI
IMR 4831	40.6	2823	45,600 PSI	44.7C	3127	60,700 PSI
H4350	38.8	2879	48,200 PSI	42.7	3113	59,800 PSI
IMR 4451	38.4	2828	47,700 PSI	42.2	3074	59,200 PSI
H414	38.6	2858	47,200 PSI	42.5	3120	60,200 PSI
IMR 4350	39.3	2858	47,200 PSI	43.2	3111	59,700 PSI
H380	37.8	2804	46,200 PSI	40.9	3050	59,600 PSI
CFE 223	36.8	2867	49,800 PSI	40.0	3068	59,800 PSI
Varget	34.7	2871	50,100 PSI	37.6	3047	59,900 PSI
IMR 4064	36.0	2894	49,400 PSI	39.0	3085	59,400 PSI
IMR 4166	35.2	2890	50,000 PSI	38.1	3089	60,300 PSI
BL-C(2)	37.1	2880	51,700 PSI	40.3	3062	60,200 PSI
IMR 4895	35.0	2880	49,500 PSI	37.9	3069	59,000 PSI
H4895	33.5	2842	50,300 PSI	36.3	3020	60,600 PSI
IMR 8208 XBR	33.0	2828	50,200 PSI	35.7	3000	60,000 PSI
Bullet: 105 GR. HDY BTHP			**Dia: .243″**		**Col: 2.730″**	
IMR 4955	41.0	2786	45,800 PSI	44.9	3083	60,600 PSI
Suprform	41.6	2874	46,600 PSI	45.7	3151	60,100 PSI
H4831	42.5	2831	48,600 PSI	46.4	3053	60,400 PSI
StaBALL 6.5	40.2	2840	44,200 PSI	43.7	3156	60,200 PSI
Hybrid 100V	39.2	2840	45,700 PSI	42.7	3102	59,100 PSI
IMR 4831	41.2	2818	46,400 PSI	45.0	3086	59,700 PSI
H4350	39.0	2867	49,800 PSI	42.4	3071	60,400 PSI
IMR 4451	38.6	2845	49,300 PSI	42.0	3064	60,500 PSI
IMR 4350	39.6	2866	48,700 PSI	43.0	3088	60,100 PSI
Bullet: 107 GR. SIE HPBT			**Dia: .243″**		**Col: 2.775″**	
H1000	43.8	2778	45,700 PSI	48.2C	3024	59,200 PSI
IMR 7977	42.9	2721	45,400 PSI	46.6C	3008	59,400 PSI
IMR 4955	39.4	2744	46,800 PSI	43.4	3000	59,600 PSI
Suprform	40.1	2850	47,400 PSI	44.2	3089	60,100 PSI

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
H4831	40.3	2750	47,400 PSI	44.4	2997	60,800 PSI
StaBALL 6.5	39.8	2836	46,300 PSI	43.3	3096	59,500 PSI
Hybrid 100V	37.2	2794	47,700 PSI	40.9	3037	60,200 PSI
IMR 4831	38.8	2744	46,200 PSI	42.6	3006	59,600 PSI
H4350	37.5	2801	49,200 PSI	41.3	3009	60,300 PSI
IMR 4451	36.8	2747	48,200 PSI	40.5	2986	60,400 PSI
IMR 4350	37.5	2776	47,200 PSI	41.3	3008	59,500 PSI
Bullet: 108 GR. HDY ELD-M			**Dia: .243″**		**Col: 2.770″**	
H1000	43.8	2786	46,600 PSI	48.2C	3042	59,700 PSI
IMR 7977	42.3	2748	46,700 PSI	45.9C	3002	59,700 PSI
IMR 4955	40.1	2771	48,100 PSI	43.5	2995	59,700 PSI
Suprform	40.2	2813	46,300 PSI	44.2	3078	60,200 PSI
H4831	40.8	2766	48,400 PSI	44.1	2972	60,200 PSI
StaBALL 6.5	39.5	2814	45,800 PSI	43.0	3088	59,500 PSI
Hybrid 100V	37.9	2805	48,300 PSI	41.7	3031	59,100 PSI
IMR 4831	39.6	2768	47,100 PSI	43.0	3012	59,800 PSI
H4350	37.8	2802	49,800 PSI	41.6	3006	60,100 PSI
IMR 4451	37.1	2754	48,700 PSI	40.8	2980	59,800 PSI
IMR 4350	37.7	2771	47,300 PSI	41.4	3004	59,200 PSI
Bullet: 110 GR. HDY A-TIP			**Dia: .243″**		**Col: 2.780″**	
StaBALL 6.5	39.3	2787	46,900 PSI	42.7	3046	60,000 PSI
Bullet: 115 GR. BER VLD TARGET Dia: .243″ Col: 2.790″						
H1000	43.2	2687	46,100 PSI	48.0C	2944	59,500 PSI
IMR 7977	42.7	2693	47,300 PSI	46.4C	2942	59,800 PSI
IMR 4955	39.2	2661	47,000 PSI	43.1	2919	60,300 PSI
Suprform	39.6	2732	46,300 PSI	43.4	2984	59,900 PSI
H4831	39.6	2658	47,200 PSI	43.6	2889	59,500 PSI
StaBALL 6.5	39.3	2714	44,100 PSI	43.2	3026	60,000 PSI
Hybrid 100V	36.4	2662	46,400 PSI	40.5	2909	59,600 PSI
IMR 4831	38.4	2663	46,900 PSI	42.2	2918	60,500 PSI
H4350	36.8	2718	50,500 PSI	40.5	2895	58,900 PSI
IMR 4451	36.3	2684	49,900 PSI	39.9	2886	59,600 PSI
IMR 4350	36.9	2690	48,600 PSI	40.6	2904	59,400 PSI

243 WINCHESTER

Case: Winchester Twist: 1:10″
Barrel: 24″ Trim: 2.035″ Primer: Winchester LR, Large Rifle

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Bullet: 55 GR. NOS BT			**Dia: .243″**		**Col: 2.650″**	
H414	45.0	3611	37,400 CUP	50.0	3950	51,600 CUP
760	45.0	3611	37,400 CUP	50.0	3950	51,600 CUP
H380	46.0	3704	40,600 CUP	51.0	4010	48,700 CUP
CFE 223	41.0	3684	49,500 PSI	45.3	3941	58,700 PSI
Varget	41.0	3776	42,000 CUP	45.0	4000	50,000 CUP
IMR 4320	40.0	3603	48,600 CUP	45.5	3876	49,800 CUP
IMR 4064	39.5	3554	41,300 CUP	44.0	3875	51,200 CUP
IMR 4166	41.2	3696	48,600 PSI	44.8	3950	57,700 PSI
BL-C(2)	43.0	3779	42,600 CUP	47.0	4025	49,400 CUP
IMR 4895	40.0	3599	42,100 CUP	44.0	3877	50,200 CUP
H4895	40.0	3638	35,100 CUP	44.5	4058	49,300 CUP
IMR 8208 XBR	40.0	3687	47,700 PSI	43.0	3931	58,600 PSI
IMR 3031	37.0	3520	38,300 CUP	40.5	3864	50,900 CUP
Benchmark	39.0	3575	42,600 CUP	41.5	3815	50,100 CUP
Bullet: 55 GR. NOS BT LF			**Dia: .243″**		**Col: 2.710″**	
H414	44.5	3687	50,700 PSI	48.4	3896	57,800 PSI
760	44.5	3687	50,700 PSI	48.4	3896	57,800 PSI
H380	41.7	3654	52,700 PSI	45.3	3826	57,500 PSI
Varget	37.1	3646	53,000 PSI	39.5	3782	57,700 PSI
IMR 4320	38.2	3497	48,200 PSI	41.0	3757	56,500 PSI
IMR 4064	37.6	3606	50,000 PSI	40.0	3801	57,800 PSI
IMR 4166	39.9	3583	46,800 PSI	44.5	3921	58,700 PSI
BL-C(2)	40.9	3689	50,700 PSI	43.5	3868	58,300 PSI
IMR 4895	38.4	3585	50,000 PSI	40.8	3783	57,700 PSI
H4895	35.7	3621	50,700 PSI	38.0	3777	57,100 PSI
Bullet: 58 GR. HDY V-MAX			**Dia: .243″**		**Col: 2.600″**	
H414	46.0	3633	43,600 CUP	49.0	3806	49,100 CUP
760	46.0	3633	43,600 CUP	49.0	3806	49,000 CUP
H380	46.0	3721	47,500 CUP	49.5	3874	51,000 CUP
CFE 223	41.0	3634	50,200 PSI	44.9	3850	57,800 PSI
Varget	41.0	3617	44,800 CUP	44.0	3790	49,800 CUP
IMR 4320	40.5	3448	41,800 CUP	44.8	3822	50,100 CUP
IMR 4064	39.6	3388	39,400 CUP	44.0	3780	50,200 CUP
IMR 4166	40.9	3645	49,800 PSI	44.5	3889	58,600 PSI
IMR 4895	40.5	3551	42,300 CUP	44.7	3819	50,000 CUP
H335	39.5	3714	47,800 CUP	41.5	3812	50,600 CUP
H4895	40.0	3643	43,300 CUP	43.0	3851	49,900 CUP
IMR 8208 XBR	39.0	3581	47,300 PSI	42.3	3825	58,300 PSI
IMR 3031	36.5	3467	40,700 CUP	41.0	3815	50,500 CUP
Benchmark	35.0	3417	41,800 CUP	37.5	3607	50,000 CUP
Bullet: 60 GR. SIE HP			**Dia: .243″**		**Col: 2.600″**	
H414	43.0	3423	38,600 CUP	47.5	3724	49,600 CUP
760	43.0	3423	38,600 CUP	47.5	3724	49,600 CUP
H380	43.0	3514	38,900 CUP	48.0	3781	47,400 CUP
CFE 223	41.0	3541	49,400 PSI	45.0	3785	58,600 PSI
Varget	40.0	3671	45,400 CUP	42.7	3816	50,400 CUP
IMR 4320	40.0	3431	42,500 CUP	44.4	3716	50,500 CUP
IMR 4064	40.0	3476	43,600 CUP	43.8	3766	50,400 CUP
IMR 4166	39.7	3508	48,400 PSI	43.5	3793	58,900 PSI
IMR 4895	39.6	3464	43,500 CUP	43.3	3785	50,800 CUP
H335	35.0	3445	41,400 CUP	39.0	3717	50,300 CUP
H4895	38.0	3521	40,500 CUP	42.0	3812	50,600 CUP
IMR 8208 XBR	37.0	3505	50,000 PSI	40.2	3702	58,500 PSI
IMR 3031	36.8	3448	43,000 CUP	40.5	3714	50,500 CUP
Benchmark	38.5	3587	47,000 CUP	41.2	3713	50,700 CUP
Bullet: 62 GR. BAR VG FB			**Dia: .243″**		**Col: 2.620″**	
H414	43.5	3427	50,600 PSI	46.3	3631	58,600 PSI
760	43.5	3427	50,600 PSI	46.3	3631	58,600 PSI
H380	41.9	3450	50,100 PSI	44.5	3625	57,900 PSI
CFE 223	34.0	3328	54,200 PSI	38.0	3517	59,300 PSI
Varget	39.3	3476	50,900 PSI	41.4	3620	57,100 PSI
IMR 4320	39.0	3425	49,600 PSI	41.4	3602	56,900 PSI
IMR 4064	38.1	3480	51,400 PSI	40.5	3652	58,000 PSI
IMR 4166	38.7	3397	48,100 PSI	42.5	3700	59,000 PSI
IMR 4895	38.1	3460	50,600 PSI	40.5	3658	58,300 PSI
H4895	36.7	3478	51,200 PSI	39.0	3622	57,400 PSI
IMR 8208 XBR	35.0	3321	46,500 PSI	39.0	3598	58,800 PSI
IMR 3031	34.8	3392	49,600 PSI	37.0	3573	58,100 PSI
Benchmark	36.1	3442	52,000 PSI	38.0	3586	58,600 PSI
Bullet: 65 GR. HDY V-MAX			**Dia: .243″**		**Col: 2.600″**	
Suprform	49.0	3530	52,100 PSI	51.9C	3773	57,300 PSI
H414	45.0	3521	41,400 CUP	48.0	3746	49,400 CUP
760	45.0	3521	41,400 CUP	48.0	3746	49,400 CUP
H380	42.0	3448	45,200 CUP	45.0	3627	50,000 CUP
CFE 223	38.0	3360	47,400 PSI	43.0	3632	57,300 PSI
Varget	38.0	3494	43,100 CUP	41.0	3682	49,600 CUP
IMR 4320	40.5	3448	43,800 CUP	43.9	3670	49,500 CUP
IMR 4064	40.0	3415	43,000 CUP	43.4	3698	50,000 CUP
IMR 4166	39.4	3448	48,800 PSI	42.9	3711	58,800 PSI
BL-C(2)	39.0	3493	47,300 CUP	42.0	3612	49,500 CUP
IMR 4895	38.5	3392	42,300 CUP	42.7	3664	50,600 CUP
H4895	38.0	3522	44,500 CUP	41.0	3677	49,200 CUP
IMR 8208 XBR	37.0	3363	45,800 PSI	41.0	3666	58,500 PSI
IMR 3031	36.5	3397	43,800 CUP	39.8	3624	50,200 CUP
Benchmark	37.0	3417	44,300 CUP	40.0	3598	50,600 CUP
Bullet: 70 GR. SPR HP			**Dia: .243″**		**Col: 2.625″**	
Suprform	46.0	3332	43,600 PSI	51.0C	3661	57,900 PSI
H414	42.0	3314	41,600 CUP	46.0	3568	49,800 CUP
760	42.0	3314	41,600 CUP	46.0	3568	49,800 CUP
H380	42.0	3349	42,900 CUP	46.0	3567	48,900 CUP

NEVER EXCEED MAXIMUM LOADS

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
CFE 223	36.0	3266	51,800 PSI	41.5	3487	57,400 PSI
Varget	38.0	3433	45,500 CUP	40.5	3574	50,100 CUP
IMR 4320	38.5	3325	43,800 CUP	42.5	3541	50,300 CUP
IMR 4064	38.5	3316	43,700 CUP	42.5	3541	50,000 CUP
IMR 4166	38.5	3366	49,600 PSI	41.9	3600	58,800 PSI
BL-C(2)	35.0	3228	47,900 CUP	39.0	3384	50,400 CUP
IMR 4895	38.5	3349	44,300 CUP	42.6	3558	50,000 CUP
H4895	36.0	3286	42,700 CUP	39.5	3477	49,200 CUP
IMR 8208 XBR	35.0	3232	47,600 PSI	38.6	3461	58,100 PSI
IMR 3031	35.5	3218	41,500 CUP	39.0	3485	51,100 CUP
Benchmark	36.5	3128	45,100 CUP	39.3	3491	50,300 CUP
Bullet: 75 GR. HDY HP			**Dia: .243″**		**Col: 2.640″**	
Suprform	45.0	3280	47,400 PSI	49.0	3510	57,900 PSI
H414	42.0	3203	41,100 CUP	46.0	3447	50,100 CUP
760	42.0	3203	41,100 CUP	46.0	3447	50,100 CUP
H380	40.0	3127	42,700 CUP	44.5	3393	48,600 CUP
CFE 223	34.0	3080	50,600 PSI	37.7	3274	57,600 PSI
Varget	36.0	3246	45,000 CUP	38.5	3408	50,500 CUP
IMR 4320	37.7	3180	43,500 CUP	41.5	3420	50,600 CUP
IMR 4064	37.5	3183	43,300 CUP	41.2	3419	50,300 CUP
IMR 4166	37.1	3227	49,300 PSI	40.4	3460	58,600 PSI
BL-C(2)	34.0	3041	45,100 CUP	37.5	3185	49,200 CUP
IMR 4895	37.5	3198	44,200 CUP	41.7	3423	50,400 CUP
H4895	34.0	3101	40,900 CUP	38.0	3354	49,400 CUP
IMR 8208 XBR	34.5	3114	48,200 PSI	37.8	3316	57,900 PSI
IMR 3031	33.2	3061	41,800 CUP	36.7	3298	49,800 CUP
Bullet: 80 GR. HDY GMX			**Dia: .243″**		**Col: 2.610″**	
Hybrid 100V	39.1	3083	48,600 PSI	42.5	3318	58,100 PSI
H4350	38.3	3045	52,600 PSI	40.7	3183	58,500 PSI
IMR 4451	38.8	3132	51,400 PSI	41.8	3338	58,800 PSI
H414	38.9	3022	48,400 PSI	42.3	3231	57,300 PSI
760	38.9	3022	48,400 PSI	42.3	3231	57,300 PSI
H380	36.9	3022	54,600 PSI	39.3	3135	57,300 PSI
Varget	34.1	2986	51,200 PSI	36.3	3137	58,700 PSI
IMR 4320	35.7	3011	49,800 PSI	38.0	3182	58,200 PSI
IMR 4064	34.0	2966	49,500 PSI	36.3	3134	57,600 PSI
IMR 4166	35.6	3024	48,200 PSI	39.2	3307	59,400 PSI
BL-C(2)	36.5	3057	49,600 PSI	39.2	3220	57,000 PSI
IMR 4895	35.3	3032	51,500 PSI	37.5	3165	58,100 PSI
H4895	32.7	2982	51,900 PSI	34.8	3123	58,100 PSI
IMR 8208 XBR	33.0	2961	51,400 PSI	35.1	3109	58,800 PSI
Bullet: 80 GR. SIE BTSP			**Dia: .243″**		**Col: 2.635″**	
Suprform	44.0	3236	49,300 PSI	48.7	3460	58,400 PSI
Hybrid 100V	41.0	3072	40,100 CUP	45.0C	3330	48,400 CUP
IMR 4451	42.5	3195	47,700 PSI	46.2	3462	58,300 PSI
H414	42.0	3249	46,300 CUP	45.0	3404	50,100 CUP
760	42.0	3249	46,300 CUP	45.0	3404	50,100 CUP
H380	38.0	3047	44,700 CUP	41.2	3223	50,300 CUP
Varget	36.0	3193	45,400 CUP	38.5	3355	50,300 CUP
IMR 4320	37.0	3132	44,000 CUP	40.5	3339	50,600 CUP
IMR 4064	37.5	3141	45,000 CUP	41.0	3320	50,800 CUP
IMR 4166	37.0	3171	48,400 PSI	40.3	3409	58,300 PSI
BL-C(2)	35.0	3083	47,100 CUP	38.5	3242	50,600 CUP
IMR 4895	36.5	3094	43,300 CUP	40.2	3290	50,300 CUP
H4895	35.0	3123	45,800 CUP	38.0	3307	50,100 CUP
IMR 8208 XBR	34.0	3013	45,400 PSI	38.0	3269	57,500 PSI
Bullet: 85 GR. BAR TSX			**Dia: .243″**		**Col: 2.620″**	
Hybrid 100V	38.3	3022	47,500 PSI	42.5C	3267	58,100 PSI
IMR 4831	38.3	3014	49,900 PSI	42.6C	3233	58,500 PSI
H4350	37.3	2972	49,600 PSI	40.5	3141	57,300 PSI
IMR 4451	40.7	3138	50,200 PSI	43.8	3342	58,700 PSI
H414	38.4	2981	50,300 PSI	41.7	3165	57,300 PSI
IMR 4350	37.4	2980	48,900 PSI	40.7	3176	57,800 PSI
760	38.4	2981	50,300 PSI	41.7	3165	57,300 PSI
H380	36.4	2987	55,700 PSI	38.7	3074	57,300 PSI
Varget	34.3	2997	52,200 PSI	36.5	3121	58,000 PSI
IMR 4320	35.3	2996	49,700 PSI	37.6	3158	58,100 PSI
IMR 4064	33.8	2964	49,200 PSI	36.0	3112	56,700 PSI
IMR 4166	35.9	3019	48,200 PSI	39.5	3249	57,800 PSI
IMR 4895	34.6	3010	50,700 PSI	36.8	3146	58,000 PSI
H4895	32.6	2955	51,800 PSI	34.7	3089	57,500 PSI
Bullet: 90 GR. SPR SP			**Dia: .243″**		**Col: 2.625″**	
IMR 7828	45.0	2950	46,100 CUP	48.0C*	3130	50,600 CUP
IMR 4955	43.6	2926	49,700 PSI	47.4C	3153	58,500 PSI
H4831	45.0	3010	43,700 CUP	48.0C	3203	50,800 CUP
Hybrid 100V	40.0	2934	43,000 CUP	44.0C	3204	50,100 CUP
IMR 4831	40.5	2858	43,700 CUP	43.9	3050	50,700 CUP
H4350	42.0	3039	44,400 CUP	44.5	3185	50,600 CUP
IMR 4451	37.6	2967	51,900 PSI	40.5	3138	58,300 PSI
H414	41.0	3024	43,600 CUP	43.5	3185	49,600 CUP
IMR 4350	39.5	2856	42,700 CUP	43.0	3096	50,800 CUP
760	41.0	3024	43,600 CUP	43.5	3185	49,600 CUP
H380	38.0	2892	43,100 CUP	40.5	3060	49,500 CUP
Varget	34.0	2964	44,800 CUP	36.5	3106	50,400 CUP
IMR 4064	33.5	2796	41,600 CUP	37.0	3020	50,200 CUP
IMR 4166	34.3	2857	48,500 PSI	37.7	3097	58,500 PSI
IMR 4895	33.5	2815	41,800 CUP	36.9	3033	50,200 CUP
H4895	34.0	2967	44,900 CUP	36.5	3114	50,800 CUP
Bullet: 95 GR. NOS PART			**Dia: .243″**		**Col: 2.650″**	
H1000	45.0	2946	44,900 CUP	48.0C	3077	50,000 CUP
IMR 7977	45.3	2903	48,400 PSI	49.3C	3146	58,200 PSI
IMR 7828	41.5	2780	42,300 CUP	45.8C*	3030	50,600 CUP
IMR 4955	44.1	2860	47,500 PSI	48.0C	3115	58,600 PSI
H4831	42.0	2930	47,000 CUP	44.5C	3052	50,700 CUP
Hybrid 100V	39.0	2866	42,200 CUP	43.0C	3113	50,200 CUP
IMR 4831	39.5	2793	43,900 CUP	42.8	2985	50,200 CUP
H4350	39.0	2917	45,800 CUP	42.0	3087	50,500 CUP
IMR 4451	38.5	2922	49,500 PSI	41.8	3141	58,500 PSI
H414	39.0	2933	43,800 CUP	42.0	3138	50,700 CUP
IMR 4350	38.0	2792	43,200 CUP	41.8	2993	50,200 CUP
760	39.0	2933	43,800 CUP	42.0	3138	50,700 CUP
H380	36.0	2779	43,000 CUP	38.0	2922	49,100 CUP
Varget	33.0	2870	45,000 CUP	35.0	2996	50,200 CUP
IMR 4064	33.0	2745	43,500 CUP	36.5	2967	51,100 CUP
IMR 4895	32.0	2687	41,800 CUP	35.5	2908	50,400 CUP
H4895	33.0	2865	45,000 CUP	35.0	2990	50,700 CUP
Bullet: 100 GR. SPR BTSP			**Dia: .243″**		**Col: 2.650″**	
H1000	44.0	2876	45,700 CUP	47.0C	3000	49,800 CUP
IMR 7977	45.6	2927	49,400 PSI	49.1C	3122	58,100 PSI
IMR 7828	42.5	2796	43,700 CUP	46.0C*	3009	51,100 CUP
IMR 4955	43.1	2799	48,000 PSI	46.9C	3038	58,700 PSI
H4831	39.0	2761	44,400 CUP	42.0	2924	50,100 CUP
Hybrid 100V	40.0	2868	45,400 CUP	43.7C	3100	51,700 CUP
IMR 4831	39.2	2733	43,500 CUP	43.0	2947	50,800 CUP
H4350	37.0	2806	45,100 CUP	40.0	2973	51,000 CUP
IMR 4451	39.2	2858	47,900 PSI	42.7	3090	58,400 PSI
H414	37.0	2800	44,500 CUP	40.0	2963	50,600 CUP
IMR 4350	38.5	2760	43,000 CUP	42.0	2958	50,100 CUP
760	37.0	2800	44,500 CUP	40.0	2963	50,600 CUP
H380	34.0	2639	43,600 CUP	36.0	2770	50,100 CUP
Varget	31.0	2674	42,700 CUP	33.7	2838	50,400 CUP
IMR 4064	33.0	2672	42,200 CUP	36.5	2902	51,100 CUP
IMR 4166	33.9	2761	47,900 PSI	37.3	2984	58,100 PSI
IMR 4895	32.8	2683	42,300 CUP	35.7	2862	50,100 CUP
H4895	31.0	2683	44,900 CUP	33.0	2818	50,100 CUP
Trail Boss	8.0	1045	27,300 CUP	15.3	1603	39,100 CUP
Bullet: 105 GR. HDY A-MAX			**Dia: .243″**		**Col: 2.760″**	
Retumbo	46.0	2772	44,200 CUP	49.0C	2986	49,700 CUP
IMR 8133	46.4	2712	47,100 PSI	50.5C	2987	59,300 PSI
H1000	43.0	2798	45,400 CUP	46.0C	2930	50,200 CUP

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
IMR 7977	43.7	2820	48,300 PSI	47.0C	3029	58,500 PSI
IMR 7828	40.6	2721	44,500 CUP	44.0C	2894	50,300 CUP
IMR 4955	41.9	2723	47,400 PSI	45.6C	2959	58,500 PSI
H4831	38.0	2687	43,900 CUP	41.0	2846	50,200 CUP
Hybrid 100V	37.0	2721	43,800 CUP	41.0C	2959	49,300 CUP
IMR 4831	38.0	2661	43,700 CUP	41.5	2870	50,800 CUP
H4350	35.0	2663	44,300 CUP	37.5	2799	49,500 CUP
IMR 4451	37.5	2809	51,500 PSI	40.4	2980	58,800 PSI
H414	36.0	2692	43,700 CUP	39.0	2862	50,100 CUP
IMR 4350	36.7	2648	43,000 CUP	40.2	2870	50,800 CUP
760	36.0	2692	43,700 CUP	39.0	2862	50,100 CUP
H380	33.0	2589	43,700 CUP	35.0	2687	49,800 CUP
Varget	31.0	2631	45,600 CUP	33.0	2769	50,800 CUP
H4895	30.5	2619	44,900 CUP	32.5	2724	50,100 CUP
Bullet: 107 GR. SIE BTHP			**Dia: .243″**		**Col: 2.850″**	
Retumbo	46.0	2785	42,800 CUP	49.0C	2974	48,500 CUP
IMR 8133	45.3	2754	49,600 PSI	49.2C	2981	59,200 PSI
H1000	43.0	2787	44,700 CUP	46.0C	2918	50,100 CUP
IMR 7977	44.0	2827	49,400 PSI	47.4C	3008	57,300 PSI
IMR 7828	40.0	2675	43,000 CUP	43.5	2878	50,100 CUP
IMR 4955	41.8	2714	47,800 PSI	45.5C	2952	58,500 PSI
H4831	38.0	2678	43,700 CUP	41.0	2835	50,100 CUP
Hybrid 100V	38.0	2760	45,300 CUP	41.5C	2957	50,900 CUP
IMR 4831	37.5	2662	43,900 CUP	40.9	2844	50,400 CUP
H4350	35.0	2671	43,100 CUP	37.5	2800	50,200 CUP
IMR 4451	37.5	2807	51,100 PSI	40.4	2967	58,500 PSI
H414	35.0	2664	43,400 CUP	38.0	2809	49,500 CUP
IMR 4350	36.5	2661	42,100 CUP	39.8	2853	50,600 CUP
760	35.0	2664	43,400 CUP	38.0	2809	49,500 CUP
H380	33.0	2570	44,400 CUP	34.8	2682	50,100 CUP
Varget	31.0	2630	45,300 CUP	33.0	2749	50,400 CUP
H4895	30.5	2613	45,900 CUP	32.5	2719	49,900 CUP
Bullet: 108 GR. HDY ELD-M			**Dia: .243″**		**Col: 2.700″**	
Retumbo	45.1	2773	43,900 PSI	49.0C	3039	57,500 PSI
IMR 8133	46.1	2705	41,400 PSI	49.6C	2970	52,500 PSI
H1000	44.2	2782	45,300 PSI	49.2C	3051	58,200 PSI
IMR 7977	43.1	2712	45,800 PSI	48.4C	3018	59,400 PSI
IMR 7828	39.2	2716	44,600 PSI	44.5	3051	59,000 PSI
IMR 4955	39.4	2737	47,000 PSI	44.2	3024	59,500 PSI
H4831	39.9	2699	45,000 PSI	44.7C	3014	59,400 PSI
Hybrid 100V	37.3	2751	44,500 PSI	42.4C	3054	58,600 PSI
IMR 4831	38.7	2745	45,800 PSI	44.0C	3053	59,300 PSI
H4350	34.1	2601	41,600 PSI	41.1	3015	59,300 PSI
IMR 4451	35.8	2648	44,400 PSI	40.7	2987	59,400 PSI
IMR 4350	36.4	2702	45,000 PSI	41.2	3023	59,200 PSI
Bullet: 115 GR. BER VLD TARG					**Dia: .243″**	
Col: 2.850″						
Retumbo	40.7	2632	43,400 PSI	46.3C	2947	59,000 PSI
IMR 8133	42.2	2661	46,100 PSI	48.0C	2963	59,400 PSI
H1000	39.8	2620	43,800 PSI	45.5C	2934	59,300 PSI
IMR 7977	38.3	2578	44,600 PSI	44.0C	2903	59,400 PSI
IMR 7828	37.2	2604	43,900 PSI	42.6C	2942	59,500 PSI
IMR 4955	36.5	2575	44,000 PSI	41.9	2889	59,200 PSI
H4831	37.1	2601	45,500 PSI	42.5	2885	59,500 PSI
Hybrid 100V	35.4	2652	45,600 PSI	40.2	2931	59,300 PSI
IMR 4831	36.8	2641	46,400 PSI	41.4	2926	59,400 PSI
H4350	34.2	2616	46,900 PSI	38.4	2850	58,700 PSI
IMR 4451	34.7	2577	45,700 PSI	39.5	2866	59,300 PSI
IMR 4350	34.8	2594	45,600 PSI	39.6	2886	59,400 PSI

6MM REMINGTON

Case: Winchester Twist: 1:9″
Barrel: 24″ Trim: 2.223″ Primer: Remington 9 1/2, Large Rifle

Bullet: 55 GR. NOS BT			**Dia: .243″**		**Col: 2.800″**	
H414	46.0	3626	43,900 PSI	51.0	4016	58,800 PSI
760	46.0	3626	43,900 PSI	51.0	4016	58,800 PSI
H380	48.0	3793	49,900 PSI	53.0	4083	60,700 PSI
Varget	43.0	3678	45,700 PSI	47.5	4023	58,800 PSI
IMR 4320	43.0	3603	43,900 PSI	47.8	4047	60,300 PSI
IMR 4166	42.7	3694	48,100 PSI	47.0	4026	60,100 PSI
BL-C(2)	44.0	3680	44,800 PSI	48.8	4094	60,100 PSI
H4895	42.0	3656	43,700 PSI	46.5	4066	59,300 PSI
IMR 8208 XBR	40.0	3533	39,700 PSI	45.0	4044	59,300 PSI
IMR 3031	40.0	3656	44,500 PSI	45.0	4090	61,200 PSI
Benchmark	40.0	3656	44,800 PSI	44.5	4028	59,600 PSI
Bullet: 55 GR. NOS BT LF			**Dia: .243″**		**Col: 2.825″**	
H380	48.0	3770	50,900 PSI	53.0	4018	59,100 PSI
Varget	43.0	3679	46,900 PSI	47.0	4027	60,700 PSI
IMR 4320	43.0	3594	45,400 PSI	47.5	4030	61,500 PSI
748	43.0	3645	46,100 PSI	48.0	4036	60,500 PSI
BL-C(2)	44.0	3686	46,400 PSI	48.8	4041	59,300 PSI
IMR 4895	43.0	3695	47,800 PSI	47.0	4061	61,100 PSI
H4895	41.0	3598	43,200 PSI	46.0	4071	61,800 PSI
IMR 8208 XBR	40.0	3540	42,200 PSI	44.6	4013	60,800 PSI
IMR 3031	39.0	3609	45,200 PSI	43.7	4043	61,100 PSI
Benchmark	40.0	3584	44,900 PSI	44.0	4005	61,700 PSI
Bullet: 58 GR. HDY V-MAX			**Dia: .243″**		**Col: 2.775″**	
H414	45.0	3534	43,200 PSI	49.7	3925	59,100 PSI
760	45.0	3534	43,200 PSI	49.7	3925	59,100 PSI
H380	46.0	3627	47,300 PSI	50.0	3898	56,700 PSI
Varget	42.0	3571	44,600 PSI	46.7	3953	59,600 PSI
IMR 4320	43.0	3616	46,800 PSI	47.0	3974	61,100 PSI
IMR 4064	42.0	3599	44,500 PSI	46.3C	3970	58,400 PSI
IMR 4166	42.2	3635	48,900 PSI	46.4	3968	61,700 PSI
BL-C(2)	42.0	3502	41,800 PSI	46.5	3939	60,000 PSI
IMR 4895	42.0	3597	44,900 PSI	46.7	4029	62,100 PSI
H4895	41.0	3590	44,500 PSI	46.0	3972	58,900 PSI
IMR 8208 XBR	40.0	3537	42,700 PSI	44.5	3939	58,600 PSI
IMR 3031	40.0	3642	46,900 PSI	44.2	3981	61,100 PSI
Benchmark	39.0	3500	42,200 PSI	43.0	3896	59,000 PSI
Bullet: 60 GR. SIE HP			**Dia: .243″**		**Col: 2.700″**	
H414	45.0	3466	43,800 PSI	50.0	3877	60,300 PSI
760	45.0	3435	37,100 PSI	50.0	3877	60,300 PSI
H380	45.0	3546	47,400 PSI	50.0	3874	59,700 PSI
Varget	42.0	3565	47,200 PSI	46.5	3900	60,200 PSI
IMR 4320	42.0	3488	45,100 PSI	47.2	3899	61,100 PSI
IMR 4064	42.0	3570	46,400 PSI	46.2C	3930	60,400 PSI
748	41.0	3532	47,500 PSI	46.5	3870	61,100 PSI
BL-C(2)	41.0	3454	42,600 PSI	46.7	3870	59,200 PSI
IMR 4895	42.0	3609	49,100 PSI	46.5	3955	62,500 PSI
H4895	41.0	3544	45,300 PSI	46.0	3934	61,400 PSI
IMR 8208 XBR	40.0	3488	43,000 PSI	44.5	3907	60,500 PSI
IMR 3031	40.0	3584	47,800 PSI	44.3	3925	62,200 PSI
Benchmark	39.0	3478	44,400 PSI	43.0	3826	59,000 PSI
Bullet: 65 GR. HDY V-MAX			**Dia: .243″**		**Col: 2.825″**	
Suprform	49.0	3495	44,700 PSI	54.5	3927	62,700 PSI
H4350	48.0	3564	50,900 PSI	51.5C	3763	58,900 PSI
H414	44.0	3388	44,900 PSI	49.2	3777	60,700 PSI
760	44.0	3388	44,900 PSI	49.2	3777	60,700 PSI
H380	44.0	3438	47,800 PSI	49.0	3763	60,000 PSI
Varget	41.0	3468	47,600 PSI	45.5	3775	60,200 PSI
IMR 4320	40.0	3380	44,900 PSI	45.3	3794	61,700 PSI
IMR 4064	40.0	3450	46,500 PSI	45.0	3839	61,800 PSI
IMR 4166	40.9	3511	51,200 PSI	45.0	3782	61,100 PSI
748	40.0	3465	50,300 PSI	44.5	3739	61,000 PSI
BL-C(2)	40.0	3379	45,000 PSI	44.7	3723	60,000 PSI
IMR 4895	40.0	3457	46,900 PSI	45.3	3856	63,100 PSI
H4895	39.0	3460	47,100 PSI	44.0	3797	60,600 PSI
IMR 8208 XBR	39.0	3412	45,000 PSI	43.5	3777	60,900 PSI
IMR 3031	38.0	3426	46,700 PSI	42.2	3765	61,600 PSI

NEVER EXCEED MAXIMUM LOADS

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Benchmark	39.0	3472	49,000 PSI	41.3	3694	60,200 PSI
Bullet: 70 GR. SIE HPBT			**Dia: .243″**		**Col: 2.810″**	
Suprform	50.0	3509	48,600 PSI	54.0	3812	61,000 PSI
H4350	46.0	3360	46,700 PSI	50.8C	3671	59,800 PSI
H414	44.0	3305	44,600 PSI	49.0	3693	60,900 PSI
760	44.0	3305	44,600 PSI	49.0	3693	60,900 PSI
H380	43.0	3334	47,900 PSI	48.0	3653	61,000 PSI
Varget	40.0	3355	47,800 PSI	44.5	3639	59,500 PSI
IMR 4320	40.0	3342	47,400 PSI	45.3	3718	63,400 PSI
IMR 4064	40.0	3355	45,600 PSI	44.5	3710	61,200 PSI
IMR 4166	40.5	3443	51,500 PSI	44.6	3712	61,800 PSI
748	40.0	3324	46,300 PSI	45.0	3691	63,400 PSI
IMR 4895	40.0	3364	46.500 PSI	44.6	3735	63,200 PSI
H4895	39.0	3435	51,200 PSI	43.0	3653	60,100 PSI
IMR 8208 XBR	38.0	3236	43,000 PSI	42.7	3616	59,500 PSI
IMR 3031	38.0	3335	46,500 PSI	42.0	3673	62,400 PSI
Benchmark	38.0	3315	46,800 PSI	41.0	3579	59,300 PSI
Bullet: 75 GR. HDY HP			**Dia: .243″**		**Col: 2.825″**	
Suprform	47.0	3297	47,500 PSI	52.0	3637	60,700 PSI
Hybrid 100V	44.0	3213	47,700 PSI	48.0C	3491	57,900 PSI
H4350	44.0	3262	48,600 PSI	49.0	3563	61,200 PSI
H414	42.0	3151	44,400 PSI	47.0	3513	58,800 PSI
IMR 4350	44.0	3206	47,300 PSI	48.5C	3509	58,600 PSI
760	42.0	3151	44,400 PSI	47.0	3513	58,800 PSI
H380	41.0	3154	47,200 PSI	45.5	3465	59,800 PSI
Varget	38.0	3207	48,500 PSI	42.6	3480	59,500 PSI
IMR 4320	38.0	3185	47,800 PSI	43.0	3508	60,900 PSI
IMR 4064	39.0	3275	50,600 PSI	43.0	3553	62,100 PSI
IMR 4166	39.4	3298	49,800 PSI	43.4	3564	60,600 PSI
748	39.0	3244	50,600 PSI	43.0	3502	61,900 PSI
IMR 4895	38.0	3255	50,600 PSI	43.0	3558	63,100 PSI
H4895	37.0	3230	49,900 PSI	41.5	3482	60,500 PSI
IMR 8208 XBR	37.0	3184	48,100 PSI	41.5	3470	59,700 PSI
IMR 3031	36.0	3217	50,500 PSI	40.0	3494	63,200 PSI
Bullet: 80 GR. BAR TTSX BT			**Dia: .243″**		**Col: 2.810″**	
Suprform	46.0	3202	45,000 PSI	51.0C	3581	59,600 PSI
H4350	42.0	3065	43,900 PSI	47.5	3427	58,800 PSI
IMR 4451	43.1	3090	43,100 PSI	48.2C	3505	59,200 PSI
H414	42.0	3134	46,400 PSI	47.0	3471	60,700 PSI
IMR 4350	43.0	3086	43,300 PSI	48.0C	3484	58,800 PSI
760	42.0	3134	46,400 PSI	47.0	3471	60,700 PSI
H380	41.0	3115	47,100 PSI	45.5	3411	59,500 PSI
Varget	38.0	3140	47,900 PSI	42.5	3416	59,800 PSI
IMR 4320	39.0	3112	46,400 PSI	43.5	3441	60,800 PSI
IMR 4064	38.0	3094	44,700 PSI	42.0	3415	58,700 PSI
748	38.0	3075	45,800 PSI	43.0	3431	61,300 PSI
IMR 4895	38.0	3129	47,500 PSI	42.3	3418	59,400 PSI
H4895	37.0	3169	49,500 PSI	41.3	3419	60,500 PSI
IMR 8208 XBR	36.0	3068	46,400 PSI	40.3	3363	60,100 PSI
IMR 3031	35.0	3039	45,100 PSI	39.2	3356	59,300 PSI
Bullet: 80 GR. SPR SP			**Dia: .243″**		**Col: 2.775″**	
Suprform	46.0	3207	49,100 PSI	51.4	3536	61,000 PSI
Hybrid 100V	44.0	3186	50,500 PSI	48.0C	3458	61,500 PSI
H4350	42.0	3123	46,700 PSI	47.0	3430	59,400 PSI
IMR 4451	43.6	3174	47,800 PSI	48.0C	3492	60,900 PSI
H414	42.0	3134	47,400 PSI	46.7	3439	59,600 PSI
IMR 4350	41.0	3108	52,000 PSI	46.5	3410	62,800 PSI
760	42.0	3134	47,400 PSI	46.7	3439	59,600 PSI
H380	40.0	3068	47,800 PSI	44.5	3358	58,900 PSI
Varget	38.0	3148	49,400 PSI	41.8	3376	59,400 PSI
IMR 4320	36.0	3079	50,400 PSI	39.8	3321	61,700 PSI
IMR 4064	35.0	3066	51,600 PSI	39.6	3346	61,800 PSI
IMR 4166	39.2	3223	50,600 PSI	43.1	3492	62,100 PSI
748	35.0	3132	58,800 PSI	39.2	3297	61,800 PSI
IMR 4895	35.0	3067	50,800 PSI	39.4	3337	61,800 PSI

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
H4895	37.0	3167	50,900 PSI	40.5	3377	59,900 PSI
IMR 8208 XBR	37.0	3156	51,600 PSI	40.7	3353	59,800 PSI
IMR 3031	33.0	3006	48,900 PSI	37.2	3296	61,600 PSI
Bullet: 85 GR. NOS PART			**Dia: .243″**		**Col: 2.825″**	
Hybrid 100V	43.0	3143	51,700 PSI	47.5C	3411	62,200 PSI
IMR 4831	44.0	3058	49,300 PSI	48.5C	3379	62,400 PSI
H4350	42.0	3075	48,200 PSI	46.5	3350	59,300 PSI
IMR 4451	44.4	3142	48,800 PSI	48.3C	3455	62,900 PSI
H414	41.0	3007	45,900 PSI	45.8	3329	59,500 PSI
IMR 4350	42.0	2996	48,900 PSI	47.0	3335	62,100 PSI
760	41.0	3007	45,900 PSI	45.8	3329	59,500 PSI
H380	39.0	2937	46,800 PSI	43.5	3243	59,000 PSI
Varget	37.0	3020	49,200 PSI	41.0	3270	59,100 PSI
IMR 4320	36.0	2945	49,300 PSI	40.5	3249	62,900 PSI
IMR 4064	37.0	3006	49,700 PSI	41.0	3277	61,700 PSI
748	36.0	3020	54,800 PSI	40.2	3235	61,200 PSI
IMR 4895	36.5	2998	50,500 PSI	40.7	3261	61,800 PSI
H4895	35.5	3003	48,400 PSI	39.5	3253	59,200 PSI
Bullet: 87 GR. HDY HPBT			**Dia: .243″**		**Col: 2.825″**	
IMR 7828 SSC	45.0	2941	48,700 PSI	50.0C*	3250	61,900 PSI
H4831	44.0	2871	41,900 PSI	49.5C	3164	53,200 PSI
Hybrid 100V	43.0	3149	53,300 PSI	47.0C	3386	63,300 PSI
IMR 4831	43.0	2985	47,400 PSI	48.0C	3327	61,300 PSI
H4350	42.0	3051	48,100 PSI	46.7	3317	59,500 PSI
IMR 4451	43.5	3107	48,800 PSI	47.3C	3386	60,800 PSI
H414	41.0	3000	47,200 PSI	45.2	3291	59,900 PSI
IMR 4350	42.0	2990	49,000 PSI	46.5C	3306	62,500 PSI
760	41.0	3000	47,200 PSI	45.2	3291	59,900 PSI
H380	39.0	2940	47,300 PSI	43.0	3206	59,200 PSI
Varget	37.0	3011	49,100 PSI	41.0	3243	59,300 PSI
IMR 4320	36.0	2962	51,000 PSI	40.0	3215	62,900 PSI
IMR 4064	36.0	2945	48,900 PSI	40.3	3217	61,200 PSI
748	36.0	2944	52,000 PSI	39.8	3174	62,100 PSI
IMR 4895	36.0	2982	51,200 PSI	40.2	3236	62,800 PSI
H4895	35.5	2986	49,100 PSI	39.5	3214	60,300 PSI
Bullet: 95 GR. NOS BT			**Dia: .243″**		**Col: 2.825″**	
H1000	47.0	2835	43,000 PSI	50.5C	3056	52,900 PSI
IMR 7828 SSC	44.0	2818	48,400 PSI	48.7C	3130	61,800 PSI
H4831	44.0	2798	43,700 PSI	49.5C	3125	57,600 PSI
Hybrid 100V	41.0	2930	50,700 PSI	45.5	3226	63,100 PSI
IMR 4831	42.0	2887	49,000 PSI	47.0C	3218	63,000 PSI
H4350	41.0	2909	48,100 PSI	45.5	3167	59,200 PSI
IMR 4451	43.2	2984	48,400 PSI	47.0C	3273	61,500 PSI
H414	40.0	2847	45,900 PSI	44.5	3164	60,100 PSI
IMR 4350	41.0	2867	49,900 PSI	45.5C	3153	61,500 PSI
760	40.0	2847	45,900 PSI	44.5	3164	60,100 PSI
Varget	36.0	2843	47,800 PSI	40.0	3091	58,900 PSI
IMR 4064	35.5	2828	51,000 PSI	39.5	3069	62,000 PSI
748	36.0	2750	48,600 PSI	39.7	3042	62,200 PSI
IMR 4895	36.0	2835	51,300 PSI	40.0	3095	63,300 PSI
H4895	35.0	2855	50,100 PSI	38.7	3076	60,100 PSI
Bullet: 100 GR. SPR BT			**Dia: .243″**		**Col: 2.775″**	
H1000	47.0	2779	41,500 PSI	50.0C	2955	48,900 PSI
IMR 7828 SSC	43.0	2778	49,500 PSI	47.5C*	3048	60,900 PSI
H4831	45.0	2794	43,900 PSI	49.0C	3064	56,100 PSI
Hybrid 100V	40.0	2909	53,400 PSI	44.5	3142	61,500 PSI
IMR 4831	42.0	2889	50,500 PSI	46.2C	3149	62,100 PSI
H4350	41.0	2879	47,900 PSI	45.5	3137	59,800 PSI
IMR 4451	42.2	2938	48,200 PSI	45.9	3189	60,100 PSI
H414	39.0	2774	44,400 PSI	43.5	3093	58,500 PSI
IMR 4350	40.0	2842	50,200 PSI	44.6C	3126	62,600 PSI
760	39.0	2774	44,400 PSI	43.5	3093	58,500 PSI
Varget	36.0	2843	49,800 PSI	40.2	3055	59,200 PSI
IMR 4064	34.0	2765	50,000 PSI	38.0	2982	61,000 PSI
748	34.5	2766	55,300 PSI	38.5	2964	61,500 PSI

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
IMR 4895	34.0	2737	48,800 PSI	38.5	3016	62,400 PSI
H4895	34.0	2749	45,900 PSI	38.5	3035	59,900 PSI
Bullet: 105 GR. HDY A-MAX			**Dia: .243″**		**Col: 2.825″**	
IMR 8133	48.8	2768	45,300 PSI	53.0C	3090	59,000 PSI
H1000	47.0	2817	45,800 PSI	50.0C	2980	53,300 PSI
H4831	44.0	2839	49,400 PSI	47.5C	3028	57,900 PSI
Hybrid 100V	40.0	2849	51,900 PSI	43.7C	3078	62,500 PSI
IMR 4831	41.0	2785	48,800 PSI	45.7C	3075	62,100 PSI
H4350	40.0	2838	49,700 PSI	43.5	3029	58,800 PSI
H414	40.0	2826	50,700 PSI	43.0	3009	58,600 PSI
IMR 4350	39.0	2713	48,200 PSI	43.8	3027	62,600 PSI
760	40.0	2826	50,700 PSI	43.0	3009	58,600 PSI
Varget	34.0	2711	47,400 PSI	38.0	2946	58,800 PSI
IMR 4064	33.0	2659	49,200 PSI	37.2	2894	60,700 PSI
Bullet: 107 GR. SIE HPBT			**Dia: .243″**		**Col: 2.950″**	
Retumbo	47.0	2836	44,900 PSI	50.0C	3033	55,200 PSI
IMR 8133	48.0	2761	47,100 PSI	52.0C	3045	60,000 PSI
H1000	47.0	2818	47,400 PSI	50.0C	2980	55,100 PSI
IMR 7828 SSC	42.0	2739	50,300 PSI	47.0C*	3023	63,000 PSI
H4831	43.0	2779	48,300 PSI	48.0C	3042	59,600 PSI
Hybrid 100V	40.0	2870	54,400 PSI	43.5	3053	62,800 PSI
IMR 4831	40.0	2772	48,800 PSI	44.5	3080	63,600 PSI
H4350	39.0	2779	48,800 PSI	43.5	3016	59,600 PSI
H414	39.0	2757	49,800 PSI	43.0	3001	60,400 PSI
IMR 4350	39.0	2750	49,300 PSI	43.5	3044	63,800 PSI
760	39.0	2757	49,800 PSI	43.0	3001	60,400 PSI
Varget	34.0	2652	46,300 PSI	38.5	2930	60,200 PSI
IMR 4064	33.0	2650	48,900 PSI	37.0	2869	60,800 PSI
Bullet: 115 GR. BAR RN			**Dia: .243″**		**Col: 2.825″**	
Retumbo	47.0	2711	43,200 CUP	50.0C	2878	49,000 CUP
H1000	43.0	2665	43,800 CUP	45.5	2793	49,600 CUP
H4831	39.0	2598	43,800 CUP	42.0	2761	49,800 CUP
H4350	36.0	2537	43,200 CUP	39.0	2696	49,700 CUP

25-20 WINCHESTER

Case: Remington Twist: 1:14″
Barrel: 24″ Trim: 1.320″ Primer: Winchester SR, Small Rifle

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Bullet: 60 GR. HDY FP			**Dia: .257″**		**Col: 1.600″**	
H322	14.0	1799	23,600 CUP	15.0C	1900	25,700 CUP
H4198	12.0	1814	20,200 CUP	14.2C	2101	25,800 CUP
H4227	9.6	1854	24,200 CUP	10.2	1962	26,700 CUP
H110	8.5	1831	23,500 CUP	9.3	1931	26,600 CUP
Bullet: 71 GR. LRNFP			**Dia: .258″**		**Col: 1.545″**	
H4227	6.0	1146	13,700 CUP	7.0	1346	18,200 CUP
HS-6	4.3	1206	18,700 CUP	5.3	1428	21,900 CUP
Bullet: 75 GR. SPR FP			**Dia: .257″**		**Col: 1.575″**	
H322	12.0	1523	22,300 CUP	13.5	1702	26,700 CUP
H4198	10.5	1530	18,100 CUP	12.8	1877	27,300 CUP
H4227	8.3	1521	21,000 CUP	9.3	1741	27,900 CUP
H110	7.4	1513	23,700 CUP	8.4	1691	28,000 CUP
Bullet: 85 GR. LRNFP			**Dia: .258″**		**Col: 1.600″**	
H4227	6.0	1129	18,500 CUP	7.0	1317	20,500 CUP
HS-6	4.5	1261	19,600 CUP	5.3	1391	25,300 CUP
Bullet: 86 GR. REM SP			**Dia: .257″**		**Col: 1.600″**	
H322	11.3	1358	22,100 CUP	12.0	1517	26,300 CUP
H4198	10.5	1576	24,500 CUP	11.5	1673	26,500 CUP
H4227	8.0	1444	23,700 CUP	8.6	1545	27,600 CUP
H110	7.0	1422	23,900 CUP	7.5	1502	27,100 CUP

25-35 WINCHESTER

Case: Winchester Twist: 1:8″
Barrel: 24″ Trim: 2.033″ Primer: Winchester LR, Large Rifle

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Bullet: 60 GR. HDY JFP			**Dia: .257″**		**Col: 2.300″**	
CFE 223	32.0	2731	23,900 CUP	35.0	2951	26,200 CUP
Varget	28.0	2677	27,900 CUP	31.5C	2972	36,200 CUP
BL-C(2)	32.0	2797	24,600 CUP	35.0	3023	29,800 CUP
H335	27.0	2865	31,800 CUP	30.0	3026	36,200 CUP
H4895	26.0	2796	32,300 CUP	30.5C	3014	36,200 CUP
IMR 8208 XBR	25.0	2838	34,500 CUP	27.5	2913	36,300 CUP
Benchmark	23.0	2626	29,700 CUP	25.7	2867	36,600 CUP
H322	22.0	2522	27,700 CUP	24.5	2793	35,900 CUP
CFE BLK	24.0	2872	28,300 CUP	26.5	3062	35,500 CUP
H4198	20.0	2626	29,700 CUP	21.7	2827	36,100 CUP
Bullet: 75 GR. SPR JFP			**Dia: .257″**		**Col: 2.280″**	
LVR	30.0	2707	27,800 CUP	34.0C	2992	33,100 CUP
CFE 223	30.0	2611	27,100 CUP	33.0	2802	30,100 CUP
Varget	26.5	2487	29,800 CUP	29.0	2672	36,300 CUP
BL-C(2)	31.5	2680	29,700 CUP	34.0	2815	32,600 CUP
H335	23.0	2440	31,000 CUP	25.5	2595	36,400 CUP
H4895	25.0	2471	32,000 CUP	27.4	2689	36,500 CUP
IMR 8208 XBR	23.0	2444	29,200 CUP	25.7	2660	34,200 CUP
Benchmark	21.0	2305	28,600 CUP	23.0	2502	36,400 CUP
H322	21.0	2256	25,900 CUP	23.5	2543	35,900 CUP
CFE BLK	19.6	2384	31,400 CUP	20.5	2470	35,400 CUP
H4198	19.0	2422	32,300 CUP	20.5	2515	35,500 CUP
Bullet: 90 GR. LFP W/GCK			**Dia: .257″**		**Col: 2.320″**	
Trail Boss	5.5	1224	22,000 CUP	8.0	1414	23,200 CUP
Titegroup	5.0	1369	18,000 CUP	7.0	1513	28,900 CUP
Clays	5.0	1284	25,100 CUP	6.0	1344	34,000 CUP
Bullet: 117 GR. HDY RN			**Dia: .257″**		**Col: 2.550″**	
H380	27.0	2172	30,100 CUP	30.0	2357	34,900 CUP
CFE 223	25.0	2179	27,100 CUP	28.5	2404	36,100 CUP
Varget	21.0	1916	25,800 CUP	24.5	2244	36,600 CUP
BL-C(2)	24.0	2082	27,000 CUP	27.0	2327	35,800 CUP
H335	20.0	1951	27,700 CUP	22.5	2174	35,900 CUP
H4895	19.5	1875	25,000 CUP	22.5	2168	36,000 CUP
IMR 8208 XBR	20.0	1985	28,800 CUP	22.5	2257	35,700 CUP
Benchmark	19.0	1902	27,200 CUP	21.0	2063	32,500 CUP
H322	19.0	1916	27,900 CUP	21.0	2127	36,000 CUP
H4198	16.8	1889	29,100 CUP	18.8	2065	36,100 CUP

250-3000 SAVAGE

Case: Remington Twist: 1:10″
Barrel: 24″ Trim: 1.902″ Primer: Remington 9 1/2, Large Rifle

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Bullet: 75 GR. HDY V-MAX			**Dia: .257″**		**Col: 2.475″**	
CFE 223	36.0	3096	36,300 CUP	39.0	3339	40,900 CUP
Varget	36.0	3061	36,700 CUP	38.5	3254	43,200 CUP
BL-C(2)	35.0	3001	36,200 CUP	37.5	3216	43,700 CUP
H335	33.0	3018	37,200 CUP	35.0	3209	43,800 CUP
H4895	34.0	3088	39,400 CUP	36.5	3256	43,500 CUP
IMR 8208 XBR	34.0	3103	37,500 CUP	37.0	3341	43,200 CUP
Benchmark	31.0	2981	38,300 CUP	33.0	3102	43,900 CUP
Bullet: 80 GR. BAR TTSX BT			**Dia: .257″**		**Col: 2.500″**	
Varget	35.0	2977	38,300 CUP	37.3C	3149	43,500 CUP
IMR 4064	34.0	2910	38,300 CUP	36.5C	3113	43,200 CUP
IMR 4166	33.5	2944	39,200 CUP	36.1	3138	43,300 CUP
748	33.0	2863	38,500 CUP	35.8	3066	43,600 CUP
BL-C(2)	33.0	2821	38,100 CUP	35.0	3008	43,600 CUP
IMR 4895	34.0	2888	38,500 CUP	36.5	3078	43,500 CUP
H335	31.0	2879	39,200 CUP	33.0	3026	43,700 CUP
H4895	33.0	2963	36,600 CUP	35.0	3121	42,800 CUP
IMR 8208 XBR	32.0	2868	36,000 CUP	34.5	3112	43,100 CUP
IMR 3031	32.0	2902	38,300 CUP	34.5C	3111	43,600 CUP

NEVER EXCEED MAXIMUM LOADS

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Benchmark	32.0	2949	39,300 CUP	34.0	3090	43,700 CUP
Bullet: 85 GR. NOS BT			**Dia: .257″**		**Col: 2.500″**	
CFE 223	33.0	2873	34,500 CUP	36.5	3136	43,900 CUP
Varget	34.0	2854	35,300 CUP	37.0	3090	43,500 CUP
IMR 4166	32.8	2855	37,900 CUP	35.4	3067	43,700 CUP
BL-C(2)	34.0	2859	36,200 CUP	36.0	3039	43,200 CUP
H335	32.0	2872	38,800 CUP	34.0	3038	44,000 CUP
H4895	33.0	2929	38,100 CUP	35.0	3084	43,600 CUP
IMR 8208 XBR	32.0	2897	34,600 CUP	35.3	3162	44,600 CUP
Benchmark	29.5	2793	38,200 CUP	31.5	2943	43,200 CUP
Bullet: 87 GR. SPR SP			**Dia: .257″**		**Col: 2.450″**	
IMR 4350				39.0C	2905	39,500 CUP
760				39.5	2985	43,500 CUP
CFE 223	34.0	2908	36,400 CUP	37.5	3151	44,500 CUP
Varget	35.0	2947	40,200 CUP	37.0	3074	43,200 CUP
IMR 4320				35.5	2975	45,000 CUP
IMR 4064				35.5	3075	45,000 CUP
IMR 4166	33.2	2857	38,100 CUP	35.7	3052	43,700 CUP
748				36.0	2940	41,000 CUP
BL-C(2)	34.5	2907	36,700 CUP	36.5	3080	43,900 CUP
IMR 4895				34.5	3000	44,900 CUP
H335	32.0	2863	39,800 CUP	34.0	2969	43,100 CUP
H4895	33.0	2913	39,100 CUP	35.5	3068	43,700 CUP
IMR 8208 XBR	31.5	2864	35,300 CUP	35.0	3103	44,800 CUP
IMR 3031				34.0	3055	44,200 CUP
Benchmark	30.5	2804	39,000 CUP	32.5	2937	43,000 CUP
Bullet: 90 GR. SIE HPBT			**Dia: .257″**		**Col: 2.425″**	
CFE 223	34.0	2855	35,400 CUP	37.5	3128	44,600 CUP
Varget	34.0	2860	37,300 CUP	36.5	3021	43,300 CUP
IMR 4166	32.9	2857	39,400 CUP	35.7	3058	43,900 CUP
BL-C(2)	34.5	2864	36,600 CUP	36.5	3012	43,500 CUP
H335	31.5	2808	37,100 CUP	33.5	2960	43,500 CUP
H4895	33.0	2901	39,000 CUP	35.5	3060	43,900 CUP
IMR 8208 XBR	32.0	2913	38,100 CUP	35.0	3002	44,200 CUP
Benchmark	31.0	2831	39,200 CUP	33.0	2965	43,900 CUP
Bullet: 100 GR. HDY SP			**Dia: .257″**		**Col: 2.500″**	
H4350	38.0	2773	38,500 CUP	40.5C	2936	44,100 CUP
IMR 4451	36.7	2695	38,700 CUP	39.1	2893	44,100 CUP
H414	35.0	2697	36,700 CUP	37.2	2852	43,900 CUP
IMR 4350				38.5C	2780	41,400 CUP
760				38.8	2820	42,000 CUP
H380	35.0	2673	35,300 CUP	37.0	2834	43,500 CUP
CFE 223	32.0	2675	35,500 CUP	35.0	2902	44,400 CUP
Varget	33.0	2750	40,000 CUP	35.2	2877	43,700 CUP
IMR 4320				34.5	2785	45,000 CUP
IMR 4064				34.5	2875	44,100 CUP
IMR 4166	31.4	2688	38,800 CUP	33.9	2879	44,600 CUP
748				35.5	2820	43,500 CUP
IMR 4895				34.0	2845	45,000 CUP
H4895	31.0	2698	38,500 CUP	33.5	2849	43,600 CUP
IMR 8208 XBR	30.0	2687	38,300 CUP	33.0	2862	44,200 CUP
IMR 3031				33.0	2865	44,500 CUP
Bullet: 115 GR. NOS BT			**Dia: .257″**		**Col: 2.525″**	
H4350	34.5	2497	36,800 CUP	36.8C	2642	43,400 CUP
IMR 4451	35.0	2503	38,100 CUP	37.3C	2672	43,500 CUP
H414	34.0	2504	35,900 CUP	36.0	2652	43,200 CUP
H380	34.0	2504	40,100 CUP	35.5	2606	44,000 CUP
Varget	30.5	2494	39,400 CUP	32.5	2611	43,500 CUP
IMR 4166	29.2	2473	38,300 CUP	31.5	2638	43,900 CUP
H4895	28.5	2440	38,400 CUP	30.5	2567	43,400 CUP
IMR 8208 XBR	28.0	2470	39,000 CUP	31.0	2614	44,400 CUP
Bullet: 117 GR. SIE SPBT			**Dia: .257″**		**Col: 2.475″**	
H4831	38.0	2453	35,900 CUP	39.0C	2519	39,600 CUP
H4350	35.0	2518	37,900 CUP	37.0C	2637	43,400 CUP
IMR 4451	34.8	2536	39,700 CUP	37.1	2678	44,500 CUP
H414	34.0	2529	40,900 CUP	36.0	2646	43,500 CUP
H380	32.5	2457	39,300 CUP	34.5	2565	43,600 CUP
Varget	30.0	2493	41,100 CUP	32.0	2594	43,700 CUP
IMR 4166	29.0	2453	38,100 CUP	31.2	2612	43,800 CUP
H4895	28.5	2447	38,000 CUP	30.5	2579	43,800 CUP
IMR 8208 XBR	27.5	2429	38,200 CUP	30.6	2594	45,000 CUP
Bullet: 120 GR. SFT SP			**Dia: .257″**		**Col: 2.525″**	
H4831	37.5	2470	39,100 CUP	39.0C	2537	42,200 CUP
H4350	33.5	2443	38,000 CUP	35.5	2577	43,300 CUP
IMR 4451	33.0	2435	39,000 CUP	35.2	2580	44,800 CUP
H414	32.5	2450	37,900 CUP	34.5	2599	43,400 CUP
H380	32.0	2423	38,700 CUP	33.5	2490	43,300 CUP
Varget	29.0	2397	37,200 CUP	31.0	2508	43,200 CUP
IMR 4166	28.0	2372	37,600 CUP	30.2	2529	43,300 CUP
H4895	27.5	2331	37,500 CUP	29.0	2467	43,400 CUP
IMR 8208 XBR	26.0	2296	35,000 CUP	28.8	2480	44,200 CUP

257 ROBERTS

Case: Remington Twist: 1:10″
Barrel: 24″ Trim: 2.223″ Primer: Remington 9 1/2, Large Rifle

Bullet: 60 GR. HDY SP			**Dia: .257″**		**Col: 2.535″**	
H4831	49.0	2847	23,700 CUP	53.0	3382	33,600 CUP
H4350	48.0	3290	36,200 CUP	51.0	3612	44,700 CUP
H414	49.5	3566	36,000 CUP	54.0	3818	43,800 CUP
760	49.5	3566	36,000 CUP	54.0	3818	43,800 CUP
H380	45.0	3497	39,000 CUP	49.0	3752	46,200 CUP
CFE 223	44.0	3551	37,200 CUP	47.5	3760	43,600 CUP
BL-C(2)	44.0	3469	30,000 CUP	48.0	3834	45,900 CUP
H335	44.0	3467	29,400 CUP	48.0	3885	46,400 CUP
H4895	42.0	3376	36,600 CUP	46.0	3805	45,000 CUP
Benchmark	41.0	3453	42,200 CUP	43.7	3671	45,000 CUP
Bullet: 75 GR. HDY HP			**Dia: .257″**		**Col: 2.795″**	
Hybrid 100V	45.0	3145	36,500 CUP	49.0C	3380	42,900 CUP
IMR 4831	46.5	3017	34,100 CUP	51.5C	3403	43,500 CUP
H4350	47.0	3129	35,200 CUP	50.0	3422	44,000 CUP
H414	48.0	3343	37,200 CUP	52.0	3555	45,300 CUP
IMR 4350	47.8	3254	41,700 CUP	52.0C	3496	46,600 CUP
760	48.0	3343	37,200 CUP	52.0	3555	45,300 CUP
H380	44.0	3258	37,800 CUP	48.0	3563	45,600 CUP
CFE 223	38.0	3160	38,500 CUP	42.0	3369	44,800 CUP
Varget	37.0	3155	34,700 CUP	41.0	3453	43,700 CUP
IMR 4064	41.7	3320	39,700 CUP	44.3	3517	46,400 CUP
IMR 4166	39.4	3167	38,400 CUP	43.8	3471	47,500 CUP
BL-C(2)	42.0	3094	31,800 CUP	46.0	3531	46,700 CUP
IMR 4895	40.9	3288	39,700 CUP	43.5	3496	46,500 CUP
H335	42.0	3161	31,200 CUP	46.0	3548	45,000 CUP
H4895	40.5	3201	34,800 CUP	44.0	3561	47,300 CUP
IMR 8208 XBR	40.5	3390	39,300 CUP	43.0	3456	44,900 CUP
Benchmark	39.0	3226	39,200 CUP	41.7	3434	45,000 CUP
Bullet: 80 GR. BAR TTSX BT			**Dia: .257″**		**Col: 2.780″**	
H4350	44.0	2999	36,000 CUP	48.5	3290	45,000 CUP
IMR 4451	43.2	2930	35,100 CUP	48.6	3350	45,000 CUP
H414	43.0	3047	37,300 CUP	48.0	3377	45,000 CUP
IMR 4350	45.0	3008	35,100 CUP	49.2C	3326	43,600 CUP
760	43.0	3047	37,300 CUP	48.0	3377	45,000 CUP
H380	41.0	2988	36,700 CUP	45.0	3257	44,600 CUP
CFE 223	35.0	3038	40,700 CUP	39.0	3243	44,300 CUP
Varget	39.0	3061	37,500 CUP	43.0	3287	45,000 CUP
IMR 4064	39.0	3071	35,300 CUP	43.5	3419	45,000 CUP
IMR 4166	39.0	3120	38,800 CUP	42.8	3378	46,700 CUP
748	39.0	3094	41,300 CUP	42.5	3248	44,700 CUP
BL-C(2)	39.0	3114	42,300 CUP	43.0	3277	45,000 CUP
IMR 4895	39.0	3058	37,000 CUP	43.0	3357	45,000 CUP
H4895	37.0	3090	38,800 CUP	40.8	3281	44,600 CUP

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
IMR 8208 XBR	36.0	3062	38,400 CUP	39.8	3284	44,700 CUP
IMR 3031	36.0	3036	35,800 CUP	40.3	3343	44,900 CUP
Benchmark	35.5	2990	36,900 CUP	39.5	3285	45,000 CUP
Bullet: 90 GR. HDY GMX			**Dia: .257″**		**Col: 2.880″**	
IMR 7828 SSC	44.0	2847	41,000 CUP	49.0C	3038	44,600 CUP
IMR 4955	44.5	2916	40,300 CUP	48.5C	3165	47,100 CUP
H4831	40.0	2645	35,200 CUP	44.5	2925	44,600 CUP
Hybrid 100V	40.0	2823	37,100 CUP	44.5	3128	44,300 CUP
IMR 4831	41.0	2841	38,800 CUP	45.3	3031	44,600 CUP
H4350	38.0	2729	36,000 CUP	42.0	2968	44,200 CUP
IMR 4451	38.7	2706	35,900 CUP	43.0	3008	44,300 CUP
H414	39.0	2832	39,200 CUP	42.5	2984	43,700 CUP
IMR 4350	40.0	2837	39,400 CUP	44.0	3025	44,200 CUP
H380	36.0	2661	38,500 CUP	40.0	2862	44,100 CUP
Varget	35.0	2788	39,100 CUP	38.0	2968	44,600 CUP
IMR 4064	35.0	2773	36,900 CUP	38.5	2973	44,500 CUP
IMR 4166	34.2	2696	36,800 CUP	38.0	2984	45,100 CUP
BL-C(2)	35.0	2749	39,800 CUP	38.0	2916	44,500 CUP
IMR 4895	36.0	2787	37,500 CUP	39.8	3023	44,500 CUP
H4895	33.0	2739	37,700 CUP	36.5	2943	44,800 CUP
IMR 8208 XBR	33.0	2739	38,300 CUP	36.3	2927	44,100 CUP
Bullet: 90 GR. SIE HPBT			**Dia: .257″**		**Col: 2.775″**	
IMR 4955	47.5	3017	38,200 CUP	51.8C	3315	46,300 CUP
H4831	48.0	2786	27,600 CUP	52.0	3236	39,500 CUP
Hybrid 100V	45.0	3061	38,800 CUP	49.0C	3282	44,800 CUP
IMR 4831	47.4	3049	37,500 CUP	51.5C	3313	45,800 CUP
H4350	44.0	2890	36,100 CUP	46.0	3040	43,700 CUP
IMR 4451	42.7	2914	36,400 CUP	48.8	3318	47,900 CUP
H414	46.0	3107	34,800 CUP	50.0	3368	44,400 CUP
IMR 4350	47.0	3084	41,800 CUP	50.0C	3299	47,900 CUP
760	46.0	3107	34,800 CUP	50.0	3368	44,400 CUP
IMR 4007 SSC	42.8	3027	39,800 CUP	45.5	3215	47,300 CUP
H380	43.0	3083	38,400 CUP	47.0	3364	45,400 CUP
Varget	36.0	2990	36,300 CUP	40.0	3269	44,900 CUP
IMR 4064	39.8	3040	39,600 CUP	42.3	3211	46,300 CUP
IMR 4166	37.4	2969	38,800 CUP	41.6	3234	47,100 CUP
BL-C(2)	40.0	2864	30,600 CUP	43.5	3231	45,000 CUP
IMR 4895	39.5	3042	39,800 CUP	42.0	3238	46,400 CUP
H335	39.0	2951	30,600 CUP	43.0	3300	44,400 CUP
H4895	38.5	2954	33,600 CUP	42.0	3372	47,600 CUP
IMR 8208 XBR	39.4	3129	40,200 CUP	42.0	3314	46,800 CUP
Bullet: 100 GR. SPR SPBT			**Dia: .257″**		**Col: 2.770″**	
IMR 4955	46.0	2890	38,900 CUP	50.0C	3152	46,700 CUP
H4831	45.0	2660	29,100 CUP	49.0	3010	44,100 CUP
Hybrid 100V	44.0	2968	38,800 CUP	48.0C	3205	45,400 CUP
IMR 4831	46.3	2965	41,000 CUP	49.2C	3134	47,100 CUP
H4350	43.0	2833	34,200 CUP	45.0	2970	45,400 CUP
IMR 4451	41.5	2781	38,800 CUP	46.2	3067	47,100 CUP
H414	44.0	2919	33,600 CUP	45.0	3098	44,500 CUP
IMR 4350	44.8	2896	38,400 CUP	47.7	3077	47,000 CUP
760	44.0	2919	33,600 CUP	45.0	3098	44,500 CUP
H380	40.5	2868	37,800 CUP	44.0	3108	46,600 CUP
Varget	34.0	2724	34,400 CUP	38.0	2981	44,900 CUP
IMR 4064	38.8	2904	40,900 CUP	41.3	3076	47,300 CUP
IMR 4166	35.4	2749	39,100 CUP	39.4	3022	47,400 CUP
BL-C(2)	36.0	2692	32,400 CUP	39.0	2958	45,400 CUP
IMR 4895	39.0	2921	41,200 CUP	41.0	3061	45,900 CUP
H335	36.0	2776	37,200 CUP	39.0	3042	47,800 CUP
H4895	35.0	2661	30,600 CUP	38.0	2990	46,100 CUP
IMR 8208 XBR	37.1	2991	39,400 CUP	39.5	3085	44,700 CUP
Bullet: 115 GR. NOS PART			**Dia: .257″**		**Col: 2.890″**	
IMR 7828 SSC	42.0	2480	35,500 CUP	46.3	2724	43,700 CUP
IMR 4955	42.3	2654	39,300 CUP	46.0	2873	47,200 CUP
H4831	43.0	2479	30,400 CUP	46.0	2760	46,000 CUP
Hybrid 100V	42.0	2845	40,700 CUP	46.0C	3049	46,600 CUP
IMR 4831	42.6	2670	37,900 CUP	46.3	2867	46,000 CUP
H4350	41.0	2660	40,600 CUP	43.0	2777	44,400 CUP
IMR 4451	39.5	2609	38,400 CUP	43.4	2841	47,000 CUP
H414	39.5	2574	36,000 CUP	43.0	2720	44,200 CUP
IMR 4350	41.9	2666	39,800 CUP	45.5	2866	46,600 CUP
760	39.5	2574	36,000 CUP	43.0	2720	44,200 CUP
H380	37.0	2567	39,600 CUP	40.0	2754	45,900 CUP
Varget	31.0	2462	34,300 CUP	35.0	2701	44,900 CUP
IMR 4064	36.1	2650	39,400 CUP	38.4	2756	46,300 CUP
IMR 4166	33.6	2506	38,400 CUP	37.8	2776	47,400 CUP
BL-C(2)	33.0	2402	33,600 CUP	36.0	2673	47,100 CUP
IMR 4895	36.7	2667	40,500 CUP	38.6	2770	46,500 CUP
H4895	33.0	2433	31,200 CUP	36.0	2702	45,100 CUP
IMR 8208 XBR	34.8	2707	39,200 CUP	37.0	2798	45,000 CUP
Bullet: 120 GR. SIE HPBT			**Dia: .257″**		**Col: 2.775″**	
IMR 7828				47.0C	2745	43,900 CUP
IMR 4831				44.0	2810	45,000 CUP
IMR 4350				41.5	2780	45,000 CUP
IMR 4064				35.5	2695	44,000 CUP
IMR 4895				33.5	2615	45,000 CUP

25-06 REMINGTON

Case: Remington Twist: 1:10″
Barrel: 24″ Trim: 2.484″ Primer: Remington 9 1/2, Large Rifle

Powder	Grs.	Vel.	Pressure	Grs.	Vel.	Pressure
Bullet: 75 GR. HDY V-MAX			**Dia: .257″**		**Col: 3.100″**	
H1000	58.0	3135	35,300 CUP	62.0C	3339	40,000 CUP
IMR 7828 SSC	56.0	3252	44,300 CUP	59.7C*	3486	50,600 CUP
H4831	58.0	3393	41,800 CUP	62.0C	3599	49,300 CUP
Hybrid 100V	51.0	3395	44,300 CUP	55.5	3625	50,900 CUP
IMR 4831	53.0	3197	43,200 CUP	58.0C	3540	51,600 CUP
H4350	54.0	3460	43,300 CUP	58.5	3700	50,900 CUP
IMR 4451	53.8	3464	48,100 PSI	58.5	3781	60,300 PSI
H414	51.0	3471	44,500 CUP	55.0	3626	50,100 CUP
IMR 4350	50.0	3195	41,800 CUP	55.0	3493	51,000 CUP
760	51.0	3471	44,500 CUP	55.0	3626	50,100 CUP
H380	47.0	3331	45,000 CUP	51.0	3494	49,900 CUP
Varget	46.0	3454	43,400 CUP	49.7	3660	51,200 CUP
IMR 4064	44.0	3322	43,600 CUP	48.5	3566	51,200 CUP
IMR 4895	43.0	3250	44,100 CUP	48.0	3529	50,900 CUP
H4895	45.0	3474	45,000 CUP	48.5	3642	50,800 CUP
Bullet: 80 GR. BAR TTSX BT			**Dia: .257″**		**Col: 3.075″**	
IMR 7828 SSC	57.0	3350	49,900 PSI	61.0C*	3582	58,500 PSI
IMR 4955	55.4	3318	48,700 PSI	60.9C	3626	61,900 PSI
Hybrid 100V	50.0	3353	46,400 PSI	54.0C	3624	56,600 PSI
IMR 4831	52.0	3301	45,600 PSI	56.0C	3569	55,200 PSI
H4350	51.0	3347	48,500 PSI	55.0C	3560	56,900 PSI
IMR 4451	51.5	3388	48,700 PSI	56.0C	3673	59,800 PSI
H414	48.0	3379	52,800 PSI	53.0	3586	60,300 PSI
IMR 4350	51.0	3372	49,300 PSI	55.0C	3600	57,300 PSI
760	48.0	3379	52,800 PSI	53.0	3586	60,300 PSI
H380	49.0	3394	52,800 PSI	52.5	3597	60,800 PSI
Varget	45.0	3389	51,800 PSI	49.0	3613	60,900 PSI
IMR 4064	45.0	3377	49,500 PSI	49.5	3645	61,400 PSI
IMR 4166	44.5	3339	48,300 PSI	50.0	3616	60,700 PSI
IMR 4895	45.0	3385	50,500 PSI	49.5	3661	61,900 PSI
H4895	43.0	3408	52,100 PSI	47.5	3630	61,500 PSI
Bullet: 85 GR. NOS BT			**Dia: .257″**		**Col: 3.230″**	
H1000	58.0	3218	41,000 CUP	62.0C	3442	48,100 CUP
IMR 7977	57.0	3256	49,200 PSI	62.0C	3564	60,600 PSI
IMR 7828 SSC	55.0	3186	46,200 PSI	59.2C*	3417	51,900 CUP
IMR 4955	53.0	3210	49,700 PSI	58.3	3499	61,700 PSI
H4831	54.0	3302	46,000 CUP	58.0	3473	51,700 CUP
Hybrid 100V	49.0	3223	44,100 CUP	54.0	3490	51,200 CUP
IMR 4831	49.0	3021	42,400 CUP	55.0	3417	51,600 CUP
H4350	49.0	3255	44,400 CUP	53.0	3445	50,700 CUP

NEVER EXCEED MAXIMUM LOADS

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
IMR 4451	48.6	3289	51,600 PSI	52.9	3494	59,100 PSI
H414	48.0	3248	45,000 CUP	52.0	3443	50,600 CUP
IMR 4350	48.0	3107	43,700 CUP	53.0	3398	50,800 CUP
760	48.0	3248	45,000 CUP	52.0	3443	50,600 CUP
H380	45.0	3130	43,700 CUP	49.0	3321	51,200 CUP
Varget	43.0	3271	45,000 CUP	46.5	3449	50,900 CUP
IMR 4064	42.0	3149	45,700 CUP	45.7	3353	50,200 CUP
IMR 4166	42.0	3148	47,700 PSI	47.2	3466	59,900 PSI
IMR 4895	41.0	3063	43,300 CUP	45.5	3297	50,100 CUP
H4895	41.0	3176	44,600 CUP	44.5	3369	51,600 CUP
Bullet: 87 GR. SPR HP			**Dia: .257″**		**Col: 3.115″**	
H1000	58.0	3176	36,200 CUP	62.0C	3296	43,700 CUP
IMR 7977	58.9	3209	46,500 PSI	62.0C	3407	54,000 PSI
IMR 7828 SSC	55.0	3133	43,600 CUP	59.5C*	3398	51,600 CUP
IMR 4955	53.5	3184	48,600 PSI	58.8	3496	61,800 PSI
H4831	56.0	3232	43,500 CUP	60.0	3421	50,500 CUP
Hybrid 100V	50.0	3214	42,400 CUP	55.0	3499	49,300 CUP
IMR 4831	52.0	3099	41,900 CUP	56.5	3398	50,600 CUP
H4350	50.0	3234	45,600 CUP	54.5	3409	50,800 CUP
IMR 4451	50.9	3260	49,500 PSI	55.7	3545	61,400 PSI
H414	47.0	3138	43,800 CUP	50.5	3327	51,100 CUP
IMR 4350	50.0	3086	41,800 CUP	54.8	3378	50,900 CUP
760	47.0	3138	43,800 CUP	50.5	3327	51,100 CUP
Varget	43.0	3231	44,900 CUP	46.0	3382	50,500 CUP
IMR 4064	42.0	3091	42,000 CUP	46.5	3344	50,600 CUP
IMR 4166	43.2	3155	47,300 PSI	48.6	3467	59,600 PSI
IMR 4895	42.0	3148	45,800 CUP	46.0	3341	51,000 CUP
H4895	43.0	3243	47,700 CUP	45.5	3364	51,600 CUP
Bullet: 90 GR. HDY GMX			**Dia: .257″**		**Col: 3.115″**	
Retumbo	56.0	3250	51,000 PSI	60.0C	3432	58,700 PSI
H1000	56.0	3248	54,900 PSI	60.0C	3377	59,300 PSI
IMR 7977	55.9	3200	51,200 PSI	60.8C	3473	61,300 PSI
IMR 7828 SSC	52.0	3198	52,300 PSI	57.0C	3437	61,500 PSI
IMR 4955	52.5	3106	49,600 PSI	57.7C	3415	61,700 PSI
H4831	50.0	3205	56,200 PSI	54.5C	3363	61,000 PSI
Hybrid 100V	46.0	3152	49,100 PSI	50.7	3436	59,500 PSI
IMR 4831	48.0	3219	53,400 PSI	52.8	3437	60,400 PSI
H4350	45.0	3117	51,300 PSI	49.5	3344	60,600 PSI
IMR 4451	46.5	3169	52,200 PSI	52.3	3429	61,000 PSI
H414	45.0	3122	51,900 PSI	49.5	3339	59,800 PSI
IMR 4350	47.0	3223	54,800 PSI	52.0	3437	61,800 PSI
Varget	41.0	3098	51,600 PSI	44.0	3261	58,800 PSI
IMR 4064	40.0	3043	48,900 PSI	44.0	3253	57,300 PSI
IMR 4166	41.5	3019	47,000 PSI	46.7	3347	59,800 PSI
IMR 4895	41.0	3070	49,200 PSI	46.0	3351	59,900 PSI
H4895	39.0	3053	50,800 PSI	43.0	3281	60,200 PSI
Bullet: 90 GR. SIE HPBT			**Dia: .257″**		**Col: 3.100″**	
H1000	58.0	3142	40,300 CUP	62.0C	3330	47,500 CUP
IMR 7977	57.0	3126	45,100 PSI	62.0C	3419	55,700 PSI
IMR 7828 SSC	55.0	3145	46,400 CUP	59.5C*	3374	52,900 CUP
IMR 4955	53.0	3161	49,000 PSI	58.3	3451	61,900 PSI
H4831	54.0	3213	46,000 CUP	58.0	3481	50,400 CUP
Hybrid 100V	50.0	3217	46,400 CUP	54.0	3404	51,500 CUP
IMR 4831	51.0	3095	42,900 CUP	55.5	3374	51,100 CUP
H4350	49.0	3191	44,000 CUP	53.0	3370	50,700 CUP
IMR 4451	50.3	3270	50,900 PSI	54.7	3517	61,200 PSI
H414	47.0	3135	44,300 CUP	51.0	3315	50,200 CUP
IMR 4350	49.0	3088	42,800 CUP	53.5	3348	51,400 CUP
760	47.0	3135	44,300 CUP	51.0	3315	50,200 CUP
Varget	42.0	3165	45,000 CUP	45.0	3312	50,400 CUP
IMR 4064	42.0	3117	45,100 CUP	45.8	3298	51,100 CUP
IMR 4895	42.0	3106	46,000 CUP	45.9	3269	49,200 CUP
H4895	41.0	3128	44,100 CUP	44.0	3257	51,000 CUP
Bullet: 100 GR. NOS PART			**Dia: .257″**		**Col: 3.200″**	
H1000	56.0	3055	44,600 CUP	59.7C	3212	50,700 CUP
IMR 7977	55.5	3064	48,600 PSI	61.0C	3372	61,300 PSI
IMR 7828 SSC	53.0	2940	40,700 CUP	57.2C	3203	51,300 CUP
IMR 4955	51.4	3033	50,500 PSI	56.5	3287	61,500 PSI
H4831	51.0	3025	46,800 CUP	54.3	3172	51,400 CUP
Hybrid 100V	48.0	3034	44,200 CUP	52.5	3295	51,800 CUP
IMR 4831	49.0	2981	41,700 CUP	54.0	3233	51,400 CUP
H4350	47.0	3038	47,800 CUP	50.0	3155	51,500 CUP
IMR 4451	46.8	3092	52,700 PSI	51.9	3329	61,600 PSI
H414	42.0	2843	44,600 CUP	47.0	3059	50,700 CUP
IMR 4350	48.0	2975	43,200 CUP	52.8	3257	51,200 CUP
760	42.0	2843	44,600 CUP	47.0	3059	50,700 CUP
Varget	41.0	2974	45,600 CUP	44.0	3125	51,400 CUP
IMR 4064	40.0	2904	40,400 CUP	44.0	3122	50,800 CUP
IMR 4166	41.0	2956	48,000 PSI	46.1	3243	59,700 PSI
IMR 4895	42.0	3009	46,000 CUP	45.3	3155	50,400 CUP
H4895	40.0	2921	44,200 CUP	43.0	3072	51,000 CUP
Trail Boss	13.4	1454	25,500 PSI	19.2	1712	30,600 PSI
Bullet: 117 GR. HDY SPBT			**Dia: .257″**		**Col: 3.165″**	
Retumbo	56.0	2876	44,600 CUP	60.5C	3079	50,700 CUP
IMR 8133	56.2	2939	49,100 PSI	61.1C	3216	61,500 PSI
H1000	55.0	2936	47,200 CUP	58.5C	3046	51,000 CUP
IMR 7977	53.0	2889	50,000 PSI	58.0C	3153	61,700 PSI
IMR 7828 SSC	51.0	2879	46,600 CUP	55.0	3037	51,200 CUP
IMR 4955	49.3	2811	49,700 PSI	54.2	3063	61,500 PSI
H4831	48.0	2748	43,000 CUP	52.0	2937	50,900 CUP
Hybrid 100V	46.0	2981	43,100 CUP	50.5	3111	50,400 CUP
IMR 4831	48.0	2839	42,600 CUP	53.0	3137	51,400 CUP
H4350	44.0	2737	44,300 CUP	47.7	2923	50,800 CUP
IMR 4350	47.0	2851	42,700 CUP	52.0	3106	51,300 CUP
Varget	37.0	2637	42,900 CUP	41.0	2838	50,100 CUP
H4895	37.0	2641	44,500 CUP	40.0	2797	50,600 CUP
Bullet: 120 GR. SFT SP			**Dia: .257″**		**Col: 3.150″**	
Retumbo	56.0	2806	43,700 CUP	60.0C	2991	50,300 CUP
IMR 8133	57.0	2962	52,200 PSI	62.0C	3173	60,400 PSI
H1000	52.0	2772	44,900 CUP	55.5	2902	50,600 CUP
IMR 7977	52.3	2797	49,800 PSI	57.2	3064	61,000 PSI
IMR 7828 SSC	50.0	2752	44,400 CUP	54.0	2923	50,300 CUP
IMR 4955	48.7	2716	48,800 PSI	53.5	2994	61,600 PSI
H4831	48.0	2705	45,800 CUP	51.5	2856	51,200 CUP
Hybrid 100V	46.0	2796	44,500 CUP	50.0	3009	51,200 CUP
IMR 4831	48.0	2787	42,200 CUP	53.0C	3065	50,900 CUP
H4350	44.0	2643	42,900 CUP	47.5	2816	50,900 CUP
IMR 4350	48.0	2831	43,500 CUP	52.0C	3049	50,800 CUP
Varget	38.0	2584	45,100 CUP	41.0	2755	51,900 CUP
H4895	37.0	2541	45,400 CUP	40.0	2694	51,700 CUP

257 WEATHERBY MAGNUM

Case: Weatherby Twist: 1:10″
Barrel: 26″ Trim: 2.535″ Primer: Federal 215, Large Rifle Magnum

Powder	Grs.	Vel.	Pressure	Grs.	Vel.	Pressure
Bullet: 75 GR. HDY V-MAX			**Dia: .257″**		**Col: 3.250″**	
H1000	76.0	3517	37,700 CUP	80.0C	3649	42,000 CUP
H4831	71.0	3652	45,200 CUP	75.0	3841	51,900 CUP
H4350	65.0	3715	43,100 CUP	70.0	3905	51,800 CUP
H414	65.0	3717	44,200 CUP	69.5	3971	52,400 CUP
Bullet: 85 GR. NOS BT			**Dia: .257″**		**Col: 3.250″**	
H1000	76.0	3548	44,600 CUP	80.0C	3665	47,900 CUP
IMR 7828				74.5	3775	53,500 CUP
H4831	68.0	3498	45,000 CUP	72.0	3664	52,200 CUP
H4350	63.0	3544	44,400 CUP	67.0	3739	51,600 CUP
H414	62.5	3543	44,800 CUP	66.5	3746	51,700 CUP
Bullet: 90 GR. SIE HPBT			**Dia: .257″**		**Col: 3.150″**	
H1000	76.0	3494	43,800 CUP	80.0C	3671	50,000 CUP
H4831	67.0	3420	44,400 CUP	71.0	3611	52,500 CUP
H4350	62.5	3524	46,600 CUP	66.5	3685	52,400 CUP

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
H414	62.0	3458	44,000 CUP	66.0	3671	52,200 CUP
Bullet: 100 GR. SPR SPBT Dia: .257″ Col: 3.200″						
H1000	73.0	3410	45,800 CUP	78.0	3575	52,400 CUP
IMR 7828				73.0	3655	53,100 CUP
H4831	64.0	3312	45,800 CUP	68.0	3462	52,500 CUP
H4350	59.0	3312	44,900 CUP	63.0	3500	52,400 CUP
H414	59.0	3294	45,300 CUP	62.5	3449	51,800 CUP
Bullet: 115 GR. BAR XFB Dia: .257″ Col: 3.250″						
H1000	67.0	3147	50,000 CUP	71.0	3265	52,700 CUP
H4831	60.0	3030	46,200 CUP	64.0	3170	52,000 CUP
H4350	56.0	2988	46,900 CUP	60.0	3188	52,500 CUP
Bullet: 117 GR. HDY SPBT Dia: .257″ Col: 3.220″						
H1000	70.0	3169	45,200 CUP	74.0	3321	51,800 CUP
IMR 7828				70.0	3390	52,600 CUP
H4831	62.0	3099	44,800 CUP	66.0	3252	52,300 CUP
H4350	57.0	3112	46,000 CUP	60.5	3266	52,000 CUP
Bullet: 120 GR. SFT SP Dia: .257″ Col: 3.220″						
H1000	69.0	3103	45,700 CUP	73.0	3256	51,800 CUP
IMR 7828				69.0	3325	53,000 CUP
H4831	61.0	3013	44,600 CUP	65.0	3184	51,800 CUP
H4350	56.0	3000	44,400 CUP	60.0	3189	51,800 CUP

6.5MM GRENDEL

Case: Lapua Twist: 1:9″
Barrel: 24″ Trim: 1.515″ Primer: Federal 205M, Small Rifle Match

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Bullet: 85 GR. SIE HP Dia: .264″ Col: 2.240″						
H335	29.0	2705	37,700 PSI	32.0	2956	49,300 PSI
H322	27.0	2625	36,600 PSI	30.1C	2927	49,400 PSI
IMR 4198	24.0	2645	38,100 PSI	26.4C	2898	50,000 PSI
H4198	24.5	2674	38,500 PSI	27.2C	2919	49,500 PSI
Bullet: 90 GR. SPR TNT HP Dia: .264″ Col: 2.200″						
H335	28.5	2613	35,200 PSI	31.7	2912	49,400 PSI
IMR 8208 XBR	29.0	2580	34,700 PSI	31.0C	2794	42,400 PSI
Benchmark	28.5	2662	37,700 PSI	30.5C	2870	47,000 PSI
H322	26.5	2534	34,600 PSI	29.5C	2863	49,500 PSI
IMR 4198	23.5	2562	36,600 PSI	26.2C	2844	49,900 PSI
H4198	24.0	2594	36,800 PSI	26.8C	2854	49,400 PSI
Bullet: 95 GR. HDY V-MAX Dia: .264″ Col: 2.230″						
H335	28.0	2570	37,400 PSI	31.2	2841	50,200 PSI
IMR 8208 XBR	28.0	2527	35,600 PSI	31.0C	2840	49,600 PSI
Benchmark	27.0	2476	33,900 PSI	30.0C	2807	49,700 PSI
H322	26.0	2477	35,900 PSI	28.8C	2768	49,300 PSI
IMR 4198	22.5	2470	36,700 PSI	25.2C	2740	49,900 PSI
H4198	23.0	2483	36,600 PSI	25.8C	2750	49,300 PSI
Bullet: 100 GR. NOS BT Dia: .264″ Col: 2.200″						
H335	28.0	2509	38,200 PSI	30.7	2744	49,700 PSI
IMR 8208 XBR	29.0	2542	38,300 PSI	30.8C	2732	47,600 PSI
Benchmark	27.0	2460	36,300 PSI	29.9C	2739	49,900 PSI
H322	26.0	2420	36,700 PSI	29.0C	2716	49,800 PSI
IMR 4198	22.0	2334	34,400 PSI	25.1C	2646	49,600 PSI
H4198	23.0	2414	36,800 PSI	25.6C	2666	49,800 PSI
Bullet: 107 GR. SIE HPBT Dia: .264″ Col: 2.250″						
H335	27.0	2413	36,900 PSI	30.0	2677	49,500 PSI
IMR 8208 XBR	27.0	2356	34,600 PSI	29.8C	2667	49,300 PSI
Benchmark	26.0	2355	34,800 PSI	29.0C	2653	49,600 PSI
H322	25.0	2325	35,900 PSI	27.7C	2607	49,800 PSI
IMR 4198	21.5	2298	35,900 PSI	24.3C	2567	49,700 PSI
H4198	22.0	2324	37,000 PSI	24.8	2576	49,900 PSI
Bullet: 120 GR. BAR TSX Dia: .264″ Col: 2.200″						
H335	25.0	2142	37,400 PSI	28.0	2415	48,400 PSI
IMR 8208 XBR	25.0	2094	34,600 PSI	28.0C	2419	50,000 PSI
Benchmark	24.5	2133	36,900 PSI	27.3	2401	50,200 PSI
H322	23.0	2074	37,700 PSI	25.8C	2347	50,000 PSI
IMR 4198	20.3	2062	40,600 PSI	22.7C	2280	50,100 PSI
H4198	20.5	2074	41,000 PSI	22.9C	2272	49,700 PSI
Bullet: 123 GR. SIE HPBT Dia: .264″ Col: 2.250″						
H335	26.0	2288	37,800 PSI	28.7	2508	49,800 PSI
IMR 8208 XBR	25.5	2180	33,900 PSI	28.5C	2497	50,000 PSI
Benchmark	25.0	2225	36,900 PSI	27.5C	2460	49,900 PSI
H322	24.0	2192	36,600 PSI	26.6C	2434	49,900 PSI
IMR 4198	22.0	2263	43,300 PSI	24.2C	2385	50,500 PSI
H4198	21.0	2153	37,700 PSI	23.7C	2375	50,000 PSI

6.5X47MM LAPUA

Case: Lapua (ref) Twist: 1:8″
Barrel: 30″ Trim: 1.840″ Primer: Federal 205M, Small Rifle Match

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Bullet: 95 GR. HDY V-MAX Dia: .264″ Col: 2.525″						
CFE 223	39.7	3119	45,300 CUP	43.2	3388	51,800 CUP
Varget	36.9	3019	44,600 CUP	40.2	3290	52,100 CUP
IMR 4064	36.4	2984	43,100 CUP	40.0	3252	52,000 CUP
IMR 4166	35.0	2871	43,800 CUP	38.9	3183	51,900 CUP
IMR 8208 XBR	36.2	3050	43,700 CUP	39.0	3265	51,800 CUP
Benchmark	34.9	3014	44,200 CUP	38.3	3264	52,000 CUP
Bullet: 100 GR. NOS BT Dia: .264″ Col: 2.600″						
CFE 223	37.9	3045	46,100 CUP	42.4	3283	51,700 CUP
Varget	36.5	2976	44,600 CUP	40.2	3243	52,200 CUP
IMR 4064	35.2	2844	43,500 CUP	38.9	3135	51,900 CUP
IMR 4166	32.4	2819	44,600 CUP	38.0	3097	52,200 CUP
IMR 8208 XBR	34.6	2961	44,900 CUP	38.0	3207	51,900 CUP
Benchmark	34.5	2973	44,600 CUP	37.9	3194	52,000 CUP
Bullet: 107 GR. SIE HPBT Dia: .264″ Col: 2.665″						
CFE 223	38.6	3077	47,000 CUP	42.5	3276	52,000 CUP
Varget	35.9	2916	45,300 CUP	39.0	3123	51,800 CUP
IMR 4064	35.5	2860	44,400 CUP	39.0	3117	51,900 CUP
IMR 4166	34.0	2781	44,400 CUP	37.0	3009	52,100 CUP
IMR 8208 XBR	34.0	2862	45,000 CUP	37.0	3083	51,700 CUP
Benchmark	33.9	2873	43,900 CUP	36.8	3078	52,000 CUP
Bullet: 123 GR. HDY A-MAX Dia: .264″ Col: 2.685″						
IMR 4955	39.9	2595	44,400 CUP	43.3C	2872	51,700 CUP
H4831	40.9	2649	44,400 CUP	43.6C	2832	49,400 CUP
StaBALL 6.5	37.3	2623	43,500 CUP	41.4	2882	52,400 CUP
H4350	37.8	2682	44,800 CUP	42.0	2945	51,900 CUP
IMR 4451	36.4	2569	44,600 CUP	40.3	2823	52,000 CUP
IMR 4350	37.1	2591	43,300 CUP	41.2	2882	51,600 CUP
CFE 223	33.3	2571	45,300 CUP	37.0	2849	51,700 CUP
Varget	32.6	2601	42,700 CUP	36.2	2845	51,400 CUP
IMR 4064	33.1	2631	47,900 CUP	36.4	2841	51,600 CUP
IMR 4166	32.4	2588	46,300 CUP	35.5	2790	52,100 CUP
IMR 8208 XBR	32.1	2634	45,100 CUP	34.9	2816	52,000 CUP
Benchmark	31.0	2563	44,400 CUP	34.1	2785	51,800 CUP
Bullet: 130 GR. SIE TMK Dia: .264″ Col: 2.700″						
IMR 4955	38.3	2514	44,600 CUP	42.5	2763	51,900 CUP
H4831	38.9	2450	44,200 CUP	43.3C	2723	51,500 CUP
StaBALL 6.5	36.9	2568	42,600 CUP	41.0	2814	52,300 CUP
H4350	36.8	2549	44,800 CUP	40.5C	2822	51,900 CUP
IMR 4451	34.9	2357	40,600 CUP	38.8C	2651	51,800 CUP
IMR 4350	36.8	2524	43,900 CUP	40.5C	2786	51,900 CUP
CFE 223	33.1	2552	44,800 CUP	36.8	2823	52,100 CUP
Varget	32.5	2569	46,400 CUP	36.1	2799	52,100 CUP
IMR 8208 XBR	31.9	2583	45,500 CUP	35.1	2794	51,400 CUP
Bullet: 136 GR. LAP SCNR-L Dia: .264″ Col: 2.695″						
IMR 4955	36.8	2401	43,100 CUP	40.9C	2650	51,700 CUP
H4831	38.7	2494	43,900 CUP	42.6C	2727	51,800 CUP

NEVER EXCEED MAXIMUM LOADS

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
StaBALL 6.5	35.8	2493	43,500 CUP	39.8	2726	52,200 CUP
H4350	36.2	2522	45,500 CUP	40.3C	2774	51,900 CUP
IMR 4451	34.7	2409	44,900 CUP	38.2	2696	52,100 CUP
IMR 4350	35.4	2453	45,300 CUP	39.4C	2735	52,100 CUP
CFE 223	31.8	2455	44,900 CUP	35.8	2718	52,200 CUP
Varget	30.8	2473	45,700 CUP	34.8	2733	52,600 CUP
IMR 8208 XBR	31.0	2480	47,700 CUP	33.7	2668	51,700 CUP
Bullet: 140 GR. BER VLD			**Dia: .264″**		**Col: 2.740″**	
IMR 4955	37.3	2367	43,700 CUP	41.4C	2615	52,700 CUP
H4831	38.2	2478	43,700 CUP	42.5C	2714	51,400 CUP
StaBALL 6.5	35.5	2443	43,600 CUP	39.5	2705	52,400 CUP
H4350	36.0	2491	45,000 CUP	40.1C	2770	52,500 CUP
IMR 4451	34.6	2412	45,500 CUP	38.1	2684	52,400 CUP
IMR 4350	35.2	2459	45,100 CUP	39.2C	2711	52,400 CUP
CFE 223	32.4	2438	45,700 CUP	36.2	2693	51,400 CUP
Varget	30.9	2450	45,000 CUP	34.9	2696	51,900 CUP
Bullet: 143 GR. HDY ELD-X			**Dia: .264″**		**Col: 2.740″**	
IMR 4955	36.5	2399	44,400 CUP	40.5C	2645	50,000 CUP
H4831	38.2	2484	43,900 CUP	41.5C	2632	48,500 CUP
StaBALL 6.5	36.7	2517	44,400 CUP	39.9	2718	52,400 CUP
IMR 4831	37.2	2462	45,400 CUP	40.0C	2653	48,700 CUP
H4350	35.6	2489	42,900 CUP	40.0C	2770	51,300 CUP
IMR 4451	34.8	2414	45,000 CUP	38.7C	2658	52,900 CUP
IMR 4350	35.5	2477	45,100 CUP	39.5C	2717	52,000 CUP
CFE 223	32.6	2496	46,500 CUP	36.3	2702	52,400 CUP
Varget	31.5	2441	45,200 CUP	35.0	2673	52,700 CUP
Bullet: 147 GR. HDY ELD-M			**Dia: .264″**		**Col: 2.740″**	
H4831	38.0	2454	43,600 CUP	41.5C	2628	47,600 CUP
StaBALL 6.5	36.5	2487	45,600 CUP	39.7	2711	52,600 CUP
IMR 4831	37.2	2440	45,100 CUP	40.0C	2625	49,800 CUP
H4350	35.8	2496	43,100 CUP	39.8C	2732	52,600 CUP
IMR 4451	34.6	2395	43,400 CUP	38.4C	2632	52,500 CUP
IMR 4350	35.3	2444	43,700 CUP	39.2C	2711	52,500 CUP
CFE 223	32.7	2443	44,600 CUP	36.3	2650	52,700 CUP
Varget	31.3	2420	44,200 CUP	34.8	2629	52,900 CUP
Bullet: 150 GR. SIE HPBT			**Dia: .264″**		**Col: 2.740″**	
StaBALL 6.5	36.6	2462	44,600 CUP	39.8	2659	52,400 CUP
H4350	35.9	2540	44,700 CUP	39.5C	2722	52,100 CUP
IMR 4451	35.2	2426	46,500 CUP	38.3C	2641	52,500 CUP
IMR 4350	35.4	2465	46,700 CUP	38.5C	2631	51,800 CUP
CFE 223	31.7	2428	44,700 CUP	34.1	2572	51,300 CUP

6.5 CREEDMOOR

Case: Hornady Twist: 1:8″
Barrel: 24″ Trim: 1.910″ Primer: Federal 210M, Large Rifle Match

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Bullet: 95 GR. HDY V-MAX			**Dia: .264″**		**Col: 2.670″**	
StaBALL 6.5	45.5	3079	45,400 PSI	49.3	3371	60,100 PSI
H4350	43.0	2972	45,000 PSI	47.0C	3224	56,100 PSI
H414	42.0	2991	46,100 PSI	46.5	3243	57,100 PSI
760	42.0	2991	46,100 PSI	46.5	3243	57,100 PSI
CFE 223	40.4	3152	54,500 PSI	43.0	3274	60,000 PSI
Varget	39.0	3051	49,000 PSI	43.0	3286	60,100 PSI
IMR 4064	38.0	3009	45,800 PSI	41.6	3281	58,700 PSI
IMR 4166	38.7	3022	48,300 PSI	42.6	3285	59,900 PSI
748	39.0	3050	50,200 PSI	43.0	3259	59,000 PSI
BL-C(2)	40.0	3082	49,800 PSI	44.0	3313	60,300 PSI
IMR 4895	38.0	3006	46,600 PSI	42.2	3295	60,400 PSI
H4895	37.0	3059	50,400 PSI	41.0	3276	60,300 PSI
IMR 8208 XBR	36.0	3041	50,800 PSI	40.0	3228	58,900 PSI
Bullet: 100 GR. BAR TTSX BT Col: 2.655″					**Dia: .264″**	
StaBALL 6.5	44.1	2981	46,700 PSI	48.0	3256	60,300 PSI
H4350	39.9	2895	49,200 PSI	44.7	3133	60,300 PSI
H414	39.7	2893	47,100 PSI	44.5	3163	60,400 PSI
760	39.7	2893	47,100 PSI	44.5	3163	60,400 PSI
Varget	34.8	2867	50,700 PSI	39.0	3101	62,100 PSI
IMR 4064	35.1	2847	47,300 PSI	39.5	3116	60,400 PSI
IMR 4166	37.3	2870	49,300 PSI	41.0	3131	59,900 PSI
IMR 4895	35.4	2819	46,600 PSI	39.8	3103	59,800 PSI
H4895	33.1	2819	49,100 PSI	37.3	3063	61,000 PSI
IMR 8208 XBR	33.2	2812	49,300 PSI	37.4	3056	60,900 PSI
Bullet: 100 GR. NOS BT			**Dia: .264″**		**Col: 2.760″**	
StaBALL 6.5	45.0	3015	46,100 PSI	48.8	3297	60,000 PSI
H4350	40.5	2905	48,500 PSI	45.0C	3156	59,800 PSI
H414	40.0	2923	48,700 PSI	43.8	3143	58,700 PSI
760	40.0	2923	48,700 PSI	43.8	3143	58,700 PSI
CFE 223	41.0	3074	56,000 PSI	43.4	3200	60,700 PSI
Varget	36.5	2888	48,900 PSI	40.5	3122	60,300 PSI
IMR 4064	36.0	2873	46,500 PSI	40.0	3135	59,400 PSI
IMR 4166	37.7	2931	48,900 PSI	41.5	3185	60,600 PSI
BL-C(2)	37.5	2912	48,800 PSI	41.8	3163	60,100 PSI
IMR 4895	36.5	2899	48,400 PSI	40.5	3151	60,300 PSI
H4895	35.0	2878	49,400 PSI	38.5	3097	59,300 PSI
IMR 8208 XBR	34.0	2850	48,700 PSI	38.0	3087	60,000 PSI
Bullet: 107 GR. SIE HPBT			**Dia: .264″**		**Col: 2.780″**	
StaBALL 6.5	43.4	2919	46,200 PSI	47.2	3208	60,400 PSI
H4350	41.0	2829	45,300 PSI	46.0C	3139	60,900 PSI
H414	40.0	2832	45,300 PSI	45.0	3127	58,800 PSI
760	40.0	2832	45,300 PSI	45.0	3127	58,800 PSI
CFE 223	39.0	2960	53,600 PSI	41.5	3076	59,000 PSI
Varget	37.0	2863	48,600 PSI	41.0	3093	60,200 PSI
IMR 4064	36.0	2799	44,100 PSI	39.7	3081	58,500 PSI
IMR 4166	36.7	2841	48,600 PSI	40.4	3086	60,200 PSI
748	37.0	2848	49,000 PSI	41.3	3086	59,300 PSI
BL-C(2)	38.0	2912	50,300 PSI	42.0	3103	59,000 PSI
IMR 4895	36.0	2816	45,800 PSI	40.0	3083	59,700 PSI
H4895	35.0	2846	49,400 PSI	39.0	3073	60,900 PSI
IMR 8208 XBR	34.0	2812	48,900 PSI	37.8	3027	59,700 PSI
Bullet: 120 GR. HDY A-MAX			**Dia: .264″**		**Col: 2.670″**	
StaBALL 6.5	41.7	2735	45,200 PSI	45.3	3004	60,500 PSI
H4350	40.5	2709	47,700 PSI	45.0C	2965	60,800 PSI
IMR 4451	40.2	2618	46,200 PSI	44.7	2929	61,400 PSI
H414	40.0	2684	47,100 PSI	44.5	2960	61,500 PSI
760	40.0	2684	47,100 PSI	44.5	2960	61,500 PSI
Varget	36.0	2668	49,600 PSI	40.2	2891	60,400 PSI
IMR 4064	35.0	2666	47,200 PSI	38.9	2903	59,800 PSI
IMR 4166	34.7	2642	50,500 PSI	38.5	2867	61,500 PSI
748	36.0	2650	56,900 PSI	40.4	2899	59,900 PSI
BL-C(2)	37.0	2678	46,600PSI	41.3	2941	60,500 PSI
IMR 4895	35.0	2670	48,600 PSI	39.0	2895	59,300 PSI
H4895	34.0	2672	50,500 PSI	37.4	2858	60,400 PSI
IMR 8208 XBR	32.0	2564	45,800 PSI	36.0	2818	60,300 PSI
Bullet: 123 GR. SIE HPBT			**Dia: .264″**		**Col: 2.670″**	
StaBALL 6.5	40.5	2656	43,600 PSI	44.9	2980	60,900 PSI
H4350	40.0	2680	45,500 PSI	44.8	2951	59,700 PSI
IMR 4451	40.1	2627	46,600 PSI	44.6	2930	61,500 PSI
H414	40.0	2670	45,200 PSI	44.2	2938	58,900 PSI
760	40.0	2670	45,200 PSI	44.2	2938	58,900 PSI
Varget	36.0	2712	51,100 PSI	39.8	2887	59,200 PSI
IMR 4064	35.0	2673	48,300 PSI	38.8	2882	58,300 PSI
IMR 4166	34.2	2624	49,200 PSI	38.0	2855	61,000 PSI
748	37.0	2650	45,600 PSI	40.8	2900	58,900 PSI
BL-C(2)	37.0	2640	43,800 PSI	41.3	2916	58,600 PSI
IMR 4895	35.0	2663	47,700 PSI	39.2	2896	59,900 PSI
IMR 8208 XBR	32.0	2570	46,100 PSI	36.0	2806	59,000 PSI
Bullet: 130 GR. NOS AB			**Dia: .264″**		**Col: 2.750″**	
StaBALL 6.5	39.9	2582	44,300 PSI	44.3	2889	61,300 PSI
H4350	35.2	2464	49,300 PSI	39.2	2687	60,400 PSI

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
IMR 4451	37.5	2479	47,800 PSI	41.7C	2735	59,500 PSI
H414	35.4	2490	50,500 PSI	39.3	2693	60,000 PSI
760	35.4	2490	50,500 PSI	39.3	2693	60,000 PSI
Varget	31.4	2414	51,500 PSI	34.9	2610	61,400 PSI
IMR 4064	31.0	2352	47,600 PSI	34.9	2585	59,600 PSI
IMR 4166	32.0	2416	47,800 PSI	35.7	2663	60,400 PSI
748	33.0	2494	56,200 PSI	34.8	2586	60,500 PSI
BL-C(2)	31.2	2358	52,600 PSI	34.9	2529	60,400 PSI
IMR 4895	32.9	2435	49,600 PSI	37.0	2668	61,000 PSI
H4895	30.1	2361	48,500 PSI	33.8	2583	61,200 PSI
IMR 8208 XBR	30.5	2378	49,700 PSI	34.0	2589	61,200 PSI
Bullet: 135 GR. HDY A-TIP Dia: .264″ Col: 2.800″						
StaBALL 6.5	41.4	2633	46,600 PSI	45.0	2870	60,800 PSI
Hybrid 100V	40.4	2670	50,300 PSI	44.0C	2878	61,400 PSI
H4350	38.4	2498	43,300 PSI	43.2	2807	61,200 PSI
IMR 4451	39.4	2553	48,900 PSI	42.8	2775	61,300 PSI
IMR 4350	40.0	2596	48,900 PSI	43.5C	2812	60,800 PSI
760	39.0	2556	45,900 PSI	42.4	2803	60,900 PSI
Varget	34.6	2553	51,500 PSI	37.7	2724	61,400 PSI
IMR 4064	34.5	2497	47,700 PSI	37.4	2702	61,100 PSI
IMR 4166	34.1	2535	50,600 PSI	37.1	2708	60,800 PSI
IMR 4895	35.1	2568	49,300 PSI	38.2	2750	60,800 PSI
H4895	34.0	2544	50,500 PSI	37.0	2703	60,700 PSI
IMR 8208 XBR	33.9	2562	52,100 PSI	36.8	2710	60,600 PSI
Bullet: 140 GR. HDY A-MAX Dia: .264″ Col: 2.820″						
StaBALL 6.5	40.0	2535	45,400 PSI	44.0	2806	61,100 PSI
Hybrid 100V	36.0	2451	45,300 PSI	40.9C	2736	59,600 PSI
H4350	36.0	2464	49,200 PSI	40.0C	2660	59,200 PSI
IMR 4451	37.0	2414	47,700 PSI	41.1	2670	60,700 PSI
H414	36.0	2460	50,100 PSI	40.2	2672	60,300 PSI
IMR 4350	37.0	2460	47,500 PSI	41.0C	2607	59,800 PSI
760	36.0	2460	50,100 PSI	40.2	2672	60,300 PSI
H380	34.5	2388	47,800 PSI	38.5	2605	59,500 PSI
Varget	32.0	2371	47,400 PSI	35.8	2598	59,900 PSI
IMR 4064	32.0	2393	48,700 PSI	35.7	2603	60,800 PSI
IMR 4166	31.7	2359	48,300 PSI	35.2	2576	60,100 PSI
IMR 4895	33.7	2491	52,700 PSI	35.9	2609	60,200 PSI
H4895	30.0	2316	46,800 PSI	34.0	2555	60,400 PSI
IMR 8208 XBR	30.0	2335	49,200 PSI	32.8	2511	59,300 PSI
Bullet: 140 GR. SFT A-FRAME Dia: .264″ Col: 2.700″						
IMR 4955	39.5	2473	47,000 PSI	43.0	2698	60,100 PSI
Suprform	39.5	2573	46,400 PSI	43.8	2819	60,500 PSI
H4831	39.6	2485	48,000 PSI	43.5	2684	59,900 PSI
StaBALL 6.5	38.7	2468	46,100 PSI	43.0	2711	60,100 PSI
Hybrid 100V	38.1	2565	48,500 PSI	41.4	2767	60,200 PSI
IMR 4831	38.8	2492	47,800 PSI	42.4	2720	60,100 PSI
H4350	37.2	2528	49,900 PSI	40.4	2707	60,300 PSI
IMR 4451	36.8	2481	48,700 PSI	40.0	2677	60,500 PSI
IMR 4350	37.1	2491	46,600 PSI	40.3	2710	60,500 PSI
760	37.4	2534	50,100 PSI	40.7	2717	60,500 PSI
H380	35.7	2445	49,600 PSI	38.8	2632	59,900 PSI
Bullet: 142 GR. SIE HPBT Dia: .264″ Col: 2.780″						
StaBALL 6.5	40.5	2533	45,100 PSI	44.4	2814	61,300 PSI
Hybrid 100V	39.0	2581	50,200 PSI	41.5	2737	58,900 PSI
H4350	38.8	2573	52,300 PSI	41.5	2694	59,800 PSI
IMR 4451	37.3	2422	46,600 PSI	41.4	2691	61,200 PSI
H414	36.5	2470	50,900 PSI	40.2	2634	58,300 PSI
IMR 4350	39.2	2511	48,300 PSI	41.7C	2687	58,600 PSI
760	36.5	2470	50,900 PSI	40.2	2634	58,300 PSI
H380	35.5	2399	47,000 PSI	39.2	2618	59,100 PSI
Varget	34.5	2489	52,600 PSI	36.3	2598	60,100 PSI
IMR 4064	34.6	2503	52,400 PSI	36.8	2614	59,500 PSI
IMR 4166	32.0	2383	48,900 PSI	35.5	2598	60,600 PSI
IMR 4895	33.8	2479	51,200 PSI	36.0	2599	59,500 PSI
H4895	32.4	2426	49,800 PSI	34.5	2551	58,000 PSI
IMR 8208 XBR	32.2	2431	51,500 PSI	33.5	2518	58,000 PSI
Bullet: 143 GR. HDY ELD-X Dia: .264″ Col: 2.800″						
Suprform	40.7	2515	48,100 PSI	45.8	2795	60,300 PSI
H4831	39.4	2414	45,800 PSI	46.3C	2735	61,500 PSI
StaBALL 6.5	39.5	2485	43,700 PSI	43.5	2772	60,800 PSI
Hybrid 100V	36.8	2433	44,300 PSI	43.4	2791	61,500 PSI
IMR 4831	38.2	2396	44,200 PSI	45.0C	2760	61,400 PSI
H4350	35.9	2407	44,700 PSI	41.8	2719	61,200 PSI
IMR 4451	35.6	2321	42,700 PSI	41.9	2698	61,000 PSI
IMR 4350	36.4	2374	43,200 PSI	42.8C	2749	61,300 PSI
Bullet: 147 GR. HDY ELD-M Dia: .264″ Col: 2.800″						
IMR 4955	40.1	2383	48,300 PSI	44.6C	2615	60,400 PSI
Suprform	39.7	2456	48,100 PSI	45.2	2746	61,100 PSI
H4831	40.4	2432	47,700 PSI	46.0C	2695	61,400 PSI
StaBALL 6.5	39.0	2429	43,200 PSI	43.3	2725	60,000 PSI
Hybrid 100V	38.2	2480	46,600 PSI	43.0	2741	59,800 PSI
IMR 4831	38.9	2394	45,300 PSI	44.3C	2705	60,700 PSI
H4350	36.7	2389	44,700 PSI	41.8	2680	60,800 PSI
IMR 4451	37.1	2367	45,300 PSI	42.2	2680	61,500 PSI
IMR 4350	37.3	2385	44,300 PSI	42.4	2697	60,500 PSI
H380	36.6	2396	48,400 PSI	40.7	2635	61,400 PSI
Bullet: 150 GR. SIE BTHP Dia: .264″ Col: 2.800″						
IMR 4955	40.7	2466	49,500 PSI	44.3C	2663	59,600 PSI
Suprform	40.9	2519	52,000 PSI	44.5	2710	60,500 PSI
H4831	41.1	2467	50,200 PSI	45.7C	2664	61,200 PSI
StaBALL 6.5	39.0	2469	47,300 PSI	42.3	2693	60,800 PSI
Hybrid 100V	39.1	2530	50,600 PSI	42.6	2713	60,300 PSI
IMR 4831	39.6	2426	46,800 PSI	44.0C	2666	60,200 PSI
H4350	37.2	2419	47,500 PSI	41.2	2638	60,400 PSI
IMR 4451	37.8	2433	49,300 PSI	42.0C	2664	61,400 PSI
IMR 4350	37.8	2433	47,900 PSI	42.0C	2668	60,700 PSI
Bullet: 153 GR. HDY A-TIP Dia: .264″ Col: 2.800″						
StaBALL 6.5	39.4	2460	47,000 PSI	42.9	2684	61,100 PSI

260 REMINGTON

Case: Remington Twist: 1:9″
Barrel: 24″ Trim: 2.025″ Primer: Remington 9 1/2, Large Rifle

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Bullet: 95 GR. HDY V-MAX Dia: .264″ Col: 2.780″						
IMR 4955	47.5	3007	47,900 PSI	50.5C	3224	57,100 PSI
H4350	47.0	3135	51,200 PSI	49.7	3284	58,100 PSI
H414	46.0	3136	50,700 PSI	49.0	3313	58,600 PSI
760	46.0	3136	50,700 PSI	49.0	3313	58,600 PSI
H380	44.0	3088	51,300 PSI	47.0	3262	59,500 PSI
CFE 223	40.4	3081	51,200 PSI	43.0	3240	58,500 PSI
Varget	39.0	3070	50,200 PSI	42.0	3244	58,500 PSI
IMR 4166	39.2	3073	51,100 PSI	42.4	3259	59,500 PSI
BL-C(2)	41.0	3093	51,900 PSI	43.5	3236	58,300 PSI
H335	34.5	2968	55,700 PSI	38.3	3114	58,000 PSI
H4895	38.0	3069	51,300 PSI	40.8	3225	58,500 PSI
IMR 8208 XBR	37.6	3038	51,900 PSI	40.0	3166	58,200 PSI
Benchmark	40.0	3190	51,400 PSI	43.5	3391	59,600 PSI
Bullet: 100 GR. BAR XFB Dia: .264″ Col: 2.750″						
H4831	46.0	2925	52,800 PSI	48.8C	3055	58,600 PSI
H4350	42.0	2946	52,900 PSI	45.0	3077	58,200 PSI
H414	43.0	2929	50,600 PSI	46.0	3101	58,000 PSI
760	43.0	2929	50,600 PSI	46.0	3101	58,000 PSI
H380	41.0	2860	52,000 PSI	43.5	3004	58,200 PSI
Varget	36.5	2861	52,000 PSI	39.5	3027	58,900 PSI
BL-C(2)	37.0	2804	50,700 PSI	40.5	3002	59,100 PSI
H335	33.0	2685	50,300 PSI	36.0	2878	58,400 PSI
H4895	35.0	2810	51,300 PSI	38.0	2974	58,800 PSI
Benchmark	38.0	2981	50,700 PSI	41.0	3171	59,900 PSI

NEVER EXCEED MAXIMUM LOADS

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Bullet: 107 GR. SIE HPBT Dia: .264″ Col: 2.780″						
IMR 4955	46.5	2872	47,800 PSI	49.5C	3078	57,100 PSI
H4831	50.0	2963	50,300 PSI	51.0C	3027	54,000 PSI
Hybrid 100V	42.0	2835	46,600 PSI	46.0C	3071	56,100 PSI
H4350	46.0	2997	50,400 PSI	49.0	3164	58,700 PSI
H414	43.5	2917	46,900 PSI	46.5	3151	58,100 PSI
760	43.5	2917	46,900 PSI	46.5	3151	58,100 PSI
H380	43.0	2908	48,500 PSI	46.0	3107	58,200 PSI
CFE 223	39.7	2955	54,900 PSI	42.2	3081	58,900 PSI
Varget	38.5	2947	49,800 PSI	41.5	3125	58,700 PSI
IMR 4166	37.8	2935	52,000 PSI	40.7	3099	59,500 PSI
BL-C(2)	40.0	2951	50,400 PSI	42.7	3097	57,800 PSI
H335	37.0	2862	50,300 PSI	39.2	3014	58,400 PSI
H4895	38.0	2950	51,900 PSI	40.7	3074	58,000 PSI
IMR 8208 XBR	37.2	2900	52,300 PSI	39.1	3001	57,900 PSI
Benchmark	40.0	3158	50,900 PSI	42.5	3227	59,500 PSI
Bullet: 120 GR. SPR SP Dia: .264″ Col: 2.780″						
H1000	49.0	2710	44,600 PSI	51.0C	2810	49,300 PSI
IMR 7828				47.0C	2895	57,800 PSI
IMR 4955	43.8	2739	51,400 PSI	46.6	2911	59,900 PSI
H4831	47.0	2812	52,100 PSI	50.0C	2954	59,200 PSI
Hybrid 100V	41.0	2738	50,200 PSI	45.0C	2934	58,500 PSI
IMR 4831				44.0	2885	58,400 PSI
H4350	43.5	2814	51,400 PSI	46.5	2960	58,200 PSI
IMR 4451	40.8	2727	50,300 PSI	43.7	2894	58,000 PSI
H414	42.5	2802	51,000 PSI	45.5	2968	58,600 PSI
IMR 4350				43.0	2885	58,000 PSI
760	42.5	2802	51,000 PSI	45.5	2968	58,600 PSI
H380	40.0	2686	51,500 PSI	43.0	2844	58,100 PSI
Varget	36.0	2716	50,300 PSI	39.0	2877	58,300 PSI
IMR 4320				37.5	2805	58,400 PSI
IMR 4064				37.0	2805	57,700 PSI
IMR 4166	35.0	2684	50,100 PSI	38.0	2867	59,000 PSI
BL-C(2)	37.0	2686	52,800 PSI	40.0	2840	58,900 PSI
IMR 4895				36.0	2770	57,100 PSI
H335	34.0	2613	51,600 PSI	36.7	2755	58,600 PSI
H4895	35.0	2664	51,900 PSI	38.0	2813	58,900 PSI
IMR 3031				34.0	2720	57,600 PSI
Benchmark	37.0	2768	51,200 PSI	40.0	2935	59,500 PSI
Bullet: 123 GR. SIE HPBT Dia: .264″ Col: 2.780″						
IMR 4955	45.3	2767	51,100 PSI	48.0C	2937	59,700 PSI
IMR 4451	41.0	2704	47,900 PSI	43.9	2926	58,700 PSI
IMR 4166	35.7	2704	51,200 PSI	38.4	2858	59,000 PSI
Bullet: 125 GR. NOS PART Dia: .264″ Col: 2.780″						
H1000	48.0	2685	46,300 PSI	51.0C	2821	53,300 PSI
IMR 7977	45.2	2658	49,200 PSI	48.7	2866	58,900 PSI
IMR 4955	42.3	2664	50,900 PSI	45.0	2830	59,000 PSI
H4831	45.0	2725	51,600 PSI	48.0C	2862	58,000 PSI
Hybrid 100V	40.0	2657	48,600 PSI	44.0C	2876	58,600 PSI
H4350	41.0	2714	50,900 PSI	44.3	2867	57,900 PSI
IMR 4451	39.7	2691	51,100 PSI	42.5	2854	58,200 PSI
H414	40.0	2691	50,500 PSI	43.0	2852	58,100 PSI
760	40.0	2691	50,500 PSI	43.0	2852	58,100 PSI
H380	39.0	2641	50,300 PSI	42.0	2806	58,900 PSI
Varget	34.5	2624	51,200 PSI	37.5	2785	58,400 PSI
IMR 4166	34.2	2620	49,500 PSI	37.2	2813	59,000 PSI
BL-C(2)	36.5	2623	51,600 PSI	38.5	2746	58,200 PSI
H4895	34.0	2623	54,300 PSI	37.0	2743	58,900 PSI
Bullet: 130 GR. NOS AB Dia: .264″ Col: 2.780″						
H1000	46.9	2658	46,000 PSI	50.0C	2814	54,000 PSI
IMR 4955	42.1	2617	53,600 PSI	44.8C	2759	58,800 PSI
H4831	43.2	2682	51,700 PSI	46.6C	2845	59,400 PSI
Hybrid 100V	39.9	2666	49,800 PSI	42.8	2835	58,300 PSI
H4350	39.7	2646	50,600 PSI	42.7	2816	59,000 PSI
H414	38.7	2640	49,800 PSI	41.6	2816	58,800 PSI
760	38.7	2640	49,800 PSI	41.6	2816	58,800 PSI
H380	37.8	2572	50,800 PSI	40.7	2738	58,900 PSI
Varget	34.6	2563	50,500 PSI	37.2	2719	58,800 PSI
IMR 4166	33.0	2535	50,100 PSI	35.9	2717	59,400 PSI
BL-C(2)	35.0	2527	51,700 PSI	37.7	2676	59,500 PSI
H4895	33.0	2504	50,700 PSI	36.0	2677	59,500 PSI
Bullet: 140 GR. NOS PART Dia: .264″ Col: 2.780″						
H1000	48.0	2619	51,200 PSI	50.5	2730	57,000 PSI
IMR 7977	42.5	2523	51,100 PSI	45.8C	2686	58,900 PSI
IMR 7828				47.0C	2755	57,200 PSI
H4831	43.0	2568	53,000 PSI	45.7	2686	59,000 PSI
StaBALL 6.5	36.9	2441	47,700 PSI	41.1	2689	59,700 PSI
Hybrid 100V	37.0	2464	49,500 PSI	41.0C	2670	58,400 PSI
IMR 4831				44.0	2715	57,000 PSI
H4350	39.0	2530	51,900 PSI	42.0	2677	58,800 PSI
IMR 4451	36.4	2479	51,000 PSI	39.0	2631	58,500 PSI
H414	38.0	2496	50,700 PSI	41.0	2656	58,800 PSI
IMR 4350				43.0	2715	57,000 PSI
760	38.0	2496	50,700 PSI	41.0	2656	58,800 PSI
H380	37.0	2434	51,200 PSI	40.0	2594	58,900 PSI
Varget	34.0	2469	53,300 PSI	36.0	2578	59,400 PSI
IMR 4320				36.0	2600	57.600 PSI
IMR 4064				36.0	2615	56,900 PSI
IMR 4166	31.7	2426	49,600 PSI	34.5	2597	58,500 PSI
BL-C(2)	34.0	2412	52,800 PSI	36.6	2557	59,000 PSI
IMR 4895				35.5	2605	57,600 PSI
H4895	32.0	2367	50,500 PSI	34.3	2517	58,400 PSI
IMR 3031				32.5	2505	56,200 PSI
Bullet: 142 GR. SIE HPBT Dia: .264″ Col: 2.780″						
IMR 4955	42.3	2535	50,100 PSI	45.1C	2702	59,200 PSI
H4831	45.0	2601	50,900 PSI	48.0C	2747	58,700 PSI
StaBALL 6.5	38.8	2521	48,300 PSI	43.1	2745	59,800 PSI
Hybrid 100V	38.0	2464	46,800 PSI	42.0C	2690	57,500 PSI
H4350	41.5	2590	50,100 PSI	44.5	2735	58,000 PSI
IMR 4451	38.8	2545	50,100 PSI	41.5	2717	58,900 PSI
H414	41.0	2588	50,400 PSI	43.5	2734	58,800 PSI
760	41.0	2588	50,400 PSI	43.5	2734	58,800 PSI
H380	39.0	2490	50,100 PSI	41.5	2636	58,300 PSI
Varget	35.0	2541	54,000 PSI	37.5	2645	59,100 PSI
IMR 4166	32.2	2440	48,900 PSI	35.0	2624	59,300 PSI
H4895	34.0	2486	52,000 PSI	36.2	2597	58,200 PSI
Bullet: 143 GR. HDY ELD-X Dia: .264″ Col: 2.800″						
H1000	43.2	2453	42,000 PSI	48.0C	2668	52,500 PSI
IMR 7977	43.5	2499	45,300 PSI	47.3C	2741	59,500 PSI
IMR 4955	40.5	2491	45,900 PSI	45.0C	2748	59,700 PSI
Suprform	40.7	2564	50,200 PSI	45.3	2791	59,500 PSI
H4831	41.6	2543	49,200 PSI	46.2C	2739	59,500 PSI
StaBALL 6.5	40.7	2562	48,100 PSI	44.0	2765	59,900 PSI
Hybrid 100V	38.9	2549	45,800 PSI	43.2	2796	59,700 PSI
IMR 4831	40.6	2546	47,800 PSI	45.0C	2771	59,700 PSI
H4350	38.6	2551	48,800 PSI	42.9	2759	59,900 PSI
IMR 4451	37.9	2467	46,500 PSI	42.2C	2731	59,300 PSI
IMR 4350	38.3	2514	46,400 PSI	42.6C	2748	59,300 PSI
Bullet: 147 GR. HDY ELD-M Dia: .264″ Col: 2.800″						
IMR 7977	42.6	2419	44,100 PSI	47.3C	2695	59,900 PSI
IMR 4955	40.5	2444	46,300 PSI	45.0C	2708	59,800 PSI
Suprform	40.1	2481	50,100 PSI	44.5	2698	59,800 PSI
H4831	41.5	2487	48,500 PSI	46.2C	2693	59,400 PSI
StaBALL 6.5	40.4	2525	48,900 PSI	43.7	2718	59,900 PSI
IMR 4831	40.6	2459	46,500 PSI	45.2C	2709	59,500 PSI
H4350	38.5	2471	48,600 PSI	42.8	2678	59,900 PSI
IMR 4451	38.3	2433	47,800 PSI	42.5C	2668	59,700 PSI
IMR 4350	38.5	2438	46,800 PSI	42.8C	2691	59,900 PSI
Bullet: 150 GR. SIE BTHP Dia: .264″ Col: 2.800″						
IMR 4955	40.5	2422	47,100 PSI	45.0C	2668	59,200 PSI

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Suprform	39.1	2421	50,900 PSI	44.0	2667	59,600 PSI
H4831	41.6	2449	47,600 PSI	45.2C	2633	58,500 PSI
StaBALL 6.5	40.3	2500	48,300 PSI	43.6	2697	59,900 PSI
Hybrid 100V	38.1	2464	47,100 PSI	42.0C	2673	58,700 PSI
IMR 4831	40.5	2475	48,000 PSI	44.0C	2656	59,100 PSI
H4350	38.6	2467	49,300 PSI	42.0C	2635	59,500 PSI
IMR 4451	38.4	2424	48,600 PSI	41.8C	2620	59,600 PSI
IMR 4350	38.6	2459	48,800 PSI	42.0C	2623	59,100 PSI
Bullet: 153 GR. HDY A-TIP			**Dia: .264″**		**Col: 2.800″**	
StaBALL 6.5	39.3	2442	47,200 PSI	43.2	2663	59,700 PSI
Bullet: 160 GR. HDY RN			**Dia: .264″**		**Col: 2.860″**	
H1000	48.0	2498	50,500 PSI	50.0C	2595	56,400 PSI
IMR 7977	46.3	2488	52,700 PSI	48.3C	2597	58,600 PSI
IMR 7828				45.0	2580	58,100 PSI
IMR 4955	41.6	2399	51,300 PSI	44.3	2543	59,500 PSI
H4831	43.0	2419	50,900 PSI	46.0	2540	58,100 PSI
Hybrid 100V	38.0	2346	47,400 PSI	42.0C	2539	56.900 PSI
IMR 4831				41.5	2520	57,200 PSI
H4350	40.0	2417	52,100 PSI	43.0	2538	58,200 PSI
H414	39.0	2365	51,200 PSI	42.0	2514	58,800 PSI
IMR 4350				40.5	2520	57,400 PSI
760	39.0	2365	51,200 PSI	42.0	2514	58,800 PSI

6.5 x 55MM SWEDISH MAUSER

Case: Winchester Twist: 1:7.87″
Barrel: 24″ Trim: 2.155″ Primer: Winchester LR, Large Rifle

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Bullet: 85 GR. SIE HP			**Dia: .264″**		**Col: 2.800″**	
H4350	47.0	2909	31,600 CUP	52.0C	3283	42,100 CUP
IMR 4451	44.9	2939	40,800 CUP	47.8C	3141	45,800 CUP
H414	45.0	3071	35,500 CUP	50.0	3265	40,900 CUP
IMR 4350	46.0	2896	37,500 CUP	49.0C	3117	43,100 CUP
760	45.0	3071	35,500 CUP	50.0	3265	40,900 CUP
H380	43.0	2932	33,400 CUP	48.0	3231	42,900 CUP
CFE 223	44.0	3003	37,000 CUP	48.0	3301	44,800 CUP
Varget	40.0	3128	36,600 CUP	44.0	3350	42,300 CUP
IMR 4064	40.0	2993	39,000 CUP	43.5	3205	44,900 CUP
BL-C(2)	43.0	2931	33,400 CUP	47.5	3261	44,500 CUP
IMR 4895	40.0	2979	39,200 CUP	43.5	3183	45,000 CUP
H335	40.0	3023	36,800 CUP	44.5	3314	45,200 CUP
H4895	40.0	3031	34,600 CUP	44.0	3370	45,100 CUP
Bullet: 100 GR. SIE HP			**Dia: .264″**		**Col: 2.850″**	
IMR 7828 SSC	48.0	2772	39,500 CUP	51.5C*	2987	45,500 CUP
IMR 4955	46.0	2775	33,800 CUP	50.0C	3089	45,000 CUP
H4831	46.0	2552	27,800 CUP	51.0C	2883	37,500 CUP
IMR 4831	46.5	2827	37,500 CUP	49.5C	3014	43,200 CUP
H4350	45.0	2724	31,400 CUP	50.0C	3172	46,000 CUP
IMR 4451	44.2	2810	41,000 CUP	47.1C	2988	46,200 CUP
H414	44.5	2879	36,500 CUP	49.5	3183	45,400 CUP
IMR 4350	45.0	2842	40,100 CUP	48.5C	3032	45,200 CUP
760	44.5	2879	36,500 CUP	49.5	3183	45,400 CUP
H380	43.0	2845	36,000 CUP	48.0	3092	43,000 CUP
CFE 223	41.0	2793	37,900 CUP	45.0	3037	44,900 CUP
Varget	38.0	2892	37,800 CUP	42.0	3177	45,800 CUP
IMR 4064	39.0	2894	41,000 CUP	42.7	3074	46,000 CUP
BL-C(2)	39.5	2734	38,900 CUP	43.8	2948	45,200 CUP
IMR 4895	39.0	2847	40,800 CUP	42.5	3024	45,600 CUP
H335	37.0	2686	36,300 CUP	41.0	2991	46,000 CUP
H4895	37.0	2820	38,800 CUP	41.0	3033	46,000 CUP
Bullet: 107 GR. SIE HPBT			**Dia: .264″**		**Col: 3.050″**	
IMR 7828 SSC	46.5	2721	39,700 CUP	50.5C*	2915	45,300 CUP
IMR 4955	46.0	2766	35,800 CUP	50.0C	3071	46,000 CUP
H4831	46.0	2590	34,500 CUP	51.0C	2911	42,700 CUP
Hybrid 100V	43.0	2724	41,300 CUP	47.0C	2946	46,100 CUP
IMR 4831	46.0	2795	38,900 CUP	49.0C	2997	44,800 CUP
H4350	43.0	2706	36,000 CUP	48.0C	3035	45,600 CUP
IMR 4451	43.2	2758	41,800 CUP	46.0	2933	46,100 CUP
H414	43.0	2743	36,100 CUP	47.5	3036	45,900 CUP
IMR 4350	44.0	2773	39,400 CUP	47.8	2994	45,600 CUP
760	43.0	2743	36,100 CUP	47.5	3036	45,900 CUP
H380	41.0	2749	39,200 CUP	45.0	2941	45,800 CUP
CFE 223	41.0	2836	40,700 CUP	45.6	3004	45,900 CUP
Varget	38.0	2742	39,800 CUP	42.0	2952	45,600 CUP
IMR 4064	38.0	2791	39,500 CUP	41.5	2982	45,200 CUP
BL-C(2)	41.0	2784	37,300 CUP	44.5	3050	45,600 CUP
IMR 4895	37.5	2776	40,600 CUP	40.8	2955	45,500 CUP
H335	36.0	2660	37,800 CUP	40.0	2948	45,800 CUP
H4895	37.0	2777	39,600 CUP	39.7	2943	45,900 CUP
Bullet: 120 GR. NOS BT			**Dia: .264″**		**Col: 3.000″**	
IMR 7828 SSC	45.5	2590	40,200 CUP	49.5C	2802	45,600 CUP
IMR 4955	44.2	2630	36,900 CUP	48.1C	2901	45,500 CUP
H4831	44.5	2528	36,200 CUP	49.5C	2802	45,900 CUP
Hybrid 100V	41.0	2553	39,300 CUP	45.5	2787	46,000 CUP
IMR 4831	44.5	2674	38,400 CUP	48.5C	2913	46,200 CUP
H4350	41.5	2545	36,800 CUP	46.0	2792	45,800 CUP
IMR 4451	41.0	2548	40,600 CUP	44.0	2761	46,300 CUP
H414	40.0	2528	37,000 CUP	44.5	2783	46,000 CUP
IMR 4350	43.0	2631	39,500 CUP	46.8C	2863	46,000 CUP
760	40.0	2528	37,000 CUP	44.5	2783	46,000 CUP
H380	40.0	2555	38,200 CUP	44.3	2784	46,000 CUP
Varget	35.0	2579	36,800 CUP	39.0	2812	45,300 CUP
IMR 4064	37.0	2625	41,300 CUP	40.0	2764	45,100 CUP
IMR 4895	36.0	2569	39,200 CUP	39.6	2767	45,900 CUP
H4895	34.0	2571	43,000 CUP	37.8	2715	46,000 CUP
Bullet: 129 GR. HDY SP			**Dia: .264″**		**Col: 2.935″**	
IMR 7828 SSC	45.0	2537	38,900 CUP	49.0C*	2734	45,000 CUP
IMR 4955	44.1	2574	36,200 CUP	48.0C	2827	45,300 CUP
H4831	44.0	2449	35,600 CUP	48.5C	2689	45,000 CUP
Hybrid 100V	41.0	2504	39,300 CUP	45.5	2743	46,400 CUP
IMR 4831	43.0	2549	37,200 CUP	47.0C	2792	45,100 CUP
H4350	40.0	2430	35,100 CUP	45.5	2703	45,500 CUP
IMR 4451	40.5	2496	40,600 CUP	43.8	2667	45,400 CUP
H414	39.5	2460	37,900 CUP	43.5	2677	45,700 CUP
IMR 4350	42.0	2584	40,000 CUP	46.0	2793	45,800 CUP
760	39.5	2460	37,900 CUP	43.5	2677	45,700 CUP
H380	38.5	2440	38,400 CUP	42.5	2654	45,500 CUP
Varget	34.0	2472	36,900 CUP	37.5	2664	46,000 CUP
IMR 4064	36.0	2534	39,800 CUP	39.2	2704	45,800 CUP
IMR 4895	35.0	2488	38,400 CUP	39.0	2703	45,600 CUP
H4895	33.0	2373	38,200 CUP	36.3	2561	45,600 CUP
Bullet: 140 GR. SPR SP			**Dia: .264″**		**Col: 3.030″**	
H1000	46.5	2423	37,600 CUP	51.5C	2651	46,000 CUP
IMR 7977	45.6	2445	38,600 CUP	49.1C	2646	45,300 CUP
IMR 7828 SSC	44.0	2460	38,300 CUP	48.2	2678	45,800 CUP
IMR 4955	42.5	2497	39,200 CUP	46.3	2684	45,500 CUP
H4831	42.5	2382	38,100 CUP	47.0	2586	45,700 CUP
Hybrid 100V	40.0	2418	38,300 CUP	44.5	2642	45,200 CUP
IMR 4831	43.0	2507	39,100 CUP	46.3	2700	45,400 CUP
H4350	39.5	2418	38,600 CUP	44.0	2617	45,700 CUP
IMR 4451	39.9	2426	41,000 CUP	43.0	2592	46,200 CUP
H414	37.5	2393	40,000 CUP	41.5	2565	45,600 CUP
IMR 4350	41.0	2486	39,300 CUP	45.0	2677	46,000 CUP
760	37.5	2393	40,000 CUP	41.5	2565	45,600 CUP
H380	36.5	2316	37,600 CUP	40.5	2520	45,100 CUP
Varget	32.5	2312	37,500 CUP	36.0	2528	46,000 CUP
IMR 4064	35.0	2394	39,500 CUP	38.0	2563	45,800 CUP
IMR 4895	34.5	2364	38,900 CUP	37.8	2550	45,500 CUP
H4895	32.5	2305	38,100 CUP	35.8	2493	45,700 CUP
Bullet: 142 GR. SIE HPBT			**Dia: .264″**		**Col: 3.050″**	
H1000	48.0	2453	37,500 CUP	51.5C	2601	41,600 CUP
IMR 7977	46.0	2494	39,500 CUP	49.3	2666	45,400 CUP

NEVER EXCEED MAXIMUM LOADS

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
IMR 7828 SSC	44.0	2457	38,600 CUP	47.7	2671	45,500 CUP
IMR 4955	42.5	2479	37,500 CUP	46.2	2725	46,100 CUP
H4831	42.5	2383	37,300 CUP	47.0	2604	45,300 CUP
Hybrid 100V	40.0	2420	39,300 CUP	44.0	2658	46,200 CUP
IMR 4831	43.0	2500	38,400 CUP	46.5	2704	44,900 CUP
H4350	39.0	2427	38,400 CUP	43.7	2653	45,800 CUP
IMR 4451	39.7	2442	39,900 CUP	42.7	2622	45,900 CUP
H414	39.0	2399	37,200 CUP	43.0	2653	45,300 CUP
IMR 4350	41.0	2452	38,000 CUP	44.8	2667	45,100 CUP
760	39.0	2399	37,200 CUP	43.0	2653	45,300 CUP
H380	35.0	2239	35,600 CUP	38.5	2437	45,300 CUP
Varget	34.0	2334	38,100 CUP	38.0	2559	45,700 CUP
IMR 4064	35.0	2430	40,300 CUP	38.0	2582	45,600 CUP
IMR 4895	35.0	2416	40,000 CUP	38.3	2574	45,700 CUP
H4895	32.5	2311	37,800 CUP	35.8	2511	45,800 CUP
Bullet: 160 GR. HDY RN			**Dia: .264″**		**Col: 3.000″**	
H1000	45.0	2265	35,000 CUP	50.0C	2517	45,300 CUP
IMR 7977	45.5	2335	38,700 CUP	48.5C	2508	45,300 CUP
IMR 7828 SSC	43.0	2335	40,100 CUP	47.0	2512	45,600 CUP
IMR 4955	43.0	2409	40,500 CUP	46.8	2563	46,100 CUP
H4831	44.0	2327	36,600 CUP	48.0C	2524	46,000 CUP
Hybrid 100V	40.0	2317	39,300 CUP	43.5	2490	45,600 CUP
IMR 4831	42.0	2362	38,900 CUP	45.5	2503	45,100 CUP
H4350	40.0	2317	38,800 CUP	43.0	2445	44,900 CUP
IMR 4451	38.9	2261	38,000 CUP	41.9	2439	46,100 CUP
H414	38.5	2262	38,400 CUP	41.0	2383	44,700 CUP
IMR 4350	40.0	2320	39,800 CUP	43.8	2513	45,900 CUP
760	38.5	2262	38,400 CUP	41.0	2383	44,700 CUP
Varget	32.5	2173	38,200 CUP	36.0	2354	45,600 CUP
IMR 4064	34.0	2243	39,500 CUP	36.5	2360	44,700 CUP
IMR 4895	33.0	2189	37,700 CUP	36.0	2346	44,600 CUP

6.5MM-06

Case: Winchester (REF) Twist: 1:9″
Barrel: 24″ Trim: 2.484″ Primer: Federal 210M, Large Rifle Match

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Bullet: 85 GR. SIE HP			**Dia: .264″**		**Col: 3.140″**	
IMR 7828 SSC	54.0	3114	47,400 PSI	60.5	3455	61,900 PSI
IMR 4955	55.8	3279	50,900 PSI	60.7	3550	63,100 PSI
Hybrid 100V	52.0	3372	50,200 PSI	56.5	3582	59,400 PSI
IMR 4831	51.0	3145	45,900 PSI	57.0	3526	62,400 PSI
H4350	53.0	3336	52,300 PSI	57.5	3574	62,300 PSI
IMR 4451	48.8	3230	57,300 PSI	54.2	3438	63,800 PSI
H414	50.0	3276	48,500 PSI	55.0	3558	60,600 PSI
IMR 4350	50.0	3176	48,000 PSI	56.0	3542	63,800 PSI
H380	50.0	3333	53,700 PSI	55.0	3552	63,000 PSI
Varget	48.0	3453	58,400 PSI	52.0	3588	62,500 PSI
IMR 4064	45.0	3334	56,100 PSI	49.0	3515	63,900 PSI
H4895	43.0	3245	49,900 PSI	46.5	3442	60,600 PSI
Bullet: 95 GR. HDY V-MAX			**Dia: .264″**		**Col: 3.200″**	
IMR 7828 SSC	53.0	3056	50,100 PSI	59.0	3368	63,500 PSI
IMR 4955	54.0	3143	50,900 PSI	59.3	3446	63,300 PSI
Hybrid 100V	52.0	3319	52,500 PSI	56.5C	3540	63,100 PSI
IMR 4831	50.0	3094	48,800 PSI	56.0	3442	63,600 PSI
H4350	50.0	3204	52,100 PSI	54.5	3436	63,300 PSI
IMR 4451	49.2	3102	51,900 PSI	54.2	3385	63,000 PSI
H414	49.0	3226	52,700 PSI	52.5	3418	61,900 PSI
IMR 4350	49.0	3116	50,200 PSI	54.0	3410	63,300 PSI
H380	47.0	3182	55,400 PSI	50.5	3347	62,900 PSI
Varget	44.0	3167	51,600 PSI	49.0	3414	63,100 PSI
IMR 4064	42.0	3090	52,000 PSI	47.0	3342	63,800 PSI
H4895	43.0	3209	55,400 PSI	46.0	3359	63,000 PSI
Bullet: 100 GR. NOS BT			**Dia: .264″**		**Col: 3.200″**	
IMR 7828 SSC	51.0	2960	50,300 PSI	56.7	3257	62,800 PSI
IMR 4955	52.5	3073	51,900 PSI	57.8	3363	63,300 PSI
H4831	53.0	3085	53,200 PSI	57.7	3304	63,400 PSI
Hybrid 100V	51.5	3225	53,400 PSI	56.0C	3427	62,300 PSI
IMR 4831	49.0	3068	51,400 PSI	54.0	3338	63,400 PSI
H4350	49.0	3119	53,800 PSI	53.0	3315	63,300 PSI
IMR 4451	47.2	3021	52,100 PSI	52.5	3301	63,400 PSI
H414	46.0	3057	52,400 PSI	50.0	3260	62,200 PSI
IMR 4350	47.0	3000	49,700 PSI	52.5	3293	62,400 PSI
H380	44.0	2963	51,300 PSI	47.8	3172	62,500 PSI
Varget	43.0	3070	53,000 PSI	47.0	3268	63,300 PSI
IMR 4064	41.0	2962	51,000 PSI	45.4	3198	62,100 PSI
H4895	42.0	3083	56,400 PSI	44.0	3205	62,900 PSI
Bullet: 107 GR. SIE HPBT			**Dia: .264″**		**Col: 3.300″**	
H1000	56.0	2945	49,300 PSI	60.0C	3141	58,700 PSI
IMR 7828 SSC	50.0	2909	50,800 PSI	55.3	3172	62,400 PSI
IMR 4955	51.3	2972	50,900 PSI	55.8	3241	62,400 PSI
H4831	51.0	2985	51,800 PSI	55.5	3200	62,500 PSI
Hybrid 100V	49.0	3136	52,700 PSI	53.0	3309	60,600 PSI
IMR 4831	48.0	2985	51,200 PSI	53.0	3246	62,900 PSI
H4350	47.0	3022	52,600 PSI	51.5	3234	62,700 PSI
IMR 4451	46.6	2946	51,400 PSI	51.8	3230	63,400 PSI
H414	46.0	3031	53,400 PSI	49.5	3215	62,600 PSI
IMR 4350	46.0	2921	49,400 PSI	51.5	3209	63,000 PSI
H380	43.0	2891	50,000 PSI	47.5	3132	62,700 PSI
Varget	42.0	2993	52,700 PSI	45.8	3185	62,700 PSI
Bullet: 120 GR. SFT SP			**Dia: .264″**		**Col: 3.150″**	
H1000	55.0	2837	53,900 PSI	58.5C	2986	62,700 PSI
IMR 7977	52.7	2746	50,200 PSI	58.0C	3005	61,000 PSI
IMR 7828 SSC	47.0	2676	50,800 PSI	52.0	2931	62,600 PSI
IMR 4955	44.3	2675	52,300 PSI	48.3	2884	62,900 PSI
H4831	48.0	2765	51,400 PSI	52.5	2970	62,300 PSI
Hybrid 100V	46.0	2822	48,300 PSI	50.0	3035	60,300 PSI
IMR 4831	44.0	2716	51,500 PSI	48.7	2941	62,600 PSI
H4350	45.0	2823	54,300 PSI	49.0	2996	63,300 PSI
IMR 4451	44.2	2714	52,100 PSI	48.6	2954	62,600 PSI
H414	42.0	2706	49,700 PSI	46.0	2925	62,800 PSI
IMR 4350	42.5	2683	51,400 PSI	47.2	2913	62,900 PSI
H380	39.0	2604	49,900 PSI	42.5	2812	62,000 PSI
Bullet: 129 GR. HDY SP			**Dia: .264″**		**Col: 3.245″**	
H1000	51.0	2683	53,800 PSI	55.5C	2885	62,700 PSI
IMR 7977	52.1	2672	49,800 PSI	57.2	2937	62,300 PSI
IMR 7828 SSC	45.0	2603	50,800 PSI	50.5	2879	63,700 PSI
IMR 4955	46.7	2699	53,700 PSI	51.2	2897	62,400 PSI
H4831	47.0	2721	54,100 PSI	51.0	2889	62,900 PSI
Hybrid 100V	45.0	2742	50,600 PSI	49.0	2925	60,400 PSI
IMR 4831	42.0	2611	51,000 PSI	47.0	2857	62,700 PSI
H4350	43.0	2676	51,400 PSI	47.0	2876	62,500 PSI
IMR 4451	43.2	2618	52,900 PSI	48.0	2855	62,900 PSI
IMR 4350	41.0	2609	52,400 PSI	45.9	2834	62,900 PSI
Bullet: 130 GR. NOS AB			**Dia: .264″**		**Col: 3.265″**	
H1000	47.7	2670	51,400 PSI	53.0	2880	61,600 PSI
IMR 7977	50.6	2645	50,900 PSI	55.5C	2908	61,600 PSI
IMR 7828 SSC	47.0	2637	49,300 PSI	52.2	2904	61,700 PSI
IMR 4955	44.3	2602	52,500 PSI	48.7	2829	62,300 PSI
H4831	44.0	2638	54,700 PSI	48.8	2824	62,300 PSI
Hybrid 100V	45.0	2752	55,800 PSI	47.3	2867	62,300 PSI
IMR 4831	43.5	2609	50,800 PSI	48.3	2845	61,900 PSI
H4350	42.1	2615	51,300 PSI	46.7	2821	61,500 PSI
IMR 4451	41.4	2558	51,400 PSI	46.4	2821	62,400 PSI
IMR 4350	43.4	2607	49,700 PSI	48.2	2867	62,300 PSI
Bullet: 140 GR. SPR GS-SP			**Dia: .264″**		**Col: 3.200″**	
H1000	49.0	2570	52,900 PSI	53.5C	2761	62,600 PSI
IMR 7828 SSC	45.0	2482	48,600 PSI	50.5	2766	62,000 PSI
IMR 4955	43.4	2498	53,800 PSI	47.7	2703	63,400 PSI
H4831	45.0	2542	52,300 PSI	49.5	2731	62,300 PSI
Hybrid 100V	45.0	2635	48,900 PSI	49.0	2848	61,600 PSI

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
IMR 4831	43.0	2532	49,500 PSI	47.8	2772	62,300 PSI
H4350	42.0	2558	52,400 PSI	45.5	2737	62,700 PSI
IMR 4451	41.2	2432	51,400 PSI	46.0	2652	62,800 PSI
IMR 4350	42.0	2521	51,000 PSI	46.8	2742	62,300 PSI
Bullet: 142 GR. SIE HPBT			**Dia: .264″**		**Col: 3.300″**	
H1000	49.0	2555	49,800 PSI	55.0C	2816	63,300 PSI
IMR 7977	50.6	2538	48,400 PSI	55.6	2815	61,400 PSI
IMR 7828 SSC	45.0	2530	51,100 PSI	50.0	2761	62,800 PSI
IMR 4955	45.5	2554	52,600 PSI	50.0	2746	62,400 PSI
H4831	45.0	2559	50,000 PSI	50.3	2795	62,900 PSI
Hybrid 100V	45.0	2678	50,500 PSI	49.5	2889	63,200 PSI
IMR 4831	41.0	2449	49,300 PSI	46.2	2702	63,000 PSI
H4350	42.0	2572	51,300 PSI	46.0	2768	62,900 PSI
IMR 4451	42.3	2508	51,300 PSI	47.0	2726	62,000 PSI
Bullet: 143 GR. HDY ELD-X			**Dia: .264″**		**Col: 3.340″**	
H1000	47.6	2595	51,600 PSI	52.9	2800	62,400 PSI
IMR 7977	48.3	2475	48,900 PSI	54.3	2769	62,800 PSI
IMR 7828	46.3	2587	51,900 PSI	51.5	2826	63,300 PSI
IMR 4955	44.1	2464	52,000 PSI	50.2	2705	63,000 PSI
H4831	44.2	2520	51,000 PSI	50.0	2767	63,600 PSI
Hybrid 100V	42.3	2582	52,700 PSI	47.0	2790	63,200 PSI
IMR 4831	43.5	2534	51,800 PSI	50.1	2761	62,800 PSI
H4350	41.1	2535	52,700 PSI	46.2	2752	63,400 PSI
IMR 4451	42.2	2521	52,400 PSI	47.5	2758	63,400 PSI
IMR 4350	41.9	2508	50,300 PSI	47.1	2766	63,100 PSI
Bullet: 150 GR. SIE BTHP			**Dia: .264″**		**Col: 3.340″**	
H1000	47.5	2477	47,900 PSI	54.6	2761	62,300 PSI
IMR 7977	48.9	2476	50,500 PSI	54.9C	2733	63,300 PSI
IMR 7828	46.7	2544	51,100 PSI	51.9	2787	63,500 PSI
IMR 4955	43.8	2393	50,500 PSI	49.8	2653	63,300 PSI
H4831	45.5	2511	50,900 PSI	51.2	2756	63,800 PSI
Hybrid 100V	42.8	2518	51,300 PSI	47.3	2741	63,500 PSI
IMR 4831	44.1	2491	50,600 PSI	49.5	2729	63,000 PSI
H4350	41.9	2504	52,000 PSI	46.6	2714	63,000 PSI
IMR 4451	41.9	2468	51,400 PSI	47.1	2709	63,700 PSI
IMR 4350	42.7	2492	50,900 PSI	48.0	2726	63,200 PSI
Bullet: 160 GR. HDY RN			**Dia: .264″**		**Col: 3.300″**	
H1000	51.0	2492	53,600 PSI	55.0	2650	62,400 PSI
IMR 7977	51.5	2448	49,100 PSI	56.5	2689	61,600 PSI
IMR 7828 SSC	45.0	2351	51,200 PSI	49.5	2558	62,400 PSI
IMR 4955	46.0	2434	53,100 PSI	50.6	2616	62,400 PSI
H4831	46.0	2461	52,700 PSI	50.0	2625	62,600 PSI
Hybrid 100V	45.0	2507	49,600 PSI	49.5	2702	62,700 PSI
IMR 4831	42.0	2347	50,500 PSI	46.3	2546	62,000 PSI

6.5-284

Case: Winchester (REF.) Twist: 1:9″
Barrel: 24″ Trim: 2.160″ Primer: Federal 210, Large Rifle

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Bullet: 85 GR. SIE HP			**Dia: .264″**		**Col: 2.750″**	
IMR 7828 SSC	54.0	3089		60.5C*	3542	
IMR 4955	55.8	3177		60.7	3518	
IMR 4831	51.0	3144		57.0	3602	
H4350	53.0	3260		57.5	3531	
IMR 4451	48.8	3077		54.2	3386	
H414	50.0	3158		55.0	3504	
IMR 4350	50.0	3123		56.0	3585	
H380	50.0	3254		55.0	3527	
Varget	48.0	3378		52.0	3587	
IMR 4064	45.0	3314		49.0	3535	
H4895	43.0	3210		46.5	3417	
Bullet: 95 GR. HDY V-MAX			**Dia: .264″**		**Col: 2.820″**	
IMR 7828 SSC	53.0	2977		59.0	3370	
IMR 4955	54.0	3093		59.3C	3440	
Hybrid 100V	52.0	3294		56.5	3505	
IMR 4831	50.0	3051		56.0	3486	
H4350	50.0	3088		54.5	3349	
IMR 4451	49.2	3066		54.2	3353	
H414	49.0	3122		52.5	3346	
IMR 4350	49.0	3059		54.0	3418	
H380	47.0	3066		50.5	3291	
Varget	44.0	3165		49.0	3380	
IMR 4064	42.0	3096		47.0	3341	
H4895	43.0	3195		46.0	3318	
Bullet: 100 GR. NOS BT			**Dia: .264″**		**Col: 2.800″**	
IMR 7828 SSC	51.0	2860		56.7	3201	
IMR 4955	52.5	2986		57.8C	3286	
H4831	53.0	2969		57.7	3211	
Hybrid 100V	51.5	3211		56.0C	3435	
IMR 4831	49.0	2950		54.0	3318	
H4350	49.0	3003		53.0	3242	
IMR 4451	47.2	2975		52.5	3232	
H414	46.0	2893		50.0	3115	
IMR 4350	47.0	2936		52.5	3291	
H380	44.0	2814		47.8	3039	
Varget	43.0	3083		47.0	3227	
IMR 4064	41.0	3003		45.4	3221	
H4895	42.0	3058		44.0	3143	
Bullet: 107 GR. SIE HPBT			**Dia: .264″**		**Col: 2.920″**	
H1000	56.0	2808		60.0C	2985	
IMR 7828 SSC	50.0	2779		55.3	3105	
IMR 4955	51.3	2867		55.8C	3156	
H4831	51.0	2842		55.5	3084	
Hybrid 100V	49.0	3167		53.0	3358	
IMR 4831	48.0	2888		53.0	3222	
H4350	47.0	2898		51.5	3118	
IMR 4451	46.6	2919		51.8	3205	
H414	46.0	2883		49.5	3110	
IMR 4350	46.0	2845		51.5	3191	
H380	43.0	2735		47.5	3020	
Varget	42.0	2970		45.8	3125	
IMR 4064	40.0	2916		43.5	3105	
Bullet: 120 GR. SFT SP			**Dia: .264″**		**Col: 2.780″**	
H1000	55.0	2743		58.5C	2901	
IMR 7977	52.7	2732		58.0C	3024	
IMR 7828 SSC	47.0	2636		52.0	2899	
IMR 4955	44.3	2499		48.3	2685	
H4831	48.0	2651		52.5	2871	
Hybrid 100V	46.0	2739		50.0	2979	
IMR 4831	44.0	2671		48.7	2920	
H4350	45.0	2744		49.0	2897	
IMR 4451	44.2	2732		48.6	2989	
H414	42.0	2577		46.0	2797	
IMR 4350	42.5	2624		47.2	2878	
H380	39.0	2463		42.5	2626	
Bullet: 129 GR. HDY SP			**Dia: .264″**		**Col: 2.935″**	
H1000	51.0	2638		55.5C	2820	
IMR 7977	52.1	2724		57.2C	3018	
IMR 7828 SSC	45.0	2536		50.5	2832	
IMR 4955	46.7	2623		51.2	2837	
H4831	47.0	2670		51.0	2859	
Hybrid 100V	45.0	2731		49.0	2910	
IMR 4831	42.0	2559		47.0	2832	
H4350	43.0	2670		47.0	2863	
IMR 4451	43.2	2695		48.0	2942	
IMR 4350	41.0	2574		45.9	2821	
Bullet: 130 GR. NOS AB			**Dia: .264″**		**Col: 2.950″**	
H1000	47.7	2570		53.0	2812	
IMR 7977	50.6	2670		55.5C	2939	
IMR 7828 SSC	47.0	2589		52.2	2872	

NEVER EXCEED MAXIMUM LOADS

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
IMR 4955	44.3	2481		48.7	2698	
H4831	44.0	2541		48.8	2779	
Hybrid 100V	45.0	2746		47.3	2884	
IMR 4831	43.5	2628		48.3	2898	
H4350	42.1	2645		46.7	2874	
IMR 4451	41.4	2588		46.4	2867	
IMR 4350	43.4	2667		48.2	2935	
Bullet: 140 GR. SPR GS-SP			**Dia: .264″**		**Col: 2.910″**	
H1000	49.0	2503		53.5C	2694	
IMR 7828 SSC	45.0	2462		50.5	2718	
H4831	45.0	2520		49.5	2722	
Hybrid 100V	45.0	2696		49.0	2895	
IMR 4831	43.0	2536		47.8	2762	
H4350	42.0	2548		45.5	2720	
IMR 4451	41.2	2495		46.0	2739	
IMR 4350	42.0	2539		46.8	2753	
Bullet: 142 GR. SIE HPBT			**Dia: .264″**		**Col: 2.900″**	
H1000	49.0	2436		55.0C	2700	
IMR 7977	50.6	2586		55.6C	2788	
IMR 7828 SSC	45.0	2484		50.0	2719	
IMR 4955	45.5	2481		50.0	2707	
H4831	45.0	2479		50.3	2714	
Hybrid 100V	45.0	2666		49.5	2901	
IMR 4831	41.0	2460		46.2	2692	
H4350	42.0	2583		46.0	2735	
Bullet: 143 GR. HDY ELD-X			**Dia: .264″**		**Col: 2.910″**	
IMR 7977	48.3	2394		54.3	2711	
IMR 7828	46.3	2493		51.5	2792	
IMR 4955	44.1	2465		50.2	2740	
H4831	44.2	2444		50.0	2713	
Hybrid 100V	42.3	2464		47.0	2725	
IMR 4831	43.5	2433		50.1	2763	
H4350	41.1	2540		46.2	2760	
IMR 4451	42.2	2494		47.5	2724	
IMR 4350	41.9	2466		47.1	2722	
Bullet: 150 GR. SIE BTHP			**Dia: .264″**		**Col: 2.930″**	
H1000	47.5	2384		54.6	2718	
IMR 7977	48.9	2379		54.9	2711	
IMR 7828	46.7	2495		51.9	2782	
IMR 4955	43.8	2386		49.8	2700	
H4831	45.5	2502		51.2	2735	
Hybrid 100V	42.8	2457		47.3	2706	
IMR 4831	44.1	2420		49.5	2689	
H4350	41.9	2522		46.6	2698	
IMR 4451	41.9	2420		47.1	2700	
IMR 4350	42.7	2467		48.0	2738	
Bullet: 160 GR. HDY RN			**Dia: .264″**		**Col: 2.980″**	
H1000	51.0	2454		55.0	2622	
IMR 7977	51.5	2534		56.5C	2789	
IMR 7828 SSC	45.0	2376		49.5	2557	
IMR 4955	46.0	2449		50.6	2653	
H4831	46.0	2433		50.0	2582	
Hybrid 100V	45.0	2548		49.5	2755	
IMR 4831	42.0	2367		46.3	2567	

6.5-300 WEATHERBY MAGNUM*

When an asterisk (*) appears in the title of the cartridge, or in the data, refer to the warning page.

Case: Weatherby Twist: 1:8″
Barrel: 24″ Trim: 2.820″ Primer: Winchester LRM, Large Rifle Magnum

Bullet: 127 GR. BAR LRX BT			**Dia: .264″**		**Col: 3.590″**	
US 869	86.0	3191	52,200 PSI	91.5	3388	60,800 PSI
H50BMG	82.5	3127	55,900 PSI	89.0C	3280	62,600 PSI
Retumbo	74.0	3160	53,900 PSI	78.8	3343	62,500 PSI
IMR 8133	75.5	3165	54,700 PSI	80.5	3328	62,500 PSI
H1000	71.9	3106	54,400 PSI	76.5	3266	62,400 PSI
IMR 7977	70.5	3107	56,700 PSI	75.0	3245	62,500 PSI
Bullet: 130 GR. SFT SCIR			**Dia: .264″**		**Col: 3.590″**	
US 869	86.0	3136	53,200 PSI	91.7	3371	62,700 PSI
H50BMG	84.5	3085	54,400 PSI	90.0C	3261	62,500 PSI
Retumbo	75.0	3114	53,200 PSI	79.9	3323	62,600 PSI
IMR 8133	76.5	3093	53,300 PSI	81.3	3312	62,500 PSI
H1000	73.0	3089	54,900 PSI	77.6	3262	62,300 PSI
IMR 7977	71.5	3079	55,100 PSI	76.0	3254	62,700 PSI
Bullet: 140 GR. SFT SP			**Dia: .264″**		**Col: 3.590″**	
US 869	83.0	3044	52,900 PSI	88.5	3267	62,600 PSI
H50BMG	79.5	2987	57,300 PSI	85.0	3133	62,700 PSI
Retumbo	72.7	2993	54,200 PSI	77.3	3161	62,300 PSI
IMR 8133	74.0	2987	54,400 PSI	78.7	3153	62,400 PSI
Bullet: 142 GR. NOS AB LR			**Dia: .264″**		**Col: 3.590″**	
US 869	85.5	3088	52,000 PSI	91.0	3308	62,000 PSI
H50BMG	84.5	3013	53,200 PSI	90.0C	3193	62,400 PSI
Retumbo	74.0	3017	52,600 PSI	78.6	3213	62,100 PSI
IMR 8133	75.8	3014	53,200 PSI	80.7	3220	62,400 PSI
Bullet: 143 GR. HDY ELD			**Dia: .264″**		**Col: 3.590″**	
US 869	83.5	3030	53,200 PSI	89.0	3248	62,600 PSI
H50BMG	84.0	2994	52,700 PSI	89.5C	3166	61,300 PSI
Retumbo	73.5	3008	52,500 PSI	78.2	3200	62,300 PSI
IMR 8133	75.4	3007	53,300 PSI	80.2	3190	62,100 PSI

6.5 PRC

Case: Hornady Twist: 1:8″
Barrel: 24″ Trim: 2.015″ Primer: Federal 210M, Large Rifle

Bullet: 120 GR. BAR TTSX BT Col: 2.875″					**Dia: .264″**	
Retumbo	51.6	2796	43,800 PSI	61.0C	3177	60,600 PSI
IMR 8133	51.8	2769	45,800 PSI	61.7C	3162	60,800 PSI
H1000	48.8	2823	51,800 PSI	58.2	3113	61,500 PSI
IMR 7977	49.0	2732	47,000 PSI	58.4	3096	61,400 PSI
IMR 4955	43.8	2705	49,300 PSI	52.1	3020	60,800 PSI
Bullet: 130 GR. SFT SCIR II					**Dia: .264″**	**Col: 2.930″**
Retumbo	52.1	2730	42,900 PSI	60.5C	3090	61,200 PSI
IMR 8133	52.9	2723	46,300 PSI	61.0C	3066	61,000 PSI
H1000	51.2	2747	48,000 PSI	58.9C	3041	61,300 PSI
IMR 7977	50.2	2654	46,200 PSI	57.8C	2985	60,900 PSI
Bullet: 140 GR. NOS BT					**Dia: .264″**	**Col: 2.880″**
US 869	61.5	2631	40,300 PSI	68.5C	2995	58,900 PSI
Retumbo	51.2	2640	45,300 PSI	59.5C	2949	60,300 PSI
IMR 8133	52.2	2619	43,100 PSI	59.9C	2966	60,400 PSI
H1000	47.9	2567	45,400 PSI	57.7C	2902	61,000 PSI
IMR 7977	49.4	2547	45,800 PSI	56.8C	2879	60,800 PSI
Bullet: 143 GR. HDY ELD-X					**Dia: .264″**	**Col: 2.945″**
US 869	61.2	2643	40,200 PSI	68.0C	2982	58,200 PSI
Retumbo	50.7	2647	44,700 PSI	59.0C	2953	59,600 PSI
IMR 8133	53.6	2637	43,700 PSI	61.0C	2958	59,700 PSI
H1000	51.1	2708	51,100 PSI	58.1C	2917	60,200 PSI
IMR 7977	50.9	2606	45,000 PSI	58.6C	2912	60,100 PSI
Bullet: 147 GR. HDY ELD-M					**Dia: .264″**	**Col: 2.945″**
US 869	59.3	2533	44,100 PSI	66.3	2872	59,900 PSI
Retumbo	51.7	2561	43,400 PSI	58.8	2896	59,900 PSI
IMR 8133	52.5	2510	43,300 PSI	59.7	2869	59,900 PSI
H1000	49.1	2505	44,500 PSI	56.5	2828	60,400 PSI
IMR 7977	48.9	2430	44,300 PSI	56.3	2777	60,500 PSI
Bullet: 150 GR. SIE BTHP					**Dia: .264″**	**Col: 2.945″**
US 869	57.8	2452	41,100 PSI	66.7	2852	58,800 PSI

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Retumbo	49.2	2544	46,100 PSI	58.6C	2878	60,700 PSI
IMR 8133	52.2	2476	43,100 PSI	60.0	2846	60,300 PSI
H1000	49.3	2498	44,600 PSI	57.0C	2818	60,300 PSI
IMR 7977	49.4	2453	44,200 PSI	56.8	2787	60,400 PSI

264 Winchester Magnum

Case: Winchester Twist: 1:8″
Barrel: 26″ Trim: 2.490″ Primer: Winchester LRM, Large Rifle Magnum

Bullet: 85 GR. SIE HP			Dia: .264″	Col: 3.100″		
H1000	74.0	3270	37,600 CUP	78.0	3480	48,000 CUP
H4831	67.0	3304	39,000 CUP	73.0	3812	54,100 CUP
Hybrid 100V	65.0	3646	53,300 PSI	69.0	3863	62,500 PSI
H4350	59.0	3396	43,600 CUP	61.0	3669	52,400 CUP
H414	57.0	3310	40,200 CUP	62.0	3633	52,200 CUP
H380	54.5	3295	44,100 CUP	58.0	3612	50,600 CUP
H4895	50.5	3264	44,600 CUP	55.0	3625	52,900 CUP

Bullet: 100 GR. HDY SP			Dia: .264″	Col: 3.230″		
H1000	72.0	3164	42,500 CUP	77.0	3428	47,500 CUP
H4831	65.5	3239	45,900 CUP	71.0	3680	53,900 CUP
Hybrid 100V	59.5	3427	54,500 PSI	63.3	3548	61,100 PSI
H4350	56.0	3194	44,100 CUP	59.0	3570	52,600 CUP
H414	54.0	3202	45,000 CUP	59.0	3389	52,600 CUP
H380	51.5	3039	44,100 CUP	56.0	3374	51,000 CUP
H4895	49.0	2970	44,100 CUP	53.0	3405	54,200 CUP

Bullet: 120 GR. SPR SP			Dia: .264″	Col: 3.250″		
Retumbo	66.3	3091	50,400 PSI	70.5	3299	61,700 PSI
IMR 8133	67.0	3059	54,800 PSI	71.5	3251	63,200 PSI
H1000	65.5	3050	49,100 PSI	69.7	3267	62,100 PSI
H4831	60.6	3027	49,100 PSI	64.5	3254	62,000 PSI
Hybrid 100V	56.4	3080	53,500 PSI	60.0	3232	60,600 PSI
IMR 4831	58.0	3105	56,400 PSI	60.7	3212	61,600 PSI
H4350	54.5	3045	53,000 PSI	58.0	3185	61.200 PSI
IMR 4350	56.5	3075	54,700 PSI	60.0	3226	61,900 PSI

Bullet: 129 GR. HDY SP			Dia: .264″	Col: 3.250″		
Retumbo	63.5	3005	51,900 PSI	67.5	3171	61,500 PSI
IMR 8133	64.0	2932	53,500 PSI	68.5	3142	63,300 PSI
H1000	60.2	2942	54,500 PSI	64.0	3064	60,700 PSI
IMR 7828 SSC	58.7	2925	52,100 PSI	62.4	3109	60,800 PSI
H4831	58.3	2927	52,500 PSI	62.0	3101	61,400 PSI
Hybrid 100V	53.0	2922	51,000 PSI	56.7	3045	59,700 PSI
IMR 4831	55.5	2931	52,300 PSI	59.0	3090	60,700 PSI
H4350	53.6	2929	53,500 PSI	57.0	3067	60,900 PSI
IMR 4350	54.4	2913	51,800 PSI	57.8	3081	61,000 PSI

Bullet: 130 GR. NOS AB			Dia: .264″	Col: 3.280″		
Retumbo	59.9	2932	54,300 PSI	64.1	3090	60,800 PSI
IMR 8133	63.5	2925	53,500 PSI	67.5	3107	61,600 PSI
H1000	56.1	2835	54,600 PSI	60.4	3005	62,100 PSI
IMR 7828 SSC	55.8	2863	55,600 PSI	60.1	3053	63,200 PSI
H4831	55.3	2864	56,100 PSI	59.2	2984	60,500 PSI
Hybrid 100V	50.7	2809	54,800 PSI	54.5	2970	61,900 PSI
IMR 4831	53.5	2788	52,800 PSI	57.8	2989	61,400 PSI
H4350	50.7	2786	54,600 PSI	55.0	2956	62,000 PSI
IMR 4350	52.2	2792	52,500 PSI	56.4	3007	62,400 PSI

Bullet: 140 GR. NOS PART			Dia: .264″	Col: 3.260″		
Retumbo	59.7	2904	57,000 PSI	63.5	3026	63,000 PSI
IMR 8133	61.0	2840	54,500 PSI	65.0	3007	62,500 PSI
H1000	55.0	2810	58,600 PSI	58.5	2900	61,800 PSI
IMR 7828 SSC	54.5	2769	54,000 PSI	58.0	2927	60,700 PSI
H4831	51.7	2753	55,600 PSI	55.0	2853	59,400 PSI
Hybrid 100V	51.2	2787	55,700 PSI	54.5	2912	61,800 PSI
IMR 4831	51.9	2755	54,700 PSI	55.2	2907	61,700 PSI
H4350	48.9	2713	55,300 PSI	52.0	2829	60,800 PSI
IMR 4350	51.2	2752	53,500 PSI	54.5	2903	61.400 PSI

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Bullet: 160 GR. HDY RN			**Dia: .264″**	**Col: 3.350″**		
Retumbo	60.2	2703	54,800 PSI	64.0	2846	61.000 PSI
IMR 8133	60.5	2655	53,000 PSI	64.7	2816	61,600 PSI
H1000	61.5	2730	55,500 PSI	65.4	2857	62,200 PSI
IMR 7828 SSC	58.6	2764	56,500 PSI	62.3	2861	61,200 PSI
H4831	58.1	2725	54,800 PSI	61.8	2847	61,500 PSI
Hybrid 100V	52.7	2690	57,400 PSI	56.0	2784	61,500 PSI
IMR 4831	55.5	2680	54,000 PSI	59.0	2810	60,900 PSI
H4350	53.4	2675	56,600 PSI	56.8	2784	61,500 PSI
IMR 4350	54.5	2696	53,800 PSI	58.0	2834	62,100 PSI

26 Nosler*

When an asterisk (*) appears in the title of the cartridge, or in the data, refer to the warning page.

Case: Nosler Twist: 1:8″
Barrel: 24″ Trim: 2.575″ Primer: Winchester LRM, Large Rifle Magnum

Bullet: 100 GR. NOS BT			Dia: .264″	Col: 3.300″		
US 869	90.4	3427	53,200 PSI	96.2	3698	63,000 PSI
H50BMG	89.0	3387	54,600 PSI	93.7	3548	61,300 PSI
Retumbo	81.2	3493	56,200 PSI	85.5	3675	62,400 PSI
H1000	77.9	3484	57,000 PSI	82.0	3628	63,100 PSI
IMR 7977	78.3	3484	57,000 PSI	82.5	3625	62,500 PSI
IMR 7828	74.8	3500	56,400 PSI	78.8	3662	63,000 PSI

Bullet: 120 GR. BAR TTSX BT			Dia: .264″	Col: 3.300″		
US 869	84.6	3184	54,200 PSI	90.0	3409	63,800 PSI
H50BMG	74.0	3143	59,000 PSI	78.0	3245	62,600 PSI
Retumbo	68.5	3127	56,000 PSI	74.0	3299	62,800 PSI
H1000	65.8	3122	56,700 PSI	71.0	3269	62,300 PSI
IMR 7977	67.8	3130	57,300 PSI	73.0	3287	62,700 PSI
IMR 7828	63.5	3094	55,800 PSI	68.5	3266	62,100 PSI

Bullet: 129 GR. NOS ABLR			Dia: .264″	Col: 3.300″		
US 869	84.8	3136	51,400 PSI	90.3	3377	62,000 PSI
H50BMG	82.0	3075	54,700 PSI	86.5	3267	62,800 PSI
Retumbo	70.5	3185	58,400 PSI	74.0	3301	64,300 PSI

Bullet: 140 GR. SFT SP			Dia: .264″	Col: 3.300″		
US 869	78.0	2983	54,200 PSI	84.5	3188	63,000 PSI
H50BMG	66.0	2899	59,200 PSI	72.5	3026	63,000 PSI
Retumbo	62.0	2847	54,500 PSI	67.5	3010	61,700 PSI

6.8 mm Remington SPC

Case: Remington Twist: 1:10″
Barrel: 24″ Trim: 1.676″ Primer: Remington 9 1/2, Large Rifle

Bullet: 85 GR. BAR TAC-X FB			Dia: .277″	Col: 2.230″		
Benchmark	27.9	2595	31,800 PSI	31.0C	2848	40,000 PSI
H322	28.0	2637	33,600 PSI	31.0C	2949	45,600 PSI
IMR 4198	24.8	2770	39,200 PSI	27.5C	3025	51,800 PSI
CFE BLK	27.0	2813	39,900 PSI	30.0	3097	52,600 PSI
H4198	25.2	2829	40,400 PSI	27.4	3030	50,900 PSI
Lil'Gun	19.7	2836	49,500 PSI	21.0	2927	52,400 PSI

Bullet: 90 GR. SPR HP			Dia: .277″	Col: 2.255″		
Benchmark	29.0	2705	38,900 PSI	31.0C	2853	45,900 PSI
H322	29.0	2765	42,100 PSI	31.0C	2929	49,500 PSI
IMR 4198	24.0	2669	37,800 PSI	27.3C	2970	52,000 PSI
CFE BLK	26.8	2759	38,000 PSI	30.1	3049	52,300 PSI
H4198	26.0	2810	47,700 PSI	28.6C	3012	54,000 PSI
IMR 4227	21.0	2590	44,200 PSI	23.9	2795	51,000 PSI
Lil'Gun	20.0	2784	46,500 PSI	22.7	2923	53,500 PSI

Bullet: 100 GR. BAR X			Dia: .277″	Col: 2.260″		
Benchmark	28.0	2588	42,000 PSI	30.0C	2755	51,200 PSI
H322	27.0	2502	37,700 PSI	30.0C	2803	52,300 PSI

NEVER EXCEED MAXIMUM LOADS

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
IMR 4198	23.0	2525	40,500 PSI	25.3C	2755	52,400 PSI
H4198	24.0	2542	40,500 PSI	26.5	2791	52,900 PSI
IMR 4227	20.0	2431	46,800 PSI	22.9	2643	53,000 PSI
Bullet: 110 GR. HDY V-MAX				**Dia: .277″**		**Col: 2.260″**
H335	27.0	2487	41,700 PSI	29.5	2694	53,600 PSI
H4895	27.0	2335	33,900 PSI	29.0C	2550	42,400 PSI
IMR 8208 XBR	28.0	2496	38,500 PSI	30.0C	2690	48,600 PSI
IMR 3031	26.0	2450	42,100 PSI	28.0C	2605	48,700 PSI
Benchmark	27.0	2518	44,000 PSI	28.8C	2665	52,000 PSI
H322	27.0	2571	47,600 PSI	29.0C	2697	53,600 PSI
IMR 4198	22.0	2422	41,700 PSI	24.2C	2619	51,300 PSI
CFE BLK	23.5	2408	39,200 PSI	26.0	2658	53,400 PSI
H4198	23.0	2431	40,600 PSI	25.3C	2651	52,000 PSI
Bullet: 115 GR. SIE HPBT				**Dia: .277″**		**Col: 2.260″**
H335	27.0	2415	40,800 PSI	29.0	2569	48,500 PSI
H4895	27.0	2302	34,300 PSI	29.0C	2495	42,800 PSI
IMR 8208 XBR	28.0	2483	41,800 PSI	30.0C	2647	51,400 PSI
Benchmark	26.0	2400	42,400 PSI	28.5C	2581	51,800 PSI
H322	26.0	2421	43,500 PSI	28.2C	2608	53,300 PSI
IMR 4198	22.0	2386	43,100 PSI	23.5C	2515	50,000 PSI
CFE BLK	22.4	2304	41,800 PSI	24.9	2520	53,600 PSI
H4198	22.0	2413	47,800 PSI	24.0C	2534	52,300 PSI

270 WINCHESTER

Case: Winchester Twist: 1:10″
Barrel: 24″ Trim: 2.530″ Primer: Winchester LR, Large Rifle

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Bullet: 90 GR. SIE HP				**Dia: .277″**		**Col: 3.200″**
StaBALL 6.5	55.0	3380	49,500 PSI	59.8	3671	62,600 PSI
H4350	58.0	3401	43,700 CUP	62.0C	3603	49,800 CUP
H414	55.0	3361	42,200 CUP	59.0	3585	50,700 CUP
IMR 4350	56.0	3251	41,900 CUP	60.3	3516	50,800 CUP
760	55.0	3361	42,200 CUP	59.0	3585	50,700 CUP
H380	53.0	3344	45,600 CUP	56.3	3462	50,900 CUP
CFE 223	52.6	3408	54,200 PSI	56.0	3579	62,200 PSI
Varget	51.0	3409	46,000 CUP	55.0	3596	51,400 CUP
IMR 4320	48.5	3220	46,800 CUP	52.7	3425	51,500 CUP
IMR 4064	49.6	3295	44,400 CUP	54.0	3538	50,500 CUP
IMR 4166	46.9	3300	53,900 PSI	51.0	3520	63,100 PSI
BL-C(2)	49.0	3328	45,400 CUP	52.0	3475	50,100 CUP
IMR 4895	49.0	3268	43,700 CUP	53.3	3507	50,300 CUP
H335	46.0	3313	46,100 CUP	49.0	3459	50,900 CUP
H4895	50.0	3482	48,100 CUP	53.0	3595	50,400 CUP
IMR 8208 XBR	45.6	3380	57,900 PSI	48.0	3476	61,900 PSI
IMR 3031	46.0	3299	45,000 CUP	50.2	3487	50,600 CUP
Bullet: 100 GR. SPR SP				**Dia: .277″**		**Col: 3.145″**
StaBALL 6.5	55.0	3212	47,200 PSI	59.8	3511	61,400 PSI
H4350	56.0	3258	44,000 CUP	59.4	3401	50,200 CUP
H414	53.0	3262	46,000 CUP	56.0	3383	50,700 CUP
IMR 4350	54.0	3072	40,100 CUP	59.5	3383	50,200 CUP
760	53.0	3262	46,000 CUP	56.0	3383	50,700 CUP
H380	50.0	3160	46,200 CUP	53.7	3274	50,300 CUP
CFE 223	53.0	3356	54,900 PSI	55.8	3514	62,900 PSI
Varget	48.0	3232	44,400 CUP	52.0	3397	50,200 CUP
IMR 4320	46.2	3066	47,100 CUP	50.0	3220	51,000 CUP
IMR 4064	48.0	3116	40,800 CUP	52.7	3380	50,100 CUP
BL-C(2)	45.0	3144	47,300 CUP	47.3	3243	50,500 CUP
IMR 4895	48.0	3180	47,900 CUP	52.2	3367	51,500 CUP
H335	41.0	3058	45,300 CUP	43.5	3185	50,200 CUP
H4895	47.0	3298	47,000 CUP	50.0	3401	50,200 CUP
IMR 3031	45.5	3139	44,700 CUP	49.0	3339	50,400 CUP
Bullet: 110 GR. HDY HP				**Dia: .277″**		**Col: 3.250″**
IMR 4955	57.1	2984	49,400 PSI	62.5C	3205	58,200 PSI
H4831	58.0	3057	42,600 CUP	62.0C	3214	48,200 CUP
StaBALL 6.5	53.7	3108	47,400 PSI	58.4	3396	61,900 PSI
Hybrid 100V	53.0	3072	49,500 PSI	57.0C	3240	56,100 PSI
H4350	54.0	3164	46,900 CUP	57.0	3267	50,100 CUP
H414	51.0	3058	43,500 CUP	55.0	3241	50,700 CUP
IMR 4350	52.5	2997	43,000 CUP	57.8	3308	50,900 CUP
760	51.0	3058	43,500 CUP	55.0	3241	50,700 CUP
H380	48.0	2976	46,000 CUP	52.0	3124	50,500 CUP
CFE 223	50.4	3142	53,500 PSI	53.6	3304	61,700 PSI
Varget	43.0	3072	44,100 CUP	48.7	3248	50,800 CUP
IMR 4320	45.5	3031	48,700 CUP	49.7	3152	50,100 CUP
IMR 4064	46.0	3036	45,800 CUP	50.7	3223	50,300 CUP
IMR 4166	45.5	3018	52,100 PSI	49.5	3250	63,300 PSI
BL-C(2)	45.0	2971	47,300 CUP	47.5	3089	50,200 CUP
IMR 4895	46.0	3045	43,400 CUP	50.2	3269	51,100 CUP
H335	42.0	2958	46,800 CUP	45.0	3081	50,800 CUP
H4895	45.0	3113	46,700 CUP	47.5	3215	50,800 CUP
IMR 8208 XBR	44.1	3064	56,400 PSI	46.4	3146	59,500 PSI
IMR 3031	44.0	3024	46,000 CUP	47.2	3159	49,500 CUP
Bullet: 120 GR. BAR XFB				**Dia: .277″**		**Col: 3.270″**
H4831	58.0	2918	45,800 CUP	62.0C	3112	51,200 CUP
IMR 4831	51.5	2793	40,600 CUP	56.7	3112	50,100 CUP
H4350	51.0	2886	44,700 CUP	55.0	3069	51,200 CUP
H414	49.0	2814	43,100 CUP	53.0	3017	51,100 CUP
IMR 4350	50.5	2836	42,300 CUP	56.0	3131	50,500 CUP
760	49.0	2814	43,100 CUP	53.0	3017	51,100 CUP
H380	46.0	2698	43,200 CUP	49.5	2980	51,000 CUP
Varget	44.0	2858	46,300 CUP	47.0	3010	51,000 CUP
IMR 4320	44.2	2782	43,800 CUP	48.5	3029	51,000 CUP
IMR 4064	45.5	2937	45,600 CUP	49.2	3096	51,000 CUP
IMR 4895	44.0	2883	44,900 CUP	48.2	3057	50,600 CUP
H4895	42.0	2799	45,000 CUP	45.0	2950	50,400 CUP
IMR 3031	42.5	2864	48,000 CUP	45.0	2976	49,300 CUP
Bullet: 130 GR. BAR TSX				**Dia: .277″**		**Col: 3.230″**
H1000	57.0	2716	42,100 PSI	60.0C	2846	48,200 PSI
IMR 7977	56.0	2736	42,300 PSI	59.5C	2936	50,700 PSI
IMR 7828 SSC	55.0	2815	48,700 PSI	60.2C	3083	62,400 PSI
IMR 4955	55.5	2852	52,000 PSI	60.7C	3096	63,500 PSI
H4831	54.0	2747	45,500 PSI	60.0C	3025	59,000 PSI
StaBALL 6.5	52.0	2954	51,400 PSI	56.5	3194	63,100 PSI
Hybrid 100V	52.2	2994	55,700 PSI	55.5	3144	63,100 PSI
IMR 4831	52.0	2822	46,600 PSI	57.0C	3113	61,700 PSI
H4350	51.0	2905	52,500 PSI	55.5	3111	63,500 PSI
IMR 4451	51.5	2889	51,300 PSI	55.5	3109	62,300 PSI
H414	48.0	2840	50,400 PSI	52.5	3059	62,100 PSI
IMR 4350	50.0	2824	48,900 PSI	55.0C	3104	62,800 PSI
760	48.0	2840	50,400 PSI	52.5	3059	62,100 PSI
H380	47.0	2810	51,900 PSI	50.8	2989	61,600 PSI
Varget	44.0	2849	54,800 PSI	48.0	3013	63,200 PSI
IMR 4064	42.0	2760	49,400 PSI	47.3	3013	62,900 PSI
IMR 4166	43.5	2842	52,900 PSI	47.3	3032	62,100 PSI
IMR 8208 XBR	42.3	2798	55,700 PSI	45.0	2922	62,400 PSI
Bullet: 130 GR. HDY SP				**Dia: .277″**		**Col: 3.180″**
H1000	61.0	2900	42,900 CUP	64.0C	3025	48,100 CUP
IMR 7977	58.9	2869	46,900 PSI	62.0C	3038	55,100 PSI
IMR 7828	56.0	2862	43,800 CUP	60.2	3085	50,300 CUP
IMR 4955	55.8	2812	51,800 PSI	61.0C	3060	63,100 PSI
H4831	56.0	2843	44,400 CUP	60.0C	3019	51,000 CUP
StaBALL 6.5	51.0	2901	50,400 PSI	55.5	3121	61,900 PSI
Hybrid 100V	51.0	2845	51,000 PSI	56.0C	3066	61,800 PSI
IMR 4831	51.0	2759	42,900 CUP	55.8	3002	50,300 CUP
H4350	51.0	2865	45,200 CUP	54.3	3012	50,500 CUP
IMR 4451	52.6	2902	53,000 PSI	56.0	3089	62,900 PSI
H414	50.0	2843	44,700 CUP	53.5	3003	50,800 CUP
IMR 4350	50.2	2806	43,700 CUP	55.0	3028	49,900 CUP
760	50.0	2843	44,700 CUP	53.5	3003	50,800 CUP
H380	47.0	2744	46,400 CUP	49.8	2884	51,000 CUP
Varget	43.0	2797	43,900 CUP	46.0	2931	49,600 CUP
IMR 4320	45.6	2850	48,600 CUP	47.0	2916	50,200 CUP

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
IMR 4064	43.0	2745	43,100 CUP	47.5	2932	50,000 CUP
IMR 4895	43.0	2768	43,000 CUP	46.9	2957	50,600 CUP
H4895	42.0	2782	44,700 CUP	45.0	2922	51,000 CUP
IMR 8208 XBR	42.8	2840	57,600 PSI	45.0	2934	62,800 PSI
Trail Boss	14.0	1318	22,800 PSI	19.7	1537	27,100 PSI
Bullet: 135 GR. SIE BT			**Dia: .277″**		**Col: 3.340″**	
H1000	61.0	2915	43,100 CUP	63.0C	3011	47,600 CUP
IMR 7977	58.9	2876	48,900 PSI	62.0C	3043	56,500 PSI
IMR 7828	54.0	2696	40,200 CUP	60.0	3046	50,000 CUP
IMR 4955	54.8	2794	52,400 PSI	59.9C	3036	63,800 PSI
H4831	55.0	2812	43,600 CUP	59.5C	3010	51,000 CUP
StaBALL 6.5	50.9	2876	48,100 PSI	55.4	3119	61,500 PSI
Hybrid 100V	50.0	2830	49,900 PSI	55.0	3056	61,600 PSI
IMR 4831	51.0	2774	40,400 CUP	55.8	2990	51,100 CUP
H4350	50.0	2834	44,400 CUP	53.5	2994	50,700 CUP
IMR 4451	51.4	2878	54,300 PSI	55.3	3060	63,400 PSI
H414	47.0	2785	45,400 CUP	50.0	2910	50,500 CUP
IMR 4350	50.0	2772	41,700 CUP	54.9	3007	50,000 CUP
760	47.0	2785	45,400 CUP	50.0	2910	50,500 CUP
H380	44.0	2667	43,600 CUP	47.0	2803	50,500 CUP
Varget	41.0	2701	40,800 CUP	45.0	2902	50,200 CUP
IMR 4320	43.0	2718	43,500 CUP	46.5	2887	50,300 CUP
IMR 4064	43.5	2775	44,500 CUP	47.3	2934	50,700 CUP
IMR 4166	42.3	2709	49,200 PSI	47.0	2968	63,100 PSI
IMR 4895	43.0	2755	43,400 CUP	47.7	2972	51,100 CUP
H4895	41.0	2735	44,300 CUP	44.0	2879	50,600 CUP
Bullet: 140 GR. SFT SP			**Dia: .277″**		**Col: 3.280″**	
H1000	59.0	2771	41,800 CUP	63.0C	2979	50,800 CUP
IMR 7977	58.9	2892	51,700 PSI	62.0C	3023	59,500 PSI
IMR 7828	52.0	2628	40,500 CUP	57.2	2939	50,600 CUP
IMR 4955	54.0	2713	51,700 PSI	59.0	2955	62,900 PSI
H4831	54.0	2716	43,900 CUP	58.0C	2888	50,100 CUP
StaBALL 6.5	50.3	2809	50,200 PSI	54.7	3033	62,300 PSI
Hybrid 100V	50.0	2787	53,600 PSI	54.2C	2964	62,300 PSI
IMR 4831	50.6	2738	44,400 CUP	54.0	2896	50,700 CUP
H4350	49.0	2737	44,500 CUP	52.0	2870	50,400 CUP
IMR 4451	49.9	2775	51,600 PSI	53.7	2977	62,700 PSI
H414	46.0	2644	42,900 CUP	48.9	2788	49,800 CUP
IMR 4350	49.0	2712	43,800 CUP	53.2	2916	51,000 CUP
760	46.0	2644	42,900 CUP	48.9	2788	49,800 CUP
Varget	41.0	2623	44,300 CUP	43.7	2772	50,500 CUP
IMR 4320	41.5	2614	42,700 CUP	44.5	2775	50,000 CUP
IMR 4064	42.0	2608	43,300 CUP	46.1	2828	50,800 CUP
IMR 4166	41.8	2645	49,400 PSI	46.5	2915	63,600 PSI
IMR 4895	42.0	2650	44,600 CUP	45.6	2828	50,100 CUP
H4895	40.0	2627	45,300 CUP	42.6	2768	50,600 CUP
Bullet: 150 GR. HDY SP			**Dia: .277″**		**Col: 3.285″**	
H1000	55.0	2689	44,900 CUP	59.0C	2831	51,000 CUP
IMR 7977	56.5	2717	50,600 PSI	60.8C	2940	61,300 PSI
IMR 7828	51.2	2536	39,800 CUP	56.8	2850	50,400 CUP
IMR 4955	51.7	2560	50,000 PSI	56.6	2829	63,900 PSI
H4831	52.0	2651	46,300 CUP	55.7	2804	51,200 CUP
StaBALL 6.5	48.2	2671	51,800 PSI	52.4	2879	63,300 PSI
Hybrid 100V	48.0	2650	53,600 PSI	52.0	2811	61,900 PSI
IMR 4831	46.3	2498	40,500 CUP	53.0	2815	50,900 CUP
H4350	46.0	2575	43,400 CUP	49.0	2724	51,000 CUP
IMR 4451	48.3	2636	52,800 PSI	52.0	2815	62,000 PSI
H414	45.0	2569	45,000 CUP	48.0	2706	51,200 CUP
IMR 4350	48.0	2642	44,600 CUP	51.6	2809	50,900 CUP
760	45.0	2569	45,000 CUP	48.0	2706	51,200 CUP
IMR 4064	42.0	2584	44,000 CUP	45.0	2719	50,700 CUP
IMR 4166	40.7	2506	49,700 PSI	45.3	2766	63,800 PSI
IMR 4895	41.5	2560	44,500 CUP	44.5	2704	50,600 CUP
Bullet: 160 GR. NOS PART			**Dia: .277″**		**Col: 3.340″**	
H1000	55.0	2614	44,200 CUP	59.0C	2765	50,900 CUP
IMR 7977	56.4	2662	50,700 PSI	60.0C	2843	59,800 PSI
IMR 7828	50.5	2450	38,900 CUP	56.0	2758	50,300 CUP
IMR 4955	52.3	2536	50,800 PSI	57.2	2778	63,100 PSI
H4831	50.0	2510	43,000 CUP	54.0	2673	50,500 CUP
Hybrid 100V	48.0	2578	49,900 PSI	53.0C	2796	63,300 PSI
IMR 4831	48.5	2481	41,800 CUP	52.9	2680	50,300 CUP
H4350	46.0	2501	43,600 CUP	49.0	2646	51,100 CUP
IMR 4451	47.7	2526	50,000 PSI	51.3	2751	62,700 PSI
IMR 4350	46.5	2483	42,100 CUP	51.0	2706	50,500 CUP
IMR 4320	40.0	2453	44,500 CUP	42.8	2584	51,000 CUP
IMR 4064	40.0	2401	42,200 CUP	43.3	2580	50,400 CUP
IMR 4166	39.9	2434	49,100 PSI	44.3	2681	62,700 PSI
IMR 4895	40.0	2334	44,100 CUP	43.2	2573	50,100 CUP
Bullet: 180 GR. BAR JRN			**Dia: .277″**		**Col: 3.300″**	
H1000	50.0	2404	45,100 CUP	54.0	2540	50,600 CUP
IMR 7828	48.0	2307	40,900 CUP	52.8	2529	50,400 CUP
H4831	47.0	2358	46,000 CUP	50.5	2501	51,100 CUP

270 WINCHESTER SHORT MAGNUM

Case: Winchester Twist: 1:10″
Barrel: 24″ Trim: 2.090″ Primer: Winchester LRM, Large Rifle Magnum

Bullet: 130 GR. BAR TSX			**Dia: .277″**		**Col: 2.800″**	
H1000	69.0	3066	55,100 PSI	73.0C	3196	61,100 PSI
IMR 7977	67.6	3031	52,600 PSI	72.0C	3236	61,600 PSI
IMR 7828	63.0	2938	49,200 PSI	67.5C	3160	58,700 PSI
IMR 4955	63.7	3070	55,100 PSI	67.8C	3268	64,100 PSI
H4831	63.0	3002	53,200 PSI	67.0C	3160	60,700 PSI
Hybrid 100V	55.0	2927	56,700 PSI	58.5	3074	62,800 PSI
IMR 4831	60.0	2966	51,800 PSI	65.5C	3232	63,700 PSI
H4350	57.0	3041	55,700 PSI	61.5	3191	62,900 PSI
IMR 4451	58.3	3018	52,900 PSI	62.0	3246	60,800 PSI
H414	56.0	2976	52,900 PSI	60.0	3178	62,900 PSI
IMR 4350	57.0	2966	51,200 PSI	63.0	3222	62,900 PSI
H380	55.0	2996	56,900 PSI	59.0	3122	62,800 PSI
Varget	48.0	2900	51,600 PSI	52.5	3106	62,500 PSI
IMR 4064	49.0	2952	53,900 PSI	53.5	3128	63,000 PSI
IMR 4166	48.8	2932	54,000 PSI	53.2	3139	63,700 PSI
IMR 4895	49.0	2940	53,100 PSI	53.8	3136	62,900 PSI
Bullet: 130 GR. HDY SP			**Dia: .277″**		**Col: 2.730″**	
H1000	71.0	3100	55,400 PSI	73.0C	3168	58,700 PSI
IMR 7977	68.8	3085	55,300 PSI	72.5C	3279	64,500 PSI
IMR 7828	63.0	3031	55,000 PSI	67.0	3201	63,000 PSI
IMR 4955	63.1	3000	53,200 PSI	67.2	3239	64,200 PSI
H4831	63.0	3085	56,300 PSI	67.0	3228	63,400 PSI
Hybrid 100V	57.0	2992	52,400 PSI	63.0C	3259	64,600 PSI
IMR 4831	59.0	3022	54,800 PSI	63.5	3208	63,300 PSI
H4350	57.0	3093	56,600 PSI	60.5	3226	63,500 PSI
IMR 4451	59.3	3010	53,000 PSI	63.2	3221	62,400 PSI
H414	57.0	3065	53,800 PSI	61.0	3235	62,700 PSI
IMR 4350	58.0	3022	53,200 PSI	62.5	3230	63,000 PSI
760	57.0	3065	53,800 PSI	61.0	3235	62,700 PSI
H380	56.0	3032	56,100 PSI	59.5	3174	63,200 PSI
Varget	51.0	3040	56,400 PSI	54.0	3169	63,200 PSI
IMR 4064	51.0	3005	56,400 PSI	54.3	3140	63,800 PSI
IMR 4166	50.5	2952	55,000 PSI	54.1	3132	63,500 PSI
IMR 4895	50.0	2953	53,500 PSI	54.0	3120	62,500 PSI
Trail Boss	16.0	1516	38,100 PSI	22.5	1832	47,900 PSI
Bullet: 135 GR. SIE HPBT			**Dia: .277″**		**Col: 2.840″**	
H1000	69.0	3056	54,400 PSI	73.0C	3205	62,600 PSI
IMR 7977	67.8	3001	52,600 PSI	72.2C	3232	63,600 PSI
IMR 7828	62.0	2986	52,000 PSI	67.0C	3211	62,900 PSI
IMR 4955	61.9	2956	52,300 PSI	65.9	3194	64,000 PSI
H4831	62.0	3056	55,400 PSI	65.5	3192	62,900 PSI
Hybrid 100V	54.0	2826	54,400 PSI	59.5	3055	63,900 PSI

NEVER EXCEED MAXIMUM LOADS

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
IMR 4831	60.0	3032	54,700 PSI	64.0C	3198	62,700 PSI
H4350	58.0	3093	57,000 PSI	61.5	3211	63,100 PSI
IMR 4451	58.6	3004	53,600 PSI	62.4	3200	62,600 PSI
H414	57.0	3041	54,000 PSI	61.0	3208	63,200 PSI
IMR 4350	58.0	3003	51,800 PSI	62.5	3210	61,600 PSI
760	57.0	3041	54,000 PSI	61.0	3208	63,200 PSI
H380	55.0	2943	52,800 PSI	58.0	3116	63,000 PSI
Varget	51.0	3000	54,800 PSI	54.0	3134	63,000 PSI
IMR 4064	50.0	2947	54,500 PSI	54.3	3108	62,800 PSI
IMR 4166	49.5	2891	53,400 PSI	53.8	3104	63,900 PSI
IMR 4895	50.0	2933	53,600 PSI	54.0	3093	62,100 PSI
Bullet: 140 GR. SFT SP			**Dia: .277″**		**Col: 2.800″**	
Retumbo	68.0	3016	53,200 PSI	71.0C	3165	61,300 PSI
H1000	66.0	2984	55,700 PSI	70.0C	3137	63,500 PSI
IMR 7977	67.1	2928	52,600 PSI	71.4C	3148	62,600 PSI
IMR 7828	61.0	2922	54,100 PSI	64.5	3081	61,900 PSI
IMR 4955	61.7	2895	53,300 PSI	65.7	3116	63,800 PSI
H4831	59.0	2974	57,000 PSI	62.5	3085	63,000 PSI
Hybrid 100V	55.0	2862	52,900 PSI	60.0	3071	61,600 PSI
IMR 4831	57.0	2860	53,100 PSI	61.5	3059	62,600 PSI
H4350	54.0	2928	54,500 PSI	58.0	3087	63,100 PSI
IMR 4451	57.9	2935	53,500 PSI	61.6	3114	61,700 PSI
H414	55.0	2932	53,700 PSI	58.0	3068	62,600 PSI
IMR 4350	56.0	2876	52,300 PSI	60.5	3081	62,200 PSI
760	55.0	2932	53,700 PSI	58.0	3068	62,600 PSI
H380	53.0	2865	55,500 PSI	56.5	3005	62,700 PSI
IMR 4166	47.7	2735	50,600 PSI	53.1	3004	62,700 PSI
Bullet: 150 GR. HDY SP			**Dia: .277″**		**Col: 2.740″**	
Retumbo	66.0	2908	53,300 PSI	70.0C	3071	63,000 PSI
H1000	64.0	2864	54,600 PSI	67.5C	3001	62,800 PSI
IMR 7977	66.9	2859	54,500 PSI	71.2C	3054	63,800 PSI
IMR 7828	59.0	2785	55,400 PSI	63.1	2952	63,200 PSI
IMR 4955	59.7	2763	52,500 PSI	63.7	2974	63,200 PSI
H4831	56.0	2804	54,500 PSI	60.0	2962	63,100 PSI
Hybrid 100V	54.0	2752	52,100 PSI	59.0	2954	61,800 PSI
IMR 4831	55.0	2739	54,400 PSI	59.3	2916	63,000 PSI
H4350	53.0	2846	55,600 PSI	56.5	2978	63,000 PSI
IMR 4451	55.8	2785	53,600 PSI	60.0	2977	62,600 PSI
H414	54.0	2845	55,400 PSI	57.5	2991	63,200 PSI
IMR 4350	54.0	2754	52,900 PSI	58.5	2934	62,200 PSI
760	54.0	2845	55,400 PSI	57.5	2991	63,200 PSI
H380	51.0	2749	56,700 PSI	54.5	2885	63,100 PSI
Bullet: 160 GR. NOS PART			**Dia: .277″**		**Col: 2.830″**	
Retumbo	65.0	2826	53,400 PSI	68.5	2989	62,600 PSI
H1000	63.0	2802	57,400 PSI	66.5	2913	63,200 PSI
IMR 7977	65.2	2773	53,700 PSI	70.2C	2986	63,500 PSI
IMR 7828	57.0	2663	52,700 PSI	61.5	2858	62,600 PSI
IMR 4955	59.0	2721	53,900 PSI	63.3	2912	63,600 PSI
H4831	57.0	2784	58,400 PSI	60.0	2877	63,300 PSI
Hybrid 100V	51.0	2551	53,900 PSI	56.0	2747	62,500 PSI
IMR 4831	54.0	2650	53,000 PSI	58.2	2829	62,500 PSI
H4350	52.0	2735	56,100 PSI	55.0	2834	62,600 PSI
IMR 4451	55.2	2723	54,000 PSI	59.4	2903	62,600 PSI
H414	52.0	2718	56,100 PSI	55.5	2844	63,100 PSI
IMR 4350	54.0	2692	53,900 PSI	57.5	2850	63,000 PSI
760	52.0	2718	56,100 PSI	55.5	2844	63,100 PSI

7MM-08 REMINGTON

Case: Remington Twist: 1:9.5″
Barrel: 24″ Trim: 2.025″ Primer: Remington 9 1/2, Large Rifle

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Bullet: 100 GR. BAR XFB			**Dia: .284″**		**Col: 2.650″**	
H414	47.0	3041	44,900 CUP	49.5	3157	50,100 CUP
760	47.0	3041	44,900 CUP	49.5	3157	50,100 CUP
H380	47.0	3080	42,100 CUP	49.0	3171	46,300 CUP
Varget	42.0	3060	40,800 CUP	45.7	3277	49,600 CUP
BL-C(2)	43.0	3109	44,600 CUP	46.5	3231	50,000 CUP
H335	39.0	2977	44,600 CUP	41.2	3123	49,700 CUP
H4895	41.0	3037	41,000 CUP	45.0	3286	49,900 CUP
Benchmark	40.0	2968	41,400 CUP	42.5	3144	49,600 CUP
H322	37.5	2917	40,300 CUP	40.0	3105	49,000 CUP
Bullet: 115 GR. SPR HP			**Dia: .284″**		**Col: 2.655″**	
H414	46.5	2906	41,400 CUP	49.5	3062	47,900 CUP
760	46.5	2906	41,400 CUP	49.5	3062	47,900 CUP
H380	47.0	2925	40,200 CUP	49.0	3046	44,700 CUP
CFE 223	45.4	2924	35,800 CUP	50.4	3231	49,700 CUP
Varget	43.0	3019	41,200 CUP	46.3	3216	50,100 CUP
IMR 4320	43.2	2933	45,100 CUP	46.0	3074	50,500 CUP
IMR 4064	42.0	2918	41,100 CUP	44.5	3101	49,900 CUP
IMR 4166	43.3	3028	51,600 PSI	46.1	3183	59,400 PSI
BL-C(2)	45.0	3055	43,200 CUP	48.0	3219	49,900 CUP
IMR 4895	41.7	2871	41,000 CUP	45.0	3062	49,400 CUP
H335	39.0	2900	42,300 CUP	42.0	3067	50,100 CUP
H4895	42.0	3007	42,400 CUP	45.0	3172	49,900 CUP
IMR 8208 XBR	40.6	2866	40,100 CUP	43.2	3022	48,400 CUP
IMR 3031	39.0	2922	44,300 CUP	41.8	3066	50,500 CUP
Benchmark	40.0	2887	42,000 CUP	43.5	3103	50,500 CUP
H322	39.0	2951	44,800 CUP	41.0	3053	49,800 CUP
Bullet: 120 GR. NOS BT			**Dia: .284″**		**Col: 2.800″**	
StaBALL 6.5	46.6	2839	39,000 PSI	53.0C	3201	54,800 PSI
H4350	48.0	2895	39,300 CUP	50.0C	3039	44,600 CUP
H414	46.5	2867	40,600 CUP	49.0	3023	47,600 CUP
760	46.5	2867	40,600 CUP	49.0	3023	47,600 CUP
H380	46.0	2881	40,200 CUP	48.0	2977	43,400 CUP
CFE 223	46.0	2944	40,700 CUP	49.5	3151	50,000 CUP
Varget	42.5	2996	43,800 CUP	45.0	3117	49,900 CUP
IMR 4320	42.0	2861	45,400 CUP	44.7	3001	50,400 CUP
IMR 4064	41.0	2839	41,500 CUP	43.9	3017	50,000 CUP
IMR 4166	41.5	2861	40,600 CUP	44.8	3055	49,000 CUP
BL-C(2)	43.5	2932	41,400 CUP	46.5	3109	50,100 CUP
IMR 4895	41.5	2861	43,900 CUP	44.0	3022	49,800 CUP
H335	39.5	2810	42,100 CUP	42.0	2984	49,400 CUP
H4895	41.0	2931	42,200 CUP	43.7	3085	49,700 CUP
IMR 8208 XBR	40.1	2830	40,500 CUP	42.7	2997	48,900 CUP
IMR 3031	38.5	2826	42,700 CUP	41.0	2987	50,500 CUP
Benchmark	39.0	2812	40,900 CUP	41.3	2968	49,000 CUP
Bullet: 130 GR. SIE HPBT			**Dia: .284″**		**Col: 2.800″**	
StaBALL 6.5	46.1	2843	45,600 PSI	51.2	3125	59,700 PSI
H4350	47.0	2871	43,000 CUP	50.0C	2998	47,400 CUP
H414	44.0	2761	40,900 CUP	47.0	2925	50,000 CUP
IMR 4350	45.0	2730	41,200 CUP	47.0C	2846	46,300 CUP
760	44.0	2761	40,900 CUP	47.0	2925	50,000 CUP
H380	45.0	2804	41,900 CUP	47.0	2934	45,700 CUP
CFE 223	41.9	2765	37,300 CUP	45.5	2957	47,800 CUP
Varget	40.0	2830	43,400 CUP	43.5	3004	50,100 CUP
IMR 4320	40.0	2709	43,200 CUP	42.5	2863	50,100 CUP
IMR 4064	39.0	2711	39,600 CUP	41.7	2890	49,900 CUP
IMR 4166	40.2	2759	43,200 CUP	43.3	2950	49,500 CUP
BL-C(2)	41.5	2857	44,000 CUP	44.2	2989	49,800 CUP
IMR 4895	40.0	2759	43,300 CUP	42.4	2801	50,000 CUP
H335	37.0	2690	44,800 CUP	39.0	2809	49,500 CUP
H4895	39.5	2824	43,500 CUP	42.0	2957	50,200 CUP
IMR 8208 XBR	39.1	2755	42,600 CUP	41.6	2922	50,400 CUP
IMR 3031	37.0	2709	42,400 CUP	39.5	2860	50,000 CUP
Benchmark	37.0	2701	41,500 CUP	39.8	2861	50,200 CUP
Bullet: 139 GR. HDY SP			**Dia: .284″**		**Col: 2.800″**	
StaBALL 6.5	45.9	2741	42,900 PSI	51.0C	3054	59,700 PSI
H4350	47.0	2729	40,400 CUP	50.0C	2906	47,500 CUP
IMR 4451	44.0	2655	48,600 PSI	47.4	2850	58,000 PSI
H414	45.5	2710	40,400 CUP	47.0	2810	44,100 CUP
IMR 4350	45.5	2646	39,700 CUP	48.0C	2793	45,200 CUP

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
760	45.5	2710	40,400 CUP	47.0	2810	44,100 CUP
H380	44.0	2674	41,800 CUP	47.0	2807	46,800 CUP
CFE 223	41.4	2666	38,900 CUP	45.0	2847	48,900 CUP
Varget	40.5	2721	44,700 CUP	43.5	2877	50,000 CUP
IMR 4320	40.7	2643	43,700 CUP	43.3	2772	49,200 CUP
IMR 4064	40.0	2682	42,500 CUP	42.5	2847	49,900 CUP
IMR 4166	40.4	2722	42,300 CUP	43.5	2879	49,400 CUP
BL-C(2)	41.0	2641	41,200 CUP	44.7	2857	49,900 CUP
IMR 4895	40.5	2706	43,600 CUP	43.2	2851	49,900 CUP
H335	37.5	2585	42,700 CUP	40.0	2730	49,400 CUP
H4895	39.0	2678	42,500 CUP	42.5	2857	50,200 CUP
IMR 8208 XBR	39.0	2642	41,200 CUP	41.5	2783	49,000 CUP
IMR 3031	38.0	2633	42,000 CUP	40.3	2797	49,900 CUP
Benchmark	37.5	2624	40,300 CUP	40.5	2799	49,600 CUP
Bullet: 140 GR. SFT SP			**Dia: .284″**		**Col: 2.750″**	
StaBALL 6.5	43.7	2699	44,200 PSI	48.5	2976	59,300 PSI
H4350	45.0	2692	42,300 CUP	48.0C	2868	49,800 CUP
IMR 4451	42.3	2621	50,700 PSI	45.5C	2798	59,100 PSI
H414	43.5	2624	41,900 CUP	46.0	2791	49,500 CUP
IMR 4350	43.7	2616	38,600 CUP	46.5C	2826	50,000 CUP
760	43.5	2624	41,900 CUP	46.0	2791	49,500 CUP
H380	43.0	2645	44,200 CUP	45.7	2775	49,400 CUP
CFE 223	39.7	2577	38,400 CUP	43.2	2796	48,800 CUP
Varget	39.5	2695	43,700 CUP	42.2	2819	49,800 CUP
IMR 4320	39.0	2588	41,400 CUP	41.4	2749	49,800 CUP
IMR 4064	38.0	2593	41,200 CUP	40.5	2770	50,300 CUP
IMR 4166	39.3	2665	39,200 CUP	42.3	2841	49,400 CUP
BL-C(2)	40.0	2660	44,800 CUP	42.5	2796	49,700 CUP
IMR 4895	38.5	2596	40,100 CUP	41.0	2752	49,600 CUP
H335	35.5	2536	43,800 CUP	37.5	2647	49,800 CUP
H4895	38.0	2618	42,000 CUP	40.5	2769	49,700 CUP
IMR 8208 XBR	37.3	2606	43,200 CUP	39.7	2732	48,800 CUP
IMR 3031	36.0	2537	40,700 CUP	38.3	2695	49,600 CUP
Benchmark	36.0	2564	42,600 CUP	38.3	2688	49,300 CUP
Trail Boss	11.0	1211	36,200 CUP	16.0	1472	43,300 CUP
Bullet: 145 GR. SPR SP			**Dia: .284″**		**Col: 2.730″**	
StaBALL 6.5	44.9	2655	40,000 PSI	51.0C	3014	58,800 PSI
H4350	45.0	2647	42,300 CUP	48.0C	2801	49,800 CUP
IMR 4451	42.7	2589	50,000 PSI	45.9C	2771	58,800 PSI
H414	43.0	2589	41,200 CUP	46.0	2788	49,500 CUP
IMR 4350	45.0	2668	43,900 CUP	48.0C	2847	50,200 CUP
760	43.0	2589	41,200 CUP	46.0	2788	49,500 CUP
H380	43.0	2603	45,000 CUP	45.5	2716	49,900 CUP
CFE 223	39.3	2519	36,000 CUP	42.7	2701	47,400 CUP
Varget	39.0	2639	46,200 CUP	41.5	2745	50,200 CUP
IMR 4320	39.5	2606	44,700 CUP	42.0	2737	49,800 CUP
IMR 4064	38.5	2590	45,000 CUP	41.0	2728	50,300 CUP
IMR 4166	40.0	2686	51,000 PSI	43.0	2854	60,200 PSI
BL-C(2)	39.0	2516	41,700 CUP	41.7	2693	49,600 CUP
IMR 4895	40.0	2598	45,700 CUP	42.5	2753	50,700 CUP
H4895	38.5	2599	44,400 CUP	41.0	2728	49,800 CUP
IMR 8208 XBR	37.8	2589	43,700 CUP	40.2	2721	50,200 CUP
IMR 3031	36.5	2512	44,000 CUP	38.8	2659	49,800 CUP
Benchmark	36.0	2487	40,900 CUP	39.5	2693	50,700 CUP
Bullet: 150 GR. BAR TTSX BT Col: 2.770″					**Dia: .284″**	
StaBALL 6.5	44.3	2631	45,500 PSI	49.2C	2891	57,900 PSI
H4350	41.9	2475	40,100 CUP	45.5C	2659	50,400 CUP
IMR 4451	41.4	2469	48,600 PSI	44.6	2662	58,700 PSI
H414	43.4	2576	43,500 CUP	46.2	2733	50,400 CUP
IMR 4350	41.4	2380	37,600 CUP	46.0C	2633	46,100 CUP
760	43.4	2576	43,500 CUP	46.2	2733	50,400 CUP
H380	41.4	2441	41,400 CUP	45.0	2646	49,900 CUP
CFE 223	39.5	2501	43,500 CUP	42.0	2668	49,200 CUP
Varget	37.3	2448	43,400 CUP	39.7	2580	50,700 CUP
IMR 4320	38.5	2430	42,200 CUP	41.0	2609	49,800 CUP
IMR 4064	37.4	2468	43,900 CUP	39.8	2576	49,900 CUP
IMR 4166	36.5	2463	42,800 CUP	39.5	2623	49,500 CUP
BL-C(2)	38.5	2463	41,400 CUP	41.0	2630	48,800 CUP
IMR 4895	38.3	2512	44,800 CUP	41.0	2655	50,600 CUP
H335	35.2	2373	43,500 CUP	37.4	2522	50,400 CUP
H4895	34.8	2428	45,200 CUP	37.0	2561	50,700 CUP
IMR 8208 XBR	35.2	2404	44,600 CUP	37.4	2518	50,700 CUP
IMR 3031	34.8	2400	43,900 CUP	37.0	2553	49,000 CUP
Benchmark	34.8	2369	45,900 CUP	37.0	2506	50,600 CUP
Bullet: 150 GR. SIE HPBT			**Dia: .284″**		**Col: 2.800″**	
StaBALL 6.5	43.6	2628	43,100 PSI	48.5	2908	58,900 PSI
H4350	42.0	2549	40,600 CUP	45.4	2724	51,500 CUP
IMR 4451	41.1	2525	48,200 PSI	44.2	2726	58,600 PSI
H414	44.0	2640	43,600 CUP	46.5	2776	50,000 CUP
IMR 4350	44.0	2637	41,800 CUP	46.5C	2746	46,600 CUP
760	44.0	2640	43,600 CUP	46.5	2776	50,000 CUP
H380	42.0	2583	43,000 CUP	45.5	2748	49,900 CUP
CFE 223	39.9	2529	41,500 CUP	42.5	2688	48,200 CUP
Varget	38.5	2597	42,400 CUP	41.3	2731	50,000 CUP
IMR 4320	39.0	2587	43,000 CUP	41.5	2711	49,400 CUP
IMR 4064	38.0	2569	42,600 CUP	40.3	2723	48,800 CUP
IMR 4166	38.3	2570	41,200 CUP	41.3	2755	50,000 CUP
BL-C(2)	39.0	2559	43,000 CUP	41.5	2699	49,600 CUP
IMR 4895	39.0	2605	44,000 CUP	41.5	2737	50,700 CUP
H335	35.0	2471	44,700 CUP	37.5	2605	49,900 CUP
H4895	37.0	2546	43,300 CUP	40.5	2723	50,000 CUP
IMR 8208 XBR	36.9	2539	43,200 CUP	39.3	2677	49,900 CUP
IMR 3031	36.2	2533	43,000 CUP	38.5	2684	49,900 CUP
Benchmark	36.0	2526	43,300 CUP	38.5	2667	50,200 CUP
Bullet: 154 GR. HDY SP			**Dia: .284″**		**Col: 2.800″**	
IMR 4955	45.0	2389	46,000 PSI	49.5C	2624	59,100 PSI
H4831	48.0	2550	40,900 CUP	49.5C	2625	44,500 CUP
StaBALL 6.5	44.3	2627	44,000 PSI	48.1	2871	59,300 PSI
Hybrid 100V	42.5	2541	42,900 CUP	46.0C	2713	47,500 CUP
IMR 4831	44.2	2517	38,400 CUP	47.0C	2655	45,100 CUP
H4350	42.3	2531	46,100 CUP	45.0	2645	51,300 CUP
IMR 4451	42.5	2539	50,000 PSI	45.8C	2726	59,100 PSI
H414	43.0	2569	41,200 CUP	46.0	2731	49,600 CUP
IMR 4350	44.2	2595	43,100 CUP	47.0C	2744	50,200 CUP
760	43.0	2569	41,200 CUP	46.0	2731	49,600 CUP
H380	41.5	2462	42,400 CUP	44.0	2627	49,600 CUP
CFE 223	38.7	2444	39,600 CUP	41.2	2696	47,000 CUP
Varget	38.5	2530	44,100 CUP	41.2	2666	50,300 CUP
IMR 4320	39.0	2530	44,500 CUP	41.5	2698	50,400 CUP
IMR 4064	38.0	2552	45,600 CUP	40.5	2697	50,700 CUP
IMR 4166	38.2	2557	50,300 PSI	40.7	2710	59,000 PSI
BL-C(2)	38.0	2387	40,800 CUP	40.5	2566	49,500 CUP
IMR 4895	38.4	2532	45,500 CUP	40.8	2687	50,700 CUP
H335	35.0	2374	41,700 CUP	37.5	2506	49,000 CUP
H4895	37.0	2484	44,200 CUP	39.5	2592	49,900 CUP
IMR 8208 XBR	36.2	2482	43,200 CUP	38.5	2587	49,100 CUP
IMR 3031	36.7	2498	43,800 CUP	39.0	2624	50,400 CUP
Benchmark	36.0	2467	42,900 CUP	38.5	2597	49,500 CUP
Bullet: 160 GR. SPR SPBT			**Dia: .284″**		**Col: 2.800″**	
IMR 4955	43.6	2368	47,200 PSI	47.9C	2573	58,700 PSI
H4831	47.5	2547	43,700 CUP	49.5C	2627	47,500 CUP
StaBALL 6.5	42.4	2500	40,800 PSI	47.7	2825	59,200 PSI
Hybrid 100V	41.0	2486	41,300 CUP	45.0C	2690	48,900 CUP
IMR 4831	43.5	2474	41,300 CUP	46.0C	2626	47,200 CUP
H4350	40.9	2471	45,400 CUP	43.5	2583	50,800 CUP
IMR 4451	40.6	2475	49,900 PSI	43.7C	2635	58,300 PSI
H414	42.5	2566	43,300 CUP	45.5	2684	49,600 CUP
IMR 4350	43.0	2513	43,500 CUP	46.0C	2681	49,300 CUP
760	42.5	2566	43,300 CUP	45.5	2684	49,600 CUP
H380	40.5	2413	42,800 CUP	43.0	2566	49,700 CUP
CFE 223	37.9	2421	42,000 CUP	40.3	2525	49,500 CUP

NEVER EXCEED MAXIMUM LOADS

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Varget	36.5	2451	43,400 CUP	39.0	2562	49,900 CUP
IMR 4320	38.0	2485	44,900 CUP	40.4	2623	50,800 CUP
IMR 4064	36.5	2438	42,000 CUP	38.7	2564	49,000 CUP
IMR 4166	36.7	2491	50,400 PSI	39.3	2641	58,800 PSI
BL-C(2)	37.0	2382	43,900 CUP	39.5	2533	49,700 CUP
IMR 4895	37.5	2477	43,100 CUP	40.0	2601	50,300 CUP
H335	34.0	2335	44,100 CUP	36.5	2468	49,900 CUP
H4895	35.0	2420	44,400 CUP	38.5	2530	50,000 CUP
IMR 8208 XBR	35.5	2459	45,400 CUP	37.7	2554	49,900 CUP
IMR 3031	34.5	2378	43,000 CUP	36.7	2516	49,200 CUP
Benchmark	36.0	2457	44,100 CUP	38.5	2592	50,700 CUP
Bullet: 162 GR. HDY A-MAX				**Dia: .284″**		**Col: 2.875″**
IMR 4955	43.9	2390	48,700 PSI	47.8C	2575	59,000 PSI
H4831	47.5	2501	39,000 CUP	48.5C	2555	42,400 CUP
StaBALL 6.5	42.5	2490	39,500 PSI	47.8	2821	59,000 PSI
Hybrid 100V	41.0	2455	40,300 CUP	45.0C	2651	46,900 CUP
H4350	41.4	2443	40,400 CUP	45.0	2622	50,500 CUP
IMR 4451	41.9	2506	50,100 PSI	45.1C	2674	58,600 PSI
H414	43.0	2553	42,100 CUP	45.0	2632	44,500 CUP
IMR 4350	44.0C	2494	40,000 CUP	46.0C	2655	46,900 CUP
760	43.0	2553	42,100 CUP	45.0	2632	44,500 CUP
H380	42.5	2508	42,400 CUP	44.0	2590	45,800 CUP
Varget	38.5	2504	43,400 CUP	41.0	2644	49,800 CUP
IMR 4320	38.5	2478	42,300 CUP	41.0	2635	49,900 CUP
IMR 4064	37.0	2463	42,000 CUP	39.5	2624	49,900 CUP
IMR 4166	36.5	2505	50,200 PSI	39.1	2634	58,600 PSI
IMR 4895	38.0	2471	42,100 CUP	40.6	2650	49,300 CUP
H335	36.5	2467	45,200 CUP	38.2	2585	50,100 CUP
H4895	37.0	2462	43,700 CUP	39.5	2600	49,800 CUP
IMR 8208 XBR	36.2	2499	41,000 CUP	40.2	2725	50,800 CUP
IMR 3031	35.7	2452	43,200 CUP	38.0	2598	50,300 CUP
Benchmark	36.0	2441	43,100 CUP	38.0	2557	49,200 CUP
Bullet: 168 GR. SIE HPBT				**Dia: .284″**		**Col: 2.800″**
IMR 7828	46.0	2385	40,700 CUP	49.0C*	2547	46,700 CUP
IMR 4955	43.7	2352	50,000 PSI	47.6C	2525	59,100 PSI
H4831	47.0	2438	39,700 CUP	49.0C	2545	45,000 CUP
StaBALL 6.5	42.1	2485	42,600 PSI	47.4	2776	59,300 PSI
Hybrid 100V	40.0	2443	42,800 CUP	44.0C	2623	48,200 CUP
IMR 4831	44.0	2402	38,500 CUP	46.0C	2517	42,900 CUP
H4350	41.6	2431	42,500 CUP	44.2	2551	50,700 CUP
IMR 4451	41.1	2468	51,100 PSI	44.2C	2625	59,100 PSI
H414	44.0	2557	44,600 CUP	46.5	2670	49,800 CUP
IMR 4350	43.7	2469	42,500 CUP	46.5C	2643	49,300 CUP
760	44.0	2557	44,600 CUP	46.5	2670	49,800 CUP
H380	42.0	2458	45,800 CUP	44.5	2565	49,900 CUP
Varget	37.5	2430	44,600 CUP	40.0	2540	50,100 CUP
IMR 4320	38.0	2430	41,300 CUP	40.5C	2565	48,700 CUP
IMR 4064	37.5	2466	43,200 CUP	39.8	2597	50,200 CUP
IMR 4166	36.5	2467	52,000 PSI	39.2	2599	59,200 PSI
BL-C(2)	38.0	2370	42,700 CUP	40.5	2492	49,500 CUP
IMR 4895	37.5	2439	42,300 CUP	40.0	2583	49,800 CUP
H335	35.0	2328	44,700 CUP	37.0	2421	49,600 CUP
H4895	36.5	2390	45,400 CUP	39.0	2504	49,700 CUP
IMR 8208 XBR	34.9	2414	46,400 CUP	37.1	2486	49,600 CUP
IMR 3031	36.0	2431	45,200 CUP	38.2	2565	50,100 CUP
Benchmark	36.0	2389	43,500 CUP	38.0	2517	49,400 CUP
Bullet: 175 GR. NOS PART				**Dia: .284″**		**Col: 2.800″**
IMR 4955	43.0	2266	48,700 PSI	46.8C	2437	59,200 PSI
H4831	47.0	2443	46,600 CUP	49.0C	2516	49,400 CUP
StaBALL 6.5	40.9	2395	41,300 PSI	46.0	2669	59,000 PSI
Hybrid 100V	40.0	2359	41,500 CUP	44.0C	2568	48,300 CUP
H4350	39.9	2303	41,900 CUP	42.4	2451	50,400 CUP
IMR 4451	40.7	2442	50,400 PSI	43.8C	2598	58,800 PSI
H414	40.5	2322	40,600 CUP	43.0	2495	50,100 CUP
IMR 4350	41.4	2310	39,200 CUP	46.0C	2556	48,500 CUP
760	40.5	2322	40,600 CUP	43.0	2495	50,100 CUP

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
H380	40.0	2303	45,600 CUP	42.7	2415	49,900 CUP
Varget	35.0	2231	43,400 CUP	37.5	2344	49,500 CUP
IMR 4320	38.5	2355	43,900 CUP	41.0	2464	49,700 CUP
IMR 4064	37.5	2308	43,300 CUP	40.0C	2433	49,700 CUP
IMR 4166	35.6	2346	49,300 PSI	38.2	2502	59,700 PSI
BL-C(2)	35.0	2154	40,000 CUP	37.0	2298	49,500 CUP
IMR 4895	38.0	2343	43,900 CUP	40.5	2466	49,400 CUP
H335	34.0	2195	46,200 CUP	36.0	2276	49,800 CUP
H4895	35.0	2240	44,500 CUP	37.5	2354	49,700 CUP
IMR 8208 XBR	33.4	2264	43,200 CUP	35.5	2372	48,200 CUP
IMR 3031	35.2	2270	44,900 CUP	37.5	2381	49,700 CUP
Benchmark	34.0	2202	42,400 CUP	36.5	2333	49,700 CUP

7 x 57MM MAUSER

Case: Winchester Twist: 1:8.75″
Barrel: 24″ Trim: 2.225″ Primer: Winchester LR, Large Rifle

Bullet: 110 GR. SPR HP				**Dia: .284″**		**Col: 2.980″**
StaBALL 6.5	49.1	2841	38,800 CUP	53.4	3183	45,600 CUP
H4350	51.0	2865	36,000 CUP	54.0C	3046	41,900 CUP
H414	50.0	2911	36,800 CUP	53.5	3101	44,100 CUP
IMR 4350	46.0	2660	35,000 CUP	52.0C	3016	45,600 CUP
760	50.0	2911	36,800 CUP	53.5	3101	44,100 CUP
H380	49.0	2933	41,000 CUP	52.0	3085	45,300 CUP
Varget	41.0	2902	40,900 CUP	45.5	3081	46,000 CUP
IMR 4320	41.4	2846	43,400 CUP	44.0	2915	44,600 CUP
IMR 4064	42.8	2860	38,400 CUP	46.0	3058	45,800 CUP
IMR 4895	41.8	2832	39,200 CUP	44.5	2955	42,500 CUP
H4895	43.0	2939	39,600 CUP	46.0	3078	45,000 CUP
IMR 8208 XBR	39.0	2823	43,400 CUP	43.5	3006	45,900 CUP
IMR 3031	40.0	2833	40,300 CUP	43.0	2995	45,700 CUP
Benchmark	41.0	2874	39,300 CUP	44.0	3034	45,700 CUP
Bullet: 120 GR. NOS BT				**Dia: .284″**		**Col: 3.000″**
IMR 7828 SSC	49.1	2571	36,600 CUP	54.5C*	2825	44,900 CUP
IMR 4955	46.9	2588	36,200 CUP	51.0 C	2823	44,800 CUP
H4831	50.0	2650	36,500 CUP	52.5C	2777	40,800 CUP
StaBALL 6.5	46.0	2702	40,000 CUP	51.0	2964	45,700 CUP
Hybrid 100V	44.0	2615	35,300 CUP	48.0C	2806	41,700 CUP
IMR 4831	46.4	2602	34,800 CUP	51.5C	2896	44,400 CUP
H4350	48.0	2790	40,300 CUP	51.0C	2945	45,800 CUP
IMR 4451	44.1	2608	41,300 CUP	47.5	2814	45,900 CUP
H414	48.0	2784	37,800 CUP	51.0	2938	45,600 CUP
IMR 4350	45.0	2622	36,900 CUP	50.0C	2896	45,700 CUP
760	48.0	2784	37,800 CUP	51.0	2938	45,600 CUP
H380	44.5	2716	40,000 CUP	47.5	2860	46,000 CUP
Varget	41.0	2820	41,700 CUP	44.0	2979	46,000 CUP
IMR 4064	39.9	2673	37,900 CUP	42.5	2807	43,400 CUP
IMR 4895	40.9	2744	40,100 CUP	43.5	2878	45,300 CUP
H4895	40.0	2732	40,900 CUP	42.0	2859	45,400 CUP
IMR 8208 XBR	37.0	2652	42,800 CUP	41.0	2821	45,800 CUP
IMR 3031	38.6	2695	39,200 CUP	41.0	2828	45,400 CUP
Benchmark	39.0	2743	42,900 CUP	41.5	2863	46,000 CUP
Bullet: 130 GR. SPR SP				**Dia: .284″**		**Col: 2.800″**
IMR 7828 SSC	48.9	2675	42,800 CUP	52.0C*	2802	45,700 CUP
IMR 4955	47.3	2569	38,900 CUP	51.1C	2783	45,400 CUP
StaBALL 6.5	45.0	2563	38,500 CUP	48.1	2797	45,300 CUP
Hybrid 100V	43.0	2536	35,000 CUP	47.0C	2721	41,000 CUP
IMR 4831	45.1	2674	42,800 CUP	48.0	2776	45,700 CUP
H4350	47.0	2682	40,500 CUP	50.0	2848	46,000 CUP
IMR 4451	43.5	2537	40,900 CUP	46.9C	2716	46,000 CUP
IMR 4350	43.7	2621	40,500 CUP	46.5	2749	45,600 CUP
H380	43.0	2575	41,500 CUP	46.5	2769	46,000 CUP
Varget	39.0	2678	40,400 CUP	42.0	2800	45,700 CUP
IMR 4320	36.2	2461	38,700 CUP	38.5	2597	44,100 CUP
IMR 4064	37.6	2556	40,200 CUP	40.0	2680	45,300 CUP
IMR 4895	37.6	2556	40,700 CUP	40.0	2691	45,200 CUP
H4895	38.0	2579	40,600 CUP	41.0	2704	46,000 CUP

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
IMR 8208 XBR	35.0	2488	41,700 CUP	39.0	2676	46,100 CUP
IMR 3031	34.0	2466	38,400 CUP	36.2	2578	44,700 CUP
Benchmark	39.0	2674	43,300 CUP	41.2	2765	46,000 CUP
Bullet: 140 GR. NOS BT			**Dia: .284″**		**Col: 3.000″**	
IMR 7828 SSC	47.3	2492	37,200 CUP	50.3C	2632	44,800 CUP
IMR 4955	46.2	2509	39,400 CUP	49.7C	2695	45,400 CUP
H4831	47.0	2520	42,500 CUP	49.5C	2719	46,000 CUP
StaBALL 6.5	44.1	2533	39,800 CUP	47.5	2714	45,700 CUP
Hybrid 100V	42.0	2466	35,900 CUP	46.5C	2654	43,300 CUP
IMR 4831	46.1	2604	40,700 CUP	49.0	2759	46,100 CUP
H4350	43.0	2530	40,400 CUP	46.5	2682	46,000 CUP
IMR 4451	41.8	2422	41,100 CUP	45.0	2599	46,000 CUP
H414	44.0	2548	40,400 CUP	47.0	2715	46,000 CUP
IMR 4350	44.2	2534	39,600 CUP	47.0	2683	45,300 CUP
760	44.0	2548	40,400 CUP	47.0	2715	46,000 CUP
H380	41.0	2467	41,500 CUP	44.0	2614	46,000 CUP
Varget	35.0	2368	40,800 CUP	37.7	2516	46,000 CUP
IMR 4320	36.1	2378	37,400 CUP	38.4	2505	45,000 CUP
IMR 4064	38.1	2498	41,800 CUP	40.5	2615	45,600 CUP
IMR 4895	37.8	2454	40,000 CUP	40.2	2678	44,700 CUP
H4895	35.0	2376	39,800 CUP	37.5	2530	45,800 CUP
IMR 8208 XBR	33.0	2335	44,100 CUP	37.0	2522	46,100 CUP
IMR 3031	35.0	2426	40,600 CUP	37.2	2528	45,400 CUP
Benchmark	35.5	2441	40,900 CUP	38.0	2571	45,700 CUP
Bullet: 150 GR. BAR TTSX			**Dia: .284″**		**Col: 2.965″**	
IMR 7828 SSC	43.0	2317	39,500 CUP	47.0C*	2492	45.000 CUP
IMR 4955	45.6	2472	39,700 CUP	49.0C	2621	45,700 CUP
H4831	42.0	2318	39,000 CUP	46.0C	2495	45,000 CUP
StaBALL 6.5	42.5	2469	40,200 CUP	45.6	2607	45,900 CUP
Hybrid 100V	38.0	2329	40,600 CUP	42.0C	2516	44,200 CUP
IMR 4831	40.0	2314	38,900 CUP	44.0C	2515	44,200 CUP
H4350	38.0	2288	36,900 CUP	42.5C	2502	45,300 CUP
IMR 4451	39.7	2363	40,600 CUP	42.7C	2491	45,300 CUP
H414	38.0	2321	40,900 CUP	42.0	2493	45,500 CUP
IMR 4350	39.0	2320	39,800 CUP	43.5C	2532	44,800 CUP
760	38.0	2321	40,900 CUP	42.0	2493	45,500 CUP
H380	36.0	2216	36,700 CUP	40.5	2405	45,500 CUP
Varget	32.0	2183	38,600 CUP	36.5	2415	45,900 CUP
IMR 4320	34.0	2232	42,100 CUP	37.5	2369	45,300 CUP
IMR 4064	34.0	2297	42,400 CUP	37.0	2423	45,600 CUP
IMR 4895	34.0	2261	39,900 CUP	38.0	2430	45,600 CUP
H4895	31.0	2167	37,700 CUP	35.0	2403	45,700 CUP
IMR 3031	32.0	2246	42,200 CUP	36.0	2429	46,000 CUP
Benchmark	31.0	2194	40,300 CUP	35.0	2356	45,000 CUP
Bullet: 150 GR. NOS BT			**Dia: .284″**		**Col: 3.000″**	
IMR 7828 SSC	46.1	2381	37,800 CUP	49.0C	2517	44,700 CUP
IMR 4955	44.9	2398	37,800 CUP	48.3C	2575	45,600 CUP
H4831	45.0	2411	41,700 CUP	48.0	2542	46,000 CUP
StaBALL 6.5	43.8	2488	40,700 CUP	47.1	2643	45,300 CUP
Hybrid 100V	41.0	2374	35,100 CUP	44.5C	2530	40,200 CUP
IMR 4831	43.7	2437	39,900 CUP	46.5	2575	45,000 CUP
H4350	41.0	2364	38,800 CUP	44.0	2513	45,500 CUP
IMR 4451	41.0	2347	40,000 CUP	44.1C	2509	45,600 CUP
H414	42.0	2406	40,100 CUP	44.5	2532	45,400 CUP
IMR 4350	42.3	2403	40,200 CUP	45.0	2535	45,400 CUP
760	42.0	2406	40,100 CUP	44.5	2532	45,400 CUP
H380	39.0	2298	40,200 CUP	42.0	2455	46,000 CUP
Varget	34.0	2265	40,900 CUP	36.0	2372	45,600 CUP
IMR 4320	35.4	2286	40,500 CUP	37.7	2401	45,000 CUP
IMR 4064	36.3	2345	41,000 CUP	38.6	2448	45,300 CUP
IMR 4895	36.9	2381	40,600 CUP	39.3	2487	45,600 CUP
H4895	34.0	2271	40,200 CUP	36.0	2383	46,000 CUP
IMR 8208 XBR	32.0	2206	39,500 CUP	36.0	2401	45,800 CUP
IMR 3031	34.5	2341	40,200 CUP	36.7	2441	45,600 CUP
Benchmark	34.0	2291	40,900 CUP	36.0	2365	45,700 CUP

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Bullet: 160 GR. NOS PART			**Dia: .284″**		**Col: 3.000″**	
IMR 7828 SSC	45.1	2370	41,200 CUP	48.0	2483	45,400 CUP
IMR 4955	43.6C	2329	39,800 CUP	46.4C	2449	45,500 CUP
H4831	43.0	2311	41,500 CUP	46.0	2415	45,700 CUP
StaBALL 6.5	41.2	2369	39,600 CUP	45.8	2577	45,600 CUP
Hybrid 100V	40.5	2337	36,600 CUP	43.5C	2468	41,600 CUP
IMR 4831	43.5	2416	42,400 CUP	46.2	2515	45,300 CUP
H4350	40.0	2314	42,100 CUP	42.5	2399	45,400 CUP
IMR 4451	39.5	2257	40,900 CUP	42.5	2410	45,800 CUP
H414	40.0	2292	40,200 CUP	42.5	2405	45,400 CUP
IMR 4350	41.8	2389	42,000 CUP	44.4	2499	45,500 CUP
760	40.0	2292	40,200 CUP	42.5	2405	45,400 CUP
H380	37.0	2186	40,800 CUP	39.5	2299	46,000 CUP
Varget	33.0	2160	41,100 CUP	35.0	2261	45,900 CUP
IMR 4320	34.8	2212	39,100 CUP	37.0	2331	44,500 CUP
IMR 4064	35.4	2255	39,400 CUP	37.6	2357	45,000 CUP
IMR 4895	34.7	2227	38,300 CUP	37.0	2312	44,600 CUP
H4895	33.0	2165	40,200 CUP	34.5	2245	44,700 CUP
IMR 8208 XBR	31.0	2106	38,000 CUP	34.5	2287	45,900 CUP
IMR 3031	33.2	2207	41,400 CUP	35.3	2337	45,500 CUP
Benchmark	32.5	2174	40,800 CUP	34.7	2284	45,700 CUP
Bullet: 168 GR. SIE HPBT			**Dia: .284″**		**Col: 3.000″**	
H1000	49.0	2338	40,800 CUP	52.0C	2485	46,000 CUP
IMR 7828 SSC	45.0	2329	40,400 CUP	48.0	2567	45,200 CUP
IMR 4955	44.5C	2377	40,200 CUP	47.3C	2510	45,600 CUP
H4831	43.0	2244	38,100 CUP	46.0	2393	43,900 CUP
StaBALL 6.5	42.0	2375	40,200 CUP	44.6	2524	45,700 CUP
Hybrid 100V	41.0	2338	37,400 CUP	45.5C	2534	45,000 CUP
IMR 4831	43.7	2392	40,100 CUP	46.5	2534	45,600 CUP
H4350	40.0	2267	40,400 CUP	42.5	2378	44,100 CUP
IMR 4451	39.8	2277	40,200 CUP	43.0	2432	46,000 CUP
H414	40.0	2276	40,700 CUP	42.5	2378	45,000 CUP
IMR 4350	42.8	2363	40,100 CUP	45.6	2515	45,900 CUP
760	40.0	2276	40,700 CUP	42.5	2378	45,000 CUP
H380	37.0	2149	38,600 CUP	39.5	2272	44,500 CUP
Varget	34.5	2232	36,600 CUP	37.5	2404	45,500 CUP
IMR 4320	34.8	2212	38,100 CUP	37.0	2343	45,800 CUP
IMR 4064	36.6	2298	41,800 CUP	39.0	2397	46,000 CUP
IMR 4895	35.7	2245	39,500 CUP	38.0	2344	44,900 CUP
H4895	33.0	2118	36,400 CUP	34.5	2211	42,600 CUP
IMR 8208 XBR	31.0	2100	39,100 CUP	34.0	2260	45,800 CUP
IMR 3031	33.8	2227	41,400 CUP	36.0	2318	45,500 CUP
Benchmark	33.5	2212	40,900 CUP	36.0	2336	46,000 CUP
Bullet: 175 GR. NOS PART			**Dia: .284″**		**Col: 3.025″**	
H1000	42.0	2038	41,000 CUP	44.5	2239	45,500 CUP
IMR 7828 SSC	41.6	2180	40,400 CUP	44.3	2299	44,700 CUP
IMR 4955	40.7	2184	40,600 CUP	43.3C	2284	45,500 CUP
H4831	37.0	2098	41,300 CUP	40.0	2201	45,700 CUP
StaBALL 6.5	39.5	2218	40,400 CUP	43.0	2392	45,000 CUP
Hybrid 100V	38.0	2163	34,800 CUP	41.0C	2300	40,800 CUP
IMR 4831	37.8	2124	39,500 CUP	40.2	2229	44,400 CUP
H4350	35.0	2066	39,700 CUP	37.0	2159	43,400 CUP
IMR 4451	35.5	2027	38,900 CUP	38.3	2178	45,000 CUP
H414	35.0	2033	40,100 CUP	37.0	2119	44,500 CUP
IMR 4350	37.0	2076	35,800 CUP	40.0	2231	44,600 CUP
760	35.0	2033	40,100 CUP	37.0	2119	44,500 CUP
Varget	31.0	2005	34,200 CUP	35.0	2178	45,500 CUP
IMR 4320	34.0	2103	39,100 CUP	36.2	2213	44,900 CUP
IMR 4064	33.1	2063	40,400 CUP	35.2	2161	44,700 CUP

280 REMINGTON

Case: Remington Twist: 1:10″
Barrel: 24″ Trim: 2.530″ Primer: Remington 9 1/2, Large Rifle

Powder	Grs.	Vel.	Pressure	Grs.	Vel.	Pressure
Bullet: 100 GR. SIE HP			**Dia: .284″**		**Col: 3.180″**	
IMR 4955	59.6	3104	49,500 PSI	63.5C	3307	58,600 PSI
H4831	59.0	3053	38,900 CUP	63.0C	3266	46,000 CUP

NEVER EXCEED MAXIMUM LOADS

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
H4350	56.0	3167	41,400 CUP	60.5	3379	49,200 CUP
H414	54.0	3243	42,100 CUP	57.5	3395	47,100 CUP
760	54.0	3243	42,100 CUP	57.5	3395	47,100 CUP
H380	52.0	3231	42,200 CUP	55.5	3368	47,800 CUP
Varget	48.0	3254	42,400 CUP	51.3	3433	48,300 CUP
BL-C(2)	49.0	3226	41,700 CUP	53.0	3409	48,300 CUP
H4895	47.0	3226	42,800 CUP	50.5	3418	49,000 CUP
Bullet: 115 GR. SPR HP			**Dia: .284″**		**Col: 3.180″**	
IMR 4955	58.2	2973	50,800 PSI	62.0C	3151	58,700 PSI
H4831	58.0	3014	40,600 CUP	62.0C	3190	47,300 CUP
H4350	54.0	3017	40,200 CUP	58.5	3234	48,100 CUP
H414	52.0	3012	40,300 CUP	56.0	3192	47,400 CUP
760	52.0	3012	40,300 CUP	56.0	3192	47,400 CUP
H380	48.0	2902	42,200 CUP	52.0	3090	48,600 CUP
Varget	46.0	3040	43,500 CUP	49.0	3170	47,700 CUP
BL-C(2)	45.0	2927	42,300 CUP	49.0	3118	48,400 CUP
H4895	46.0	3033	42,600 CUP	49.0	3175	48,300 CUP
Bullet: 120 GR. BAR TSX			**Dia: .284″**		**Col: 3.230″**	
IMR 7828 SSC	60.2	3054	50,000 PSI	64.0C*	3234	58,300 PSI
IMR 4955	56.8	2907	50,000 PSI	60.5C	3098	58,700 PSI
Suprform	54.0	3072	48,900 PSI	60.0	3304	57,300 PSI
H4831	58.0	2923	43.600 PSI	63.0C	3124	53,100 PSI
IMR 4831	57.0	3060	49,500 PSI	61.0C	3259	57,400 PSI
H4350	55.5	3093	49,100 PSI	59.0C	3254	57,400 PSI
H414	53.0	3033	49,700 PSI	56.2	3191	56,900 PSI
IMR 4350	55.5	3038	49,500 PSI	59.0C	3210	56,800 PSI
H380	51.7	3044	50,700 PSI	55.0	3210	58,000 PSI
Varget	47.7	3007	48,800 PSI	50.7	3177	57,200 PSI
IMR 4064	47.6	2994	48,700 PSI	50.6	3160	57,000 PSI
748	47.0	2935	49,600 PSI	50.0	3061	56,400 PSI
BL-C(2)	48.0	3002	50,000 PSI	50.6	3125	55,800 PSI
H4895	46.9	3067	54,300 PSI	49.9	3171	57,200 PSI
Bullet: 140 GR. NOS PART			**Dia: .284″**		**Col: 3.230″**	
IMR 4955	53.5	2683	49,700 PSI	57.0	2860	58,600 PSI
Suprform	54.0	2905	55,400 PSI	57.0	2983	58,600 PSI
H4831	54.0	2732	41,000 CUP	58.5	2927	48,500 CUP
Hybrid 100V	50.0	2669	41,300 CUP	54.0C	2847	47,000 CUP
H4350	50.0	2756	41,900 CUP	53.5	2918	48,500 CUP
IMR 4451	50.4	2747	51,500 PSI	54.2	2913	58,700 PSI
H414	47.0	2710	41,800 CUP	51.0	2867	47,900 CUP
760	47.0	2710	41,800 CUP	51.0	2867	47,900 CUP
Varget	42.0	2674	41,400 CUP	45.5	2838	48,100 CUP
H4895	42.0	2711	43,200 CUP	45.2	2830	48,400 CUP
Bullet: 145 GR. SPR SP			**Dia: .284″**		**Col: 3.160″**	
IMR 4955	55.0	2680	50,600 PSI	58.6C	2860	58,700 PSI
H4831	48.0	2579	46,900 CUP	53.0	2727	50,000 CUP
Hybrid 100V	50.0	2691	43,000 CUP	54.0C	2866	49,100 CUP
H4350	45.0	2553	44,500 CUP	48.8	2714	49,900 CUP
H414	43.0	2491	44,700 CUP	46.5	2639	48,900 CUP
760	43.0	2491	44,700 CUP	46.5	2639	48,900 CUP
Varget	39.0	2469	44,900 CUP	43.0	2690	48,000 CUP
H4895	38.0	2434	43,800 CUP	41.0	2596	48,400 CUP
Bullet: 150 GR. NOS PART			**Dia: .284″**		**Col: 3.300″**	
H1000	56.0	2647	43,500 CUP	60.0C	2797	49,300 CUP
IMR 7977	57.3	2634	47,200 PSI	61.0C	2822	55,600 PSI
IMR 4955	52.1	2620	51,400 PSI	55.5	2776	58,700 PSI
H4831	50.0	2579	45,100 CUP	53.7	2709	49,500 CUP
H4350	46.0	2550	42,500 CUP	49.7	2700	49,300 CUP
IMR 4451	47.5	2604	50,800 PSI	51.1	2772	58,000 PSI
H414	43.0	2456	41,500 CUP	47.3	2640	49,400 CUP
760	43.0	2456	41,500 CUP	47.3	2640	49,400 CUP
Varget	39.0	2485	44,000 CUP	42.0	2611	49,800 CUP
H4895	38.0	2430	43,700 CUP	41.5	2588	50,000 CUP

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Bullet: 160 GR. SFT SP			**Dia: .284″**		**Col: 3.240″**	
H1000	57.0	2517	40,700 CUP	61.0C	2714	47,500 CUP
IMR 7977	56.4	2560	47,100 PSI	60.0C	2773	56,900 PSI
IMR 4955	51.4	2531	50,200 PSI	54.7	2697	58,500 PSI
H4831	51.0	2464	40,600 CUP	55.0	2660	49,500 CUP
Hybrid 100V	47.0	2451	38,900 CUP	52.0C	2712	48,600 CUP
H4350	46.0	2441	40,900 CUP	49.5	2610	48,900 CUP
IMR 4451	46.8	2519	48,900 PSI	50.5	2709	57,900 PSI
H414	43.0	2348	40,300 CUP	47.5	2558	49,700 CUP
760	43.0	2348	40,300 CUP	47.5	2558	49,700 CUP
Varget	39.0	2384	43,000 CUP	42.5	2555	49,300 CUP
H4895	38.0	2341	40,300 CUP	41.5	2535	49,500 CUP
Bullet: 162 GR. HDY A-MAX			**Dia: .284″**		**Col: 3.330″**	
H1000	56.0	2526	40,300 CUP	60.0C	2711	47,200 CUP
IMR 7977	56.0	2595	49,500 PSI	59.6C	2761	57,400 PSI
IMR 4955	51.6	2511	48,900 PSI	54.9	2689	58,100 PSI
H4831	51.0	2517	44,100 CUP	54.5	2644	49,300 CUP
Hybrid 100V	47.5	2528	39,800 CUP	51.5C	2746	47,500 CUP
H4350	46.0	2468	42,300 CUP	49.5	2614	49,900 CUP
IMR 4451	46.5	2512	48,700 PSI	50.2	2696	57,900 PSI
H414	43.0	2400	41,400 CUP	47.5	2669	49,900 CUP
760	43.0	2400	41,400 CUP	47.5	2669	49,900 CUP
Varget	39.0	2443	44,100 CUP	42.0	2573	49,500 CUP
H4895	38.0	2396	42,800 CUP	41.5	2567	50,000 CUP
Bullet: 168 GR. SIE HPBT			**Dia: .284″**		**Col: 3.330″**	
H1000	56.0	2506	39,400 CUP	60.0C	2700	49,300 CUP
IMR 7977	54.4	2525	48,800 PSI	58.3C	2699	57,000 PSI
IMR 4955	49.8	2475	50,400 PSI	53.0	2640	58,600 PSI
H4831	51.0	2462	42,400 CUP	54.5	2605	49,200 CUP
Hybrid 100V	47.0	2537	42,100 CUP	51.0C	2704	48,100 CUP
H4350	46.0	2422	41,300 CUP	50.0	2586	49,400 CUP
IMR 4451	46.0	2482	50,000 PSI	49.8	2659	58,600 PSI
Varget	40.0	2424	45,800 CUP	42.2	2523	49,900 CUP
H4895	38.0	2329	45,900 CUP	41.2	2468	49,600 CUP
Bullet: 175 GR. HDY SP			**Dia: .284″**		**Col: 3.300″**	
H1000	54.0	2502	47,000 CUP	57.0C	2583	49,600 CUP
IMR 7977	52.3	2432	49,900 PSI	55.7C	2591	57,100 PSI
IMR 4955	49.0	2388	50,800 PSI	52.2	2530	58,000 PSI
H4831	48.0	2362	44,400 CUP	51.0	2477	49,800 CUP
Hybrid 100V	45.5	2374	39,400 CUP	49.5C	2569	47,400 CUP
H4350	44.0	2343	44,600 CUP	46.5	2447	49,300 CUP
IMR 4451	43.7	2356	50,800 PSI	47.3	2509	57,600 PSI

280 ACKLEY IMPROVED

Case: Nosler Twist: 1:9″
Barrel: 24″ Trim: 2.530″ Primer: Winchester LR, Large Rifle

Powder	Grs.	Vel.	Pressure	Grs.	Vel.	Pressure
Bullet: 120 GR. NOS BT			**Dia: .284″**		**Col: 3.320″**	
H1000	62.0	2924	45,100 PSI	66.0C	3120	54,400 PSI
IMR 7828 SSC	59.2	2997	52,500 PSI	63.0	3219	62,200 PSI
IMR 4955	61.5	3030	53,200 PSI	65.0C	3217	62,200 PSI
H4831	61.1	3024	52,200 PSI	65.0C	3240	60,900 PSI
Hybrid 100V	54.9	3097	50,500 PSI	58.5	3312	60,500 PSI
IMR 4831	56.4	2967	48,900 PSI	60.0	3223	60,100 PSI
H4350	55.5	3120	54,000 PSI	59.0	3271	61,400 PSI
IMR 4451	56.0	3003	51,000 PSI	59.6	3236	61,700 PSI
H414	53.1	3059	52,700 PSI	56.5	3237	62,000 PSI
IMR 4350	55.0	3056	53,100 PSI	58.5	3222	60,900 PSI
760	53.1	3059	52,700 PSI	56.5	3237	62,000 PSI
Varget	47.0	2988	52,200 PSI	50.0	3153	61,300 PSI
IMR 4320	47.5	2970	51,000 PSI	50.5	3141	60,300 PSI
IMR 4064	47.8	3046	54,200 PSI	50.9	3180	60,400 PSI
748	48.0	3005	52,800 PSI	51.0	3177	60,600 PSI
BL-C(2)	50.3	3089	55,800 PSI	53.5	3242	61,900 PSI
IMR 4895	47.7	3039	54,100 PSI	50.7	3174	60,800 PSI
H4895	44.7	2974	51,800 PSI	47.5	3128	60,700 PSI

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
IMR 3031	45.1	3014	55,700 PSI	48.0	3120	60,200 PSI
Bullet: 130 GR. SIE HPBT Dia: .284″ Col: 3.320″						
H1000	60.6	2910	51,600 PSI	64.5C	3065	59,800 PSI
IMR 7828 SSC	56.4	2907	52,800 PSI	60.0	3079	61,300 PSI
IMR 4955	58.4	2877	51,800 PSI	62.2	3070	62,300 PSI
H4831	57.3	2910	53,800 PSI	61.0	3060	61,300 PSI
Hybrid 100V	53.4	3028	53,600 PSI	56.9	3206	61,800 PSI
IMR 4831	54.8	2939	52,800 PSI	58.3	3128	62,000 PSI
H4350	50.8	2913	53,300 PSI	54.0	3051	60,000 PSI
IMR 4451	53.0	2875	52,600 PSI	56.5	3065	61,600 PSI
H414	50.3	2932	53,500 PSI	53.5	3071	61,700 PSI
IMR 4350	51.3	2901	53,200 PSI	54.6	3067	61,200 PSI
760	50.3	2932	53,500 PSI	53.5	3071	61,700 PSI
Varget	44.7	2855	53,500 PSI	47.5	2991	60,800 PSI
IMR 4320	43.2	2787	51,000 PSI	46.0	2948	60,400 PSI
IMR 4064	44.2	2859	52,400 PSI	47.0	3007	61,800 PSI
748	44.8	2851	52,000 PSI	47.7	2994	60,600 PSI
BL-C(2)	46.5	2888	52,600 PSI	49.5	3026	61,300 PSI
IMR 4895	44.7	2867	52,300 PSI	47.5	2982	58,000 PSI
H4895	42.8	2813	51,200 PSI	45.5	2953	60,300 PSI
IMR 3031	42.0	2830	53,800 PSI	44.6	2941	60,300 PSI
Bullet: 140 GR. NOS BT Dia: .284″ Col: 3.330″						
H1000	60.0	2778	48,200 PSI	64.0C	2972	58,700 PSI
IMR 7977	61.0	2794	49,800 PSI	65.0C	3014	60,200 PSI
IMR 7828 SSC	56.2	2738	48,600 PSI	59.8	2967	60,200 PSI
IMR 4955	59.3	2849	54,400 PSI	61.8	2985	62,300 PSI
H4831	58.3	2841	53,600 PSI	62.0C	3012	61,100 PSI
Hybrid 100V	52.6	2883	51,400 PSI	56.0	3068	60,700 PSI
IMR 4831	54.5	2821	51,200 PSI	58.0	3025	60,900 PSI
H4350	52.2	2893	55,200 PSI	55.5	3012	61,600 PSI
IMR 4451	53.0	2776	52,000 PSI	56.6	2986	61,900 PSI
H414	50.3	2830	52,700 PSI	53.5	2991	62,200 PSI
IMR 4350	52.0	2814	52,700 PSI	55.4	2992	61,800 PSI
760	50.3	2830	52,700 PSI	53.5	2991	62,200 PSI
Varget	44.6	2754	54,100 PSI	47.4	2903	60,400 PSI
IMR 4064	43.7	2728	52,300 PSI	46.5	2876	61,200 PSI
IMR 4895	44.2	2737	52,800 PSI	47.0	2870	60,500 PSI
H4895	42.8	2737	53,600 PSI	45.5	2876	61,600 PSI
Bullet: 150 GR. BAR TSX Dia: .284″ Col: 3.230″						
H1000	54.5	2592	54,100 PSI	61.0C	2826	56,900 PSI
IMR 7977	59.6	2734	51,200 PSI	63.5C	2928	60,300 PSI
IMR 7828 SSC	54.0	2737	53,900 PSI	57.5	2863	59,200 PSI
IMR 4955	58.4	2749	53,300 PSI	62.2C	2911	61,600 PSI
H4831	54.1	2705	51,900 PSI	57.5C	2840	59,900 PSI
Hybrid 100V	51.2	2782	51,400 PSI	54.5	2952	60,100 PSI
IMR 4831	51.2	2756	53,500 PSI	54.5	2881	60,800 PSI
H4350	49.5	2736	55,600 PSI	52.7	2855	61,600 PSI
IMR 4451	51.0	2684	49,600 PSI	55.7	2890	61,700 PSI
H414	47.3	2689	53,200 PSI	50.3	2818	60,100 PSI
IMR 4350	51.0	2746	52,600 PSI	54.5	2893	60,100 PSI
760	47.3	2689	53,200 PSI	50.3	2818	60,100 PSI
Varget	43.0	2632	53,800 PSI	45.8	2750	60,900 PSI
IMR 4064	44.2	2686	54,600 PSI	47.0	2799	61,900 PSI
IMR 4895	44.7	2665	51,600 PSI	47.5	2805	62,000 PSI
H4895	41.4	2598	52,800 PSI	44.0	2716	59,900 PSI
Bullet: 150 GR. SFT SCIR Dia: .284″ Col: 3.330″						
H1000	58.5	2724	57,100 PSI	62.2C	2883	60,300 PSI
IMR 7977	58.8	2710	52,200 PSI	62.2C	2910	61,600 PSI
IMR 7828 SSC	54.0	2668	51,600 PSI	59.0	2902	60,600 PSI
IMR 4955	56.6	2694	54,100 PSI	60.3C	2859	61,900 PSI
H4831	53.6	2657	51,500 PSI	57.0	2773	61,200 PSI
Hybrid 100V	50.3	2744	52,500 PSI	53.6	2930	61,300 PSI
IMR 4831	51.0	2650	50,600 PSI	56.0	2922	60,000 PSI
H4350	48.0	2676	51,900 PSI	54.5	2908	61,700 PSI
IMR 4451	50.5	2639	52,600 PSI	54.2	2832	61,700 PSI
H414	46.1	2601	52,900 PSI	51.5	2808	56,000 PSI
IMR 4350	52.0	2739	50,800 PSI	55.3	2932	61,200 PSI
760	46.1	2601	52,900 PSI	51.5	2808	56,000 PSI
Varget	43.5	2647	51,700 PSI	46.3	2796	59,300 PSI
IMR 4064	44.0	2665	50,700 PSI	46.5	2834	61,100 PSI
IMR 4895	45.1	2764	55,900 PSI	48.0	2850	60,400 PSI
H4895	42.0	2633	52,100 PSI	44.6	2773	61,200 PSI
Bullet: 160 GR. NOS AB Dia: .284″ Col: 3.330″						
H1000	57.3	2672	54,200 PSI	61.0C	2808	61,100 PSI
IMR 7977	59.6	2690	53,100 PSI	63.5C	2872	61,700 PSI
IMR 7828 SSC	54.5	2667	51,900 PSI	58.0	2849	61,300 PSI
H4831	54.0	2674	55,000 PSI	57.5C	2812	62,000 PSI
IMR 4831	52.2	2663	53,100 PSI	55.5	2847	61,900 PSI
H4350	48.4	2633	54,100 PSI	51.5	2747	60,700 PSI
IMR 4451	50.5	2602	53,100 PSI	53.7	2735	59,100 PSI
H414	47.5	2594	52,700 PSI	50.5	2736	60,800 PSI
IMR 4350	50.5	2647	53,600 PSI	53.7	2813	61,600 PSI
760	47.5	2594	52,700 PSI	50.5	2736	60,800 PSI
Varget	43.2	2551	53,200 PSI	46.0	2685	62,000 PSI
IMR 4064	42.3	2517	52,900 PSI	45.0	2668	61,400 PSI
IMR 4895	43.0	2532	51,300 PSI	45.8	2670	60,000 PSI
H4895	40.9	2496	52,300 PSI	43.5	2615	59,500 PSI
Bullet: 162 GR. HDY BTSP Dia: .284″ Col: 3.325″						
H1000	56.8	2653	52,300 PSI	60.4	2797	61,300 PSI
IMR 7977	58.4	2662	50,900 PSI	62.2C	2847	60,100 PSI
IMR 7828 SSC	54.0	2678	53,600 PSI	57.3	2824	61,900 PSI
IMR 4955	55.9	2663	54,500 PSI	59.5	2801	62,200 PSI
H4831	53.0	2662	54,200 PSI	56.4	2788	61,400 PSI
Hybrid 100V	50.0	2726	52,600 PSI	53.2	2882	61,400 PSI
IMR 4831	51.5	2697	54,700 PSI	54.8	2850	62,000 PSI
H4350	47.6	2629	52,900 PSI	50.6	2755	60,800 PSI
IMR 4451	50.0	2616	53,500 PSI	53.2	2757	60,700 PSI
H414	47.0	2610	52,600 PSI	50.0	2730	60,300 PSI
IMR 4350	49.4	2677	54,400 PSI	52.5	2797	60,800 PSI
760	47.0	2610	52,600 PSI	50.0	2730	60,300 PSI
Varget	42.6	2570	54,600 PSI	45.3	2690	62,000 PSI
IMR 4064	42.0	2556	53,700 PSI	44.5	2673	61,000 PSI
IMR 4895	42.3	2547	53,100 PSI	45.0	2675	61,100 PSI
H4895	40.9	2535	53,800 PSI	43.5	2651	61,400 PSI
Bullet: 168 GR. SIE HPBT Dia: .284″ Col: 3.330″						
Retumbo	59.0	2652	49,000 PSI	63.0C	2831	59,300 PSI
IMR 8133	61.4	2662	49,400 PSI	66.0C	2917	62,100 PSI
H1000	57.8	2641	52,500 PSI	61.5C	2789	61,100 PSI
IMR 7977	58.9	2641	52,900 PSI	62.7C	2822	61,400 PSI
IMR 7828 SSC	53.8	2618	52,600 PSI	57.2	2776	61,000 PSI
IMR 4955	55.3	2601	53,200 PSI	58.9	2768	62,100 PSI
H4831	54.0	2653	55,100 PSI	57.7	2779	62,000 PSI
Hybrid 100V	49.5	2671	53,300 PSI	52.7	2826	62,200 PSI
IMR 4831	52.0	2633	51,400 PSI	55.3	2798	61,400 PSI
H4350	48.4	2621	54,500 PSI	51.5	2734	61,800 PSI
IMR 4451	50.0	2579	53,700 PSI	53.5	2729	61,600 PSI
H414	47.0	2571	53,200 PSI	50.3	2717	61,600 PSI
IMR 4350	49.8	2632	53,100 PSI	53.0	2762	61,100 PSI
760	47.0	2571	53,200 PSI	50.3	2717	61,600 PSI
Varget	43.0	2518	53,700 PSI	46.0	2667	62,100 PSI
IMR 4064	42.3	2532	55,900 PSI	45.0	2643	62,300 PSI
IMR 4895	42.8	2530	53,700 PSI	45.5	2650	61,300 PSI
H4895	40.4	2474	52,300 PSI	43.0	2595	60,900 PSI
Bullet: 175 GR. SFT SP Dia: .284″ Col: 3.270″						
Retumbo	56.7	2604	52,400 PSI	60.3C	2743	59,800 PSI
IMR 8133	61.0	2588	49,100 PSI	65.5C	2804	60,100 PSI
H1000	55.5	2544	52,700 PSI	59.0C	2675	61,100 PSI
IMR 7977	57.4	2531	52,200 PSI	61.1C	2710	60,600 PSI
IMR 7828 SSC	53.1	2505	51,400 PSI	56.5	2686	61,700 PSI
IMR 4955	54.9	2519	53,400 PSI	58.5C	2656	62,000 PSI

NEVER EXCEED MAXIMUM LOADS

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
H4831	52.0	2496	51,900 PSI	55.5	2651	62,000 PSI
Hybrid 100V	49.2	2559	52,200 PSI	52.4	2721	61,100 PSI
IMR 4831	51.7	2545	51,200 PSI	55.0	2702	61,400 PSI
H4350	47.7	2515	54,700 PSI	50.7	2626	62,100 PSI
IMR 4451	49.5	2475	53,200 PSI	52.8	2626	61,000 PSI
H414	45.9	2469	52,600 PSI	48.8	2594	59,700 PSI
IMR 4350	50.0	2529	51,300 PSI	53.3	2681	60,700 PSI
760	45.9	2469	52,600 PSI	48.8	2594	59,700 PSI

7MM REMINGTON MAGNUM

Case: Winchester Twist: 1:9.5″
Barrel: 24″ Trim: 2.490″ Primer: Winchester LRM, Large Rifle Magnum

Bullet: 100 GR. SIE HP Dia: .284″ Col: 3.150″

IMR 7828	72.0	3267	48,900 PSI	75.0C	3421	54,100 PSI
IMR 4955	69.7	3273	51,600 PSI	73.2	3466	59,800 PSI
H4831	71.0	3316	43,300 CUP	75.0	3499	50,300 CUP
Hybrid 100V	62.0	3290	49,500 PSI	68.0	3547	58,700 PSI
IMR 4831	67.0	3318	49,300 PSI	72.0	3592	59,400 PSI
H4350	65.0	3334	44,800 CUP	69.0	3494	49,600 CUP
H414	60.0	3216	39,900 CUP	66.0	3499	49,100 CUP
IMR 4350	66.0	3312	49,400 PSI	70.5	3569	59,000 PSI
Varget	53.0	3193	39,600 CUP	59.0	3487	49,800 CUP
IMR 4064	57.0	3318	50,000 PSI	61.5	3528	58,600 PSI
IMR 4895	57.0	3288	49,200 PSI	61.2	3538	59,400 PSI

Bullet: 110 GR. SPR HP Dia: .284″ Col: 3.250″

IMR 7828	72.0	3230	50,900 PSI	75.0C	3386	56,700 PSI
IMR 4955	66.9	3157	51,700 PSI	72.0	3355	59,600 PSI
H4831	68.0	3213	44,000 CUP	73.0	3367	49,700 CUP
Hybrid 100V	62.0	3203	48,900 PSI	68.0	3465	59,500 PSI
IMR 4831	67.0	3249	51,200 PSI	71.3	3456	59,700 PSI
H4350	65.0	3233	44,700 CUP	68.5	3357	49,500 CUP
H414	62.0	3250	45,800 CUP	65.5	3395	50,400 CUP
IMR 4350	65.0	3205	49,700 PSI	69.8	3442	59,000 PSI
Varget	54.0	3174	44,600 CUP	58.5	3356	50,300 CUP
IMR 4064	56.0	3214	53,100 PSI	60.5	3369	59,400 PSI
IMR 4895	56.0	3210	52,600 PSI	59.9	3350	58,800 PSI

Bullet: 115 GR. SPR HP Dia: .284″ Col: 3.200″

IMR 4955	65.2	3060	50,200 PSI	70.9	3291	60,000 PSI
H4831	65.0	3060	44,200 CUP	69.7	3257	50,600 CUP
Hybrid 100V	60.0	3102	48,500 PSI	66.0	3354	58,500 PSI
H4350	62.0	3089	43,800 CUP	66.0	3281	50,300 CUP
H414	59.0	3071	45,100 CUP	63.5	3267	50,400 CUP
Varget	53.0	3068	44,800 CUP	56.5	3245	49,800 CUP

Bullet: 120 GR. HDY SP Dia: .284″ Col: 3.230″

IMR 7828	68.0	3044	50,000 PSI	72.5C	3261	59,100 PSI
IMR 4955	63.9	2994	49,900 PSI	69.5	3222	59,700 PSI
H4831	65.0	3095	45,800 CUP	68.5	3236	50,600 CUP
Hybrid 100V	60.0	3092	50,100 PSI	65.5	3327	59,600 PSI
IMR 4831	64.0	3040	51,300 PSI	68.2	3231	58,500 PSI
H4350	62.0	3106	44,700 CUP	65.0	3226	50,100 CUP
H414	61.0	3126	45,500 CUP	64.5	3261	50,700 CUP
IMR 4350	62.0	3050	49,900 PSI	66.5	3251	59,000 PSI
Varget	53.0	3021	45,200 CUP	57.0	3218	50,900 CUP
IMR 4064	54.0	3062	52,600 PSI	58.2	3212	59,400 PSI
IMR 4895	54.0	3049	52,200 PSI	57.9	3189	58,700 PSI

Bullet: 130 GR. SPR SP Dia: .284″ Col: 3.185″

IMR 7828	65.0	2943	50,800 PSI	70.0	3159	59,300 PSI
IMR 4955	62.9	2915	51,700 PSI	68.4	3123	60,200 PSI
H4831	63.0	2952	46,300 CUP	66.0	3051	50,200 CUP
Hybrid 100V	57.0	2931	49,400 PSI	62.5	3157	59,000 PSI
IMR 4831	62.0	2971	53,200 PSI	66.3	3125	59,800 PSI
H4350	58.0	2953	45,100 CUP	61.5	3082	50,800 CUP
IMR 4451	58.3	3031	51,800 PSI	63.4	3228	59,800 PSI
H414	59.0	2985	46,500 CUP	61.0	3064	49,400 CUP
IMR 4350	60.0	2964	52,300 PSI	64.0	3131	59,300 PSI
Varget	51.0	2877	45,700 CUP	54.0	2998	49,400 CUP
IMR 4064	52.0	2904	52,200 PSI	55.4	3048	59,600 PSI

Bullet: 139 GR. HDY GMX Dia: .284″ Col: 3.290″

Retumbo	68.0	2869	45,500 PSI	74.0C	3128	58,400 PSI
IMR 8133	70.0	2859	46,100 PSI	76.0C	3148	59,000 PSI
H1000	67.5	2847	46,300 PSI	73.0C	3065	56,000 PSI
IMR 7977	64.8	2790	46,400 PSI	70.0C	3064	56,900 PSI
IMR 7828	63.4	2841	45,800 PSI	70.0C	3191	59,400 PSI
IMR 4955	60.6	2773	50,200 PSI	65.9	3007	60,100 PSI
H4831	64.5	2878	50,200 PSI	68.8	3054	58,100 PSI
Hybrid 100V	58.5	2914	49,800 PSI	62.2	3114	59,500 PSI
IMR 4831	61.6	2862	48,400 PSI	65.5	3085	58,400 PSI
H4350	56.1	2834	45,300 PSI	59.7	3007	57,800 PSI
IMR 4451	57.3	2909	51,800 PSI	62.3	3114	59,500 PSI
H414	56.2	2820	51,300 PSI	59.8	3043	59,300 PSI
IMR 4350	59.6	2902	49,300 PSI	63.4	3099	58,500 PSI
760	56.2	2820	51,300 PSI	59.8	3043	59,300 PSI

Bullet: 140 GR. NOS PART Dia: .284″ Col: 3.250″

Retumbo	71.0	2955	46,100 CUP	75.0C	3107	49,400 CUP
IMR 8133	71.8	2940	46,200 PSI	78.0C	3217	58,100 PSI
H1000	67.0	2934	46,200 CUP	70.0	3036	50,600 CUP
IMR 7977	66.5	2891	47,400 PSI	72.0	3175	59,900 PSI
IMR 7828	64.0	2867	50,000 PSI	69.0	3095	59,200 PSI
IMR 4955	62.0	2840	50,700 PSI	67.4	3061	60,200 PSI
H4831	61.0	2841	46,300 CUP	64.0	2950	50,200 CUP
Hybrid 100V	57.0	2895	49,100 PSI	63.0	3138	59,800 PSI
IMR 4831	61.0	2880	52,200 PSI	65.4	3053	59,400 PSI
H4350	56.0	2808	45,500 CUP	59.0	2927	50,000 CUP
IMR 4451	57.1	2934	50,000 PSI	62.0	3136	58,800 PSI
H414	58.0	2897	46,700 CUP	60.2	2967	49,300 CUP
IMR 4350	59.0	2877	51,400 PSI	62.8	3045	58,600 PSI
760	58.0	2897	46,700 CUP	60.2	2967	49,300 CUP
Trail Boss	17.2	1405	21,400 PSI	24.5	1724	31,000 PSI

Bullet: 150 GR. BAR TTSX BT Dia: .284″ Col: 3.225″

Retumbo	66.9	2895	47,900 PSI	73.5C	3115	57,200 PSI
IMR 8133	69.7	2864	48,400 PSI	75.8C	3100	60,000 PSI
H1000	67.2	2847	49,200 PSI	73.8	3083	59,100 PSI
IMR 7977	64.0	2788	49,900 PSI	69.2C	3041	59,800 PSI
IMR 7828	63.4	2851	48,400 PSI	68.7	3100	59,200 PSI
IMR 4955	59.8	2719	49,900 PSI	65.1	2940	60100 PSI
H4831	62.7	2852	50,600 PSI	68.0	3080	60,200 PSI
Hybrid 100V	56.8	2829	47,800 PSI	60.7	3071	59,000 PSI
IMR 4831	60.4	2848	49,600 PSI	65.0	3075	59,600 PSI
H4350	57.9	2836	50,800 PSI	62.5	3041	59,800 PSI
IMR 4451	55.2	2842	51,800 PSI	60.0	3005	58,800 PSI
IMR 4350	58.9	2856	49,800 PSI	63.7	3059	59,300 PSI

Bullet: 150 GR. NOS PART Dia: .284″ Col: 3.270″

Retumbo	68.0	2818	43,300 CUP	72.5C	2998	50,300 CUP
IMR 8133	70.8	2838	45,300 PSI	77.0C	3133	59,200 PSI
H1000	65.0	2835	46,200 CUP	68.0	2936	49,900 CUP
IMR 7977	65.5	2741	45,400 PSI	70.9C	3042	58,900 PSI
IMR 7828	62.0	2792	51,700 PSI	66.2	2952	58,500 PSI
IMR 4955	60.6	2747	50,600 PSI	65.9	2952	60,100 PSI
H4831	59.0	2775	45,300 CUP	62.0	2986	51,100 CUP
Hybrid 100V	55.0	2746	48,800 PSI	60.0	2975	59,500 PSI
IMR 4831	58.0	2758	51,500 PSI	62.5	2925	59,400 PSI
H4350	55.0	2781	45,700 CUP	57.0	2859	50,100 CUP
IMR 4451	55.8	2861	51,700 PSI	60.7	3045	59,400 PSI
IMR 4350	57.0	2786	52,400 PSI	60.8	2931	59,400 PSI

Bullet: 160 GR. NOS PART Dia: .284″ Col: 3.290″

US 869	77.0	2786	52,300 PSI	80.0	2897	58,300 PSI
Retumbo	65.0	2756	43,200 CUP	69.5C	2915	49,900 CUP
IMR 8133	69.8	2820	48,800 PSI	75.0C	3035	59,400 PSI

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
H1000	63.0	2729	43,300 CUP	66.0	2839	49,600 CUP
IMR 7977	63.7	2673	46,700 PSI	68.9	2934	58,500 psi
IMR 7828	60.0	2709	50,500 PSI	64.0	2868	58,200 PSI
IMR 4955	58.7	2646	50,600 PSI	63.9	2846	59,800 PSI
Supreme 780	61.8	2829	52,400 PSI	65.7	2948	58,000 PSI
H4831	58.0	2695	46,400 CUP	60.0	2787	49,800 CUP
Hybrid 100V	53.0	2647	49,600 PSI	58.0	2839	58,300 PSI
IMR 4831	57.0	2707	50,600 PSI	61.0	2858	58,400 PSI
H4350	53.0	2651	46,400 CUP	55.5	2745	49,800 CUP
IMR 4451	54.3	2757	51,900 PSI	59.4	2945	59,700 PSI
IMR 4350	56.0	2697	49,700 PSI	59.5	2856	58,500 PSI
Bullet: 162 GR. HDY SPBT			**Dia: .284″**			**Col: 3.290″**
US 869	77.0	2820	49,800 PSI	80.0	2921	54,400 PSI
Retumbo	69.0	2787	43,900 CUP	73.5C	2963	50,500 CUP
IMR 8133	70.2	2846	49,500 PSI	75.5C	3069	60,200 PSI
H1000	67.0	2800	45,400 CUP	70.0	2905	49,600 CUP
IMR 7977	64.0	2702	47,500 PSI	69.5C	2955	59,300 PSI
IMR 7828	61.0	2724	50,800 PSI	65.0	2882	59,000 PSI
IMR 4955	59.0	2659	50,700 PSI	64.2	2863	60,200 PSI
H4831	60.0	2731	43,300 CUP	64.0	2871	49,800 CUP
Hybrid 100V	55.0	2725	49,700 PSI	60.0	2922	59,500 PSI
IMR 4831	58.0	2710	49,900 PSI	61.8	2877	59,500 PSI
H4350	55.0	2677	43,400 CUP	58.0	2799	49,400 CUP
IMR 4451	53.9	2755	51,200 PSI	58.7	2938	59,200 PSI
IMR 4350	56.0	2704	49,700 PSI	60.0	2861	58,100 PSI
Bullet: 170 GR. SIE RN			**Dia: .284″**			**Col: 3.270″**
US 869	77.0	2688	44,700 PSI	79.0	2826	51,300 PSI
Retumbo	71.0	2752	44,200 CUP	75.0C	2899	50,700 CUP
H1000	69.0	2744	45,600 CUP	71.0	2806	49,400 CUP
IMR 7828	62.0	2680	50,400 PSI	66.0	2839	58,700 PSI
H4831	63.0	2749	46,300 CUP	65.0	2806	48,900 CUP
Hybrid 100V	54.0	2604	49,400 PSI	59.0	2807	59,500 PSI
IMR 4831	59.0	2672	50,500 PSI	63.0	2828	59,100 PSI
H4350	58.0	2701	44,600 CUP	60.0	2767	48,500 CUP
IMR 4350	57.0	2669	50,700 PSI	61.5	2829	59,200 PSI
Bullet: 175 GR. NOS PART			**Dia: .284″**			**Col: 3.290″**
US 869	74.0	2632	49,300 PSI	77.0	2758	56,200 PSI
Retumbo	64.0	2650	45,400 CUP	68.0	2800	51,200 CUP
IMR 8133	66.2	2683	50,200 PSI	71.2C	2879	59,400 PSI
H1000	61.0	2567	45,000 CUP	64.5	2692	50,400 CUP
IMR 7977	61.9	2576	48,900 PSI	67.3	2822	60,200 PSI
IMR 7828	57.0	2549	49,800 PSI	61.0	2707	58,300 PSI
IMR 4955	56.6	2481	48,600 PSI	61.5	2711	59,700 PSI
H4831	55.0	2532	45,800 CUP	58.0	2660	50,200 CUP
Hybrid 100V	53.0	2567	49,700 PSI	57.5	2740	58,200 PSI
IMR 4831	54.0	2540	50,100 PSI	58.0	2710	58,700 PSI
H4350	51.0	2504	46,200 CUP	54.0	2617	51,400 CUP
IMR 4451	50.8	2541	49,400 PSI	55.2	2746	59,400 PSI
IMR 4350	54.0	2586	52,600 PSI	57.0	2698	58,800 PSI
Bullet: 180 GR. BER VLD			**Dia: .284″**			**Col: 3.290″**
Retumbo	64.4	2638	46,400 PSI	70.8C	2914	59,600 PSI
IMR 8133	67.7	2705	50,200 PSI	72.8C	2905	60,200 PSI
H1000	63.2	2605	46,000 PSI	69.5C	2884	60,000 PSI
IMR 7977	61.9	2573	48,700 PSI	67.0C	2793	59,200 PSI
IMR 7828	59.6	2570	45,300 PSI	65.5	2874	58,900 PSI
IMR 4955	56.9	2537	50,900 PSI	61.9	2716	60,200 PSI
H4831	58.6	2652	51,800 PSI	64.5	2830	60,200 PSI
Hybrid 100V	53.6	2594	48,800 PSI	59.0	2810	59,700 PSI
IMR 4831	56.4	2608	48,900 PSI	62.0	2841	59,500 PSI
H4350	52.0	2553	48,000 PSI	56.0	2752	59,000 PSI
IMR 4451	51.3	2590	51,400 PSI	55.8	2757	59,600 PSI
IMR 4350	55.5	2622	49,300 PSI	61.0	2837	59,400 PSI

7MM WEATHERBY MAGNUM

Case: Remington Twist: 1:10″
Barrel: 24″ Trim: 2.539″ Primer: Federal 215M, Large Rifle Magnum Match

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Bullet: 140 GR. SFT SP			**Dia: .284″**			**Col: 3.250″**
IMR 8133	76.3	3021	43,600 CUP	82.0C	3272	52,800 CUP
H1000	75.0	3104	42,800 CUP	79.0C	3273	49,900 CUP
IMR 7977	72.5	3022	44,500 CUP	77.5C	3269	54,800 CUP
IMR 7828	69.0	3098	45,100 CUP	74.0	3326	55,100 CUP
H4831	69.0	3023	43,600 CUP	74.0	3258	54,000 CUP
Hybrid 100V	60.0	2931	44,800 CUP	66.0	3196	53,300 CUP
IMR 4831	65.0	3031	42,800 CUP	69.5	3255	52,800 CUP
H4350	64.0	3046	43,800 CUP	68.5	3248	54,000 CUP
IMR 4350	62.0	3037	41,400 CUP	67.0	3261	53,100 CUP
Trail Boss	18.5	1365	22,700 CUP	26.5	1529	30,500 CUP
Bullet: 150 GR. NOS PART			**Dia: .284″**			**Col: 3.250″**
IMR 8133	76.3	3029	46,200 CUP	82.0C	3256	55,100 CUP
H1000	75.0	3073	45,400 CUP	79.0C	3223	52,200 CUP
IMR 7977	72.5	2984	46,400 CUP	77.5C	3186	54,500 CUP
IMR 7828	67.0	2989	48,500 CUP	72.0	3212	54,100 CUP
H4831	68.0	2973	44,800 CUP	72.0	3152	53,500 CUP
Hybrid 100V	61.0	2967	41,500 CUP	65.5C	3133	53,900 CUP
IMR 4831	64.0	2957	44,300 CUP	69.0	3172	53,900 CUP
H4350	64.0	3012	45,800 CUP	68.0	3180	54,000 CUP
IMR 4350	62.0	3003	44,000 CUP	66.5	3175	54,100 CUP
Bullet: 160 GR. BAR TTSX			**Dia: .284″**			**Col: 3.250″**
H1000	68.0	2778	45,600 CUP	75.0C	3034	54,800 CUP
IMR 7828 SSC	62.0	2699	43,900 CUP	69.5C	2998	54,200 CUP
H4831	62.0	2759	48,300 CUP	69.0C	3001	55,000 CUP
Hybrid 100V	58.0	2664	43,200 CUP	63.5C	2888	50,700 CUP
IMR 4831	59.0	2750	44,300 CUP	65.0	2991	54,100 CUP
H4350	55.0	2723	48,500 CUP	61.5	2960	55,300 CUP
IMR 4350	56.0	2715	46,900 CUP	62.0	2917	54,100 CUP
Bullet: 175 GR. HDY SP			**Dia: .284″**			**Col: 3.350″**
US 869	78.0	2751	41,600 CUP	80.0	2862	45,200 CUP
IMR 8133	72.1	2785	46,900 CUP	77.5C	2995	55,000 CUP
H1000	70.0	2844	45,000 CUP	74.7C	3022	54,000 CUP
IMR 7977	68.5	2765	46,600 CUP	73.2C	2964	55,000 CUP
IMR 7828	64.0	2773	45,000 CUP	67.5	2942	52,600 CUP
H4831	63.0	2724	43,500 CUP	67.5	2895	53,400 CUP
Hybrid 100V	57.0	2658	46,000 CUP	62.0C	2826	52,600 CUP
IMR 4831	60.0	2756	46,400 CUP	64.0	2880	53,000 CUP
H4350	60.0	2755	45,900 CUP	63.7	2899	53,600 CUP
IMR 4350	59.0	2784	45,800 CUP	63.0	2885	53,400 CUP
Bullet: 180 GR. BER VLD			**Dia: .284″**			**Col: 3.350″**
US 869	75.2	2698	42,800 CUP	81.8C	2927	50,900 CUP
IMR 8133	72.3	2817	47,500 CUP	77.8C	3034	54,800 CUP
H1000	66.3	2733	44,400 CUP	72.1C	2939	53,600 CUP
IMR 7977	69.5	2764	45,600 CUP	74.2C	2962	54,500 CUP
IMR 7828	62.6	2686	42,800 CUP	68.1C	2948	53,800 CUP
H4831	60.3	2647	42,800 CUP	66.3	2877	53,600 CUP
Hybrid 100V	56.4	2641	43,900 CUP	61.4	2832	52,600 CUP
IMR 4831	59.1	2705	45,700 CUP	64.3	2886	52,700 CUP
H4350	55.4	2630	44,400 CUP	60.3	2840	53,900 CUP

7MM SHOOTING TIMES WESTERNER

Case: Federal Twist: 1:10″
Barrel: 24″ Trim: 2.840″ Primer: Federal 215, Large Rifle Magnum

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Bullet: 120 GR. SIE SP			**Dia: .284″**			**Col: 3.585″**
Retumbo	85.0	3330	47,900 CUP	89.5C	3519	54,300 CUP
IMR 8133	85.6	3246	43,800 CUP	92.0C	3536	53,900 CUP
H1000	82.0	3255	45,300 CUP	86.0	3405	51,800 CUP
IMR 7977	79.7	3216	44,300 CUP	85.7	3491	54,300 CUP

NEVER EXCEED MAXIMUM LOADS

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
IMR 7828	75.8	3289	50,800 CUP	80.6	3436	53,000 CUP
IMR 4955	72.2	3250	47,300 CUP	78.1	3420	54,000 CUP
H4831	75.0	3200	46,300 CUP	78.5	3348	51,900 CUP
Hybrid 100V	69.0	3256	47,200 CUP	75.0	3498	53,800 CUP
IMR 4831	71.2	3257	46,100 CUP	75.7	3387	50,700 CUP
H4350	69.0	3185	45,400 CUP	73.0	3350	52,300 CUP
IMR 4350	68.0	3236	44,000 CUP	72.5	3402	52,700 CUP
Bullet: 139 GR. HDY SPBT			**Dia: .284″**			**Col: 3.585″**
Retumbo	83.0	3165	47,700 CUP	88.0C	3347	54,300 CUP
IMR 8133	82.6	3101	44,000 CUP	88.8C	3380	54,200 CUP
H1000	81.0	3119	46,400 CUP	85.5	3284	52,300 CUP
IMR 7977	76.4	3041	45,300 CUP	82.2	3283	53,700 CUP
IMR 7828	75.0	3190	49,700 CUP	79.7	3333	52,800 CUP
IMR 4955	69.9	3001	47,300 CUP	76.0	3267	54,300 CUP
H4831	72.0	3018	44,400 CUP	76.5	3181	51,900 CUP
Hybrid 100V	67.0	3085	45,800 CUP	72.0	3264	52,500 CUP
IMR 4831	70.5	3156	48,500 CUP	75.0	3302	54,200 CUP
H4350	69.0	3079	46,700 CUP	71.0	3183	52,300 CUP
IMR 4350	67.2	3125	46,000 CUP	71.5	3274	53,100 CUP
Bullet: 145 GR. SPR SP			**Dia: .284″**			**Col: 3.565″**
US 869	86.0	3055	48,300 CUP	91.0	3209	52,900 CUP
Retumbo	77.0	3052	48,000 CUP	81.5C	3195	53,700 CUP
IMR 8133	82.2	3021	43,200 CUP	88.4C	3292	53,300 CUP
H1000	74.0	3023	47,400 CUP	77.0	3120	52,100 CUP
IMR 7977	72.5	2957	45,700 CUP	78.0	3187	54,200 CUP
IMR 7828	69.5	2975	48,800 CUP	74.0	3136	53,700 CUP
IMR 4955	67.2	2954	46,400 CUP	73.1	3140	54,100 CUP
H4831	68.0	2937	47,800 CUP	72.0	3063	52,300 CUP
Hybrid 100V	64.0	2959	46,600 CUP	69.0	3144	53,000 CUP
IMR 4831	64.5	2909	46,000 CUP	69.0	3048	52,200 CUP
IMR 4350	65.0	2965	47,800 CUP	69.0	3168	54,300 CUP
Bullet: 150 GR. BAR TSX			**Dia: .284″**			**Col: 3.530″**
US 869	83.0	2930	43,600 CUP	88.0	3081	48,900 CUP
H50BMG	80.0	2908	46,600 CUP	84.0C	3005	49,500 CUP
Retumbo	71.0	2929	46,200 CUP	77.0C	3140	53,500 CUP
H1000	71.0	2889	45,000 CUP	76.0C	3038	51,600 CUP
IMR 7977	71.0	2975	48,600 CUP	76.4	3127	52,500 CUP
IMR 7828 SSC	69.0	2909	46,600 CUP	72.0	3047	52,200 CUP
IMR 4955	65.3	2898	47,200 CUP	71.0	3085	54,000 CUP
H4831	65.0	2842	47,100 CUP	70.0	3022	53,100 CUP
Hybrid 100V	64.0	2910	47,300 CUP	68.5	3060	52,800 CUP
IMR 4831	62.0	2849	44,500 CUP	66.5	3019	53,200 CUP
IMR 4350	60.0	2813	46,100 CUP	65.5	3006	53,900 CUP
Bullet: 160 GR. SFT SP			**Dia: .284″**			**Col: 3.565″**
US 869	85.0	2922	46,400 CUP	90.0	3041	50,800 CUP
H50BMG	88.0	2929	46,100 CUP	90.0C	2970	46,600 CUP
Retumbo	75.0	2909	46,700 CUP	80.2	3056	53,600 CUP
IMR 8133	78.5	2896	44,300 CUP	84.5C	3139	53,400 CUP
H1000	76.0	2930	44,300 CUP	80.7	3084	51,500 CUP
IMR 7977	72.5	2872	46,000 CUP	78.0	3084	54,000 CUP
IMR 7828	72.5	2900	48,400 CUP	77.0	3085	54,200 CUP
IMR 4955	65.5	2788	46,400 CUP	71.2	2998	54,200 CUP
H4831	70.0	2884	45,900 CUP	74.0	3037	52,300 CUP
Hybrid 100V	64.0	2850	46,300 CUP	69.0	3013	52,500 CUP
IMR 4831	65.0	2730	41,600 CUP	69.5	2926	51,800 CUP
Bullet: 175 GR. NOS PART			**Dia: .284″**			**Col: 3.585″**
US 869	84.0	2908	50,100 CUP	88.0	3020	53,200 CUP
H50BMG	85.0	2851	46,900 CUP	89.0C	2973	52,300 CUP
Retumbo	72.0	2819	48,300 CUP	77.0	2967	54,200 CUP
IMR 8133	76.5	2823	47,500 CUP	82.5C	3010	54,000 CUP
H1000	70.0	2833	47,700 CUP	74.0	2944	51,900 CUP
IMR 7977	69.7	2771	48,700 CUP	75.0	2949	53,800 CUP
IMR 7828	67.5	2770	47,700 CUP	71.7	2910	53,000 CUP
IMR 4955	62.2	2633	46,200 CUP	67.7	2841	54,400 CUP
Hybrid 100V	64.0	2771	47,900 CUP	68.0	2883	52,900 CUP
IMR 4831	63.5	2698	47,900 CUP	67.5	2831	53,900 CUP
Bullet: 180 GR. BER VLD			**Dia: .284″**			**Col: 3.655″**
US 869	81.8	2822	46,200 CUP	87.0	2988	52,700 CUP
H50BMG	80.8	2772	48,800 CUP	86.0C	2894	52,400 CUP
Retumbo	69.3	2760	49,700 CUP	73.8	2876	53,500 CUP
IMR 8133	76.5	2787	45,600 CUP	82.5C	3010	53,600 CUP
H1000	70.0	2771	48,800 CUP	74.5	2892	53,300 CUP
IMR 7977	70.3	2757	48,800 CUP	74.8	2901	53,200 CUP
IMR 7828	67.8	2789	48,200 CUP	72.0	2920	53,600 CUP
IMR 4955	63.9	2736	50,300 CUP	68.0	2849	54,300 CUP

28 NOSLER

Case: Nosler Twist: 1:9″
Barrel: 24″ Trim: 2.575″ Primer: Winchester LRM, Large Rifle Magnum

Powder	Grs.	Vel.	Pressure	Grs.	Vel.	Pressure
Bullet: 120 GR. NOS BT			**Dia: .284″**			**Col: 3.340″**
US 869	93.2	3192	48,900 PSI	101.0C	3535	62,500 PSI
H50BMG	90.2	3062	43,900 PSI	97.0C	3346	55,600 PSI
Retumbo	83.8	3170	44,900 PSI	90.2	3576	62,900 PSI
IMR 8133	84.0	3184	46,000 PSI	91.0C	3579	61,600 PSI
H1000	84.0	3268	50,500 PSI	89.4C	3547	63,000 PSI
IMR 7977	82.2	3280	51,000 PSI	87.5	3545	62,700 PSI
IMR 7828	79.9	3336	52,600 PSI	84.8	3594	62,900 PSI
IMR 4955	77.8	3313	52,600 PSI	82.8	3566	63,100 PSI
H4831	78.5	3323	54,700 PSI	83.5	3507	62,400 PSI
IMR 4831	75.0	3249	49,700 PSI	81.6	3557	62,500 PSI
Bullet: 140 GR. NOS E-TIP			**Dia: .284″**			**Col: 3.340″**
US 869	90.2	3057	52,100 PSI	96.0	3305	62,500 PSI
H50BMG	88.1	3089	56,600 PSI	93.8C	3244	63,100 PSI
Retumbo	79.1	3131	55,100 PSI	84.1	3307	62,800 PSI
IMR 8133	81.2	3093	51,600 PSI	87.5	3375	63,200 PSI
H1000	78.2	3107	56,300 PSI	83.2	3254	62,400 PSI
IMR 7977	76.8	3018	52,800 PSI	81.8	3233	61,900 PSI
IMR 7828	73.1	3059	53,200 PSI	77.8	3256	62,200 PSI
IMR 4955	71.3	3038	54,200 PSI	75.8	3227	62,800 PSI
H4831	71.8	3031	54,900 PSI	76.4	3194	62,400 PSI
IMR 4831	69.3	3014	53,300 PSI	73.8	3224	62,600 PSI
Bullet: 145 GR. SPR SPBT			**Dia: .284″**			**Col: 3.340″**
US 869	88.9	3083	52,800 PSI	94.6	3307	62,700 PSI
H50BMG	85.7	3080	57,500 PSI	91.2C	3206	62,900 PSI
Retumbo	78.3	3089	53,800 PSI	83.4	3275	62,700 PSI
IMR 8133	81.7	3057	50,500 PSI	87.9	3356	63,300 PSI
H1000	75.4	3096	57,400 PSI	80.3	3226	63,000 PSI
IMR 7977	75.0	3042	55,200 PSI	79.8	3211	62,600 PSI
IMR 7828	73.3	3098	54,800 PSI	78.0	3260	62,500 PSI
IMR 4955	70.7	3074	56,900 PSI	75.3	3218	63,100 PSI
H4831	70.1	3012	54,000 PSI	74.6	3190	62,800 PSI
IMR 4831	69.9	3040	53,900 PSI	74.4	3220	62,600 PSI
Bullet: 150 GR. BAR TTSX BT						**Dia: .284″**
Col: 3.340″						
US 869	88.5	3048	54,400 PSI	94.5	3265	63,500 PSI
H50BMG	81.4	3000	58,800 PSI	86.6C	3103	62,400 PSI
Retumbo	72.3	2959	53,300 PSI	77.1	3137	62,400 PSI
IMR 8133	78.7	3011	51,800 PSI	85.0	3273	62,700 PSI
H1000	74.5	3016	57,300 PSI	79.3	3160	63,400 PSI
IMR 7977	71.6	2965	56,400 PSI	76.2	3111	62,800 PSI
Bullet: 160 GR. NOS PART			**Dia: .284″**			**Col: 3.340″**
US 869	88.2	3025	55,500 PSI	93.8	3199	63,700 PSI
H50BMG	83.2	2934	55,900 PSI	88.6C	3086	62,800 PSI
Retumbo	76.0	2984	55,700 PSI	80.9	3131	63,000 PSI
IMR 8133	78.2	2956	52,900 PSI	84.3	3189	62,700 PSI
H1000	75.8	2984	57,800 PSI	80.6	3114	63,500 PSI
IMR 7977	73.5	2922	55,900 PSI	78.2	3076	62,600 PSI

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Bullet: 162 GR. HDY SPBT			**Dia: .284″**		**Col: 3.340″**	
US 869	89.0	3013	54,100 PSI	94.2	3195	62,600 PSI
H50BMG	83.8	2908	54,200 PSI	90.7C	3103	63,800 PSI
Retumbo	77.8	2982	53,900 PSI	82.8	3161	62,900 PSI
IMR 8133	78.6	2926	50,500 PSI	84.8	3200	62,400 PSI
H1000	76.3	2975	55,100 PSI	81.2	3153	63,500 PSI
Bullet: 175 GR. NOS PART			**Dia: .284″**		**Col: 3.340″**	
US 869	85.7	2873	52,900 PSI	91.2	3085	62,700 PSI
H50BMG	80.9	2850	57,800 PSI	84.8	2955	62,900 PSI
Retumbo	72.3	2858	56,000 PSI	78.0	3018	64,000 PSI
IMR 8133	75.8	2809	51,200 PSI	82.0	3045	63,000 PSI
H1000	72.8	2864	57,300 PSI	77.5	2996	63,800 PSI
IMR 7977	71.6	2792	54,600 PSI	77.0	2973	63,400 PSI
IMR 7828	68.1	2831	55,900 PSI	71.7	2959	62,500 PSI
Bullet: 180 GR. BER VLD			**Dia: .284″**		**Col: 3.340″**	
US 869	85.1	2854	51,900 PSI	90.6	3087	62,900 PSI
H50BMG	85.2	2808	53,700 PSI	90.6C	2968	62,600 PSI
Retumbo	76.6	2804	51,600 PSI	81.5	3017	63,300 PSI
IMR 8133	75.7	2799	51,200 PSI	81.8	3039	62,500 PSI
H1000	74.8	2830	55,100 PSI	79.6	2976	62,400 PSI
IMR 7977	73.7	2761	52,500 PSI	78.5	2957	62,600 PSI
IMR 7828	69.6	2825	54,700 PSI	74.1	2966	62,200 PSI

30 CARBINE

Case: Winchester Twist: 1:20″
Barrel: 20″ Trim: 1.285″ Primer: CCI 400, Small Rifle

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Bullet: 85 GR. SIE RN			**Dia: .308″**		**Col: 1.625″**	
H4227	14.5	2054	25,200 CUP	15.5C	2181	30,700 CUP
296	16.5	2293	26,000 CUP	17.5	2458	34,800 CUP
H110	16.5	2293	26,000 CUP	17.5	2458	34,800 CUP
Lil'Gun	16.0	2140	20,300 CUP	17.0	2285	24,800 CUP
Bullet: 100 GR. HDY SJ			**Dia: .308″**		**Col: 1.760″**	
IMR 4227				16.0C	2005	40,000 CUP
Bullet: 100 GR. SPR SP			**Dia: .308″**		**Col: 1.625″**	
H4227	13.0	1879	28,900 CUP	14.5C	2026	33,600 CUP
296	14.5	2075	28,200 CUP	15.5	2202	36,100 CUP
H110	14.5	2075	28,200 CUP	15.5	2202	36,100 CUP
Lil'Gun	14.0	2032	26,700 CUP	15.0	2132	28,300 CUP
Bullet: 110 GR. HDY JRN			**Dia: .308″**		**Col: 1.680″**	
IMR 4227	13.0	1826	30,100 CUP	14.5C	2003	38,800 CUP
H4227	13.0	1826	30,100 CUP	14.5C	2003	38,800 CUP
296	14.0	2006	32,000 CUP	15.0	2106	36,500 CUP
H110	14.0	2006	32,000 CUP	15.0	2106	36,500 CUP
Lil'Gun	14.0	1998	28,000 CUP	15.0	2064	29,800 CUP

300 AAC BLACKOUT

Case: Hornady Twist: 1:8″
Barrel: 16″ Trim: 1.363″ Primer: Remington 7 1/2, Small Rifle Magnum

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Bullet: 110 GR. HDY V-MAX			**Dia: .308″**		**Col: 2.050″**	
CFE BLK	22.5C	2168	28,500 PSI	23.7C	2303	35,900 PSI
IMR 4227	19.0C	2120	40,900 PSI	20.0C	2220	47,600 PSI
296	18.4	2191	38,900 PSI	19.4	2286	48,400 PSI
H110	18.4	2191	38,900 PSI	19.4	2286	48,400 PSI
Lil'Gun	19.9	2368	39,700 PSI	21.0C	2474	46,400 PSI
Trail Boss	4.9	1023	12,400 PSI	6.2	1040	18,600 PSI
Bullet: 115 GR. BER TGT FB			**Dia: .308″**		**Col: 2.050″**	
CFE BLK	21.2	2004	22,400 PSI	23.0C	2169	28,600 PSI
IMR 4227	17.9	1987	34,700 PSI	19.8C	2178	45,300 PSI
296	18.3	2134	34,100 PSI	20.3	2336	52,700 PSI
H110	18.3	2134	34,100 PSI	20.3	2336	52,700 PSI
Lil'Gun	20.2	2362	41,000 PSI	22.5C	2486	44,900 PSI
Trail Boss	4.5	965	17,100 PSI	5.5	1062	18,400 PSI

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Bullet: 125 GR. NOS BT			**Dia: .308″**		**Col: 2.060″**	
CFE BLK	19.0	1866	23,700 PSI	20.0C	1945	26,500 PSI
IMR 4227	15.7	1790	32,200 PSI	17.5C	1953	38,900 PSI
296	15.7	1921	32,400 PSI	18.5C	2205	52,500 PSI
H110	15.7	1921	32,400 PSI	18.5C	2205	52,500 PSI
Lil'Gun	17.8	2210	42,700 PSI	21.0C	2402	48,800 PSI
Trail Boss				6.1	1060	21,300 PSI
Bullet: 130 GR. SPR HP			**Dia: .308″**		**Col: 2.005″**	
CFE BLK	20.9	1966	28,200 PSI	22.0C	2092	37,100 PSI
IMR 4227	17.4	1885	38,700 PSI	19.4C	2062	49,000 PSI
296	17.1	1942	37,900 PSI	18.6	2083	51,700 PSI
H110	17.1	1942	37,900 PSI	18.6	2083	51,700 PSI
Lil'Gun	17.0	2090	41,700 PSI	18.5	2192	51,200 PSI
Trail Boss				6.4	967	25,800 PSI
Bullet: 135 GR. SIE VAR HP			**Dia: .308″**		**Col: 2.055″**	
CFE BLK	20.7	1895	24,600 PSI	22.5C	2090	37,000 PSI
IMR 4227	17.8	1865	38,000 PSI	19.8C	2057	51,300 PSI
296	16.9	1881	38,500 PSI	18.8C	2077	50,800 PSI
H110	16.9	1881	38,500 PSI	18.8C	2077	50,800 PSI
Lil'Gun	17.3	2069	42,000 PSI	19.3	2178	50,700 PSI
Trail Boss				6.4	869	21,600 PSI
Bullet: 140 GR. NOS HPBT			**Dia: .308″**		**Col: 2.055″**	
CFE BLK	18.5	1772	20,400 PSI	20.0C	1938	28,600 PSI
IMR 4227	15.5	1689	30,200 PSI	18.3C	2018	52,500 PSI
296	15.1	1793	31,500 PSI	17.8	2047	52,700 PSI
H110	15.1	1793	31,500 PSI	17.8	2047	52,700 PSI
Lil'Gun	15.1	1922	36,000 PSI	17.8	2139	52,800 PSI
Trail Boss				6.0	929	27,100 PSI
Bullet: 150 GR. HDY IB			**Dia: .308″**		**Col: 2.235″**	
CFE BLK	18.8	1810	26,600 PSI	20.5C	1940	33,500 PSI
IMR 4227	15.6	1683	34,500 PSI	17.8	1899	48,700 PSI
296	14.6	1725	34,400 PSI	17.2	1971	52,800 PSI
H110	14.6	1725	34,400 PSI	17.2	1971	52,800 PSI
Lil'Gun	14.6	1855	39,000 PSI	17.2	2062	52,800 PSI
Trail Boss				6.0	871	28,900 PSI
Bullet: 168 GR. HDY BTHP			**Dia: .308″**		**Col: 2.230″**	
CFE BLK	17.4	1653	25,900 PSI	20.0C	1887	41,800 PSI
IMR 4227	15.6	1658	40,200 PSI	17.2	1812	52,500 PSI
296	14.5	1679	40,600 PSI	16.0	1817	53,300 PSI
H110	14.5	1679	40,600 PSI	16.0	1817	53,300 PSI
Lil'Gun	13.9	1735	41,400 PSI	15.3	1866	52,900 PSI
Bullet: 175 GR. SIE HPBT			**Dia: .308″**		**Col: 2.215″**	
CFE BLK	17.9	1691	30,000 PSI	19.5C	1821	37,400 PSI
IMR 4227	15.3	1620	38,900 PSI	16.8	1775	53,000 PSI
296	14.5	1652	40,600 PSI	16.0	1785	52,600 PSI
H110	14.5	1652	40,600 PSI	16.0	1785	52,600 PSI
Lil'Gun	14.1	1730	42,500 PSI	15.4	1834	52,800 PSI
Bullet: 180 GR. SPR SP			**Dia: .308″**		**Col: 2.210″**	
IMR 4198	15.9	1567	33,400 PSI	16.8C	1636	37,900 PSI
CFE BLK	16.4	1516	26,900 PSI	19.3	1799	51,200 PSI
H4198	16.7	1596	31,400 PSI	17.6C	1675	35,900 PSI
IMR 4227	14.8	1579	41,400 PSI	16.3	1718	52,900 PSI
296	14.1	1624	44,500 PSI	15.6	1736	53,700 PSI
H110	14.1	1624	44,500 PSI	15.6	1736	53,700 PSI
Lil'Gun	13.4	1680	45,100 PSI	14.8	1786	52,900 PSI
Bullet: 208 GR. HDY A-MAX			**Dia: .308″**		**Col: 2.260″**	
IMR 4198				11.1	1080	22,500 PSI
CFE BLK				11.6	1041	13,400 PSI
H4198				11.1	1052	19,900 PSI
IMR 4227				9.8	1041	25,800 PSI
296				9.2	1060	22,700 PSI
H110				9.2	1060	22,700 PSI
Lil'Gun				8.2	1050	22,200 PSI

NEVER EXCEED MAXIMUM LOADS

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Bullet: 220 GR. SIE HPBT				**Dia: .308″**		**Col: 2.260″**
IMR 4198				10.9	1057	22,500 PSI
CFE BLK				12.1	1060	18,200 PSI
H4198				11.2	1069	21,800 PSI
IMR 4227				10.1	1044	26,700 PSI
296				9.2	1046	28,100 PSI
H110				9.2	1046	28,100 PSI
Lil'Gun				8.4	1062	26,500 PSI
Bullet: 230 GR. BER TACT				**Dia: .308″**		**Col: 2.260″**
IMR 4198				10.8	1062	27,900 PSI
CFE BLK				11.3	1045	20,000 PSI
H4198				10.8	1066	26,600 PSI
IMR 4227				9.6	1046	33,100 PSI
296				9.0	1058	32,900 PSI
H110				9.0	1058	32,900 PSI
Lil'Gun				8.2	1068	30,000 PSI

300 HAM'R

Case: WC Twist: 1:15″
Barrel: 18″ Trim: 1.595″ Primer: CCI 450

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Bullet: 110 GR. BAR TSX				**Dia: .308″**		**Col: 2.255″**
CFE BLK	26.0	2437	42,800 CUP	27.5C	2609	49,300 CUP
Bullet: 125 GR. SIE SP				**Dia: .308″**		**Col: 2.220″**
IMR 4198	20.8	2054	40,200 CUP	23.4C	2313	52,500 CUP
CFE BLK	24.7	2300	39,700 CUP	27.6C	2557	52,500 CUP
H4198	21.6	2118	39,900 CUP	24.3C	2367	52,200 CUP
Bullet: 130 GR. SPR FN				**Dia: .308″**		**Col: 2.150″**
IMR 4198	19.9	1997	39,500 CUP	22.4C	2233	52,300 CUP
CFE BLK	22.5	2165	40,600 CUP	25.3C	2398	52,700 CUP
H4198	20.4	1979	37,500 CUP	23.2C	2286	52,400 CUP
Bullet: 135 GR. SIE SP				**Dia: .308″**		**Col: 2.245″**
IMR 4198	19.6	1966	39,600 CUP	22.0C	2185	52,100 CUP
CFE BLK	21.8	2117	40,700 CUP	24.6C	2341	52,300 CUP
H4198	20.5	2006	39,500 CUP	23.0C	2239	52,600 CUP
Bullet: 150 GR. SFT AF FN				**Dia: .308″**		**Col: 2.200″**
IMR 4198	19.1	1870	44,200 CUP	21.4C	2072	52,300 CUP
CFE BLK	18.5	1838	40,100 CUP	21.0	2048	52,400 CUP
H4198	19.4	1847	39,100 CUP	22.0C	2103	52,400 CUP

30-30 WINCHESTER

Case: Winchester Twist: 1:12″
Barrel: 24″ Trim: 2.030″ Primer: Winchester LR, Large Rifle

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Bullet: 110 GR. SPR FP				**Dia: .308″**		**Col: 2.415″**
Varget	34.5	2365	27,200 CUP	38.0C	2572	31,900 CUP
IMR 4320	34.3	2322	31,300 CUP	36.5	2435	36,100 CUP
IMR 4064	33.3	2342	31,800 CUP	35.5C	2506	36,100 CUP
748				36.8	2595	33,000 CUP
BL-C(2)	36.0	2351	24,500 CUP	39.0	2526	25,400 CUP
IMR 4895	33.8	2290	30,500 CUP	36.0C	2459	35,400 CUP
H335	35.0	2487	28,800 CUP	38.0	2684	34,300 CUP
H4895	34.0	2417	28,600 CUP	37.0	2605	31,100 CUP
IMR 3031	30.5	2281	22,400 CUP	32.5C	2445	33,700 CUP
Benchmark	30.5	2406	36,400 CUP	32.5	2507	37,800 CUP
IMR 4198	22.5	2168	27,800 CUP	24.0	2302	35,400 CUP
H4198	23.0	2174	27,100 CUP	25.5	2409	35,900 CUP
Bullet: 130 GR. SPR FP				**Dia: .308″**		**Col: 2.540″**
CFE 223	32.8	2378	31,500 PSI	35.7	2533	37,000 PSI
Varget	32.5	2312	30,200 CUP	36.0C	2496	35,700 CUP
IMR 4320	34.0	2201	33,700 CUP	36.3	2384	37,200 CUP
IMR 4064	33.3	2196	27,200 CUP	35.5C	2424	37,300 CUP
BL-C(2)	34.0	2305	28,500 CUP	37.5	2473	32,800 CUP
H335	30.5	2173	27,600 CUP	34.0	2423	34,700 CUP
H4895	31.5	2248	27,600 CUP	35.0	2482	35,300 CUP
IMR 3031	29.6	2159	27,400 CUP	31.5	2323	33,500 CUP
Benchmark	27.7	2165	33,700 CUP	29.7	2295	37,100 CUP
IMR 4198	22.0	2025	28,700 CUP	23.5	2187	36,200 CUP
H4198	22.5	2082	29,200 CUP	24.5	2234	36,400 CUP
Bullet: 140 GR. HDY MFTX				**Dia: .308″**		**Col: 2.550″**
LVR	29.0	2175	32,400 PSI	34.0C	2436	39,700 PSI
Varget	27.0	1986	31,600 PSI	30.5C	2225	39,900 PSI
IMR 4320	26.0	1814	29,900 PSI	30.0C	2094	39,500 PSI
IMR 4064	26.0	1909	30,600 PSI	30.0C	2209	41,000 PSI
IMR 4166	26.0	1826	30,300 PSI	30.0C	2134	41,100 PSI
BL-C(2)	29.0	2030	31,600 PSI	32.7	2239	39,900 PSI
H335	25.0	1977	31,200 PSI	28.8	2224	40,600 PSI
H4895	26.0	2077	36,800 PSI	29.7	2273	40,300 PSI
IMR 3031	25.0	1963	32,300 PSI	28.5	2216	41,600 PSI
Benchmark	24.0	1839	26,400 PSI	28.0	2160	38,800 PSI
Bullet: 150 GR. SIE FN				**Dia: .308″**		**Col: 2.550″**
760				35.9	2090	30,000 CUP
LVR	35.0	2314	28,700 CUP	38.5C	2512	34,800 CUP
CFE 223	33.9	2274	31,700 PSI	36.8	2409	36,700 PSI
Varget	31.0	2172	31,100 CUP	34.5	2349	36,200 CUP
IMR 4320	30.5	2062	32,500 CUP	32.5	2127	36,500 CUP
IMR 4064	31.0	2106	33,300 CUP	33.3	2236	36,200 CUP
IMR 4166	29.7	2114	35,700 PSI	32.6	2262	41,300 PSI
748				34.5	2310	36,000 CUP
BL-C(2)	33.0	2021	21,800 CUP	37.0	2358	33,900 CUP
IMR 4895	31.5	2071	32,200 CUP	33.5	2213	34,300 CUP
H335	29.7	2098	28,700 CUP	33.0	2308	36,200 CUP
H4895	30.5	2138	27,900 CUP	34.0	2390	36,700 CUP
IMR 8208 XBR	30.0	2213	35,000 CUP	32.0	2316	36,700 CUP
IMR 3031	28.7	2085	28,700 CUP	30.5	2192	36,000 CUP
Benchmark	27.0	2042	32,100 CUP	29.0	2183	37,200 CUP
IMR 4198	21.5	1888	27,800 CUP	23.0	2055	35,500 CUP
H4198	21.6	1924	26,900 CUP	24.0	2110	36,800 CUP
Bullet: 160 GR. CAST LFN				**Dia: .308″**		**Col: 2.485″**
H4895	17.5	1351	15,200 CUP	21.0	1562	23,100 CUP
H4198	15.0	1420	15,000 CUP	17.0	1616	20,600 CUP
Trail Boss	6.5	997	20,500 CUP	9.0	1195	29,100 CUP
Bullet: 160 GR. HDY FTX				**Dia: .308″**		**Col: 2.550″**
LVR	32.0	2221	31,200 CUP	35.5C	2389	37,500 CUP
CFE 223	31.6	2170	30,700 PSI	34.0	2302	36,700 PSI
Varget	29.8	2081	31,700 CUP	32.4	2235	35,900 CUP
IMR 4320	28.7	1900	30,900 CUP	31.2	2056	36,400 CUP
IMR 4064	28.7	2000	33,700 CUP	30.5	2095	36,200 CUP
IMR 4166	27.8	2002	35,600 PSI	29.6	2126	41,400 PSI
748	29.8	1994	31,500 CUP	31.7	2112	36,400 CUP
BL-C(2)	29.1	1863	27,400 CUP	31.0	2035	35,600 CUP
IMR 4895	28.2	1912	31,700 CUP	30.0	2065	36,900 CUP
H335	28.2	2005	31,600 CUP	30.0	2131	37,100 CUP
H4895	27.8	2045	31,100 CUP	30.0	2200	35,500 CUP
IMR 8208 XBR	27.0	2045	33,900 CUP	30.0	2207	37,000 CUP
IMR 3031	26.8	1992	34,300 CUP	28.5	2094	36,800 CUP
Benchmark	26.1	1933	31,000 CUP	27.8	2045	35,400 CUP
Bullet: 170 GR. SIE FP				**Dia: .308″**		**Col: 2.550″**
760				33.6	1975	30,000 CUP
LVR	33.0	2145	28,900 CUP	36.3C	2332	35,400 CUP
CFE 223	32.2	2115	30,600 PSI	35.0	2258	36,800 PSI
Varget	29.5	1976	30,200 CUP	33.0	2168	36,500 CUP
IMR 4320	30.0	1976	35,400 CUP	32.5	2068	36,300 CUP
IMR 4064	29.8	1991	30,700 CUP	31.7	2090	35,300 CUP
IMR 4166	28.8	1977	36,400 PSI	30.7	2087	40,600 PSI
748				32.0	2145	36,000 CUP
BL-C(2)	32.5	2048	27,900 CUP	36.0	2227	34,700 CUP
IMR 4895	29.8	1938	30,500 CUP	31.7	2068	35,300 CUP
H335	27.5	1934	29,000 CUP	30.5	2086	36,300 CUP
H4895	27.5	1947	28,200 CUP	30.5	2138	35,200 CUP

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
IMR 8208 XBR	27.8	2052	36,400 CUP	30.9	2181	37,500 CUP
IMR 3031	27.5	1959	27,500 CUP	29.2	2085	35,800 CUP
Benchmark	25.3	1894	32,200 CUP	27.0	2001	36,100 CUP
IMR 4198	21.0	1800	27,400 CUP	22.3	1896	32,100 CUP
H4198	20.5	1764	27,300 CUP	22.5	1918	32,600 CUP

308 WINCHESTER

Case: Winchester Twist: 1:12″
Barrel: 24″ Trim: 2.005″ Primer: Federal 210M, Large Rifle Match

Bullet: 110 GR. BAR TSX FB Dia: .308″ Col: 2.690″

IMR 4895	45.0	2831	36,100 PSI	50.0C	3128	46,600 PSI
H335	47.3	3078	40,800 PSI	52.5	3358	53,900 PSI
H4895	46.1	3055	40,300 PSI	49.0C	3212	46,200 PSI
IMR 8208 XBR	45.5	2975	37,700 PSI	50.0C	3266	50,000 PSI
IMR 3031	43.2	2913	37,700 PSI	47.0C	3170	47,700 PSI
Benchmark	45.2	3005	39,700 PSI	50.2C	3316	54,200 PSI
H322	46.1	3139	48,100 PSI	49.0C	3334	59,000 PSI
IMR 4198	39.1	3064	46,200 PSI	41.6	3251	57,600 PSI
H4198	39.9	3124	48,800 PSI	42.5	3278	58,700 PSI

Bullet: 125 GR. SFIRE Dia: .308″ Col: 2.700″

IMR 4895	43.0	2772	42,100 PSI	48.0	3068	55,000 PSI
H335	42.0	2840	42,100 PSI	46.5	3075	52,300 PSI
H4895	42.0	2796	39,500 PSI	46.0C	3034	49,600 PSI
IMR 8208 XBR	42.0	2830	41,200 PSI	46.5C	3110	54,100 PSI
IMR 3031	39.0	2741	40,600 PSI	43.5C	3007	51,400 PSI
Benchmark	40.0	2736	38,200 PSI	44.5C	3019	52,000 PSI
H322	38.0	2760	43,500 PSI	42.5C	2985	52,800 PSI

Bullet: 125 GR. SIE SP Dia: .308″ Col: 2.700″

Varget	48.0	3049	42,400 CUP	50.0C	3135	45,700 CUP
IMR 4320	48.7	2952	46,400 PSI	53.0C	3167	55,200 PSI
IMR 4064	46.0	2891	42,500 PSI	50.1C	3119	52,100 PSI
IMR 4166	45.6	2860	42,800 PSI	50.7C	3113	53,700 PSI
748				52.0	3175	50,000 CUP
BL-C(2)	48.0	2876	35,900 CUP	52.0	3069	42,600 CUP
IMR 4895	48.0	2969	45,600 PSI	51.8C	3185	55,200 PSI
H335	44.0	2840	37,500 CUP	48.0	3080	48,200 CUP
H4895	45.0	2891	36,800 CUP	49.0C	3127	48,400 CUP
IMR 8208 XBR	46.0	3000	50,200 PSI	49.2C	3174	60,100 PSI
IMR 3031	43.2	2866	40,200 PSI	48.0C	3194	58,100 PSI
Benchmark	43.0	2821	40,600 CUP	47.5	3070	50,700 CUP
H322	42.0	2888	43,400 CUP	45.0	3052	51,400 CUP
H4198	36.0	2841	46,600 CUP	39.5	2988	49,800 CUP

Bullet: 130 GR. SPR HP Dia: .308″ Col: 2.615″

CFE 223	52.0	3054	49,600 PSI	54.0	3202	59,500 PSI
Varget	47.0	2975	42,900 CUP	50.0C	3130	50,400 CUP
IMR 4320	46.8	2819	44,100 PSI	52.0C	3140	59,600 PSI
IMR 4064	45.0	2809	43,600 PSI	49.5C	3036	52,300 PSI
IMR 4166	44.9	2796	43,200 PSI	50.0C	3059	54,800 PSI
BL-C(2)	48.0	2897	42,400 CUP	51.5	3089	49,700 CUP
IMR 4895	45.9	2867	44,500 PSI	51.0C	3153	57,800 PSI
H335	43.0	2805	40,400 CUP	46.0	2980	49,700 CUP
H4895	45.0	2903	41,800 CUP	49.0C	3099	50,100 CUP
IMR 8208 XBR	43.0	2834	46,900 PSI	48.0C	3110	62,000 PSI
IMR 3031	42.0	2827	42,600 PSI	46.7C	3130	59,800 PSI
Benchmark	41.0	2704	38,800 CUP	46.0	2985	50,100 CUP
H322	40.0	2754	41,200 CUP	43.0	2924	49,800 CUP
H4198	35.0	2745	44,700 CUP	37.0	2837	49,700 CUP

Bullet: 150 GR. NOS BT Dia: .308″ Col: 2.800″

CFE 223	48.4	2764	44,500 PSI	51.5	2974	57,000 PSI
Varget	44.0	2788	43,300 CUP	47.0C	2937	50,300 CUP
IMR 4320	44.1	2658	44,600 PSI	49.0C	2936	59,800 PSI
IMR 4064	43.0	2663	44,700 PSI	47.7C	2903	57,100 PSI
IMR 4166	43.0	2677	47,800 PSI	48.0C	2934	60,300 PSI
748				48.5	2865	48,000 CUP
BL-C(2)	45.0	2661	40,200 CUP	48.0	2839	50,000 CUP
IMR 4895	42.6	2631	42,300 PSI	47.3C	2920	57,700 PSI
H335	41.0	2619	42,600 CUP	44.0	2787	51,200 CUP
H4895	43.0	2742	43,200 CUP	45.5	2870	51,000 CUP
IMR 8208 XBR	40.0	2604	45,500 PSI	44.5C	2870	60,800 PSI
IMR 3031	40.2	2658	44,300 PSI	43.5C	2881	59,200 PSI
Benchmark	39.0	2521	38,800 CUP	43.0	2752	49,900 CUP
H322	37.0	2508	39,100 CUP	40.0	2702	50,500 CUP
Trail Boss	10.0	1176	25,800 PSI	14.0	1417	27,100 PSI

Bullet: 150 GR. NOS E-TIP Dia: .308″ Col: 2.800″

CFE 223	49.0	2865	52,300 PSI	51.1	2990	60,400 PSI
Varget	42.3	2670	46,700 PSI	46.5C	2914	60,400 PSI
IMR 4320	43.7	2637	48,100 PSI	47.6	2876	60,100 PSI
IMR 4064	42.9	2659	47,500 PSI	46.7C	2883	59,800 PSI
IMR 4166	41.5	2570	48,800 PSI	45.7C	2839	61,400 PSI
748	43.9	2762	50,800 PSI	47.3	2923	59,600 PSI
BL-C(2)	43.7	2654	47,800 PSI	47.0	2868	60,100 PSI
IMR 4895	42.7	2684	48,800 PSI	46.5C	2899	60,100 PSI
H335	40.4	2551	46,500 PSI	43.4	2790	59,100 PSI
H4895	41.5	2677	48,700 PSI	45.6	2893	60,500 PSI
IMR 8208 XBR	40.8	2659	45,900 PSI	44.3	2889	60,000 PSI
IMR 3031	39.3	2628	48,500 PSI	42.8	2839	60,100 PSI
Benchmark	39.9	2629	47,300 PSI	43.0	2819	59,600 PSI

Bullet: 155 GR. SIE HPBT Dia: .308″ Col: 2.775″

H414	48.0	2625	40,500 CUP	51.0	2793	50,200 CUP
760	48.0	2625	40,500 CUP	51.0	2793	50,200 CUP
CFE 223	49.5	2846	50,900 PSI	51.0	2966	60,500 PSI
Varget	44.0	2759	41,300 CUP	47.0C	2909	49,400 CUP
IMR 4320	44.0	2622	44,800 PSI	48.5C	2875	58,400 PSI
IMR 4064	43.0	2602	42,900 PSI	47.5C	2871	56,500 PSI
IMR 4166	43.0	2688	52,500 PSI	46.2C	2856	60,900 PSI
BL-C(2)	45.0	2658	37,500 CUP	48.0	2867	49,600 CUP
IMR 4895	43.5	2664	45,100 PSI	47.5C	2897	58,200 PSI
H335	41.0	2646	42,100 CUP	43.5	2779	49,900 CUP
H4895	43.0	2735	42,000 CUP	46.0	2873	49,700 CUP
IMR 8208 XBR	41.0	2619	47,300 PSI	45.3	2854	60,900 PSI
IMR 3031	39.5	2594	43,400 PSI	43.2C	2832	58,500 PSI
Benchmark	39.0	2538	41,900 CUP	43.0	2753	50,200 CUP
H322	38.0	2588	42,400 CUP	41.0	2710	49,400 CUP

Bullet: 165 GR. HDY SP Dia: .308″ Col: 2.750″

H414	48.0	2537	43,500 CUP	52.0	2704	49,200 CUP
760	48.0	2537	43,500 CUP	52.0	2704	49,200 CUP
CFE 223	45.4	2649	46,700 PSI	48.3	2839	61,500 PSI
Varget	42.0	2582	40,800 CUP	46.0C	2773	50,500 CUP
IMR 4320	43.0	2536	46,900 PSI	46.5C	2730	58,400 PSI
IMR 4064	42.0	2554	47,700 PSI	46.3C	2767	59,700 PSI
IMR 4166	40.2	2487	49,500 PSI	44.9C	2739	61,300 PSI
BL-C(2)	44.0	2528	37,700 CUP	47.5	2738	49,700 CUP
IMR 4895	42.7	2584	49,200 PSI	45.5C	2745	58,800 PSI
H335	39.0	2432	44,500 CUP	42.0	2608	49,100 CUP
H4895	41.0	2525	38,600 CUP	43.5	2694	50,000 CUP
IMR 8208 XBR	38.5	2491	49,100 PSI	42.8	2691	60,200 PSI
IMR 3031	39.1	2537	49,600 PSI	41.6	2697	59,800 PSI
Benchmark	38.5	2438	40,200 CUP	42.5	2647	50,500 CUP

Bullet: 168 GR. BAR TTSX BT Dia: .308″ Col: 2.800″

CFE 223	41.0	2444	39,600 PSI	45.0C	2664	49,800 PSI
Varget	41.0	2514	46,100 PSI	45.0C	2737	60,000 PSI
IMR 4320	42.0	2490	47,200 PSI	45.5C	2715	60,700 PSI
IMR 4064	43.0	2539	47,400 PSI	45.0C	2743	58,900 PSI
IMR 4166	40.5	2464	46,700 PSI	45.0C	2710	59,300 PSI
BL-C(2)	43.0	2532	46,000 PSI	46.0	2697	55,000 PSI
IMR 4895	41.0	2514	47,400 PSI	44.0C	2692	57,800 PSI
H335	39.0	2500	46,800 PSI	42.0	2661	56,100 PSI
H4895	39.0	2497	45,100 PSI	43.0C	2727	59,900 PSI

NEVER EXCEED MAXIMUM LOADS

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
IMR 8208 XBR	39.0	2505	46,500 PSI	43.0C	2724	60,700 PSI
IMR 3031	38.0	2493	46,600 PSI	41.5C	2693	58,600 PSI
Benchmark	38.0	2458	44,500 PSI	42.0C	2686	59,500 PSI
Bullet: 168 GR. SIE HPBT			**Dia: .308″**		**Col: 2.800″**	
CFE 223	46.6	2662	48,200 PSI	49.0	2828	60,400 PSI
Varget	42.0	2520	41,200 CUP	46.0C	2731	50,600 CUP
IMR 4320	41.5	2463	43,800 PSI	46.0	2733	59,300 PSI
IMR 4064	41.5	2518	43,800 PSI	45.9C	2766	58,800 PSI
IMR 4166	38.5	2418	46,400 PSI	43.5C	2704	60,900 PSI
BL-C(2)	44.0	2569	39,400 CUP	47.0	2754	50,200 CUP
IMR 4895	41.0	2447	39,700 PSI	45.4C	2758	58,000 PSI
H335	39.0	2451	37,700 CUP	42.0	2631	49,300 CUP
H4895	41.0	2551	38,300 CUP	43.5	2703	49,500 CUP
IMR 8208 XBR	39.0	2493	49,000 PSI	43.3	2707	61,500 PSI
IMR 3031	39.0	2507	43,900 PSI	42.0	2710	58,900 PSI
Benchmark	38.0	2416	38,100 CUP	42.0	2630	49,300 CUP
Titegroup				8.0	1080	25,000 CUP
Clays				8.0	1060	26,800 CUP
Bullet: 175 GR. SIE HPBT			**Dia: .308″**		**Col: 2.800″**	
H414	46.0	2484	40,300 CUP	49.0	2629	50,100 CUP
760	46.0	2484	40,300 CUP	49.0	2629	50,100 CUP
CFE 223	45.5	2612	49,600 PSI	47.5	2752	60,400 PSI
Varget	42.0	2583	42,600 CUP	45.0C	2690	48,600 CUP
IMR 4320	42.0	2471	44,000 PSI	45.7C	2687	57,600 PSI
IMR 4064	41.5	2500	45,200 PSI	45.6C	2728	59,500 PSI
IMR 4166	38.9	2416	48,100 PSI	43.1C	2652	60,100 PSI
BL-C(2)	43.0	2517	39,200 CUP	46.0	2706	50,300 CUP
IMR 4895	41.0	2463	42,800 PSI	45.0C	2704	57,800 PSI
H335	38.0	2390	38,800 CUP	41.3	2592	50,100 CUP
H4895	40.0	2489	39,100 CUP	42.7	2647	49,000 CUP
IMR 8208 XBR	39.0	2511	52,200 PSI	42.5	2664	61,800 PSI
IMR 3031	38.0	2427	42,000 PSI	41.3	2653	59,100 PSI
Benchmark	38.0	2400	40,100 CUP	41.5	2590	50,800 CUP
Bullet: 180 GR. SPR SP			**Dia: .308″**		**Col: 2.800″**	
H414	46.0	2433	39,800 CUP	49.0	2573	47,500 CUP
760	46.0	2433	39,800 CUP	49.0	2573	47,500 CUP
CFE 223	42.9	2502	52,500 PSI	45.1	2615	61,100 PSI
Varget	41.0	2470	41,200 CUP	45.0C	2661	49,600 CUP
IMR 4320	41.0	2407	43,500 PSI	45.4C	2665	57,900 PSI
IMR 4064	40.7	2445	44,100 PSI	45.2C	2683	58,200 PSI
IMR 4166	41.0	2459	49,300 PSI	45.1C	2663	60,500 PSI
748				46.5	2610	48,500 CUP
BL-C(2)	42.0	2460	40,300 CUP	46.0	2660	50,100 CUP
IMR 4895	40.5	2439	43,800 PSI	44.7C	2674	58,700 PSI
H335	38.0	2374	41,100 CUP	41.0	2528	49,500 CUP
H4895	40.0	2454	41,200 CUP	42.5	2595	49,700 CUP
IMR 8208 XBR	36.0	2340	51,600 PSI	40.0	2497	60,100 PSI
IMR 3031	37.0	2372	43,300 PSI	40.6	2594	58,000 PSI
Benchmark	38.0	2363	40,700 CUP	41.3	2542	50,800 CUP
Bullet: 190 GR. HDY BTSP			**Dia: .308″**		**Col: 2.740″**	
H414	45.0	2368	42,100 CUP	48.0	2504	48,700 CUP
760	45.0	2386	42,100 CUP	48.0	2504	48,700 CUP
CFE 223	41.4	2388	46,500 PSI	45.0	2589	60,200 PSI
Varget	41.0	2452	46,100 CUP	44.0C	2536	49,100 CUP
IMR 4320	41.0	2430	50,700 PSI	43.7C	2566	58,800 PSI
IMR 4064	39.4	2365	47,800 PSI	43.7C	2569	59,100 PSI
IMR 4166	38.7	2354	48,500 PSI	43.1	2562	59,200 PSI
748				42.0	2445	49,000 CUP
BL-C(2)	42.0	2396	41,300 CUP	44.5	2543	48,700 CUP
IMR 4895	40.0	2363	46,000 PSI	43.9C	2571	59,100 PSI
H335	37.0	2246	39,200 CUP	40.0	2449	49,800 CUP
H4895	39.0	2359	40,400 CUP	42.0	2514	49,500 CUP
IMR 8208 XBR	36.0	2303	51,700 PSI	40.0	2459	59,800 PSI
IMR 3031	36.0	2273	43,800 PSI	39.6C	2483	57,700 PSI
Benchmark	37.0	2288	41,100 CUP	39.5	2418	48,500 CUP

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Bullet: 200 GR. SFT SP			**Dia: .308″**		**Col: 2.700″**	
760				45.7	2430	46,500 CUP
CFE 223	41.7	2362	48,600 PSI	45.3	2582	60,600 PSI
Varget	39.0	2288	43,100 CUP	42.0C	2441	50,100 CUP
IMR 4320	38.3	2222	44,900 PSI	42.5C	2427	56,600 PSI
IMR 4064	39.0	2268	46,100 PSI	42.5C	2466	58,400 PSI
IMR 4166	38.9	2305	48,900 PSI	42.7	2494	59,700 PSI
748				43.0	2435	50,000 CUP
BL-C(2)	41.0	2213	40,200 CUP	43.5	2514	49,800 CUP
IMR 4895	40.0	2302	47,500 PSI	43.2C	2476	59,000 PSI
H335	37.0	2217	41,600 CUP	39.5	2400	50,400 CUP
H4895	38.0	2256	42,400 CUP	41.0C	2403	49,400 CUP
IMR 8208 XBR	35.5	2250	51,900 PSI	39.5	2400	59,900 PSI
IMR 3031	36.0	2219	46,100 PSI	39.5C	2410	59,200 PSI
Benchmark	37.5	2227	43,000 CUP	40.0	2355	50,100 CUP
Bullet: 208 GR. HDY A-MAX			**Dia: .308″**		**Col: 2.820″**	
CFE 223	40.6	2274	46,600 PSI	43.7	2474	57,500 PSI
Varget	38.1	2260	49,400 PSI	41.5C	2420	59,500 PSI
IMR 4320	38.1	2220	47,900 PSI	41.5C	2416	59,600 PSI
IMR 4064	37.7	2207	45,100 PSI	41.0C	2391	56,700 PSI
IMR 4166	35.8	2217	51,700 PSI	40.2C	2418	61,200 PSI
748	39.8	2279	47,000 PSI	42.8	2453	57,300 PSI
BL-C(2)	40.7	2273	48,300 PSI	43.8	2455	58,900 PSI
IMR 4895	37.7	2229	47,200 PSI	41.0C	2425	59,400 PSI
H335	37.5	2264	52,600 PSI	39.5	2381	59,700 PSI
H4895	35.6	2218	49,900 PSI	38.8C	2359	58,600 PSI
IMR 8208 XBR	36.4	2219	48,100 PSI	39.2	2373	59,300 PSI
IMR 3031	35.2	2214	48,600 PSI	38.1	2363	58,700 PSI
Benchmark	35.2	2207	51,000 PSI	38.3	2346	59,300 PSI

308 WINCHESTER SERVICE RIFLE

Case: Winchester Twist: 1:12″
Barrel: 24″ Trim: 2.005″ Primer: Federal 210M , Large Rifle Match

Bullet: 150 GR. NOS BT			**Dia: .308″**		**Col: 2.800″**	
Varget	42.8	2728	40,500 CUP	44.0	2788	43,300 CUP
IMR 4064	43.0	2663	44,700 PSI	45.0	2765	50,000 PSI
IMR 4166	43.0	2677	47,800 PSI	44.5	2754	51,500 PSI
BL-C(2)	45.0	2661	40,200 CUP	46.0	2720	43,400 CUP
IMR 4895	42.6	2631	42,300 PSI	45.3	2795	51,100 PSI
H4895	41.9	2685	40,000 CUP	43.0	2742	43,200 CUP
Bullet: 155 GR. SIE HPBT			**Dia: .308″**		**Col: 2.775″**	
Varget	43.0	2709	39,000 CUP	44.0	2759	41,300 CUP
IMR 4064	43.0	2602	42,900 PSI	45.6	2757	51,000 PSI
IMR 4166	42.0	2635	50,000 PSI	43.2	2700	53,000 PSI
BL-C(2)	45.0	2658	37,500 CUP	46.4	2755	43,000 PSI
IMR 4895	43.5	2664	45,100 PSI	45.3	2769	51,000 PSI
H4895	41.8	2680	39,000 CUP	43.0	2735	42,000 CUP
Bullet: 168 GR. SIE HPBT			**Dia: .308″**		**Col: 2.800″**	
Varget	42.0	2520	41,200 CUP	43.2	2583	44,000 CUP
IMR 4064	41.5	2518	43,800 PSI	43.9	2653	52,000 PSI
IMR 4166	38.5	2418	46,400 PSI	40.7	2543	52,800 PSI
BL-C(2)	44.0	2569	39,400 CUP	45.2	2643	43,600 CUP
IMR 4895	41.0	2447	39,700 PSI	44.2	2673	53,000 PSI
H4895	41.0	2551	38,300 CUP	42.3	2630	44,000 CUP
Bullet: 175 GR. SIE HPBT			**Dia: .308″**		**Col: 2.800″**	
Varget	42.0	2583	42,600 CUP	43.0	2619	44,600 CUP
IMR 4064	40.7	2445	44,100 PSI	43.5	2593	53,000 PSI
IMR 4166	41.0	2459	49,300 PSI	42.0	2508	52,000 PSI
BL-C(2)	43.0	2517	39,200 CUP	44.0	2580	42,900 CUP
IMR 4895	41.0	2463	42,800 PSI	43.4	2607	52,000 PSI
H4895	40.0	2454	41,200 CUP	40.8	2500	44,000 CUP

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

30-06

Case: Winchester Twist: 1:10″
Barrel: 24″ Trim: 2.484″ Primer: Winchester LR, Large Rifle

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Bullet: 110 GR. HDY SP			**Dia: .308″**		**Col: 3.170″**	
H414	57.0	3044	39,200 CUP	62.5	3268	46,900 CUP
760	57.0	3044	39,200 CUP	62.5	3268	46,900 CUP
CFE 223	55.6	3224	50,600 PSI	59.0	3370	56,400 PSI
Varget	55.0	3308	44,400 CUP	59.0	3452	48,500 CUP
IMR 4320	57.0	3285	49,400 PSI	60.5	3470	58,100 PSI
IMR 4064	55.0	3263	47,900 PSI	58.5	3453	56,400 PSI
748				52.7	3320	47,000 CUP
BL-C(2)	54.0	3108	36,200 CUP	60.0	3396	45,000 CUP
IMR 4895	56.0	3303	48,200 PSI	59.8	3505	57,300 PSI
H335	50.0	3168	43,500 CUP	55.5	3367	48,100 CUP
H4895	51.0	3155	39,000 CUP	57.0	3431	49,300 CUP
IMR 8208 XBR	52.6	3223	46,200 PSI	56.0	3415	57,500 PSI
IMR 3031	51.0	3252	47,200 PSI	54.9	3471	57,800 PSI
Benchmark	51.5	3242	45,600 CUP	55.0	3396	49,800 CUP
Bullet: 125 GR. SIE SP			**Dia: .308″**		**Col: 3.150″**	
H414	57.0	2952	40,300 CUP	62.5	3181	46,700 CUP
760	57.0	2952	40,300 CUP	62.5	3181	46,700 CUP
CFE 223	54.5	3081	53,000 PSI	58.0	3212	58,900 PSI
Varget	54.0	3159	45,500 CUP	57.2	3267	49,500 CUP
IMR 4320	54.0	3125	49,100 PSI	57.5	3307	57,900 PSI
IMR 4064	53.0	3129	47,400 PSI	56.5	3334	58,000 PSI
IMR 4166	53.0	3109	51,200 PSI	56.8	3286	59,000 PSI
748				51.0	3060	46,000 CUP
BL-C(2)	53.0	3117	38,000 CUP	58.7	3273	48,700 CUP
IMR 4895	53.0	3137	47,800 PSI	57.2	3331	56,800 PSI
H335	49.0	3046	43,000 CUP	54.0	3228	49,300 CUP
H4895	48.0	2977	41,400 CUP	53.7	3229	49,300 CUP
IMR 8208 XBR	51.5	3100	50,400 PSI	54.7	3243	57,400 PSI
IMR 3031	49.0	3091	47,100 PSI	52.8	3298	58,400 PSI
Benchmark	49.0	2996	40,700 CUP	52.0	3178	48,700 CUP
Bullet: 130 GR. SPR HP			**Dia: .308″**		**Col: 3.060″**	
H414	56.0	2862	40,600 CUP	62.0	3157	48,700 CUP
CFE 223	54.0	3004	52,300 PSI	57.4	3145	59,100 PSI
Varget	49.0	2979	41,300 CUP	53.5	3154	48,400 CUP
IMR 4320	51.0	3094	55,600 PSI	54.5	3197	57,700 PSI
IMR 4064	51.0	3070	49,500 PSI	54.5	3243	58,200 PSI
IMR 4166	51.7	3003	49,200 PSI	55.3	3213	59,200 PSI
BL-C(2)	52.0	2936	36,600 CUP	58.0	3179	48,300 CUP
IMR 4895	51.0	3074	50,800 PSI	54.7	3234	57,800 PSI
H335	48.0	2912	39,600 CUP	53.5	3158	48,600 CUP
H4895	48.0	2927	38,600 CUP	53.1	3144	46,100 CUP
IMR 8208 XBR	49.1	3021	52,100 PSI	51.7	3126	56,900 PSI
IMR 3031	47.0	3010	49,500 PSI	50.3	3176	58,300 PSI
Benchmark	48.0	2986	44,900 CUP	51.0	3107	48,700 CUP
Bullet: 150 GR. NOS BT			**Dia: .308″**		**Col: 3.250″**	
Suprform	60.0	2850	43,100 PSI	65.0C	3072	53,000 PSI
StaBALL 6.5	58.5	2929	50,500 PSI	63.0C	3128	59,600 PSI
H4350	56.0	2792	37,100 CUP	62.0C	3068	48,400 CUP
IMR 4451	53.7	2747	49,000 PSI	57.8C	2969	59,700 PSI
H414	54.0	2753	40,500 CUP	60.0	2992	48,600 CUP
IMR 4350	54.0	2745	47,400 PSI	58.0C	2942	57,200 PSI
760	54.0	2792	40,500 CUP	60.0	2992	48,600 CUP
H380	53.0	2798	40,200 CUP	59.0	3005	45,900 CUP
CFE 223	50.1	2763	50,500 PSI	54.2	2942	58,600 PSI
Varget	47.0	2808	42,600 CUP	51.0	2975	50,000 CUP
IMR 4320	49.0	2850	51,600 PSI	52.3	3016	58,000 PSI
IMR 4064	47.0	2743	49,000 PSI	51.0	2928	58,600 PSI
IMR 4166	47.0	2755	49,200 PSI	50.9	2935	58,100 PSI
748				48.0	2810	46,000 CUP
BL-C(2)	49.0	2759	39,700 CUP	54.0	2962	48,600 CUP
IMR 4895	49.0	2856	49,400 PSI	53.0	3009	56,700 PSI
H335	47.0	2785	42,500 CUP	51.5	2982	49,200 CUP
H4895	46.0	2806	44,400 CUP	51.0	2976	48,500 CUP
IMR 8208 XBR	47.0	2797	50,500 PSI	50.0	2935	58,400 PSI
IMR 3031	43.0	2697	47,600 PSI	46.7	2887	59,300 PSI
Benchmark	46.5	2792	44,600 CUP	49.5	2944	49,300 CUP
Trail Boss	13.3	1061	14,700 PSI	19.0	1477	26,400 PSI
Bullet: 150 GR. NOS E-TIP			**Dia: .308″**		**Col: 3.300″**	
H4350	54.0	2747	47,000 PSI	57.8C	2927	57,700 PSI
IMR 4451	54.0	2798	52,700 PSI	57.5C	2947	58,900 PSI
H414	53.0	2779	49,300 PSI	57.0	2945	57,100 PSI
IMR 4350	54.0	2744	48,800 PSI	57.5C	2930	57,300 PSI
760	53.0	2779	49,300 PSI	57.0	2945	57,100 PSI
H380	53.0	2763	50,400 PSI	57.0	2921	57,300 PSI
CFE 223	49.0	2715	47,600 PSI	53.2	2927	58,600 PSI
Varget	46.0	2697	49,900 PSI	49.5	2860	58,000 PSI
IMR 4320	48.0	2695	48,400 PSI	52.0	2897	58,100 PSI
IMR 4064	47.0	2714	48,700 PSI	51.0	2926	59,500 PSI
IMR 4166	45.3	2729	50,400 PSI	49.3	2921	59,100 PSI
748	48.0	2704	48,000 PSI	51.5	2859	55,400 PSI
BL-C(2)	50.0	2777	51,300 PSI	53.5	2915	57,900 PSI
IMR 4895	47.0	2717	50,000 PSI	50.8	2900	58,700 PSI
H335	44.0	2671	51,600 PSI	48.0	2842	59,200 PSI
H4895	43.0	2658	49,000 PSI	47.5	2863	59,700 PSI
IMR 8208 XBR	44.0	2677	50,100 PSI	47.7	2838	58,500 PSI
IMR 3031	43.0	2644	47,600 PSI	46.0	2811	56,600 PSI
Benchmark	44.0	2631	46,400 PSI	48.0	2850	58,600 PSI
Bullet: 155 GR. SIE HPBT			**Dia: .308″**		**Col: 3.225″**	
Suprform	59.0	2843	43,400 PSI	65.2C	3125	58,800 PSI
StaBALL 6.5	57.0	2800	43,400 PSI	62.0	3085	59,500 PSI
H4350	56.0	2757	36,000 CUP	62.0C	3038	47,500 CUP
IMR 4451	55.0	2748	48,500 PSI	59.2C	2988	59,600 PSI
H414	54.0	2732	39,600 CUP	60.0	2956	46,200 CUP
IMR 4350	56.0	2784	45,800 PSI	60.0C	2959	53,800 PSI
H380	53.0	2789	40,100 CUP	59.0	3009	47,800 CUP
CFE 223	49.2	2744	52,200 PSI	52.3	2879	59,500 PSI
Varget	48.0	2822	44,600 CUP	50.7	2958	48,800 CUP
IMR 4320	49.0	2823	50,800 PSI	53.0	2976	57,900 PSI
IMR 4064	49.0	2811	46,800 PSI	53.0	3005	58,800 PSI
IMR 4166	47.4	2743	47,800 PSI	51.5	2959	58,900 PSI
BL-C(2)	49.0	2723	38,800 CUP	54.0	2912	46,300 CUP
IMR 4895	50.0	2851	49,800 PSI	53.8	3010	58,000 PSI
H335	47.0	2776	42,200 CUP	51.5	2943	48,800 CUP
H4895	46.0	2752	41,200 CUP	51.0	2925	45,600 CUP
IMR 8208 XBR	46.1	2747	50,400 PSI	49.0	2869	57,500 PSI
IMR 3031	46.0	2779	47,600 PSI	49.0	2944	58,600 PSI
Benchmark	46.5	2779	40,500 CUP	49.5	2916	49,400 CUP
Bullet: 165 GR. HDY GMX			**Dia: .308″**		**Col: 3.225″**	
StaBALL 6.5	52.5	2733	50,400 PSI	57.1	2942	59,600 PSI
Hybrid 100V	52.5	2653	48,600 PSI	56.7C	2818	56,700 PSI
H4350	51.0	2587	48,600 PSI	55.4	2781	59,200 PSI
IMR 4451	50.4	2532	48,200 PSI	54.3C	2751	58,300 PSI
H414	50.0	2656	52,400 PSI	53.1	2773	58,500 PSI
IMR 4350	52.0	2546	46,700 PSI	56.6	2770	58,200 PSI
760	50.0	2656	52,400 PSI	53.1	2773	58,500 PSI
H380	52.0	2652	52,700 PSI	56.0	2788	57,300 PSI
CFE 223	43.9	2531	51,200 PSI	46.7	2672	57,500 PSI
Varget	44.5	2526	46,600 PSI	48.3	2724	59,000 PSI
IMR 4320	45.6	2515	45,800 PSI	49.6	2731	58,700 PSI
IMR 4064	44.4	2510	44,900 PSI	48.2	2729	58,600 PSI
IMR 4166	45.0	2607	49,700 PSI	48.2	2788	59,500 PSI
BL-C(2)	43.9	2511	49,200 PSI	47.5	2706	58,800 PSI
IMR 4895	44.4	2535	45,100 PSI	47.8	2757	58,400 PSI
H4895	43.4	2595	50,300 PSI	46.7	2712	57,100 PSI
IMR 8208 XBR	43.2	2572	50,800 PSI	47.0	2717	58,300 PSI
IMR 3031	41.0	2510	46,400 PSI	44.1	2685	58,100 PSI

NEVER EXCEED MAXIMUM LOADS

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Bullet: 165 GR. SIE SPBT Dia: .308″ Col: 3.300″						
Suprform	55.0	2724	45,100 PSI	61.0	2972	58,800 PSI
StaBALL 6.5	55.4	2804	50,100 PSI	60.2	3003	59,700 PSI
Hybrid 100V	53.0	2648	46,000 PSI	57.0C	2801	52,800 PSI
H4350	53.0	2678	38,400 CUP	59.0	2938	49,400 CUP
IMR 4451	53.3	2658	49,100 PSI	57.4	2858	59,200 PSI
H414	51.0	2678	41,900 CUP	56.5	2877	49,700 CUP
IMR 4350	56.0	2746	48,100 PSI	60.0C	2934	57,600 PSI
760	51.0	2678	38,400 CUP	56.5	2877	49,700 CUP
H380	51.0	2669	41,700 CUP	56.5	2892	50,000 CUP
CFE 223	46.5	2612	52,900 PSI	49.5	2731	58,700 PSI
Varget	47.0	2726	44,500 CUP	50.5	2873	49,700 CUP
IMR 4320	48.0	2727	50,700 PSI	51.2	2869	58,600 PSI
IMR 4064	49.0	2752	50,400 PSI	52.5	2901	58,900 PSI
IMR 4166	45.1	2625	47,800 PSI	49.1	2832	58,900 PSI
BL-C(2)	46.0	2608	41,200 CUP	51.0	2805	49,800 CUP
IMR 4895	49.0	2768	50,500 PSI	52.0	2888	57,200 PSI
H335	42.0	2515	38,500 CUP	47.0	2749	49,300 CUP
H4895	43.0	2607	41,100 CUP	47.5	2782	49,000 CUP
IMR 8208 XBR	44.6	2667	55,100 PSI	46.5	2728	58,000 PSI
IMR 3031	45.0	2707	51,000 PSI	48.0	2825	57,500 PSI
Benchmark	45.0	2686	45,600 CUP	47.7	2795	49,300 CUP
Bullet: 168 GR. HDY HPBT Dia: .308″ Col: 3.230″						
StaBALL 6.5	54.0	2703	47,900 PSI	58.1	2903	58,900 PSI
Hybrid 100V	52.0	2645	50,400 PSI	57.0C	2817	57,400 PSI
H4350	55.0	2695	40,400 CUP	59.0	2897	48,100 CUP
IMR 4451	52.7	2646	50,200 PSI	56.7	2837	59,300 PSI
H414	53.0	2686	40,300 CUP	56.5	2839	49,700 CUP
IMR 4350	54.0	2720	48,500 PSI	58.0C	2903	57,800 PSI
760	53.0	2686	40,300 CUP	56.5	2839	49,700 CUP
H380	51.0	2648	42,800 CUP	56.5	2859	49,700 CUP
Varget	47.0	2710	42,700 CUP	50.5	2859	49,200 CUP
IMR 4320	46.0	2646	48,900 PSI	49.7	2816	58,400 PSI
IMR 4064	47.0	2660	46,800 PSI	50.8	2850	57,900 PSI
IMR 4166	44.7	2610	49,200 PSI	48.6	2794	59,200 PSI
BL-C(2)	46.0	2555	39,100 CUP	51.0	2767	49,200 CUP
IMR 4895	48.0	2719	49,900 PSI	51.2	2859	58,200 PSI
H335	42.0	2459	39,900 CUP	46.5	2656	49,500 CUP
H4895	43.0	2574	41,200 CUP	47.5	2789	50,000 CUP
IMR 8208 XBR	45.1	2661	54,800 PSI	48.0	2748	58,700 PSI
Benchmark	44.0	2614	42,900 CUP	47.2	2760	49,400 CUP
Bullet: 175 GR. SIE HPBT Dia: .308″ Col: 3.300″						
IMR 4955	56.7	2650	49,400 PSI	61.0C	2845	59,200 PSI
Suprform	53.0	2609	42,600 PSI	58.7	2881	59,400 PSI
H4831	57.0	2535	38,300 CUP	61.5C	2719	44,400 CUP
StaBALL 6.5	52.5	2659	49,000 PSI	57.0	2855	59,100 PSI
Hybrid 100V	50.0	2543	47,400 PSI	55.0C	2757	57,600 PSI
IMR 4831	54.0	2615	48,100 PSI	57.5C	2781	56,900 PSI
H4350	55.0	2661	42,100 CUP	59.0	2842	48,700 CUP
IMR 4451	52.0	2548	47,500 PSI	56.0	2762	58,900 PSI
H414	52.5	2622	40,700 CUP	56.2	2794	49,200 CUP
IMR 4350	52.0	2546	45,000 PSI	57.0C	2780	57,100 PSI
760	52.5	2622	40,700 CUP	56.2	2794	49,200 CUP
H380	49.5	2564	43,400 CUP	53.0	2704	48,400 CUP
Varget	45.0	2551	41,700 CUP	48.0	2694	49,000 CUP
IMR 4320	45.5	2533	48,000 PSI	48.5	2697	58,200 PSI
IMR 4064	46.5	2626	52,000 PSI	49.5	2741	58,000 PSI
IMR 4166	44.4	2605	48,600 PSI	48.3	2782	56,800 PSI
BL-C(2)	48.5	2644	44,100 CUP	51.5	2765	48,700 CUP
IMR 4895	46.0	2619	51,600 PSI	49.0	2741	58,100 PSI
H335	43.0	2566	46,600 CUP	45.7	2667	49,400 CUP
H4895	43.8	2584	44,100 CUP	46.7	2700	49,000 CUP
Bullet: 180 GR. SIE SPBT Dia: .308″ Col: 3.300″						
IMR 7977	58.3	2513	47,700 PSI	62.0C	2686	56,600 PSI
IMR 4955	56.7	2635	50,200 PSI	61.0C	2828	60,000 PSI
Suprform	54.0	2628	46,200 PSI	59.7	2840	57,600 PSI
H4831	54.0	2447	34,700 CUP	60.0C	2710	44,300 CUP
StaBALL 6.5	52.6	2663	49,700 PSI	57.2	2857	59,600 PSI
Hybrid 100V	53.0	2585	47,000 PSI	57.0C	2742	55,200 PSI
IMR 4831	53.0	2563	47,300 PSI	56.8C	2749	57,100 PSI
H4350	52.0	2543	37,800 CUP	57.5	2798	49,300 CUP
IMR 4451	51.7	2574	50,900 PSI	55.6	2752	59,600 PSI
H414	50.0	2528	39,200 CUP	55.5	2743	48,700 CUP
IMR 4350	53.0	2586	48,300 PSI	56.5C	2752	57,200 PSI
760	50.0	2528	39,200 CUP	55.5	2743	48,700 CUP
H380	48.0	2490	39,900 CUP	53.0	2682	48,700 CUP
Varget	44.0	2533	41,900 CUP	47.0	2668	50,000 CUP
IMR 4320	45.0	2525	49,900 PSI	47.8	2661	58,000 PSI
IMR 4064	45.5	2550	48,900 PSI	48.7	2700	58,200 PSI
IMR 4166	45.5	2575	50,800 PSI	48.8	2724	58,800 PSI
BL-C(2)	44.0	2456	39,200 CUP	48.5	2634	48,100 CUP
IMR 4895	45.0	2555	49,500 PSI	48.0	2680	56,800 PSI
H335	42.0	2455	41,900 CUP	46.0	2621	49,200 CUP
H4895	41.0	2427	38,100 CUP	46.0	2638	48,800 CUP
Benchmark	43.0	2550	45,600 CUP	46.0	2660	49,000 CUP
Bullet: 190 GR. HDY BTSP Dia: .308″ Col: 3.220″						
IMR 7977	57.5	2432	49,600 PSI	61.2C	2591	57,700 PSI
IMR 7828	55.0	2429	46,200 PSI	59.8C*	2646	58,700 PSI
IMR 4955	54.4	2476	47,600 PSI	58.5C	2703	59,800 PSI
H4831	57.0	2514	44,100 CUP	61.0C	2668	50,000 CUP
StaBALL 6.5	50.6	2536	49,300 PSI	55.2	2747	59,600 PSI
Hybrid 100V	49.0	2456	49,300 PSI	53.5C	2639	58,300 PSI
IMR 4831	51.0	2445	46,300 PSI	55.0C	2639	57,000 PSI
H4350	51.0	2451	39,500 CUP	56.5	2692	49,200 CUP
IMR 4451	49.9	2453	51,500 PSI	53.7	2615	59,400 PSI
H414	48.0	2398	39,000 CUP	53.0	2640	49,500 CUP
IMR 4350	51.0	2466	47,200 PSI	54.5	2647	58,500 PSI
760	48.0	2398	49,000 CUP	53.0	2640	49,500 CUP
H380	47.0	2369	40,900 CUP	51.5	2555	48,700 CUP
Varget	43.5	2450	41,800 CUP	46.5	2608	49,700 CUP
IMR 4064	45.0	2485	50,900 PSI	47.7	2593	57,600 PSI
IMR 4166	43.9	2431	48,900 PSI	47.0	2608	59,200 PSI
BL-C(2)	43.0	2312	39,200 CUP	47.0	2510	48,600 CUP
H335	40.0	2271	40,200 CUP	44.0	2465	48,400 CUP
H4895	41.0	2380	41,400 CUP	45.5	2525	48,000 CUP
Bullet: 200 GR. NOS AB Dia: .308″ Col: 3.300″						
H1000	57.0	2329	35,800 CUP	61.0C	2487	42,200 CUP
IMR 7977	56.4	2343	48,600 PSI	60.0C	2504	57,300 PSI
IMR 7828	53.0	2323	45,000 PSI	58.0C*	2559	58,100 PSI
IMR 4955	53.1	2412	49,100 PSI	57.2C	2590	59,100 PSI
H4831	55.0	2427	42,100 CUP	59.0C	2586	49,300 CUP
StaBALL 6.5	49.2	2458	49,400 PSI	53.5	2653	59,700 PSI
Hybrid 100V	48.0	2384	50,000 PSI	52.0C	2542	57,900 PSI
IMR 4831	51.0	2375	46,600 PSI	54.2C	2550	56,800 PSI
H4350	50.0	2412	40,400 CUP	53.7	2580	48,400 CUP
IMR 4451	49.0	2348	49,300 PSI	52.7	2533	59,900 PSI
H414	48.0	2413	42,900 CUP	51.5	2579	49,400 CUP
IMR 4350	50.0	2364	45,900 PSI	53.5C	2550	57,200 PSI
760	48.0	2413	42,900 CUP	51.5	2579	49,400 CUP
H380	45.5	2325	42,300 CUP	48.5	2463	48,800 CUP
Varget	42.0	2337	41,900 CUP	47.0	2505	49,100 CUP
IMR 4064	43.0	2292	44,600 PSI	46.0	2469	57,400 PSI
IMR 4166	43.2	2361	50,300 PSI	46.2	2517	59,200 PSI
H4895	41.0	2355	43,700 CUP	44.0	2474	49,500 CUP
Bullet: 200 GR. SPR SP Dia: .308″ Col: 3.230″						
H1000	55.0	2267	33,600 CUP	61.0C	2510	44,400 CUP
IMR 7977	54.5	2321	48,600 PSI	58.0C	2484	58,100 PSI
IMR 4955	51.8	2372	49,100 PSI	55.7C	2559	59,400 PSI
H4831	54.0	2436	43,200 CUP	57.5C	2577	49,400 CUP
StaBALL 6.5	47.5	2393	48,800 PSI	52.0	2595	59,000 PSI
Hybrid 100V	47.0	2335	48,100 PSI	51.5C	2532	58,600 PSI
H4350	50.0	2431	44,500 CUP	53.0	2544	49,100 CUP

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
IMR 4451	47.2	2294	49,600 PSI	50.7	2470	59,400 PSI
H414	47.0	2351	40,700 CUP	52.0	2551	49,100 CUP
H380	44.0	2231	41,700 CUP	48.0	2395	49,600 CUP
Varget	42.5	2373	44,700 CUP	45.5	2501	49,600 CUP
IMR 4166	42.0	2327	49,800 PSI	45.2	2476	58,900 PSI
H4895	39.0	2246	40,700 CUP	43.5	2421	49,200 CUP
Bullet: 208 GR. HDY A-MAX			**Dia: .308″**		**Col: 3.285″**	
IMR 7977	57.3	2364	48,200 PSI	61.0C	2521	57,200 PSI
IMR 7828	52.2	2239	43,600 PSI	57.0C	2442	53,100 PSI
IMR 4955	53.6	2414	49,400 PSI	57.7C	2604	59,100 PSI
H4831	52.1	2301	47,100 PSI	58.0C	2511	58,700 PSI
StaBALL 6.5	49.8	2428	47,700 PSI	54.2	2660	59,100 PSI
Hybrid 100V	47.3	2292	45,100 PSI	52.0C	2519	58,300 PSI
IMR 4831	49.9	2291	46,100 PSI	54.9C	2538	59,500 PSI
H4350	47.6	2303	47,600 PSI	52.4	2499	59,600 PSI
H414	46.1	2307	49,300 PSI	49.6	2467	58,300 PSI
IMR 4350	47.9	2259	45,000 PSI	52.7C	2503	58,600 PSI
760	46.1	2307	49,300 PSI	49.6	2467	58,300 PSI
H380	45.5	2231	45,600 PSI	49.5	2427	57,300 PSI
Varget	40.9	2226	47,900 PSI	45.0	2415	59,200 PSI
IMR 4064	42.5	2250	47,400 PSI	45.5	2404	57,000 PSI
IMR 4166	42.4	2341	48,500 PSI	45.4	2495	59,200 PSI
H4895	38.9	2203	48,700 PSI	43.2	2362	57,400 PSI
Bullet: 220 GR. HDY JRN			**Dia: .308″**		**Col: 3.230″**	
H1000	58.0	2293	36,500 CUP	61.0C	2412	43,600 CUP
IMR 7977	56.2	2291	48,900 PSI	59.8C	2445	58,500 PSI
IMR 7828	53.0	2288	48,600 PSI	58.0	2476	59,700 PSI
IMR 4955	52.8	2306	48,200 PSI	56.8C	2485	59,200 PSI
H4831	54.0	2342	43,300 CUP	57.5C	2458	48,600 CUP
StaBALL 6.5	49.5	2331	48,300 PSI	54.0	2523	59,500 PSI
Hybrid 100V	47.0	2258	48,100 PSI	52.0C	2448	58,600 PSI
IMR 4831	50.0	2275	47,300 PSI	54.0	2438	57,200 PSI
H4350	50.0	2318	43,400 CUP	53.0	2435	49,200 CUP
H414	47.0	2215	39,000 CUP	52.0	2408	49,500 CUP
IMR 4350	49.0	2287	49,500 PSI	52.5	2425	57,300 PSI
760	47.0	2215	39,000 CUP	52.0	2408	49,500 CUP
Varget	42.0	2279	44,000 CUP	45.0	2382	49,400 CUP
IMR 4064	43.0	2241	52,200 PSI	45.5	2325	56,700 PSI
IMR 4166	42.2	2235	49,300 PSI	45.2	2380	58,800 PSI

300 WINCHESTER SHORT MAGNUM

Case: Winchester Twist: 1:10″
Barrel: 24″ Trim: 2.090″ Primer: Winchester LRM, Large Rifle Magnum

Bullet: 110 GR. SPR SP			**Dia: .308″**		**Col: 2.650″**	
H4350	70.0	3437	53,500 PSI	74.5C	3646	63,300 PSI
H414	70.0	3538	55,800 PSI	73.5	3692	62,900 PSI
760	70.0	3538	55,800 PSI	73.5	3692	62,900 PSI
H380	68.0	3456	52,500 PSI	71.0	3600	60,200 PSI
Varget	62.0	3454	54,300 PSI	66.0	3631	63,200 PSI
IMR 4166	61.0	3439	54,300 PSI	65.6	3651	2.650"
H4895	60.0	3495	56,800 PSI	63.5	3647	63,600 PSI
IMR 8208 XBR	60.3	3555	54,400 PSI	63.5	3697	62,400 PSI
Bullet: 125 GR. NOS BT			**Dia: .308″**		**Col: 2.810″**	
H4350	69.0	3332	55,800 PSI	73.0	3481	63,000 PSI
H414	68.0	3318	51,300 PSI	72.0	3540	63,300 PSI
760	68.0	3318	51,300 PSI	72.0	3540	63,300 PSI
H380	68.0	3346	55,100 PSI	71.0	3493	62,600 PSI
Varget	61.0	3312	54,700 PSI	65.0	3478	63,100 PSI
IMR 4166	59.0	3293	54,400 PSI	63.5	3493	63,600 PSI
H4895	58.0	3314	56,600 PSI	61.0	3431	63,000 PSI
IMR 8208 XBR	58.3	3350	53,600 PSI	62.0	3496	61,700 PSI
Bullet: 130 GR. HDY SP			**Dia: .308″**		**Col: 2.720″**	
Suprform	69.0	3256	42,900 PSI	77.0C	3645	62,600 PSI
H4350	67.0	3237	54,900 PSI	71.0	3393	63,200 PSI
H414	66.0	3267	54,500 PSI	70.0	3437	63,700 PSI
760	66.0	3267	54,500 PSI	70.0	3437	63,700 PSI
H380	66.0	3244	55,700 PSI	69.5	3497	63,300 PSI
Varget	60.0	3269	58,100 PSI	63.5	3388	63,500 PSI
IMR 4166	57.5	3168	53,500 PSI	62.0	3388	63,600 PSI
H4895	56.0	3213	55,700 PSI	58.5	3318	63,000 PSI
IMR 8208 XBR	56.4	3272	56,600 PSI	60.0	3391	61,900 PSI
Bullet: 150 GR. SPR GSSP			**Dia: .308″**		**Col: 2.780″**	
Suprform	67.0	3129	50,000 PSI	74.0	3410	63,500 PSI
Hybrid 100V	63.0	2948	49,400 PSI	67.0C	3127	57,700 PSI
H4350	63.0	3040	55,700 PSI	67.0	3187	63,200 PSI
IMR 4451	63.6	3033	52,900 PSI	67.7	3248	63,300 PSI
H414	62.0	3025	53,400 PSI	66.0	3204	63,300 PSI
IMR 4350	64.0	3006	50,200 PSI	68.0	3221	62,100 PSI
760	62.0	3025	53,400 PSI	66.0	3204	63,300 PSI
H380	60.0	2987	54,900 PSI	64.0	3141	63,600 PSI
Varget	55.0	3008	56,800 PSI	58.5	3140	63,800 PSI
IMR 4320	57.0	3004	54,000 PSI	61.0	3172	63,900 PSI
IMR 4064	57.0	3012	52,100 PSI	61.0	3198	63,300 PSI
IMR 4166	55.9	3033	54,000 PSI	59.5	3200	62,800 PSI
IMR 4895	56.0	2980	50,800 PSI	60.5	3176	62,300 PSI
H4895	51.0	2919	53,400 PSI	54.5	3078	63,100 PSI
IMR 8208 XBR	52.6	2992	55,800 PSI	56.0	3115	62,300 PSI
Trail Boss	16.3	1473	26,400 PSI	23.3	1758	31,600 PSI
Bullet: 155 GR. HDY A-MAX			**Dia: .308″**		**Col: 2.860″**	
Suprform	66.0	3065	45,700 PSI	73.5C	3405	63,500 PSI
Hybrid 100V	63.0	3060	51,800 PSI	68.5C	3269	62,300 PSI
H4350	63.0	3014	55,300 PSI	66.5	3156	63,200 PSI
IMR 4451	62.5	3005	52,300 PSI	66.5	3210	63,300 PSI
H414	63.0	3023	53,300 PSI	66.5	3206	63,100 PSI
760	63.0	3023	53,300 PSI	66.5	3206	63,100 PSI
H380	60.0	2956	54,500 PSI	64.0	3117	63,100 PSI
Varget	55.0	2963	54,800 PSI	58.5	3110	63,600 PSI
IMR 4166	54.7	2974	52,900 PSI	58.9	3165	63,200 PSI
H4895	52.0	2935	55,800 PSI	55.0	3061	63,600 PSI
IMR 8208 XBR	53.0	2990	56,800 PSI	56.4	3110	63,400 PSI
Bullet: 165 GR. HDY GMX			**Dia: .308″**		**Col: 2.840″**	
Suprform	64.0	2952	51,600 PSI	69.0C	3169	62,700 PSI
Hybrid 100V	58.0	2867	51,600 PSI	63.0C	3099	63,300 PSI
H4350	58.0	2821	52,400 PSI	62.0C	2986	61,300 PSI
IMR 4451	59.6	2927	56,000 PSI	63.5	3088	63,200 PSI
H414	58.0	2860	53,400 PSI	62.5	3043	62,900 PSI
760	58.0	2860	53,400 PSI	62.5	3043	62,900 PSI
H380	57.0	2800	52,500 PSI	61.8	2993	62,300 PSI
Varget	51.0	2810	56,700 PSI	54.5	2948	63,600 PSI
IMR 4166	50.4	2785	50,900 PSI	54.5	2996	62,700 PSI
H4895	47.0	2700	51,900 PSI	51.0	2887	63,300 PSI
IMR 8208 XBR	48.0	2743	55,600 PSI	52.0	2887	63,300 PSI
Bullet: 165 GR. NOS PART			**Dia: .308″**		**Col: 2.860″**	
Suprform	65.0	2987	47,800 PSI	72.0	3273	63,500 PSI
Hybrid 100V	62.0	2957	51,600 PSI	68.0C	3175	63,100 PSI
H4350	61.0	2898	54,800 PSI	65.5	3047	63,600 PSI
IMR 4451	60.6	2856	50,200 PSI	65.2C	3108	63,300 PSI
H414	61.0	2915	54,200 PSI	65.0	3069	63,200 PSI
760	61.0	2915	54,200 PSI	65.0	3069	63,200 PSI
H380	59.0	2854	55,100 PSI	63.0	3012	63,600 PSI
Varget	54.0	2859	56,400 PSI	57.5	2987	63,700 PSI
IMR 4166	53.2	2849	52,400 PSI	57.6	3053	63,400 PSI
H4895	51.0	2810	55,700 PSI	54.0	2929	63,200 PSI
IMR 8208 XBR	51.1	2849	55,600 PSI	54.4	2963	61,700 PSI
Bullet: 168 GR. SIE HPBT			**Dia: .308″**		**Col: 2.840″**	
IMR 4955	66.8	2906	53,100 PSI	71.2C	3112	63,900 PSI
H4831	65.0	2848	53,400 PSI	69.5C	3015	63,200 PSI
Hybrid 100V	62.0	2921	49,800 PSI	67.7C	3144	61,100 PSI
H4350	61.0	2908	56,000 PSI	64.5	3034	63,700 PSI

NEVER EXCEED MAXIMUM LOADS

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
IMR 4451	60.7	2862	50,900 PSI	65.0C	3078	62,600 PSI
H414	61.0	2919	54,600 PSI	65.0	3074	63,200 PSI
760	61.0	2919	54,600 PSI	65.0	3074	63,200 PSI
H380	59.0	2865	56,000 PSI	62.0	2985	63,300 PSI
IMR 4166	53.0	2834	51,600 PSI	57.4	3033	62,300 PSI
IMR 8208 XBR	51.5	2853	56,400 PSI	54.8	2970	63,400 PSI
Bullet: 175 GR. SIE HPBT			**Dia: .308″**		**Col: 2.860″**	
IMR 4955	65.8	2862	54,100 PSI	70.1C	3051	63,700 PSI
H4831	66.0	2848	55,300 PSI	70.0C	2980	63,100 PSI
Hybrid 100V	61.0	2878	51,000 PSI	66.5C	3085	61,700 PSI
H4350	61.0	2839	53,300 PSI	65.0	3009	63,400 PSI
IMR 4451	59.4	2816	51,700 PSI	63.9	3031	63,600 PSI
H414	61.0	2868	53,900 PSI	65.0	3032	63,200 PSI
760	61.0	2868	53,900 PSI	65.0	3032	63,200 PSI
H380	60.0	2859	57,600 PSI	63.0	2954	63,200 PSI
IMR 4166	52.1	2773	52,000 PSI	56.4	2970	63,100 PSI
Bullet: 180 GR. NOS E-TIP			**Dia: .308″**		**Col: 2.860″**	
IMR 4955	63.4	2782	55,300 PSI	67.5C	2945	63,500 PSI
H4350	59.0	2751	54,900 PSI	63.7C	2925	63,800 PSI
IMR 4451	57.8	2759	55,000 PSI	62.2	2947	63,500 PSI
H414	56.0	2693	52,800 PSI	60.0	2865	62,100 PSI
IMR 4350	60.0	2748	52,600 PSI	64.0C	2963	62,400 PSI
H380	57.0	2648	51,700 PSI	61.5	2809	59,700 PSI
Bullet: 180 GR. SFT SCIR			**Dia: .308″**		**Col: 2.860″**	
IMR 7828	65.0	2783	54,400 PSI	69.5C*	2943	62,600 PSI
IMR 4955	63.9	2797	55,800 PSI	68.0C	2957	63,500 PSI
H4831	65.5	2775	52,000 PSI	70.0C	2929	64,000 PSI
Hybrid 100V	59.0	2728	50,200 PSI	64.0C	2918	59,800 PSI
IMR 4831	62.0	2797	52,700 PSI	66.3C	2980	62,900 PSI
H4350	60.0	2799	55,700 PSI	64.0	2950	63,900 PSI
IMR 4451	59.2	2727	52,900 PSI	63.7C	2935	62,700 PSI
H414	59.0	2801	54,100 PSI	62.5	2959	63,000 PSI
IMR 4350	61.0	2808	52,800 PSI	65.0C	2991	63,700 PSI
760	59.0	2801	54,100 PSI	62.5	2959	63,000 PSI
H380	57.0	2718	53,700 PSI	61.0	2884	63,400 PSI
Bullet: 190 GR. SIE HPBT			**Dia: .308″**		**Col: 2.860″**	
IMR 7828	64.0	2703	52,100 PSI	69.0C*	2891	63,300 PSI
IMR 4955	62.8	2724	53,300 PSI	66.9C	2904	63,400 PSI
H4831	62.0	2704	53,800 PSI	66.5C	2858	63,400 PSI
Hybrid 100V	60.0	2790	52,000 PSI	64.5C	2951	61,000 PSI
IMR 4831	60.0	2679	49,300 PSI	64.0C	2867	61,700 PSI
H4350	57.5	2736	56,200 PSI	61.0	2853	63,400 PSI
IMR 4451	57.1	2707	53,500 PSI	61.4	2873	62,500 PSI
H414	59.0	2765	55,600 PSI	62.5	2896	63,800 PSI
IMR 4350	60.0	2755	53,200 PSI	64.0C	2920	63,700 PSI
760	59.0	2765	55,600 PSI	62.5	2896	63,800 PSI
Bullet: 200 GR. SFT SP			**Dia: .308″**		**Col: 2.790″**	
H1000	70.0	2660	51,600 PSI	72.0C	2737	57,200 PSI
IMR 7977	67.4	2604	50,900 PSI	71.0C	2776	61,100 PSI
IMR 7828	63.0	2580	50,000 PSI	67.5C*	2793	63,100 PSI
IMR 4955	62.7	2656	54,700 PSI	66.8C	2825	63,600 PSI
H4831	63.0	2678	56,000 PSI	66.5C	2802	63,700 PSI
IMR 4831	59.0	2565	49,200 PSI	63.7C	2780	62,200 PSI
H4350	58.0	2666	55,000 PSI	62.0	2792	63,200 PSI
H414	58.0	2678	55,700 PSI	61.0	2803	63,200 PSI
IMR 4350	59.0	2643	52,900 PSI	63.5C	2827	63,700 PSI
760	58.0	2678	55,700 PSI	61.0	2803	63,200 PSI
Bullet: 208 GR. HDY A-MAX			**Dia: .308″**		**Col: 2.900″**	
H1000	62.0	2420	42,900 PSI	69.0C	2670	55,900 PSI
IMR 7977	65.0	2537	49,200 PSI	68.5C	2681	56,800 PSI
IMR 7828	62.0	2556	48,000 PSI	66.8C	2761	58,400 PSI
IMR 4955	62.3	2636	54,900 PSI	66.3C	2797	63,500 PSI
H4831	61.8	2624	54,800 PSI	66.5C	2761	62,500 PSI
IMR 4831	59.0	2594	51,500 PSI	63.5C	2785	62,600 PSI
H4350	56.4	2612	55,400 PSI	60.7	2748	62,800 PSI
H414	55.6	2567	52,500 PSI	59.8	2732	62,100 PSI
IMR 4350	57.7	2593	52,000 PSI	62.0C	2773	62,900 PSI
760	55.6	2567	52,500 PSI	59.8	2732	62,100 PSI
Bullet: 220 GR. HDY RN			**Dia: .308″**		**Col: 2.830″**	
H1000	69.0	2597	57,200 PSI	72.5C	2689	63,000 PSI
IMR 7977	65.2	2517	53,200 PSI	70.2	2704	63,600 PSI
IMR 4955	60.7	2511	54,000 PSI	64.6C	2672	63,600 PSI
H4831	60.0	2520	55,600 PSI	64.3C	2646	63,500 PSI
Hybrid 100V	57.0	2522	49,300 PSI	62.0C	2711	61,400 PSI
H4350	54.0	2476	54,100 PSI	58.0	2602	63,300 PSI
H414	55.0	2484	54,000 PSI	59.0	2624	63,600 PSI
760	55.0	2484	54,000 PSI	59.0	2624	63,600 PSI

300 WINCHESTER MAGNUM

Case: Winchester Twist: 1:10″
Barrel: 24″ Trim: 2.610″ Primer: Winchester LRM, Large Rifle Magnum

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Bullet: 110 GR. SPR SP			**Dia: .308″**		**Col: 3.215″**	
H1000	80.0	3189	34,700 CUP	85.0C	3392	42,000 CUP
IMR 4955	79.3	3394	49,800 PSI	84.5C	3609	58,200 PSI
H4831	79.0	3355	41,500 CUP	84.0C	3540	48,400 CUP
IMR 4831	76.0	3410	50,900 PSI	81.0C	3656	60,700 PSI
H4350	72.0	3337	39,300 CUP	80.0	3648	49,400 CUP
H414	66.0	3330	40,900 CUP	73.0	3570	49,700 CUP
IMR 4350	74.0	3354	49,100 PSI	79.5C	3655	61,500 PSI
760	66.0	3330	40,900 CUP	73.0	3570	49,700 CUP
H380	66.0	3282	41,100 CUP	73.0	3544	49,000 CUP
Varget	67.0	3424	42,900 CUP	72.5	3660	51,700 CUP
IMR 4064	65.0	3424	50,600 PSI	70.0	3669	62,100 PSI
IMR 4166	65.8	3514	55,100 PSI	70.81	3709	63,000 PSI
IMR 4895	65.0	3440	52,000 PSI	69.5	3684	63,300 PSI
H4895	60.0	3381	43,300 CUP	67.0	3665	51,400 CUP
Bullet: 130 GR. HDY SP			**Dia: .308″**		**Col: 3.300″**	
H1000	80.0	3125	38,900 CUP	85.0C	3289	45,000 CUP
IMR 4955	76.5	3247	52,800 PSI	81.4	3471	62,900 PSI
H4831	77.0	3116	44,900 CUP	82.0C	3383	51,300 CUP
IMR 4831	75.0	3167	50,300 PSI	80.0C	3436	61,800 PSI
H4350	70.0	3219	45,800 CUP	74.0	3375	51,600 CUP
H414	67.0	3219	47,000 CUP	71.0	3360	52,300 CUP
IMR 4350	73.0	3214	50,700 PSI	78.0	3466	62,300 PSI
760	67.0	3219	47,000 CUP	71.0	3360	52,300 CUP
H380	64.0	3111	46,700 CUP	68.5	3283	52,600 CUP
Varget	64.0	3218	45,600 CUP	68.5	3398	52,100 CUP
IMR 4064	64.0	3217	51,600 PSI	68.3	3427	62,900 PSI
IMR 4166	61.8	3249	53,600 PSI	66.5	3439	62,100 PSI
IMR 4895	64.0	3198	51,600 PSI	69.0	3442	63,000 PSI
H4895	58.0	3187	46,900 CUP	62.0	3331	52,500 CUP
IMR 8208 XBR	60.0	3202	52,200 PSI	65.0	3386	62,200 PSI
Bullet: 150 GR. BAR TTSX BT Col: 3.325″					**Dia: .308″**	
IMR 7977	76.5	2992	48,200 PSI	80.0C	3127	53,700 PSI
IMR 7828 SSC	78.0	3120	51,100 PSI	83.0C*	3321	60,000 PSI
IMR 4955	74.2	3076	52,900 PSI	79.0C	3279	62,600 PSI
H4831	75.0	2985	46,300 PSI	80.0C	3182	50,100 PSI
Hybrid 100V	68.0	3140	50,700 PSI	73.0C	3340	59,900 PSI
IMR 4831	71.0	3027	47,700 PSI	76.0C	3278	58,800 PSI
H4350	69.0	3062	49,600 PSI	74.0C	3289	60,600 PSI
IMR 4451	67.1	3019	51,900 PSI	72.2	3264	62,500 PSI
H414	65.0	3053	51,200 PSI	69.7	3231	59,600 PSI
IMR 4350	70.0	3078	49,000 PSI	75.0C	3347	61,300 PSI
760	65.0	3053	51,200 PSI	69.7	3231	59,600 PSI
H380	65.0	3030	51,600 PSI	69.0	3166	57,400 PSI
IMR 4064	60.0	2969	47,300 PSI	65.5	3239	60,500 PSI
IMR 4166	58.2	2972	52,600 PSI	62.0	3138	60,900 PSI

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
IMR 4895	61.0	3018	49,600 PSI	66.3	3249	60,800 PSI
H4895	57.0	3006	52,000 PSI	63.0	3186	59,900 PSI
IMR 8208 XBR	57.0	2925	47,900 PSI	64.0	3183	61,100 PSI
Bullet: 150 GR. SIE SP			**Dia: .308″**		**Col: 3.340″**	
H1000	80.0	3004	46,500 CUP	85.0C	3255	52,200 CUP
IMR 7977	76.4	3035	49,900 PSI	82.2C	3269	59,300 PSI
IMR 7828	75.0	2913	46,200 PSI	80.0C	3148	55,600 PSI
IMR 4955	73.7	3008	50,200 PSI	78.5	3242	61,400 PSI
H4831	73.0	3025	45,700 CUP	78.0	3207	52,700 CUP
Hybrid 100V	67.0	3026	49,800 PSI	73.5	3289	62,700 PSI
IMR 4831	73.0	3037	51,300 PSI	78.0C	3289	63,300 PSI
H4350	68.0	3052	47,100 CUP	72.0	3205	52,500 CUP
IMR 4451	67.9	3046	52,700 PSI	73.1	3261	61,900 PSI
H414	62.0	2973	47,400 CUP	68.0	3145	52,500 CUP
IMR 4350	69.0	3003	50,100 PSI	74.0	3254	61,500 PSI
760	62.0	2973	47,400 CUP	68.0	3145	52,500 CUP
H380	62.0	2903	46,000 CUP	65.0	3031	52,200 CUP
Varget	56.0	2952	43,300 CUP	60.0	3108	51,400 CUP
IMR 4064	61.0	3028	52,900 PSI	65.5	3205	62,200 PSI
IMR 4166	57.5	2914	48,200 PSI	62.5	3178	62,300 PSI
IMR 4895	61.0	2980	50,700 PSI	65.5	3196	62,300 PSI
H4895	57.0	2991	47,300 CUP	61.0	3124	52,500 CUP
IMR 8208 XBR	57.0	2987	52,600 PSI	61.5	3156	60,800 PSI
Trail Boss	18.0	1302	18,400 PSI	25.5	1687	28,600 PSI
Bullet: 155 GR. SIE HPBT			**Dia: .308″**		**Col: 3.340″**	
H1000	80.0	2992	41,300 CUP	85.0C	3160	47,400 CUP
IMR 7977	76.0	3006	48,800 PSI	81.8C	3273	60,700 PSI
IMR 7828	75.0	2943	47,500 PSI	80.0C	3188	58,100 PSI
IMR 4955	73.2	3001	50,600 PSI	77.9	3239	62,500 PSI
H4831	74.0	2964	43,600 CUP	79.0C	3166	51,500 CUP
Hybrid 100V	68.0	3049	51,900 PSI	74.0	3274	63,200 PSI
IMR 4831	71.0	2963	48,100 PSI	76.5C	3226	61,600 PSI
H4350	69.0	3013	45,100 CUP	74.0	3215	52,400 CUP
IMR 4451	67.4	3017	50,200 PSI	73.3	3290	63,000 PSI
H414	67.0	2986	44,500 CUP	71.5	3157	51,300 CUP
IMR 4350	70.0	3064	51,600 PSI	74.5	3273	63,300 PSI
760	67.0	2986	44,500 CUP	71.5	3157	51,300 CUP
H380	61.0	2869	44,300 CUP	65.0	3025	51,900 CUP
Varget	55.0	2897	42,400 CUP	59.7	3090	52,000 CUP
IMR 4064	61.0	3014	52,000 PSI	65.0	3195	61,900 PSI
IMR 4166	57.3	2938	50,100 PSI	62.3	3161	63,100 PSI
IMR 4895	61.0	3002	50,900 PSI	65.5	3210	63,100 PSI
H4895	55.0	2919	43,700 CUP	59.0	3078	52,200 CUP
IMR 8208 XBR	58.0	2997	55,000 PSI	61.5	3117	60,700 PSI
Bullet: 165 GR. SPR SP			**Dia: .308″**		**Col: 3.340″**	
H1000	79.0	2957	44,600 CUP	84.0	3117	51,300 CUP
IMR 7977	75.5	2908	48,600 PSI	81.2C	3192	62,200 PSI
IMR 7828	74.0	2884	49,500 PSI	79.5C	3127	60,600 PSI
IMR 4955	71.5	2906	52,600 PSI	76.5C	3122	62,900 PSI
H4831	72.0	2934	47,600 CUP	75.5	3055	52,200 CUP
Hybrid 100V	66.0	2905	50,700 PSI	72.0	3144	62,500 PSI
IMR 4831	70.0	2878	49,800 PSI	75.2C	3142	62,900 PSI
H4350	66.0	2910	46,900 CUP	70.0	3042	51,900 CUP
IMR 4451	65.0	2882	51,700 PSI	70.7	3115	62,000 PSI
H414	61.0	2853	48,500 CUP	65.0	2968	52,900 CUP
IMR 4350	68.0	2875	50,000 PSI	73.3	3142	63,100 PSI
760	61.0	2853	48,500 CUP	65.0	2968	52,900 CUP
H380	59.0	2754	44,500 CUP	63.0	2909	52,400 CUP
Varget	54.0	2799	43,900 CUP	58.5	2975	52,900 CUP
IMR 4166	57.0	2878	54,500 PSI	61.9	3054	62,500 PSI
H4895	55.0	2839	46,700 CUP	59.0	2977	52,500 CUP
Bullet: 168 GR. HDY BTHP			**Dia: .308″**		**Col: 3.340″**	
H1000	79.0	2938	44,900 CUP	84.0	3110	51,000 CUP
IMR 7977	75.1	2948	51,400 PSI	80.8C	3186	63,200 PSI
IMR 7828	75.0	2888	50,900 PSI	80.0C	3129	62,300 PSI
IMR 4955	71.1	2872	51,300 PSI	75.8	3091	62,400 PSI
H4831	72.0	2876	45,100 CUP	75.5	3023	51,400 CUP
Hybrid 100V	65.0	2884	50,100 PSI	71.0	3128	62,900 PSI
IMR 4831	70.0	2854	50,500 PSI	75.5C	3115	62,700 PSI
H4350	66.0	2900	45,500 CUP	70.0	3034	51,000 CUP
IMR 4451	64.8	2892	52,000 PSI	70.5	3114	62,500 PSI
H414	64.0	2873	45,400 CUP	68.0	3014	51,700 CUP
IMR 4350	68.0	2883	50,900 PSI	72.5	3089	61,300 PSI
760	64.0	2873	45,400 CUP	68.0	3014	51,700 CUP
H380	59.0	2738	44,200 CUP	63.0	2903	52,700 CUP
Varget	54.0	2795	44,300 CUP	58.2	2964	52,900 CUP
IMR 4166	55.2	2808	52,300 PSI	60.0	3008	61,800 PSI
H4895	55.0	2843	47,800 CUP	59.0	2977	52,900 CUP
Bullet: 175 GR. SIE HPBT			**Dia: .308″**		**Col: 3.300″**	
H1000	77.0	2820	43,100 CUP	82.0C	3008	51,800 CUP
IMR 7977	74.4	2914	51,100 PSI	80.0C	3131	62,900 PSI
IMR 7828 SSC	71.1	2703	42,700 PSI	79.0C	3051	58,900 PSI
IMR 4955	70.3	2841	52,300 PSI	75.2	3051	62,900 PSI
H4831	72.0	2843	46,600 CUP	76.5	3006	53,100 CUP
Hybrid 100V	65.0	2837	49,900 PSI	70.5	3068	62,300 PSI
IMR 4831	69.5	2889	49,600 PSI	75.5C	3150	63,200 PSI
H4350	66.0	2832	45,800 CUP	71.0	2992	52,700 CUP
IMR 4451	64.2	2830	51,300 PSI	69.8	3061	62,500 PSI
H414	63.0	2830	48,200 CUP	67.5	2972	53,300 CUP
IMR 4350	68.3	2910	51,900 PSI	72.7	3106	63,000 PSI
760	63.0	2830	48,200 CUP	67.5	2972	53,300 CUP
Bullet: 180 GR. NOS E-TIP			**Dia: .308″**		**Col: 3.340″**	
H1000	74.6	2821	53,300 PSI	79.4C	2984	62,400 PSI
IMR 7977	70.4	2768	51,000 PSI	75.8C	2981	61,900 PSI
IMR 7828	68.4	2811	52,700 PSI	73.5C	2995	61,600 PSI
IMR 4955	67.9	2749	53,700 PSI	72.7C	2945	62,600 PSI
H4831	66.8	2770	53,300 PSI	71.8C	2938	61,900 PSI
Hybrid 100V	58.9	2679	47,700 PSI	66.0	2941	60,800 PSI
IMR 4831	67.3	2817	54,500 PSI	70.2C	2916	59,700 PSI
H4350	62.1	2730	52,300 PSI	66.8	2916	62,600 PSI
IMR 4451	60.2	2670	51,800 PSI	65.5	2915	62,500 PSI
H414	60.0	2760	56,000 PSI	62.8	2849	60,600 PSI
IMR 4350	64.7	2797	53,200 PSI	68.1	2932	60,500 PSI
760	60.0	2760	56,000 PSI	62.8	2849	60,600 PSI
Bullet: 180 GR. SPR MT-SP			**Dia: .308″**		**Col: 3.285″**	
US 869	86.0	2824	52,500 PSI	88.0	2892	56,800 PSI
H1000	76.0	2883	46,800 CUP	81.0C	3042	52,900 CUP
IMR 7977	70.1	2757	50,400 PSI	75.4	2969	60,400 PSI
IMR 7828	73.0	2770	49,700 PSI	78.5C	3034	62,000 PSI
IMR 4955	67.8	2744	50,900 PSI	73.7	2984	62,900 PSI
H4831	69.0	2851	48,500 CUP	73.0C	2966	53,200 CUP
Hybrid 100V	62.0	2775	50,200 PSI	67.7	2998	62,400 PSI
IMR 4831	69.0	2766	50,100 PSI	74.0C	3025	63,200 PSI
H4350	63.0	2787	46,400 CUP	67.0	2918	53,100 CUP
IMR 4451	61.3	2739	52,400 PSI	66.7	2944	62,500 PSI
H414	58.0	2722	48,200 CUP	62.0	2845	52,300 CUP
IMR 4350	66.0	2746	50,100 PSI	71.0	2974	61,200 PSI
760	58.0	2722	48,200 CUP	62.0	2845	52,300 CUP
Bullet: 190 GR. HDY BTSP			**Dia: .308″**		**Col: 3.340″**	
H1000	76.0	2822	44,900 CUP	81.0C	2990	52,800 CUP
IMR 7977	71.0	2748	50,500 PSI	76.4C	2963	61,400 PSI
IMR 7828	71.0	2676	46,700 PSI	76.5C	2975	61,000 PSI
IMR 4955	67.5	2689	50,900 PSI	73.4	2937	63,100 PSI
H4831	69.0	2795	48,400 CUP	73.0C	2923	53,600 CUP
Hybrid 100V	63.5	2811	56,200 PSI	67.5	2933	62,800 PSI
IMR 4831	68.0	2741	51,000 PSI	72.5	2951	61,200 PSI
H4350	63.0	2735	46,600 CUP	67.0	2863	53,400 CUP
IMR 4451	62.0	2727	52,800 PSI	67.4	2933	62,500 PSI
IMR 4350	65.0	2739	49,900 PSI	69.7	2959	61,500 PSI

NEVER EXCEED MAXIMUM LOADS

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Bullet: 200 GR. NOS AB Dia: .308″ Col: 3.340″						
Retumbo	73.0	2703	44,600 CUP	78.0C	2872	52,100 CUP
IMR 8133	73.6	2639	45,300 PSI	80.0C	2880	55,500 PSI
H1000	72.0	2662	44,500 CUP	77.0C	2826	52,600 CUP
IMR 7977	70.4	2681	52,300 PSI	75.8C	2861	61,000 PSI
IMR 4955	66.2	2620	52,300 PSI	72.0C	2832	62,400 PSI
H4831	67.0	2686	49,500 CUP	71.5C	2785	52,800 CUP
Hybrid 100V	61.0	2561	47,200 PSI	67.0C	2821	61,400 PSI
H4350	60.0	2576	44,400 CUP	64.4	2723	51,600 CUP
IMR 4451	58.6	2571	51,000 PSI	63.8	2791	62,900 PSI
Bullet: 200 GR. NOS PART Dia: .308″ Col: 3.340″						
US 869	83.0	2657	49,200 PSI	85.0	2712	51,800 PSI
Retumbo	79.0	2798	45,700 CUP	84.0C	2962	52,300 CUP
IMR 8133	75.5	2702	47,000 PSI	82.0C	2965	59,500 PSI
H1000	74.0	2725	45,500 CUP	79.0C	2883	52,800 CUP
IMR 7977	71.3	2727	53,800 PSI	76.7C	2910	62,500 PSI
IMR 7828	71.0	2645	48,200 PSI	76.0C	2851	58,400 PSI
IMR 4955	67.1	2630	51,700 PSI	73.0C	2850	63,500 PSI
H4831	67.0	2686	47,000 CUP	72.0C	2825	53,100 CUP
Hybrid 100V	61.0	2636	49,400 PSI	66.0	2820	59,400 PSI
IMR 4831	69.0	2694	51,900 PSI	72.5C	2859	60,900 PSI
H4350	63.0	2646	47,800 CUP	66.0	2753	51,700 CUP
IMR 4451	61.3	2648	53,700 PSI	66.7	2839	63,000 PSI
IMR 4350	65.0	2700	53,900 PSI	69.5	2860	62,600 PSI
Bullet: 208 GR. HDY A-MAX Dia: .308″ Col: 3.420″						
Retumbo	74.5	2717	50,300 PSI	81.0C	2915	61,300 PSI
IMR 8133	74.5	2680	47,500 PSI	81.0C	2950	61,300 PSI
H1000	71.7	2650	47,800 PSI	78.0C	2869	60,200 PSI
IMR 7977	69.9	2645	50,600 PSI	75.2C	2852	61,700 PSI
IMR 7828	68.0	2635	47,400 PSI	74.0C	2899	62,000 PSI
IMR 4955	67.1	2621	48,700 PSI	73.0C	2857	62,300 PSI
H4831	66.5	2671	53,200 PSI	72.3	2838	62,000 PSI
Hybrid 100V	61.4	2620	50,100 PSI	66.7	2831	62,400 PSI
IMR 4831	63.7	2613	48,600 PSI	69.2	2832	60,500 PSI
H4350	60.4	2655	53,600 PSI	65.7	2813	62,000 PSI
Bullet: 220 GR. SIE RN Dia: .308″ Col: 3.340″						
US 869	82.0	2578	49,500 PSI	84.9	2661	54,400 PSI
Retumbo	76.0	2646	44,400 CUP	81.0C	2810	52,400 CUP
IMR 8133	74.5	2599	47,900 PSI	81.0C	2858	61,200 PSI
H1000	73.0	2588	44,500 CUP	78.0	2750	52,000 CUP
IMR 7977	69.2	2526	49,100 PSI	74.5C	2751	62,000 PSI
IMR 7828	70.0	2541	49,600 PSI	75.0C	2760	61,700 PSI
IMR 4955	67.0	2546	49,100 PSI	72.9C	2738	61,600 PSI
H4831	66.0	2533	44,900 CUP	71.0	2685	53,100 CUP
Hybrid 100V	61.0	2474	48,800 PSI	67.0C	2694	62,300 PSI
IMR 4831	66.0	2531	51,000 PSI	71.0	2718	61,600 PSI
H4350	61.0	2501	46,100 CUP	65.0	2622	52,300 CUP
Bullet: 230 GR. BER TACT Dia: .308″ Col: 3.395″						
US 869	77.7	2423	41,700 PSI	83.5C	2610	50,200 PSI
Retumbo	71.6	2520	44,700 PSI	77.0C	2714	55,200 PSI
IMR 8133	72.3	2596	49,800 PSI	78.6C	2835	62,900 PSI
H1000	69.1	2471	44,200 PSI	76.0C	2721	58,200 PSI
IMR 7977	68.2	2543	53,400 PSI	73.4C	2724	62,900 PSI
IMR 7828	66.7	2507	46,200 PSI	72.6C	2774	61,300 PSI
IMR 4955	64.2	2495	50,000 PSI	69.8C	2701	62,900 PSI
H4831	64.1	2527	50,800 PSI	70.3	2710	61,200 PSI
Hybrid 100V	59.5	2506	51,800 PSI	64.3	2690	62,600 PSI
IMR 4831	62.9	2553	51,500 PSI	68.7	2739	61,600 PSI

300 PRC

Case: Hornady Twist: 1:8.5″
Barrel: 24″ Trim: 2.580″ Primer: Winchester LR Magnum

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Bullet: 150 GR. SFT SCIR Dia: .308″ Col: 3.515″						
H1000	81.4	3060	47,000 PSI	89.5C	3354	62,500 PSI
IMR 7977	78.1	3002	47,300 PSI	84.9	3313	62,900 PSI
IMR 7828 SSC	74.5	3016	47,800 PSI	81.4	3304	62,400 PSI
IMR 4955	74.3	3060	48,900 PSI	80.0	3320	62,100 PSI
H4831	76.8	3064	50,200 PSI	83.0	3306	62,900 PSI
Bullet: 168 GR. SIE TMK Dia: .308″ Col: 3.500″						
Retumbo	81.2	2949	46,800 PSI	87.8C	3223	63,000 PSI
IMR 8133	80.1	2857	43,700 PSI	86.7C	3188	60,500 PSI
H1000	80.9	2973	49,100 PSI	87.0C	3205	62,800 PSI
IMR 7977	77.7	2920	47,900 PSI	82.4	3162	62,400 PSI
IMR 7828 SSC	78.6	3020	53,300 PSI	82.4	3192	62,500 PSI
IMR 4955	72.8	2959	49,300 PSI	78.8	3204	63,200 PSI
Bullet: 175 GR. BAR LRX BT Dia: .308″ Col: 3.425″						
Retumbo	78.5	2957	50,600 PSI	83.6C	3156	62,700 PSI
H1000	79.2	2927	50,900 PSI	85.5C	3142	62,700 PSI
IMR 7977	75.2	2848	49,500 PSI	81.2C	3093	62,800 PSI
IMR 7828 SSC	73.4	2839	47,800 PSI	79.4C	3122	62,400 PSI
IMR 4955	70.5	2868	49,900 PSI	76.2	3100	62,500 PSI
Suprform	68.7	2928	53,000 PSI	72.0	3072	61,400 PSI
H4831	71.5	2863	51,100 PSI	77.3	3054	62,100 PSI
Bullet: 180 GR. NOS E-TIP Dia: .308″ Col: 3.575″						
Retumbo	73.7	2826	50,200 PSI	79.3	3042	62,600 PSI
IMR 8133	76.4	2812	50,400 PSI	82.2	3057	62,700 PSI
H1000	75.1	2833	51,600 PSI	80.8	3035	62,400 PSI
IMR 7977	71.6	2720	49,600 PSI	77.3	2976	62,200 PSI
IMR 7828 SSC	70.2	2783	51,900 PSI	75.7	2997	62,400 PSI
Bullet: 190 GR. NOS ABLR Dia: .308″ Col: 3.575″						
Retumbo	78.2	2820	48,300 PSI	83.2	3043	62,700 PSI
IMR 8133	79.7	2818	48,300 PSI	84.5	3053	62,300 PSI
IMR 7977	74.6	2736	47,300 PSI	80.7	2995	62,400 PSI
IMR 7828 SSC	73.4	2797	49,500 PSI	79.4	3037	63,200 PSI
IMR 4955	69.9	2783	50,100 PSI	75.6	3002	63,000 PSI
H4831	71.6	2779	49,400 PSI	77.4	2990	62,100 PSI
Bullet: 200 GR. SFT AF Dia: .308″ Col: 3.450″						
Retumbo	74.2	2643	45,600 PSI	80.6	2916	62,000 PSI
IMR 8133	76.7	2662	49,100 PSI	82.5	2896	61,800 PSI
H1000	75.2	2694	49,900 PSI	80.9	2908	62,800 PSI
IMR 7977	72.0	2574	48,700 PSI	77.5	2833	62,700 PSI
IMR 7828 SSC	71.7	2651	49,900 PSI	77.1	2879	62,600 PSI
IMR 4955	68.6	2709	55,500 PSI	72.8	2846	63,000 PSI
H4831	70.1	2706	55,100 PSI	74.6	2839	62,200 PSI
Bullet: 212 GR. HDY ELD-X Dia: .308″ Col: 3.575″						
Retumbo	74.3	2666	47,100 PSI	78.3	2873	62,500 PSI
IMR 8133	75.4	2636	48,600 PSI	80.5	2866	62,500 PSI
H1000	74.2	2686	51,400 PSI	79.4	2861	62,900 PSI
IMR 7977	71.9	2609	49,800 PSI	77.2	2834	63,600 PSI
IMR 7828 SSC	70.1	2655	50,300 PSI	75.4	2870	63,700 PSI
IMR 4955	67.9	2693	55,500 PSI	72.6	2826	63,100 PSI
Bullet: 220 GR. HDY ELD-X Dia: .308″ Col: 3.575″						
Retumbo	70.7	2590	48,100 PSI	76.4	2803	62,800 PSI
IMR 8133	73.2	2572	48,300 PSI	79.2C	2810	62,700 PSI
H1000	72.2	2626	50,600 PSI	78.0	2812	62,300 PSI
IMR 7977	69.4	2549	49,600 PSI	74.8	2741	62,300 PSI
IMR 7828 SSC	67.6	2602	52,300 PSI	73.0	2778	62,800 PSI
Bullet: 230 GR. BER TACT Dia: .308″ Col: 3.575″						
Retumbo	71.5	2558	51,400 PSI	76.1	2733	62,900 PSI
IMR 8133	73.0	2491	48,000 PSI	78.5	2740	62,500 PSI
H1000	70.4	2547	52,600 PSI	75.7	2721	63,000 PSI
IMR 7977	69.4	2478	52,100 PSI	74.6	2667	63,700 PSI
IMR 7828 SSC	63.4	2475	52,300 PSI	68.2	2645	63,300 PSI

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

30 NOSLER

Case: Nosler Twist: 1:10″
Barrel: 24″ Trim: 2.556″ Primer: Winchester LRM, Large Rifle Magnum

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Bullet: 130 GR. BAR TSX BT			**Dia: .308″**		**Col: 3.340″**	
Retumbo	83.7	3246	48,400 PSI	93.0C	3565	63,500 PSI
IMR 8133	85.5	3170	44,700 PSI	95.0C	3580	62,300 PSI
H1000	84.7	3232	47,300 PSI	94.1C	3559	62,700 PSI
IMR 7977	80.9	3204	47,500 PSI	89.9C	3576	63,700 PSI
IMR 7828	79.2	3277	49,900 PSI	87.0	3582	63,200 PSI
IMR 4955	77.6	3263	49,000 PSI	85.3	3567	63,400 PSI
H4831	78.9	3234	49,300 PSI	87.7	3527	63,500 PSI
Bullet: 150 GR. SIE SPBT			**Dia: .308″**		**Col: 3.340″**	
Retumbo	80.3	3054	47,800 PSI	88.2	3336	62,000 PSI
IMR 8133	83.0	3009	46,800 PSI	91.0C	3331	60,800 PSI
H1000	80.4	3102	51,600 PSI	88.2	3343	63,500 PSI
IMR 7977	77.2	3035	50,300 PSI	84.7	3322	63,000 PSI
IMR 7828	75.0	3092	51,000 PSI	82.4	3370	63,500 PSI
IMR 4955	73.5	3045	49,700 PSI	80.8	3329	63,000 PSI
H4831	75.5	3046	50,400 PSI	83.0	3307	63,600 PSI
Bullet: 165 GR. SFT SP			**Dia: .308″**		**Col: 3.340″**	
US 869	87.8	2851	46,700 PSI	96.5C	3203	63,300 PSI
Retumbo	79.1	2927	47,200 PSI	86.9C	3236	63,500 PSI
IMR 8133	82.0	2909	47,600 PSI	89.0	3225	62,300 PSI
H1000	79.0	2925	48,800 PSI	86.8	3216	63,300 PSI
IMR 7977	76.2	2890	48,600 PSI	83.4	3189	63,100 PSI
IMR 7828	74.0	2955	50,300 PSI	81.0	3243	63,600 PSI
IMR 4955	72.5	2970	52,800 PSI	79.1	3185	63,600 PSI
H4831	73.0	2912	50,900 PSI	80.3	3160	63,100 PSI
Bullet: 168 GR. NOS E-TIP			**Dia: .308″**		**Col: 3.340″**	
US 869	86.1	2850	50,100 PSI	94.6C	3156	63,500 PSI
Retumbo	74.6	2859	48,200 PSI	82.0	3160	63,800 PSI
IMR 8133	77.7	2852	48,600 PSI	85.4C	3183	63,500 PSI
H1000	75.3	2926	53,000 PSI	82.8	3142	63,200 PSI
IMR 7977	70.8	2799	50,000 PSI	77.8	3074	63,000 PSI
IMR 7828	66.4	2770	47,400 PSI	73.0	3099	62,400 PSI
IMR 4955	67.3	2842	51,800 PSI	74.0	3093	63,200 PSI
H4831	68.3	2827	51,900 PSI	75.0	3070	63,400 PSI
Bullet: 180 GR. SIE SPBT			**Dia: .308″**		**Col: 3.340″**	
US 869	86.0	2825	49,400 PSI	94.5C	3105	62,800 PSI
Retumbo	76.0	2853	49,200 PSI	83.0	3099	62,800 PSI
IMR 8133	77.5	2824	48,300 PSI	85.5C	3128	63,300 PSI
H1000	75.0	2842	49,900 PSI	82.5	3090	63,000 PSI
IMR 7977	74.0	2840	51,400 PSI	81.0	3077	63,700 PSI
IMR 7828	71.5	2886	52,000 PSI	78.5	3112	63,000 PSI
IMR 4955	69.0	2820	50,200 PSI	76.0	3069	63,300 PSI
H4831	71.1	2854	52,400 PSI	78.1	3059	62,400 PSI
Bullet: 190 GR. NOS ABLR			**Dia: .308″**		**Col: 3.575″**	
H1000	76.9	2786	47,500 PSI	83.1	3033	62,400 PSI
Bullet: 200 GR. BAR LRX BT					**Dia: .308″**	
Col: 3.340″						
US 869	81.4	2686	50,800 PSI	89.5	2943	63,600 PSI
Retumbo	69.8	2735	54,600 PSI	76.8	2906	63,000 PSI
IMR 8133	71.4	2662	51,800 PSI	77.7C	2832	59,400 PSI
H1000	69.5	2686	52,700 PSI	76.4	2890	63,200 PSI
IMR 7977	65.8	2569	50,700 PSI	72.4	2819	63,000 PSI
IMR 7828	66.1	2680	52,800 PSI	72.7	2896	63,700 PSI
IMR 4955	63.5	2629	53,000 PSI	68.5	2807	63,300 PSI
H4831	66.0	2685	55,300 PSI	71.0	2833	63,300 PSI
Bullet: 210 GR. NOS ABLR			**Dia: .308″**		**Col: 3.340″**	
US 869	83.4	2621	47,400 PSI	91.7C	2885	60,100 PSI
Retumbo	73.1	2685	51,700 PSI	80.3	2909	63,500 PSI
IMR 8133	76.6	2666	49,900 PSI	83.3C	2901	62,000 PSI
H1000	66.2	2479	42,900 PSI	78.7	2864	62,500 PSI
IMR 7977	71.3	2614	49,800 PSI	76.7	2852	62,700 PSI
IMR 7828	67.9	2645	50,900 PSI	74.6	2883	63,400 PSI
Bullet: 220 GR. HDY ELD-X			**Dia: .308″**		**Col: 3.340″**	
US 869	82.3	2596	49,200 PSI	90.5	2855	62,600 PSI
Retumbo	70.7	2618	52,600 PSI	77.7C	2809	62,900 PSI
IMR 8133	74.6	2626	51,900 PSI	82.0C	2854	63,500 PSI
H1000	70.1	2618	54,000 PSI	77.1	2795	63,800 PSI
IMR 7977	69.2	2573	52,700 PSI	76.0	2784	63,800 PSI
IMR 7828	65.8	2582	52,100 PSI	72.3	2788	63,900 PSI
Bullet: 230 GR. BER TACT			**Dia: .308″**		**Col: 3.340″**	
US 869	82.8	2581	48,600 PSI	90.0C	2812	60,800 PSI
Retumbo	71.5	2508	45,400 PSI	78.6	2784	62,300 PSI
IMR 8133	75.1	2582	50,600 PSI	82.6C	2824	63,800 PSI
H1000	70.1	2539	49,900 PSI	77.0	2748	62,500 PSI
IMR 7977	68.8	2481	48,400 PSI	75.7	2746	63,600 PSI
IMR 7828	66.4	2552	50,900 PSI	73.0	2761	63,200 PSI

300 WEATHERBY MAGNUM

Case: Remington Twist: 1:10″
Barrel: 24″ Trim: 2.810″ Primer: Federal 215M, Large Rifle Magnum Match

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Bullet: 150 GR. BAR TSX			**Dia: .308″**		**Col: 3.570″**	
H1000	83.0	3056	43,500 CUP	88.0C	3220	49,900 CUP
IMR 7828 SSC	79.0	3146	45,600 CUP	86.5C*	3400	54,200 CUP
IMR 4955	77.0	3131	46,600 CUP	82.9	3368	54,400 CUP
H4831	77.0	3031	45,200 CUP	84.0C	3275	52,900 CUP
Hybrid 100V	70.0	3103	42,500 CUP	76.5	3310	49,100 CUP
IMR 4831	76.0	3154	46,400 CUP	82.7C	3437	54,100 CUP
H4350	70.0	3084	44,700 CUP	76.5	3310	53,800 CUP
IMR 4451	71.3	3035	44,400 CUP	77.6	3298	53,400 CUP
H414	67.0	3007	44,400 CUP	72.5	3201	53,000 CUP
IMR 4350	73.0	3151	45,400 CUP	79.5	3396	54,300 CUP
H380	63.0	2908	44,200 CUP	69.5	3142	53,800 CUP
Varget	59.0	2935	42,200 CUP	64.5	3155	54,000 CUP
IMR 4064	62.0	3045	44,200 CUP	67.0	3244	51,900 CUP
IMR 4895	61.0	3011	44,000 CUP	66.0	3214	53,100 CUP
H4895	57.0	2926	42,200 CUP	61.5	3112	54,100 CUP
Trail Boss	19.0	1334	20,300 CUP	27.5	1656	28,900 CUP
Bullet: 165 GR. NOS BT			**Dia: .308″**		**Col: 3.560″**	
H1000	84.0	3014	45,600 CUP	89.7C	3216	54,200 CUP
IMR 7977	81.8	2908	43,600 CUP	88.0C	3153	52,800 CUP
IMR 7828	77.0	2957	46,800 CUP	82.0	3145	53,400 CUP
IMR 4955	74.7	2983	45,800 CUP	80.3	3188	53,600 CUP
H4831	75.0	2934	46,400 CUP	80.2	3113	54,000 CUP
Hybrid 100V	71.0	2995	45,400 CUP	78.0	3236	53,800 CUP
IMR 4831	73.0	2981	46,600 CUP	78.0	3175	54,100 CUP
H4350	69.0	2908	45,400 CUP	74.0	3074	54,100 CUP
IMR 4451	69.9	2866	44,200 CUP	76.0	3148	54,000 CUP
H414	65.0	2892	48,200 CUP	70.0	3034	53,700 CUP
IMR 4350	70.0	2973	46,900 CUP	75.0	3143	53,400 CUP
760	65.0	2892	48,200 CUP	70.0	3034	53,700 CUP
H380	63.0	2787	46,300 CUP	67.5	2950	53,700 CUP
Varget	58.0	2873	46,300 CUP	62.0	3033	54,200 CUP
H4895	58.0	2871	48,000 CUP	62.5	3028	54,200 CUP
Bullet: 168 GR. NOS E-TIP			**Dia: .308″**		**Col: 3.590″**	
H1000	82.0	2959	44,100 CUP	88.0C	3197	53,700 CUP
IMR 7977	81.3	2924	45,800 CUP	86.5C	3135	53,700 CUP
IMR 7828 SSC	78.0	2956	46,700 CUP	84.0C*	3205	54,200 CUP
IMR 4955	74.2	2940	46,400 CUP	79.8	3188	54,200 CUP
H4831	74.0	2865	43,700 CUP	81.0C	3107	54,200 CUP
Hybrid 100V	68.0	2923	45,000 CUP	74.0	3150	53,700 CUP
IMR 4831	71.0	2907	45,800 CUP	77.5	3158	54,000 CUP
H4350	66.0	2898	46,900 CUP	72.5	3099	53,800 CUP
IMR 4451	70.2	2879	47,200 CUP	75.5	3118	54,600 CUP

NEVER EXCEED MAXIMUM LOADS

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
H414	62.0	2750	44,300 CUP	69.0	2994	53,900 CUP
IMR 4350	70.0	2911	45,300 CUP	76.0	3164	54,300 CUP
760	62.0	2750	44,300 CUP	69.0	2994	53,900 CUP
H380	63.0	2752	45,700 CUP	68.0	2929	53,800 CUP
Varget	59.0	2854	48,000 CUP	63.5	2999	53,800 CUP
H4895	55.0	2773	47,000 CUP	60.0	2968	54,500 CUP
Bullet: 180 GR. NOS E-TIP Dia: .308″ Col: 3.590″						
H1000	79.0	2861	46,300 CUP	85.0C	3054	53,900 CUP
IMR 7977	79.7	2832	45,900 CUP	85.8C	3035	53,800 CUP
IMR 7828 SSC	75.0	2851	46,700 CUP	81.0	3076	53,900 CUP
IMR 4955	71.8	2826	46,600 CUP	77.3	3023	53,600 CUP
H4831	71.0	2772	46,700 CUP	78.0	2977	53,300 CUP
Hybrid 100V	66.0	2802	44,600 CUP	72.5	3046	53,700 CUP
IMR 4831	69.0	2804	46,300 CUP	75.0	3021	53,700 CUP
H4350	64.0	2783	47,100 CUP	70.0	2968	54,100 CUP
IMR 4451	67.7	2751	46,900 CUP	73.6	2985	54,100 CUP
H414	61.0	2691	48,500 CUP	67.0	2893	54,600 CUP
IMR 4350	67.0	2781	44,800 CUP	73.0	3008	53,300 CUP
760	61.0	2691	48,500 CUP	67.0	2893	54,600 CUP
H380	61.0	2640	46,500 CUP	66.5	2826	53,800 CUP
Bullet: 180 GR. SPR BTSP Dia: .308″ Col: 3.560″						
H1000	83.0	2971	43,800 CUP	88.5C	3151	53,500 CUP
IMR 7977	80.9	2866	44,300 CUP	87.0C	3098	53,200 CUP
IMR 7828	75.0	2583	47,000 CUP	80.5	3064	53,400 CUP
IMR 4955	74.4	2915	45,700 CUP	80.9	3149	54,500 CUP
H4831	76.0	2910	45,300 CUP	81.5	3096	54,000 CUP
Hybrid 100V	70.0	2954	46,100 CUP	77.0	3171	54,600 CUP
IMR 4831	70.0	2835	47,100 CUP	75.5	2997	53,500 CUP
H4350	69.0	2876	44,600 CUP	73.5	3022	54,000 CUP
IMR 4451	69.0	2831	46,500 CUP	75.0	3041	53,900 CUP
H414	67.0	2825	45,600 CUP	71.5	2984	53,000 CUP
IMR 4350	68.0	2865	46,200 CUP	72.6	3018	53,000 CUP
760	67.0	2825	45,600 CUP	71.5	2984	53,000 CUP
H380	62.0	2734	45,000 CUP	67.0	2896	54,000 CUP
Bullet: 180 GR. WIN FS Dia: .308″ Col: 3.560″						
H1000	78.0	2921	47,800 CUP	83.0C	3111	54,600 CUP
H4831	74.0	2892	50,200 CUP	79.0	3013	54,600 CUP
H4350	67.0	2813	46,500 CUP	72.0	2974	54,600 CUP
Bullet: 200 GR. NOS AB Dia: .308″ Col: 3.590						
Retumbo	79.0	2753	45,800 CUP	84.5C	2942	53,100 CUP
IMR 8133	81.2	2659	40,900 CUP	87.5C	2926	50,500 CUP
H1000	77.0	2709	45,800 CUP	83.0C	2884	53,700 CUP
IMR 7977	78.1	2720	44,900 CUP	84.0C	2939	53,600 CUP
IMR 4955	70.4	2734	46,900 CUP	75.8	2904	53,800 CUP
H4831	70.0	2702	49,300 CUP	75.0	2839	54,400 CUP
Hybrid 100V	68.0	2737	45,900 CUP	73.5	2940	54,000 CUP
IMR 4451	66.5	2634	46,700 CUP	72.3	2857	54,200 CUP
Bullet: 200 GR. SFT Dia: .308″ Col: 3.510″						
Retumbo	80.0	2764	46,100 CUP	85.5C	2981	54,400 CUP
IMR 8133	81.6	2643	40,300 CUP	87.5C	2910	50,300 CUP
H1000	79.0	2766	43,200 CUP	85.0C	2963	53,400 CUP
IMR 7977	80.2	2707	43,700 CUP	85.8C	2961	54,000 CUP
IMR 7828	73.0	2693	48,100 CUP	78.3	2872	53,800 CUP
IMR 4955	71.8	2732	45,600 CUP	77.3	2929	54,100 CUP
H4831	72.0	2708	44,700 CUP	77.5	2869	52,900 CUP
Hybrid 100V	67.0	2699	44,900 CUP	73.0	2906	53,200 CUP
IMR 4831	68.0	2641	45,800 CUP	73.0	2806	53,400 CUP
H4350	66.0	2706	45,800 CUP	71.0	2866	54,300 CUP
IMR 4451	67.6	2642	45,700 CUP	73.5	2860	54,100 CUP
IMR 4350	66.0	2680	46,000 CUP	70.5	2807	52,800 CUP
Bullet: 220 GR. HDY RN Dia: .308″ Col: 3.565″						
Retumbo	79.0	2679	45,900 CUP	84.0C	2853	54,000 CUP
IMR 8133	81.2	2633	42,700 CUP	87.5C	2867	52,800 CUP
H1000	77.0	2670	45,100 CUP	82.5	2833	53,400 CUP
IMR 7977	77.6	2601	42,800 CUP	83.0C	2815	53,900 CUP
IMR 7828	70.0	2569	47,200 CUP	75.3	2739	54,100 CUP
IMR 4955	66.8	2539	44,500 CUP	74.0	2757	54,100 CUP
H4831	71.0	2630	47,200 CUP	75.7	2766	54,500 CUP
Hybrid 100V	65.0	2579	45,100 CUP	71.0	2762	53,900 CUP
IMR 4831	65.0	2529	46,000 CUP	70.0	2657	53,600 CUP
H4350	66.0	2599	45,900 CUP	70.0	2725	53,800 CUP
IMR 4451	64.3	2501	46,200 CUP	70.7	2710	54,500 CUP
IMR 4350	63.0	2517	46,300 CUP	67.7	2700	53,500 CUP

300 REMINGTON ULTRA MAG

Case: Remington Twist: 1:10″
Barrel: 24″ Trim: 2.840″ Primer: Remington 9 1/2M, Large Rifle Magnum

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Bullet: 150 GR. SIE SPBT Dia: .308″ Col: 3.530″						
Retumbo	100.0	3343	52,600 PSI	106.0C	3531	60,800 PSI
IMR 8133	97.5	3254	52,800 PSI	104.0	3510	63,500 PSI
H1000	98.0	3258	53,100 PSI	102.0	3457	62,900 PSI
IMR 7977	95.5	3238	51,100 PSI	101.7	3515	63,700 PSI
IMR 7828	86.5	3105	52,100 PSI	92.0	3319	63,000 PSI
H4831	90.0	3243	55,100 PSI	94.0	3408	62,900 PSI
IMR 4831	85.0	3207	50,600 PSI	90.5	3380	63,700 PSI
IMR 4350	81.5	3147	53,200 PSI	86.7	3362	63,500 PSI
Bullet: 165 GR. SFT SP Dia: .308″ Col: 3.530″						
Retumbo	97.0	3241	54,200 PSI	103.0C	3414	62,300 PSI
IMR 8133	95.5	3131	53,400 PSI	102.0	3361	63,400 PSI
H1000	94.0	3135	53,300 PSI	98.0	3321	62,500 PSI
IMR 7977	92.3	3074	49,600 PSI	98.8	3360	63,600 PSI
IMR 7828	84.5	2985	54,300 PSI	90.0	3178	63,200 PSI
H4831	85.0	3057	52,300 PSI	90.0	3255	62,100 PSI
IMR 4831	80.0	2951	51,100 PSI	87.0	3215	62,900 PSI
IMR 4350	78.0	2985	52,800 PSI	83.0	3181	63,100 PSI
Bullet: 180 GR. BAR TTSX BT Dia: .308″ Col: 3.600″						
US 869	98.0	2861	47,000 PSI	107.0	3155	58,700 PSI
H50BMG	97.0	2977	55,800 PSI	103.5C	3101	62,000 PSI
Retumbo	86.0	2973	53,200 PSI	92.0	3159	62,600 PSI
IMR 8133	86.5	2950	54,600 PSI	92.5	3135	62,600 PSI
H1000	81.5	2890	53,900 PSI	89.0	3083	60,600 PSI
IMR 7977	88.5	3022	56,400 PSI	94.3	3193	63,600 PSI
IMR 7828 SSC	78.0	2938	55,800 PSI	84.0	3110	63,600 PSI
H4831	77.0	2956	57,400 PSI	83.0	3098	63,300 PSI
IMR 4831	75.0	2906	54,500 PSI	80.5	3081	63,000 PSI
IMR 4350	73.5	2915	55,200 PSI	78.5	3084	63,600 PSI
Bullet: 180 GR. SPR SPBT Dia: .308″ Col: 3.530″						
US 869	104.0	2994	53,800 PSI	107.0	3070	57,300 PSI
H50BMG	103.0	3005	53,700 PSI	108.0C	3159	62,100 PSI
Retumbo	94.0	3182	58,400 PSI	100.5C	3300	62,400 PSI
IMR 8133	91.5	3032	53,600 PSI	98.0	3253	63,200 PSI
H1000	91.0	3018	52,300 PSI	96.0	3218	62,800 PSI
IMR 7977	91.0	3007	51,100 PSI	96.4	3224	62,800 PSI
IMR 7828	81.0	2869	52,000 PSI	86.5	3069	63,200 PSI
H4831	84.0	2997	54,000 PSI	89.0	3167	62,500 PSI
IMR 4831	78.0	2907	53,700 PSI	83.0	3075	63,200 PSI
IMR 4350	76.0	2869	51,800 PSI	81.0	3071	63,200 PSI
Bullet: 190 GR. HDY SPBT Dia: .308″ Col: 3.555″						
US 869	100.0	2905	52,600 PSI	104.0	3035	59,200 PSI
H50BMG	100.0	2938	54,900 PSI	105.0C	3085	63,000 PSI
Retumbo	90.0	3069	56,500 PSI	96.0	3204	62,500 PSI
IMR 8133	89.5	2968	54,600 PSI	95.5	3158	63,400 PSI
H1000	88.0	2971	54,900 PSI	93.0	3130	63,500 PSI
IMR 7977	87.6	2898	51,700 PSI	93.2	3119	62,600 PSI
IMR 7828	80.5	2802	51,700 PSI	85.5	2985	62,000 PSI
H4831	80.0	2892	53,000 PSI	85.0	3069	62,500 PSI
IMR 4831	77.0	2849	54,300 PSI	82.5	3013	63,900 PSI

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
IMR 4350	75.0	2804	51,800 PSI	80.0	3001	63,100 PSI
Bullet: 200 GR. BAR XFB			**Dia: .308″**		**Col: 3.555″**	
US 869	96.0	2834	58,000 PSI	100.0	2919	61,800 PSI
H50BMG	92.0	2767	56,100 PSI	98.0C	2910	63,100 PSI
Retumbo	81.0	2852	56,200 PSI	86.0	2988	62,800 PSI
H1000	80.0	2767	57,400 PSI	83.0	2850	62,800 PSI
Bullet: 200 GR. NOS AB			**Dia: .308″**		**Col: 3.600″**	
H50BMG	96.0	2762	49,700 PSI	102.0C	2950	58,900 PSI
Retumbo	89.0	2904	56,400 PSI	95.5C	3048	62,400 PSI
IMR 8133	86.5	2843	54,000 PSI	92.5	3050	63,400 PSI
H1000	87.0	2839	56,000 PSI	92.5	2975	62,800 PSI
IMR 7977	84.5	2800	51,700 PSI	90.9	3022	62,800 PSI
IMR 7828	77.0	2670	51,200 PSI	82.0	2857	61,800 PSI
H4831	79.0	2787	54,700 PSI	85.0	2953	63,600 PSI
Bullet: 220 GR. NOS PART			**Dia: .308″**		**Col: 3.530″**	
US 869	97.0	2758	49,500 PSI	101.0	2875	55,200 PSI
H50BMG	95.0	2699	54,000 PSI	100.5C	2850	62,500 PSI
Retumbo	84.0	2800	56,600 PSI	89.0	2905	61,900 PSI
IMR 8133	85.0	2722	54,700 PSI	90.0	2892	63,100 PSI
H1000	83.0	2704	54,500 PSI	89.0	2863	63,500 PSI
IMR 7977	81.6	2689	54,200 PSI	87.2	2824	60,700 PSI
IMR 7828	77.5	2600	53,400 PSI	82.5	2774	63,200 PSI

7.62 x 39mm Russian

Case: Midway Twist: 1:9.45″
Barrel: 24″ Trim: 1.518″ Primer: CCI 200, Large Rifle

Powder	Grs.	Vel.	Pressure	Grs.	Vel.	Pressure
Bullet: 108 GR. BAR RRLP FB						**Dia: .310″**
Col: 2.210″						
H335	27.1	2020	39,300 CUP	28.8	2098	42,300 CUP
Benchmark	25.0	1826	32,200 CUP	28.5C	2118	38,700 CUP
H322	25.7	1974	34,500 CUP	28.5C	2199	41,200 CUP
IMR 4198	21.7	1985	37,500 CUP	23.6C	2163	41,700 CUP
CFE BLK	24.9	2301	38,100 CUP	27.0	2471	41,400 CUP
H4198	23.3	2155	38,300 CUP	25.0	2310	42,300 CUP
IMR 4227	15.0	1526	26,100 CUP	17.6	1907	41,000 CUP
Bullet: 125 GR. SPR SP			**Dia: .311″**		**Col: 2.150″**	
BL-C(2)	30.0	2155	32,200 CUP	31.5	2349	38,800 CUP
H335	30.0	2219	35,400 CUP	31.5	2408	40,900 CUP
H4895	28.0	2171	29,900 CUP	29.0	2249	33,600 CUP
H322	28.0	2210	32,900 CUP	29.0	2323	35,400 CUP
IMR 4198	22.6	2035	36,800 CUP	24.0	2250	42,500 CUP
CFE BLK	27.5	2377	34,200 CUP	29.7	2554	40,500 CUP
H4198	24.5	2190	34,200 CUP	26.5	2378	40,400 CUP
Bullet: 150 GR. HDY SP			**Dia: .312″**		**Col: 2.220″**	
BL-C(2)	27.0	1904	33,600 CUP	29.5	2090	40,400 CUP
H335	27.0	2055	36,000 CUP	29.0	2132	42,500 CUP
H4895	27.0	2080	33,600 CUP	28.0	2154	39,300 CUP
H322	27.0	2084	34,200 CUP	28.5	2192	40,400 CUP
IMR 4198	21.2	1917	42,200 CUP	22.5	2070	43,600 CUP
CFE BLK	22.6	1984	37,800 CUP	24.5	2156	43,200 CUP
H4198	22.5	1947	33,600 CUP	24.5	2122	39,800 CUP

303 British

Case: Remington Twist: 1:10″
Barrel: 24″ Trim: 2.212″ Primer: Federal 210, Large Rifle

Powder	Grs.	Vel.	Pressure	Grs.	Vel.	Pressure
Bullet: 125 GR. SPR SP			**Dia: .311″**		**Col: 2.915″**	
CFE 223	49.6	2886	36,000 PSI	54.0	3077	43,000 PSI
Varget	45.0	2766	39,200 CUP	48.0	2883	42,100 CUP
IMR 4166	44.2	2739	37,500 CUP	47.2	2907	43,000 CUP
H335	42.0	2741	35,900 CUP	46.0	2966	43,000 CUP
H4895	41.0	2791	42,400 CUP	45.0	2931	43,700 CUP
IMR 8208 XBR	39.0	2708	38,400 CUP	43.0	2886	43,100 CUP
Bullet: 150 GR. HDY SP			**Dia: .312″**		**Col: 2.995″**	
CFE 223	40.9	2558	38,100 PSI	44.0	2699	45,900 PSI
Varget	39.0	2458	39,600 CUP	43.0	2656	42,700 CUP
IMR 4064				44.7	2699	46,400 PSI
IMR 4166	39.9	2477	36,400 CUP	43.9	2693	43,600 CUP
BL-C(2)	43.0	2502	34,000 CUP	48.0	2756	39,200 CUP
IMR 4895				44.2	2689	46,600 PSI
H335	37.0	2430	34,700 CUP	42.0	2706	43,100 CUP
H4895	36.0	2447	40,300 CUP	40.0	2627	43,600 CUP
IMR 8208 XBR	34.0	2392	37,700 CUP	36.7	2515	41,300 CUP
IMR 3031				41.0	2632	46,100 PSI
Bullet: 174 GR. SIE HPBT			**Dia: .311″**		**Col: 3.075″**	
Hybrid 100V	42.0	2223	36,000 CUP	46.0C	2399	40,300 CUP
H4350	43.0	2266	35,400 CUP	48.0C	2517	41,900 CUP
IMR 4451	45.6	2397	36,800 CUP	49.6C	2590	43,300 CUP
H414	43.0	2302	35,200 CUP	46.0	2447	41,000 CUP
760	43.0	2302	35,200 CUP	46.0	2447	41,000 CUP
CFE 223	37.5	2345	40,500 PSI	40.4	2470	46,500 PSI
Varget	38.0	2345	38,800 CUP	42.0	2509	43,800 CUP
IMR 4166	39.1	2391	38,600 CUP	42.6	2554	43,100 CUP
BL-C(2)	43.0	2442	36,400 CUP	46.5	2616	42,900 CUP
H335	36.0	2340	38,600 CUP	39.5	2503	43,400 CUP
H4895	34.0	2262	38,800 CUP	38.0	2446	43,600 CUP
Bullet: 180 GR. SIE SP			**Dia: .311″**		**Col: 3.075″**	
Hybrid 100V	42.0	2232	36,200 CUP	46.0C	2384	41,700 CUP
H4350	44.0	2295	35,700 CUP	48.0C	2500	43,800 CUP
IMR 4451	45.2	2361	37,300 CUP	49.2C	2556	43,900 CUP
H414	42.0	2231	35,400 CUP	46.0	2435	42,500 CUP
760	42.0	2231	35,400 CUP	46.0	2435	42,500 CUP
CFE 223	37.5	2262	39,600 PSI	40.4	2394	45,200 PSI
Varget	37.0	2282	38,200 CUP	41.0	2440	43,400 CUP
IMR 4064				41.1	2400	45,700 PSI
IMR 4166	37.5	2265	34,900 CUP	40.8	2453	42,300 CUP
BL-C(2)	41.0	2395	37,100 CUP	45.0	2563	43,000 CUP
IMR 4895				41.0	2399	46,100 PSI
H335	36.0	2286	36,400 CUP	39.0	2449	42,700 CUP
H4895	34.0	2178	35,200 CUP	38.0	2400	43,500 CUP
IMR 8208 XBR	31.0	2108	34,900 CUP	35.0	2325	43,300 CUP
IMR 3031				38.3	2341	46,500 PSI

32 Winchester Special

Case: Winchester Twist: 1:16″
Barrel: 20″ Trim: 2.030″ Primer: CCI 200, Large Rifle

Powder	Grs.	Vel.	Pressure	Grs.	Vel.	Pressure
Bullet: 165 GR. HDY FTX			**Dia: .321″**		**Col: 2.565″**	
CFE 223	34.4	2140	28,900 CUP	37.4	2330	36,300 CUP
Varget	31.8	2084	29,700 CUP	34.6	2290	35,500 CUP
IMR 4320	31.1	1968	30,400 CUP	33.9	2161	36,700 CUP
IMR 4064	30.8	2017	28,600 CUP	33.5	2209	35,800 CUP
748	32.8	2080	30,400 CUP	35.7	2243	36,300 CUP
BL-C(2)	33.8	2024	28,100 CUP	36.9	2212	36,400 CUP
IMR 4895	30.7	2030	31,900 CUP	33.4	2198	36,400 CUP
H335	29.3	1976	32,500 CUP	32.0	2141	36,600 CUP
H4895	30.6	2147	31,300 CUP	33.3	2315	36,200 CUP
IMR 8208 XBR	30.2	2118	32,500 CUP	32.8	2290	36,500 CUP
IMR 3031	27.8	1954	29,400 CUP	30.3	2153	36,600 CUP
Benchmark	27.2	2020	31,100 CUP	29.6	2162	36,800 CUP
Bullet: 170 GR. HDY JFP			**Dia: .321″**		**Col: 2.565″**	
CFE 223	35.4	2209	31,700 CUP	38.5	2359	36,600 CUP
Varget	34.0	2096	30,800 CUP	37.0C	2271	36,400 CUP
IMR 4320	31.8	2021	31,500 CUP	34.6	2182	35,900 CUP
IMR 4064	32.3	2087	30,200 CUP	35.1	2267	36,100 CUP
748				36.2	2240	32,500 CUP
BL-C(2)	35.0	2152	31,300 CUP	37.0	2226	35,300 CUP
IMR 4895	31.3	2041	30,800 CUP	34.1	2217	35,800 CUP
H335	30.0	2021	29,700 CUP	32.0	2144	36,200 CUP

NEVER EXCEED MAXIMUM LOADS

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
H4895	32.0	2122	30,800 CUP	34.5	2283	36,100 CUP
IMR 8208 XBR	30.7	2126	30, 400 CUP	33.4	2307	36,200 CUP
IMR 3031	29.0	2000	29,000 CUP	31.6	2220	35,700 CUP
Benchmark	30.0	2005	29,900 CUP	32.5	2175	36,600 CUP
H322	30.0	2111	32,100 CUP	32.3	2263	36,800 CUP

32-40 WINCHESTER

Case: Winchester Twist: 1:16″
Barrel: 24″ Trim: 2.120″ Primer: Remington 2 1/2, Large Pistol

Bullet: 196 GR. HOCH Dia: .324″ Col: 2.555″

H4227				13.0	1367	18,000 CUP
H110				12.0	1376	19,200 CUP
Lil'Gun				9.3	1237	19,600 CUP
Trail Boss	5.0	833	12,500 CUP	6.0	935	25,300 CUP

Bullet: 202 GR. POPE Dia: .324″ Col: 2.555″

H4227				14.0	1376	15,900 CUP
H110				13.0	1386	17,900 CUP
Lil'Gun				9.5	1264	20,100 CUP

Bullet: 204 GR. MILLER Dia: .324″ Col: 2.555″

H4227				13.5	1367	16,300 CUP
H110				13.0	1369	17,900 CUP
Lil'Gun				10.8	1310	20,100 CUP

8 x 57MM MAUSER

Case: Remington Twist: 1:9.5″
Barrel: 24″ Trim: 2.230″ Primer: Remington 9 1/2, Large Rifle

Bullet: 125 GR. HDY SP Dia: .323″ Col: 2.880″

CFE 223	55.0	2798	31,400 CUP	57.0	2964	34,400 CUP
Varget	47.0	2730	36,600 CUP	54.0	3092	48,100 CUP
IMR 4320	45.5	2621	36,400 CUP	52.5	2979	48,100 CUP
IMR 4064	46.0	2736	34,300 CUP	50.0C	2927	41,700 CUP
IMR 4166	47.1	1761	43,100 CUP	51.3	2977	48,400 CUP
748	50.0	2742	33,100 CUP	55.0	2974	37,200 CUP
BL-C(2)	53.0	2916	36,300 CUP	55.0	3026	40,600 CUP
IMR 4895	47.0	2717	37,000 CUP	52.0	2945	43,700 CUP
H335	47.0	2846	37,300 CUP	53.0	3155	48,800 CUP
H4895	47.0	2843	37,300 CUP	53.5	3208	49,400 CUP
IMR 8208 XBR	48.0	2907	41,500 CUP	52.2	3139	48,700 CUP
IMR 3031	44.0	2736	34,800 CUP	48.0	2987	43,300 CUP
Benchmark	43.5	2728	36,400 CUP	49.8	3068	49,700 CUP

Bullet: 150 GR. HDY SP Dia: .323″ Col: 2.950″

CFE 223	54.0	2848	37,600 CUP	57.0	3054	46,900 CUP
Varget	45.5	2561	37,500 CUP	52.4C	2896	49,000 CUP
IMR 4320	41.0	2377	35,400 CUP	50.5	2818	48,800 CUP
IMR 4064	42.0	2486	34,800 CUP	49.5	2839	46,200 CUP
IMR 4166	43.4	2528	40,400 CUP	49.9	2869	49,700 CUP
BL-C(2)	50.0	2690	36,600 CUP	55.0	2962	48,400 CUP
IMR 4895	42.0	2482	36,700 CUP	49.5	2847	48,000 CUP
H335	44.0	2631	37,400 CUP	50.8	2942	48,800 CUP
H4895	44.0	2619	37,200 CUP	51.0	2987	49,500 CUP
IMR 8208 XBR	44.1	2648	40,600 CUP	48.0	2861	48,300 CUP
IMR 3031	41.5	2534	35,200 CUP	46.5	2815	47,300 CUP
Benchmark	42.5	2577	36,900 CUP	47.5	2860	48,800 CUP

Bullet: 160 GR. BAR TTSX BT Dia: .323″ Col: 3.010″

CFE 223	49.7	2726	42,100 CUP	54.0	2919	48,500 CUP
Varget	45.0	2503	36,100 CUP	49.0C	2727	43,600 CUP
IMR 4064	43.0	2438	38,500 CUP	47.0C	2664	45,100 CUP
IMR 4166	40.1	2314	38,400 CUP	46.6	2670	47,100 CUP
BL-C(2)	47.0	2559	40,300 CUP	51.0	2772	48,300 CUP
IMR 4895	44.0	2485	40,100 CUP	48.0C	2696	47,500 CUP
H335	42.0	2500	40,100 CUP	46.0	2720	47,900 CUP
H4895	44.0	2603	39,200 CUP	48.5C	2821	47,700 CUP
IMR 8208 XBR	42.0	2486	37,200 CUP	46.5C	2758	48,300 CUP
IMR 3031	42.6	2483	42,900 CUP	46.1	2712	48,600 CUP
Benchmark	43.1	2558	42,500 CUP	46.6	2726	49,300 CUP

Bullet: 170 GR. HDY RN Dia: .323″ Col: 2.825″

CFE 223	53.0	2686	37,900 CUP	56.0	2854	44,200 CUP
Varget	43.0	2362	36,700 CUP	50.5	2700	48,700 CUP
IMR 4320	39.0	2195	34,400 CUP	49.8	2680	49,200 CUP
IMR 4064	41.5	2345	35,700 CUP	48.7	2706	49,300 CUP
IMR 4166	40.5	2312	38,900 CUP	47.7	2667	49,300 CUP
748	46.0	2467	35,600 CUP	54.0	2832	48,500 CUP
BL-C(2)	48.8	2560	36,800 CUP	53.5	2839	48,800 CUP
IMR 4895	40.0	2284	36,600 CUP	48.0	2647	47,900 CUP
H335	42.5	2421	37,400 CUP	49.2	2738	48,800 CUP
H4895	40.0	2306	37,400 CUP	49.0	2769	48,700 CUP
IMR 8208 XBR	44.2	2575	41,400 CUP	47.0	2696	48,000 CUP
IMR 3031	40.0	2355	35,000 CUP	45.5	2640	47,500 CUP
Benchmark	41.0	2397	37,100 CUP	46.6	2679	49,100 CUP

Bullet: 175 GR. SIE SP Dia: .323″ Col: 3.100″

CFE 223	52.0	2615	36,500 CUP	55.0	2837	47,800 CUP
Varget	43.0	2418	37,200 CUP	50.5	2716	48,500 CUP
IMR 4320	39.0	2209	36,100 CUP	48.5	2619	49,800 CUP
IMR 4064	41.0	2340	36,600 CUP	48.0C	2687	49,100 CUP
IMR 4166	40.2	2307	38,300 CUP	47.3	2656	49,600 CUP
748	48.0	2524	37,500 CUP	53.0	2748	46,600 CUP
BL-C(2)	48.8	2595	36,800 CUP	53.5	2818	46,700 CUP
IMR 4895	39.5	2246	35,900 CUP	48.0	2642	48,400 CUP
H335	42.5	2446	37,100 CUP	48.0	2722	48,400 CUP
H4895	40.0	2387	36,800 CUP	49.4	2762	48,300 CUP
IMR 8208 XBR	43.7	2537	41,400 CUP	46.5	2667	46,600 CUP
IMR 3031	39.0	2341	37,300 CUP	45.0	2625	48,900 CUP
Benchmark	41.0	2414	37,100 CUP	46.2	2657	48,400 CUP

Bullet: 180 GR. BAR TSX Dia: .323″ Col: 2.960″

CFE 223	47.0	2584	43,700 CUP	50.0	2712	49,200 CUP
Varget	41.0	2256	35,800 CUP	47.8C	2570	48,400 CUP
IMR 4320	38.0	2087	34,700 CUP	46.3	2481	48,700 CUP
IMR 4064	39.5	2251	36,300 CUP	45.0C	2529	48,400 CUP
IMR 4166	38.3	2161	38,200 CUP	44.5	2508	48,900 CUP
748	39.0	2219	36,200 CUP	45.5	2542	49,000 CUP
BL-C(2)	39.0	2153	34,200 CUP	45.5	2487	48,500 CUP
IMR 4895	40.0	2235	36,400 CUP	46.0C	2525	47,900 CUP
H335	36.5	2163	35,500 CUP	43.0	2483	48,900 CUP
H4895	39.0	2259	36,800 CUP	46.0C	2565	48,700 CUP
IMR 8208 XBR	41.8	2459	43,300 CUP	44.5	2572	48,300 CUP
Benchmark	34.0	2104	37,200 CUP	42.0	2466	48,800 CUP

Bullet: 180 GR. NOS BT Dia: .323″ Col: 3.020″

CFE 223	49.0	2635	42,100 CUP	52.0	2758	47,500 CUP
Varget	42.0	2309	36,600 CUP	48.8	2641	49,400 CUP
IMR 4320	38.0	2140	35,800 CUP	47.3	2533	48,500 CUP
IMR 4064	40.0	2259	35,400 CUP	45.0C	2538	47,800 CUP
IMR 4166	39.4	2224	38,200 CUP	45.8	2572	49,600 CUP
748	42.0	2295	35,700 CUP	47.0	2587	49,400 CUP
BL-C(2)	44.5	2439	36,700 CUP	48.5	2669	48,500 CUP
IMR 4895	41.5	2291	36,900 CUP	46.8	2562	48,300 CUP
H335	38.0	2267	36,100 CUP	43.7	2557	48,100 CUP
H4895	41.0	2387	36,300 CUP	47.7	2691	49,300 CUP
IMR 8208 XBR	43.0	2479	41,300 CUP	45.7	2619	47,900 CUP
Benchmark	39.0	2304	36,800 CUP	44.5	2586	48,900 CUP

Bullet: 200 GR. SPR SP Dia: .323″ Col: 2.970″

H4350	49.0	2276	35,900 CUP	54.0C	2522	44,800 CUP
H414	45.0	2229	36,900 CUP	50.0	2475	47,300 CUP
Varget	40.5	2183	36,900 CUP	47.5	2511	49,100 CUP
IMR 4064	40.0	2193	36,200 CUP	44.5	2401	48,300 CUP
748	40.0	2151	35,300 CUP	44.8	2408	48,000 CUP
IMR 4895	39.0	2112	34,900 CUP	45.0	2409	48,500 CUP
H4895	38.0	2240	36,800 CUP	45.4	2539	49,200 CUP

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
IMR 8208 XBR	41.4	2325	39,900 CUP	44.0	2459	47,600 CUP
Bullet: 220 GR. HDY SP			**Dia: .323″**		**Col: 2.970″**	
Varget	39.0	2055	36,800 CUP	46.8	2390	48,800 CUP
IMR 4064	39.5	2090	36,100 CUP	43.0C	2275	47,700 CUP
IMR 4166	38.2	2063	40,900 CUP	44.0C	2338	48,100 CUP
748	40.0	2034	34,200 CUP	44.5	2270	43,200 CUP
IMR 4895	39.5	2091	36,100 CUP	45.0C	2325	48,500 CUP
H4895	40.0	2178	37,200 CUP	45.2	2420	48,800 CUP
IMR 8208 XBR	41.5	2249	40,000 CUP	44.1	2348	47,500 CUP

8MM REMINGTON MAGNUM

Case: Remington Twist: 1:10″
Barrel: 24″ Trim: 2.840″ Primer: Remington 9 1/2 M, Large Rifle Magnum

Bullet: 150 GR. SPR SP			**Dia: .323″**		**Col: 3.550″**	
H4831	88.0	3268	47,200 CUP	92.0C	3378	51,500 CUP
Hybrid 100V	80.0	3366	46,100 CUP	84.5C	3462	49,400 CUP
H4350	79.0	3242	45,700 CUP	83.5	3401	52,500 CUP
H414	76.0	3270	48,000 CUP	81.0	3385	52,300 CUP
H380	71.0	3110	47,400 CUP	75.5	3245	52,300 CUP
Varget	71.0	3253	46,100 CUP	75.0	3403	52,600 CUP
Bullet: 175 GR. SIE SP			**Dia: .323″**		**Col: 3.600″**	
H4831	81.0	3031	47,300 CUP	86.5	3162	52,800 CUP
Hybrid 100V	72.0	3016	43,700 CUP	80.0	3251	52,200 CUP
H4350	72.0	2930	45,300 CUP	77.0	3141	52,300 CUP
H414	70.0	2987	47,700 CUP	74.0	3113	52,300 CUP
Bullet: 180 GR. BAR TSX			**Dia: .323″**		**Col: 3.600″**	
H1000	81.0	2912	46,100 CUP	89.0C	3099	52,400 CUP
H4831	73.0	2858	47,400 CUP	79.5	3035	52,000 CUP
Hybrid 100V	68.0	2875	43,000 CUP	73.5	3075	51,200 CUP
Bullet: 185 GR. REM PSPCL			**Dia: .323″**		**Col: 3.560″**	
IMR 4831				79.5	3095	52,900 CUP
IMR 4350				77.5	3090	53,100 CUP
IMR 4064				66.5	2975	54,000 CUP
Bullet: 200 GR. NOS PART			**Dia: .323″**		**Col: 3.600″**	
H1000	86.0	2825	45,300 CUP	89.0C	2920	48,100 CUP
H4831	77.0	2819	47,400 CUP	81.5	2944	52,000 CUP
Hybrid 100V	67.0	2793	43,000 CUP	72.5	2976	51,200 CUP
H4350	70.0	2820	47,300 CUP	74.0	2950	52,200 CUP
Bullet: 220 GR. HDY SP			**Dia: .323″**		**Col: 3.600″**	
H1000	85.0	2726	46,700 CUP	88.0C	2817	49,300 CUP
H4831	76.0	2685	46,700 CUP	80.5	2816	52,100 CUP
Hybrid 100V	67.0	2673	44,100 CUP	72.5	2849	51,300 CUP
IMR 4831				76.0	2845	53,800 CUP
H4350	70.0	2690	48,200 CUP	74.0	2824	52,100 CUP
IMR 4350				72.0	2795	53,000 CUP

338 FEDERAL

Case: Federal Twist: 1:10″
Barrel: 24″ Trim: 2.005″ Primer: Federal 210M, Large Rifle Match

Bullet: 160 GR. BAR TTSX			**Dia: .338″**		**Col: 2.840″**	
H335	43.8	2579	39,900 PSI	48.7	2814	49,700 PSI
IMR 8208 XBR	46.0	2733	46,500 PSI	50.0C	2910	54,700 PSI
IMR 3031	41.9	2559	41,000 PSI	45.5C	2763	50,400 PSI
Benchmark	45.1	2725	47,900 PSI	49.0C	2894	56,200 PSI
H322	44.6	2761	52,400 PSI	48.5C	2937	61,800 PSI
IMR 4198	38.5	2706	52,900 PSI	41.0	2850	62,400 PSI
H4198	40.2	2756	53,600 PSI	42.8	2884	61,500 PSI
Bullet: 180 GR. NOS AB			**Dia: .338″**		**Col: 2.810″**	
CFE 223	46.0	2408	32,700 PSI	50.0	2620	42,100 PSI
748	45.0	2486	40,300 PSI	51.0	2746	51,100 PSI
BL-C(2)	44.0	2338	34,700 PSI	50.0	2648	47,500 PSI
IMR 4895	42.0	2373	40,700 PSI	47.0C	2624	50,900 PSI
H335	42.0	2483	43,000 PSI	47.0	2712	53,900 PSI
H4895	43.0	2486	42,400 PSI	47.0C	2682	50,800 PSI
IMR 8208 XBR	44.6	2641	49,600 PSI	48.5C	2811	59,900 PSI
IMR 3031	40.0	2438	42,500 PSI	45.0C	2705	55,200 PSI
Benchmark	42.0	2532	47,900 PSI	47.0C	2768	61,300 PSI
H322	41.0	2514	46,000 PSI	45.5C	2743	59,700 PSI
Bullet: 185 GR. BAR TSX			**Dia: .338″**		**Col: 2.800″**	
CFE 223	47.5	2488	39,800 PSI	50.5	2624	46,200 PSI
Varget	42.0	2364	43,000 PSI	47.0C	2607	54,700 PSI
IMR 4064	41.0	2388	45,100 PSI	45.0C	2584	53,400 PSI
IMR 4166	41.4	2363	47,000 PSI	45.5C	2581	56,700 PSI
748	44.0	2477	45,200 PSI	49.0	2665	53,100 PSI
BL-C(2)	44.0	2386	41,600 PSI	49.0	2597	51,100 PSI
IMR 4895	41.0	2342	43,500 PSI	45.0C	2541	51,400 PSI
H335	41.0	2460	46,300 PSI	46.0	2679	56,700 PSI
H4895	42.0	2456	45,400 PSI	46.5C	2690	58,200 PSI
IMR 8208 XBR	44.2	2601	51,800 PSI	47.0C	2721	59,500 PSI
IMR 3031	39.0	2410	47,200 PSI	44.0C	2666	60,000 PSI
Benchmark	39.0	2416	48,000 PSI	44.0C	2637	60,100 PSI
H322	39.0	2447	49,400 PSI	43.3C	2645	59,700 PSI
Bullet: 200 GR. HDY SP			**Dia: .338″**		**Col: 2.810″**	
CFE 223	45.8	2326	33,600 PSI	50.0	2545	44,900 PSI
Varget	42.0	2264	40,400 PSI	47.0C	2510	52,100 PSI
IMR 4064	40.0	2224	37,500 PSI	45.0C	2486	48,600 PSI
IMR 4166	41.8	2323	47,800 PSI	46.0C	2543	58,800 PSI
748	44.0	2322	37,300 PSI	50.0	2584	49,500 PSI
BL-C(2)	45.0	2289	36,900 PSI	49.0	2442	43,300 PSI
IMR 4895	42.0	2296	41,400 PSI	47.0C	2535	52,100 PSI
H335	42.0	2389	44,400 PSI	47.0	2606	56,400 PSI
H4895	42.0	2350	42,600 PSI	47.0C	2597	55,100 PSI
IMR 8208 XBR	44.0	2504	50,200 PSI	47.0C	2657	60,300 PSI
IMR 3031	40.0	2316	41,300 PSI	45.0C	2598	57,300 PSI
Benchmark	40.0	2309	43,200 PSI	45.0C	2584	59,700 PSI
H322	40.0	2412	49,500 PSI	44.5	2596	59,300 PSI
Bullet: 210 GR. SFT SCIR			**Dia: .338″**		**Col: 2.820″**	
LVR	45.0	2468	48,800 PSI	49.0C	2622	56,400 PSI
CFE 223	43.8	2381	45,900 PSI	47.6	2549	57,100 PSI
Varget	41.0	2248	42,000 PSI	46.0C	2503	56,500 PSI
IMR 4064	40.0	2254	42,200 PSI	43.0C	2394	48,800 PSI
IMR 4166	39.9	2270	50,500 PSI	43.9C	2466	60,900 PSI
748	41.0	2289	42,200 PSI	45.7	2534	56,300 PSI
BL-C(2)	42.0	2270	52,000 PSI	47.0	2548	59,100 PSI
IMR 4895	40.0	2195	39,500 PSI	45.0C	2482	53,900 PSI
H335	38.0	2267	45,300 PSI	41.7	2469	57,400 PSI
H4895	40.0	2281	41,600 PSI	45.0C	2551	58,100 PSI
IMR 8208 XBR	40.7	2402	52,000 PSI	43.3C	2508	59,400 PSI
IMR 3031	38.0	2267	43,700 PSI	42.5C	2499	57,000 PSI
Benchmark	38.0	2277	45,900 PSI	43.0C	2514	60,800 PSI
H322	38.0	2296	45,900 PSI	42.3C	2511	59,200 PSI
Bullet: 215 GR. SIE SP			**Dia: .338″**		**Col: 2.810″**	
LVR	47.0	2509	50,900 PSI	52.0C	2668	57,900 PSI
CFE 223	44.5	2330	40,800 PSI	48.4	2494	49,800 PSI
Varget	41.0	2216	41,000 PSI	46.0C	2452	53,100 PSI
IMR 4064	41.0	2267	43,800 PSI	45.0C	2468	54,400 PSI
IMR 4166	40.2	2264	50,400 PSI	44.2C	2447	59,100 PSI
748	41.0	2218	38,000 PSI	46.0	2445	48,900 PSI
BL-C(2)	43.0	2242	39,000 PSI	47.0	2428	47,900 PSI
IMR 4895	41.0	2234	42,400 PSI	45.0C	2448	53,200 PSI
H335	40.0	2312	46,100 PSI	44.0	2512	58,300 PSI
H4895	41.0	2297	43,500 PSI	46.0C	2539	57,600 PSI
IMR 8208 XBR	41.9	2396	50,500 PSI	44.6	2519	59,400 PSI
IMR 3031	38.0	2227	42,500 PSI	43.0C	2469	56,300 PSI
Benchmark	39.0	2286	47,200 PSI	43.3	2487	60,000 PSI
H322	38.0	2305	50,400 PSI	43.0	2504	60,300 PSI

NEVER EXCEED MAXIMUM LOADS

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Bullet: 225 GR. SFT SP			**Dia: .338″**		**Col: 2.750″**	
LVR	43.0	2293	46,500 PSI	48.0C	2518	61,800 PSI
CFE 223	43.2	2278	47,700 PSI	46.0	2423	57,900 PSI
Varget	41.0	2149	43,100 PSI	46.0C	2410	57,900 PSI
IMR 4064	39.0	2148	43,800 PSI	43.8C	2386	58,400 PSI
IMR 4166	39.4	2141	48,100 PSI	43.4C	2351	60,100 PSI
748	41.0	2199	42,000 PSI	46.0	2453	57,400 PSI
BL-C(2)	42.0	2178	41,800 PSI	47.0	2436	57.800 PSI
IMR 4895	40.0	2151	45,300 PSI	44.5C	2383	58,200 PSI
H335	38.0	2166	46,100 PSI	42.0	2378	59,200 PSI
H4895	40.0	2167	42,900 PSI	45.3C	2445	60,000 PSI
IMR 8208 XBR	40.5	2283	52,400 PSI	43.1	2394	60,500 PSI
IMR 3031	37.0	2149	45,800 PSI	41.0C	2361	59,500 PSI
Benchmark	38.0	2150	46,600 PSI	42.8	2365	59,500 PSI
H322	37.0	2204	52,700 PSI	41.0	2357	60,000 PSI

33 NOSLER

Case: Nosler Twist: 1:10″
Barrel: 24″ Trim: 2.440″ Primer: Winchester LRM, Large Rifle Magnum

Bullet: 180 GR. NOS AB			**Dia: .338″**		**Col: 3.340″**	
IMR 7977	82.0	2994	50,900 PSI	86.0C	3145	58,500 PSI
IMR 7828	81.2	3064	52,700 PSI	85.5C	3259	62,500 PSI
IMR 4955	79.0	3054	52,400 PSI	83.0C	3231	61,900 PSI
H4831	81.5	3040	52,200 PSI	85.8C	3201	62,400 PSI
IMR 4831	78.3	3051	52,700 PSI	82.5C	3240	62,200 PSI
H4350	76.0	3104	54,500 PSI	80.0	3243	62,200 PSI
IMR 4451	74.0	3041	52,300 PSI	78.0	3231	62,000 PSI
H414	73.0	3074	53,200 PSI	78.5	3255	62,500 PSI
IMR 4350	74.2	2989	50,100 PSI	79.0	3227	61,900 PSI
Bullet: 185 GR. BAR TSX			**Dia: .338″**		**Col: 3.260″**	
IMR 7977	81.5	2973	52,000 PSI	84.9C	3115	59,400 PSI
IMR 7828	80.4	3003	52,600 PSI	84.6C	3196	62,500 PSI
IMR 4955	77.6	2970	51,300 PSI	81.5	3169	62,100 PSI
H4831	81.0	3001	53,800 PSI	85.3C	3157	62,300 PSI
IMR 4831	77.2	2991	51,900 PSI	81.3	3181	62,400 PSI
H4350	74.7	3026	52,700 PSI	78.7	3194	61,900 PSI
IMR 4451	73.0	2996	52,800 PSI	76.9	3174	62,500 PSI
H414	72.2	3053	55,300 PSI	76.0	3181	62,000 PSI
IMR 4350	73.4	2978	50,700 PSI	77.8	3194	61,800 PSI
Bullet: 200 GR. NOS E-TIP			**Dia: .338″**		**Col: 3.340″**	
IMR 7977	80.0	2892	53,900 PSI	83.4C	3003	60,700 PSI
IMR 7828	79.1	2932	53,600 PSI	83.3C	3097	62,200 PSI
IMR 4955	76.2	2909	53,900 PSI	80.3	3077	62,800 PSI
H4831	79.0	2894	53,300 PSI	83.2C	3041	62,400 PSI
IMR 4831	76.0	2918	53,100 PSI	79.9	3088	62,500 PSI
H4350	72.6	2898	51,800 PSI	76.4	3066	62,500 PSI
IMR 4451	71.1	2887	52,900 PSI	74.9	3056	62,400 PSI
H414	69.9	2900	52,900 PSI	74.4	3072	62,500 PSI
IMR 4350	72.4	2895	51,200 PSI	76.3	3077	62,200 PSI
Bullet: 210 GR. NOS PART			**Dia: .338″**		**Col: 3.300″**	
H1000	81.7	2842	51,800 PSI	87.0C	3025	62,300 PSI
IMR 7977	78.2	2788	51,200 PSI	83.2C	2998	62,100 PSI
IMR 7828	75.1	2818	51,600 PSI	79.9	3021	62,500 PSI
IMR 4955	73.5	2805	52,200 PSI	78.2	2989	62,200 PSI
H4831	76.3	2810	52,700 PSI	81.2	2978	62,600 PSI
IMR 4831	72.2	2818	52,900 PSI	76.9	2983	62,100 PSI
H4350	69.3	2815	52,000 PSI	74.5	3005	62,900 PSI
IMR 4451	69.2	2822	54,000 PSI	73.6	2982	62,200 PSI
H414	67.0	2770	52,400 PSI	71.0	2953	62,100 PSI
IMR 4350	70.2	2838	52,900 PSI	74.5	3014	62,400 PSI
Bullet: 215 GR. SIE SBT			**Dia: .338″**		**Col: 3.310″**	
H1000	84.0	2855	50,800 PSI	88.0C	2980	59,300 PSI
IMR 7977	80.8	2798	53,600 PSI	85.1C	2953	61,800 PSI
IMR 7828	77.7	2775	49,800 PSI	81.8	2989	62,100 PSI
IMR 4955	74.5	2766	51,600 PSI	79.3	2959	61,700 PSI
H4831	77.7	2786	51,900 PSI	82.7	2966	62,600 PSI
IMR 4831	75.5	2814	51,500 PSI	78.9	2993	62,000 PSI
H4350	72.8	2833	52,100 PSI	77.5	3003	61,800 PSI
IMR 4451	70.5	2780	52,500 PSI	75.0	2972	62,400 PSI
H414	69.1	2821	54,800 PSI	73.5	2961	62,300 PSI
IMR 4350	70.9	2786	51,100 PSI	76.2	2991	62,200 PSI
Bullet: 225 GR. HDY SST			**Dia: .338″**		**Col: 3.400″**	
H1000	81.3	2721	52,400 PSI	86.1C	2878	62,400 PSI
IMR 7977	78.2	2702	53,700 PSI	82.3C	2864	62,700 PSI
IMR 7828	74.8	2688	50,900 PSI	79.6	2895	62,600 PSI
IMR 4955	73.1	2653	50,300 PSI	77.0	2851	61,700 PSI
H4831	75.8	2702	53,600 PSI	79.8	2843	62,000 PSI
IMR 4831	72.5	2672	50,700 PSI	76.2	2863	62,000 PSI
H4350	69.2	2689	52,400 PSI	73.6	2827	62,000 PSI
IMR 4451	68.3	2660	51,800 PSI	72.7	2857	62,400 PSI
H414	66.7	2675	53,800 PSI	70.2	2812	62,100 PSI
IMR 4350	72.0	2810	54,400 PSI	75.0	2939	62,500 PSI
Bullet: 250 GR. HDY BTHP			**Dia: .338″**		**Col: 3.400″**	
Retumbo	79.1	2694	55,100 PSI	83.9C	2824	62,300 PSI
IMR 8133	81.7	2680	52,800 PSI	86.0C	2819	60,200 PSI
H1000	79.4	2688	53,000 PSI	84.0C	2832	62,100 PSI
IMR 7977	76.5	2656	54,400 PSI	81.0C	2793	62,300 PSI
IMR 7828	72.9	2657	52,400 PSI	77.1	2814	62,000 PSI
IMR 4955	69.9	2580	52,200 PSI	74.0	2747	62,100 PSI
H4831	71.2	2591	52,800 PSI	75.4	2734	62,200 PSI
IMR 4831	70.1	2627	52,200 PSI	74.2	2789	62,000 PSI
H4350	67.5	2626	52,400 PSI	71.4	2762	62,200 PSI
IMR 4451	66.5	2619	53,500 PSI	70.4	2754	62,500 PSI
IMR 4350	67.3	2620	52,100 PSI	71.2	2773	62,200 PSI
Bullet: 265 GR. BAR LRX BT Col: 3.450″					**Dia: .338″**	
Retumbo	71.7	2518	53,600 PSI	76.7C	2650	62,100 PSI
IMR 8133	77.9	2552	53,300 PSI	82.0C	2671	60,000 PSI
H1000	73.9	2536	53,800 PSI	79.0C	2684	62,600 PSI
IMR 7977	70.7	2461	52,400 PSI	75.6	2626	62,300 PSI
IMR 7828	68.3	2520	54,900 PSI	73.0	2657	62,300 PSI
IMR 4955	65.1	2427	52,100 PSI	69.8	2601	62,400 PSI
H4831	68.1	2485	55,000 PSI	72.3	2611	62,200 PSI
IMR 4831	65.4	2471	54,000 PSI	69.2	2607	62,100 PSI
H4350	62.4	2462	53,900 PSI	66.2	2579	61,300 PSI
IMR 4451	61.8	2449	54,900 PSI	65.4	2571	62,200 PSI
IMR 4350	62.6	2458	54,000 PSI	66.3	2595	61,900 PSI
Bullet: 275 GR. SFT SP			**Dia: .338″**		**Col: 3.280″**	
Retumbo	71.4	2472	53,000 PSI	75.6C	2608	62,500 PSI
IMR 8133	77.4	2519	53,500 PSI	81.5C	2651	61,100 PSI
H1000	74.4	2512	54,000 PSI	78.7C	2633	62,100 PSI
IMR 7977	70.8	2418	53,200 PSI	75.0	2558	61,600 PSI
IMR 7828	67.3	2460	53,600 PSI	72.0	2610	62,400 PSI
IMR 4955	65.0	2409	53,400 PSI	69.0	2541	61,700 PSI
H4831	67.1	2465	55,600 PSI	70.7	2564	61,700 PSI
IMR 4831	64.7	2434	53,500 PSI	68.4	2552	62,100 PSI
H4350	61.8	2416	52,900 PSI	65.4	2543	62,200 PSI
IMR 4451	60.5	2358	51,700 PSI	64.1	2509	62,000 PSI
IMR 4350	61.4	2417	54,500 PSI	65.0	2543	62,700 PSI
Bullet: 300 GR. NOS AB			**Dia: .338″**		**Col: 3.400″**	
Retumbo	75.9	2483	53,800 PSI	81.0C	2589	61,700 PSI
IMR 8133	78.0	2441	50,700 PSI	83.0C	2608	61,400 PSI
H1000	74.2	2464	54,000 PSI	79.0C	2589	62,100 PSI
IMR 7977	71.6	2384	51,100 PSI	76.6C	2548	62,200 PSI
IMR 7828	69.3	2430	52,700 PSI	73.8	2580	62,500 PSI
IMR 4955	67.0	2418	54,900 PSI	70.4	2532	62,600 PSI
H4831	64.8	2376	52,200 PSI	72.0	2526	61,800 PSI
IMR 4831	68.0	2454	52,900 PSI	72.5	2606	62,300 PSI
H4350	64.3	2426	51,900 PSI	67.9	2557	61,600 PSI

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
IMR 4451	61.2	2341	51,700 PSI	65.2	2479	61,700 PSI
IMR 4350	63.8	2394	52,800 PSI	68.1	2530	62,300 PSI

338 WINCHESTER MAGNUM

Case: Winchester Twist: 1:10″
Barrel: 24″ Trim: 2.490″ Primer: Winchester LRM, Large Rifle Magnum

Bullet: 160 GR. BAR TTSX Dia: .338″ Col: 3.325″

H414	70.0	3003	41,100 CUP	75.5	3195	46,400 CUP
760	70.0	3003	41,100 CUP	75.5	3195	46,400 CUP
Varget	62.0	2984	41,600 CUP	68.5	3196	51,100 CUP
IMR 4064	61.0	2974	40,200 CUP	68.0C	3246	50,900 CUP
IMR 4895	62.0	3038	43,300 CUP	69.0	3277	52,100 CUP
H4895	60.0	3057	45,000 CUP	67.0	3271	51,600 CUP
IMR 8208 XBR	58.0	3023	47,000 CUP	64.0	3198	51,900 CUP

Bullet: 180 GR. NOS BT Dia: .338″ Col: 3.340″

IMR 4955	71.5	2861	51,100 PSI	77.0C	3100	62,800 PSI
H4831	70.0	2776	35,200 CUP	78.0C	3067	49,100 CUP
IMR 4831	70.0	2822	39,000 CUP	75.0C	3034	47,500 CUP
H4350	69.0	2928	41,200 CUP	74.5	3157	52,200 CUP
IMR 4451	67.2	2841	48,500 PSI	72.7	3094	61,900 PSI
H414	66.0	2914	43,200 CUP	72.0	3107	51,800 CUP
IMR 4350	70.5	2848	40,800 CUP	75.0C	3038	48,300 CUP
760	66.0	2914	43,200 CUP	72.0	3107	51,800 CUP
H380	65.0	2886	44,200 CUP	72.5	3111	51,100 CUP
Varget	57.0	2871	45,500 CUP	63.5	3087	53,200 CUP
IMR 4320	60.6	2808	42,500 CUP	64.5	2972	49,800 CUP
IMR 4064	60.6	2885	43,300 CUP	64.5	3041	51,600 CUP
IMR 4895	62.5	2896	43,000 CUP	66.5	3059	51,200 CUP
H4895	58.0	2893	45,100 CUP	64.0	3066	52,300 CUP

Bullet: 185 GR. BAR TSX Dia: .338″ Col: 3.290″

IMR 4955	70.5	2847	53,200 PSI	75.8C	3040	62,700 PSI
Hybrid 100V	65.0	2774	40,600 CUP	70.0C	2947	45,800 CUP
IMR 4831	70.5	2749	39,500 CUP	75.0C	3031	49,800 CUP
H4350	69.6	2896	47,500 CUP	74.0C	3048	52,800 CUP
IMR 4451	66.7	2822	50,000 PSI	72.2	3048	61,500 PSI
H414	66.0	2889	48,400 CUP	70.0	3002	52,000 CUP
IMR 4350	67.0	2792	41,000 CUP	74.0C	3072	51,900 CUP
760	66.0	2889	48,400 CUP	70.0	3002	52,000 CUP
H380	65.8	2870	48,000 CUP	70.0	3007	52,800 CUP
Varget	60.0	2831	47,200 CUP	65.0	3013	52,900 CUP
IMR 4320	59.7	2822	48,900 CUP	63.5	2942	51,800 CUP
IMR 4064	59.2	2831	45,400 CUP	63.0	2981	51,600 CUP
IMR 4895	60.2	2837	43,900 CUP	64.0	2990	51,400 CUP
H4895	56.0	2764	46,600 CUP	59.5	2901	52,300 CUP

Bullet: 200 GR. SPR SP Dia: .338″ Col: 3.300″

IMR 4955	68.3	2707	50,800 PSI	73.5	2916	62,400 PSI
H4831	70.0	2703	41,300 CUP	77.5C	2965	52,400 CUP
Hybrid 100V	65.0	2684	40,600 CUP	70.0C	2870	46,100 CUP
IMR 4831	70.0	2751	43,500 CUP	74.5C	2934	50,200 CUP
H4350	65.0	2695	39,900 CUP	72.5	2969	52,200 CUP
H414	63.0	2730	43,000 CUP	69.5	2942	52,400 CUP
IMR 4350	69.6	2837	46,700 CUP	74.0C	2979	52,900 CUP
760	63.0	2730	43,000 CUP	69.5	2942	52,400 CUP
H380	62.0	2685	44,900 CUP	69.0	2921	52,800 CUP
Varget	53.0	2597	39,100 CUP	58.5	2805	51,100 CUP
IMR 4320	57.0	2678	46,200 CUP	60.5	2784	51,300 CUP
IMR 4064	60.2	2793	47,100 CUP	64.0	2918	52,700 CUP
IMR 4895	62.3	2830	47,700 CUP	66.3	2958	52,900 CUP
H4895	56.0	2702	44,700 CUP	62.0	2877	52,600 CUP

Bullet: 210 GR. NOS PART Dia: .338″ Col: 3.280″

IMR 7828	72.0	2676	43,900 CUP	78.0C*	2895	52,600 CUP
IMR 4955	66.5	2662	52,800 PSI	71.5	2844	62,700 PSI
H4831	68.0	2648	42,600 CUP	75.5C	2888	52,300 CUP
Hybrid 100V	68.0	2759	45,200 CUP	72.0C	2887	48,400 CUP
IMR 4831	68.0	2677	41,000 CUP	73.0C	2877	50,600 CUP
H4350	63.0	2618	41,500 CUP	70.0	2855	51,800 CUP
IMR 4451	63.7	2647	50,500 PSI	68.9	2857	61,900 PSI
H414	60.0	2617	42,300 CUP	67.0	2848	51,800 CUP
IMR 4350	67.0	2711	44,200 CUP	71.5C	2894	52,800 CUP
760	60.0	2617	42,300 CUP	67.0	2848	51,800 CUP
H380	59.0	2555	42,400 CUP	66.0	2797	53,000 CUP
Varget	53.0	2577	41,800 CUP	58.5	2784	52,500 CUP
IMR 4064	57.0	2651	44,200 CUP	62.0	2843	53,300 CUP
IMR 4895	56.0	2581	41,900 CUP	62.0	2809	52,500 CUP
H4895	54.0	2609	44,100 CUP	60.0	2788	53,000 CUP

Bullet: 215 GR. SIE BTSP Dia: .338″ Col: 3.340″

IMR 7828	72.0	2706	46,000 CUP	77.5C*	2889	53,400 CUP
IMR 4955	67.1	2635	51,500 PSI	72.2C	2838	62,900 PSI
IMR 4831	68.0	2708	45,700 CUP	72.5C	2889	53,000 CUP
IMR 4451	64.2	2655	51,700 PSI	69.5	2857	62,900 PSI
IMR 4350	67.0	2643	44,200 CUP	71.5	2845	52,900 CUP
IMR 4064	57.0	2596	45,800 CUP	62.0	2776	53,100 CUP
IMR 4895	56.0	2572	42,600 CUP	61.5	2779	52,600 CUP

Bullet: 225 GR. HDY SP Dia: .338″ Col: 3.340″

IMR 7828	72.0	2605	44,100 CUP	77.0C*	2777	49,400 CUP
IMR 4955	67.4	2562	50,300 PSI	72.5C	2779	62,300 PSI
H4831	67.0	2542	40,200 CUP	74.5C	2792	52,000 CUP
Hybrid 100V	67.0	2693	46,200 CUP	71.0C	2815	49,400 CUP
IMR 4831	69.0	2637	44,900 CUP	73.5C	2805	50,200 CUP
H4350	63.0	2571	41,100 CUP	69.5	2785	51,700 CUP
IMR 4451	64.2	2570	50,000 PSI	69.4	2777	61,900 PSI
H414	62.0	2611	43,200 CUP	69.0	2811	51,700 CUP
IMR 4350	67.0	2657	43,600 CUP	72.0C	2832	52,000 CUP
760	62.0	2611	43,200 CUP	69.0	2811	51,700 CUP
H380	58.0	2490	43,700 CUP	65.0	2708	52,600 CUP
Varget	52.0	2481	41,500 CUP	57.5	2680	52,700 CUP
IMR 4320	55.5	2540	48,300 CUP	59.0	2642	51,000 CUP
IMR 4064	57.0	2583	43,200 CUP	61.7	2764	52,800 CUP
IMR 4895	58.0	2605	44,400 CUP	62.0	2761	52,600 CUP
H4895	53.0	2505	43,000 CUP	59.0	2688	52,400 CUP

Bullet: 250 GR. HDY SP Dia: .338″ Col: 3.340″

H1000	72.0	2512	41,500 CUP	76.0 C	2622	46,500 CUP
IMR 7977	69.5	2346	44,300 PSI	75.5C	2592	57,700 PSI
IMR 7828	70.0	2423	44,000 CUP	75.0C*	2628	51,800 CUP
IMR 4955	64.8	2440	50,500 PSI	69.7	2641	62,200 PSI
H4831	64.0	2424	41,900 CUP	71.5C	2655	52,300 CUP
Hybrid 100V	63.0	2475	34,700 CUP	68.0C	2643	50,500 CUP
IMR 4831	67.0	2474	45,300 CUP	71.6C	2632	52,400 CUP
H4350	61.0	2448	42,000 CUP	67.5	2657	51,900 CUP
IMR 4451	61.7	2419	49,300 PSI	66.8	2631	62,400 PSI
H414	59.0	2426	44,100 CUP	65.0	2622	52,900 CUP
IMR 4350	65.0	2468	45,800 CUP	69.5C	2634	52,400 CUP
760	59.0	2426	44,100 CUP	65.0	2622	52,900 CUP
IMR 4064	54.0	2339	43,300 CUP	58.5	2518	52,700 CUP
IMR 4895	55.0	2392	45,700 CUP	59.0	2529	53,200 CUP

Bullet: 265 GR. BAR TTSX BT Dia: .338″ Col: 3.450″

IMR 7977	63.7	2251	49,200 PSI	69.3C	2426	58,100 PSI
IMR 7828 SSC	61.2	2239	42,400 CUP	68.0C*	2443	50,000 CUP
IMR 4955	57.8	2299	54,700 PSI	62.2	2440	62,200 PSI
H4831	60.3	2236	44,000 CUP	67.0C	2434	52,500 CUP
Hybrid 100V	58.0	2324	44,600 CUP	63.0C	2496	52,000 CUP
IMR 4831	58.0	2287	43,100 CUP	62.5C	2426	49,600 CUP
H4350	55.8	2287	48,400 CUP	59.4	2409	52,200 CUP
IMR 4451	55.1	2267	53,500 PSI	59.6	2430	62,500 PSI
H414	52.2	2223	45,200 CUP	55.5	2329	50,200 CUP
IMR 4350	57.0	2304	44,100 CUP	62.0C	2468	49,900 CUP
760	52.2	2223	45,200 CUP	55.5	2329	50,200 CUP

NEVER EXCEED MAXIMUM LOADS

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Bullet: 275 GR. SPR SP Dia: .338″ Col: 3.340″						
H1000	70.0	2402	43,400 CUP	76.0 C	2564	51,100 CUP
IMR 7977	67.7	2334	51,200 PSI	73.6C	2505	61,000 PSI
IMR 7828	63.0	2263	42,000 CUP	68.0C	2454	52,700 CUP
IMR 4955	60.2	2286	51,100 PSI	65.2	2461	62,400 PSI
H4831	62.0	2304	42,600 CUP	69.0	2502	52,300 CUP
Hybrid 100V	60.0	2327	43,800 CUP	65.0C	2472	50,900 CUP
IMR 4831	61.0	2304	47,000 CUP	65.5C	2465	53,100 CUP
H4350	57.0	2259	41,100 CUP	63.5	2447	52,100 CUP
IMR 4451	58.5	2280	51,400 PSI	63.3	2449	62,400 PSI
H414	56.0	2269	44,800 CUP	62.0	2445	52,500 CUP
IMR 4350	58.0	2285	45,600 CUP	62.0	2401	52,500 CUP
760	56.0	2269	44,800 CUP	62.0	2445	52,500 CUP
Bullet: 300 GR. SIE HPBT Dia: .338″ Col: 3.340″						
H1000	66.0	2241	42,200 CUP	70.0C	2347	46,900 CUP
IMR 7977	62.7	2118	44,100 PSI	68.2C	2315	55,200 PSI
IMR 7828	64.0	2274	45,500 CUP	68.0C*	2434	52,600 CUP
IMR 4955	59.3	2223	53,200 PSI	64.2C	2387	62,600 PSI
H4831	63.0	2255	45,900 CUP	69.0C	2422	52,800 CUP
IMR 4831	62.0	2293	46,900 CUP	67.0C	2441	53,200 CUP
H4350	56.0	2202	44,000 CUP	61.5	2362	52,600 CUP
IMR 4451	55.5	2185	51,500 PSI	60.0	2336	61,300 PSI
H414	53.0	2147	43,000 CUP	59.5	2348	52,600 CUP
IMR 4350	60.0	2263	47,100 CUP	64.0C	2420	52,300 CUP

338 LAPUA MAGNUM

Case: Norma Twist: 1:9″
Barrel: 24″ Trim: 2.714″ Primer: Federal 215M, Large Rifle Magnum Match

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Bullet: 160 GR. BAR TTSX Dia: .338″ Col: 3.565″						
IMR 7828	98.7	3330	54,000 PSI	105.0	3531	62,800 PSI
IMR 4955	94.5	3303	52,700 PSI	101.0C	3537	63,500 PSI
H4831	98.5	3290	52,900 PSI	104.8C	3472	61,200 PSI
Hybrid 100V	90.0	3413	54,000 PSI	96.3C	3606	62,400 PSI
IMR 4831	93.0	3346	51,500 PSI	99.0	3589	62,500 PSI
H4350	89.3	3348	54,100 PSI	95.0	3511	61,800 PSI
H414	87.4	3341	54,700 PSI	93.0	3502	62,400 PSI
IMR 4350	90.2	3350	53,700 PSI	96.0	3525	61,200 PSI
760	87.4	3341	54,700 PSI	93.0	3502	62,400 PSI
Bullet: 185 GR. BAR TSX Dia: .338″ Col: 3.530″						
H1000	100.0	3051	49,300 PSI	106.0C	3218	57,300 PSI
IMR 7828	94.0	3133	54,200 PSI	100.0	3312	62,000 PSI
IMR 4955	89.0	3100	53,600 PSI	95.0	3296	63,500 PSI
H4831	93.7	3085	52,500 PSI	100.0	3281	61,500 PSI
Hybrid 100V	85.2	3198	54,600 PSI	90.6	3354	62,100 PSI
IMR 4831	89.0	3176	53,000 PSI	94.6	3371	62,800 PSI
H4350	85.0	3120	53,200 PSI	90.4	3311	63,400 PSI
H414	81.8	3124	56,100 PSI	87.0	3247	62,400 PSI
IMR 4350	85.4	3122	53,000 PSI	90.8	3307	61,800 PSI
760	81.8	3124	56,100 PSI	87.0	3247	62,400 PSI
Bullet: 200 GR. SPR SP Dia: .338″ Col: 3.525″						
Retumbo	96.0	2928	43,700 CUP	104.0C	3189	52,600 CUP
IMR 8133	98.0	2922	49,500 PSI	106.0C	3183	60,700 PSI
H1000	92.0	2854	42,300 CUP	102.0C	3116	52,500 CUP
IMR 7828	89.0	2965	44,300 CUP	95.0	3133	52,300 CUP
IMR 4955	86.5	2968	54,000 PSI	92.5	3150	63,000 PSI
H4831	83.0	2855	44,900 CUP	92.0	3086	53,200 CUP
Hybrid 100V	81.0	2975	47,100 CUP	88.0	3155	53,200 CUP
IMR 4831	85.5	2970	47,600 CUP	91.0	3162	53,100 CUP
H4350	79.0	2925	45,900 CUP	85.5	3099	52,500 CUP
H414	74.0	2840	45,000 CUP	81.0	3058	53,000 CUP
IMR 4350	83.0	3001	47,400 CUP	88.0	3161	52,700 CUP
Bullet: 210 GR. NOS PART Dia: .338″ Col: 3.525″						
Retumbo	92.0	2846	42,100 CUP	102.0C	3142	52,600 CUP
IMR 8133	95.0	2881	51,400 PSI	103.0	3132	62,800 PSI
H1000	90.0	2800	42,900 CUP	99.5	3052	52,500 CUP
IMR 7828	88.0	2920	47,300 CUP	93.4	3099	52,900 CUP
IMR 4955	84.0	2898	54,500 PSI	89.5	3057	62,300 PSI
H4831	80.0	2735	44,600 CUP	89.0	3006	53,000 CUP
Hybrid 100V	77.0	2760	45,200 CUP	84.0	2948	52,500 CUP
IMR 4831	83.0	2920	47,900 CUP	88.5	3076	53,500 CUP
H4350	76.0	2834	47,000 CUP	82.0	3005	52,200 CUP
IMR 4350	80.0	2891	46,400 CUP	85.0	3034	51,900 CUP
Bullet: 215 GR. SIE SPBT Dia: .338″ Col: 3.550″						
Retumbo	94.0	2849	43,700 CUP	104.0C	3125	51,900 CUP
IMR 8133	96.5	2846	48,900 PSI	104.5	3130	62,500 PSI
H1000	92.0	2809	43,500 CUP	102.0C	3068	53,000 CUP
IMR 7828	87.7	2906	47,600 CUP	93.3	3076	51,900 CUP
IMR 4955	85.0	2862	52,300 PSI	91.0	3056	62,000 PSI
H4831	82.0	2763	44,500 CUP	91.0	2997	53,000 CUP
IMR 4831	83.0	2868	45,900 CUP	88.5	3033	52,600 CUP
H4350	76.0	2791	45,000 CUP	84.0	3015	52,800 CUP
IMR 4350	80.0	2888	45,900 CUP	85.0	3042	52,200 CUP
Bullet: 225 GR. NOS PART Dia: .338″ Col: 3.550″						
Retumbo	92.0	2744	41,200 CUP	102.0C	3040	52,300 CUP
IMR 8133	94.5	2804	50,600 PSI	102.0	3039	61,700 PSI
H1000	91.0	2713	42,100 CUP	101.0C	2995	53,100 CUP
IMR 7828	85.0	2831	46,900 CUP	90.5	2966	52,100 CUP
IMR 4955	83.0	2791	53,500 PSI	89.0	2966	62,700 PSI
H4831	80.0	2699	44,000 CUP	89.6	2918	52,900 CUP
Hybrid 100V	76.0	2760	45,300 CUP	83.0	2942	52,700 CUP
IMR 4831	81.8	2794	47,300 CUP	87.0	2965	53,500 CUP
H4350	74.0	2715	45,200 CUP	82.5	2936	52,800 CUP
IMR 4350	78.0	2821	45,200 CUP	83.3	2944	52,300 CUP
Bullet: 250 GR. HDY SP Dia: .338″ Col: 3.550″						
US 869	101.5	2728	47,000 CUP	108.0	2879	51,100 CUP
Retumbo	90.0	2620	43,200 CUP	98.0C	2853	52,000 CUP
IMR 8133	93.0	2666	49,500 PSI	100.5C	2916	61,600 PSI
H1000	88.0	2567	41,400 CUP	98.0C	2838	52,800 CUP
IMR 7977	89.2	2691	49,200 PSI	97.0	2927	61,300 PSI
IMR 7828	83.0	2636	46,200 CUP	88.5	2802	52,100 CUP
IMR 4955	81.0	2641	52,000 PSI	86.5	2811	61,600 PSI
H4831	79.0	2600	46,100 CUP	85.0	2740	52,200 CUP
Hybrid 100V	75.0	2619	45,500 CUP	81.0	2765	52,200 CUP
IMR 4831	80.0	2657	47,700 CUP	85.0	2801	52,900 CUP
H4350	74.0	2615	48,300 CUP	78.0	2742	52,300 CUP
Bullet: 265 GR. BAR TTSX BT Dia: .338″ Col: 3.685″						
US 869	93.8	2518	48,400 PSI	100.0	2677	55,900 PSI
Retumbo	76.4	2483	50,400 PSI	83.0	2660	60,600 PSI
IMR 8133	83.5	2551	53,500 PSI	91.5C	2731	60,900 PSI
H1000	77.7	2510	52,800 PSI	83.6	2656	61,100 PSI
IMR 7977	81.2	2558	51,600 PSI	83.5	2698	60,100 PSI
IMR 7828	76.1	2533	54,000 PSI	81.0	2658	60,500 PSI
IMR 4955	73.5	2507	55,100 PSI	78.5	2630	61,600 PSI
H4831	74.6	2518	54,400 PSI	79.4	2642	61,600 PSI
IMR 4831	70.5	2503	53,800 PSI	75.0	2634	62,300 PSI
Bullet: 275 GR. SFT SP Dia: .338″ Col: 3.460″						
US 869	99.0	2636	46,200 CUP	104.5	2761	52,200 CUP
Retumbo	80.0	2421	41,800 CUP	89.0	2671	52,700 CUP
IMR 8133	84.5	2461	48,800 PSI	92.0C	2687	61,900 PSI
H1000	83.0	2444	43,500 CUP	91.5C	2648	52,600 CUP
IMR 7977	81.8	2518	51,600 PSI	89.0	2719	61,700 PSI
IMR 7828	73.0	2429	44,500 CUP	81.0	2632	53,000 CUP
IMR 4955	74.5	2414	51,200 PSI	81.0	2591	60,700 PSI
H4831	71.0	2349	42,800 CUP	79.0	2572	52,800 CUP
IMR 4831	73.0	2450	46,000 CUP	77.3	2584	52,900 CUP
Bullet: 300 GR. SIE HPBT Dia: .338″ Col: 3.600″						
US 869	98.5	2567	47,500 CUP	104.0	2677	51,500 CUP

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Retumbo	85.0	2376	41,100 CUP	94.0C	2654	53,400 CUP
IMR 8133	86.0	2394	48,200 PSI	94.5C	2644	61,700 PSI
H1000	83.0	2383	43,200 CUP	92.0C	2590	53,000 CUP
IMR 7977	85.5	2482	50,900 PSI	93.0	2688	62,600 PSI
IMR 7828	73.0	2376	44,600 CUP	81.0	2566	53,000 CUP
IMR 4955	75.5	2419	54,100 PSI	82.5	2571	62,800 PSI
H4831	71.0	2307	44,400 CUP	79.0	2511	53,100 CUP
IMR 4831	68.0	2316	43,500 CUP	76.0	2541	53,300 CUP

357 MAGNUM

Case: Winchester Twist: 1:18.75″
Barrel: 18.5″ Trim: 1.285″ Primer: Winchester SPM, Small Pistol Magnum

Bullet: 110 GR. HDY XTP	Dia: .357″	Col: 1.590″				
H4227	18.9	2072	29,600 CUP	21.0	2233	35,500 CUP
H110	22.0	2291	32,400 CUP	23.0	2398	37,200 CUP
HS-6	10.3	1669	32,600 CUP	11.5	1830	42,300 CUP
Universal	7.5	1585	35,100 CUP	8.0	1670	40,000 CUP
HP-38	8.0	1662	36,200 CUP	9.0	1782	42,500 CUP
Titegroup	7.2	1612	35,000 CUP	8.0	1746	41,500 CUP
Bullet: 125 GR. HDY XTP	**Dia: .357″**	**Col: 1.590″**				
H4227	18.0	1955	34,400 CUP	20.0	2122	42,000 CUP
H110	21.0	2205	38,400 CUP	22.0	2276	41,400 CUP
HS-6	9.8	1538	34,400 CUP	10.9	1724	42,100 CUP
Universal	7.1	1423	34,900 CUP	7.6	1526	39,600 CUP
HP-38	7.3	1454	33,800 CUP	8.5	1622	42,700 CUP
Titegroup	6.8	1461	36,500 CUP	7.5	1586	41,200 CUP
Bullet: 125 GR. HDY XTP	**Dia: .357″**	**Col: 1.590″**				
IMR 4227	18.0	1955	34,400 CUP	20.0	2122	42,000 CUP
700-X	4.5	1173	18,300 PSI	6.4	1479	30,400 PSI
Bullet: 140 GR. HDY XTP	**Dia: .357″**	**Col: 1.590″**				
H4227	16.2	1798	33,100 CUP	18.0	1930	42,600 CUP
H110	17.1	1836	28,400 CUP	19.0	1997	40,900 CUP
HS-6	9.5	1497	35,800 CUP	10.5	1613	43,000 CUP
Universal	6.5	1282	34,800 CUP	7.0	1356	40,200 CUP
HP-38	6.5	1324	30,800 CUP	7.7	1447	41,900 CUP
Titegroup	6.3	1325	35,600 CUP	7.0	1425	41,900 CUP
Bullet: 150 GR. NOS JFP	**Dia: .357″**	**Col: 1.590″**				
H4227	15.0	1663	33,100 CUP	16.5	1775	36,700 CUP
H110	16.0	1766	23,600 CUP	17.0	1807	28,900 CUP
HS-6	9.0	1449	31,500 CUP	9.7	1503	39,900 CUP
Universal	6.2	1096	32,800 CUP	6.7	1323	39,900 CUP
HP-38	6.5	1261	35,800 CUP	7.0	1356	39,700 CUP
Titegroup	6.1	1291	33,800 CUP	6.8	1429	40,900 CUP
Bullet: 158 GR. HDY XTP	**Dia: .357″**	**Col: 1.580″**				
IMR 4227	14.5	1578	34,600 CUP	16.0	1668	42,600 CUP
H4227	14.5	1578	34,600 CUP	16.0	1668	42,600 CUP
H110	15.0	1619	28,600 CUP	16.7	1757	40,700 CUP
HS-6	8.0	1181	28,000 CUP	9.5	1427	41,900 CUP
Universal	5.8	1059	32,100 CUP	6.3	1147	39,300 CUP
HP-38	6.2	1095	33,700 CUP	6.9	1214	40,000 CUP
Titegroup	5.4	1035	32,600 CUP	6.1	1184	41,900 CUP
700-X	4.5	1019	21,900 PSI	5.7	1219	31,200 PSI
Bullet: 158 GR. LSWC	**Dia: .358″**	**Col: 1.610″**				
H4227	10.5	1288	15,400 CUP	11.5	1382	17,800 CUP
HS-6	6.0	1083	12,900 CUP	7.0	1224	15,500 CUP
Universal	5.5	1214	23,300 CUP	6.7	1380	34,600 CUP
HP-38	3.5	901	8,400 CUP	4.5	1059	16,200 CUP
Titegroup	4.5	1157	19,300 CUP	5.0	1220	24,900 CUP
Bullet: 170 GR. SIE JHC	**Dia: .357″**	**Col: 1.580″**				
H4227	13.0	1442	32,300 CUP	14.5	1535	41,200 CUP
H110	14.0	1537	25,900 CUP	15.5	1662	40,800 CUP
HS-6	8.0	1243	30,900 CUP	9.2	1424	42,900 CUP
Titegroup	5.4	1177	34,700 CUP	6.0	1270	41,800 CUP
Bullet: 180 GR. NOS PART	**Dia: .357″**	**Col: 1.575″**				
H4227	12.7	1185	36,900 CUP	13.7	1325	40,900 CUP
H110	13.0	1324	36,800 CUP	13.5	1381	39,100 CUP

350 LEGEND

Case: Winchester Twist: 1:16″
Barrel: 24″ Trim: 1.700″ Primer: Winchester SR, Small Rifle

Bullet: 125 GR. BAR TAC-XP	Dia: .355″	Col: 2.050″				
IMR 4227	24.0	2054	33,000 PSI	27.5C	2307	46,100 PSI
296	23.7	2352	41,300 PSI	26.3	2543	51,800 PSI
H110	23.7	2352	41,300 PSI	26.3	2543	51,800 PSI
Lil'Gun	24.0	2428	42,400 PSI	27.5	2600	50,300 PSI
Bullet: 147 GR. HDY XTP	**Dia: .355″**	**Col: 2.000″**				
IMR 4227	24.0	2066	38,000 PSI	27.5C	2276	45,800 PSI
296	27.0	2368	41,900 PSI	28.2	2495	52,100 PSI
H110	27.0	2368	41,900 PSI	28.2	2495	52,100 PSI
Lil'Gun	27.0	2347	36,400 PSI	28.5	2455	40,500 PSI
Bullet: 170 GR. HDY SP	**Dia: .355″**	**Col: 2.240″**				
CFE BLK	27.0	1857	24,000 PSI	30.0C	2075	31,000 PSI
IMR 4227	25.0	1946	38,500 PSI	27.4C	2122	50,900 PSI
296	24.0	2049	40,600 PSI	26.7	2221	51,600 PSI
H110	24.0	2049	40,600 PSI	26.7	2221	51,600 PSI
Lil'Gun	25.0	2181	42,700 PSI	27.9	2307	45,900 PSI
Bullet: 180 GR. WIN PP	**Dia: .355″**	**Col: 2.110″**				
CFE BLK	24.7	1691	21,000 PSI	27.5C	1889	28,100 PSI
IMR 4227	22.7	1880	42,100 PSI	24.7	2032	51,200 PSI
296	22.0	1894	36,700 PSI	24.0	2079	51,100 PSI
H110	22.0	1894	36,700 PSI	24.0	2079	51,100 PSI
Lil'Gun	23.0	2049	41,300 PSI	25.5	2213	50,600 PSI

35 REMINGTON

Case: Remington Twist: 1:16″
Barrel: 24″ Trim: 1.910″ Primer: Remington 9 1/2, Large Rifle

Bullet: 180 GR. SPR FN	Dia: .358″	Col: 2.470″				
LVR	40.0	2044	26,700 CUP	45.0C	2302	33,900 CUP
Varget	37.0	1972	27,200 CUP	40.5	2196	32,500 CUP
BL-C(2)	39.0	2014	29,300 CUP	43.0	2147	32,300 CUP
H335	34.0	1953	29,900 CUP	37.5	2111	33,600 CUP
H4895	35.0	1991	27,500 CUP	39.0	2232	33,100 CUP
IMR 8208 XBR	33.0	1915	30,900 CUP	37.0	2074	33,900 CUP
Benchmark	32.5	1865	29,300 CUP	35.5	2034	32,300 CUP
H322	31.0	1901	28,200 CUP	35.0	2104	33,100 CUP
H4198	28.0	1971	28,600 CUP	32.0	2172	33,000 CUP
Bullet: 200 GR. HDY FTX	**Dia: .358″**	**Col: 2.540″**				
LVR	37.0	1897	26,500 CUP	41.4C	2116	34,700 CUP
Varget	36.0	1845	29,800 CUP	38.3C	1963	32,000 CUP
IMR 4064	34.1	1741	30,400 CUP	36.3C	1861	32,200 CUP
748	35.7	1815	28,600 CUP	38.0	1913	31,300 CUP
H4895	33.8	1839	30,000 CUP	36.0C	1959	31,900 CUP
IMR 8208 XBR	33.2	1799	28,800 CUP	35.3	1932	32,000 CUP
Bullet: 200 GR. HDY RN	**Dia: .358″**	**Col: 2.510″**				
LVR	42.0	2040	25,600 CUP	45.0C	2235	31,200 CUP
Varget	36.0	1966	28,800 CUP	39.5	2139	33,300 CUP
IMR 4320				38.5	2020	35,000 CUP
IMR 4064				39.5C	2080	34,200 CUP
748				39.0	2130	33,000 CUP
BL-C(2)	38.0	1877	23,200 CUP	41.5	2011	31,700 CUP
IMR 4895				36.5	2030	34,900 CUP
H335	33.0	1855	27,100 CUP	37.0	2048	33,200 CUP
H4895	35.0	1920	26,100 CUP	38.5	2110	32,300 CUP
IMR 8208 XBR	33.0	1872	31,000 CUP	36.6	1997	33,600 CUP
IMR 3031				37.5	2110	34,700 CUP

NEVER EXCEED MAXIMUM LOADS

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Benchmark	32.5	1847	29,400 CUP	35.5	1984	32,600 CUP
H322	31.0	1866	28,500 CUP	33.8	1987	33,100 CUP
IMR 4198				27.0	1915	33,500 CUP
H4198	27.0	1816	26,700 CUP	30.5	1999	31,700 CUP
Bullet: 220 GR. SPR FN			**Dia: .358″**		**Col: 2.470″**	
Varget	34.0	1803	27,800 CUP	38.0	1998	33,300 CUP
BL-C(2)	36.0	1824	26,900 CUP	39.5	1917	31,000 CUP
H335	30.0	1633	29,100 CUP	33.5	1821	33,400 CUP
H4895	33.0	1848	29,000 CUP	36.3	2010	33,600 CUP
IMR 8208 XBR	31.0	1679	30,500 CUP	34.8	1932	34,500 CUP
Benchmark	31.0	1725	30,600 CUP	34.0	1865	33,300 CUP
H322	29.0	1692	26,100 CUP	32.5	1870	32,600 CUP
H4198	26.0	1744	30,400 CUP	29.0	1867	33,400 CUP

358 WINCHESTER

Case: Winchester Twist: 1:12″
Barrel: 26″ Trim: 2.005″ Primer: Winchester LR, Large Rifle

Bullet: 200 GR. HDY SP			**Dia: .358″**		**Col: 2.650″**	
Varget	47.0	2376	41,100 CUP	51.0C	2527	47,900 CUP
IMR 4320				51.0C	2545	51,700 CUP
IMR 4064				49.0C	2525	46,200 CUP
748				50.6	2500	50,000 CUP
BL-C(2)	49.0	2329	31,500 CUP	52.0	2464	41,800 CUP
IMR 4895				49.0C	2565	50,800 CUP
H335	44.0	2300	40,000 CUP	48.5	2484	48,400 CUP
H4895	44.0	2316	40,200 CUP	48.0C	2519	49,800 CUP
IMR 3031				49.0C	2630	51,800 CUP
Benchmark	42.0	2319	42,700 CUP	46.2	2494	50,000 CUP
H322	40.0	2306	45,400 CUP	44.8	2491	49,400 CUP
Bullet: 220 GR. SPR FN SP			**Dia: .358″**		**Col: 2.560″**	
Varget	46.0	2226	42,800 CUP	50.0C	2445	50,300 CUP
BL-C(2)	48.0	2238	37,600 CUP	51.0	2355	43,900 CUP
H335	42.0	2181	42,200 CUP	46.0	2352	49,400 CUP
H4895	43.0	2227	41,500 CUP	47.5C	2421	50,200 CUP
Benchmark	41.0	2184	39,400 CUP	45.0	2361	49,500 CUP
H322	40.0	2243	45,700 CUP	44.0	2371	49,300 CUP
Bullet: 225 GR. SIE BTSP			**Dia: .358″**		**Col: 2.770″**	
Varget	45.0	2254	40,700 CUP	49.0	2451	50,600 CUP
BL-C(2)	48.0	2324	39,900 CUP	51.0	2431	45,400 CUP
H335	42.0	2231	43,500 CUP	46.0	2390	48,500 CUP
H4895	42.0	2223	41,700 CUP	46.5	2422	50,300 CUP
Benchmark	40.0	2211	44,200 CUP	44.0	2354	50,600 CUP
H322	41.0	2275	46,000 CUP	43.0	2372	50,300 CUP
Bullet: 250 GR. NOS PART			**Dia: .358″**		**Col: 2.760″**	
Varget	43.0	2119	39,500 CUP	47.0C	2278	48,600 CUP
IMR 4320				44.5	2210	51,400 CUP
IMR 4064				44.0C	2270	52,000 CUP
748				46.2	2250	50,500 CUP
BL-C(2)	44.0	2121	39,900 CUP	47.0	2240	47,200 CUP
IMR 4895				43.0	2235	51,200 CUP
H335	39.0	1987	39,200 CUP	43.0	2184	50,500 CUP
H4895	40.0	2057	40,400 CUP	44.5C	2257	50,500 CUP
IMR 3031				42.0	2260	50,800 CUP
Benchmark	38.0	2030	39,800 CUP	42.0	2176	49,400 CUP
H322	38.0	2095	43,500 CUP	42.5	2260	49,900 CUP

35 WHELEN

Case: Remington Twist: 1:16″
Barrel: 24″ Trim: 2.484″ Primer: Remington 9 1/2, Large Rifle

Bullet: 180 GR. SPR FP			**Dia: .358″**		**Col: 3.045″**	
Varget	54.0	2609	39,900 CUP	60.0C	2764	42,500 CUP
IMR 4064	56.0	2544	39,700 CUP	60.0C	2708	44,700 CUP
BL-C(2)	62.0	2644	38,100 CUP	65.0	2860	48,500 CUP
IMR 4895	56.0	2636	43,600 CUP	60.0C	2780	46,800 CUP
H335	56.0	2741	45,600 CUP	60.0	2870	50,000 CUP
H4895	56.0	2649	40,000 CUP	60.0	2798	46,800 CUP
IMR 8208 XBR	56.0	2736	42,600 CUP	60.0C	2891	47,500 CUP
H322	55.0	2707	44,000 CUP	58.0	2829	48,500 CUP
Bullet: 200 GR. SIE RN			**Dia: .358″**		**Col: 3.050″**	
H380	59.0	2511	41,500 CUP	61.0	2602	45,000 CUP
Varget	52.0	2508	40,400 CUP	57.0	2653	42,300 CUP
IMR 4320	53.0	2436	41,400 CUP	59.0C	2669	49,300 CUP
IMR 4064	54.0	2460	40,800 CUP	59.0C	2637	46,400 CUP
BL-C(2)	60.0	2636	43,000 CUP	63.0	2807	49,000 CUP
IMR 4895	54.0	2512	42,800 CUP	59.0C	2696	48,800 CUP
H335	52.0	2588	44,900 CUP	55.0	2684	50,000 CUP
H4895	54.0	2544	43,500 CUP	57.0	2689	49,000 CUP
IMR 8208 XBR	53.0	2579	41,300 CUP	59.0C	2802	48,900 CUP
IMR 3031	50.0	2467	40,900 CUP	55.5	2711	48,900 CUP
H322	52.0	2540	42,600 CUP	56.0	2691	48,500 CUP
Bullet: 220 GR. SPR FP			**Dia: .358″**		**Col: 3.045″**	
H380	58.0	2389	41,500 CUP	60.0	2490	44,800 CUP
IMR 4320	49.5	2290	43,400 CUP	55.0	2510	49,600 CUP
IMR 4064	49.5	2248	41,000 CUP	55.5C	2499	48,000 CUP
BL-C(2)	58.0	2492	44,000 CUP	61.0	2636	49,000 CUP
IMR 4895	50.0	2332	42,200 CUP	56.0C	2569	50,300 CUP
H335	50.0	2429	44,500 CUP	53.0	2519	49,500 CUP
H4895	51.0	2461	44,000 CUP	55.0	2588	50,000 CUP
IMR 8208 XBR	49.5	2397	42,600 CUP	55.0	2623	50,200 CUP
IMR 3031	46.0	2270	41,300 CUP	51.5	2516	49,100 CUP
H322	50.0	2392	43,500 CUP	54.0	2566	49,500 CUP
Bullet: 225 GR. SIE SBT			**Dia: .358″**		**Col: 3.175″**	
Varget	51.0	2442	43,500 CUP	56.0	2588	46,400 CUP
IMR 4064	51.0	2321	42,400 CUP	56.0C	2547	49,200 CUP
IMR 4895	49.5	2315	41,300 CUP	55.0C	2553	50,000 CUP
H4895	49.5	2404	40,900 CUP	55.0C	2611	49,200 CUP
IMR 8208 XBR	49.5	2409	40,500 CUP	55.0C	2618	49,600 CUP
Bullet: 250 GR. HDY SP			**Dia: .358″**		**Col: 3.290″**	
H380	57.0	2304	41,000 CUP	59.0	2416	44,500 CUP
Varget	50.0	2348	44,900 CUP	55.0	2486	49,900 CUP
IMR 4320	49.0	2170	43,400 CUP	53.8	2387	50,100 CUP
IMR 4064	49.0	2200	41,700 CUP	54.8C	2449	50,200 CUP
BL-C(2)	56.0	2382	43,000 CUP	59.0	2503	48,900 CUP
IMR 4895	48.0	2178	41,400 CUP	53.5	2421	50,300 CUP
H335	49.0	2288	44,200 CUP	52.0	2404	50,000 CUP
H4895	49.0	2330	43,700 CUP	53.0	2455	50,000 CUP
IMR 8208 XBR	49.0	2311	44,000 CUP	54.3C	2515	50,300 CUP
H322	48.0	2249	44,000 CUP	52.0	2398	48,500 CUP

9.3 x 62

Case: Norma Twist: 1:10″
Barrel: 24″ Trim: 2.431″ Primer: CCI 200, Large Rifle

Bullet: 250 GR. BAR TSX			**Dia: .366″**		**Col: 3.200″**	
Varget	52.0	2199	33,900 CUP	58.0C	2436	47,200 CUP
IMR 4895	52.0	2185	39,200 CUP	58.0C	2438	48,700 CUP
H335	49.5	2188	38,800 CUP	56.0	2435	48,800 CUP
H4895	51.0	2221	37,000 CUP	57.0C	2484	48,700 CUP
IMR 3031	49.0	2182	36,500 CUP	54.5C	2423	47,700 CUP
Bullet: 270 GR. SPR SP			**Dia: .366″**		**Col: 3.280″**	
H4350	63.0	2322	38,500 CUP	67.0C	2438	44,600 CUP
IMR 4350	58.0	2117	38,400 CUP	64.0C	2347	47,600 CUP
Varget	55.0	2290	40,100 CUP	59.5	2440	48,100 CUP
IMR 4320	51.0	2151	39,200 CUP	56.0	2328	47,900 CUP
IMR 4064	50.0	2139	40,200 CUP	54.5	2317	48,300 CUP
BL-C(2)	60.0	2338	39,600 CUP	66.0	2548	47,400 CUP
IMR 4895	50.0	2092	37,200 CUP	56.0	2328	48,300 CUP
H335	54.0	2283	40,700 CUP	58.0	2411	47,600 CUP
H4895	52.0	2244	39,800 CUP	56.5	2406	48,000 CUP

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
IMR 3031	48.0	2154	36,900 CUP	53.5	2380	48,800 CUP
Bullet: 286 GR. NOS PART Dia: .366″ Col: 3.225″						
H4350	64.0	2321	40,800 CUP	67.0C	2407	46,300 CUP
H414	60.0	2205	40,700 CUP	63.0C	2305	47,800 CUP
760	60.0	2205	40,700 CUP	63.0C	2305	47,800 CUP
Varget	55.0	2242	39,800 CUP	59.0C	2350	47,500 CUP
IMR 4064	49.0	2015	35,700 CUP	54.5C	2218	46,100 CUP
748	52.0	2056	34,300 CUP	57.0	2241	43,200 CUP
IMR 4895	51.0	2108	38,200 CUP	56.0C	2279	48,000 CUP
H335	51.0	2178	41,300 CUP	55.0	2323	48,100 CUP
H4895	51.0	2131	39,000 CUP	55.5	2331	47,800 CUP
IMR 3031	47.0	2058	35,700 CUP	51.5C	2219	46,900 CUP
Bullet: 300 GR. SFT SP Dia: .366″ Col: 3.150″						
Hybrid 100V	56.0	2041	39,300 CUP	60.0C	2158	42,600 CUP
H4350	60.0	2142	40,000 CUP	64.0C	2288	48,100 CUP
H414	59.0	2136	41,500 CUP	62.0C	2242	46,200 CUP
760	59.0	2136	41,500 CUP	62.0C	2242	46,200 CUP
Varget	52.0	2083	42,000 CUP	56.0	2194	47,800 CUP
IMR 4320	50.0	2039	38,700 CUP	54.0C	2184	47,900 CUP
IMR 4064	49.0	2002	38,600 CUP	54.5C	2205	48,900 CUP
748	52.0	2096	36,700 CUP	56.5	2234	44,500 CUP
BL-C(2)	54.0	2140	42,900 CUP	57.5	2211	47,900 CUP
IMR 4895	49.0	2020	38,800 CUP	54.7C	2224	48,500 CUP
H4895	47.0	1979	40,200 CUP	52.0	2133	48,200 CUP
IMR 3031	46.0	2002	37,200 CUP	52.0C	2230	48,600 CUP

9.3 x 74R

Case: Norma Twist: 1:14″
Barrel: 24″ Trim: 2.931″ Primer: CCI 200, Large Rifle

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Bullet: 250 GR. BAR TSX FB Dia: .366″ Col: 3.700″						
H4350	59.0	2150	37,100 CUP	64.5C	2330	41,800 CUP
IMR 4451	54.3	1963	36,200 CUP	59.7	2168	42,400 CUP
IMR 4350	58.0	2072	34,500 CUP	62.5C	2212	38,900 CUP
Varget	48.0	2096	39,000 CUP	52.0	2211	42,400 CUP
IMR 4064	47.0	2063	40,400 CUP	51.5	2175	42,100 CUP
IMR 4166	42.8	1886	38,500 CUP	46.6	2064	41,500 CUP
H4895	44.0	2033	39,000 CUP	48.0	2155	42,300 CUP
Bullet: 270 GR. SPR SP Dia: .366″ Col: 3.665″						
H4350	64.0	2292	36,200 CUP	68.0C	2403	41,600 CUP
H414	65.0	2239	32,100 CUP	68.0	2345	36,900 CUP
IMR 4350	62.0	2208	35,700 CUP	66.5C	2312	39,600 CUP
760	65.0	2239	32,100 CUP	68.0	2345	36,900 CUP
IMR 4007 SSC	59.5	2252	34,700 CUP	64.5C	2399	40,600 CUP
H380	60.0	2234	37,600 CUP	64.0	2360	42,400 CUP
Varget	50.0	2107	36,500 CUP	54.5	2257	42,000 CUP
IMR 4064	50.0	2146	35,500 CUP	56.7	2346	42,600 CUP
IMR 4166	44.3	1981	38,300 CUP	48.4	2121	42,400 CUP
Bullet: 286 GR. NOS PART Dia: .366″ Col: 3.700″						
H4831	66.0	2119	33,400 CUP	70.0C	2232	36,800 CUP
H4350	61.5	2211	36,800 CUP	65.5C	2323	41,500 CUP
H414	64.0	2206	34,200 CUP	68.0	2351	40,200 CUP
IMR 4350	58.0	2084	33,700 CUP	64.0C	2241	41,000 CUP
760	64.0	2206	34,200 CUP	68.0	2351	40,200 CUP
H380	58.0	2146	36,000 CUP	62.0	2266	41,700 CUP
Varget	51.0	2125	38,200 CUP	54.0	2200	41,800 CUP
Bullet: 300 GR. SFT SP Dia: .366″ Col: 3.640″						
H4831	61.0	1939	31,900 CUP	67.0C	2128	40,400 CUP
H4350	58.0	2111	38,900 CUP	62.0C	2210	42,100 CUP
H414	60.0	2100	34,500 CUP	64.0	2228	41,100 CUP
IMR 4350	56.0	2010	34,900 CUP	62.2C	2199	41,900 CUP
760	60.0	2100	34,500 CUP	64.0	2228	41,100 CUP
H380	53.0	1993	36,900 CUP	57.0	2120	42,200 CUP

38-55 WINCHESTER

Case: Winchester Twist: 1:18″
Barrel: 24″ Trim: 2.075″ Primer: CCI 200, Large Rifle

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Bullet: 250 GR. LYMAN CAST Dia: .376″ Col: 2.500″						
H4895	21.0	1197	18,200 CUP	26.0	1600	26,500 CUP
H322	24.0	1534	22,500 CUP	27.0	1692	27,600 CUP
H4198	18.5	1408	17,100 CUP	24.0	1740	26,200 CUP
Trail Boss	6.0	842	20,300 CUP	7.0	911	25,600 CUP
Bullet: 255 GR. BAR JFP Dia: .375″ Col: 2.620″						
H322	27.0	1603	25,500 CUP	33.0	1830	28,200 CUP
H4198	24.0	1554	21,400 CUP	28.0	1788	26,700 CUP

375 H & H MAGNUM

Case: Remington Twist: 1:12″
Barrel: 24″ Trim: 2.840″ Primer: Winchester LRM, Large Rifle Magnum

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Bullet: 200 GR. SIE JFP Dia: .375″ Col: 3.350″						
CFE 223	81.8	2985	41,600 CUP	89.0	3186	46,200 CUP
Varget	69.5	2915	45,200 CUP	77.3	3109	51,000 CUP
IMR 4064	68.4	2819	46,000 CUP	76.0C	3013	50,800 CUP
IMR 4895	67.6	2834	43,700 CUP	75.1	3022	51,000 CUP
H4895	67.7	2924	42,200 CUP	75.2	3117	51,300 CUP
Bullet: 235 GR. SPR SP Dia: .375″ Col: 3.600″						
StaBALL 6.5	83.0	2721	42,800 CUP	91.5C	2926	48,500 CUP
760	79.2	2714	42,300 CUP	87.0	2912	46,600 CUP
CFE 223	76.6	2858	43,700 CUP	84.2	3026	50,600 CUP
Varget	65.0	2718	43,600 CUP	71.5	2874	51,400 CUP
IMR 4064	65.0	2641	42,700 CUP	71.5	2824	50,900 CUP
Bullet: 250 GR. SFT SP Dia: .375″ Col: 3.555″						
StaBALL 6.5	73.8	2579	44,600 CUP	82.0	2789	50,100 CUP
H4350	76.0	2641	44,000 CUP	83.0C	2841	51,200 CUP
IMR 4451	69.3	2401	43,500 CUP	77.0	2699	51,300 CUP
IMR 4350	71.0	2423	41,300 CUP	79.0C	2695	48,400 CUP
760	77.0	2750	44,500 CUP	82.5	2820	48,800 CUP
Bullet: 260 GR. NOS PART Dia: .375″ Col: 3.580″						
H4831	76.0	2371	41,800 CUP	83.0C	2616	46,300 CUP
StaBALL 6.5	72.5	2551	44,900 CUP	80.6	2771	51,000 CUP
Hybrid 100V	73.0	2542	44,800 CUP	77.0C	2700	48,500 CUP
IMR 4831	76.0	2508	44,200 CUP	83.0C	2727	49,900 CUP
H4350	73.5	2611	43,300 CUP	81.5	2818	51,400 CUP
IMR 4451	68.4	2376	42,500 CUP	76.0	2637	51,200 CUP
IMR 4350	70.0	2406	41,500 CUP	78.6C	2710	50,700 CUP
760	67.0	2459	43,000 CUP	74.5	2663	50,300 CUP
Bullet: 270 GR. BAR TSX Dia: .375″ Col: 3.550″						
StaBALL 6.5	71.0	2442	42,600 CUP	79.0C	2653	51,500 CUP
Hybrid 100V	69.0	2304	40,000 CUP	75.0C	2517	45,300 CUP
H4350	69.0	2379	41,600 CUP	75.0C	2563	44,400 CUP
IMR 4451	67.2	2311	43,400 CUP	74.7C	2569	51,400 CUP
IMR 4350	69.0	2300	39,500 CUP	76.0C	2555	46,700 CUP
760	72.0	2511	46,300 CUP	79.0	2650	48,400 CUP
Bullet: 300 GR. SFT BAT Dia: .375″ Col: 3.570″						
StaBALL 6.5	72.0	2425	45,100 CUP	80.0	2570	50,700 CUP
Hybrid 100V	65.7	2194	40,400 CUP	73.0C	2406	44,300 CUP
H4350	68.0	2304	41,300 CUP	76.0C	2548	48,400 CUP
IMR 4451	67.0	2258	43,500 CUP	74.5C	2499	49,700 CUP
IMR 4350	67.5	2253	43,200 CUP	75.0C	2481	47,800 CUP
760	69.0	2314	40,600 CUP	75.0	2484	44,200 CUP

NEVER EXCEED MAXIMUM LOADS

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

375 RUGER

Case: Hornady Twist: 1:12″
Barrel: 24″ Trim: 2.580″ Primer: Winchester LRM, Large Rifle Magnum

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Bullet: 225 GR. HDY SP			**Dia: .375″**		**Col: 3.320″**	
H414	82.0	2967	49,800 PSI	87.4	3125	59,600 PSI
760	82.0	2967	49,800 PSI	87.4	3125	59,600 PSI
H380	79.3	2925	49,200 PSI	83.2	3065	57,800 PSI
CFE 223	74.6	2936	52,200 PSI	80.0	3083	60,000 PSI
Varget	74.1	2934	50,300 PSI	78.0	3085	60,400 PSI
IMR 4320	72.8	2878	50,300 PSI	78.5	3053	59,100 PSI
IMR 4064	73.9	2918	49,200 PSI	78.1	3089	60,700 PSI
IMR 4166	73.1	2886	51,400 PSI	77.8	3054	60,500 PSI
748	75.6	2947	50,400 PSI	81.7	3129	60,400 PSI
BL-C(2)	76.3	2933	51,500 PSI	81.2	3068	58,400 PSI
IMR 4895	72.5	2886	47,600 PSI	77.9	3104	60,200 PSI
Bullet: 235 GR. BAR TSX			**Dia: .375″**		**Col: 3.280″**	
H414	76.4	2782	51,700 PSI	81.3	2922	59,400 PSI
760	76.4	2782	51,700 PSI	81.3	2922	59,400 PSI
H380	74.7	2752	52,000 PSI	79.5	2907	58,900 PSI
CFE 223	70.9	2793	53,500 PSI	75.4	2932	61,100 PSI
Varget	69.1	2709	48,600 PSI	73.5	2885	59,600 PSI
IMR 4320	70.0	2776	53,100 PSI	73.4	2877	59,100 PSI
IMR 4064	68.2	2764	50,700 PSI	72.5	2905	60,100 PSI
IMR 4166	69.8	2786	52,100 PSI	74.3	2935	60,100 PSI
748	68.6	2752	52,100 PSI	73.0	2887	59,200 PSI
BL-C(2)	70.5	2791	53,700 PSI	75.0	2908	60,200 PSI
IMR 4895	68.3	2757	50,400 PSI	72.7	2907	59,600 PSI
H4895	66.7	2768	52,800 PSI	71.0	2882	58,500 PSI
IMR 3031	63.0	2696	51,900 PSI	67.0	2831	60,400 PSI
Bullet: 250 GR. SFT SP			**Dia: .375″**		**Col: 3.270″**	
Hybrid 100V	78.0	2760	50,600 PSI	83.0C	2896	57,200 PSI
IMR 4831	79.4	2627	49,000 PSI	84.5C	2829	58,700 PSI
H4350	77.5	2675	51,400 PSI	82.5	2834	59,000 PSI
IMR 4451	75.3	2602	47,000 PSI	81.0	2933	59,500 PSI
H414	75.5	2710	52,100 PSI	80.3	2838	59,400 PSI
IMR 4350	77.1	2615	49,500 PSI	82.0	2811	59,200 PSI
760	75.5	2710	52,500 PSI	80.3	2838	59,400 PSI
H380	73.8	2665	50,000 PSI	78.5	2812	59,400 PSI
CFE 223	69.6	2704	54,900 PSI	74.0	2791	59,700 PSI
Varget	67.7	2657	53,200 PSI	72.0	2773	59,000 PSI
IMR 4064	66.7	2600	48,700 PSI	71.0	2763	58,900 PSI
IMR 4166	67.4	2656	51,600 PSI	71.8	2801	59,800 PSI
Bullet: 260 GR. NOS AB			**Dia: .375″**		**Col: 3.320″**	
StaBALL 6.5	78.5	2724	49,700 PSI	84.0	2904	59,600 PSI
Hybrid 100V	77.0	2675	49,300 PSI	82.0C	2795	55,800 PSI
H4350	78.0	2681	50,800 PSI	83.5C	2837	60,100 PSI
IMR 4451	78.3	2659	50,200 PSI	84.2C	2845	60,100 PSI
H414	74.7	2659	51,000 PSI	79.5	2808	60,400 PSI
IMR 4350	77.5	2638	50,500 PSI	82.5	2803	59,700 PSI
760	74.7	2659	51,000 PSI	79.5	2808	60,400 PSI
H380	74.0	2671	53,600 PSI	78.6	2795	59,700 PSI
Varget	67.3	2618	52,200 PSI	71.6	2749	59,200 PSI
IMR 4064	67.0	2622	51,000 PSI	71.4	2755	60,100 PSI
IMR 4166	66.2	2616	52,300 PSI	70.5	2757	59,800 PSI
Bullet: 270 GR. HDY SP			**Dia: .375″**		**Col: 3.310″**	
StaBALL 6.5	78.5	2680	49,800 PSI	84.0	2860	60,000 PSI
Hybrid 100V	77.1	2622	48,700 PSI	82.0C	2759	55,900 PSI
IMR 4831	79.9	2565	46,600 PSI	85.0C	2724	54,800 PSI
H4350	78.5	2614	47,800 PSI	83.5C	2783	58,400 PSI
IMR 4451	78.1	2613	49,000 PSI	84.0	2802	59,600 PSI
H414	75.7	2599	49,500 PSI	80.5	2757	59,300 PSI
IMR 4350	78.0	2588	47,200 PSI	83.0C	2758	57,200 PSI
760	75.7	2599	49,500 PSI	80.5	2757	59,300 PSI
Bullet: 300 GR. HDY RN			**Dia: .375″**		**Col: 3.280″**	
IMR 4955	78.9	2429	47,100 PSI	85.8C	2653	60,200 PSI
H4831	82.7	2457	48,100 PSI	88.0C	2611	57,800 PSI
StaBALL 6.5	77.0	2521	48,400 PSI	82.3	2693	59,900 PSI
Hybrid 100V	73.8	2486	49,400 PSI	78.5	2645	59,100 PSI
IMR 4831	77.6	2478	50,100 PSI	82.5C	2648	59,700 PSI
H4350	75.9	2510	48,300 PSI	80.7	2660	59,600 PSI
IMR 4451	74.6	2449	47,800 PSI	80.3C	2648	59,800 PSI
H414	74.7	2510	52,800 PSI	79.5	2642	60,100 PSI
IMR 4350	75.0	2454	50,100 PSI	79.8	2632	59,600 PSI
760	74.7	2510	52,800 PSI	79.5	2642	60,100 PSI
Bullet: 350 GR. BAR TSX FB			**Dia: .375″**		**Col: 3.295″**	
IMR 4955	67.4C	2129	49,300 PSI	73.3C	2302	59,300 PSI
StaBALL 6.5	66.0	2207	52,400 PSI	74.5C	2400	59,500 PSI
Hybrid 100V	65.0	2230	51,600 PSI	71.0C	2396	60,600 PSI
H4350	62.1	2142	50,900 PSI	66.9C	2281	59,200 PSI
IMR 4451	63.0	2119	51,200 PSI	68.2C	2274	59,800 PSI
H414	64.1	2182	51,500 PSI	69.3	2322	59,300 PSI
IMR 4350	61.8	2113	47,100 PSI	66.2C	2258	56,200 PSI
760	64.1	2182	51,500 PSI	69.3	2322	59,300 PSI

40-65 WINCHESTER

Case: Winchester Twist: 1:16″
Barrel: 24″ Trim: 2.095″ Primer: Winchester LR, Large Rifle

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Bullet: 400 GR. LRNFP			**Dia: .409″**		**Col: 2.780″**	
Varget	35.0	1438	20,100 CUP	38.0	1558	24,800 CUP
H4895	33.0	1423	19,700 CUP	36.0	1554	24,200 CUP
IMR 8208 XBR	30.8	1409	24,300 CUP	32.4	1462	25,100 CUP
Benchmark	29.0	1321	18,800 CUP	32.5	1491	25,000 CUP
H322	30.5	1398	19,200 CUP	33.0	1520	23,900 CUP
IMR 4198	25.2	1373	22,000 CUP	26.5	1446	25,200 CUP
H4198	28.0	1441	21,200 CUP	31.0	1572	24,700 CUP
H4227	20.0	1277	18,900 CUP	23.0	1410	24,900 CUP
Trail Boss	11.0	889	20,000 CUP	12.0	915	21,200 CUP

416 REMINGTON MAGNUM

Case: Remington Twist: 1:14″
Barrel: 24″ Trim: 2.840″ Primer: Remington 9 1/2 M, Large Rifle Magnum

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Bullet: 300 GR. BAR TSX			**Dia: .416″**		**Col: 3.600″**	
Varget	79.0	2610	42,900 CUP	84.0C	2745	48,600 CUP
IMR 4064	79.0	2640	42,800 CUP	84.0C	2743	47,000 CUP
IMR 4166	77.2	2597	43,100 CUP	83.0	2783	51,000 CUP
BL-C(2)	86.0	2556	37,900 CUP	90.0	2681	42,600 CUP
IMR 4895	79.0	2649	43,100 CUP	84.5C	2781	48,400 CUP
H335	79.0	2618	44,300 CUP	84.5	2778	50,300 CUP
H4895	75.0	2631	43,700 CUP	80.5	2779	50,300 CUP
IMR 8208 XBR	74.0	2600	44,200 CUP	78.5	2725	52,700 CUP
Bullet: 350 GR. SPR SP			**Dia: .416″**		**Col: 3.590″**	
IMR 4451	74.7	2446	43,500 CUP	80.4	2597	50,300 CUP
Varget	77.0	2519	46,900 CUP	82.0	2622	52,400 CUP
IMR 4064				81.0	2485	51,600 CUP
BL-C(2)	84.0	2475	40,600 CUP	87.0	2580	44,700 CUP
IMR 4895				77.0	2425	53,700 CUP
H335	78.0	2464	45,400 CUP	82.0	2572	50,900 CUP
H4895	75.0	2476	45,000 CUP	80.0	2601	52,200 CUP
IMR 8208 XBR	71.0	2409	44,600 CUP	77.0	2551	52,700 CUP
IMR 3031				76.5	2450	53,000 CUP
Trail Boss	20.0	913	19,700 CUP	29.0	1143	29,900 CUP
Bullet: 400 GR. HDY JRN			**Dia: .416″**		**Col: 3.560″**	
H4350	85.0	2305	41,400 CUP	88.0 C	2395	46,400 CUP
IMR 4451	82.6	2306	45,500 CUP	87.0	2429	51,300 CUP
H380	78.0	2234	42,900 CUP	84.0	2367	48,500 CUP
Varget	72.0	2276	46,300 CUP	77.0	2407	53,000 CUP
IMR 4064				78.0	2335	52,000 CUP

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
IMR 4166	70.2	2238	45,100 CUP	75.6	2397	53,000 CUP
BL-C(2)	78.0	2290	45,900 CUP	83.0	2420	50,500 CUP
IMR 4895				76.5	2325	53,800 CUP
H4895	71.0	2268	46,100 CUP	76.0	2391	53,300 CUP
IMR 8208 XBR	68.0	2233	46,100 CUP	73.0	2348	52,800 CUP
IMR 3031				75.0	2315	52,100 CUP

416 RIGBY

Case: Norma Twist: 1:16.5″
Barrel: 24″ Trim: 2.890″ Primer: Federal 215M, Large Rifle Magnum Match

Bullet: 300 GR. BAR TSX	Dia: .416″	Col: 3.630″				
IMR 7828 SSC	97.0	2285	33,400 CUP	108.0	2617	43,900 CUP
IMR 4955	96.5	2488	34,700 CUP	105.0	2717	43,400 CUP
H4831	102.0	2555	34,900 CUP	109.5	2725	40,600 CUP
Hybrid 100V	90.2	2497	37,600 CUP	96.0	2641	43,000 CUP
IMR 4831	95.0	2476	35,800 CUP	102.0	2694	43,000 CUP
H4350	92.0	2577	35,700 CUP	99.0	2776	42,900 CUP
IMR 4451	91.8	2479	36,200 CUP	96.7	2644	42,500 CUP
H414	94.7	2594	35,900 CUP	103.0	2805	42,500 CUP
IMR 4350	92.9	2445	31,800 CUP	101.0	2725	42,600 CUP

Bullet: 325 GR. BAR XFB	Dia: .416″	Col: 3.660″				
H4831	102.0	2522	37,700 CUP	107.0	2631	43,700 CUP
H4350	94.0	2549	37,600 CUP	99.0	2660	43,600 CUP
H414	94.0	2596	38,300 CUP	99.0	2702	43,400 CUP
760	94.0	2596	38,300 CUP	99.0	2702	43,400 CUP

Bullet: 350 GR. SPR SP	Dia: .416	Col: 3.640″				
H1000	112.0	2479	37,400 CUP	116.0C	2551	39,900 CUP
IMR 7977	109.3	2461	37,500 CUP	115.0C	2578	41,300 CUP
IMR 7828 SSC	97.5	2286	32,000 CUP	106.0	2535	43,300 CUP
IMR 4955	95.5	2359	33,700 CUP	104.0	2630	43,200 CUP
H4831	101.0	2459	37,100 CUP	107.0	2609	43,000 CUP
Hybrid 100V	89.8	2493	37,200 CUP	95.5	2654	43,200 CUP
IMR 4831	92.4	2353	31,600 CUP	100.5	2606	43,700 CUP
H4350	94.0	2507	38,000 CUP	99.0	2641	43,400 CUP
IMR 4451	89.5	2359	36,600 CUP	96.3	2554	42,300 CUP
IMR 4350	91.6	2398	34,200 CUP	99.5	2626	43,200 CUP
Trail Boss	25.0	1139		35.0	1354	

Bullet: 400 GR. HDY SP	Dia: .416	Col: 3.700″				
H1000	110.0	2371	37,500 CUP	116.0C	2470	42,200 CUP
IMR 7977	108.7	2391	40,000 CUP	114.5C	2510	43,900 CUP
IMR 7828	96.8	2246	36,400 CUP	103.0	2421	43,700 CUP
IMR 4955	90.0	2186	34,700 CUP	98.0	2419	43,200 CUP
H4831	97.0	2321	38,500 CUP	102.0	2432	43,300 CUP
Hybrid 100V	87.9	2361	38,900 CUP	93.5	2505	43,100 CUP
IMR 4831	91.2	2282	34,800 CUP	97.0	2444	43,300 CUP
H4350	89.0	2333	38,500 CUP	94.0	2456	43,500 CUP
IMR 4451	87.5	2275	38,200 CUP	93.1	2418	43,300 CUP
IMR 4350	90.2	2308	36,000 CUP	96.0	2456	43,000 CUP

44-40 WINCHESTER

Case: Winchester Twist: 1:36″
Barrel: 20″ Trim: 1.295″ Primer: Winchester LP, Large Pistol

Bullet: 200 GR. LEAD RNFP	Dia: .428″	Col: 1.600″				
Universal	6.6	950	10,000 PSI	7.3	1069	11,100 PSI
231	5.5	901	9,800 PSI	6.5	1020	12,400 PSI
HP-38	5.5	901	9,800 PSI	6.5	1020	12,400 PSI
Titegroup	5.0	956	8,400 PSI	6.2	1117	12,900 PSI
Clays	4.2	845	8,200 PSI	5.0	924	11,700 PSI

44 MAGNUM

Case: Winchester Twist: 1:38″
Barrel: 20″ Trim: 1.280″ Primer: Remington 2 1/2, Large Pistol

Bullet: 165 GR. LRNFP CAST Col: 1.500″	Dia: .430″					
Universal	6.5	1009	7,700 CUP	7.2	1138	11,500 CUP
HP-38	6.0	1078	10,100 CUP	7.0	1225	13,900 CUP
Titegroup	5.3	1127	11,800 CUP	6.5	1280	16,400 CUP
Clays	4.4	949	8,500 CUP	5.5	1147	15,500 CUP

Bullet: 180 GR. HDY XTP	Dia: .430″	Col: 1.600″				
H4227	27.5	2005	24,000 CUP	29.0	2114	31,200 CUP
H110	29.0	2170	21,800 CUP	31.5	2286	29,900 CUP

Bullet: 185 GR. LRNFP CAST Col: 1.540″	Dia: .430″					
Universal	6.4	993	8,400 CUP	7.4	1180	12,600 CUP
HP-38	5.9	1035	9,400 CUP	7.2	1207	14,700 CUP
Titegroup	5.3	1072	9,500 CUP	6.6	1248	16,500 CUP
Clays	4.2	859	8,900 CUP	6.0	1162	18,400 CUP

Bullet: 200 GR. LRNFP CAST Col: 1.570″	Dia: .430″					
Universal	6.8	1065	10,500 CUP	7.8	1209	15,400 CUP
HP-38	5.8	1004	10,800 CUP	7.4	1197	16,700 CUP
Titegroup	5.0	1004	11,000 CUP	6.6	1217	17,300 CUP
Clays	4.2	874	8,500 CUP	6.4	1172	20,200 CUP

Bullet: 200 GR. NOS JHP	Dia: .429″	Col: 1.600″				
H4227	25.0	1840	29,800 CUP	27.0	1982	37,800 CUP
H110	27.5	2064	29,000 CUP	28.5	2106	37,800 CUP

Bullet: 210 GR. SIE JHC	Dia: .430″	Col: 1.600″				
H4227	25.0	1843	29,200 CUP	27.0	1970	37,600 CUP
H110	26.0	1969	29,900 CUP	27.0	2030	31,100 CUP

Bullet: 225 GR. HDY FTX	Dia: .430″	Col: 1.665″				
IMR 4227	19.8	1330	26,800 PSI	22.0	1484	34,500 PSI
296	19.4	1480	26,700 PSI	21.5	1669	33,400 PSI
H110	19.4	1480	26,700 PSI	21.5	1669	33,400 PSI
Lil'Gun	18.6	1595	26,600 PSI	20.7	1749	34,300 PSI

Bullet: 225 GR. SPR JHP	Dia: .429″	Col: 1.575″				
H4227	23.0	1721	27,400 CUP	25.5	1897	35,700 CUP
H110	23.0	1778	25,600 CUP	25.0	1924	36,300 CUP

Bullet: 240 GR. LSWC CAST	Dia: .430″	Col: 1.620″				
Universal	6.5	927	11,700 CUP	10.2	1374	37,500 CUP
HP-38	5.5	907	12,000 CUP	11.0	1437	38,100 CUP
Titegroup	4.7	908	11,100 CUP	10.0	1423	38,400 CUP
Clays	4.3	839	14,000 CUP	6.2	1062	21,800 CUP

Bullet: 240 GR. NOS JHP	Dia: .429″	Col: 1.600″				
IMR 4227	22.0	1624	28,400 CUP	24.0	1778	36,100 CUP
H4227	22.0	1624	28,400 CUP	24.0	1778	36,100 CUP
H110	23.0	1750	25,200 CUP	24.0	1817	36,200 CUP

Bullet: 270 GR. SPR GDSP	Dia: .429″	Col: 1.600″				
H4227	20.5	1476	28,400 CUP	22.5	1638	37,400 CUP
H110	19.5	1502	29,300 CUP	21.5	1637	37,700 CUP

Bullet: 280 GR. SFT JHP	Dia: .430″	Col: 1.700″				
H4227	20.0	1354	27,600 CUP	22.0	1544	37,800 CUP
H110	18.5	1358	27,000 CUP	20.5	1510	36,100 CUP

Bullet: 300 GR. HDY XTP	Dia: .430″	Col: 1.600″				
H4227	18.0	1318	30,600 CUP	20.0	1452	38,600 CUP
H110	18.0	1393	35,100 CUP	19.0	1473	38,800 CUP

NEVER EXCEED MAXIMUM LOADS

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

444 MARLIN

Case: Remington Twist: 1:38″
Barrel: 24″ Trim: 2.215″ Primer: Remington 9 1/2, Large Rifle

Powder	Starting Grs.	Starting Vel.	Starting Pressure	Maximum Grs.	Maximum Vel.	Maximum Pressure
Bullet: 200 GR. BAR XFB Dia: .429″ Col: 2.550″						
H335	53.0	2080	27,800 CUP	56.0	2215	33,800 CUP
Benchmark	50.0	2040	27,600 CUP	54.0	2212	35,800 CUP
H322	50.0	2139	30,200 CUP	52.0C	2206	33,600 CUP
IMR 4198	42.6	2171	31,800 CUP	47.3C	2396	40,300 CUP
H4198	46.0	2309	34,400 CUP	51.2C	2566	42,900 CUP
Bullet: 225 GR. BAR XFB Dia: .429″ Col: 2.550″						
H335	49.0	1891	25,500 CUP	52.0	2031	34,500 CUP
Benchmark	49.0	2028	34,500 CUP	52.0C	2127	38,100 CUP
H322	47.0	2029	33,400 CUP	50.0C	2144	37,000 CUP
IMR 4198	41.6	2137	36,900 CUP	46.2C	2324	43,200 CUP
H4198	42.2	2107	32,300 CUP	46.9	2361	42,300 CUP
Bullet: 240 GR. SIE JHP Dia: .430″ Col: 2.535″						
H335	52.5	2049	29,200 CUP	56.0	2222	38,900 CUP
H4895	51.0	1999	29,600 CUP	53.0C	2069	33,100 CUP
Benchmark	51.0	2042	31,600 CUP	55.0C	2234	40,600 CUP
H322	49.5	2049	31,400 CUP	52.0C	2185	35,900 CUP
IMR 4198	42.0	2112	36,000 CUP	45.6	2276	42,600 CUP
H4198	44.0	2206	36,100 CUP	49.2C	2499	42,100 CUP
Bullet: 260 GR. FA JFP Dia: .430″ Col: 2.550″						
H335	52.5	2034	31,600 CUP	56.0	2200	41,400 CUP
H4895	50.0	1913	32,700 CUP	53.0C	2057	36,800 CUP
H322	47.0	1944	33,400 CUP	52.0C	2159	41,400 CUP
H4198	41.0	2016	35,600 CUP	45.5	2194	40,900 CUP
Bullet: 265 GR. HDY JFP Dia: .430″ Col: 2.550″						
H335	52.5	2032	32,100 CUP	56.0	2187	39,700 CUP
H4895	50.0	1944	29,300 CUP	53.0C	2080	34,800 CUP
IMR 8208 XBR	51.0	2030	34,700 CUP	53.5C	2135	39,100 CUP
Benchmark	49.0	1911	31,000 CUP	53.0C	2139	40,700 CUP
H322	47.0	1991	33,200 CUP	52.0C	2164	38,300 CUP
IMR 4198	42.6	2105	39,800 CUP	44.4	2187	42,100 CUP
H4198	42.0	2034	31,100 CUP	47.0	2273	41,100 CUP
Bullet: 270 GR. SPR JFP Dia: .429″ Col: 2.540″						
H335	51.0	1992	31,800 CUP	55.8	2200	42,100 CUP
H4895	50.0	1950	29,300 CUP	53.0C	2080	33,400 CUP
IMR 8208 XBR	51.0	2019	34,300 CUP	53.5C	2107	38,300 CUP
Benchmark	50.0	1978	33,500 CUP	54.0C	2166	41,700 CUP
H322	47.0	1973	31,700 CUP	52.0C	2169	38,100 CUP
IMR 4198	41.4	2050	37,300 CUP	44.0	2169	43,100 CUP
H4198	42.0	2092	34,900 CUP	46.5	2261	41,400 CUP
Bullet: 275 GR. BAR FP Dia: .430″ Col: 2.520″						
H335	50.0	1984	35,400 CUP	53.5	2120	41,100 CUP
H4895	47.0	1780	27,100 CUP	52.0C	2021	36,200 CUP
Benchmark	48.0	1930	35,900 CUP	51.0C	2069	42,300 CUP
H322	46.0	1930	33,800 CUP	51.0C	2146	43,100 CUP
H4198	40.0	1973	33,500 CUP	44.5	2172	41,800 CUP
Bullet: 280 GR. SFT HP Dia: .430″ Col: 2.620″						
Varget	49.0	1914	33,000 CUP	52.0C	2025	36,800 CUP
H335	49.5	1983	36,100 CUP	52.8	2109	42,000 CUP
H4895	47.0	1875	30,300 CUP	52.0C	2089	37,600 CUP
IMR 8208 XBR	48.0	1942	35,900 CUP	52.0	2099	41,600 CUP
Benchmark	46.0	1935	38,300 CUP	49.5C	2070	42,600 CUP
H322	44.5	1901	33,400 CUP	49.5	2120	42,400 CUP
IMR 4198	38.7	1907	36,500 CUP	42.0	2050	42,500 CUP
H4198	38.0	1938	37,300 CUP	42.5	2108	42,300 CUP
Bullet: 300 GR. SFT HP Dia: .430″ Col: 2.620″						
Varget	47.0	1784	30,700 CUP	50.0C	1914	35,700 CUP
IMR 4064	47.2	1738	30,900 CUP	51.3C	1908	38,000 CUP
IMR 4895	46.6	1762	33,300 CUP	50.6C	1915	38,300 CUP
H335	49.0	1935	37,600 CUP	52.0	2023	42,300 CUP
H4895	47.0	1839	33,600 CUP	50.0C	1931	35,600 CUP
IMR 8208 XBR	46.0	1829	35,700 CUP	49.0	2029	41,600 CUP
IMR 3031	44.9	1859	35,600 CUP	48.8C	2004	40,100 CUP
Benchmark	46.0	1899	36,200 CUP	48.5	1993	41,900 CUP
H322	43.0	1776	30,600 CUP	48.0	2038	42,600 CUP
IMR 4198	36.8	1796	37,700 CUP	39.2	1911	42,100 CUP
H4198	38.5	1917	36,200 CUP	42.5	2082	42,500 CUP

450 BUSHMASTER

Case: Starline Twist: 1:24″
Barrel: 24″ Trim: 1.690″ Primer: Winchester SR, Small Rif

Powder	Starting Grs.	Starting Vel.	Starting Pressure	Maximum Grs.	Maximum Vel.	Maximum Pressure
Bullet: 225 GR. HDY FTX Dia: .452″ Col: 2.150″						
IMR 4227	37.9	1942	25,700 PSI	41.7	2221	36,600 PSI
H110	40.4	2169	26,300 PSI	44.4	2426	36,100 PSI
Lil'Gun	38.0	2309	31,300 PSI	42.2	2495	36,300 PSI
Bullet: 250 GR. HDY FTX Dia: .452″ Col: 2.225″						
IMR 4227	34.5	1848	28,900 PSI	38.0	2044	36,400 PSI
H110	37.3	2010	27,900 PSI	41.0	2240	36,100 PSI
Lil'Gun	35.0	2158	32,500 PSI	38.5	2289	35,900 PSI
Bullet: 275 GR. BAR TSX FB Dia: .452″ Col: 2.225″						
CFE BLK	34.4	1731	25,400 PSI	37.8	1931	36,200 PSI
H4198	39.1	1772	24,000 PSI	43.0C	1986	31,600 PSI
IMR 4227	32.9	1698	30,400 PSI	36.6	1878	36,400 PSI
H110	33.4	1869	33,500 PSI	37.6	2036	36,100 PSI
Lil'Gun	30.4	1892	33,100 PSI	35.4	2084	36,200 PSI
Bullet: 300 GR. SFT A-FRAME Dia: .452″ Col: 2.065″						
CFE BLK	33.7	1604	25,600 PSI	37.0	1811	34,100 PSI
H4198	39.0	1776	27,700 PSI	42.8C	1973	35,400 PSI
IMR 4227	31.8	1631	29,200 PSI	35.0	1793	35,500 PSI
H110	26.4	1484	28,200 PSI	28.7	1657	35,900 PSI
Lil'Gun	25.0	1661	32,200 PSI	27.0	1758	36,000 PSI

45-70 GOVERNMENT (TRAPDOOR RIFLES)*

When an asterisk (*) appears in the title of the cartridge, or in the data, refer to the warning page.

Case: Winchester Twist: 1:20″
Barrel: 24″ Trim: 2.100″ Primer: CCI 200, Large Rifle

Powder	Starting Grs.	Starting Vel.	Starting Pressure	Maximum Grs.	Maximum Vel.	Maximum Pressure
Bullet: 250 GR. BAR TSX FN Dia: .458″ Col: 2.525″						
Varget	56.3	1846	19,200 PSI	62.5C	2102	26,100 PSI
IMR 4064	55.0	1832	20,400 PSI	60.0C	2012	25,500 PSI
IMR 4895	53.2	1745	19,200 PSI	57.9	1940	24,600 PSI
H335	55.2	1979	22,500 PSI	60.1	2107	26,800 PSI
H4895	53.8	1925	22,000 PSI	60.0C	2112	26,600 PSI
IMR 8208 XBR	52.1	1801	18,000 PSI	57.8	2106	27,000 PSI
IMR 3031	51.9	1756	18,000 PSI	58.0C	2048	27,000 PSI
Benchmark	51.5	1852	19,800 PSI	56.2	2085	27,300 PSI
H322	48.3	1849	19,900 PSI	53.3	2080	26,100 PSI
IMR 4198	39.8	1781	18,900 PSI	47.4	2067	26,300 PSI
H4198	45.9	1994	21,600 PSI	48.3	2118	26,200 PSI
Bullet: 300 GR. CAST LFP Dia: .458″ Col: 2.465″						
Varget	45.0	1599	17,800 CUP	55.0	1880	20,600 CUP
IMR 4064	49.8	1685	19,400 CUP	53.0	1813	21,800 CUP
IMR 4895	47.5	1590	16,500 CUP	50.5	1703	20,400 CUP
H4895	45.0	1572	14,400 CUP	51.0	1703	15,500 CUP
IMR 8208 XBR	51.2	1723	19,500 CUP	55.0	1924	24,700 CUP
IMR 3031	51.7	1839	18,700 CUP	55.0	1995	24,900 CUP
Benchmark	54.0	1788	18,300 CUP	58.0	1940	21,900 CUP
IMR 4198	33.8	1649	15,500 CUP	36.0	1752	20,200 CUP
H4198	30.0	1390	14,400 CUP	35.5	1641	16,100 CUP
Trail Boss	14.0	1199	19,400 CUP	16.5	1285	20,900 CUP

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Bullet: 300 GR. SIE HP			**Dia: .458″**		**Col: 2.525″**	
Varget	57.0	1770	16,300 CUP	63.0C	2020	23,800 CUP
IMR 4064	57.0	1865	22,500 CUP	60.5C	1992	25,100 CUP
IMR 4166	51.0	1804	22,000 PSI	56.2	1957	26,700 PSI
IMR 4895	57.0	1826	21,700 CUP	61.0C	1968	23,900 CUP
H335	57.0	1901	17,500 CUP	63.5	2143	27,400 CUP
H4895	58.0	1805	16,500 CUP	62.0C	1974	21,000 CUP
IMR 8208 XBR	54.0	1728	18,800 CUP	60.0	2023	25,400 CUP
IMR 3031	56.0	1884	21,100 CUP	59.5C	2021	22,000 CUP
Benchmark	59.5	1907	19,400 CUP	63.5C	2113	27,400 CUP
H322	54.0	1850	18,100 CUP	60.0	2142	28,000 CUP
IMR 4198	45.0	2008	23,500 CUP	48.0	2138	27,800 CUP
H4198	45.0	1807	16,700 CUP	55.0	2221	27,600 CUP
Bullet: 325 GR. HDY FTX			**Dia: .458″**		**Col: 2.590″**	
H335	48.8	1688	17,800 CUP	56.8	1958	26,300 CUP
H4895	41.8	1327	13,700 CUP	53.3C	1834	23,500 CUP
IMR 8208 XBR	48.5	1618	18,400 CUP	56.8C	1936	25,800 CUP
IMR 3031	46.3	1491	16,600 CUP	54.3	1862	24,700 CUP
H322	36.5	1401	17,100 CUP	51.5	1951	26,000 CUP
Bullet: 385 GR. CAST LFP			**Dia: .458″**		**Col: 2.505″**	
Varget	42.5	1537	15,400 CUP	52.5	1805	21,800 CUP
IMR 4064	47.0	1545	18,800 CUP	50.0	1661	24,000 CUP
IMR 4895	44.2	1412	16,200 CUP	47.0	1486	18,100 CUP
H4895	35.0	1280	11,900 CUP	42.0	1526	23,100 CUP
IMR 3031	49.0	1684	22,300 CUP	52.0	1819	25,900 CUP
Benchmark	50.0	1621	16,300 CUP	53.0	1779	21,300 CUP
IMR 4198	31.0	1405	15,000 CUP	33.0	1491	17,400 CUP
H4198	28.0	1302	13,300 CUP	32.0	1483	14,700 CUP
Trail Boss	14.0	1075	19,400 CUP	16.0	1142	23,200 CUP
Bullet: 405 GR. CAST LFP			**Dia: .458″**		**Col: 2.540″**	
Varget	40.0	1392	15,600 CUP	50.0	1718	20,900 CUP
IMR 4064	46.0	1534	17,900 CUP	49.5	1660	23,200 CUP
IMR 4166	43.6	1530	21,000 PSI	49.0	1700	27,400 PSI
IMR 4895	45.6	1496	18,900 CUP	48.5	1598	23,000 CUP
H4895	40.0	1424	14,900 CUP	48.0	1645	18,900 CUP
IMR 8208 XBR	47.9	1637	21,800 CUP	51.0	1727	23,600 CUP
IMR 3031	45.5	1597	17,300 CUP	48.5	1706	21,100 CUP
Benchmark	47.0	1564	17,100 CUP	50.0	1695	22,600 CUP
IMR 4198	30.0	1370	17,000 CUP	32.0	1462	19,000 CUP
H4198	27.0	1251	14,200 CUP	31.0	1459	17,100 CUP
Trail Boss	12.0	971	24,500 CUP	13.0	1007	25,600 CUP
Bullet: 485 GR. CAST LFP			**Dia: .458″**		**Col: 2.540″**	
IMR 4064	38.5	1280	17,400 CUP	41.0	1372	21,300 CUP
IMR 4895	40.0	1294	19,700 CUP	43.0	1435	25,300 CUP
IMR 3031	39.5	1406	20,500 CUP	42.0	1488	22,600 CUP
Benchmark	38.0	1290	15,600 CUP	43.0	1503	23,400 CUP
IMR 4198	30.5	1364	17,500 CUP	32.5	1439	21,600 CUP
H4198	28.0	1279	16,400 CUP	32.0	1434	20,400 CUP
Trail Boss	8.0	699	17,100 CUP	10.0	804	23,300 CUP

45-70 GOVERNMENT (LEVER ACTIONS)*

When an asterisk (*) appears in the title of the cartridge, or in the data, refer to the warning page.

Case: Winchester Twist: 1:20″
Barrel: 24″ Trim: 2.100″ Primer: CCI 200, Large Rifle

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Bullet: 250 GR. BAR TSX FN			**Dia: .458″**		**Col: 2.525″**	
H335	60.2	2131	27,900 PSI	67.5	2371	38,300 PSI
IMR 8208 XBR	54.3	1897	20,600 PSI	64.1C	2308	32,700 PSI
Benchmark	56.2	2085	27,300 PSI	62.5C	2298	34,000 PSI
H322	53.3	2080	26,100 PSI	61.9C	2423	38,100 PSI
IMR 4198	47.0	2079	25,700 PSI	55.3	2432	38,600 PSI
H4198	49.4	2152	26,400 PSI	56.5C	2487	38,700 PSI
Bullet: 300 GR. SIE HP			**Dia: .458″**		**Col: 2.525″**	
IMR 4064	59.0	1858	20,300 CUP	65.5C	2125	28,700 CUP
IMR 4166	56.2	1957	26,700 PSI	64.0	2230	37,200 PSI
IMR 4895	58.5	1800	19,900 CUP	65.0C	2087	30,000 CUP
H335	61.0	2073	22,500 CUP	68.0	2326	38,800 CUP
IMR 8208 XBR	60.0	2023	25,400 CUP	65.0C	2240	32,900 CUP
IMR 3031	58.0	1971	21,900 CUP	64.0C	2196	29,500 CUP
H322	57.0	2002	21,400 CUP	63.0C	2252	32,600 CUP
IMR 4198	53.7	2293	33,100 CUP	57.2	2407	39,100 CUP
H4198	55.0	2221	27,600 CUP	60.0	2424	40,000 CUP
Bullet: 325 GR. HDY FTX			**Dia: .458″**		**Col: 2.590″**	
H322	51.5	1951	26,000 CUP	59.4C	2250	37,600 CUP
Bullet: 350 GR. HDY JRN			**Dia: .458″**		**Col: 2.540″**	
Varget	54.0	1786	21,800 CUP	60.0C	2013	29,500 CUP
IMR 4064	58.0	1967	32,700 CUP	62.0C	2085	36,700 CUP
IMR 4166	52.2	1775	26,800 PSI	58.7C	2022	37,600 PSI
IMR 4895	57.5	1891	29,200 CUP	61.0C	2026	37,200 CUP
H335	54.0	1903	26,000 CUP	60.0	2094	38,800 CUP
H4895	53.0	1784	21,700 CUP	59.0C	2045	32,900 CUP
IMR 8208 XBR	55.0	1930	26,800 CUP	61.0C	2152	36,200 CUP
IMR 3031	56.5	2022	31,400 CUP	60.0C	2135	37,100 CUP
Benchmark	56.0	1886	26,900 CUP	60.0C	2092	39,300 CUP
IMR 4198	47.0	2032	32,500 CUP	50.0	2131	36,600 CUP
H4198	48.5	2036	32,200 CUP	54.0	2191	39,300 CUP
Bullet: 400 GR. SPR JFP			**Dia: .458″**		**Col: 2.540″**	
Varget	50.0	1655	18,600 CUP	55.0C	1845	25,000 CUP
IMR 4064	53.5	1808	29,700 CUP	57.0C	1918	36,400 CUP
IMR 4166	49.0	1645	28,000 PSI	56.0C	1873	38,100 PSI
IMR 4895	54.0	1785	30,500 CUP	58.0C	1930	38,600 CUP
H335	52.0	1798	25,400 CUP	58.0	1995	40,000 CUP
H4895	50.0	1614	19,200 CUP	55.0C	1859	26,500 CUP
IMR 3031	51.0	1809	26,900 CUP	55.0C	1971	37,300 CUP
Benchmark	55.0	1856	29,600 CUP	58.5C	1986	40,000 CUP
H322	50.0	1767	23,700 CUP	55.0C	1984	39,200 CUP
IMR 4198	43.0	1868	31,600 CUP	46.0	1960	37,600 CUP
H4198	46.0	1854	29,500 CUP	50.5	2002	39,400 CUP

45-70 GOVERNMENT (MODERN RIFLES)*

When an asterisk (*) appears in the title of the cartridge, or in the data, refer to the warning page.

Case: Winchester Twist: 1:20″
Barrel: 24″ Trim: 2.100″ Primer: CCI 200, Large Rifle

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Bullet: 250 GR. BAR TSX FN			**Dia: .458″**		**Col: 2.525″**	
IMR 4198	50.0	2188	31,100 PSI	57.5C	2513	43,100 PSI
H4198	51.9	2260	29,500 PSI	60.0C	2607	44,600 PSI
Bullet: 300 GR. BAR TTSX			**Dia: .458″**		**Col: 2.775″**	
IMR 4198	50.0	2207	37,700 CUP	53.0C	2323	45,000 CUP
H4198	53.0	2346	39,800 CUP	56.0C	2445	46,700 CUP
Bullet: 300 GR. SIE HP			**Dia: .458″**		**Col: 2.525″**	
IMR 4198	54.0	2253	31,800 CUP	58.5C	2450	43,000 CUP
H4198	59.5	2394	37,300 CUP	63.0	2532	50,000 CUP
Bullet: 325 GR. HDY FTX			**Dia: .458″**		**Col: 2.650″**	
H335	63.0	2170	37,000 CUP	66.0C	2272	44,000 CUP
H322	59.4	2250	37,600 CUP	63.0C	2375	45,900 CUP
IMR 4198	50.0	2149	37,000 CUP	54.0C	2292	44,100 CUP
H4198	52.0	2242	37,700 CUP	56.0C	2378	46,500 CUP
Bullet: 350 GR. HDY JRN			**Dia: .458″**		**Col: 2.540″**	
H335	57.0	2016	32,200 CUP	63.0	2174	47,300 CUP
H322	52.0	1898	25,800 CUP	57.0C	2143	41,100 CUP
IMR 4198	49.0	2118	37,700 CUP	52.0	2212	43,900 CUP
H4198	50.5	2104	35,100 CUP	56.0	2300	50,000 CUP
Bullet: 400 GR. SPR JFP			**Dia: .458″**		**Col: 2.540″**	
H335	54.0	1883	31,900 CUP	60.0	2057	49,800 CUP
IMR 4198	47.0	1954	35,400 CUP	50.0	2089	47,100 CUP

NEVER EXCEED MAXIMUM LOADS

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
H4198	48.0	1915	31,800 CUP	53.0	2108	49,100 CUP

45-120 SHARPS

Case: Bell Twist: 1:18″
Barrel: 24″ Trim: 3.240″ Primer: Federal 210M, Large Rifle Match

Bullet: 350 GR. LY #457122			Dia: .458″ Col: 3.700″			
IMR 4064	58.0	1827	19,300 CUP	63.0	1965	23,400 CUP
IMR 4895	56.0	1737	17,000 CUP	60.0	1923	24,000 CUP
H4895	59.0	1875	24,800 CUP	64.0	2031	26,900 CUP
IMR 3031	54.0	1847	20,600 CUP	58.0	1968	24,000 CUP
Benchmark	53.0	1809	24,700 CUP	57.0	1922	26,800 CUP
H322	50.0	1717	21,000 CUP	53.0	1874	27,700 CUP
H4198	46.0	1783	22,500 CUP	49.0	1903	27,500 CUP
Trail Boss	29.0	1320	20,500 CUP	32.0	1371	24,400 CUP

Bullet: 405 GR. LY #457193			Dia: .458″ Col: 3.730″			
Varget	59.0	1763	24,200 CUP	63.0	1858	28,200 CUP
IMR 4064	55.0	1676	18,300 CUP	59.0	1822	23,900 CUP
IMR 4895	54.0	1641	19,400 CUP	58.3	1815	25,600 CUP
H4895	58.0	1849	26,000 CUP	64.0	2012	28,300 CUP
IMR 3031	51.0	1648	17,500 CUP	55.3	1837	23,500 CUP
Benchmark	53.0	1805	26,500 CUP	58.0	1917	27,200 CUP
H322	49.0	1665	23,200 CUP	52.5	1793	27,900 CUP
H4198	45.0	1708	24,700 CUP	48.0	1818	27,200 CUP
Trail Boss	26.0	1156	18,300 CUP	30.0	1252	25,500 CUP

Bullet: 500 GR. LY #457125			Dia: .458″ Col: 3.920″			
Varget	56.0	1618	24,200 CUP	61.0	1737	27,900 CUP
IMR 4064	53.0	1567	19,500 CUP	57.0	1716	25,400 CUP
IMR 4895	52.0	1535	19,600 CUP	56.0	1676	24,800 CUP
H4895	54.0	1641	24,400 CUP	60.0	1809	28,500 CUP
IMR 3031	48.0	1533	18,600 CUP	52.0	1636	23,400 CUP
Benchmark	50.0	1607	26,600 CUP	54.5	1747	28,200 CUP
H322	48.0	1568	25,400 CUP	52.0	1695	28,300 CUP
H4198	42.0	1523	25,200 CUP	46.5	1650	28,300 CUP
Trail Boss	26.0	1050	20,100 CUP	29.0	1105	24,300 CUP

458 WINCHESTER MAGNUM

Case: Winchester Twist: 1:14″
Barrel: 24″ Trim: 2.490″ Primer: CCI 250, Large Rifle Magnum

Bullet: 250 GR. BAR TSX FN			Dia: .458″ Col: 2.950″			
H322	75.0	2707	40,600 CUP	81.0C	2876	51,000 CUP
IMR 4198	66.5	2658	39,800 CUP	74.0C	2899	50,900 CUP
H4198	68.0	2683	36,100 CUP	76.0C	2952	50,600 CUP

Bullet: 300 GR. BAR TSX			Dia: .458″ Col: 3.200″			
Benchmark	74.0.0	2355	30,600 CUP	80.0C	2507	32,600 CUP
H322	77.0	2584	41,300 CUP	83.0C	2753	50,500 CUP
IMR 4198	67.0	2508	37,500 CUP	74.0C	2730	48,100 CUP
H4198	68.0	2565	40,300 CUP	76.0C	2793	51,300 CUP

Bullet: 300 GR. BAR TTSX BT Col: 3.300″			Dia: .458″			
H322	71.0	2447	36,900 CUP	75.0C	2561	41,200 CUP
IMR 4198	68.0	2559	39,000 CUP	70.0C	2617	44,600 CUP
H4198	68.0	2591	40,900 CUP	72.5C	2720	49,100 CUP

Bullet: 300 GR. MEI LFP			Dia: .458″ Col: 2.885″			
Trail Boss	19.0	1187	10,800 CUP	23.0	1282	13,200 CUP

Bullet: 350 GR. SPR SP			Dia: .458″ Col: 3.105″			
IMR 4895	75.0	2220	31,000 CUP	79.0C	2353	34,900 CUP
H4895	77.0	2419	34,600 CUP	80.0C	2496	38,700 CUP
IMR 8208 XBR	74.0	2365	35,800 CUP	77.0C	2452	37,700 CUP
IMR 3031	71.0	2279	31,000 CUP	74.0C	2354	32,900 CUP
Benchmark	71.0	2250	33,500 CUP	79.0C	2468	42,400 CUP
H322	75.0	2469	40,900 CUP	80.0C	2589	49,400 CUP
IMR 4198	65.0	2378	39,100 CUP	72.0C	2563	49,800 CUP
H4198	67.0	2426	44,700 CUP	72.0C	2548	51,600 CUP

Bullet: 385 GR. CAST LRN			Dia: .459″ Col: 3.000″			
Trail Boss	16.0	1020	12,100 CUP	19.0	1123	16,100 CUP

Bullet: 400 GR. SFT SP			Dia: .458″ Col: 3.220″			
Varget	74.0	2246	34,500 CUP	77.0C	2310	38,800 CUP
IMR 4895	75.0	2217	37,400 CUP	79.0C	2321	42,700 CUP
H4895	72.0	2214	33,100 CUP	77.0C	2349	42,500 CUP
IMR 8208 XBR	73.0	2269	37,100 CUP	77.0C	2362	44,300 CUP
IMR 3031	70.0	2214	37,700 CUP	74.0C	2308	42,400 CUP
Benchmark	70.0	2138	33,500 CUP	78.0C	2343	46,600 CUP
H322	68.5	2211	36,500 CUP	76.0C	2407	51,100 CUP
IMR 4198	60.0	2151	40,500 CUP	66.7	2311	51,400 CUP
H4198	61.0	2197	44,000 CUP	67.0	2323	51,000 CUP

Bullet: 405 GR. CAST LFP			Dia: .458″ Col: 2.910″			
Trail Boss	18.0	1040	14,500 CUP	21.0	1082	17,100 CUP

Bullet: 450 GR. SFT SP			Dia: .458″ Col: 3.340″			
Varget	70.0	2083	34,200 CUP	74.0C	2195	41,600 CUP
IMR 4895	69.0	1989	34,000 CUP	73.0C	2097	38,500 CUP
H335	71.5	2056	36,000 CUP	76.0	2172	44,800 CUP
H4895	70.0	2108	36,100 CUP	74.0C	2205	43,000 CUP
IMR 8208 XBR	71.0	2146	40,800 CUP	75.0C	2235	48,300 CUP
IMR 3031	67.0	2077	37,200 CUP	71.0C	2160	41,400 CUP
Benchmark	70.0	2090	41,600 CUP	75.0C	2220	48,200 CUP
H322	67.0	2139	43,700 CUP	71.0C	2220	51,000 CUP
IMR 4198	57.0	1990	40,600 CUP	61.5C	2100	48,300 CUP
H4198	56.5	2001	44,700 CUP	60.0	2092	50,800 CUP

Bullet: 485 GR. MEI LFP			Dia: .458″ Col: 2.925″			
Trail Boss	13.0	860	15,500 CUP	19.0	962	22,700 CUP

Bullet: 500 GR. HDY JRN			Dia: .458″ Col: 3.310″			
Varget	70.0	2056	39,400 CUP	74.0C	2152	48,100 CUP
748				73.0	2040	39,000 CUP
H335	71.0	2058	39,700 CUP	75.5	2163	50,300 CUP
H4895	70.0	2068	42,000 CUP	74.0C	2161	50,300 CUP
IMR 8208 XBR	67.0	1993	39,400 CUP	73.5C	2140	49,700 CUP
Benchmark	68.0	2017	42,300 CUP	73.0C	2123	50,300 CUP
H322	62.5	1935	39,400 CUP	69.5C	2109	52,000 CUP
H4198	53.0	1887	48,700 CUP	58.5	1987	51,100 CUP

Bullet: 510 GR. WIN SP			Dia: .457″ Col: 3.340″			
IMR 4320				74.0C	2070	51,500 CUP
IMR 4064				71.0C	2020	41,300 CUP
748				75.0	2065	41,000 CUP
IMR 4895				72.5	2100	53,000 CUP
IMR 3031				69.0C	2030	43,900 CUP
IMR 4198				58.0	1925	52,500 CUP

470 NITRO EXPRESS

Case: Hornady Twist: 1:20″
Barrel: 24″ Trim: 3.240″ Primer: Federal 215M, Large Rifle Magnum Match

Bullet: 500 GR. WDLGH RN			Dia: .475″ Col: 3.875″			
Retumbo	118.0	2088	30,600 PSI	125.0C	2202	34,800 PSI
IMR 8133	118.0	2047	33,800 PSI	125.0C	2201	39,700 PSI
H1000	118.0	2172	33,900 PSI	124.0C	2300	40,500 PSI
IMR 7977	114.3	2011	29,600 PSI	123.0C	2205	37,200 PSI
IMR 7828	113.0	2172	37,000 PSI	117.0	2252	40,500 PSI
H4831	108.0	2184	38,000 PSI	112.0	2247	40,800 PSI
IMR 4831	104.0	2157	36,200 PSI	108.0	2248	40,800 PSI
H4350	95.0	2134	36,900 PSI	100.0	2234	41,700 PSI
IMR 4451	96.5	2158	37,500 PSI	102.7	2240	40,200 PSI
IMR 4350	99.0	2111	35,700 PSI	105.0	2229	40,800 PSI
Trail Boss				45.5	1257	26,500 PSI

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
50-140 SHARPS						
Case: Bell			Twist: 1:22″			
Barrel: 24″	Trim: 3.230″		Primer: Federal 210M, Large Rifle Match			
Bullet: 425 GR. LY #515141			**Dia: .512″**		**Col: 3.800″**	
H4831	118.0	2079	22,800 CUP	125.0	2209	26,300 CUP
H4350	105.0	2033	21,600 CUP	114.0	2242	26,700 CUP
Varget	95.0	2127	23,600 CUP	102.5	2294	28,100 CUP
Bullet: 515 GR. LY #515142			**Dia: .512″**		**Col: 3.750″**	
H4831	112.0	1956	23,200 CUP	118.0	2085	27,500 CUP
H4350	101.0	1916	22,000 CUP	108.0	2091	27,200 CUP
Varget	87.0	1958	24,000 CUP	95.0	2088	27,900 CUP
500 NITRO EXPRESS 3"						
Case: Hornady			Twist: 1:15″			
Barrel: 24″	Trim: 2.990″		Primer: Federal 215M, Large Rifle Magnum Match			
Bullet: 570 GR. HDY DGX			**Dia: .510″**		**Col: 3.740″**	
IMR 7828	108.1	1902	31,400 PSI	115.0C	2041	37,000 PSI
IMR 4955	108.0	1975	34,900 PSI	115.0C	2107	40,500 PSI
H4831	106.0	1989	34,000 PSI	114.0C	2145	40,900 PSI
Hybrid 100V	105.4	2118	35,100 PSI	112.2	2246	40,500 PSI
IMR 4831	106.0	1971	33,400 PSI	114.0C	2137	40,700 PSI
H4350	98.8	2001	33,800 PSI	106.3	2188	42,700 PSI
IMR 4451	98.5	1941	35,200 PSI	106.0C	2100	42,000 PSI
IMR 4350	97.3	1960	34,900 PSI	104.7	2075	38,600 PSI
50 BROWNING MACHINE GUN						
Case: FNB			Twist: 1:16.5″			
Barrel: 45″	Trim: 3.900″		Primer: CCI 35, 50 BMG			
Bullet: 650 GR. M-33			**Dia: .510″**		**Col: 5.425″**	
US 869				265.0	3155	
Bullet: 655 GR. ADI FMJ			**Dia: .510″**		**Col: 5.450″**	
H50BMG				248.0	3029	
Bullet: 750 GR. HDY A-MAX			**Dia: .510″**		**Col: 5.450″**	
US 869				250.0	2944	
H50BMG				233.0	2800	
Bullet: 800 GR. BAR SOLID			**Dia: .510″**		**Col: 5.630″**	
US 869				250.0	2895	
H50BMG				225.0	2725	

NEVER EXCEED MAXIMUM LOADS

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

22 HORNET

Case: Winchester — Twist: 1:16″
Barrel: 15″ — Trim: 1.393″ — Primer: Winchester SR, Small Rifle

Powder	Starting Grs.	Starting Vel.	Starting Pressure	Maximum Grs.	Maximum Vel.	Maximum Pressure
Bullet: 35 GR. HDY V-MAX			**Dia: .224″**		**Col: 1.725″**	
H4227	10.5	2579	35,600 CUP	11.6C	2770	42,500 CUP
296	11.0	2616	32,700 CUP	12.3	2861	41,400 CUP
H110	11.0	2616	32,700 CUP	12.3	2861	41,400 CUP
Lil'Gun	12.0	2641	22,000 CUP	13.0	2770	24,000 CUP
Bullet: 40 GR. SPR SP			**Dia: .224″**		**Col: 1.725″**	
H4227	9.0	2403	39,900 CUP	10.2	2458	43,000 CUP
296	10.0	2484	32,400 CUP	11.2	2652	41,800 CUP
H110	10.0	2484	32,400 CUP	11.2	2652	41,800 CUP
Lil'Gun	12.0	2646	24,900 CUP	13.0	2793	28,400 CUP
Bullet: 45 GR. BAR XBT			**Dia: .224″**		**Col: 1.850″**	
H4198	10.5	2010	31,500 CUP	11.5C	2261	36,900 CUP
H4227	8.5	2189	37,000 CUP	9.8	2339	42,700 CUP
296	9.0	2279	35,200 CUP	9.9	2403	40,400 CUP
H110	9.0	2279	35,200 CUP	9.9	2403	40,400 CUP
Lil'Gun	12.0	2642	35,700 CUP	13.0	2803	38,500 CUP
Bullet: 45 GR. HDY SP			**Dia: .224″**		**Col: 1.750″**	
H4198	10.5	2002	28,000 CUP	11.5C	2200	32,000 CUP
H4227	8.5	2202	39,900 CUP	9.8	2349	42,000 CUP
296	9.0	2134	33,500 CUP	10.4	2382	43,000 CUP
H110	9.0	2134	33,500 CUP	10.4	2382	43,000 CUP
Lil'Gun	12.0	2532	26,500 CUP	13.0	2637	31,600 CUP
Bullet: 50 GR. SIE SP			**Dia: .224″**		**Col: 1.850″**	
H4198	10.5	2007	28,200 CUP	11.5C	2203	34,100 CUP
H4227	8.4	2120	39,700 CUP	9.4	2270	41,800 CUP
296	9.0	2147	37,500 CUP	10.0	2292	42,300 CUP
H110	9.0	2147	37,500 CUP	10.0	2292	42,300 CUP
Lil'Gun	12.0	2501	31,600 CUP	13.0	2659	35,300 CUP
Bullet: 53 GR. BAR XFB			**Dia: .224″**		**Col: 1.850″**	
H4198	10.0	1859	31,600 CUP	11.0	2098	40,600 CUP
H4227	8.0	1943	37,600 CUP	8.7	2068	43,000 CUP
296	8.0	2048	38,300 CUP	9.0	2110	41,000 CUP
H110	8.0	2048	38,300 CUP	9.0	2110	41,000 CUP
Lil'Gun	11.0	2350	32,800 CUP	12.0	2537	39,000 CUP
Bullet: 55 GR. HDY SP			**Dia: .224″**		**Col: 1.850″**	
H4198	10.0	1846	30,000 CUP	11.5	2182	41,000 CUP
H4227	8.0	1987	41,800 CUP	9.0	2151	43,000 CUP
Lil'Gun	12.0	2528	39,400 CUP	13.0	2681	42,900 CUP

22 K HORNET

Case: Winchester — Twist: 1:14″
Barrel: 15″ — Trim: 1.393″ — Primer: Winchester SR, Small Rifle

Powder	Starting Grs.	Starting Vel.	Starting Pressure	Maximum Grs.	Maximum Vel.	Maximum Pressure
Bullet: 35 GR. HDY V-MAX			**Dia: .224″**		**Col: 1.725″**	
H4227	11.0	2747	39,500 CUP	12.3	2924	46,000 CUP
H110	11.5	2779	35,100 CUP	12.8	3009	45,500 CUP
Lil'Gun	12.5	2858	29,900 CUP	13.5	2935	35,300 CUP
Bullet: 40 GR. NOS BT			**Dia: .224″**		**Col: 1.900″**	
H4227	11.0	2644	37,500 CUP	12.2C	2822	45,500 CUP
H110	11.5	2636	33,100 CUP	12.9	2940	45,600 CUP
Lil'Gun	12.5	2695	29,400 CUP	13.5	2817	33,800 CUP
Bullet: 45 GR. BAR XBT			**Dia: .224″**		**Col: 1.850″**	
H4227	10.5	2502	40,900 CUP	11.3	2619	45,300 CUP
H110	10.5	2524	38,700 CUP	11.2	2640	45,300 CUP
Lil'Gun	12.0	2672	36,700 CUP	13.0	2859	40,200 CUP
Bullet: 45 GR. SPR SP			**Dia: .224″**		**Col: 1.750″**	
H4227	10.7	2520	40,700 CUP	11.7	2669	45,500 CUP
H110	11.5	2658	37,000 CUP	12.4	2761	45,500 CUP
Lil'Gun	12.0	2568	28,100 CUP	13.2	2744	35,800 CUP
Bullet: 50 GR. SIE BK			**Dia: .224″**		**Col: 1.900″**	
H4198	11.5	2201	30,100 CUP	12.5C	2386	38,700 CUP
H4227	10.0	2375	40,200 CUP	11.0	2520	45,700 CUP
H110	10.4	2416	37,900 CUP	11.1	2552	45,800 CUP
Lil'Gun	12.0	2542	34,300 CUP	13.0	2751	40,700 CUP
Bullet: 53 GR. BAR XFB			**Dia: .224″**		**Col: 1.850″**	
H4198	11.5	2153	30,200 CUP	12.5C	2335	42,600 CUP
H4227	9.5	2240	39,000 CUP	10.5	2357	45,900 CUP
H110	9.5	2247	40,300 CUP	10.2	2340	46,100 CUP
Lil'Gun	11.5	2446	38,700 CUP	12.3	2571	45,700 CUP
Bullet: 55 GR. HDY SP			**Dia: .224″**		**Col: 1.850″**	
H4198	11.5	2167	31,100 CUP	12.5C	2352	39,400 CUP
H4227	10.0	2313	43,400 CUP	11.0	2443	46,100 CUP

221 FIREBALL

Case: Remington — Twist: 1:12″
Barrel: 10 3/4″ — Trim: 1.390″ — Primer: Remington 7 1/2, Small Rifle Magnum

Powder	Starting Grs.	Starting Vel.	Starting Pressure	Maximum Grs.	Maximum Vel.	Maximum Pressure
Bullet: 40 GR. SPR SP			**Dia: .224″**		**Col: 1.830″**	
H4227	15.5	2925		17.0	3033	
H110	13.0	2714		14.0	2933	
Bullet: 45 GR. HDY SP			**Dia: .224″**		**Col: 1.830″**	
IMR 4198				17.7C	2575	44,500 CUP
H4198	16.0	2451		17.0	2632	
IMR 4227	15.0	2451		16.0	2697	
H110	13.0	2553		14.0	2714	
Bullet: 50 GR. NOS BT			**Dia: .224″**		**Col: 1.850″**	
IMR 4198				16.7C	2380	44,000 CUP
H4198	15.5	2412		16.5	2539	
IMR 4227	15.0	2449		16.0	2672	
H110	12.5	2520		13.5	2637	
Bullet: 53 GR. SIE HPBT			**Dia: .224″**		**Col: 1.840″**	
H4198	15.5	2343		16.5	2537	
H4227	15.0	2449		16.0	2603	
H110	12.0	2492		13.0	2619	
Bullet: 55 GR. SPR SP			**Dia: .224″**		**Col: 1.830″**	
IMR 4198				16.4C	2315	51,700 CUP
H4198	15.0	2261		16.0	2441	
IMR 4227	14.5	2418		15.5	2503	
Bullet: 60 GR. HDY SP			**Dia: .224″**		**Col: 1.840″**	
H4198	15.0	2251		16.0	2399	
H4227	14.0	2328		15.0	2414	

223 REMINGTON

Case: Winchester — Twist: 1:12″
Barrel: 15″ — Trim: 1.750″ — Primer: Winchester SR, Small Rifle

Powder	Starting Grs.	Starting Vel.	Starting Pressure	Maximum Grs.	Maximum Vel.	Maximum Pressure
Bullet: 36 GR. BAR VG FB			**Dia: .224″**		**Col: 2.200″**	
IMR 4320	25.2	2758	39,700 PSI	28.0C	3120	52,200 PSI
IMR 4895	24.8	2725	39,700 PSI	27.0C	3014	50,100 PSI
IMR 8208 XBR	25.4	2829	44,500 PSI	27.0C	3057	50,600 PSI
IMR 3031	23.3	2839	41,600 PSI	24.8C	3068	48,200 PSI
IMR 4198	21.2	2995	43,500 PSI	22.5	3247	52,500 PSI
Bullet: 40 GR. NOS BT			**Dia: .224″**		**Col: 2.280″**	
Varget	25.0	2609	34,400 CUP	28.0C	3069	47,200 CUP
IMR 4320	26.0	2781	43,500 PSI	27.7C	3049	48,900 PSI
BL-C(2)	26.5	2696	35,400 CUP	28.5	2910	45,400 CUP
IMR 4895	24.9	2653	35,200 PSI	26.5C	2907	44,200 PSI
H335	26.0	2931	34,400 CUP	28.0	3231	44,600 CUP
H4895	25.0	2628	32,100 CUP	27.5C	3060	44,500 CUP
IMR 8208 XBR	25.0	2755	41,500 PSI	26.7C	2985	50,400 PSI
IMR 3031	23.5	2746	42,600 PSI	25.2C	3066	46,200 PSI
Benchmark	25.3	2900	39,600 CUP	27.3	3174	51,000 CUP

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
H322	23.5	2783	34,600 CUP	25.5	3087	48,000 CUP
IMR 4198	19.5	2901	42,500 PSI	22.2	3129	53,400 PSI
H4198	20.5	2755	29,400 CUP	22.5	3014	49,600 CUP
Bullet: 45 GR. SIE SP			**Dia: .224″**		**Col: 2.240″**	
Varget	25.0	2550	30,200 CUP	28.0C	3010	43,700 CUP
IMR 4320	25.5	2601	40,300 PSI	27.8C	2982	46,300 PSI
BL-C(2)	26.5	2644	36,000 CUP	28.5	2915	48,000 CUP
H335	24.0	2667	41,500 CUP	26.2	2877	51,000 CUP
H4895	25.0	2603	33,800 CUP	27.5C	3017	43,400 CUP
IMR 8208 XBR	24.5	2617	41,700 PSI	26.8	3022	52,000 PSI
IMR 3031	22.7	2506	37,700 PSI	25.2C	2980	45,800 PSI
Benchmark	25.3	2815	41,400 CUP	27.3	3089	51,100 CUP
H322	23.0	2635	36,000 CUP	25.0	2926	47,400 CUP
IMR 4198	19.5	2731	44,600 PSI	22.1	3005	52,000 PSI
H4198	20.0	2617	28,800 CUP	22.0	2847	49,100 CUP
Bullet: 50 GR. SPR SP			**Dia: .224″**		**Col: 2.210″**	
Varget	26.5	2842	40,800 CUP	27.5C	2959	44,800 CUP
IMR 4320	24.8	2461	39,400 PSI	27.5C	2852	48,900 PSI
BL-C(2)	26.0	2569	34,200 CUP	28.0	2851	47,100 CUP
IMR 4895	25.2	2646	43,300 PSI	26.7C	2892	45,200 PSI
H335	24.0	2538	43,000 CUP	26.0	2834	51,700 CUP
H4895	25.0	2658	38,300 CUP	27.5C	3024	51,300 CUP
IMR 8208 XBR	23.5	2525	40,500 PSI	25.8	2849	53,300 PSI
IMR 3031	23.5	2698	44,600 PSI	25.8C	3002	46,900 PSI
Benchmark	24.0	2639	38,600 CUP	26.5	2953	50,400 CUP
H322	22.0	2460	36,500 CUP	24.0	2740	49,300 CUP
IMR 4198	19.8	2769	42,800 PSI	21.9	3012	52,100 PSI
H4198	19.5	2429	32,400 CUP	21.5	2824	45,900 CUP
Bullet: 53 GR. SIE HP			**Dia: .224″**		**Col: 2.200″**	
Varget	24.0	2449	38,400 CUP	27.0C	2833	47,900 CUP
IMR 4320	24.0	2365	40,400 PSI	27.5C	2851	52,300 PSI
IMR 4064	24.0	2483	41,600 PSI	25.7C	2765	45,600 PSI
BL-C(2)	26.0	2562	36,600 CUP	28.0	2914	47,600 CUP
IMR 4895	24.5	2568	43,900 PSI	26.4C	2856	52,300 PSI
H335	24.0	2539	44,100 CUP	26.0	2880	52,000 CUP
H4895	25.0	2660	37,400 CUP	27.0C	2965	48,600 CUP
IMR 8208 XBR	23.0	2382	41,400 PSI	25.4	2789	53,400 PSI
IMR 3031	22.0	2401	40,700 PSI	24.5C	2869	53,300 PSI
Benchmark	24.0	2652	39,900 CUP	26.0	2932	49,800 CUP
H322	21.5	2527	39,200 CUP	23.5	2707	48,900 CUP
IMR 4198	19.0	2680	43,800 PSI	21.4	2886	48,200 PSI
H4198	19.5	2650	34,200 CUP	21.5	2846	46,700 CUP
Bullet: 55 GR. SPR SP			**Dia: .224″**		**Col: 2.200″**	
Varget	25.5	2697	41,300 CUP	27.5C	2972	49,700 CUP
IMR 4320	23.5	2254	41,300 PSI	26.1C	2652	50,700 PSI
IMR 4064	23.0	2268	40,300 PSI	25.7C	2672	52,600 PSI
BL-C(2)	25.5	2558	37,200 CUP	27.5	2816	48,500 CUP
IMR 4895	23.0	2251	39,500 PSI	26.2C	2757	53,200 PSI
H335	23.0	2463	40,800 CUP	25.3	2799	49,300 CUP
H4895	25.0	2721	39,700 CUP	26.0	2880	49,000 CUP
IMR 8208 XBR	23.0	2390	42,100 PSI	25.3	2715	53,100 PSI
IMR 3031	21.6	2300	41,100 PSI	24.6C	2874	52,500 PSI
Benchmark	24.0	2625	42,600 CUP	25.6	2840	50,000 CUP
H322	21.0	2439	38,600 CUP	23.0	2638	48,900 CUP
IMR 4198	18.8	2599	41,600 PSI	20.4	2789	53,600 PSI
H4198	19.0	2400	34,800 CUP	21.0	2719	47,600 CUP
Bullet: 60 GR. HDY V-MAX			**Dia: .224″**		**Col: 2.250″**	
Varget	25.0	2544	40,400 CUP	27.0C	2825	51,900 CUP
IMR 4320	23.7	2309	45,400 PSI	25.3C	2529	52,100 PSI
IMR 4064	23.0	2312	42,500 PSI	24.7C	2517	52,600 PSI
BL-C(2)	25.0	2482	44,900 CUP	27.0	2791	51,900 CUP
IMR 4895	23.7	2386	45,000 PSI	25.2	2619	52,700 PSI
H335	22.5	2401	43,700 CUP	24.0	2643	50,600 CUP
H4895	24.0	2514	37,600 CUP	26.0C	2804	50,100 CUP
IMR 8208 XBR	21.5	2179	43,500 PSI	23.6	2488	51,700 PSI
IMR 3031	21.0	2281	42,500 PSI	22.5	2514	51,700 PSI
Benchmark	23.0	2515	42,500 CUP	24.6	2744	49,900 CUP
H322	22.0	2526	40,300 CUP	23.5	2657	49,800 CUP
IMR 4198	18.3	2488	42,500 PSI	19.5	2570	52,000 PSI
H4198	18.0	2450	42,500 CUP	20.0	2647	47,600 CUP
Bullet: 63 GR. SIE SP			**Dia: .224″**		**Col: 2.200″**	
Varget	24.5	2566	42,400 CUP	26.4	2809	50,700 CUP
IMR 4320	23.0	2206	42,500 PSI	25.5	2533	52,900 PSI
IMR 4064	22.5	2203	44,400 PSI	24.8	2566	52,600 PSI
BL-C(2)	24.0	2347	36,600 CUP	26.0	2630	46,300 CUP
IMR 4895	22.9	2308	42,700 PSI	25.3	2638	53,500 PSI
H335	22.5	2390	41,000 CUP	25.0	2724	50,000 CUP
H4895	23.5	2434	43,300 CUP	25.5	2800	50,000 CUP
IMR 8208 XBR	21.0	2158	43,000 PSI	23.1	2409	52,400 PSI
IMR 3031	21.0	2247	42,900 PSI	23.3	2674	53,000 PSI
Benchmark	22.0	2318	41,800 CUP	24.2	2601	50,500 CUP
H322	20.0	2240	38,100 CUP	22.0	2482	48,400 CUP
IMR 4198	18.5	2473	48,100 PSI	20.0	2608	53,500 PSI
H4198	18.0	2294	33,600 CUP	20.0	2572	44,600 CUP
Bullet: 69 GR. SIE HPBT			**Dia: .224″**		**Col: 2.235″**	
IMR 4320	23.0	2218	43,500 PSI	24.8	2471	53,100 PSI
IMR 4064	22.5	2227	42,200 PSI	24.0C	2435	50,900 PSI
IMR 4895	23.3	2393	44,600 PSI	24.8C	2608	53,600 PSI
IMR 8208 XBR	21.0	2168	42,200 PSI	23.8	2515	52,900 PSI
IMR 3031	21.0	2277	42,900 PSI	22.5	2476	52,800 PSI
IMR 4198	18.3	2389	46,300 PSI	19.5	2489	52,300 PSI
Bullet: 70 GR. SPR SP			**Dia: .224″**		**Col: 2.140″**	
IMR 4320	20.3	1891	38,200 PSI	24.3	2337	52,900 PSI
IMR 4064	19.5	1861	42,000 PSI	23.5C	2325	53,300 PSI
IMR 4895	20.2	1943	45,700 PSI	24.5C	2495	52,300 PSI
IMR 8208 XBR	20.0	2051	44,100 PSI	21.8	2201	52,800 PSI
IMR 3031	19.0	2029	47,200 PSI	21.2	2270	50,900 PSI

25 ACP

Case: Winchester Twist: 1:16″
Barrel: 2″ Trim: .610″ Primer: Federal 100M, Small Pistol Match

Powder	Grs.	Vel.	Pressure	Grs.	Vel.	Pressure
Bullet: 35 GR. HDY XTP			**Dia: .251″**		**Col: .860″**	
572	1.7	822	14,500 CUP	2.0	926	17,200 CUP
CFE Pistol	1.5	719	12,800 CUP	1.8	883	16,600 CUP
Universal	1.5	823	14,500 CUP	1.7	922	16,200 CUP
244	1.7	884	13,600 CUP	1.9	965	17,600 CUP
HP-38	1.6	890	15,700 CUP	1.8	963	17,900 CUP
IMR Target	1.6	820	14,800 CUP	1.9	882	17,600 CUP
Titegroup	1.5	888	15,900 CUP	1.7	970	17,300 CUP
Bullet: 50 GR. SIE FMJ			**Dia: .251″**		**Col: .900″**	
572	1.4	647	14,500 CUP	1.7	767	17,900 CUP
800-X				1.8	815	17,800 CUP
CFE Pistol	1.2	584	13,400 CUP	1.5	727	17,600 CUP
Universal	1.2	620	12,000 CUP	1.4	751	16,600 CUP
244	1.2	639	12,400 CUP	1.4	767	17,000 CUP
HP-38	1.3	704	15,600 CUP	1.5	788	17,900 CUP
IMR Target	1.2	623	13,300 CUP	1.5	754	17,100 CUP
Titegroup	1.1	657	14,500 CUP	1.3	752	17,200 CUP
700-X				1.1	740	14,400 CUP

25-35 WINCHESTER

Case: Winchester Twist: 1:8″
Barrel: 10″ Trim: 2.033″ Primer: Federal 210, Large Rifle

Powder	Grs.	Vel.	Pressure	Grs.	Vel.	Pressure
Bullet: 60 GR. SPR SP			**Dia: .257″**		**Col: 2.390″**	
IMR 4064				30.5C	2285	36,000 CUP
IMR 3031				28.3	2325	36,900 CUP
Bullet: 87 GR. HDY SP			**Dia: .257″**		**Col: 2.690″**	
IMR 4064				25.7	1960	36,500 CUP

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
IMR 3031				23.4	1965	36,800 CUP
Bullet: 100 GR. SPR SP				**Dia: .257″**		**Col: 2.700″**
IMR 4350				31.0C	1900	36,400 CUP
IMR 4064				25.2	1875	37,000 CUP
IMR 3031				22.1	1845	36,500 CUP
Bullet: 117 GR. SIE SPBT				**Dia: .257″**		**Col: 2.700″**
IMR 4350				28.3C	1760	35,900 CUP
IMR 4895				22.2	1750	37,000 CUP
IMR 3031				21.5	1760	36,700 CUP

30 CARBINE

Case: Winchester Twist: 1:20″
Barrel: 7″ Trim: 1.286″ Primer: CCI 400, Small Rifle

Bullet: 85 GR. SIE RN				**Dia: .308″**		**Col: 1.625″**
H4227	14.5	1643	25,200 CUP	15.5C	1745	30,700 CUP
H110	16.5	1834	26,000 CUP	17.5	1966	34,800 CUP
Bullet: 100 GR. SPR SP				**Dia: .308″**		**Col: 1.625″**
H4227	13.0	1503	28,900 CUP	14.5C	1621	33,600 CUP
H110	14.5	1660	28,200 CUP	15.5	1762	36,100 CUP
Bullet: 110 GR. HDY JRN				**Dia: .308″**		**Col: 1.680″**
H4227	13.0	1461	30,100 CUP	14.5C	1602	38,800 CUP
H110	14.0	1605	32,000 CUP	15.0	1685	36,500 CUP

32 ACP

Case: Winchester Twist: 1:16″
Barrel: 4″ Trim: .675″ Primer: Federal 100M, Small Pistol Match

Bullet: 71 GR. SIE FMJ				**Dia: .312″**		**Col: .978″**
AutoComp	2.7	879	13,900 CUP	3.0	937	14,800 CUP
Universal	2.2	781	11,600 CUP	2.4	881	14,900 CUP
231	2.1	805	12,400 CUP	2.3	871	14,400 CUP
HP-38	2.1	805	12,400 CUP	2.3	871	14,400 CUP
Titegroup	2.0	824	12,600 CUP	2.2	910	14,800 CUP
Clays	1.5	745	11,700 CUP	1.7	830	15,000 CUP

32 S&W LONG

Case: Remington Twist: 1:18.75″
Barrel: 5.32″ Trim: .915″ Primer: CCI 500, Small Pistol

Bullet: 83 GR. BERB HBWC				**Dia: .314″**		**Col: .920″**
Universal	2.2	592	7,000 CUP	2.7	798	10,500 CUP
HP-38	2.1	679	7,600 CUP	2.4	800	10,800 CUP
Titegroup	1.7	633	6,800 CUP	2.0	754	10,000 CUP
Bullet: 85 GR. HDY JHP				**Dia: .312″**		**Col: 1.160″**
Universal	2.7	705	8,000 CUP	3.0	865	12,000 CUP
244	2.4	729	8,500 CUP	2.7	843	11,400 CUP
HP-38	2.4	707	8,500 CUP	2.7	810	11,500 CUP
Titegroup	2.1	723	7,800 CUP	2.4	819	11,300 CUP
Bullet: 90 GR. HDY LSWC				**Dia: .314″**		**Col: 1.185″**
Universal	2.4	777	8,800 CUP	2.7	844	10,200 CUP
HP-38	2.1	744	9,100 CUP	2.4	831	11,300 CUP
Trail Boss	1.5	599	5,900 CUP	2.0	730	8,100 CUP
Titegroup	1.9	765	10,200 CUP	2.1	818	10,900 CUP
Bullet: 90 GR. SIE JHC				**Dia: .312″**		**Col: 1.170″**
Universal	2.6	676	7,500 CUP	2.9	838	11,200 CUP
244	2.3	677	8,500 CUP	2.6	804	11,400 CUP
HP-38	2.3	678	8,400 CUP	2.6	766	10,500 CUP
Titegroup	2.0	665	8,200 CUP	2.3	749	10,000 CUP
Bullet: 98 GR. SPR LHBWC				**Dia: .314″**		**Col: .920″**
Universal	1.9	675	6,100 CUP	2.2	830	11,000 CUP
244	1.8	742	9,500 CUP	2.1	834	11,300 CUP
HP-38	1.9	718	9,200 CUP	2.3	861	11,600 CUP
Titegroup	1.8	780	9,000 CUP	2.0	860	11,500 CUP

32 H&R MAGNUM

Case: Federal Twist: 1:16″
Barrel: 5″ Trim: 1.070″ Primer: Federal 100, Small Pistol

Bullet: 77 GR. CAST LFP				**Dia: .314″**		**Col: 1.335″**
572	3.4	828	8,400 CUP	4.0	1013	13,000 CUP
800-X	3.3	792	7,400 CUP	4.1	985	11,400 CUP
CFE Pistol	3.4	864	9,300 CUP	4.0	1003	13,500 CUP
AutoComp	3.0	773	6,700 CUP	4.0	1016	12,800 CUP
244	2.5	749	7,800 CUP	3.3	987	11,700 CUP
WSF	3.4	831	8,800 CUP	3.8	926	11,100 CUP
231	2.4	797	6,700 CUP	3.4	998	12,300 CUP
HP-38	2.4	797	6,700 CUP	3.4	998	12,300 CUP
IMR Target	2.1	756	7,600 CUP	3.1	996	12,900 CUP
Titegroup	2.0	745	5,300 CUP	3.0	993	11,300 CUP
700-X	2.3	832	9,900 CUP	2.7	913	11,500 CUP
Bullet: 85 GR. HDY HP				**Dia: .312″**		**Col: 1.290″**
H4227	8.5	989	19,300 CUP	9.5	1151	21,000 CUP
Lil'Gun	10.5	1163	13,700 CUP	12.0	1263	16,800 CUP
Longshot	4.0	948	11,500 CUP	5.0	1167	20,200 CUP
572	4.3	1058	17,200 CUP	4.8	1145	20,700 CUP
800-X	4.7	1067	16,600 CUP	5.3	1156	19,900 CUP
HS-6	5.2	902	17,100 CUP	5.6	1146	20,200 CUP
CFE Pistol	4.2	1014	16,400 CUP	4.7	1147	21,000 CUP
AutoComp	4.2	1037	15,500 CUP	4.6	1114	19,200 CUP
Universal	4.0	1090	18,400 CUP	4.3	1123	19,000 CUP
244	3.6	980	15,000 CUP	4.1	1111	20,300 CUP
WSF	4.2	1030	15,900 CUP	4.8	1147	20,400 CUP
231	3.2	785	15,200 CUP	3.8	1003	20,700 CUP
HP-38	3.2	785	15,200 CUP	3.8	1003	20,700 CUP
IMR Target	3.2	969	15,300 CUP	4.0	1140	21,000 CUP
Titegroup	3.0	929	14,000 CUP	3.7	1110	20,900 CUP
700-X	3.2	951	14,600 CUP	3.7	1071	18,700 CUP
Bullet: 90 GR. HDY LSWC				**Dia: .314″**		**Col: 1.350″**
700-X	2.6	901	11,300 CUP	3.0	973	15,500 CUP
Bullet: 90 GR. SIE JHP				**Dia: .312″**		**Col: 1.340″**
H4227	9.5	1042	15,000 CUP	10.0	1079	17,000 CUP
Lil'Gun	10.0	1156	14,900 CUP	11.5	1227	18,000 CUP
Longshot	4.0	945	12,100 CUP	5.0	1139	19,500 CUP
572	4.0	920	14,000 CUP	4.7	1098	20,600 CUP
800-X	4.2	973	14,900 CUP	5.0	1130	21,000 CUP
HS-6	5.4	1026	16,400 CUP	6.0	1140	20,200 CUP
CFE Pistol	3.8	927	14,500 CUP	4.5	1076	20,200 CUP
AutoComp	4.0	957	15,700 CUP	4.5	1082	20,300 CUP
Universal	3.7	1008	16,900 CUP	4.0	1072	20,000 CUP
244	3.5	945	15,100 CUP	4.1	1070	20,200 CUP
WSF	4.0	966	15,900 CUP	4.5	1065	19,500 CUP
231	3.5	930	16,200 CUP	4.0	1033	20,300 CUP
HP-38	3.5	930	16,200 CUP	4.0	1033	20,300 CUP
IMR Target	3.1	915	15,200 CUP	3.8	1070	19,700 CUP
Titegroup	3.1	932	15,300 CUP	3.6	1060	20,600 CUP
700-X	3.0	914	14,500 CUP	3.5	1036	19,400 CUP
Bullet: 100 GR. SPR JHP				**Dia: .312″**		**Col: 1.345″**
H4227	9.0	980	15,700 CUP	10.0	1060	19,300 CUP
Lil'Gun	10.0	1151	17,900 CUP	11.0	1208	19,900 CUP
Longshot	4.0	903	13,900 CUP	4.7	1056	19,300 CUP
572	3.9	892	14,700 CUP	4.4	1018	20,700 CUP
800-X	4.2	900	14,600 CUP	4.7	1035	20,200 CUP
HS-6	4.8	885	15,800 CUP	5.4	1023	20,200 CUP
AutoComp	3.7	867	15,200 CUP	4.2	964	18,900 CUP
Universal	3.3	847	14,300 CUP	3.7	973	19,900 CUP
WSF	3.8	858	15,100 CUP	4.3	1000	20,300 CUP
231	3.3	860	15,600 CUP	3.7	947	19,400 CUP
HP-38	3.3	860	15,600 CUP	3.7	947	19,400 CUP

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
IMR Target	2.9	817	13,100 CUP	3.5	961	19,900 CUP
Titegroup	2.8	833	15,000 CUP	3.3	956	19,900 CUP
700-X	3.1	857	15,900 CUP	3.5	976	20,200 CUP

32-20 WINCHESTER

Case: Remington Twist: 1:20″
Barrel: 5.5″ Trim: 1.305″ Primer: Winchester SP, Small Pistol

Bullet: 77 GR. LFP Dia: .314″ Col: 1.555″

231	3.4	957	11,000 CUP	3.8	1031	12,700 CUP
HP-38	3.4	957	11,000 CUP	3.8	1031	12,700 CUP
Titegroup	2.9	945	10,300 CUP	3.2	1020	11,700 CUP

Bullet: 85 GR. HDY JHP Dia: .312″ Col: 1.550″

Lil'Gun	7.5	1048	13,200 CUP	8.0	1102	15,700 CUP
Titegroup	3.1	866	11,600 CUP	3.5	961	15,900 CUP

Bullet: 90 GR. CAST LRNFP Dia: .314″ Col: 1.490″

231	3.2	833	11,900 CUP	3.5	969	16,000 CUP
HP-38	3.2	833	11,900 CUP	3.5	969	16,000 CUP
Trail Boss	2.5	785	11,400 CUP	2.8	830	13,900 CUP
Titegroup	3.0	937	12,300 CUP	3.4	1012	15,800 CUP

Bullet: 100 GR. REM JFP Dia: .312″ Col: 1.580″

Lil'Gun	7.0	947	12,200 CUP	7.5	1018	15,700 CUP
Titegroup	3.0	839	14,100 CUP	3.5	908	16,000 CUP

Bullet: 115 GR. CAST LRNFP Dia: .314″ Col: 1.580″

Universal	3.0	808	14,200 CUP	3.2	869	16,000 CUP
231	3.2	839	11,100 CUP	3.5	915	15,600 CUP
HP-38	3.2	839	11,100 CUP	3.5	915	15,600 CUP
Trail Boss	2.2	642	11,300 CUP	2.5	707	15,300 CUP
Titegroup	2.7	815	12,900 CUP	3.0	857	15,300 CUP

327 FEDERAL MAGNUM

Case: Federal Twist: 1:16″
Barrel: 5″ Trim: 1.200″ Primer: Federal 200, Small Pistol Magnum

Bullet: 77 GR. CAST LFP Dia: .314″ Col: 1.460″

572	5.5	1233	18,500 PSI	6.2	1381	24,300 PSI
CFE Pistol	5.1	1254	18,600 PSI	5.8	1382	23,100 PSI
AutoComp	5.9	1251	17,700 PSI	6.7	1393	21,900 PSI
Universal	4.9	1190	15,700 PSI	5.5	1357	22,800 PSI
244	4.9	1267	19,500 PSI	5.5	1383	23,500 PSI
231	5.1	1273	20,700 PSI	5.8	1380	25,000 PSI
HP-38	5.1	1273	20,700 PSI	5.8	1380	25,000 PSI
Trail Boss	3.0	919	12,300 PSI	3.5	1024	18,700 PSI
IMR Target	4.4	1245	19,500 PSI	5.4	1429	25,900 PSI
Titegroup	4.5	1225	17,200 PSI	5.3	1391	24,700 PSI
700-X	4.5	1236	17,500 PSI	5.3	1388	24,600 PSI
Clays	3.7	1121	18,000 PSI	4.5	1297	30,900 PSI

Bullet: 85 GR. HDY XTP Dia: .312″ Col: 1.450″

Longshot	6.5	1404	32,700 PSI	7.2	1549	41,800 PSI
572	6.4	1403	32,000 PSI	7.3	1564	42,000 PSI
800-X	6.7	1376	25,300 PSI	7.5	1548	36,700 PSI
HS-6	7.6	1402	30,800 PSI	8.5	1561	41,600 PSI
CFE Pistol	6.7	1474	33,400 PSI	7.5	1600	41,200 PSI
AutoComp	6.3	1387	32,700 PSI	7.0	1518	42,100 PSI
Universal	5.3	1253	32,100 PSI	6.0	1378	38,700 PSI
244	5.8	1384	28,800 PSI	6.6	1571	40,100 PSI
WSF	6.4	1359	31,900 PSI	7.0	1475	38,200 PSI
231	5.5	1299	34,000 PSI	6.0	1416	39,800 PSI
HP-38	5.5	1299	34,000 PSI	6.0	1416	39,800 PSI
IMR Target	5.4	1381	28,800 PSI	6.6	1606	40,600 PSI
Titegroup	5.0	1294	27,000 PSI	5.8	1438	37,600 PSI

Bullet: 90 GR. CAST LRNFP Dia: .312″ Col: 1.460″

AutoComp	5.5	1210	19,900 PSI	6.3	1348	28,700 PSI
Universal	4.3	1090	16,600 PSI	5.2	1274	27,800 PSI
HP-38	4.5	1118	18,400 PSI	5.5	1299	30,400 PSI
Trail Boss	2.7	789	11,200 PSI	3.2	890	14,800 PSI
Titegroup	3.8	1066	16,300 PSI	5.0	1283	28,800 PSI
700-X	4.1	1108	17,800 PSI	5.0	1277	28,100 PSI
Clays	3.5	1065	26,400 PSI	4.2	1186	37,900 PSI

Bullet: 90 GR. LHBWC Dia: .314″ Col: 1.200″

Universal	2.4	721	9,100 PSI	2.8	869	12,500 PSI
244	2.3	769	10,600 PSI	2.7	878	13,600 PSI
231	2.3	781	14,600 PSI	2.7	878	15,000 PSI
HP-38	2.3	781	14,600 PSI	2.7	878	15,000 PSI
Titegroup	2.0	773	13,200 PSI	2.3	859	14,000 PSI
700-X	2.2	810	12,700 PSI	2.5	885	14,200 PSI
Clays	1.9	792	17,800 PSI	2.2	856	20,600 PSI

Bullet: 90 GR. SIE JHC Dia: .312″ Col: 1.460″

Longshot	6.6	1340	26,400 PSI	7.3	1512	42,600 PSI
572	6.5	1377	33,400 PSI	7.4	1531	42,100 PSI
800-X	6.5	1321	24,900 PSI	7.2	1446	31,700 PSI
HS-6	8.0	1337	23,400 PSI	8.8	1491	36,400 PSI
CFE Pistol	6.4	1395	31,800 PSI	7.3	1530	41,500 PSI
AutoComp	6.4	1337	29,200 PSI	7.2	1493	42,900 PSI
Universal	5.3	1275	26,800 PSI	5.7	1372	40,900 PSI
244	5.7	1342	29,100 PSI	6.4	1492	41,600 PSI
WSF	6.0	1320	29,300 PSI	6.6	1426	41,900 PSI
231	5.4	1279	32,100 PSI	6.1	1415	43,000 PSI
HP-38	5.4	1279	32,100 PSI	6.1	1415	43,000 PSI
IMR Target	5.1	1306	26,800 PSI	6.6	1511	41,100 PSI
Titegroup	5.0	1287	28,200 PSI	5.7	1402	39,600 PSI

Bullet: 100 GR. HDY XTP Dia: .312″ Col: 1.450″

IMR 4227	11.5	1239	27,100 PSI	12.5C	1318	30,000 PSI
296	12.2	1419	31,400 PSI	13.2	1525	38,500 PSI
H110	12.2	1419	31,400 PSI	13.2	1525	38,500 PSI
Lil'Gun	12.7	1347	25,600 PSI	14.0	1431	27,900 PSI
Longshot	6.0	1287	35,400 PSI	6.7	1400	43,500 PSI
572	6.0	1299	33,500 PSI	6.8	1413	42,800 PSI
800-X	6.0	1252	28,900 PSI	6.9	1434	39,400 PSI
HS-6	7.0	1289	34,100 PSI	7.7	1384	42,000 PSI
CFE Pistol	5.9	1298	31,800 PSI	7.0	1451	42,300 PSI
AutoComp	5.5	1190	32,500 PSI	6.2	1328	41,400 PSI
Universal	4.5	1087	28,000 PSI	5.4	1250	40,800 PSI
244	5.3	1269	32,100 PSI	6.0	1407	42,500 PSI
HP-38	4.8	1146	31,100 PSI	5.4	1261	39,800 PSI
IMR Target	4.9	1239	29,300 PSI	6.2	1439	41,600 PSI
Titegroup	4.3	1102	33,300 PSI	5.2	1261	42,800 PSI

Bullet: 115 GR. MEI LRNFP Dia: .312″ Col: 1.460″

572	4.6	1068	23,500 PSI	5.4	1222	33,800 PSI
AutoComp	4.7	1062	22,100 PSI	5.5	1194	33,500 PSI
Universal	4.2	1059	25,200 PSI	5.0	1184	40,200 PSI
244	4.0	1066	23,500 PSI	5.0	1226	33,700 PSI
231	4.3	1053	27,400 PSI	5.3	1218	41,200 PSI
HP-38	4.3	1053	27,400 PSI	5.3	1218	41,200 PSI
Trail Boss	2.5	733	15,200 PSI	3.0	804	19,600 PSI
IMR Target	4.2	1121	26,100 PSI	5.5	1310	39,800 PSI
Titegroup	3.6	1012	23,900 PSI	4.6	1173	40,600 PSI
700-X	3.8	1024	26,400 PSI	4.6	1158	35,300 PSI
Clays	3.0	913	26,600 PSI	3.7	1017	39,500 PSI

380 AUTO

Case: Remington Twist: 1:16″
Barrel: 3.75″ Trim: .675″ Primer: CCI 500, Small Pistol

Bullet: 56 GR. PLYCS ARX Dia: .355″ Col: .975″

572	4.7	1213	17,900 PSI	5.5	1326	20,000 PSI
CFE Pistol	4.3	1103	15,700 PSI	5.1	1356	20,400 PSI
AutoComp	4.3	1072	15,500 PSI	5.2	1310	20,300 PSI
Universal	3.6	1025	14,800 PSI	4.2	1274	20,000 PSI

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
244	3.4	1113	16,700 PSI	4.0	1297	20,200 PSI
HP-38	3.3	1073	16,400 PSI	3.9	1257	20,400 PSI
IMR Target	3.4	1113	16,300 PSI	4.0	1287	19,900 PSI
Titegroup	3.1	1102	15,700 PSI	3.7	1309	20,200 PSI
Bullet: 60 GR. PLYCS RNP			**Dia: .355″**		**Col: .975″**	
572	4.5	1134	16,900 PSI	5.2	1272	20,300 PSI
CFE Pistol	4.1	1090	15,800 PSI	4.8	1303	20,200 PSI
AutoComp	4.1	1065	16,200 PSI	4.8	1250	20,100 PSI
Universal	3.4	1005	15,300 PSI	4.0	1228	20,000 PSI
244	3.2	1058	16,100 PSI	3.8	1234	20,300 PSI
HP-38	3.1	1020	15,700 PSI	3.7	1213	20,300 PSI
IMR Target	3.2	1095	16,300 PSI	3.8	1259	20,100 PSI
Titegroup	2.9	1033	15,300 PSI	3.5	1240	20,100 PSI
Bullet: 80 GR. BAR TAC XP			**Dia: .355″**		**Col: .980″**	
572	3.3	901	16,100 PSI	3.8	1043	19,700 PSI
CFE Pistol	2.9	814	12,600 PSI	3.7	1036	20,300 PSI
AutoComp	3.3	911	16,100 PSI	3.8	1024	20,200 PSI
Universal	2.8	889	16,100 PSI	3.0	964	17,900 PSI
244	2.9	930	16,200 PSI	3.3	1053	19,900 PSI
231	2.4	817	15,000 PSI	2.7	936	20,300 PSI
HP-38	2.4	817	15,000 PSI	2.7	936	20,300 PSI
IMR Target	2.8	886	16,600 PSI	3.3	1034	20,500 PSI
Titegroup	2.3	865	15,700 PSI	2.6	970	19,300 PSI
700-X	2.3	846	15,900 PSI	2.6	960	19,700 PSI
Bullet: 90 GR. HDY JHP			**Dia: .355″**		**Col: .955″**	
572	3.9	919	15,600 PSI	4.4	1053	19,900 PSI
800-X				4.1	870	15,500 CUP
CFE Pistol	3.7	880	11,900 PSI	4.2	1010	19,500 PSI
AutoComp	4.1	893	11,200 CUP	4.5	1012	15,000 CUP
Universal	3.2	815	10,700 CUP	3.6	955	15,700 CUP
244	3.2	930	15,600 PSI	3.7	1061	19,800 PSI
231	3.2	917	13,900 CUP	3.5	957	15,400 CUP
HP-38	3.2	917	13,900 CUP	3.5	957	15,400 CUP
IMR Target	2.8	829	15,500 PSI	3.3	976	19,200 PSI
Titegroup	2.7	826	10,800 CUP	3.2	970	15,600 CUP
700-X				2.9	895	15,900 CUP
Bullet: 95 GR. SPR FMJ			**Dia: .355″**		**Col: .970″**	
572	3.5	785	13,700 PSI	4.2	982	19,900 PSI
CFE Pistol	3.7	822	12,000 PSI	4.2	986	19,900 PSI
AutoComp	3.9	816	10,600 CUP	4.3	937	14,100 CUP
Universal	3.1	814	12,500 CUP	3.5	901	15,500 CUP
244	3.2	848	14,800 PSI	3.7	995	19,600 PSI
231	2.9	802	13,100 CUP	3.2	884	15,400 CUP
HP-38	2.9	802	13,100 CUP	3.2	884	15,400 CUP
IMR Target	2.9	836	16,300 PSI	3.4	961	19,600 PSI
Titegroup	2.7	796	10,600 CUP	3.2	953	15,600 CUP
Bullet: 100 GR. HDY FMJ			**Dia: .355″**		**Col: .980″**	
572	3.4	816	15,300 PSI	4.1	965	19,800 PSI
800-X				4.0	840	14,700 CUP
CFE Pistol	3.3	794	12,400 PSI	4.0	955	19,800 PSI
AutoComp	3.8	822	11,000 CUP	4.2	934	14,400 CUP
Universal	3.0	721	11,400 CUP	3.4	889	16,100 CUP
244	3.0	851	15,600 PSI	3.5	994	19,500 PSI
231	2.9	819	13,800 CUP	3.1	843	15,400 CUP
HP-38	2.9	819	13,800 CUP	3.1	843	15,400 CUP
IMR Target	2.8	805	15,900 PSI	3.3	945	19,400 PSI
Titegroup	2.6	793	11,400 CUP	3.0	912	14,700 CUP
700-X				2.7	840	15,200 CUP

38 LONG COLT

Case: Starline Twist: 1:16″
Barrel: 7 1/2″ Trim: 1.012″ Primer: Federal 100M, Small Pistol Match

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Bullet: 125 GR. LRN			**Dia: .358″**		**Col: 1.400″**	
Universal	3.2	626		3.7	772	
HP-38	2.6	636		3.2	766	
Trail Boss	2.0	622		2.4	705	
Titegroup	2.3	657		2.7	752	
Clays	2.0	631		2.5	765	
Bullet: 150 GR. LRN			**Dia: .358″**		**Col: 1.390″**	
Universal	3.0	631		3.5	769	
HP-38	2.6	631		3.3	777	
Trail Boss	1.8	541		2.0	575	
Titegroup	2.3	641		2.8	755	
Clays	2.0	624		2.6	744	

9MM LUGER

Case: Winchester Twist: 1:10″
Barrel: 4″ Trim: .750″ Primer: CCI 500, Small Pistol

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Bullet: 65 GR. PLYCS ARX			**Dia: .355″**		**Col: 1.155″**	
572	7.8	1526	25,800 PSI	8.5	1621	28,500 PSI
CFE Pistol	6.3	1552	28,100 PSI	7.3	1713	33,000 PSI
AutoComp	6.2	1489	26,600 PSI	7.1	1634	32,700 PSI
Universal	5.2	1453	28,200 PSI	5.8	1593	33,000 PSI
244	4.8	1400	27,000 PSI	5.5	1562	33,400 PSI
HP-38	4.7	1359	27,900 PSI	5.3	1480	32,900 PSI
IMR Target	4.7	1372	24,200 PSI	5.6	1595	32,700 PSI
Titegroup	4.5	1422	27,000 PSI	5.1	1554	33,600 PSI
Bullet: 65 GR. PLYCS RNP			**Dia: .355″**		**Col: 1.125″**	
CFE Pistol	6.2	1504	27,100 PSI	7.1	1697	33,200 PSI
AutoComp	6.2	1503	27,500 PSI	7.1	1626	32,900 PSI
Universal	4.9	1368	23,700 PSI	5.7	1592	32,800 PSI
244	4.7	1369	23,900 PSI	5.5	1575	33,300 PSI
HP-38	4.8	1384	26,300 PSI	5.6	1537	33,100 PSI
IMR Target	5.0	1416	24,100 PSI	5.8	1610	33,000 PSI
Titegroup	4.7	1438	26,200 PSI	5.5	1610	33,700 PSI
Bullet: 80 GR. BAR TAC-XP			**Dia: .355″**		**Col: 1.025″**	
Longshot	5.7	1239	31,100 PSI	6.6	1327	33,500 PSI
572	5.4	1311	27,400 PSI	6.2	1424	31,200 PSI
HS-6	5.4	1102	28,000 PSI	5.7	1167	32,100 PSI
CFE Pistol	5.0	1221	26,100 PSI	5.9	1420	33,500 PSI
AutoComp	4.4	1101	27,700 PSI	4.8	1207	31,800 PSI
Universal	3.7	1156	31,400 PSI	3.9	1166	31,500 PSI
244	4.0	1212	26,400 PSI	4.6	1356	33,000 PSI
231	3.3	1021	26,300 PSI	3.8	1125	32,000 PSI
HP-38	3.3	1021	26,300 PSI	3.8	1125	32,000 PSI
IMR Target	4.2	1235	29,200 PSI	4.6	1323	32,700 PSI
Titegroup	3.0	1015	25,700 PSI	3.6	1174	32,900 PSI
700-X	3.1	1038	25,800 PSI	3.5	1119	31,000 PSI
Bullet: 90 GR. CEB RAPTOR			**Dia: .355″**		**Col: 1.140″**	
Longshot	6.0	1210	28,100 PSI	6.6	1315	29,700 PSI
572	5.4	1189	28,500 PSI	6.0	1312	32,800 PSI
HS-6	6.5	1140	28,200 PSI	7.3	1292	32,600 PSI
CFE Pistol	5.2	1169	27,800 PSI	5.6	1277	32,800 PSI
AutoComp	5.2	1108	25,500 PSI	5.8	1270	32,600 PSI
Universal	5.0	1157	28,200 PSI	5.4	1246	31,200 PSI
244	4.3	1114	27,200 PSI	4.9	1271	32,900 PSI
WSF	5.1	1129	27,600 PSI	5.7	1272	32,800 PSI
HP-38	4.1	1029	26,800 PSI	4.7	1187	32,500 PSI
IMR Target	4.5	1132	27,700 PSI	5.1	1281	32,600 PSI
Titegroup	4.0	1085	27,500 PSI	4.5	1232	32,500 PSI

Pistol Data

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Bullet: 90 GR. SPR GDHP Dia: .355″ Col: 1.010″						
Longshot	6.0	1278	29,400 PSI	7.0	1378	32,300 PSI
572	5.5	1239	25,000 PSI	6.4	1419	33,500 PSI
HS-6	7.9	1361	27,400 CUP	8.2	1413	30,900 CUP
CFE Pistol	6.0	1310	27,200 PSI	6.4	1404	32,900 PSI
AutoComp	6.1	1255	27,700 PSI	6.5	1332	32,100 PSI
Universal	5.0	1170	25,700 CUP	5.5	1266	30,100 CUP
244	4.5	1212	25,000 PSI	5.2	1378	31,800 PSI
231	5.5	1312	25,400 CUP	5.8	1349	30,100 CUP
HP-38	5.5	1312	25,400 CUP	5.8	1349	30,100 CUP
IMR Target	4.7	1245	29,800 PSI	5.2	1338	32,500 PSI
Titegroup	4.7	1239	25,700 CUP	5.0	1305	30,000 CUP
700-X	4.1	1215	27,700 PSI	4.5	1279	32,200 PSI
Bullet: 95 GR. SIE FMJ Dia: .355″ Col: 1.020″						
Longshot	5.8	1192	25,800 PSI	6.8	1356	33,300 PSI
572	5.4	1233	25,900 PSI	6.3	1379	33,400 PSI
HS-6	7.3	1232	26,500 CUP	7.8	1339	31,300 CUP
CFE Pistol	5.9	1207	27,900 PSI	6.4	1362	32,200 PSI
AutoComp	5.6	1216	27,300 PSI	6.1	1306	32,600 PSI
Universal	4.6	1182	26,800 CUP	5.2	1292	31,700 CUP
244	4.5	1199	25,700 PSI	5.2	1340	32,300 PSI
231	4.8	1189	26,300 CUP	5.3	1273	31,400 CUP
HP-38	4.8	1189	26,300 CUP	5.3	1273	31,400 CUP
IMR Target	4.8	1241	31,000 PSI	5.3	1330	32,900 PSI
Titegroup	4.7	1241	28,500 CUP	5.0	1298	32,000 CUP
700-X	4.1	1137	26,300 PSI	4.5	1224	31,500 PSI
Bullet: 100 GR. SFIRE Dia: .355″ Col: 1.140″						
572	5.0	1176	27,800 PSI	6.1	1319	33,300 PSI
CFE Pistol	5.0	1048	28,900 PSI	5.5	1211	33,200 PSI
Universal	3.8	1057	21,700 PSI	4.2	1169	30,700 PSI
244	3.9	1113	26,400 PSI	4.5	1230	32,700 PSI
231	3.9	1062	26,500 PSI	4.4	1149	31,000 PSI
HP-38	3.9	1062	26,500 PSI	4.4	1149	31,000 PSI
IMR Target	4.0	1107	28,500 PSI	4.5	1207	33,000 PSI
Titegroup	3.6	1097	24,700 PSI	4.0	1174	31,400 PSI
700-X	3.5	1015	22,600 PSI	4.0	1122	26,700 PSI
Bullet: 100 GR. SPR FMJ Dia: .355″ Col: 1.050″						
Longshot	5.5	1158	26,500 PSI	6.5	1315	33,300 PSI
HS-6	7.2	1270	23,900 CUP	7.5	1313	28,600 CUP
Universal	4.8	1119	27,200 CUP	5.3	1212	31,500 CUP
231	5.1	1218	25,200 CUP	5.5	1282	28,400 CUP
HP-38	5.1	1218	25,200 CUP	5.5	1282	28,400 CUP
IMR Target	4.4	1170	28,200 PSI	4.9	1262	32,600 PSI
Titegroup	4.7	1234	28,300 CUP	5.0	1289	30,300 CUP
Bullet: 115 GR. FMJ Dia: .355″ Col: 1.169″						
WSF	4.9	1060	24,200 PSI	5.7	1195	31,900 PSI
Bullet: 115 GR. JHP Dia: .355″ Col: 1.169″						
WSF	5.2	1095	28,700 PSI	5.7	1165	32,100 PSI
Bullet: 115 GR. LRN Dia: .356″ Col: 1.100″						
Longshot	5.0	1032	20,200 CUP	6.0	1166	27,300 CUP
572	4.6	1118	26,300 PSI	5.1	1200	31,900 PSI
800-X	4.5	1004	24,000 PSI	5.3	1128	28,200 PSI
HS-6	6.4	1117	27,900 CUP	6.9	1170	32,200 CUP
CFE Pistol	4.9	1124	28,800 PSI	5.4	1209	33,800 PSI
AutoComp	4.4	1002	24,800 PSI	5.1	1145	31,500 PSI
Universal	4.0	1034	24,400 CUP	4.5	1124	31,300 CUP
244	4.0	1092	25,300 PSI	4.5	1199	32,900 PSI
231	4.3	1079	28,400 CUP	4.8	1135	32,000 CUP
HP-38	4.3	1079	28,400 CUP	4.8	1135	32,000 CUP
IMR Target	4.0	1095	25,500 PSI	4.5	1197	33,100 PSI
Titegroup	3.9	1075	25,800 CUP	4.3	1151	30,500 CUP
700-X	3.3	986	25,200 PSI	3.7	1082	31,900 PSI
Clays	3.0	954	25,300 CUP	3.4	1039	31,000 CUP

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Bullet: 115 GR. SPR GDHP Dia: .355″ Col: 1.125″						
Longshot	5.0	1127	29,000 PSI	6.0	1203	32,300 PSI
572	5.3	1137	26,400 PSI	5.7	1221	33,000 PSI
HS-6	6.7	1171	26,700 CUP	7.0	1234	29,400 CUP
CFE Pistol	5.3	1059	23,200 PSI	5.9	1185	31,800 PSI
AutoComp	5.1	1078	28,200 PSI	5.6	1161	32,500 PSI
Universal	4.5	1029	27,400 CUP	5.0	1149	31,200 CUP
244	4.2	1071	25,400 PSI	4.7	1197	33,100 PSI
231	4.7	1075	25,300 CUP	5.1	1167	28,100 CUP
HP-38	4.7	1075	25,300 CUP	5.1	1167	28,100 CUP
IMR Target	4.4	1084	28,700 PSI	4.9	1171	32,600 PSI
Titegroup	4.5	1135	29,500 CUP	4.8	1158	30,500 CUP
700-X	3.9	991	26,000 PSI	4.2	1091	31,900 PSI
Clays	3.7	1066	30,900 CUP	3.9	1095	32,600 CUP
Bullet: 124 GR. BERB HBRN TP Dia: .356″ Col: 1.150″						
Longshot	4.8	958	23,000 PSI	5.8	1135	32,300 PSI
572	5.3	1131	27,200 PSI	5.8	1212	32,600 PSI
800-X	5.2	1060	27,700 PSI	5.7	1114	30,400 PSI
HS-6	6.0	1016	28,200 PSI	6.6	1116	32,400 PSI
CFE Pistol	4.9	1006	27,300 PSI	5.5	1120	33,800 PSI
AutoComp	4.8	1020	28,400 PSI	5.4	1120	32,900 PSI
Universal	3.8	904	26,300 PSI	4.4	1045	33,500 PSI
244	4.0	1010	26,300 PSI	4.5	1131	32,600 PSI
231	3.9	920	27,400 PSI	4.4	1037	31,900 PSI
HP-38	3.9	920	27,400 PSI	4.4	1037	31,900 PSI
IMR Target	4.1	1017	29,000 PSI	4.5	1109	32,900 PSI
Titegroup	3.6	957	27,700 PSI	4.1	1057	32,700 PSI
700-X	3.7	894	24,700 PSI	4.2	1068	33,400 PSI
Clays	2.7	791	27,900 PSI	3.0	857	31,200 PSI
Titewad	2.9	847	28,700 PSI	3.4	942	32,200 PSI
Bullet: 124 GR. FMJ Dia: .355″ Col: 1.169″						
WSF	4.7	1015	27,700 PSI	5.3	1115	32,700 PSI
Bullet: 124 GR. LEAD RN Dia: .355″ Col: 1.169″						
WSF	4.0	945	22,200 PSI	4.7	1055	27,300 PSI
Bullet: 125 GR. HDY HAP Dia: .356″ Col: 1.069″						
Longshot	3.9	901	24,700 PSI	4.4	998	32,600 PSI
572	4.0	961	26,400 PSI	4.6	1074	32,800 PSI
HS-6	4.5	865	25,700 PSI	5.1	971	33,100 PSI
CFE Pistol	4.2	956	25,600 PSI	4.8	1096	33,400 PSI
AutoComp	3.6	842	25,000 PSI	4.1	954	31,600 PSI
Universal	3.0	803	26,800 PSI	3.3	892	32,200 PSI
244	3.4	960	26,500 PSI	3.9	1060	32,600 PSI
231	2.8	753	25,300 PSI	3.3	876	33,600 PSI
HP-38	2.8	753	25,300 PSI	3.3	876	33,600 PSI
IMR Target	3.5	931	27,600 PSI	3.9	1037	32,100 PSI
Titegroup	2.8	816	27,100 PSI	3.2	930	33,700 PSI
700-X	2.9	843	27.000 PSI	3.4	938	33,500 PSI
Bullet: 125 GR. LCN Dia: .356″ Col: 1.125″						
Longshot	5.0	1052	24,700 CUP	5.7	1115	28,300 CUP
800-X	4.5	1015	24,900 PSI	5.0	1051	26,200 PSI
HS-6	5.9	1023	24,400 CUP	6.6	1124	30,700 CUP
CFE Pistol	4.4	1041	27,200 PSI	5.0	1156	33,000 PSI
AutoComp	4.3	1012	26,700 PSI	4.8	1101	32,800 PSI
Universal	3.8	993	24,400 CUP	4.3	1096	31,300 CUP
244	3.6	1009	26,100 PSI	4.1	1119	33,300 PSI
231	3.9	1009	25,700 CUP	4.4	1086	31,200 CUP
HP-38	3.9	1009	25,700 CUP	4.4	1086	31,200 CUP
IMR Target	3.4	980	27,000 PSI	3.8	1061	32,300 PSI
Titegroup	3.6	1002	22,900 CUP	4.0	1096	30,400 CUP
700-X	2.9	899	23,700 PSI	3.4	1003	31,600 PSI
Clays	2.9	899	22,700 CUP	3.3	993	30,900 CUP
Bullet: 125 GR. SIE FMJ Dia: .355″ Col: 1.090″						
Longshot	4.7	1022	28,100 PSI	5.7	1162	33,400 PSI

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
572	4.3	1001	25,600 PSI	4.9	1119	31,600 PSI
HS-6	6.4	1131	25,600 CUP	6.8	1169	27,100 CUP
CFE Pistol	4.6	1009	26,900 PSI	5.1	1118	33,000 PSI
AutoComp	4.7	1055	28,900 PSI	5.2	1120	33,300 PSI
Universal	4.3	1031	26,900 CUP	4.9	1118	30,600 CUP
244	3.6	996	27,100 PSI	4.1	1091	32,500 PSI
231	4.4	1009	24,600 CUP	4.8	1088	28,800 CUP
HP-38	4.4	1009	24,600 CUP	4.8	1088	28,800 CUP
IMR Target	3.9	1029	30,100 PSI	4.3	1082	32,700 PSI
Titegroup	4.1	1069	27,300 CUP	4.4	1136	30,600 CUP
700-X	3.0	845	21,600 PSI	3.6	1007	31,000 PSI
Clays	3.5	1010	28,000 CUP	3.7	1056	32,500 CUP
Bullet: 130 GR. BERB RN			**Dia: .356″**		**Col: 1.150″**	
Longshot	5.2	970	27,500 PSI	5.8	1115	33,900 PSI
572	4.6	990	25,600 PSI	5.2	1131	33,500 PSI
800-X	5.3	1032	28,700 PSI	5.8	1104	31,000 PSI
HS-6	5.9	970	28,300 PSI	6.5	1097	31,800 PSI
AutoComp	4.8	990	27,500 PSI	5.3	1093	33,500 PSI
Universal	3.8	857	26,600 PSI	4.2	978	31,500 PSI
244	3.9	1005	27,300 PSI	4.4	1097	33,400 PSI
231	3.9	903	27,600 PSI	4.3	1005	33,000 PSI
HP-38	3.9	903	27,600 PSI	4.3	1005	33,100 PSI
Titegroup	3.5	895	27,400 PSI	3.9	1006	32,100 PSI
700-X	3.5	904	26,300 PSI	3.9	998	31,100 PSI
Clays	2.7	755	27,400 PSI	3.0	853	31,700 PSI
Bullet: 135 GR. ACME RN CTD Col: 1.150″					**Dia: .356″**	
Longshot	4.5	964	25,000 PSI	5.5	1112	32,900 PSI
572	4.6	1009	27,900 PSI	5.2	1108	33,500 PSI
HS-6	5.3	969	27,100 PSI	5.9	1080	33,400 PSI
CFE Pistol	4.2	974	25,900 PSI	4.8	1092	33,500 PSI
AutoComp	4.3	969	26,700 PSI	5.0	1087	33,800 PSI
Universal	3.8	973	27,700 PSI	4.3	1073	33,300 PSI
244	3.6	934	27,300 PSI	4.1	1044	33,200 PSI
231	3.6	937	28,400 PSI	4.2	1028	33,200 PSI
IMR Target	3.7	978	27,400 PSI	4.1	1070	33,400 PSI
Titegroup	3.3	938	28,500 PSI	3.8	1040	33,400 PSI
IMR Red	3.4	922	26,300 PSI	3.9	1039	33,500 PSI
700-X	3.4	947	27,500 PSI	3.8	1033	33,200 PSI
Clays	2.9	883	26,100 PSI	3.4	997	33,300 PSI
Bullet: 145 GR. ACME RN CTD Col: 1.150″					**Dia: .356″**	
Longshot	4.1	907	27,500 PSI	4.9	1049	33,200 PSI
572	3.7	865	25,700 PSI	4.4	1008	33,700 PSI
HS-6	4.5	852	25,500 PSI	5.3	995	33,100 PSI
CFE Pistol	3.6	867	25,800 PSI	4.3	1001	33,700 PSI
AutoComp	3.7	862	25,300 PSI	4.4	1006	33,400 PSI
Universal	3.2	853	25,100 PSI	3.8	985	33,100 PSI
244	3.0	829	26,500 PSI	3.6	978	33,900 PSI
IMR Target	3.0	856	25,900 PSI	3.6	994	33,600 PSI
Titegroup	2.9	851	26,700 PSI	3.4	957	33,400 PSI
700-X	2.9	835	26,900 PSI	3.4	948	33,300 PSI
Bullet: 147 GR. FMJ			**Dia: .355″**		**Col: 1.169″**	
WSF	3.9	895	28,400 PSI	4.3	950	32,300 PSI
Bullet: 147 GR. HDY XTP			**Dia: .355″**		**Col: 1.100″**	
Longshot	3.8	851	25,700 PSI	4.7	1004	33,800 PSI
572	3.5	855	25,600 PSI	4.1	957	32,200 PSI
800-X	3.5	808	25,600 PSI	4.0	883	28,900 PSI
HS-6	4.3	773	20,200 CUP	5.0	885	27,900 CUP
CFE Pistol	3.7	864	26,700 PSI	4.2	963	33,000 PSI
AutoComp	3.6	827	27,900 PSI	4.0	916	32,800 PSI
Universal	3.0	803	24,100 CUP	3.3	869	31,000 CUP
244	3.0	827	26,200 PSI	3.4	931	33,000 PSI
231	3.0	755	30,100 PSI	3.4	845	34,300 PSI
HP-38	3.0	755	30,100 PSI	3.4	845	34,300 PSI
IMR Target	3.2	840	28,100 PSI	3.5	927	33,500 PSI
Titegroup	3.2	855	22,500 CUP	3.6	929	27,500 CUP
700-X	2.6	764	27,300 PSI	2.9	838	32,000 PSI
Bullet: 147 GR. JHP			**Dia: .355″**		**Col: 1.169″**	
WSF	4.0	900	30,100 PSI	4.3	935	32,300 PSI
Bullet: 147 GR. LEAD CFP			**Dia: .355″**		**Col: 1.169″**	
WSF	3.7	905	28,500 PSI	4.1	965	32,800 PSI

38 SUPER AUTO

Case: Remington Twist: 1:16″
Barrel: 5″ Trim: .895″ Primer: Remington 1 1/2, Small Pistol

Bullet: 90 GR. CEB RAPTOR			**Dia: .355″**		**Col: 1.275″**	
Longshot	7.3	1377	28,800 PSI	8.0	1530	33,900 PSI
572	6.8	1407	30,000 PSI	7.4	1509	35,200 PSI
HS-6	8.4	1386	28,800 PSI	9.2	1517	34,200 PSI
CFE Pistol	6.7	1400	29,800 PSI	7.3	1515	35,100 PSI
AutoComp	6.7	1338	27,400 PSI	7.3	1479	34,200 PSI
Universal	6.0	1329	28,200 PSI	6.6	1476	34,700 PSI
244	5.8	1355	30,900 PSI	6.3	1449	35,000 PSI
HP-38	5.8	1334	32,000 PSI	6.3	1422	35,500 PSI
IMR Target	5.8	1371	30,400 PSI	6.4	1501	34,900 PSI
Titegroup	5.3	1345	30,700 PSI	5.8	1436	35,500 PSI
Bullet: 90 GR. SIE JHP			**Dia: .355″**		**Col: 1.180″**	
Longshot	7.8	1448	27,600 CUP	8.4	1526	32,100 CUP
HS-6	8.5	1298	24,300 CUP	9.5	1392	32,000 CUP
CFE Pistol	7.0	1391	24,600 CUP	7.6	1482	31,800 CUP
AutoComp	6.6	1311	27,100 CUP	7.2	1388	32,500 CUP
Universal	5.7	1312	26,200 CUP	6.3	1352	31,600 CUP
244	5.9	1397	28,600 PSI	6.6	1506	34,400 PSI
231	6.0	1253	26,700 CUP	6.7	1345	32,000 CUP
HP-38	6.0	1253	26,700 CUP	6.7	1345	32,000 CUP
IMR Target	6.2	1415	26,800 PSI	6.8	1540	33,700 PSI
Titegroup	5.3	1288	23,200 CUP	6.0	1384	31,200 CUP
Bullet: 95 GR. BAR TAC-XP			**Dia: .355″**		**Col: 1.255″**	
Longshot	6.6	1339	25,800 CUP	7.3	1454	32,000 CUP
572	6.1	1273	24,500 PSI	7.0	1450	34,300 PSI
HS-6	7.3	1269	24,500 CUP	8.3	1434	32,000 CUP
CFE Pistol	6.0	1286	26,100 CUP	6.8	1434	32,700 CUP
AutoComp	5.9	1279	26,900 CUP	6.6	1398	31,700 CUP
Universal	5.0	1232	26,400 CUP	5.4	1323	31,500 CUP
244	5.2	1281	27,800 PSI	6.0	1431	34,800 PSI
231	5.0	1186	25,700 CUP	5.6	1341	32,500 CUP
HP-38	5.0	1186	25,700 CUP	5.6	1341	32,500 CUP
IMR Target	5.7	1364	28,500 PSI	6.2	1460	34,200 PSI
Titegroup	4.6	1334	25,900 CUP	5.1	1334	31,400 CUP
Clays	3.5	1072	27,100 CUP	4.6	1287	32,200 CUP
Titewad	4.2	1184	27,900 CUP	4.6	1247	31,400 CUP
Bullet: 100 GR. SPR JHP			**Dia: .355″**		**Col: 1.215″**	
Longshot	7.2	1343	26,100 CUP	7.9	1446	32,100 CUP
HS-6	8.5	1284	25,500 CUP	9.4	1347	32,500 CUP
Universal	5.4	1233	25,200 CUP	6.0	1327	32,500 CUP
231	5.7	1206	26,300 CUP	6.4	1272	31,500 CUP
HP-38	5.7	1206	26,300 CUP	6.4	1272	31,500 CUP
Titegroup	5.1	1204	25,300 CUP	5.8	1292	31,400 CUP
Bullet: 115 GR. HDY XTP			**Dia: .355″**		**Col: 1.245″**	
Longshot	6.5	1214	25,500 CUP	7.1	1301	31,600 CUP
572	6.2	1212	26,900 PSI	7.1	1355	34,400 PSI
800-X				5.9	1015	21,900 CUP
HS-6	7.8	1212	25,500 CUP	8.5	1314	31,500 CUP
CFE Pistol	6.3	1246	27,700 CUP	6.9	1340	32,600 CUP
AutoComp	5.7	1152	27,400 CUP	6.2	1238	32,000 CUP
Universal	4.9	1141	25,300 CUP	5.5	1225	32,300 CUP
244	5.2	1187	27,300 PSI	6.0	1317	34,900 PSI

Pistol Data

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
231	5.7	1198	29,000 CUP	6.1	1261	32,700 CUP
HP-38	5.7	1198	29,000 CUP	6.1	1261	32,700 CUP
IMR Target	5.7	1273	30,100 PSI	6.2	1352	34,300 PSI
Titegroup	4.7	1107	25,000 CUP	5.3	1208	31,800 CUP
700-X				4.0	955	22,900 CUP
Bullet: 115 GR. LRN			**Dia: .356″**		**Col: 1.250″**	
Longshot	6.5	1180	20,400 CUP	7.3	1289	30,900 CUP
572	5.8	1212	25,700 PSI	6.7	1355	34,500 PSI
HS-6	7.8	1204	24,700 CUP	8.7	1307	31,100 CUP
CFE Pistol	6.0	1200	20,300 CUP	6.5	1310	30,900 CUP
AutoComp	6.0	1178	26,400 CUP	6.5	1246	32,000 CUP
Universal	5.0	1115	21,900 CUP	5.7	1216	31,900 CUP
244	5.0	1171	25,800 PSI	5.8	1312	33,500 PSI
231	4.9	1059	19,700 CUP	5.7	1191	30,700 CUP
HP-38	4.9	1059	19,700 CUP	5.7	1191	30,700 CUP
IMR Target	5.4	1151	25,800 PSI	6.0	1361	33,200 PSI
Titegroup	4.8	1156	26,700 CUP	5.4	1213	31,900 CUP
Clays	4.0	1046	28,600 CUP	4.6	1104	31,600 CUP
Bullet: 124 GR. BERB HBRN TP Col: 1.250″					**Dia: .356″**	
Lil'Gun	12.5	1271	23,100 CUP	13.0	1315	26,600 CUP
Longshot	5.9	1140	22,400 CUP	6.8	1286	31,300 CUP
572	5.8	1160	26,100 PSI	6.7	1297	35,300 PSI
HS-6	7.1	1160	26,100 CUP	8.0	1280	32,500 CUP
CFE Pistol	5.8	1170	26,100 CUP	6.4	1260	32,200 CUP
AutoComp	5.7	1126	25,100 CUP	6.3	1222	32,100 CUP
Universal	4.8	1088	24,300 CUP	5.2	1182	32,100 CUP
244	5.0	1119	24,800 PSI	5.8	1255	34,800 PSI
231	4.7	1062	26,100 CUP	5.4	1200	32,400 CUP
HP-38	4.7	1062	26,100 CUP	5.4	1200	32,400 CUP
IMR Target	5.3	1197	27,400 PSI	5.9	1286	34,000 PSI
Titegroup	4.3	1086	25,100 CUP	4.9	1181	31,000 PSI
Clays	3.8	1000	26,700 CUP	4.4	1126	31,900 CUP
Titewad	4.0	1068	28,600 CUP	4.6	1140	32,000 CUP
Bullet: 125 GR. CAST LCN			**Dia: .356″**		**Col: 1.230″**	
Lil'Gun	12.6	1288	25,900 CUP	14.0C	1379	30,500 CUP
Longshot	6.0	1157	25,100 CUP	6.8	1243	31,200 CUP
572	5.8	1191	26,600 PSI	6.6	1303	34,500 PSI
HS-6	7.2	1151	24,300 CUP	8.1	1264	31,300 CUP
CFE Pistol	5.0	1195	26,100 CUP	6.3	1271	31,800 CUP
AutoComp	5.5	1109	26,300 CUP	6.1	1174	31,700 CUP
Universal	4.7	1110	25,200 CUP	5.3	1171	32,300 CUP
244	4.6	1124	26,600 PSI	5.3	1230	34,200 PSI
231	5.1	1129	27,900 CUP	5.7	1214	32,600 CUP
HP-38	5.1	1129	27,900 CUP	5.7	1214	32,600 CUP
IMR Target	4.9	1060	27,600 PSI	5.4	1190	33,600 PSI
Titegroup	4.5	1114	23,400 CUP	5.1	1199	32,200 CUP
Clays	3.9	1014	27,300 CUP	4.4	1063	31,600 CUP
Bullet: 125 GR. HDY HAP			**Dia: .356″**		**Col: 1.210″**	
Lil'Gun	12.2	1285	23,900 CUP	13.6C	1399	29,700 CUP
Longshot	5.8	1170	25,500 CUP	6.6	1294	32,400 CUP
572	5.5	1135	26,000 PSI	6.3	1266	34,800 PSI
HS-6	6.9	1175	25,700 CUP	7.7	1300	32,300 CUP
CFE Pistol	5.5	1166	26,500 CUP	6.1	1259	32,300 CUP
AutoComp	5.5	1148	24,800 CUP	6.0	1240	31,200 CUP
Universal	4.5	1105	25,500 CUP	5.1	1202	31,700 CUP
244	4.6	1103	27,200 PSI	5.4	1234	34,900 PSI
231	4.8	1113	27,100 CUP	5.4	1237	31,900 CUP
HP-38	4.8	1113	27,100 CUP	5.4	1237	31,900 CUP
IMR Target	5.0	1161	27,100 PSI	5.6	1251	27,100 PSI
Titegroup	4.2	1082	25,400 CUP	4.8	1200	31,600 CUP
Clays	3.6	1034	25,900 CUP	4.2	1132	32,100 CUP
Titewad	3.8	1050	26,300 CUP	4.4	1136	31,200 CUP
Bullet: 125 GR. SIE FMJ			**Dia: .355″**		**Col: 1.275″**	
Lil'Gun	13.5	1317	27,600 CUP	14.0	1353	29,800 CUP
Longshot	6.0	1109	24,600 CUP	6.9	1247	32,600 CUP
572	5.9	1171	27,700 PSI	6.7	1287	34,400 PSI
HS-6	7.5	1158	24,600 CUP	8.3	1271	32,100 CUP
CFE Pistol	5.9	1162	25,500 CUP	6.4	1240	32,500 CUP
AutoComp	5.7	1067	26,200 CUP	6.2	1173	31,400 CUP
Universal	4.9	1069	27,600 CUP	5.5	1179	32,300 CUP
244	4.9	1092	26,100 PSI	5.8	1250	35,100 PSI
231	5.1	1098	26,500 CUP	5.7	1159	31,200 CUP
HP-38	5.1	1098	26,500 CUP	5.7	1159	31,200 CUP
IMR Target	5.2	1172	27,900 PSI	5.9	1275	33,900 PSI
Titegroup	4.4	1020	23,800 CUP	5.0	1124	31,800 CUP
Bullet: 130 GR. BERB RN			**Dia: .355″**		**Col: 1.270″**	
Lil'Gun	10.5	1119	25,400 CUP	12.0C	1204	28,300 CUP
Longshot	5.5	1058	27,400 CUP	6.5	1166	32,300 CUP
HS-6	6.5	1010	26,000 CUP	7.5	1127	31,100 CUP
AutoComp	5.3	1035	25,800 CUP	5.8	1109	31,100 CUP
Universal	4.4	984	23,000 CUP	4.9	1073	30,500 CUP
244	5.0	1118	26,300 PSI	5.8	1214	34,500 PSI
Bullet: 135 GR. LRN			**Dia: .356″**		**Col: 1.275″**	
Lil'Gun	11.7	1203	26,400 CUP	13.0C	1314	31,500 CUP
Longshot	5.8	1087	26,600 CUP	6.5	1178	32,200 CUP
572	5.4	1133	26,300 PSI	6.1	1236	34,600 PSI
HS-6	7.2	1123	27,200 CUP	8.0	1190	32,000 CUP
CFE Pistol	5.1	1068	25,600 CUP	5.7	1160	32,000 CUP
AutoComp	5.3	1065	25,400 CUP	5.8	1139	31,400 CUP
Universal	4.5	1011	22,800 CUP	5.1	1108	30,900 CUP
244	4.6	1085	26,400 PSI	5.3	1190	34,300 PSI
231	4.8	1045	27,600 CUP	5.4	1120	31,900 CUP
HP-38	4.8	1045	27,600 CUP	5.4	1120	31,900 CUP
IMR Target	4.8	991	27,000 PSI	5.4	1139	33,600 PSI
Titegroup	4.1	1011	23,700 CUP	4.9	1123	31,700 CUP
Clays	3.5	928	25,600 CUP	4.2	998	32,500 CUP
Bullet: 147 GR. HDY XTP			**Dia: .355″**		**Col: 1.260″**	
Lil'Gun	10.0	1111	22,200 CUP	11.0	1207	28,100 CUP
Longshot	5.4	1042	25,300 CUP	6.0	1119	30,900 CUP
572	5.2	1052	29,400 PSI	5.9	1147	34,700 PSI
HS-6	6.3	997	24,500 CUP	7.0	1106	31,900 CUP
CFE Pistol	5.0	1000	23,600 CUP	5.5	1105	31,200 CUP
AutoComp	5.0	943	25,300 CUP	5.5	1056	32,900 CUP
Universal	4.3	960	26,900 CUP	4.8	1017	32,500 CUP
244	4.4	982	26,700 PSI	5.1	1110	34,200 PSI
231	4.4	965	24,300 CUP	4.9	1032	31,800 CUP
HP-38	4.4	965	24,300 CUP	4.9	1032	31,800 CUP
IMR Target	4.5	1019	27,800 PSI	5.1	1112	33,900 PSI
Titegroup	3.9	976	25,600 CUP	4.4	1066	31,700 CUP
Bullet: 150 GR. CAST LRN			**Dia: .356″**		**Col: 1.230″**	
Longshot	5.0	1076	27,200 CUP	6.2	1162	32,200 CUP
HS-6	6.4	1078	25,400 CUP	7.1	1175	30,900 CUP
Universal	4.5	1038	27,600 CUP	5.0	1111	32,000 CUP
244	3.9	967	26,700 PSI	4.5	1076	34,400 PSI
231	4.5	1026	26,000 CUP	5.1	1135	31,400 CUP
HP-38	4.5	1026	26,000 CUP	5.1	1135	31,400 CUP
IMR Target	4.1	840	27,900 PSI	4.6	947	33,500 PSI
Titegroup	4.3	1066	27,400 CUP	4.8	1131	31,800 CUP
Bullet: 150 GR. SIE JFP			**Dia: .356″**		**Col: 1.265″**	
Lil'Gun	10.0	1106	23,500 CUP	11.0	1206	29,700 CUP
Longshot	5.5	1040	26,900 CUP	6.0	1126	31,800 CUP
HS-6	6.5	1029	26,000 CUP	7.2	1137	31,200 CUP
Universal	4.4	984	26,600 CUP	4.9	1059	32,100 CUP
231	4.5	968	26,000 CUP	5.0	1066	32,100 CUP
HP-38	4.5	968	26,000 CUP	5.0	1066	32,100 CUP
Titegroup	4.0	976	27,000 CUP	4.6	1063	32,100 CUP

38 SUPER AUTO +P

Case: Winchester — Twist: 1:16″
Barrel: 5″ — Trim: .895″ — Primer: Winchester SP, Small Pistol

Powder	Starting Grs.	Starting Vel.	Starting Pressure	Maximum Grs.	Maximum Vel.	Maximum Pressure
Bullet: 115 GR. JHP — Dia: .355″ — Col: 1.280″						
WSF	6.0	1185	28,100 PSI	7.1	1320	34,400 PSI
Bullet: 124 GR. FMJ — Dia: .355″ — Col: 1.280″						
WSF	5.2	1060	25,800 PSI	6.6	1245	34,600 PSI
Bullet: 147 GR. JHP — Dia: .355″ — Col: 1.280″						
WSF	4.8	960	27,300 PSI	5.6	1070	34,400 PSI
Bullet: 160 GR. LEAD — Dia: .355″ — Col: 1.280″						
WSF	3.8	875	25,300 PSI	4.9	1010	34,600 PSI

38 SPECIAL

Case: Winchester — Twist: 1:18.75″
Barrel: 7.7″ — Trim: 1.145″ — Primer: Winchester SP, Small Pistol

Powder	Starting Grs.	Starting Vel.	Starting Pressure	Maximum Grs.	Maximum Vel.	Maximum Pressure
Bullet: 77 GR. PLYCS ARX — Dia: .357″ — Col: 1.475″						
572	6.1	1278	12,900 PSI	7.0	1473	17,000 PSI
CFE Pistol	6.0	1266	13,300 PSI	6.9	1472	16,800 PSI
AutoComp	6.3	1290	13,800 PSI	6.9	1429	16,900 PSI
Universal	5.5	1243	12,900 PSI	6.1	1431	16,400 PSI
244	4.6	1197	13,100 PSI	5.4	1359	16,900 PSI
HP-38	4.7	1171	13,200 PSI	5.3	1300	16,800 PSI
IMR Target	4.6	1253	13,900 PSI	5.4	1408	17,000 PSI
Titegroup	4.2	1193	13,000 PSI	5.0	1377	17,100 PSI
Bullet: 84 GR. PLYCS RNP — Dia: .357″ — Col: 1.475″						
572	6.9	1360	14,400 PSI	7.5	1470	16,700 PSI
CFE Pistol	6.6	1294	13,400 PSI	7.2	1451	16,700 PSI
AutoComp	6.6	1247	12,900 PSI	7.3	1456	17,000 PSI
Universal	5.7	1289	13,600 PSI	6.4	1420	16,600 PSI
244	5.2	1242	13,500 PSI	5.9	1392	16,700 PSI
HP-38	5.4	1230	13,600 PSI	6.0	1338	16,200 PSI
IMR Target	5.0	1265	13,900 PSI	5.8	1419	17,000 PSI
Titegroup	4.6	1224	13,300 PSI	5.4	1378	16,900 PSI
Bullet: 90 GR. CAST LRNFP — Dia: .359″ — Col: 1.325″						
CFE Pistol	3.7	751	7,500 PSI	5.2	1077	10,800 PSI
AutoComp	3.7	790	7,500 PSI	5.1	1089	10,800 PSI
Trail Boss	3.0	740	7,800 PSI	5.0	904	8,100 PSI
IMR Target	2.8	843	7,900 PSI	3.9	1081	11,500 PSI
Titegroup	3.0	755	7,700 PSI	3.5	969	11,300 PSI
IMR Red	2.5	756	8,200 PSI	3.8	1079	12,700 PSI
Clays	2.5	705	7,900 PSI	3.0	938	11,400 PSI
Bullet: 105 GR. CEB RAPTOR — Dia: .358″ — Col: 1.405″						
Longshot	5.5	723	13,400 PSI	6.0	962	16,100 PSI
572	5.1	689	13,100 PSI	5.6	944	16,200 PSI
IMR Blue	7.4	843	15,300 PSI	8.0	939	16,600 PSI
HS-6	6.2	801	14,500 PSI	6.6	935	16,400 PSI
CFE Pistol	5.2	833	14,000 PSI	5.6	972	16,400 PSI
AutoComp	5.1	732	13,300 PSI	5.5	943	16,500 PSI
Universal	4.7	698	14,600 PSI	5.3	901	16,100 PSI
244	4.1	622	14,100 PSI	4.4	789	16,200 PSI
WSF	5.0	618	12,700 PSI	5.2	886	16,000 PSI
Bullet: 110 GR. HDY XTP — Dia: .357″ — Col: 1.455″						
572	5.9	992	12,700 PSI	6.5	1163	16,300 PSI
HS-6	7.0	1071	14,500 CUP	7.8	1178	17,000 CUP
CFE Pistol	6.5	1195	13,900 PSI	6.8	1283	17,300 PSI
AutoComp	5.8	860	11,700 PSI	6.4	1101	16,000 PSI
Universal	5.0	968	11,800 CUP	5.6	1143	16,700 CUP
244	5.0	1070	12,700 PSI	5.6	1205	16,900 PSI
231	4.6	948	12,600 CUP	5.5	1096	16,300 CUP
HP-38	4.6	948	12,600 CUP	5.5	1096	16,300 CUP
IMR Target	4.4	1016	14,000 PSI	5.2	1177	17,300 PSI
Titegroup	4.3	1011	12,100 CUP	4.8	1109	16,000 CUP
IMR Red	4.0	943	13,700 PSI	4.5	1071	16,300 PSI
700-X	4.0	986	14,500 PSI	4.6	1078	16,500 PSI
Clays	4.0	1002	14,400 CUP	4.2	1073	17,000 CUP
Bullet: 125 GR. CAST LRNFP — Dia: .358″ — Col: 1.445″						
572	5.0	972	13,300 PSI	5.8	1112	16,000 PSI
CFE Pistol	5.2	1044	13,500 PSI	6.2	1201	16,100 PSI
AutoComp	5.7	1048	7,300 PSI	6.2	1139	10,800 PSI
Universal	4.3	872	8,700 CUP	4.7	1036	16,800 CUP
244	4.4	994	13,400 PSI	5.2	1142	16,600 PSI
231	3.8	876	10,300 CUP	4.8	1071	16,900 CUP
HP-38	3.8	876	10,300 CUP	4.8	1071	16,900 CUP
Trail Boss	3.0	753	11,600 PSI	5.3	952	13,400 PSI
IMR Target	3.1	853	11,400 PSI	4.3	1077	14,600 PSI
Titegroup	3.2	856	8,400 CUP	3.8	985	12,000 CUP
IMR Red	3.0	826	11,500 PSI	4.2	1066	16,400 PSI
700-X	3.7	982	14,500 PSI	4.2	1076	16,200 PSI
Clays	2.5	810	8,400 CUP	3.5	978	16,900 CUP
Bullet: 125 GR. HDY XTP — Dia: .357″ — Col: 1.455″						
572	5.4	960	14,300 PSI	5.9	1069	16,800 PSI
IMR Blue	7.8	997	13,700 PSI	8.7	1120	16,300 PSI
HS-6	6.5	931	13,100 CUP	7.2	1048	16,600 CUP
CFE Pistol	5.4	995	12,600 PSI	6.3	1133	16,000 PSI
AutoComp	5.7	985	13,600 PSI	6.2	1068	16,500 PSI
Universal	4.7	918	12,600 CUP	5.2	1019	17,000 CUP
244	4.7	951	14,000 PSI	5.2	1077	16,600 PSI
231	4.3	826	13,300 CUP	4.9	934	16,300 CUP
HP-38	4.3	826	13,300 CUP	4.9	934	16,300 CUP
IMR Target	3.9	919	13,900 PSI	4.6	1051	16,800 PSI
Titegroup	4.3	953	12,800 CUP	4.6	1010	15,600 CUP
IMR Red	3.4	756	13,400 PSI	4.1	933	16,200 PSI
700-X	3.6	863	14,300 PSI	4.2	969	17,000 PSI
Clays	3.5	843	12,400 CUP	3.9	937	16,100 CUP
Bullet: 130 GR. MEI CAST LRNFP — Dia: .357″ — Col: 1.460″						
572	5.1	980	14,100 PSI	5.8	1103	17,000 PSI
CFE Pistol	5.3	1053	13,200 PSI	6.1	1175	17,100 PSI
AutoComp	5.5	981	13,600 PSI	6.0	1072	15,800 PSI
Universal	4.7	957	13,500 PSI	5.2	1056	16,000 PSI
244	4.6	1035	14,000 PSI	5.1	1129	16,800 PSI
HP-38	4.1	880	13,200 PSI	4.7	1008	16,100 PSI
IMR Target	3.5	915	12,700 PSI	4.8	1126	16,400 PSI
Titegroup	3.6	922	14,000 PSI	4.2	1018	15,900 PSI
IMR Red	3.4	884	12,800 PSI	4.3	1071	16,600 PSI
700-X	3.5	870	13,300 PSI	4.1	996	16,500 PSI
Clays	3.0	828	12,500 PSI	3.5	924	16,100 PSI
Bullet: 135 GR. CAST LRNFP — Dia: .358″ — Col: 1.418″						
Universal	4.1	924	13,400 CUP	4.6	1025	16,900 CUP
244	4.2	968	13,300 PSI	4.8	1067	15,900 PSI
231	3.7	872	12.500 CUP	4.7	1024	17,000 CUP
HP-38	3.7	872	12,500 CUP	4.7	1024	17,000 CUP
Titegroup	3.1	824	9,600 CUP	3.6	927	12,900 CUP
Clays	2.6	767	11,400 CUP	3.3	910	16,200 CUP
Bullet: 140 GR. HDY COWBOY — Dia: .358″ — Col: 1.450″						
572	4.2	846	13,400 PSI	5.0	996	16,200 PSI
HS-6	6.1	960	13,100 PSI	6.8	1091	16,300 PSI
CFE Pistol	5.0	940	13,000 PSI	5.8	1107	16,200 PSI
AutoComp	5.2	971	14,000 PSI	5.8	1055	16,100 PSI
Universal	4.4	889	12,800 PSI	4.9	1009	15,600 PSI
244	4.2	955	13,600 PSI	4.9	1072	16,800 PSI
231	4.1	861	12,400 PSI	4.6	980	16,100 PSI
HP-38	4.1	861	12,400 PSI	4.6	980	16,100 PSI

Pistol Data

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
WST	3.5	825	12,600 PSI	3.9	903	15,900 PSI
Trail Boss	3.0	697	11,200 PSI	3.7	806	13,400 PSI
IMR Target	3.6	923	13,500 PSI	4.5	1060	16,900 PSI
Titegroup	2.5	675	9,400 PSI	4.4	1010	16,500 PSI
IMR Red	2.5	695	10,600 PSI	4.2	1015	16,500 PSI
700-X	2.5	693	10,000 PSI	4.3	993	16,400 PSI
Clays	2.5	706	10,700 PSI	3.4	862	16,200 PSI
Bullet: 140 GR. HDY XTP			**Dia: .357″**		**Col: 1.455″**	
572	4.8	816	13,900 PSI	5.5	958	16,900 PSI
IMR Blue	7.2	910	13,900 PSI	8.0	1032	16,600 PSI
HS-6	5.8	808	11,000 CUP	6.5	933	16,000 CUP
CFE Pistol	5.2	934	13,300 PSI	5.7	1008	16,300 PSI
AutoComp	5.0	880	14,400 PSI	5.5	989	16,600 PSI
Universal	4.3	832	12,400 CUP	4.8	939	15,400 CUP
244	3.9	797	13,400 PSI	4.5	934	16,700 PSI
231	4.2	809	13,900 CUP	4.6	861	15,800 CUP
HP-38	4.2	809	13,900 CUP	4.6	861	15,800 CUP
IMR Target	3.5	700	13,600 PSI	4.4	926	16,900 PSI
Titegroup	3.9	864	13,100 CUP	4.2	919	15,800 CUP
IMR Red	3.5	756	13,900 PSI	4.1	889	16,400 PSI
700-X	3.3	736	13,300 PSI	3.8	849	16,400 PSI
Clays	3.0	703	13,400 CUP	3.7	869	16,700 CUP
Bullet: 146 GR. SPR JHP			**Dia: .357″**		**Col: 1.370″**	
H4227	9.6	908	12,600 CUP	10.7	979	15,700 CUP
HS-6	5.6	808	11,700 CUP	6.3	969	16,100 CUP
CFE Pistol	4.7	845	13,000 PSI	5.1	964	15,700 PSI
AutoComp	4.6	796	13,100 PSI	5.0	881	14,700 PSI
Universal	4.0	788	11,100 CUP	4.5	933	16,100 CUP
244	3.6	791	14,400 PSI	4.1	898	16,800 PSI
231	4.0	773	12,700 CUP	4.5	876	15,500 CUP
HP-38	4.0	773	12,700 CUP	4.5	876	15,500 CUP
Titegroup	3.5	808	12,800 CUP	4.0	914	16,000 CUP
700-X	3.2	724	13,800 PSI	3.6	815	16,000 PSI
Bullet: 148 GR. HDY LHBWC			**Dia: .358″**		**Col: 1.160″**	
572	2.6	668	13,400 PSI	3.3	799	16,100 PSI
HS-6	4.5	816	9,200 CUP	5.2	943	14,300 CUP
CFE Pistol	3.5	849	14,000 PSI	3.9	914	15,700 PSI
AutoComp	3.7	820	14,100 PSI	4.1	881	15,200 PSI
Universal	2.9	709	7,400 CUP	3.8	940	15,600 CUP
244	2.5	736	13,400 PSI	2.8	817	15,900 PSI
231	3.5	869	14,200 CUP	4.0	956	15,900 CUP
HP-38	3.5	869	14,200 CUP	4.0	956	15,900 CUP
WST	2.5	680	13,000 PSI	2.8	735	16,000 PSI
Trail Boss	2.0	625	15,100 PSI	2.3	675	15,700 PSI
IMR Target	2.4	762	13,300 PSI	3.0	873	16,500 PSI
Titegroup	2.7	771	7,700 CUP	3.3	908	11,800 CUP
IMR Red	1.9	628	10,400 PSI	2.8	828	16,600 PSI
700-X	2.0	686	11,600 PSI	2.5	804	16,000 PSI
Clays	2.3	784	10,900 CUP	2.5	836	13,200 CUP
Bullet: 158 GR. CAST LSWC			**Dia: .358″**		**Col: 1.475″**	
H4227	9.0	887	12,100 CUP	10.0	983	15,700 CUP
572	3.7	776	13,400 PSI	4.5	926	16,400 PSI
HS-6	5.7	928	13,700 CUP	6.3	1010	16,200 CUP
CFE Pistol	4.8	960	13,900 PSI	5.3	1048	16,100 PSI
AutoComp	4.8	870	14,300 PSI	5.3	984	16,800 PSI
Universal	3.5	756	9,600 CUP	4.5	974	16,700 CUP
244	3.6	862	13,400 PSI	4.0	955	16,100 PSI
231	3.1	782	11,900 CUP	3.7	834	14,600 CUP
HP-38	3.1	782	11,900 CUP	3.7	834	14,600 CUP
WST	3.3	705	12,800 PSI	3.7	770	15,700 PSI
Trail Boss	2.7	661	11,400 PSI	4.2	804	13,700 PSI
Titegroup	3.2	815	11,500 CUP	3.8	920	15,400 CUP
IMR Red	2.9	787	12,800 PSI	3.7	927	16,600 PSI
Clays	2.8	812	12,900 CUP	3.1	871	15,100 CUP

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Bullet: 158 GR. HDY XTP			**Dia: .357″**		**Col: 1.455″**	
H4227	9.0	769	12,400 CUP	10.0	864	15,500 CUP
572	3.8	574	13,300 PSI	4.5	770	16,600 PSI
IMR Blue	6.6	834	14,400 PSI	7.3	924	16,500 PSI
HS-6	5.6	761	13,400 CUP	6.2	862	16,300 CUP
CFE Pistol	4.6	816	13,600 PSI	5.0	914	16,200 PSI
AutoComp	4.5	751	14,000 PSI	4.9	865	16,800 PSI
Universal	4.0	678	12,600 CUP	4.4	778	16,200 CUP
244	3.4	665	14,300 PSI	3.8	772	16,200 PSI
231	3.8	661	12,600 CUP	4.3	779	15,900 CUP
HP-38	3.8	661	12,600 CUP	4.3	779	15,900 CUP
IMR Target	3.3	664	13,800 PSI	3.8	800	16,900 PSI
Titegroup	3.5	704	12,400 CUP	3.9	798	15,900 CUP
IMR Red	3.4	641	14,900 PSI	3.7	780	16,700 PSI
700-X	3.2	688	13,000 PSI	3.7	798	15,900 PSI
Clays	3.0	633	13,400 CUP	3.1	721	16,600 CUP
Bullet: 158 GR. MEI CAST LSWC					**Dia: .358″**	
Col: 1.475″						
IMR Blue	6.5	923	14,300 PSI	7.2	1008	16,400 PSI
CFE Pistol	4.4	927	13,800 PSI	5.0	1029	16,700 PSI
IMR Target	3.2	839	12,900 PSI	3.9	955	16,000 PSI
700-X	3.0	795	13,700 PSI	3.4	867	15,800 PSI
Bullet: 170 GR. SIE JHC			**Dia: .357″**		**Col: 1.450″**	
H4227	8.8	762	12,900 CUP	9.8	888	15,900 CUP
HS-6	5.3	710	12,200 CUP	5.9	832	16,100 CUP
AutoComp	4.3	736	14,300 PSI	4.8	820	16,000 PSI
Universal	3.8	744	14,100 CUP	4.2	823	16,100 CUP
231	3.8	683	12,200 CUP	4.1	752	15,800 CUP
HP-38	3.8	683	12,200 CUP	4.1	752	15,800 CUP
Titegroup	3.0	635	11,100 CUP	3.6	764	16,000 CUP
700-X	3.1	639	14,100 PSI	3.5	735	16,700 PSI

38 Special +P

Case: Winchester Twist: 1:18.75″
Barrel: 7.7″ Trim: 1.145″ Primer: Winchester SP, Small Pistol

Bullet: 77 GR. PLYCS ARX		**Dia: .357″**	**Col: 1.475″**
572	7.1	1514	18,100 PSI
CFE Pistol	7.0	1493	17,900 PSI
AutoComp	7.0	1486	18,500 PSI
Universal	6.2	1470	17,600 PSI
244	5.5	1389	17,800 PSI
HP-38	5.4	1355	17,600 PSI
IMR Target	5.5	1438	17,800 PSI
Titegroup	5.1	1412	18,300 PSI
Bullet: 84 GR. PLYCS RNP		**Dia: .357″**	**Col: 1.475″**
572	7.6	1515	18,100 PSI
CFE Pistol	7.4	1516	18,100 PSI
AutoComp	7.5	1506	18,200 PSI
Universal	6.5	1469	18,100 PSI
244	6.0	1424	17,900 PSI
HP-38	6.1	1392	18,200 PSI
IMR Target	5.9	1448	18,000 PSI
Titegroup	5.6	1416	17,800 PSI
Bullet: 105 GR. CEB RAPTOR			**Dia: .357″**
Col: 1.430″			
Longshot	6.5	1071	18,200 PSI
572	6.0	1042	18,300 PSI
IMR Blue	8.3	1018	17,900 PSI
HS-6	6.9	1007	18,300 PSI
CFE Pistol	5.9	1080	18,100 PSI
AutoComp	5.9	1049	17,900 PSI
Universal	5.3	937	18,100 PSI
244	4.7	929	18,200 PSI
WSF	5.7	1007	18,200 PSI

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Bullet: 110 GR. HDY XTP				**Dia: .357″**		**Col: 1.455″**
Longshot				7.6	1337	17,700 PSI
572				6.6	1216	18,400 PSI
HS-6				8.4	1268	19,600 CUP
CFE Pistol				7.0	1303	18,400 PSI
AutoComp				7.0	1228	17,400 PSI
Universal				6.0	1204	18,700 CUP
244				6.2	1274	18,400 PSI
HP-38				5.9	1155	18,700 CUP
IMR Target				5.6	1283	18,600 PSI
Titegroup				5.2	1185	18,800 CUP
IMR Red				5.0	1159	18,300 PSI
700-X				4.8	1140	17,700 PSI
Bullet: 125 GR. HDY XTP				**Dia: .357″**		**Col: 1.455″**
Longshot				7.0	1228	18,300 PSI
572				6.1	1071	18,400 PSI
IMR Blue				9.2	1171	18,000 PSI
HS-6				7.8	1138	19,500 CUP
CFE Pistol				6.4	1199	18,600 PSI
AutoComp				6.4	1073	17,600 PSI
Universal				5.4	1072	18,900 CUP
244				5.6	1124	18,400 PSI
HP-38				5.3	1018	19,800 CUP
IMR Target				5.0	1082	18,000 PSI
Titegroup				5.0	1069	18,700 CUP
IMR Red				4.6	1034	18,400 PSI
700-X				4.4	1023	18,100 PSI
Bullet: 140 GR. HDY XTP				**Dia: .357″**		**Col: 1.455″**
H4227				12.4	1121	19,400 CUP
Longshot				6.4	1126	17,700 PSI
572				5.7	987	18,600 PSI
IMR Blue				8.5	1101	17,900 PSI
HS-6				7.0	992	18,300 CUP
CFE Pistol				6.0	1097	18,600 PSI
AutoComp				5.7	1031	18,000 PSI
Universal				5.1	1022	19,100 CUP
244				4.9	994	17,900 PSI
HP-38				4.9	892	18,600 CUP
IMR Target				4.7	957	18,200 PSI
Titegroup				4.6	984	19,300 CUP
IMR Red				4.5	951	18,000 PSI
700-X				4.1	913	18,200 PSI
Bullet: 146 GR. SPR JHP				**Dia: .357″**		**Col: 1.370″**
H4227				12.0	1085	18,400 CUP
Longshot				5.7	1036	17,400 PSI
HS-6				6.7	1035	18,400 CUP
CFE Pistol				5.5	1023	17,700 PSI
AutoComp				5.2	957	17,500 PSI
Universal				4.7	987	18,100 CUP
244				4.3	924	18,200 PSI
HP-38				4.9	975	17,700 CUP
Titegroup				4.4	981	19,300 CUP
700-X				3.8	854	17,400 PSI
Bullet: 158 GR. HDY XTP				**Dia: .357″**		**Col: 1.455″**
H4227				11.0	964	17,600 CUP
Longshot				5.5	965	17,000 PSI
572				5.0	872	18,400 PSI
IMR Blue				7.7	981	17,900 PSI
HS-6				6.6	926	18,700 CUP
CFE Pistol				5.4	986	18,500 PSI
AutoComp				5.0	885	17,000 PSI
244				4.0	815	17,800 PSI
Universal				4.7	837	19,200 CUP
HP-38				4.6	807	18,100 CUP
IMR Target				4.3	888	18,400 PSI
Titegroup				4.3	905	19,300 CUP
IMR Red				3.9	790	18,400 PSI
700-X				4.0	866	18,500 PSI
Bullet: 170 GR. SIE JHC				**Dia: .357″**		**Col: 1.450″**
H4227				10.6	950	17,600 CUP
Longshot				5.3	939	17,800 PSI
HS-6				6.3	897	18,600 CUP
AutoComp				4.8	844	18,200 PSI
Universal				4.3	847	18,600 CUP
HP-38				4.4	819	18,100 CUP
Titegroup				4.0	846	19,000 CUP
700-X				3.7	775	18,000 PSI

357 SIG

Case: Federal Twist: 1:16″
Barrel: 4″ Trim: .860″ Primer: Winchester SP, Small Pistol

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Bullet: 90 GR. HDY XTP				**Dia: .355″**		**Col: 1.135″**
572	8.8	1526	28,300 PSI	10.3	1696	38,900 PSI
Universal	7.2	1428	27,000 PSI	8.1	1578	36,900 PSI
HP-38	6.6	1404	29,000 PSI	7.3	1509	37,500 PSI
Bullet: 90 GR. HDY XTP				**Dia: .355″**		**Col: 1.135″**
HS-6	9.8	1484	28,200 PSI	10.8	1634	38,700 PSI
CFE Pistol	8.0	1401	27,600 PSI	9.5	1642	38,200 PSI
244	7.2	1468	27,000 PSI	8.1	1629	37,900 PSI
Bullet: 115 GR. HDY XTP				**Dia: .355″**		**Col: 1.135″**
Longshot	9.0	1339	35,200 PSI	10.0	1497	37,300 PSI
572	7.6	1327	29,200 PSI	8.8	1482	39,000 PSI
HS-6	8.7	1319	31,300 PSI	9.4	1412	38,800 PSI
CFE Pistol	7.2	1277	29,100 PSI	8.2	1431	38,400 PSI
Universal	6.5	1272	31,600 PSI	7.3	1375	39,200 PSI
244	6.1	1272	28,900 PSI	6.9	1387	38,300 PSI
Bullet: 124 GR. HDY XTP				**Dia: .355″**		**Col: 1.135″**
Longshot	8.3	1344	33,500 PSI	9.3	1429	37,900 PSI
572	7.0	1228	28,300 PSI	8.2	1400	38,600 PSI
HS-6	8.0	1233	30,300 PSI	9.0	1339	38,700 PSI
CFE Pistol	6.6	1181	27,400 PSI	7.6	1342	37,800 PSI
Universal	5.2	1134	27,500 PSI	5.8	1235	38,500 PSI
244	6.0	1219	28,500 PSI	6.7	1331	38,700 PSI
Bullet: 125 GR. SPR GD-HP				**Dia: .355″**		**Col: 1.135″**
572	7.2	1149	28,300 PSI	8.4	1399	38,000 PSI
800-X				10.0C	1438	36,100 PSI
CFE Pistol	7.0	1222	29,700 PSI	8.0	1346	38,900 PSI
244	6.1	1196	27,400 PSI	7.0	1340	38,100 PSI
Bullet: 147 GR. HDY XTP				**Dia: .355″**		**Col: 1.140″**
Longshot	6.5	1158	32,100 PSI	7.5	1254	38,700 PSI
572	6.1	1113	29,000 PSI	7.1	1213	38,100 PSI
800-X				9.0	1317	38,000 PSI
HS-6	6.8	1069	27,800 PSI	7.6	1173	36,600 PSI
CFE Pistol	5.4	1029	27,600 PSI	6.3	1148	39,200 PSI
Universal	5.0	1026	29,200 PSI	5.6	1110	38,600 PSI
244	5.2	1070	28,400 PSI	5.9	1177	38,900 PSI
WSF				7.1	1260	33,800 PSI

357 MAGNUM

Case: Winchester Twist: 1:18.75″
Barrel: 10″ Trim: 1.285″ Primer: Winchester SPM, Small Pistol Magnum

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Bullet: 90 GR. CAST LRNFP				**Dia: .359″**		**Col: 1.560″**
Trail Boss	3.5	969	6,800 CUP	5.0	1121	10,700 CUP
Titegroup	3.0	850	6,300 CUP	4.0	1107	9,000 CUP
Clays	2.7	780	6,000 CUP	3.5	1106	12,500 CUP
Bullet: 110 GR. HDY XTP				**Dia: .357″**		**Col: 1.590″**
H4227	18.9	1774	29,600 CUP	21.0	1900	35,500 CUP

Pistol Data

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
296	22.0	1992	32,400 CUP	23.0	2078	37,200 CUP
H110	22.0	1992	32,400 CUP	23.0	2078	37,200 CUP
Longshot	9.5	1676	33,700 CUP	10.5	1800	42,400 CUP
572	8.1	1500	23,100 PSI	9.8	1744	33,100 PSI
HS-6	10.3	1614	32,600 CUP	11.5	1776	42,300 CUP
CFE Pistol	7.3	1452	23,300 PSI	8.5	1641	33,000 PSI
AutoComp	7.7	1483	23,900 PSI	8.6	1631	32,900 PSI
Universal	7.5	1465	35,100 CUP	8.0	1536	40,000 CUP
244	6.8	1413	25,500 PSI	7.9	1577	32,800 PSI
231	8.0	1541	36,200 CUP	9.0	1652	42,500 CUP
HP-38	8.0	1541	36,200 CUP	9.0	1652	42,500 CUP
Titegroup	7.2	1509	35,000 CUP	8.0	1614	41,500 CUP
700-X	5.0	1254	18,600 PSI	7.0	1556	30,600 PSI
Bullet: 125 GR. CAST LRNFP Dia: .358″ Col: 1.580″						
Universal	4.8	1046	11,000 CUP	6.8	1401	34,200 CUP
231	4.6	1052	13,800 CUP	5.5	1185	18,800 CUP
HP-38	4.6	1052	13,800 CUP	5.5	1185	18,800 CUP
Trail Boss	3.5	874	14,900 CUP	5.3	1035	17,900 CUP
Titegroup	4.0	1055	13,800 CUP	5.4	1274	22,800 CUP
Clays	3.5	984	11,900 CUP	5.3	1260	33,000 CUP
Bullet: 125 GR. HDY XTP Dia: .357″ Col: 1.590″						
H4227	18.0	1692	34,400 CUP	20.0	1839	42,000 CUP
296	21.0	1881	38,400 CUP	22.0	1966	41,400 CUP
H110	21.0	1881	38,400 CUP	22.0	1966	41,400 CUP
Longshot	8.7	1529	33,000 CUP	9.7	1647	42,000 CUP
572	7.7	1348	24,800 PSI	9.0	1526	33,100 PSI
HS-6	9.8	1493	34,400 CUP	10.9	1629	42,100 CUP
CFE Pistol	6.9	1340	24,200 PSI	8.0	1480	32,500 PSI
AutoComp	7.5	1352	26,900 PSI	8.2	1455	31,700 PSI
Universal	7.1	1394	34,900 CUP	7.6	1453	39,600 CUP
244	6.8	1321	26,900 PSI	7.5	1394	33,300 PSI
231	7.3	1335	33,800 CUP	8.5	1514	42,700 CUP
HP-38	7.3	1335	33,800 CUP	8.5	1514	42,700 CUP
Titegroup	6.8	1425	36,500 CUP	7.5	1497	41,200 CUP
700-X	4.5	1093	18,300 PSI	6.4	1399	30,400 PSI
Bullet: 125 GR. MEI CAST LRNFP Dia: .358″ Col: 1.580″						
572	7.0	1352	19,900 PSI	8.0	1516	26,600 PSI
CFE Pistol	6.6	1375	22,400 PSI	7.6	1514	27,900 PSI
AutoComp	6.5	1311	20,600 PSI	7.5	1456	27,500 PSI
244	6.0	1308	21,100 PSI	7.0	1451	27,200 PSI
700-X	4.0	1069	13,500 PSI	5.5	1311	21,800 PSI
Bullet: 130 GR. MEI CAST LRNFP Dia: .358″ Col: 1.580″						
572	6.4	1245	18,000 PSI	7.8	1464	26,900 PSI
CFE Pistol	6.3	1300	19,000 PSI	7.7	1497	26,700 PSI
AutoComp	6.0	1216	18,700 PSI	7.3	1392	25,000 PSI
244	5.5	1244	19,400 PSI	6.7	1421	27,400 PSI
700-X	4.0	1059	15,000 PSI	5.5	1299	24,800 PSI
Bullet: 135 GR. CAST LRNFP Dia: .358″ Col: 1.580″						
572	5.1	1042	13,100 PSI	7.0	1343	23,400 PSI
Universal	4.8	986	11,700 CUP	6.5	1314	27,800 CUP
244	4.7	1114	16,700 PSI	6.4	1360	26,400 PSI
231	4.1	946	11,700 CUP	5.3	1027	19,400 CUP
HP-38	4.1	946	11,700 CUP	5.3	1027	19,400 CUP
Titegroup	3.5	906	13,100 CUP	5.2	1186	24,500 CUP
Clays	3.4	914	12,200 CUP	5.1	1207	30,200 CUP
Bullet: 140 GR. HDY CBOY Dia: .358″ Col: 1.550″						
572	3.7	811	10,300 PSI	4.2	907	12,200 PSI
CFE Pistol	3.4	711	9,100 PSI	4.1	904	9,900 PSI
AutoComp	3.6	793	8,800 PSI	4.3	883	9,900 PSI
Universal	3.3	767	8,800 PSI	3.9	902	10,600 PSI
244	2.7	745	10,500 PSI	3.5	902	12,900 PSI
231	2.9	718	8,500 PSI	3.7	897	11,200 PSI
HP-38	2.9	718	8,500 PSI	3.7	897	11,200 PSI
Titegroup	2.7	782	8,900 PSI	3.2	899	10,800 PSI
700-X	2.6	769	8,800 PSI	3.2	892	11,900 PSI
Bullet: 140 GR. HDY FTX Dia: .357″ Col: 1.600″						
IMR 4227	11.0	1176	29,900 PSI	13.0	1320	33,000 PSI
H110	12.0	1405	27,800 PSI	14.5	1607	31,100 PSI
Longshot	5.5	1091	22,000 PSI	7.0	1358	33,800 PSI
572	5.9	1144	23,200 PSI	7.2	1371	33,400 PSI
HS-6	6.0	1046	22,500 PSI	7.7	1326	33,400 PSI
CFE Pistol	5.4	1110	19,400 PSI	6.6	1328	32,200 PSI
AutoComp	5.0	1038	22,500 PSI	6.3	1279	33,200 PSI
Universal	4.0	922	19,700 PSI	5.3	1205	34,200 PSI
244	4.5	998	21,500 PSI	5.7	1249	32,900 PSI
Titegroup	3.5	895	20,700 PSI	5.0	1213	33,800 PSI
700-X	3.5	849	19,800 PSI	5.2	1205	31,900 PSI
Bullet: 140 GR. HDY XTP Dia: .357″ Col: 1.590″						
H4227	16.2	1541	33,100 CUP	18.0	1685	42,600 CUP
296	17.1	1597	28,400 CUP	19.0	1762	40,900 CUP
H110	17.1	1597	28,400 CUP	19.0	1762	40,900 CUP
Longshot	8.0	1396	31,300 CUP	9.1	1534	41,000 CUP
572	6.9	1210	24,000 PSI	8.5	1442	33,700 PSI
HS-6	9.5	1411	35,800 CUP	10.5	1539	43,000 CUP
CFE Pistol	6.1	1149	22,600 PSI	7.5	1347	33,000 PSI
AutoComp	6.5	1164	22,000 PSI	7.6	1346	32,400 PSI
Universal	6.5	1218	34,800 CUP	7.0	1299	40,200 CUP
244	6.3	1209	28,100 PSI	7.1	1323	33,200 PSI
231	6.5	1219	30,800 CUP	7.7	1378	41,900 CUP
HP-38	6.5	1219	30,800 CUP	7.7	1378	41,900 CUP
Titegroup	6.3	1262	35,600 CUP	7.0	1376	41,900 CUP
700-X	4.0	927	17,000 PSI	6.0	1267	30,000 PSI
Bullet: 146 GR. SPR JHP Dia: .357″ Col: 1.535″						
H4227	14.5	1440	34,300 CUP	16.0	1566	42,700 CUP
296	15.5	1512	29,200 CUP	17.2	1691	42,600 CUP
H110	15.5	1512	29,200 CUP	17.2	1691	42,600 CUP
Longshot	7.5	1358	33,400 CUP	8.6	1483	42,600 CUP
572	6.5	1212	24,300 PSI	7.5	1394	33,100 PSI
HS-6	8.5	1330	32,900 CUP	9.5	1461	41,800 CUP
CFE Pistol	6.0	1157	23,200 PSI	6.9	1338	32,600 PSI
AutoComp	6.4	1193	26,000 PSI	7.1	1288	32,300 PSI
Universal	6.0	1160	33,500 CUP	6.5	1261	39,900 CUP
244	5.8	1158	24,900 PSI	6.5	1296	33,300 PSI
231	6.0	1176	32,100 CUP	7.1	1330	42,200 CUP
HP-38	6.0	1176	32,100 CUP	7.1	1330	42,200 CUP
Titegroup	5.9	1223	34,600 CUP	6.6	1317	42,900 CUP
700-X	4.5	1025	21,500 PSI	5.7	1233	30,300 PSI
Bullet: 148 GR. HDY LHBWC Dia: .358″ Col: 1.290″						
572	3.7	923	17,100 PSI	4.6	1064	22,900 PSI
CFE Pistol	3.6	927	17,300 PSI	4.5	1085	23,000 PSI
AutoComp	4.0	943	18,000 PSI	4.7	1064	24,300 PSI
Universal	3.5	880	13,700 CUP	4.0	989	17,700 CUP
244	3.2	897	18,600 PSI	4.0	1032	23,900 PSI
231	3.0	845	14,300 CUP	3.4	908	17,600 CUP
HP-38	3.0	845	14,300 CUP	3.4	908	17,600 CUP
Titegroup	2.9	830	14,700 CUP	3.3	909	18,900 CUP
700-X	3.0	892	17,600 PSI	3.5	989	22,300 PSI
Bullet: 158 GR. CAST LSWC Dia: .358″ Col: 1.610″						
HS-6	6.0	990	12,900 CUP	7.0	1106	15,500 CUP
Universal	4.0	890	15,700 CUP	6.2	1247	33,400 CUP
231	3.4	796	12,600 CUP	5.0	1109	23,900 CUP
HP-38	3.4	796	12,600 CUP	5.0	1109	23,900 CUP
Trail Boss	3.2	754	16,500 CUP	4.2	865	20,400 CUP
Titegroup	4.5	1028	19,300 CUP	5.0	1108	24,900 CUP
Clays	3.2	867	14,400 CUP	4.6	1079	33,600 CUP

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Bullet: 158 GR. HDY XTP			**Dia: .357″**		**Col: 1.580″**	
H4227	14.5	1402	34,600 CUP	16.0	1520	42,600 CUP
296	15.0	1418	28,600 CUP	16.7	1591	40,700 CUP
H110	15.0	1418	28,600 CUP	16.7	1591	40,700 CUP
Lil'Gun	16.0	1504	24,100 CUP	18.0	1577	25,800 CUP
Longshot	7.3	1258	31,700 CUP	8.4	1394	43,200 CUP
572	6.5	1092	26,800 PSI	7.4	1241	33,200 PSI
HS-6	8.0	1182	28,000 CUP	9.5	1375	41,900 CUP
CFE Pistol	6.1	1107	26,100 PSI	6.9	1233	33,700 PSI
AutoComp	6.2	1058	25,700 PSI	7.0	1181	33,200 PSI
Universal	5.8	1026	32,100 CUP	6.3	1133	39,300 CUP
244	5.5	1061	26,200 PSI	6.2	1204	33,100 PSI
231	6.2	1108	33,700 CUP	6.9	1220	40,000 CUP
HP-38	6.2	1108	33,700 CUP	6.9	1220	40,000 CUP
Titegroup	5.4	1135	32,600 CUP	6.1	1229	41,900 CUP
700-X	4.5	949	21,900 PSI	5.7	1149	31,200 PSI
Bullet: 158 GR. MEI CAST LSWC Col: 1.620″					**Dia: .358″**	
572	5.6	1112	18,600 PSI	6.7	1275	27,000 PSI
CFE Pistol	5.3	1123	18,100 PSI	6.6	1321	28,500 PSI
AutoComp	5.0	1025	17,600 PSI	6.5	1237	27,000 PSI
244	3.9	922	14,800 PSI	6.0	1250	27,800 PSI
700-X	3.4	867	13,100 PSI	4.9	1137	24,400 PSI
Bullet: 170 GR. SIE JHC			**Dia: .357″**		**Col: 1.580″**	
H4227	13.0	1272	32,300 CUP	14.5	1395	41,200 CUP
296	14.0	1328	25,900 CUP	15.5	1497	40,800 CUP
H110	14.0	1328	25,900 CUP	15.5	1497	40,800 CUP
Lil'Gun	15.0	1422	25,100 CUP	17.0	1576	35,500 CUP
Longshot	6.8	1182	32,700 CUP	7.9	1322	42,600 CUP
HS-6	8.0	1181	30,900 CUP	9.2	1321	42,900 CUP
Titegroup	5.4	1031	34,700 CUP	6.0	1156	41,800 CUP
700-X	4.0	833	22,100 PSI	5.2	1107	32,200 PSI
Bullet: 180 GR. NOS PART			**Dia: .357″**		**Col: 1.575″**	
H4227	12.7	1247	36,900 CUP	13.7	1308	40,900 CUP
296	13.0	1352	36,800 CUP	13.5	1396	39,100 CUP
H110	13.0	1352	36,800 CUP	13.5	1396	39,100 CUP
Lil'Gun	13.0	1279	27,500 CUP	15.0	1422	34,500 CUP
Longshot	6.1	1025	32,700 CUP	7.2	1167	41,700 CUP
572	5.4	882	27,100 PSI	6.1	1024	33,700 PSI
CFE Pistol	5.2	903	27,200 PSI	5.8	1018	33,100 PSI
AutoComp	5.3	869	27,700 PSI	5.9	997	33,700 PSI
244	4.4	763	25,800 PSI	5.2	934	32,900 PSI
Titegroup	5.0	948	38,100 CUP	5.5	1020	40,300 CUP
700-X	4.0	668	25,500 PSI	4.7	846	32,500 PSI

357 REMINGTON MAXIMUM

Case: Remington Twist: 1:18.75″
Barrel: 10″ Trim: 1.600″ Primer: Remington 7 1/2, Small Rifle Magnum

Bullet: 110 GR. HDY XTP			**Dia: .357″**		**Col: 1.910″**	
H4227	26.0	2120		28.0	2314	
H110	29.0	2101		30.0	2242	
Bullet: 125 GR. SPR JSP			**Dia: .357″**		**Col: 1.885″**	
H4227	25.0	1968		27.0	2126	
H110	27.5	2014		28.5	2163	
Bullet: 140 GR. SPR JHP			**Dia: .357″**		**Col: 1.890″**	
H4227	22.0	1866		24.0	1985	
H110	24.0	1836		26.0	2001	
Bullet: 150 GR. NOS SP			**Dia: .357″**		**Col: 1.890″**	
H4227	21.0	1788		23.0	1923	
H110	23.0	1724		25.0	1947	
Bullet: 160 GR. HDY JTC SIL			**Dia: .357″**		**Col: 1.890″**	
H4227	20.5	1709		22.5	1814	
H110	22.0	1643		24.0	1886	
Bullet: 170 GR. SIE JHC			**Dia: .357″**		**Col: 1.880″**	
H4227	19.0	1638		21.0	1748	
H110	20.0	1690		22.0	1784	
Bullet: 180 GR. FMJ			**Dia: .358″**		**Col: 1.990″**	
296				19.0	1670	46,900 CUP
Bullet: 180 GR. SPR TMJ SIL Col: 1.990″					**Dia: .357″**	
H4227	18.0	1551		20.0	1645	
H110	19.0	1544		21.0	1694	
Bullet: 200 GR. SPR TMJ SIL Col: 1.990″					**Dia: .357″**	
H4227	16.0	1280		18.0	1440	
H110	18.0	1411		20.0	1604	

9 X 18MM MAKAROV

Case: Winchester Twist: 1:10″
Barrel: 4″ Trim: .708″ Primer: Winchester SP, Small Pistol

Bullet: 90 GR. SPR FP			**Dia: .364″**		**Col: .970″**	
Universal	3.5	885	17,900 PSI	3.9	1022	23,000 PSI
HP-38	3.6	948	21,300 PSI	4.0	1031	24,000 PSI
Titegroup	3.3	959	19,200 PSI	3.7	1053	22,900 PSI
Bullet: 95 GR. HDY XTP			**Dia: .364″**		**Col: .965″**	
Universal	3.6	923	20,100 PSI	4.0	1030	23,800 PSI
HP-38	3.4	900	20,500 PSI	3.8	990	24,000 PSI
Titegroup	3.2	926	18,500 PSI	3.6	1022	22,500 PSI

38-40 WINCHESTER

Case: Winchester Twist: 1:36″
Barrel: 5.5″ Trim: 1.295″ Primer: Winchester LP, Large Pistol

Bullet: 140 GR. CAST LRNFP Col: 1.600″					**Dia: .401″**	
Titegroup	5.0	912	7,200 PSI	5.9	983	13,000 PSI
Clays	4.0	778	4,900 PSI	5.0	960	10,100 PSI
Bullet: 180 GR. CAST LRNFP Col: 1.600″					**Dia: .401″**	
Universal	6.9	813	8,200 PSI	7.5	955	11,900 PSI
HP-38	5.8	747	9,400 PSI	6.8	934	13,500 PSI
Trail Boss	4.5	694	7,300 PSI	5.5	800	9,900 PSI
Titegroup	5.0	819	7,000 PSI	6.4	990	13,300 PSI
Clays	4.7	760	8,700 PSI	5.5	889	13,500 PSI

40 S&W*

When an asterisk (*) appears in the title of the cartridge, or in the data, refer to the warning page.

Case: Hornady Twist: 1:16″
Barrel: 4″ Trim: .845″ Primer: Winchester SP, Small Pistol

Bullet: 88 GR. PLYCS ARX			**Dia: .400″**		**Col: 1.135″**	
572	9.1	1469	25,200 PSI	10.8	1673	33,200 PSI
CFE Pistol	8.0	1503	27,200 PSI	9.2	1668	33,200 PSI
AutoComp	8.0	1440	25,500 PSI	9.3	1652	32,700 PSI
Universal	6.6	1424	26,300 PSI	7.8	1607	32,400 PSI
244	5.8	1332	24,900 PSI	6.8	1520	33,200 PSI
HP-38	5.6	1307	25,800 PSI	6.6	1465	33,700 PSI
IMR Target	5.7	1339	24,900 PSI	6.7	1543	33,000 PSI
Titegroup	5.4	1360	26,000 PSI	6.3	1511	33,100 PSI
Bullet: 97 GR. PLYCS RNP			**Dia: .400″**		**Col: 1.135″**	
572	9.0	1426	25,700 PSI	10.4	1626	33,800 PSI
CFE Pistol	7.5	1397	25,400 PSI	8.8	1597	33,900 PSI
AutoComp	7.6	1416	27,400 PSI	9.1	1575	33,100 PSI
Universal	6.5	1370	26,700 PSI	7.7	1540	32,100 PSI
244	5.6	1285	25,000 PSI	6.6	1458	33,200 PSI

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
HP-38	5.6	1240	24,300 PSI	6.6	1420	33,000 PSI
IMR Target	5.7	1304	25,500 PSI	6.7	1496	33,300 PSI
Titegroup	5.3	1295	24,700 PSI	6.3	1476	33,500 PSI
Bullet: 115 GR. LGH XD Dia: .400″ Col: 1.125″						
Longshot	7.8	1245	24,200 PSI	8.5	1367	30,300 PSI
572	7.5	1293	28,500 PSI	8.2	1377	32,400 PSI
HS-6	8.2	1176	26,800 PSI	9.2	1307	32,100 PSI
CFE Pistol	7.1	1240	25,300 PSI	8.0	1398	33,200 PSI
AutoComp	7.1	1219	26,200 PSI	8.0	1386	33,800 PSI
Universal	6.0	1157	24,700 PSI	6.8	1325	33,300 PSI
244	5.8	1173	27,200 PSI	6.6	1315	33,300 PSI
WSF	6.8	1177	25,900 PSI	7.7	1329	33,500 PSI
HP-38	5.5	1110	26,300 PSI	6.2	1240	33,200 PSI
IMR Target	5.8	1178	26,300 PSI	6.5	1333	33,000 PSI
Titegroup	5.3	1165	26,500 PSI	6.0	1301	33,300 PSI
Bullet: 120 GR. CEB RAPTOR Dia: .400″ Col: 1.120″						
Longshot	7.0	1135	26,000 PSI	8.5	1291	31,300 PSI
572	6.4	1168	28,600 PSI	7.2	1257	32,400 PSI
HS-6	6.7	925	23,600 PSI	7.9	1178	33,000 PSI
CFE Pistol	5.9	1107	26,800 PSI	6.7	1259	33,200 PSI
AutoComp	5.9	1048	25,100 PSI	6.7	1240	33,500 PSI
Universal	5.2	1024	25,600 PSI	5.9	1230	33,500 PSI
244	4.8	1035	26,900 PSI	5.4	1151	33,100 PSI
WSF	5.5	1027	26,200 PSI	6.2	1166	33,200 PSI
HP-38	4.5	951	26,700 PSI	5.1	1080	33,600 PSI
IMR Target	4.9	1050	26,100 PSI	5.5	1189	32,400 PSI
Titegroup	4.4	1019	27,500 PSI	4.9	1134	33,100 PSI
Bullet: 125 GR. SFIRE Dia: .400″ Col: 1.120″						
572	5.8	1120	28,300 PSI	6.8	1229	33,200 PSI
CFE Pistol	5.6	1077	21,800 PSI	6.4	1237	32,800 PSI
Universal	4.7	1059	23,500 PSI	5.3	1172	32,300 PSI
244	4.8	1100	26,100 PSI	5.5	1221	32,600 PSI
231	4.8	1060	29,500 PSI	5.4	1132	31,500 PSI
HP-38	4.8	1060	29,500 PSI	5.4	1132	31,500 PSI
IMR Target	4.8	1077	26,200 PSI	5.6	1220	32,000 PSI
Titegroup	4.3	1041	24,700 PSI	4.8	1145	31,300 PSI
700-X	4.6	1069	27,900 PSI	5.2	1143	31,200 PSI
Bullet: 135 GR. NOS JHP Dia: .400″ Col: 1.125″						
Longshot	8.5	1241	25,100 PSI	11.5	1434	31,900 PSI
572	7.3	1188	26,800 PSI	8.1	1302	33,200 PSI
HS-6	9.0	1180	27,400 PSI	10.2	1321	33,600 PSI
CFE Pistol	8.0	1303	29,500 PSI	8.9	1392	33,800 PSI
AutoComp	8.0	1236	26,600 PSI	8.8	1342	32,700 PSI
Universal	6.2	1109	22,000 PSI	6.8	1250	32,000 PSI
244	6.2	1180	26,000 PSI	6.8	1282	32,800 PSI
WSF	7.1	1166	26,000 PSI	7.8	1273	32,200 PSI
231	6.3	1152	29,900 PSI	7.0	1244	33,100 PSI
HP-38	6.3	1152	29,900 PSI	7.0	1244	33,100 PSI
WST	5.5	1089	27,900 PSI	5.9	1143	31,200 PSI
IMR Target	5.8	1134	25,900 PSI	6.7	1275	33,100 PSI
Titegroup	5.8	1155	27,300 PSI	6.4	1251	33,200 PSI
700-X	6.0	1172	27,500 PSI	6.6	1263	32,200 PSI
Clays	4.0	940	22,600 PSI	4.5	1071	32,900 PSI
Bullet: 140 GR. BAR TAC-XP Dia: .400″ Col: 1.135″						
Longshot	6.4	1090	25,800 PSI	7.0	1185	31,400 PSI
572	5.5	1033	27,900 PSI	6.0	1117	33,900 PSI
HS-6	6.8	1025	28,500 PSI	7.2	1096	33,700 PSI
CFE Pistol	5.6	1095	28,600 PSI	6.1	1159	33,800 PSI
AutoComp	5.9	1089	27,400 PSI	6.3	1154	33,000 PSI
Universal	4.3	958	23,100 PSI	4.8	1070	31,200 PSI
244	4.5	1016	26,100 PSI	5.0	1103	32,800 PSI
WSF	5.3	995	26,700 PSI	6.2	1109	34,000 PSI
231	4.4	965	27,300 PSI	4.8	1016	30,400 PSI
HP-38	4.4	965	27,300 PSI	4.8	1016	30,400 PSI
WST	3.6	819	28,200 PSI	4.0	863	31,200 PSI
IMR Target	4.3	961	26,700 PSI	5.0	1096	32,900 PSI
Titegroup	3.5	848	27,800 PSI	4.0	937	32,900 PSI
700-X	3.3	820	26,900 PSI	3.9	933	32,900 PSI
Clays	2.6	713	24,800 PSI	3.0	783	31,900 PSI
Bullet: 150 GR. NOS JHP Dia: .400″ Col: 1.125″						
Longshot	7.5	1184	26,400 PSI	9.3	1320	33,600 PSI
572	6.5	1117	26,700 PSI	7.3	1194	33,000 PSI
HS-6	7.8	1076	25,700 PSI	8.7	1201	32,500 PSI
CFE Pistol	7.0	1141	25,000 PSI	7.8	1267	33,500 PSI
AutoComp	6.6	1105	24,300 PSI	7.3	1220	32,100 PSI
Universal	5.4	1066	25,700 PSI	5.9	1165	32,900 PSI
244	5.6	1086	26,800 PSI	6.3	1183	32,600 PSI
WSF	6.6	1137	29,800 PSI	6.8	1185	33,300 PSI
231	5.2	1024	26,900 PSI	5.8	1116	33,500 PSI
HP-38	5.2	1024	26,900 PSI	5.8	1116	33,500 PSI
WST	5.5	1047	29,400 PSI	5.8	1088	32,300 PSI
IMR Target	5.2	1051	26,300 PSI	6.0	1170	33,100 PSI
Titegroup	5.1	1079	27,700 PSI	5.5	1147	32,600 PSI
700-X	5.2	1080	27,100 PSI	5.5	1143	32,600 PSI
Clays	3.8	923	28,400 PSI	4.0	960	31,700 PSI
Bullet: 155 GR. BAR TAC-XP Dia: .400″ Col: 1.135″						
Longshot	5.9	1042	28,500 PSI	6.6	1090	32,500 PSI
572	5.1	973	26,800 PSI	5.6	1065	33,400 PSI
HS-6	5.7	877	26,100 PSI	6.3	984	33,000 PSI
CFE Pistol	4.8	956	25,700 PSI	5.3	1065	33,300 PSI
AutoComp	4.8	945	25,900 PSI	5.3	1028	32,800 PSI
Universal	4.3	921	27,100 PSI	4.8	1028	32,800 PSI
244	3.8	863	26,400 PSI	4.3	955	33,300 PSI
WSF	4.7	892	26,300 PSI	5.2	987	33,100 PSI
HP-38	3.7	825	26,300 PSI	4.2	909	32,700 PSI
IMR Target	4.4	958	28,300 PSI	5.0	1059	33,500 PSI
Titegroup	3.5	850	25,700 PSI	4.0	967	32,800 PSI
Bullet: 155 GR. BERB FP Dia: .400″ Col: 1.125″						
572	6.5	1087	25,900 PSI	7.2	1174	32,700 PSI
IMR Blue	9.0	1088	26,800 PSI	10.5	1222	32,700 PSI
HS-6	7.8	1054	24,300 PSI	8.8	1200	32,600 PSI
CFE Pistol	7.2	1162	26,400 PSI	7.8	1232	31,900 PSI
AutoComp	6.7	1091	24,800 PSI	7.3	1200	31,600 PSI
Universal	5.5	1049	26,000 PSI	6.0	1145	33,500 PSI
244	5.5	1058	25,700 PSI	6.2	1156	32,500 PSI
WSF	6.2	1030	23,500 PSI	7.1	1164	32,300 PSI
231	5.1	979	24,100 PSI	6.0	1130	33,900 PSI
HP-38	5.1	979	24,100 PSI	6.0	1130	33,900 PSI
WST	5.1	996	27,400 PSI	5.9	1091	33,400 PSI
IMR Target	5.3	1063	27,400 PSI	6.1	1167	33,600 PSI
Titegroup	5.1	1051	26,200 PSI	5.7	1151	33,600 PSI
700-X	4.9	1010	23,300 PSI	5.5	1134	32,700 PSI
Clays	3.7	879	23,500 PSI	4.1	959	31,300 PSI
Bullet: 155 GR. HDY XTP Dia: .400″ Col: 1.125″						
Longshot	7.5	1129	24,900 PSI	9.3	1283	31,900 PSI
572	6.0	1034	26,000 PSI	6.9	1161	33,000 PSI
IMR Blue	9.5	1085	24,700 PSI	10.5	1188	28,100 PSI
HS-6	7.7	1035	26,500 PSI	8.5	1137	33,200 PSI
CFE Pistol	6.6	1103	25,800 PSI	7.4	1219	32,600 PSI
AutoComp	7.0	1109	25,800 PSI	7.8	1223	33,800 PSI
Universal	5.7	1056	23,900 PSI	6.2	1138	31,800 PSI
244	5.1	1032	24,800 PSI	6.0	1155	33,100 PSI
WSF	6.2	1070	26,100 PSI	6.8	1159	32,500 PSI
231	5.0	937	22,900 PSI	6.0	1103	33,000 PSI
HP-38	5.0	937	22,900 PSI	6.0	1103	33,000 PSI
WST	4.6	957	25,400 PSI	5.3	1039	32,500 PSI
IMR Target	5.1	1042	27,000 PSI	5.9	1176	33,400 PSI
Titegroup	5.4	1058	28,400 PSI	5.9	1139	31,700 PSI
700-X	5.2	1054	26,600 PSI	5.8	1138	33,700 PSI

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Clays	3.6	854	23,300 PSI	4.0	942	30,900 PSI
Bullet: 165 GR. BERB FP Dia: .400″ Col: 1.125″						
Longshot	6.9	1091	24,500 PSI	7.8	1199	32,300 PSI
572	6.0	1016	25,500 PSI	6.7	1124	33,100 PSI
IMR Blue	9.0	1036	24,400 PSI	10.0	1152	29,500 PSI
HS-6	7.4	1027	26,900 PSI	8.1	1108	31,300 PSI
CFE Pistol	6.9	1124	28,000 PSI	7.5	1205	33,900 PSI
AutoComp	6.3	1051	25,900 PSI	7.0	1171	33,300 PSI
Universal	4.8	951	24,200 PSI	5.4	1051	30,500 PSI
244	5.0	986	25,400 PSI	5.7	1101	33,000 PSI
WSF	6.1	1034	27,600 PSI	6.5	1081	31,000 PSI
231	4.7	933	25,200 PSI	5.4	1049	33,400 PSI
HP-38	4.7	933	25,200 PSI	5.4	1049	33,400 PSI
WST	4.8	944	27,600 PSI	5.5	1003	30,700 PSI
IMR Target	5.0	996	25,500 PSI	5.8	1116	33,700 PSI
Titegroup	4.5	960	24,300 PSI	5.1	1060	31,800 PSI
700-X	4.6	994	28,100 PSI	5.0	1043	32,100 PSI
Clays	3.4	829	27,500 PSI	3.7	888	32,000 PSI
Bullet: 165 GR. SIE JHP Dia: .400″ Col: 1.125″						
Longshot	7.3	1139	29,600 PSI	7.8	1185	33,400 PSI
572	5.5	976	26,100 PSI	6.2	1111	32,900 PSI
IMR Blue	9.0	1016	23,800 PSI	10.0	1133	29,300 PSI
HS-6	7.3	1013	28,700 PSI	8.0	1098	32,700 PSI
CFE Pistol	6.0	1038	25,500 PSI	6.8	1149	32,400 PSI
AutoComp	6.5	1037	25,600 PSI	7.1	1124	31,500 PSI
Universal	5.1	976	26,800 PSI	5.6	1061	32,900 PSI
244	4.9	994	26,100 PSI	5.5	1092	32,600 PSI
WSF	6.3	1055	28,100 PSI	6.7	1115	32,700 PSI
231	4.8	946	28,100 PSI	5.3	1001	32,500 PSI
HP-38	4.8	946	28,100 PSI	5.3	1001	32,500 PSI
WST	4.5	916	26,400 PSI	5.1	995	33,300 PSI
IMR Target	4.8	983	26,500 PSI	5.6	1105	33,600 PSI
Titegroup	4.6	961	27,000 PSI	5.1	1047	33,600 PSI
700-X	5.0	997	28,000 PSI	5.5	1066	32,900 PSI
Clays	3.5	851	29,900 PSI	3.9	897	33,300 PSI
Bullet: 180 GR. BERB FP Dia: .400″ Col: 1.125″						
Longshot	6.3	1013	26,200 PSI	7.5	1150	33,400 PSI
572	5.4	952	28,000 PSI	6.0	1033	32,900 PSI
IMR Blue	8.0	959	24,000 PSI	9.5	1105	31,900 PSI
HS-6	6.6	924	25,400 PSI	7.4	1041	31,800 PSI
CFE Pistol	5.9	1007	25,500 PSI	6.5	1092	32,600 PSI
AutoComp	5.7	971	26,700 PSI	6.2	1060	33,000 PSI
Universal	4.6	925	28,300 PSI	5.1	1002	33,100 PSI
244	4.8	974	27,400 PSI	5.3	1041	32,900 PSI
WSF	5.5	952	27,600 PSI	6.0	1020	33,500 PSI
231	4.4	872	26,400 PSI	5.1	984	33,500 PSI
HP-38	4.4	872	26,400 PSI	5.1	984	33,500 PSI
WST	4.4	868	26,900 PSI	4.9	932	32,000 PSI
IMR Target	4.7	949	26,700 PSI	5.5	1082	33,900 PSI
Titegroup	4.2	901	27,400 PSI	4.7	988	31,900 PSI
700-X	4.2	900	25,800 PSI	4.7	986	33,500 PSI
Clays	3.0	732	25,400 PSI	3.4	809	32,100 PSI
Bullet: 180 GR. HDY XTP Dia: .400″ Col: 1.125″						
Longshot	6.5	1009	25,000 PSI	8.0	1159	32,300 PSI
572	5.1	915	27,800 PSI	5.7	1002	33,100 PSI
IMR Blue	7.7	949	25,500 PSI	9.2	1094	32,700 PSI
HS-6	6.1	876	25,900 PSI	6.9	976	32,500 PSI
CFE Pistol	5.4	949	25,800 PSI	6.0	1051	32,200 PSI
AutoComp	5.8	975	27,700 PSI	6.3	1053	33,200 PSI
Universal	5.0	973	26,500 PSI	5.8	1046	33,400 PSI
244	4.5	929	28,000 PSI	5.0	1006	33,100 PSI
WSF	5.4	946	28,000 PSI	5.8	1013	32,900 PSI
231	4.1	797	23,800 PSI	5.0	947	32,900 PSI
HP-38	4.1	797	23,800 PSI	5.0	947	32,900 PSI
WST	3.9	830	28,300 PSI	4.3	888	32,400 PSI
IMR Target	4.4	911	27,500 PSI	5.1	1049	33,900 PSI
Titegroup	4.2	877	26,500 PSI	4.7	978	33,300 PSI
700-X	4.3	904	27,700 PSI	4.8	966	32,500 PSI
Clays	3.0	727	26,000 PSI	3.5	847	34,300 PSI
Bullet: 200 GR. HDY XTP Dia: .400″ Col: 1.125″						
Longshot	5.0	836	23,900 PSI	6.0	954	32,500 PSI
572	4.0	765	27,300 PSI	4.6	871	33,800 PSI
IMR Blue	6.5	821	25,300 PSI	8.0	987	33,400 PSI
HS-6	5.5	810	27,000 PSI	6.3	900	32,800 PSI
CFE Pistol	4.4	833	27,800 PSI	4.8	897	33,500 PSI
AutoComp	4.8	838	27,900 PSI	5.2	894	32,100 PSI
Universal	4.0	824	25,000 PSI	4.7	903	33,600 PSI
244	3.8	809	27,300 PSI	4.3	894	33,200 PSI
WSF	4.4	786	27,300 PSI	4.8	867	33,100 PSI
231	3.9	737	25,900 PSI	4.7	857	33,400 PSI
HP-38	3.9	737	25,900 PSI	4.7	857	33,400 PSI
WST	3.0	654	25,300 PSI	3.4	733	31,100 PSI
IMR Target	3.6	770	26,200 PSI	4.2	886	33,500 PSI
Titegroup	3.4	744	27,200 PSI	3.8	822	31,700 PSI
700-X	3.5	744	27,000 PSI	3.9	810	30,700 PSI

10MM AUTO

Case: Winchester Twist: 1:16″
Barrel: 5″ Trim: .987″ Primer: Winchester LP, Large Pistol

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Bullet: 120 GR. CEB RAPTOR Dia: .400″ Col: 1.250″						
Longshot	9.7	1402	27,700 PSI	10.5	1447	29,800 PSI
572	7.0	1165	25,400 PSI	8.5	1443	35,700 PSI
HS-6	8.7	1163	27,700 PSI	9.8	1345	35,700 PSI
CFE Pistol	7.1	1201	26,900 PSI	8.0	1386	35,100 PSI
AutoComp	7.2	1200	28,000 PSI	8.1	1377	35,800 PSI
Universal	6.2	1139	26,500 PSI	7.0	1328	35,600 PSI
244	6.0	1163	28,100 PSI	6.8	1323	36,100 PSI
WSF	6.9	1122	25,000 PSI	8.0	1338	34,700 PSI
231	5.7	1074	27,000 PSI	6.5	1251	36,100 PSI
IMR Target	6.0	1182	28,200 PSI	6.9	1346	35,300 PSI
Titegroup	5.5	1141	28,300 PSI	6.2	1289	34,800 PSI
Bullet: 135 GR. NOS JHP Dia: .400″ Col: 1.250″						
HS-6	10.0	1318	31,300 PSI	11.2	1435	36,900 PSI
CFE Pistol	9.0	1404	26,900 PSI	10.2	1551	35,900 PSI
AutoComp	8.7	1372	28,400 PSI	9.5	1476	34,500 PSI
Universal	7.0	1284	30,200 PSI	8.0	1416	36,100 PSI
Titegroup	7.2	1362	28,300 PSI	8.0	1459	35,800 PSI
Bullet: 140 GR. BAR TAC-XP Dia: .400″ Col: 1.260″						
HS-6	8.2	1191	27,800 PSI	9.3	1327	35,700 PSI
CFE Pistol	6.6	1225	26,800 PSI	7.6	1339	34,100 PSI
Universal	5.6	1171	29,500 PSI	6.1	1232	36,000 PSI
244	5.6	1157	27,000 PSI	6.5	1281	35,300 PSI
WSF	6.6	1162	27,800 PSI	7.5	1284	35,300 PSI
231	5.4	1074	26,400 PSI	6.2	1211	35,300 PSI
HP-38	5.4	1074	26,400 PSI	6.2	1211	35,300 PSI
Titegroup	5.0	1114	26,400 PSI	6.0	1265	35,600 PSI
Bullet: 150 GR. LGH XD Dia: .400″ Col: 1.250″						
Longshot	7.0	1069	28,000 PSI	8.6	1268	36,200 PSI
572	6.6	1048	28,700 PSI	7.4	1179	35,700 PSI
HS-6	7.8	1001	26,900 PSI	9.1	1186	35,200 PSI
CFE Pistol	6.5	1049	27,900 PSI	7.3	1210	35,900 PSI
AutoComp	6.7	1059	29,100 PSI	7.5	1213	36,300 PSI
Universal	5.5	956	25,400 PSI	6.4	1122	35,300 PSI
244	5.7	1030	29,300 PSI	6.3	1138	35,500 PSI
WSF	6.2	981	28,500 PSI	7.2	1151	35,900 PSI
231	5.3	933	29,000 PSI	6.0	1084	36,100 PSI
IMR Target	5.6	1029	27,300 PSI	6.5	1187	35,600 PSI
Titegroup	5.0	960	27,500 PSI	5.8	1146	36,400 PSI

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Bullet: 155 GR. BAR TAC-XP Dia: .400″ Col: 1.260″						
Longshot	7.3	1160	28,700 PSI	8.3	1269	35,000 PSI
572	6.1	1076	27,100 PSI	6.9	1191	34,600 PSI
HS-6	7.3	1044	27,100 PSI	8.3	1183	36,000 PSI
CFE Pistol	5.9	1069	26,900 PSI	6.8	1209	36,000 PSI
AutoComp	6.1	1076	26,900 PSI	7.0	1194	36,100 PSI
Universal	5.2	1018	25,200 PSI	6.2	1178	36,200 PSI
244	4.9	1011	27,000 PSI	5.9	1150	36,000 PSI
WSF	6.0	1058	28,800 PSI	7.0	1168	36,800 PSI
231	4.7	967	26,800 PSI	5.6	1104	36,300 PSI
IMR Target	5.1	1040	27,600 PSI	6.0	1190	35,700 PSI
Titegroup	4.6	1026	28,000 PSI	5.5	1140	35,900 PSI
Bullet: 155 GR. HDY XTP Dia: .400″ Col: 1.260″						
800-X				9.8	1350	30,000 PSI
HS-6	8.8	1095	22,400 PSI	11.0	1350	35,000 PSI
CFE Pistol	8.2	1269	26,300 PSI	9.2	1409	34,900 PSI
AutoComp	8.0	1254	29,000 PSI	8.9	1362	35,700 PSI
Universal	6.5	1135	22,600 PSI	7.5	1279	35,200 PSI
244	6.6	1192	27,800 PSI	7.5	1325	34,900 PSI
WSF	6.8	1100	23,000 PSI	8.4	1320	35,600 PSI
231	5.8	1030	23,000 PSI	7.3	1253	35,700 PSI
HP-38	5.8	1030	23,000 PSI	7.3	1253	35,700 PSI
Titegroup	6.4	1211	26,800 PSI	7.2	1315	35,700 PSI
Bullet: 180 GR. SIE JHC Dia: .400″ Col: 1.260″						
Longshot	8.5	1221	31,000 PSI	9.5	1287	34,600 PSI
800-X				8.7	1210	30,000 PSI
HS-6	7.4	940	22,000 PSI	9.4	1127	35,800 PSI
CFE Pistol	6.7	1082	25,600 PSI	7.6	1208	34,000 PSI
AutoComp	7.0	1119	29,800 PSI	7.7	1199	36,000 PSI
Universal	5.4	965	22,300 PSI	6.4	1122	32,200 PSI
244	5.5	1019	26,800 PSI	6.5	1157	35,100 PSI
WSF	5.7	950	25,000 PSI	7.1	1150	35,600 PSI
231	5.2	944	29,700 PSI	5.8	1061	34,900 PSI
HP-38	5.2	944	29,700 PSI	5.8	1061	34,900 PSI
Titegroup	5.4	1051	27,400 PSI	6.0	1141	34,300 PSI
Bullet: 200 GR. HDY FMJ Dia: .400″ Col: 1.260″						
Longshot	7.0	1034	23,900 PSI	8.2	1172	35,000 PSI
800-X				7.8	1130	32,500 PSI
HS-6	7.5	957	26,000 PSI	8.6	1089	35,900 PSI
CFE Pistol	6.1	1007	26,200 PSI	7.1	1123	35,600 PSI
AutoComp	6.0	959	25,900 PSI	7.0	1100	36,100 PSI
Universal	4.9	846	24,300 PSI	5.9	1015	36,900 PSI
244	5.1	946	25,900 PSI	6.0	1068	35,700 PSI
WSF	5.2	880	26,200 PSI	6.2	1020	35,600 PSI
231	4.6	827	24,200 PSI	5.6	1011	35,700 PSI
HP-38	4.6	827	24,200 PSI	5.6	1011	35,700 PSI
Titegroup	4.8	946	28,900 PSI	5.3	1024	36,100 PSI

41 REMINGTON MAGNUM

Case: Remington Twist: 1:18.75″
Barrel: 10.125″ Trim: 1.280″ Primer: Winchester LP, Large Pistol

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Bullet: 170 GR. SIE JHC Dia: .410″ Col: 1.575″						
H4227	22.5	1582	26,100 CUP	24.9	1745	35,600 CUP
296	23.5	1669	21,400 CUP	26.5	1887	37,400 CUP
H110	23.5	1669	21,400 CUP	26.5	1887	37,400 CUP
Longshot	11.0	1504	29,400 CUP	12.5	1646	38,700 CUP
HS-6	12.2	1447	28,100 CUP	13.7	1597	37,200 CUP
Universal	8.0	1229	21,600 CUP	10.3	1488	38,700 CUP
HP-38	8.8	1326	29,500 CUP	9.8	1440	38,300 CUP
Titegroup	8.2	1361	29,800 CUP	9.2	1470	37,700 CUP
700-X				8.4	1375	39,800 CUP
Bullet: 180 GR. BAR XPB FB Dia: .410″ Col: 1.590″						
IMR 4227	16.6	1141	26,300 CUP	18.5C	1364	37,800 CUP
296	17.0	1335	23,000 CUP	19.0	1543	39,400 CUP
H110	17.0	1335	23,000 CUP	19.0	1543	39,400 CUP
Lil'Gun	17.2	1430	23,600 CUP	19.0	1591	30,600 CUP
Longshot	9.0	1247	30,100 CUP	10.4	1415	39,600 CUP
HS-6	10.1	1188	28,600 CUP	11.7	1410	39,100 CUP
CFE Pistol	8.2	1230	31,900 CUP	9.0	1319	39,800 CUP
Universal	6.9	873	29,800 CUP	8.0	1151	39,700 CUP
Titegroup	6.8	1001	31,700 CUP	7.4	1207	39,200 CUP
Bullet: 200 GR. CAST LFP Dia: .410″ Col: 1.550″						
Titegroup	4.5	897	11,400 CUP	5.5	1030	15,300 CUP
Clays	4.0	854	13,400 CUP	5.2	997	21,200 CUP
Bullet: 210 GR. HDY XTP Dia: .410″ Col: 1.580″						
H4227	19.3	1379	28,000 CUP	21.5	1518	38,000 CUP
296	19.8	1465	25,600 CUP	22.0	1631	36,400 CUP
H110	19.8	1465	25,600 CUP	22.0	1631	36,400 CUP
Lil'Gun	20.5	1505	23,500 CUP	22.5	1626	29,900 CUP
Longshot	10.0	1316	31,600 CUP	11.0	1410	38,200 CUP
HS-6	10.6	1186	27,300 CUP	11.8	1321	35,700 CUP
CFE Pistol	9.0	1245	26,100 CUP	10.1	1359	36,500 CUP
AutoComp	9.1	1216	30,500 CUP	9.9	1303	38,200 CUP
Universal	6.9	971	17,700 CUP	8.9	1243	37,700 CUP
HP-38	8.0	1089	27,800 CUP	8.6	1200	39,800 CUP
SR 7625				9.1	1245	39,700 CUP
Titegroup	6.5	1053	24,300 CUP	7.4	1173	33,200 CUP
700-X				7.6	1185	39,000 CUP
Bullet: 215 GR. CAST LFP Dia: .410″ Col: 1.585″						
CFE Pistol	7.1	1102	17,500 CUP	8.2	1229	23,200 CUP
AutoComp	7.0	1052	18,100 CUP	8.0	1158	23,600 CUP
Trail Boss	4.5	752	13,000 CUP	6.5	910	17,100 CUP
Titegroup	4.5	882	12,800 CUP	5.5	1004	17,400 CUP
Clays	4.0	825	24,600 CUP	5.2	979	26,700 CUP
Bullet: 220 GR. SPR JSP Dia: .410″ Col: 1.580″						
H4227	18.0	1296	29,700 CUP	20.0	1433	37,500 CUP
296	18.0	1352	23,000 CUP	20.0	1529	34,000 CUP
H110	18.0	1352	23,000 CUP	20.0	1529	34,000 CUP
Lil'Gun	18.0	1431	24,300 CUP	20.5	1563	31,200 CUP
Longshot	9.0	1208	29,300 CUP	10.1	1311	37,700 CUP
HS-6	10.0	1159	28,800 CUP	11.3	1271	36,700 CUP
CFE Pistol	8.4	1198	28,400 CUP	9.3	1272	36,600 CUP
AutoComp	8.3	1154	32,500 CUP	9.1	1221	38,300 CUP
Universal	6.5	921	18,900 CUP	8.5	1178	38,600 CUP
HP-38	7.2	1031	30,100 CUP	8.0	1125	36,700 CUP
Titegroup	6.4	997	25,300 CUP	7.3	1127	33,700 CUP
Bullet: 245 GR. CAST LSWC Dia: .410″ Col: 1.630″						
H4227	18.0	1272	27,000 CUP	20.0	1444	37,700 CUP
296	18.5	1372	22,800 CUP	21.0	1563	37,400 CUP
H110	18.5	1372	22,800 CUP	21.0	1563	37,400 CUP
Longshot	9.0	1208	29,200 CUP	10.0	1293	37,900 CUP
AutoComp	8.3	1123	26,300 CUP	9.5	1232	36,200 CUP
Universal	6.3	1001	21,200 CUP	8.0	1164	36,000 CUP
Trail Boss	3.5	683	12,600 CUP	6.0	834	16,100 CUP
Titegroup	6.5	1075	28,800 CUP	7.8	1202	39,500 CUP
Bullet: 250 GR. WFNGC Dia: .410″ Col: 1.540″						
H4227	17.0	1302	33,600 CUP	18.4	1398	39,700 CUP
296	17.4	1391	29,400 CUP	18.5	1479	38,700 CUP
H110	17.4	1391	29,400 CUP	18.5	1479	38,700 CUP
Lil'Gun	17.2	1399	30,300 CUP	18.3	1474	36,700 CUP
CFE Pistol	7.6	1126	30,800 CUP	8.6	1222	38,700 CUP
AutoComp	7.5	1075	29,600 CUP	8.5	1163	37,600 CUP
Trail Boss	3.7	611	14,600 CUP	5.0	748	20,300 CUP
Titegroup	6.0	1018	30,400 CUP	6.7	1083	38,600 CUP
Bullet: 255 GR. WFNGC Dia: .410″ Col: 1.660″						
H4227	18.8	1378	33,900 CUP	20.0	1446	38,800 CUP
296	18.0	1327	21,000 CUP	19.5	1491	37,200 CUP
H110	18.0	1327	21,000 CUP	19.5	1491	37,200 CUP

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Lil'Gun	18.8	1424	26,600 CUP	20.0	1500	32,800 CUP
CFE Pistol	8.1	1123	26,900 CUP	9.1	1224	36,800 CUP
AutoComp	7.7	1044	25,300 CUP	8.7	1141	36,000 CUP
Titegroup	7.0	1062	33,300 CUP	7.6	1124	38,600 CUP
Bullet: 265 GR. WLNGC			**Dia: .410″**		**Col: 1.710″**	
H4227	18.6	1366	31,900 CUP	19.8	1429	35,700 CUP
296	19.5	1410	24,400 CUP	20.8	1540	37,600 CUP
H110	19.5	1410	24,400 CUP	20.8	1540	37,600 CUP
Lil'Gun	20.0	1479	28,700 CUP	21.3	1558	35,400 CUP
CFE Pistol	8.2	1132	27,700 CUP	9.2	1220	35,800 CUP
AutoComp	7.7	1040	26,300 CUP	8.7	1132	35,700 CUP
Titegroup	7.0	1064	32,200 CUP	7.6	1116	37,900 CUP

44 S&W SPECIAL

Case: Starline Twist: 1:20″
Barrel: 8″ Trim: 1.155″ Primer: Winchester LP, Large Pistol

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Bullet: 165 GR. CAST LRNFP Col: 1.365″			**Dia: .430″**			
CFE Pistol	7.4	1046	10,800 CUP	8.0	1118	12,900 CUP
AutoComp	7.4	1028	8,800 CUP	8.0	1112	13,400 CUP
Universal	5.5	851	5,700 CUP	6.3	1042	10,900 CUP
244	5.7	982	8,900 CUP	6.5	1118	13,600 CUP
HP-38	4.9	893	8,200 CUP	6.0	1040	12,000 CUP
Trail Boss	4.8	865	10,700 CUP	7.0	1005	12,100 CUP
IMR Target	4.9	945	8,600 CUP	6.0	1074	12,900 CUP
Titegroup	4.5	865	7,100 CUP	5.8	1035	13,400 CUP
IMR Red	4.0	809	6,400 CUP	6.1	1093	13,800 CUP
Clays	3.6	836	6,000 CUP	4.6	1009	13,400 CUP
Bullet: 185 GR. CAST LRNFP Col: 1.400″			**Dia: .430″**			
800-X	6.3	951	10,200 CUP	7.1	1031	12,700 CUP
Universal	5.4	823	7,700 CUP	6.4	1031	13,900 CUP
HP-38	4.4	810	8,000 CUP	5.6	953	12,500 CUP
Trail Boss	4.5	791	10,400 CUP	6.6	944	12,600 CUP
IMR Target	5.0	928	9,400 CUP	5.8	1022	13,300 CUP
Titegroup	4.0	819	6,600 CUP	5.5	1025	11,600 CUP
700-X	4.8	929	11,800 CUP	5.4	1013	13,500 CUP
Clays	3.5	810	7,800 CUP	4.2	930	13,200 CUP
Bullet: 200 GR. CAST LRNFP Col: 1.450″			**Dia: .430″**			
H4227	13.0	879	8,600 CUP	15.0	1051	13,100 CUP
572	6.3	903	9,400 CUP	7.3	1015	13,300 CUP
800-X	6.4	912	10,300 CUP	7.4	1011	12,900 CUP
HS-6	8.0	856	7,100 CUP	9.5	1035	12,400 CUP
CFE Pistol	6.3	863	8,200 CUP	7.1	990	12,800 CUP
AutoComp	6.4	880	9,900 CUP	6.9	944	12,000 CUP
Universal	5.5	802	8,200 CUP	6.5	960	12,900 CUP
244	5.4	902	9,900 CUP	6.1	1001	13,700 CUP
HP-38	4.5	743	8,300 CUP	5.6	918	12,500 CUP
Trail Boss	4.3	757	8,700 CUP	6.3	885	13,200 CUP
IMR Target	4.4	828	9,000 CUP	5.5	975	13,500 CUP
Titegroup	4.5	846	8,600 CUP	5.4	973	13,100 CUP
IMR Red	4.6	855	9,300 CUP	5.7	993	13,800 CUP
700-X	4.1	831	9,400 CUP	5.0	943	13,400 CUP
Clays	3.5	748	7,800 CUP	4.5	891	14,000 CUP
Bullet: 200 GR. NOS JHP			**Dia: .429″ Col: 1.460″**			
H4227	13.0	848	9,100 CUP	15.0	1021	13,100 CUP
572	6.4	856	9,800 CUP	7.3	984	13,800 CUP
800-X	6.5	840	10,000 CUP	7.5	972	13,500 CUP
HS-6	8.0	851	8,500 CUP	9.0	960	12,500 CUP
CFE Pistol	6.3	824	9,800 CUP	7.1	938	13,100 CUP
AutoComp	6.5	849	9,500 CUP	7.1	937	12,300 CUP
Universal	6.0	834	9,000 CUP	6.8	967	12,900 CUP
244	5.4	833	9,100 CUP	6.1	933	13,400 CUP
HP-38	5.5	806	10,100 CUP	6.0	898	13,100 CUP
IMR Target	4.8	796	10,800 CUP	5.4	906	13,600 CUP
Titegroup	5.0	849	11,000 CUP	5.4	904	12,700 CUP
IMR Red	5.2	853	10,800 CUP	5.8	932	13,900 CUP
700-X	4.7	824	11,000 CUP	5.3	902	13,500 CUP
Bullet: 220 GR. BERB FP			**Dia: .430″ Col: 1.460″**			
572	6.3	809	8,900 CUP	7.3	952	13,200 CUP
800-X	6.5	826	10,200 CUP	7.5	959	13,500 CUP
HS-6	7.2	750	8,500 CUP	8.7	941	13,700 CUP
AutoComp	6.4	828	8,900 CUP	7.3	937	13,300 CUP
Universal	5.7	748	8,700 CUP	6.5	918	13,700 CUP
244	5.2	712	8,700 CUP	6.1	874	13,500 CUP
231	4.8	695	8,200 CUP	5.8	845	13,000 CUP
HP-38	4.8	695	8,200 CUP	5.8	845	13,000 CUP
Trail Boss	4.0	633	7,300 CUP	5.1	766	12,800 CUP
IMR Target	4.3	705	7,300 CUP	5.1	843	13,200 CUP
Titegroup	4.7	772	9,600 CUP	5.4	875	13,300 CUP
IMR Red	4.9	794	9,900 CUP	5.6	902	13,800 CUP
700-X	4.5	777	9,700 CUP	5.2	872	13,200 CUP
Clays	3.7	638	7,800 CUP	4.4	774	13,600 CUP
Bullet: 240 GR. CAST LSWC			**Dia: .430″ Col: 1.450″**			
572	5.3	799	8,700 CUP	6.3	913	13,100 CUP
800-X	6.3	869	10,300 CUP	7.0	945	13,600 CUP
HS-6	6.5	761	7,500 CUP	8.0	917	13,000 CUP
CFE Pistol	5.6	784	9,800 CUP	6.6	898	13,800 CUP
AutoComp	5.5	769	8,400 CUP	6.5	903	13,400 CUP
Universal	4.9	721	8,000 CUP	5.6	873	13,300 CUP
244	4.4	775	9,200 CUP	5.2	870	13,600 CUP
HP-38	4.2	717	8,400 CUP	5.2	858	13,200 CUP
Trail Boss	4.0	673	9,700 CUP	5.2	763	11,700 CUP
IMR Target	4.1	776	10,400 CUP	4.9	877	13,600 CUP
Titegroup	4.0	758	9,400 CUP	4.8	862	13,100 CUP
IMR Red	4.4	815	10,500 CUP	5.0	886	13,800 CUP
700-X	4.3	811	11,700 CUP	4.9	869	13,800 CUP
Clays	3.2	669	9,000 CUP	4.0	771	13,500 CUP

44-40 WINCHESTER

Case: Winchester Twist: 1:36″
Barrel: 6″ Trim: 1.295″ Primer: Winchester LP, Large Pistol

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Bullet: 160 GR. CAST LFP			**Dia: .430″ Col: 1.600″**			
Titegroup	4.5	750	7,700 PSI	6.2	983	12,200 PSI
Clays	4.2	747	7,400 PSI	5.5	916	12,700 PSI
Bullet: 200 GR. CAST LRNFP Col: 1.600″			**Dia: .430″**			
800-X	8.0	870	9,400 CUP	8.8	965	12,600 CUP
Universal	6.6	722	10,000 PSI	7.3	777	11,100 PSI
HP-38	5.5	711	9,800 PSI	6.5	820	12,400 PSI
Trail Boss	5.5	723	7,800 PSI	6.5	826	11,900 PSI
Titegroup	5.0	758	8,400 PSI	6.2	901	12,900 PSI
700-X	5.0	788	7,100 CUP	5.6	860	11,400 CUP
Clays	4.2	648	8,200 PSI	5.0	765	11,700 PSI

44 REMINGTON MAGNUM

Case: Winchester Twist: 1:20″
Barrel: 8.275″ Trim: 1.280″ Primer: Remington 2 1/2, Large Pistol

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Bullet: 165 GR. LRNFP CAST Col: 1.500″			**Dia: .430″**			
CFE Pistol	8.4	1057	13,900 PSI	9.6	1221	18,400 PSI
AutoComp	8.0	1072	13,100 PSI	9.0	1185	15,300 PSI
Universal	6.5	918	7,700 CUP	7.2	1059	11,500 CUP
244	6.5	1064	13,700 PSI	7.2	1158	15,500 PSI
231	6.0	963	10,100 CUP	7.0	1088	13,900 CUP
HP-38	6.0	963	10,100 CUP	7.0	1088	13,900 CUP
Trail Boss	6.0	960	17,200 PSI	8.0	1086	18,800 PSI
Titegroup	5.3	949	11,800 CUP	6.5	1083	16,400 CUP

Pistol Data

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Clays	4.4	910	8,500 CUP	5.5	1064	15,500 CUP
Bullet: 180 GR. HDY XTP Dia: .430″ Col: 1.600″						
IMR 4227	27.5	1575	24,000 CUP	29.0	1708	31,200 CUP
296	29.0	1714	21,800 CUP	31.5	1896	29,900 CUP
H110	29.0	1714	21,800 CUP	31.5	1896	29,900 CUP
Lil'Gun	29.0	1749	27,400 CUP	31.5	1859	32,300 CUP
Longshot	13.5	1499	29,400 PSI	14.8	1604	34,600 PSI
572	12.5	1474	27,800 PSI	13.8	1606	33,800 PSI
HS-6	15.0	1463	26,400 CUP	17.0	1642	37,700 CUP
CFE Pistol	12.6	1466	27,400 PSI	14.0	1595	34,300 PSI
AutoComp	12.6	1419	26,800 PSI	13.8	1527	31,700 PSI
Universal	9.0	1209	19,000 CUP	11.3	1463	36,900 CUP
244	11.2	1490	28,900 PSI	12.6	1618	34,100 PSI
231	10.0	1327	26,500 CUP	12.0	1509	37,300 CUP
HP-38	10.0	1327	26,500 CUP	12.0	1509	37,300 CUP
Titegroup	10.3	1459	32,700 CUP	11.5	1544	38,400 CUP
Bullet: 185 GR. LRNFP CAST Dia: .430″ Col: 1.540″						
Universal	6.4	919	8,400 CUP	7.4	1070	12,600 CUP
231	5.9	906	9,400 CUP	7.2	1058	14,700 CUP
HP-38	5.9	906	9,400 CUP	7.2	1058	14,700 CUP
Trail Boss	6.2	936	19,500 PSI	7.8	1050	21,100 PSI
Titegroup	5.3	902	9,500 CUP	6.6	1082	16,500 CUP
Clays	4.2	839	8,900 CUP	6.0	1043	18,400 CUP
Bullet: 200 GR. LRNFP CAST Dia: .430″ Col: 1.570″						
572	6.8	900	13,100 PSI	7.8	1031	15,700 PSI
800-X				5.9	813	10,500 CUP
CFE Pistol	7.1	914	14,000 PSI	8.2	1051	16,500 PSI
AutoComp	7.0	939	13,200 PSI	8.0	1038	15,400 PSI
Universal	6.8	897	10,500 CUP	7.8	1045	15,400 CUP
244	6.2	951	13,300 PSI	7.3	1095	16,600 PSI
231	5.8	875	10,800 CUP	7.4	1039	16,700 CUP
HP-38	5.8	875	10,800 CUP	7.4	1039	16,700 CUP
Trail Boss	6.1	890	17,900 PSI	7.7	988	20,700 PSI
Titegroup	5.0	878	11,000 CUP	6.6	1061	17,300 CUP
700-X				4.3	818	11,700 CUP
Clays	4.2	785	8,500 CUP	6.4	1028	20,200 CUP
Bullet: 200 GR. NOS JHP Dia: .429″ Col: 1.600″						
IMR 4227	25.0	1553	29,800 CUP	27.0	1686	37,800 CUP
296	27.5	1708	29,000 CUP	28.5	1806	37,800 CUP
H110	27.5	1708	29,000 CUP	28.5	1806	37,800 CUP
Lil'Gun	27.5	1667	27,500 CUP	29.5	1794	36,200 CUP
Longshot	13.0	1440	30,000 PSI	14.3	1534	34,600 PSI
572	11.7	1376	27,500 PSI	13.4	1498	33,400 PSI
800-X				15.5	1600	39,800 CUP
HS-6	15.0	1440	30,300 CUP	16.7	1569	37,700 CUP
CFE Pistol	12.0	1343	26,500 PSI	13.4	1499	35,000 PSI
AutoComp	12.0	1348	27,000 PSI	13.2	1429	32,500 PSI
Universal	10.0	1303	30,700 CUP	11.1	1398	38,300 CUP
244	10.8	1389	28,200 PSI	12.0	1501	34,500 PSI
231	10.0	1277	28,000 CUP	11.9	1444	37,400 CUP
HP-38	10.0	1277	28,000 CUP	11.9	1444	37,400 CUP
Titegroup	9.7	1331	31,300 CUP	10.8	1433	38,400 CUP
700-X				10.1	1300	40,000 CUP
Bullet: 210 GR. SIE JHC Dia: .430″ Col: 1.600″						
IMR 4227	25.0	1458	29,200 CUP	27.0	1624	37,600 CUP
296	26.0	1615	29,900 CUP	27.0	1665	31,100 CUP
H110	26.0	1615	29,900 CUP	27.0	1665	31,100 CUP
Lil'Gun	26.0	1660	35,500 CUP	27.7	1749	37,900 CUP
Longshot	12.0	1358	28,500 PSI	13.3	1457	35,400 PSI
572	11.4	1311	26,700 PSI	12.7	1434	35,000 PSI
HS-6	13.0	1254	21,900 CUP	16.2	1538	37,900 CUP
CFE Pistol	11.4	1331	29,200 PSI	12.5	1430	35,200 PSI
AutoComp	11.5	1341	27,700 PSI	12.5	1414	34,600 PSI

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Universal	9.0	1190	26,000 CUP	11.0	1365	37,600 CUP
244	10.1	1333	30,000 PSI	11.4	1421	35,300 PSI
231	7.5	985	17,300 CUP	11.7	1398	37,500 CUP
HP-38	7.5	985	17,300 CUP	11.7	1398	37,500 CUP
Titegroup	9.6	1309	33,500 CUP	10.7	1411	38,500 CUP
Bullet: 220 GR. BERB FP Dia: .430″ Col: 1.610″						
Longshot	9.0	894	12,300 PSI	11.8	1189	20,300 PSI
572	8.2	940	14,300 PSI	10.8	1205	23,200 PSI
800-X	8.7	930	13,400 PSI	11.8	1231	20,300 PSI
HS-6	10.2	925	12,900 PSI	13.5	1194	19,900 PSI
CFE Pistol	8.5	948	16,700 PSI	10.9	1197	23,300 PSI
AutoComp	8.3	878	12,700 PSI	10.6	1127	19,900 PSI
Universal	7.3	839	12,200 PSI	9.0	1104	21,200 PSI
244	7.3	972	17,200 PSI	9.4	1204	22,800 PSI
231	6.8	811	12,600 PSI	9.4	1104	20,700 PSI
HP-38	6.8	811	12.600 PSI	9.4	1104	20,700 PSI
Titegroup	5.8	807	12,300 PSI	8.0	1066	20,600 PSI
700-X	5.0	717	11,400 PSI	8.4	1085	20,700 PSI
Bullet: 225 GR. HDY FTX Dia: .430″ Col: 1.665″						
IMR 4227	19.8	1130	26,800 PSI	22.0	1307	34,500 PSI
296	19.4	1338	26,700 PSI	21.5	1482	33,400 PSI
H110	19.4	1338	26,700 PSI	21.5	1482	33,400 PSI
Lil'Gun	18.6	1358	26,600 PSI	20.7	1530	34,300 PSI
Bullet: 225 GR. SPR JHP Dia: .429″ Col: 1.575″						
IMR 4227	23.0	1383	27,400 CUP	25.5	1537	35,700 CUP
296	23.0	1468	25,600 CUP	25.0	1617	36,300 CUP
H110	23.0	1468	25,600 CUP	25.0	1617	36,300 CUP
Lil'Gun	22.5	1508	31,600 CUP	24.7	1623	37,700 CUP
Longshot	11.2	1291	29,300 PSI	12.5	1402	35,200 PSI
572	10.4	1254	28,700 PSI	11.6	1357	33,600 PSI
800-X				15.4	1525	39,800 CUP
HS-6	11.5	1103	20,100 CUP	15.5	1434	38,000 CUP
CFE Pistol	10.5	1248	29,600 PSI	11.6	1333	34,800 PSI
AutoComp	10.8	1266	28,300 PSI	11.8	1352	34,200 PSI
Universal	8.0	1041	18,900 CUP	10.5	1291	37,300 CUP
244	8.7	1205	27,900 PSI	10.3	1290	34,800 PSI
231	8.4	1101	23,900 CUP	11.0	1344	38,200 CUP
HP-38	8.4	1101	23,900 CUP	11.0	1344	38,200 CUP
Titegroup	9.3	1262	31,900 CUP	10.4	1360	38,100 CUP
700-X				9.8	1235	40,000 CUP
Bullet: 240 GR. LSWC CAST Dia: .430″ Col: 1.620″						
IMR 4227				22.0C	1310	33,300 CUP
572	9.5	1168	23,500 PSI	11.4	1327	33,700 PSI
800-X				13.4	1395	39,600 CUP
CFE Pistol	9.9	1171	24,400 PSI	11.7	1299	33,900 PSI
AutoComp	9.8	1162	24,500 PSI	11.6	1303	34,300 PSI
Universal	6.5	852	11,700 CUP	10.2	1276	37,500 CUP
244	8.5	1176	24,800 PSI	10.2	1327	34,400 PSI
231	5.5	800	12,000 CUP	11.0	1334	38,100 CUP
HP-38	5.5	800	12,000 CUP	11.0	1334	38,100 CUP
Trail Boss	6.0	828	19,100 PSI	7.3	917	21,600 PSI
Titegroup	4.7	801	11,100 CUP	10.0	1288	38,400 CUP
700-X				9.5	1185	40,000 CUP
Clays	4.3	759	14,000 CUP	6.2	940	21,800 CUP
Bullet: 240 GR. NOS JHP Dia: .429″ Col: 1.600″						
IMR 4227	22.0	1301	28,400 CUP	24.0	1458	36,100 CUP
296	23.0	1413	25,200 CUP	24.0	1522	36,200 CUP
H110	23.0	1413	25,200 CUP	24.0	1522	36,200 CUP
Lil'Gun	22.5	1465	30,100 CUP	24.5	1582	38,100 CUP
Longshot	11.0	1249	29,400 PSI	12.1	1331	34,500 PSI
572	10.0	1177	24,400 PSI	11.9	1331	34,900 PSI
800-X				14.2	1415	39,600 CUP
HS-6	12.0	1144	22,800 CUP	15.1	1417	38,200 CUP
CFE Pistol	10.2	1164	25,700 PSI	12.0	1304	35,000 PSI
AutoComp	10.0	1129	26,000 PSI	11.5	1250	34,100 PSI

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Universal	8.0	1018	21,900 CUP	10.2	1246	38,200 CUP
244	8.8	1173	25,600 PSI	10.5	1294	34,800 PSI
231	8.0	1021	23,800 CUP	11.0	1272	37,800 CUP
HP-38	8.0	1021	23,800 CUP	11.0	1272	37,800 CUP
Titegroup	9.0	1219	33,500 CUP	10.0	1292	37,700 CUP
Bullet: 270 GR. SPR GDSP			**Dia: .429″**		**Col: 1.600″**	
IMR 4227	20.5	1275	28,400 CUP	22.5	1425	37,400 CUP
296	19.5	1295	29,300 CUP	21.5	1421	37,700 CUP
H110	19.5	1295	29,300 CUP	21.5	1421	37,700 CUP
Lil'Gun	19.0	1305	31,800 CUP	21.5	1439	38,300 CUP
Longshot	9.8	1112	27,900 PSI	11.0	1213	34,100 PSI
572	9.1	1075	27,400 PSI	10.3	1185	33,600 PSI
HS-6	11.0	1036	22,200 CUP	14.0	1305	36,900 CUP
CFE Pistol	9.4	1081	29,100 PSI	10.5	1181	35,300 PSI
AutoComp	9.7	1106	28,000 PSI	10.8	1199	34,600 PSI
Universal	8.5	1049	32,100 CUP	9.5	1128	36,700 CUP
244	8.1	1067	29,000 PSI	9.3	1183	34,900 PSI
231	8.0	992	26,000 CUP	10.2	1194	37,400 CUP
HP-38	8.0	992	26,000 CUP	10.2	1194	37,400 CUP
Titegroup	8.6	1100	33,100 CUP	9.6	1175	37,700 CUP
Bullet: 280 GR. SFT JHP			**Dia: .430″**		**Col: 1.700″**	
IMR 4227	20.0	1215	27,600 CUP	22.0	1373	37,800 CUP
296	18.5	1214	27,000 CUP	20.5	1342	36,100 CUP
H110	18.5	1214	27,000 CUP	20.5	1342	36,100 CUP
Lil'Gun	18.5	1278	34,300 CUP	20.8	1384	38,400 CUP
Longshot	9.8	1076	28,400 PSI	11.0	1189	34,600 PSI
572	9.3	1034	27,200 PSI	10.6	1167	33,500 PSI
HS-6	11.0	1006	23,800 CUP	14.0	1251	37,400 CUP
CFE Pistol	8.7	981	28,600 PSI	9.9	1085	35,100 PSI
AutoComp	9.0	1005	26,600 PSI	10.2	1115	32,500 PSI
Universal	8.0	917	27,400 CUP	9.7	1090	38,200 CUP
244	8.0	994	26,000 PSI	9.4	1136	34,800 PSI
231	8.0	918	26,100 CUP	10.0	1115	37,300 CUP
HP-38	8.0	918	26,100 CUP	10.0	1115	37,300 CUP
Titegroup	8.6	1059	32,100 CUP	9.6	1152	37,000 CUP
Bullet: 300 GR. HDY XTP			**Dia: .430″**		**Col: 1.600″**	
IMR 4227	18.0	1180	30,600 CUP	20.0	1312	38,600 CUP
296	18.0	1266	35,100 CUP	19.0	1325	38,800 CUP
H110	18.0	1266	35,100 CUP	19.0	1325	38,800 CUP
Lil'Gun	15.5	1168	29,600 CUP	17.7	1280	37,600 CUP
Longshot	8.5	983	28,600 PSI	9.5	1071	34,700 PSI
572	7.7	930	27,200 PSI	8.9	1042	34,300 PSI
HS-6	11.0	1048	28,400 CUP	13.0	1214	37,900 CUP
CFE Pistol	7.6	876	27,600 PSI	8.7	987	34,800 PSI
AutoComp	8.0	866	26,300 PSI	9.0	927	33,500 PSI
Universal	8.0	972	31,200 CUP	9.6	1113	38,200 CUP
244	6.7	882	28,300 PSI	7.8	991	34,900 PSI
231	8.0	966	29,400 CUP	10.0	1149	38,100 CUP
HP-38	8.0	966	29,400 CUP	10.0	1149	38,100 CUP
Titegroup	8.6	1079	34,200 CUP	9.6	1186	38,400 CUP
Bullet: 325 GR. BTB LFN GC					**Dia: .430″**	
Col: 1.730″						
IMR 4227	17.0	1041	19,200 CUP	21.0C	1278	34,200 CUP
296	20.0	1264	30,800 CUP	22.0	1368	38,100 CUP
H110	20.0	1264	30,800 CUP	22.0	1368	38,100 CUP
Lil'Gun	17.0	1217	29,400 CUP	20.0	1360	38,600 CUP
Longshot	10.0	1069	28,500 CUP	11.8	1195	38,700 CUP
HS-6	13.0	1155	33,200 CUP	14.0	1218	38,000 CUP
CFE Pistol	9.0	997	27,500 PSI	10.2	1093	35,200 PSI
AutoComp	9.0	1008	26,100 PSI	10.0	1075	30,900 PSI
Universal	8.0	942	27,700 CUP	10.0	1090	38,000 CUP
244	7.7	991	27,800 PSI	8.8	1088	35,200 PSI
231	9.0	1035	32,100 CUP	10.3	1125	38,700 CUP
HP-38	9.0	1035	32,100 CUP	10.3	1125	38,700 CUP
Titegroup	8.0	1001	28,700 CUP	9.2	1091	38,300 CUP
Bullet: 330 GR. BTB LFN GC					**Dia: .430″**	
Col: 1.730″						
IMR 4227	18.0	1132	25,900 CUP	20.7C	1278	34,200 CUP
296	19.0	1239	30,200 CUP	20.8	1350	38,800 CUP
H110	19.0	1239	30,200 CUP	20.8	1350	38,800 CUP
Lil'Gun	16.0	1186	29,800 CUP	19.0	1332	38,000 CUP
Longshot	9.5	1026	27,600 CUP	11.3	1158	38,700 CUP
572	8.6	995	28,200 PSI	9.8	1087	35,200 PSI
HS-6	12.0	1098	29,900 CUP	13.6	1202	39,000 CUP
CFE Pistol	8.6	978	28,500 PSI	9.7	1057	35,100 PSI
AutoComp	8.8	976	25,200 PSI	9.8	1056	30,900 PSI
Universal	8.0	943	27,800 CUP	9.5	1058	37,000 CUP
244	7.3	962	28,200 PSI	8.4	1052	34,900 PSI
231	8.5	992	33,700 CUP	9.7	1081	38,700 CUP
HP-38	8.5	992	33,700 CUP	9.7	1081	38,700 CUP
Titegroup	7.5	952	29,700 CUP	8.5	1035	38,000 CUP
Bullet: 355 GR. BTB LFN GC					**Dia: .430″**	
Col: 1.710″						
IMR 4227	17.5	1125	28,100 CUP	19.0	1223	37,800 CUP
296	17.5	1168	29,300 CUP	18.8	1245	38,000 CUP
H110	17.5	1168	29,300 CUP	18.8	1245	38,000 CUP
Lil'Gun	16.0	1178	31,700 CUP	17.5	1247	37,900 CUP
Longshot	9.0	987	28,400 CUP	10.5	1096	37,800 CUP
572	7.6	909	28,400 PSI	8.7	1001	35,200 PSI
HS-6	11.0	1019	26,800 CUP	12.0	1091	37,400 CUP
CFE Pistol	7.6	896	29,000 PSI	8.3	953	34,000 PSI
AutoComp	7.8	906	25,600 PSI	8.5	959	29,900 PSI
Universal	7.8	922	30,700 CUP	8.8	991	37,300 CUP
244	6.4	878	26,800 PSI	7.4	967	34,600 PSI
231	7.8	928	31,000 CUP	8.8	1001	38,700 CUP
HP-38	7.8	928	31,000 CUP	8.8	1001	37,700 CUP
Titegroup	7.0	907	29,900 CUP	8.2	994	37,600 CUP

45 S&W (SCHOFIELD)

Case: Starline — Twist: 1:16″
Barrel: 5″ — Trim: 1.095″ — Primer: Winchester LP, Large Pistol

Powder	Grs.	Vel.	Pressure	Grs.	Vel.	Pressure
Bullet: 200 GR. LRNFP			**Dia: .452″**		**Col: 1.430″**	
Universal	6.0	773	9,100 CUP	7.0	938	13,100 CUP
231	5.2	745	8,800 CUP	6.2	877	13,000 CUP
HP-38	5.2	745	8,800 CUP	6.2	877	13,000 CUP
Trail Boss	4.0	684	9,000 CUP	5.0	791	13,200 CUP
Titegroup	4.5	715	6,700 CUP	6.0	925	12,100 CUP
Clays	4.0	733	8,300 CUP	5.0	845	13,100 CUP
Bullet: 230 GR. LRNFP			**Dia: .452″**		**Col: 1.430″**	
Universal	5.5	738	9,400 CUP	6.0	816	11,400 CUP
231	5.0	719	9,900 CUP	5.7	816	12,700 CUP
HP-38	5.0	719	9,900 CUP	5.7	816	12,700 CUP
Trail Boss	4.0	649	9,000 CUP	5.0	739	13,000 CUP
Titegroup	4.5	702	7,800 CUP	5.8	866	12,300 CUP
Clays	4.0	697	9,400 CUP	4.7	783	13,600 CUP
Bullet: 250 GR. LRNFP			**Dia: .452″**		**Col: 1.430″**	
Universal	6.0	724	9,900 CUP	6.3	830	13,800 CUP
231	4.5	664	10,100 CUP	5.2	741	12,100 CUP
HP-38	4.5	664	10,100 CUP	5.2	741	12,100 CUP
Trail Boss	3.5	537	7,300 CUP	4.8	685	13,200 CUP
Titegroup	4.5	716	7,900 CUP	5.3	811	11,600 CUP
Clays	4.0	674	11,000 CUP	4.2	710	12,500 CUP

45 GAP (GLOCK AUTO)

Case: Speer — Twist: 1:16″
Barrel: 5″ — Trim: .750″ — Primer: Winchester SP, Small Pistol

Powder	Grs.	Vel.	Pressure	Grs.	Vel.	Pressure
Bullet: 155 GR. LSWC CAST			**Dia: .452″**		**Col: 1.110″**	
AutoComp	6.9	937	17,500 PSI	7.5	1089	21,200 PSI
IMR Target	5.5	1075	17,200 PSI	6.1	1147	22,300 PSI
Titegroup	4.7	1014	17,500 PSI	5.3	1152	21,300 PSI

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Clays	3.9	974	18,000 PSI	4.4	1047	22,300 PSI
Bullet: 160 GR. BAR TAC-XP Dia: .451″ Col: 1.110″						
Longshot	6.5	986	18,800 PSI	7.2	1082	21,700 PSI
572	5.9	938	18,200 PSI	6.5	1041	22,500 PSI
HS-6	6.4	859	18,500 PSI	7.0	936	21,700 PSI
AutoComp	5.4	905	18,300 PSI	6.0	1006	21,600 PSI
Universal	4.3	798	16,600 PSI	4.9	974	22,000 PSI
244	4.6	949	16,400 PSI	5.3	1050	22,300 PSI
231	3.9	765	17,100 PSI	4.6	900	21,200 PSI
HP-38	3.9	765	17,100 PSI	4.6	900	21,200 PSI
IMR Target	4.8	946	18,800 PSI	5.4	1045	21,900 PSI
Titegroup	4.1	888	16,500 PSI	4.6	1000	22,300 PSI
Clays	3.1	692	20,500 PSI	3.3	748	22,600 PSI
Bullet: 185 GR. HDY XTP Dia: .451″ Col: 1.060″						
Longshot	6.5	923	16,400 PSI	7.5	1075	22,500 PSI
HS-6	8.0	890	17,700 PSI	9.0	1017	22,500 PSI
AutoComp	6.7	809	18,100 PSI	7.3	911	21,400 PSI
Universal	5.5	864	17,700 PSI	6.3	1027	22,300 PSI
244	5.0	920	15,700 PSI	5.5	985	22,100 PSI
231	4.8	841	18,200 PSI	5.5	951	21,500 PSI
HP-38	4.8	841	18,200 PSI	5.5	951	21,500 PSI
IMR Target	4.9	898	17,900 PSI	5.7	989	21,400 PSI
Titegroup	4.3	875	18,200 PSI	4.9	974	21,300 PSI
Clays	3.7	816	18,800 PSI	4.1	881	21,400 PSI
Bullet: 200 GR. SPR GDHP Dia: .451″ Col: 1.080″						
Longshot	6.0	892	19,100 PSI	6.8	1000	22,300 PSI
572	6.0	869	19,300 PSI	6.7	947	22,000 PSI
HS-6	7.0	795	17,100 PSI	8.0	921	21,200 PSI
CFE Pistol	6.1	912	16,400 PSI	7.0	1032	20,900 PSI
AutoComp	6.3	727	17,400 PSI	6.9	814	21,100 PSI
Universal	5.2	838	18,500 PSI	5.7	924	20,900 PSI
244	5.2	904	19,200 PSI	5.7	978	22,000 PSI
231	4.5	796	18,400 PSI	4.9	860	20,700 PSI
HP-38	4.5	796	18,400 PSI	4.9	860	20,700 PSI
IMR Target	5.0	835	17,600 PSI	5.4	910	22,400 PSI
Titegroup	4.1	829	18,300 PSI	4.6	908	21,700 PSI
Clays	3.3	718	17,300 PSI	3.7	796	20,400 PSI

45 ACP

Case: Winchester Twist: 1:16″
Barrel: 5″ Trim: .893″ Primer: Federal 150, Large Pistol

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Bullet: 118 GR. PLYCS ARX Dia: .452″ Col: 1.260″						
572	8.8	1242	16,600 PSI	9.7	1349	20,200 PSI
CFE Pistol	8.4	1206	15,200 PSI	9.3	1352	20,200 PSI
AutoComp	8.2	1157	14,400 PSI	9.2	1303	20,000 PSI
Universal	7.1	1157	16,000 PSI	8.1	1291	20,200 PSI
244	6.4	1135	14,600 PSI	7.1	1260	20,100 PSI
HP-38	6.3	1105	15,200 PSI	7.0	1207	20,000 PSI
IMR Target	6.2	1165	16,000 PSI	7.2	1281	20,200 PSI
Titegroup	5.6	1126	14,100 PSI	6.5	1255	20,000 PSI
Bullet: 135 GR. PLYCS RNP Dia: .452″ Col: 1.260″						
572	8.5	1177	15,700 PSI	9.4	1294	20,300 PSI
CFE Pistol	8.2	1163	15,400 PSI	9.1	1288	20,300 PSI
AutoComp	8.2	1133	15,600 PSI	9.1	1250	20,400 PSI
Universal	7.0	1059	14,400 PSI	7.9	1242	20,100 PSI
244	6.1	1043	13,700 PSI	7.0	1200	20,300 PSI
HP-38	6.0	1020	15,100 PSI	6.9	1169	20,300 PSI
IMR Target	5.9	1052	14,600 PSI	6.8	1206	20,000 PSI
Titegroup	5.6	1074	14,900 PSI	6.5	1204	20,100 PSI
Bullet: 150 GR. CEB RAPTOR Dia: .4515″ Col: 1.200″						
Longshot	8.0	976	16,000 PSI	8.9	1127	19,900 PSI
572	7.3	967	15,900 PSI	8.3	1124	20,000 PSI
IMR Blue	10.5	935	16,000 PSI	12.4	1113	20,100 PSI
HS-6	8.8	902	16,200 PSI	9.8	1038	20,100 PSI
CFE Pistol	7.2	959	15,400 PSI	8.0	1119	19,700 PSI
AutoComp	7.4	949	15,700 PSI	8.3	1091	20,000 PSI
Universal	6.3	856	15,000 PSI	7.0	1040	20,100 PSI
244	5.8	883	15,800 PSI	6.5	1013	20,000 PSI
WSF	6.9	909	16,400 PSI	7.7	1035	20,100 PSI
HP-38	5.6	823	16,300 PSI	6.2	965	20,100 PSI
IMR Target	5.8	908	16,900 PSI	6.4	1005	19,800 PSI
Titegroup	5.0	832	15,800 PSI	5.6	961	19,900 PSI
Bullet: 155 GR. CAST LSWC Dia: .451″ Col: 1.230″						
800-X	7.8	1019	13,600 CUP	8.5	1117	17,000 CUP
HS-6	9.0	988	12,000 CUP	10.0	1126	16,300 CUP
CFE Pistol	7.9	1081	14,900 PSI	8.6	1187	19,200 PSI
AutoComp	7.6	1006	13,700 CUP	8.2	1079	16,600 CUP
Universal	6.5	1015	13,000 CUP	7.0	1135	16,700 CUP
244	6.5	1062	15,200 PSI	7.2	1166	19,200 PSI
WSF	7.1	934	11,600 CUP	7.9	1064	15,900 CUP
231	6.0	998	13,400 CUP	6.7	1112	17,100 CUP
HP-38	6.0	998	13,400 CUP	6.7	1112	17,100 CUP
WST	4.9	919	13,100 CUP	5.4	1017	16,700 CUP
IMR Target	5.3	940	15,000 PSI	6.2	1069	19,100 PSI
Titegroup	5.7	1039	14,300 CUP	6.2	1132	17,000 CUP
IMR Red	5.5	977	14,500 PSI	6.5	1116	19,300 PSI
700-X	5.4	1004	13,500 CUP	6.0	1076	16,400 CUP
Clays	4.9	1040	16,100 CUP	5.2	1082	17,700 CUP
Titewad	4.6	1015	15,800 PSI	5.0	1082	18,800 PSI
Bullet: 155 GR. SFIRE Dia: .451″ Col: 1.220″						
572	6.5	933	15,700 PSI	7.7	1130	19,700 PSI
IMR Blue	10.5	998	15,600 PSI	11.2	1040	17,100 PSI
CFE Pistol	6.3	890	15,200 PSI	7.1	1024	18,400 PSI
AutoComp	6.2	875	15,000 PSI	7.0	1000	18,600 PSI
Universal	5.4	828	12,300 CUP	6.0	1050	16,900 CUP
244	5.5	964	15,400 PSI	6.1	1068	19,700 PSI
231	5.6	944	13,800 CUP	6.2	1057	16,700 CUP
HP-38	5.6	944	13,800 CUP	6.2	1057	16,700 CUP
IMR Target	5.4	923	15,800 PSI	6.2	1069	19,500 PSI
Titegroup	5.0	974	13,600 CUP	5.5	1036	16,900 CUP
700-X	5.3	955	14,500 CUP	5.8	1045	16,200 CUP
Bullet: 160 GR. BAR TAC-XP Dia: .451″ Col: 1.200″						
572	6.2	929	15,400 PSI	7.2	1085	19,400 PSI
IMR Blue	9.9	967	15,600 PSI	11.0	1057	18,600 PSI
800-X	7.2	1046	17,800 PSI	7.6	1078	18,800 PSI
HS-6	7.6	951	17,200 PSI	8.5	1048	20,000 PSI
CFE Pistol	6.7	1034	16,900 PSI	7.6	1154	20,000 PSI
AutoComp	6.7	1036	18,400 PSI	7.2	1105	20,100 PSI
Universal	5.4	938	17,100 PSI	5.9	1047	19,500 PSI
244	5.1	971	16,700 PSI	5.5	1034	19,500 PSI
WSF	6.2	972	17,400 PSI	6.8	1043	20,100 PSI
231	5.0	940	17,900 PSI	5.4	992	20,100 PSI
HP-38	5.0	940	17,900 PSI	5.4	992	20,100 PSI
WST	4.2	895	17,200 PSI	4.6	946	19,700 PSI
IMR Target	5.1	944	15,600 PSI	5.4	1079	19,900 PSI
Titegroup	4.7	970	17,100 PSI	5.1	1040	19,900 PSI
IMR Red	4.8	907	16,000 PSI	5.6	1014	19,700 PSI
700-X	4.3	913	16,600 PSI	4.7	982	19,700 PSI
Clays	3.4	833	17,100 PSI	3.9	906	20,000 PSI
Bullet: 180 GR. LFP Dia: .452″ Col: 1.140″						
Longshot	6.5	788	9,800 CUP	8.0	1015	16,900 CUP
572	6.8	965	14,800 PSI	7.6	1076	18,800 PSI
IMR Blue	11.0	986	14,700 PSI	12.5	1126	17,800 PSI
800-X	7.2	925	13,100 CUP	8.0	1031	16,800 CUP
HS-6	7.8	805	10,900 CUP	9.0	961	16,600 CUP
CFE Pistol	7.1	1006	15,500 PSI	8.0	1114	19,500 PSI
AutoComp	6.8	903	12,800 CUP	7.6	1008	16,500 CUP
Universal	5.3	755	11,100 CUP	6.4	1019	17,600 CUP

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
244	5.2	944	15,300 PSI	6.2	1058	19,300 PSI
WSF	6.6	887	12,200 CUP	7.3	1003	16,500 CUP
231	5.0	778	11,300 CUP	6.0	950	16,800 CUP
HP-38	5.0	778	11,300 CUP	6.0	950	16,800 CUP
WST	4.4	846	13,300 CUP	4.9	912	16,100 CUP
Trail Boss	3.5	664	7,100 CUP	5.0	852	13,700 CUP
IMR Target	5.4	975	15,900 PSI	6.4	1082	19,100 PSI
Titegroup	4.2	771	10,200 CUP	5.2	946	16,600 CUP
IMR Red	5.0	919	15,100 PSI	6.0	1058	19,800 PSI
700-X	5.0	903	13,300 CUP	5.6	982	16,000 CUP
Clays	3.8	783	11,600 CUP	4.5	910	16,700 CUP
Titewad	3.7	855	14,800 PSI	4.3	948	19,200 PSI
Bullet: 185 GR. HDY JSWC Dia: .451″ Col: 1.135″						
Longshot	7.2	919	11,300 CUP	8.2	1044	17,000 CUP
572	6.7	930	17,200 PSI	7.7	1036	20,000 PSI
IMR Blue	10.4	940	15,300 PSI	11.6	1078	19,200 PSI
800-X	7.1	883	13,600 CUP	7.9	991	16,700 CUP
HS-6	8.6	888	12,200 CUP	9.5	996	16,800 CUP
CFE Pistol	7.1	1008	15,800 PSI	8.1	1139	19,700 PSI
AutoComp	6.7	856	12,600 CUP	7.4	958	16,200 CUP
Universal	6.0	908	13,100 CUP	6.4	977	16,800 CUP
244	5.5	915	15,000 PSI	6.2	1022	19,600 PSI
WSF	6.8	886	13,400 CUP	7.5	981	17,400 CUP
231	5.0	762	12,000 CUP	5.9	906	15,800 CUP
HP-38	5.0	762	12,000 CUP	5.9	906	15,800 CUP
WST	4.4	794	14,100 CUP	4.9	866	16,500 CUP
IMR Target	5.2	906	14,900 PSI	6.1	1028	19,000 PSI
Titegroup	5.0	892	14,600 CUP	5.5	956	17,000 CUP
IMR Red	5.0	881	15,300 PSI	5.7	983	19,700 PSI
700-X	4.9	873	14,000 CUP	5.5	959	17,100 CUP
Clays	4.5	855	14,500 CUP	4.9	981	17,400 CUP
Titewad	3.5	754	14,900 PSI	4.2	887	19,400 PSI
Bullet: 200 GR. CAST LSWC Dia: .451″ Col: 1.225″						
572	6.4	897	15,900 PSI	7.2	1018	19,600 PSI
IMR Blue	10.0	948	15,900 PSI	11.1	1045	20,000 PSI
800-X	6.9	861	12,200 CUP	7.7	958	15,700 CUP
HS-6	8.2	860	14,400 CUP	8.4	907	16,300 CUP
CFE Pistol	7.4	1042	15,000 PSI	8.2	1142	19,600 PSI
AutoComp	6.5	843	11,500 CUP	7.2	914	15,100 CUP
Universal	5.8	889	13,900 CUP	6.3	962	16,800 CUP
244	5.1	880	15,500 PSI	5.8	992	19,800 PSI
WSF	6.0	870	15,200 PSI	6.7	970	19,400 PSI
231	4.4	771	11,000 CUP	5.6	914	16,900 CUP
HP-38	4.4	771	11,000 CUP	5.6	914	16,900 CUP
WST	4.4	830	15,400 PSI	5.1	910	19,900 PSI
Trail Boss	3.5	652	9,200 CUP	5.5	816	16,100 CUP
IMR Target	5.0	900	15,500 PSI	5.8	1007	19,500 PSI
Titegroup	4.8	877	13,400 CUP	5.4	957	16,800 CUP
IMR Red	4.4	833	14,200 PSI	5.3	958	19,700 PSI
700-X	4.6	821	12,100 CUP	5.3	921	16,300 CUP
Clays	3.6	759	11,800 CUP	4.3	888	17,000 CUP
Titewad	3.6	816	15,400 PSI	4.5	940	20,000 PSI
Bullet: 200 GR. SPR JHP Dia: .451″ Col: 1.155″						
Longshot	7.0	918	13,300 CUP	7.8	1013	16,900 CUP
572	6.4	859	16,500 PSI	7.4	992	20,200 PSI
IMR Blue	9.9	903	15,200 PSI	11.0	1002	18,800 PSI
800-X	6.8	877	13,600 CUP	7.4	954	16,600 CUP
HS-6	8.2	868	14,000 CUP	9.0	948	16,400 CUP
CFE Pistol	6.3	877	14,900 PSI	7.2	1010	20,200 PSI
AutoComp	6.4	856	12,600 CUP	7.0	930	16,000 CUP
Universal	5.8	889	15,100 CUP	6.2	949	17,200 CUP
244	5.2	862	15,300 PSI	5.9	957	19,700 PSI
WSF	6.1	807	12,500 CUP	6.8	929	16,700 CUP
231	5.2	794	12,700 CUP	5.9	906	16,700 CUP
HP-38	5.2	794	12,700 CUP	5.9	906	16,700 CUP
WST	4.6	789	15,900 CUP	5.1	898	17,500 CUP
IMR Target	4.9	826	14,800 PSI	5.9	969	19,300 PSI
Titegroup	4.7	812	13,700 CUP	5.2	884	16,900 CUP
IMR Red	4.5	789	15,300 PSI	5.5	936	19,900 PSI
700-X	4.8	844	14,400 CUP	5.3	911	16,700 CUP
Clays	3.9	714	15,200 CUP	4.3	785	17,700 CUP
Titewad	3.4	680	15,200 PSI	4.0	834	19,500 PSI
Bullet: 230 GR. HDY FMJ FP Dia: .451″ Col: 1.200″						
Longshot	6.3	848	14,100 CUP	6.8	908	17,200 CUP
572	6.0	775	16,500 PSI	6.8	875	19,700 PSI
IMR Blue	9.0	812	16,600 PSI	10.1	916	19,400 PSI
800-X	6.3	817	13,300 CUP	7.0	900	16,900 CUP
HS-6	8.0	790	14,400 CUP	8.2	825	15,400 CUP
CFE Pistol	6.0	815	16,000 PSI	6.8	934	19,800 PSI
AutoComp	6.0	789	13,800 CUP	6.6	871	17,100 CUP
Universal	5.1	716	11,800 CUP	5.6	844	16,800 CUP
244	5.1	793	15,300 PSI	5.6	885	19,700 PSI
WSF	5.7	766	12,100 CUP	6.4	851	15,700 CUP
231	4.2	751	13,800 CUP	5.3	832	16,800 CUP
HP-38	4.2	751	13,800 CUP	5.3	832	16,800 CUP
WST	4.1	733	13,900 CUP	4.9	848	16,100 CUP
IMR Target	4.8	767	15,600 PSI	5.6	871	20,000 PSI
Titegroup	4.4	744	15,000 CUP	4.8	818	16,700 CUP
IMR Red	4.2	691	14,400 PSI	5.1	841	19,900 PSI
700-X	4.4	758	12,700 CUP	4.9	842	16,600 CUP
Clays	3.7	670	15,900 CUP	4.0	732	17,000 CUP
Bullet: 230 GR. LRN Dia: .452″ Col: 1.200″						
Longshot	6.0	747	12,000 CUP	6.8	875	16,800 CUP
572	5.6	846	16,200 PSI	6.4	935	20,100 PSI
IMR Blue	8.8	859	16,300 PSI	9.8	944	19,900 PSI
800-X	6.5	867	15,100 CUP	7.0	939	17,300 CUP
HS-6	7.0	751	12,900 CUP	8.0	859	16,600 CUP
CFE Pistol	5.4	816	14,600 PSI	6.2	942	20,100 PSI
AutoComp	6.1	832	13,700 CUP	6.6	896	16,400 CUP
Universal	4.5	703	11,400 CUP	5.4	857	16,800 CUP
244	4.1	761	15,100 PSI	4.9	868	20,100 PSI
WSF	5.8	832	14,500 CUP	6.3	892	16,800 CUP
231	4.3	699	12,200 CUP	5.3	834	16,900 CUP
HP-38	4.3	699	12,200 CUP	5.3	834	16,900 CUP
WST	4.0	776	14,300 CUP	4.3	812	16,400 CUP
Trail Boss	3.5	658	11,200 CUP	4.5	761	15,100 CUP
IMR Target	4.3	800	16,100 PSI	5.0	891	19,400 PSI
Titegroup	4.0	751	12,500 CUP	4.8	855	17,000 CUP
IMR Red	3.9	748	15,400 PSI	4.7	857	19,900 PSI
700-X	4.5	831	14,500 CUP	5.0	893	17,700 CUP
Clays	3.5	716	13,700 CUP	4.0	793	16,800 CUP
Titewad	2.8	684	14,700 PSI	3.3	767	19,400 PSI

45 COLT*

When an asterisk (*) appears in the title of the cartridge, or in the data, refer to the warning page.

Case: Winchester Twist: 1:16″
Barrel: 7.25″ Trim: 1.280″ Primer: Winchester LP, Large Pistol

Powder	Grs.	Vel.	Pressure	Grs.	Vel.	Pressure
Bullet: 160 GR. CAST LRNFP Dia: .452″ Col: 1.500″						
572	8.9	1021	9,900 PSI	10.5	1192	13,600 PSI
800-X	7.0	865	7,700 PSI	10.0	1162	12,800 PSI
CFE Pistol	8.9	1040	8,500 PSI	10.5	1199	11,600 PSI
Universal	6.5	798	7,400 CUP	9.5	1197	12,900 CUP
244	7.0	976	8,200 PSI	9.3	1236	12,800 PSI
231	6.5	917	7,700 CUP	9.0	1177	13,800 CUP
HP-38	6.5	917	7,700 CUP	9.0	1177	13,800 CUP
Trail Boss	7.0	903	8,100 PSI	8.5	1018	10,800 PSI
IMR Target	5.8	961	9,300 PSI	8.4	1237	13,800 PSI
Titegroup	6.0	932	6,000 CUP	7.0	1051	9,100 CUP
IMR Red	5.5	902	8,300 PSI	7.9	1178	13,800 PSI
700-X	4.8	857	8,000 PSI	7.0	1142	13,600 PSI

Pistol Data

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Clays	5.0	907	7,500 CUP	6.4	1083	13,500 CUP
Bullet: 180 GR. CAST LRNFP Dia: .452″ Col: 1.540″						
572	8.5	844	7,600 PSI	10.3	1157	13,400 PSI
800-X	7.5	905	9,400 PSI	9.6	1099	13,200 PSI
CFE Pistol	8.5	996	9,000 PSI	10.2	1200	13,700 PSI
Universal	6.5	791	7,100 CUP	9.2	1161	13,900 CUP
244	6.8	914	8,100 PSI	9.1	1201	13,500 PSI
231	6.0	838	6,500 CUP	8.2	1087	13,900 CUP
HP-38	6.0	838	6,500 CUP	8.2	1087	13,900 CUP
Trail Boss	6.0	818	9,400 PSI	7.3	935	12,700 PSI
IMR Target	5.3	855	7,900 PSI	8.0	1154	13,900 PSI
Titegroup	6.0	918	8,600 CUP	6.9	1020	10,900 CUP
IMR Red	5.3	870	8,500 PSI	7.7	1141	13,600 PSI
700-X	5.0	850	9,100 PSI	6.5	1014	12,600 PSI
Clays	4.8	840	7,900 CUP	6.0	1016	13,800 CUP
Bullet: 200 GR. CAST LRNFP Dia: .452″ Col: 1.600″						
572	8.3	886	9,200 PSI	9.8	1080	13,300 PSI
800-X	7.2	842	8,700 PSI	9.3	1042	13,500 PSI
Universal	6.4	749	5,700 CUP	8.8	1067	13,600 CUP
244	6.7	883	7,600 PSI	9.0	1150	12,900 PSI
231	5.9	761	5,800 CUP	8.0	1002	13,800 CUP
HP-38	5.9	761	5,800 CUP	8.0	1002	13,800 CUP
Trail Boss	5.5	706	8,000 PSI	6.5	855	11,000 PSI
IMR Target	5.0	802	7,500 PSI	7.6	1098	13,800 PSI
Titegroup	6.5	933	9,300 CUP	7.7	1050	12,700 CUP
IMR Red	5.4	860	9,800 PSI	7.6	1087	13,800 PSI
700-X	5.0	822	8,800 PSI	6.2	933	12,400 PSI
Clays	4.6	777	5,900 CUP	5.9	931	13,100 CUP
Bullet: 200 GR. HDY XTP Dia: .452″ Col: 1.600″						
572	7.6	804	8,800 PSI	9.3	1021	13,700 PSI
800-X	6.5	808	10,200 PSI	8.8	996	13,400 PSI
HS-6	11.7	994	9,700 CUP	13.0	1111	13,900 CUP
CFE Pistol	8.6	927	9,300 PSI	10.0	1065	13,300 PSI
Universal	8.0	915	9,600 CUP	9.0	1068	13,900 CUP
244	7.3	915	9,400 PSI	8.5	1079	12,900 PSI
231	7.8	956	11,000 CUP	8.7	1048	14,000 CUP
HP-38	7.8	956	11,000 CUP	8.7	1048	14,000 CUP
IMR Target	6.1	859	10,800 PSI	7.7	1040	13,900 PSI
Titegroup	6.7	899	9,600 CUP	7.5	989	12,700 CUP
IMR Red	4.7	705	8,000 PSI	6.9	956	13,600 PSI
700-X	5.0	795	10,500 PSI	6.3	940	13,400 PSI
Bullet: 215 GR. CAST LRNFP Dia: .452″ Col: 1.650″						
572	7.8	854	9,400 PSI	9.1	1013	13,400 PSI
800-X	7.5	845	10,600 PSI	9.2	995	13,200 PSI
CFE Pistol	8.2	919	10,100 PSI	9.5	1037	12,400 PSI
Universal	6.8	777	6,300 CUP	8.6	1001	13,800 CUP
244	6.5	839	7,700 PSI	8.6	1091	13,200 PSI
231	5.9	758	5,900 CUP	7.8	965	13,500 CUP
HP-38	5.9	758	5,900 CUP	7.8	965	13,500 CUP
Trail Boss	5.5	725	8,100 PSI	6.5	820	10,300 PSI
IMR Target	4.8	765	7,700 PSI	7.2	1033	13,900 PSI
Titegroup	6.2	881	8,600 CUP	7.2	983	12,100 CUP
IMR Red	4.8	776	8,900 PSI	7.0	1029	13,800 PSI
700-X	4.7	752	8,500 PSI	6.2	921	12,800 PSI
Clays	4.6	754	6,400 CUP	5.7	889	13,400 CUP
Bullet: 225 GR. HDY FTX Dia: .452″ Col: 1.600″						
800-X	6.2	654	7800 PSI	8.9	937	12,800 PSI
HS-6	8.8	790	9200 PSI	10.8	987	13,200 PSI
AutoComp	7.1	750	8700 PSI	8.9	973	13,600 PSI
Universal	6.4	684	7800 PSI	8.2	916	13,200 PSI
231	5.7	663	9000 PSI	7.5	897	13,200 PSI
HP-38	5.7	663	9000 PSI	7.5	897	13,200 PSI
Titegroup	5.1	670	9700 PSI	6.4	863	13,200 PSI
700-X	5.1	738	10,200 PSI	6.4	885	13,400 PSI
Clays	4.4	538	9400 PSI	5.5	761	13,600 PSI
Bullet: 230 GR. CAST LRNFP Dia: .452″ Col: 1.580″						
800-X	6.2	746	9,100 PSI	9.0	1003	13,200 PSI
Universal	6.5	761	7,600 CUP	8.1	975	13,800 CUP
244	6.0	849	9,000 PSI	7.7	1044	13,500 PSI
231	5.8	738	7,300 CUP	7.3	941	13,700 CUP
HP-38	5.8	738	7,300 CUP	7.3	941	13,700 CUP
Trail Boss	5.5	685	9,100 PSI	6.5	802	12,400 PSI
IMR Target	4.5	734	8,200 PSI	6.5	962	13,100 PSI
Titegroup	5.8	857	10,300 CUP	6.5	934	13,000 CUP
700-X	4.7	771	10,100 PSI	6.0	904	13,500 PSI
Clays	4.4	734	7,600 CUP	5.4	865	13,900 CUP
Bullet: 250 GR. CAST LRNFP Dia: .452″ Col: 1.600″						
572	7.1	851	11,800 PSI	7.6	898	13,600 PSI
800-X	6.5	778	9,100 PSI	8.0	911	13,300 PSI
HS-6	9.0	787	7,800 CUP	10.5	946	13,300 CUP
CFE Pistol	8.4	930	10,300 PSI	9.2	1014	13,000 PSI
AutoComp	7.8	867	12,600 PSI	8.5	923	13,200 PSI
Universal	6.5	742	9,200 CUP	7.8	941	13,000 CUP
244	6.1	807	9,400 PSI	7.4	972	13,400 PSI
231	5.8	785	9,100 CUP	7.1	916	13,900 CUP
HP-38	5.8	785	9,100 CUP	7.1	916	13,900 CUP
Trail Boss	4.5	606	8,800 PSI	5.8	727	12,700 PSI
IMR Target	4.7	734	9,800 PSI	6.3	920	13,500 PSI
Titegroup	5.0	716	7,600 CUP	6.2	881	13,000 CUP
IMR Red	4.1	675	9,300 PSI	6.2	896	13,400 PSI
700-X	4.8	765	11,300 PSI	5.7	856	13,200 PSI
Clays	4.2	713	8,500 CUP	5.1	817	13,400 CUP
Bullet: 250 GR. HDY XTP Dia: .452″ Col: 1.595″						
572	6.7	692	11,900 PSI	7.1	742	13,400 PSI
800-X	6.0	646	10,800 PSI	7.4	790	13,100 PSI
HS-6	9.7	743	9,700 CUP	10.8	862	13,500 CUP
CFE Pistol	8.0	832	10,400 PSI	8.8	915	13,300 PSI
AutoComp	7.7	757	12,200 PSI	8.4	839	13,500 PSI
Universal	7.5	705	10,300 CUP	8.5	856	14,000 CUP
244	6.5	737	11,400 PSI	7.1	845	13,300 PSI
231	6.5	692	10,500 CUP	7.3	797	14,000 CUP
HP-38	6.5	692	10,500 CUP	7.3	797	14,000 CUP
IMR Target	5.3	616	10,700 PSI	6.5	810	13,500 PSI
Titegroup	5.5	739	9,700 CUP	6.3	830	12,700 CUP
IMR Red	4.8	552	10,700 PSI	5.9	726	13,800 PSI
700-X	4.0	539	10,200 PSI	5.2	710	13,200 PSI
Bullet: 260 GR. SPR JHP Dia: .451″ Col: 1.595″						
800-X	6.0	611	10,300 PSI	7.6	803	13,600 PSI
HS-6	9.7	759	10,600 CUP	10.7	865	14,000 CUP
CFE Pistol	8.1	832	10,900 PSI	8.8	916	13,200 PSI
AutoComp	7.4	728	11,800 PSI	8.0	770	13,500 PSI
Universal	7.0	661	9,400 CUP	8.0	813	14,000 CUP
244	6.3	737	10,600 PSI	7.0	798	13,300 PSI
231	6.5	722	12,000 CUP	7.1	787	14,000 CUP
HP-38	6.5	722	12,000 CUP	7.1	787	14,000 CUP
IMR Target	5.3	643	10,700 PSI	6.5	804	13,300 PSI
Titegroup	5.5	661	8,300 CUP	6.3	797	12,500 CUP
IMR Red	4.8	560	10,600 PSI	5.8	712	13,600 PSI
700-X	4.0	523	10,000 PSI	5.2	714	12,500 PSI
Bullet: 300 GR. SIE JFP Dia: .452″ Col: 1.670″						
572	6.8	548	11,500 PSI	7.5	689	12,800 PSI
HS-6	9.0	616	9,600 CUP	10.0	730	13,700 CUP
CFE Pistol	6.2	579	11,600 PSI	7.2	710	13,800 PSI
AutoComp	6.9	598	10,000 PSI	7.3	663	12,700 PSI
Universal	6.6	593	11,200 CUP	7.3	700	13,700 CUP

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
244	5.6	535	10,300 PSI	6.3	664	13,200 PSI
Titegroup	5.2	578	11,300 CUP	5.8	682	12,900 CUP

45 COLT (RUGER, FREEDOM ARMS & T/C ONLY)*

When an asterisk (*) appears in the title of the cartridge, or in the data, refer to the warning page.

Case: Winchester Twist: 1:16″
Barrel: 7.25″ Trim: 1.280″ Primer: Winchester LP, Large Pistol

Bullet: 225 GR. BAR XPB			**Dia: .451″**			**Col: 1.600″**
IMR 4227	20.9	1077	19,900 CUP	24.9	1312	29,800 CUP
296	23.1	1344	26,200 CUP	24.0	1410	29,300 CUP
H110	23.1	1344	26,200 CUP	24.0	1410	29,300 CUP
Lil'Gun	22.3	1377	22,900 CUP	23.7	1476	30,200 CUP
Longshot	10.5	1140	21,800 CUP	12.2	1305	30,500 CUP
Titegroup	7.0	1011	19,400 CUP	9.0	1207	29,800 CUP
Bullet: 225 GR. HDY FTX			**Dia: .452″**			**Col: 1.700″**
IMR 4227	20.6	1146	20,200 PSI	25.7	1383	30,400 PSI
296	26.2	1493	26,600 PSI	27.2	1542	29,900 PSI
H110	26.2	1493	26,600 PSI	27.2	1542	29,900 PSI
Lil'Gun	26.5	1551	28,500 PSI	27.5	1594	30,100 PSI
Longshot	11.7	1221	21,400 PSI	13.2	1351	28,400 PSI
Titegroup	7.8	1058	19,700 PSI	9.8	1242	29,400 PSI
Bullet: 240 GR. SIE JHC			**Dia: .452″**			**Col: 1.600″**
H4227	20.0	1169	20,100 CUP	26.0	1413	30,000 CUP
H110	27.2	1483	27,900 CUP	28.0	1532	30,000 CUP
Lil'Gun	27.0	1431	23,800 CUP	27.8	1489	29,200 CUP
Longshot	12.3	1179	21,900 CUP	13.7	1292	29,200 CUP
Titegroup	8.0	1028	19,000 CUP	10.0	1157	29,100 CUP
Bullet: 250 GR. HDY XTP			**Dia: .452″**			**Col: 1.600″**
H4227	20.0	1150	23,500 CUP	24.6	1343	30,300 CUP
H110	25.7	1398	27,000 CUP	26.5	1455	29,800 CUP
Lil'Gun	23.5	1331	25,800 CUP	25.5	1410	29,800 CUP
Longshot	12.0	1129	22,100 CUP	13.4	1252	29,900 CUP
Titegroup	8.0	983	21,100 CUP	9.5	1124	29,100 CUP
Bullet: 260 GR. NOS PART			**Dia: .451″**			**Col: 1.650″**
H110	23.5	1351	27,700 CUP	24.0	1374	30,100 CUP
Lil'Gun	19.0	1196	24,500 CUP	21.0	1312	30,000 CUP
Longshot	11.5	1068	24,500 CUP	12.7	1188	30,000 CUP
Titegroup	8.0	945	21,900 CUP	9.3	1065	28,800 CUP
Bullet: 300 GR. SPR JFP			**Dia: .451″**			**Col: 1.650″**
H4227	19.0	1051	23,600 CUP	22.3	1202	29,900 CUP
H110	21.8	1191	26,700 CUP	22.2	1198	30,100 CUP
Lil'Gun	18.0	1140	24,500 CUP	20.2	1203	29,800 CUP
Longshot	11.2	1005	21,100 CUP	12.5	1136	29,200 CUP
Titegroup	7.5	851	20,400 CUP	9.0	1004	28,500 CUP
Bullet: 325 GR. CPB LFN PB			**Dia: .452″**			**Col: 1.680″**
H4227	20.0	1053	22,300 CUP	23.0	1189	28,000 CUP
H110	21.0	1109	18,100 CUP	24.0	1266	27,400 CUP
Lil'Gun	17.0	1061	20,700 CUP	20.5	1235	29,700 CUP
Bullet: 335 GR. CPB LFN GC						**Dia: .452″**
Col: 1.680″						
H4227	20.0	1011	21,100 CUP	22.5C	1155	28,300 CUP
H110	20.5	1109	19,200 CUP	23.5	1240	28,000 CUP
Lil'Gun	17.0	1052	20,100 CUP	20.0	1206	29,600 CUP
Bullet: 360 GR. CPB LFN GC						**Dia: .452″**
Col: 1.680″						
H4227	19.5	1004	21,100 CUP	22.0C	1167	29,800 CUP
H110	18.0	1012	20,200 CUP	21.0	1151	28,300 CUP
Lil'Gun	15.5	984	22,400 CUP	18.0	1131	29,700 CUP

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure

454 CASULL

Case: Freedom Arms Twist: 1:24″
Barrel: 9.375″ Trim: 1.380″ Primer: Winchester SR, Small Rifle

Bullet: 240 GR. FA JHP			**Dia: .452″**			**Col: 1.765″**
H4227	29.0	1512	22,300 CUP	34.0C	1834	43,300 CUP
296	36.0	1923	38,800 CUP	38.2	2065	51,300 CUP
H110	36.0	1923	38,800 CUP	38.2	2065	51,300 CUP
Lil'Gun	35.0	1952	39,800 CUP	38.0	2033	43,100 CUP
Bullet: 240 GR. SIE JHC			**Dia: .452″**			**Col: 1.680″**
Longshot	14.0	1375	23,800 CUP	16.0	1541	36,200 CUP
HS-6	15.5	1360	27,100 CUP	17.5	1508	36,600 CUP
Universal	10.2	1212	24,400 CUP	11.5	1325	37,500 CUP
Titegroup	10.0	1214	24,500 CUP	11.0	1309	34,700 CUP
Bullet: 250 GR. BAR X			**Dia: .451″**			**Col: 1.780″**
H4227	26.0	1580	40,800 CUP	28.5C	1685	50,000 CUP
296	27.5	1725	45,100 CUP	28.5	1785	52,300 CUP
H110	27.5	1725	45,100 CUP	28.5	1785	52,300 CUP
Lil'Gun	26.0	1620	30,100 CUP	28.0	1738	41,700 CUP
Bullet: 250 GR. MEI LRNFP				**Dia: .452″**		**Col: 1.680″**
Trail Boss	6.7	862	14,800 CUP	9.0	1011	19,300 CUP
Bullet: 250 GR. NOS JHP			**Dia: .451″**			**Col: 1.700″**
Longshot	14.5	1377	26,400 CUP	15.5	1492	36,100 CUP
HS-6	15.0	1295	25,400 CUP	17.0	1428	34,600 CUP
Universal	10.8	1221	25,700 CUP	12.0	1290	35,300 CUP
Titegroup	9.7	1193	24,600 CUP	11.2	1298	36,000 CUP
Bullet: 260 GR. FA JFP			**Dia: .452″**			**Col: 1.765″**
H4227	28.0	1421	19,000 CUP	33.0C	1762	42,100 CUP
296	34.0	1817	37,100 CUP	36.0	1954	51,600 CUP
H110	34.0	1817	37,100 CUP	36.0	1954	51,600 CUP
Lil'Gun	33.4	1744	28,800 CUP	35.5	1895	37,900 CUP
Bullet: 260 GR. SPR JHP			**Dia: .451″**			**Col: 1.675″**
Longshot	14.0	1353	28,200 CUP	15.0	1443	36,600 CUP
HS-6	14.5	1252	25,000 CUP	16.8	1420	36,400 CUP
Universal	10.3	1157	25,500 CUP	11.5	1245	34,900 CUP
Titegroup	9.5	1159	25,200 CUP	11.0	1270	35,900 CUP
Bullet: 265 GR. CPB LFP GC						**Dia: .452″**
Col: 1.700″						
Trail Boss	7.0	836	18,800 CUP	9.0	984	27,100 CUP
Bullet: 300 GR. CPB LFN GC						**Dia: .452″**
Col: 1.800″						
Trail Boss	6.5	767	14,900 CUP	8.0	865	23,900 CUP
Bullet: 300 GR. FA JFP			**Dia: .452″**			**Col: 1.775″**
H4227	27.0	1541	41,100 CUP	31.0C	1702	52,400 CUP
296	28.5	1618	44,200 CUP	30.0	1716	53,700 CUP
H110	28.5	1618	44,200 CUP	30.0	1716	53,700 CUP
Lil'Gun	29.0	1666	39,800 CUP	31.0	1746	45,000 CUP
Bullet: 325 GR. CPB LFN PB			**Dia: .452″**			**Col: 1.760″**
H4227	24.7	1389	30,300 CUP	25.5C	1452	36,900 CUP
296	25.2	1345	19,700 CUP	26.0	1511	34,300 CUP
H110	25.2	1345	19,700 CUP	26.0	1511	34,300 CUP
Lil'Gun	23.2	1468	33,200 CUP	24.0	1526	38,900 CUP
Trail Boss	5.0	636	13,600 CUP	7.0	798	23,700 CUP
Bullet: 325 GR. SFT HP			**Dia: .451″**			**Col: 1.750″**
H4227	23.0	1323	42,600 CUP	25.5	1460	52,600 CUP
296	23.0	1379	36,800 CUP	26.0	1545	52,600 CUP
H110	23.0	1379	36,800 CUP	26.0	1545	52,600 CUP
Lil'Gun	21.0	1395	41,400 CUP	24.0	1558	52,600 CUP
Bullet: 335 GR. CPB LFN GC						**Dia: .452″**
Col: 1.770″						
H4227	23.0	1306	30,000 CUP	25.5	1460	42,800 CUP

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
296	23.0	1321	22,200 CUP	26.0	1531	41,600 CUP
H110	23.0	1321	22,200 CUP	26.0	1531	41,600 CUP
Lil'Gun	21.0	1377	34,000 CUP	24.0	1517	44,200 CUP
Trail Boss	4.8	618	15,500 CUP	6.8	778	25,600 CUP
Bullet: 360 GR. CPB LFN GC Dia: .452″ Col: 1.760″						
H4227	21.0	1205	31,000 CUP	24.0	1406	48,300 CUP
296	21.0	1265	24,000 CUP	24.0	1447	43,400 CUP
H110	21.0	1265	24,000 CUP	24.0	1447	43,400 CUP
Lil'Gun	20.0	1330	38,000 CUP	23.0	1477	48,200 CUP
Trail Boss	5.0	615	18,000 CUP	6.0	699	27,300 CUP
Bullet: 395 GR. CPB LFN GC Dia: .452″ Col: 1.770″						
H4227	18.0	1076	29,600 CUP	21.0	1269	48,300 CUP
296	18.5	1169	27,200 CUP	21.0	1309	43,200 CUP
H110	18.5	1169	27,200 CUP	21.0	1309	43,200 CUP
Lil'Gun	17.5	1212	40,100 CUP	20.0	1331	47,100 CUP
Trail Boss	4.0	519	19,200 CUP	5.0	607	23,600 CUP

460 S&W MAGNUM

Case: Starline Twist: 1:20″
Barrel: 10.743″ Trim: 1.790″ Primer: Winchester LRM, Large Rifle Magnum

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Bullet: 200 GR. BAR XPB Dia: .451″ Col: 2.320″						
H4227	41.0	2077	35,200 PSI	45.5C	2238	42,200 PSI
H110	45.0	2237	38,500 PSI	46.5	2315	42,900 PSI
Longshot	20.0	1752	30,300 PSI	27.0	2161	56,500 PSI
Bullet: 225 GR. BAR X Dia: .451″ Col: 2.110″						
H4227	37.0	2007	42,100 PSI	41.0C	2191	54,400 PSI
296	39.0	2045	39,400 PSI	42.0	2243	51,800 PSI
H110	39.0	2045	39,400 PSI	42.0	2243	51,800 PSI
Bullet: 240 GR. HDY XTP MAG. Dia: .452″ Col: 2.160″						
H4227	40.0	2018	43,200 PSI	45.0C	2198	51,800 PSI
296	45.0	2084	43,600 PSI	48.5	2254	52,100 PSI
H110	45.0	2084	43,600 PSI	48.5	2254	52,100 PSI
Bullet: 250 GR. BAR X Dia: .451″ Col: 2.200″						
H4227	36.0	1938	45,700 PSI	40.0C	2074	57,200 PSI
296	39.0	1985	43,500 PSI	41.5	2133	56,800 PSI
H110	39.0	1985	43,500 PSI	41.5	2133	56,800 PSI
Lil'Gun	39.0	1945	41,400 PSI	42.0	2044	43,600 PSI
Bullet: 260 GR. NOS PART Dia: .451″ Col: 2.175″						
H4227	38.0	1939	45,000 PSI	43.0C	2098	51,300 PSI
296	41.0	1959	41,600 PSI	46.0	2178	54,000 PSI
H110	41.0	1959	41,600 PSI	46.0	2178	54,000 PSI
Lil'Gun	43.0	1971	39,200 PSI	46.0	2080	43,400 PSI
Bullet: 265 GR. SFT HP Dia: .451″ Col: 2.180″						
H4227	38.0	1940	44,800 PSI	43.5C	2109	53,100 PSI
296	41.0	1932	43,300 PSI	46.5	2183	56,400 PSI
H110	41.0	1932	43,300 PSI	46.5	2183	56,400 PSI
Lil'Gun	43.0	1988	40,800 PSI	46.5	2118	45,900 PSI
Bullet: 300 GR. HDY XTP MAG. Dia: .452″ Col: 2.160″						
CFE BLK	45.2	1682	30,600 PSI	50.0C	1874	40,900 PSI
H4227	36.0	1852	49,000 PSI	40.0C	1988	57,000 PSI
296	38.0	1825	43,200 PSI	42.5	2034	56,100 PSI
H110	38.0	1825	43,200 PSI	42.5	2034	56,100 PSI
Lil'Gun	40.0	1970	46,300 PSI	44.0	2067	53,600 PSI
Bullet: 325 GR. CPB LFN PB Dia: .452″ Col: 2.200″						
CFE BLK	45.5	1716	30,200 PSI	50.0C	1912	38,600 PSI
H4227	34.0	1790	51,100 PSI	38.0	1897	56,400 PSI
296	38.0	1810	45,300 PSI	42.0	1953	54,900 PSI
H110	38.0	1810	45,300 PSI	42.0	1953	54,900 PSI
Lil'Gun	39.0	1843	43,700 PSI	42.0	1925	46,400 PSI
Trail Boss	7.0	734	16,500 PSI	11.0	914	20,400 PSI
Titegroup	15.0	1353	48,200 PSI	17.6	1470	55,100 PSI
Bullet: 325 GR. SFT HP Dia: .452″ Col: 2.175″						
CFE BLK	42.8	1672	33,600 PSI	47.0C	1810	40,600 PSI
H4198	37.0	1556	36,200 PSI	41.0C	1695	42,500 PSI
H4227	33.0	1716	46,700 PSI	37.0	1859	57,300 PSI
296	35.0	1749	46,300 PSI	39.0	1907	56,800 PSI
H110	35.0	1749	46,300 PSI	39.0	1907	56,800 PSI
Lil'Gun	36.0	1769	44,500 PSI	41.0	1955	55,600 PSI
Bullet: 335 GR. CPB WLN GC Dia: .452″ Col: 2.180″						
CFE BLK	44.1	1673	30,300 PSI	49.0C	1883	39,800 PSI
H4227	33.0	1719	50,000 PSI	37.5	1849	55,700 PSI
296	38.0	1790	46,100 PSI	41.0	1917	55,800 PSI
H110	38.0	1790	46,100 PSI	41.0	1917	55,800 PSI
Lil'Gun	39.0	1834	45,000 PSI	41.5	1919	49,300 PSI
Trail Boss	7.0	726	17,700 PSI	10.0	887	22,200 PSI
Titegroup	15.0	1333	46,800 PSI	17.5	1446	55,800 PSI
Bullet: 360 GR. CPB WLN GC Dia: .452″ Col: 2.190″						
IMR 4198	34.0	1433	34,600 PSI	37.0C	1538	38,800 PSI
CFE BLK	41.8	1599	30,000 PSI	46.0C	1803	39,600 PSI
H4198	37.0	1531	38,200 PSI	40.0C	1644	43,200 PSI
H4227	31.0	1632	49,500 PSI	35.5	1776	56,500 PSI
296	35.0	1713	47,600 PSI	38.0	1836	56,900 PSI
H110	35.0	1713	47,600 PSI	38.0	1836	56,900 PSI
Lil'Gun	36.0	1752	45,100 PSI	40.0	1882	52,600 PSI
Trail Boss	7.0	712	19,600 PSI	9.0	827	24,200 PSI
Titegroup	13.0	1208	40,300 PSI	15.6	1340	55,700 PSI
Bullet: 395 GR. CPB WLN GC Dia: .452″ Col: 2.185″						
IMR 4198	32.0	1372	35,200 PSI	35.0C	1486	41,500 PSI
CFE BLK	40.1	1631	35,700 PSI	44.0C	1747	42,200 PSI
H4198	35.0	1484	40,000 PSI	38.0C	1596	46,600 PSI
H4227	28.0	1516	48,700 PSI	32.0	1647	56,600 PSI
296	30.0	1553	45,300 PSI	34.0	1693	55,700 PSI
H110	30.0	1553	45,300 PSI	34.0	1693	55,700 PSI
Lil'Gun	33.0	1665	47,200 PSI	36.8	1796	56,400 PSI
Trail Boss	7.0	695	21,100 PSI	8.0	754	24,000 PSI
Titegroup	12.0	1138	41,000 PSI	14.6	1255	55,200 PSI

45-70 GOVERNMENT

Case: Winchester Twist: 1:20″
Barrel: 15″ Trim: 2.100″ Primer: CCI 200, Large Rifle

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Bullet: 300 GR. CAST LFP Dia: .458″ Col: 2.465″						
Varget	45.0	1276	17,800 CUP	55.0	1530	20,600 CUP
H4895	45.0	1326	14,400 CUP	51.0	1464	15,500 CUP
H4198	30.0	1175	14,400 CUP	35.5	1418	16,100 CUP
Bullet: 300 GR. SIE HP Dia: .458″ Col: 2.525″						
Varget	57.0	1512	16,300 CUP	63.0C	1821	23,800 CUP
H335	57.0	1645	17,500 CUP	63.5	1926	27,400 CUP
H4895	58.0	1654	16,500 CUP	62.0C	1874	21,000 CUP
H322	54.0	1699	18,100 CUP	60.0	1940	28,000 CUP
H4198	45.0	1774	16,700 CUP	55.0	2076	27,600 CUP
Bullet: 385 GR. CAST LFP Dia: .458″ Col: 2.505″						
Varget	42.5	1293	15,400 CUP	52.5	1537	21,800 CUP
H4895	35.0	1101	11,900 CUP	42.0	1301	23,100 CUP
H4198	28.0	1077	13,300 CUP	32.0	1249	14,700 CUP
Bullet: 405 GR. CAST LFP Dia: .458″ Col: 2.540″						
Varget	40.0	1188	15,600 CUP	50.0	1445	20,900 CUP
H4895	40.0	1261	14,900 CUP	48.0	1453	18,900 CUP

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
H4198	27.0	1057	14,200 CUP	31.0	1224	17,100 CUP
Bullet: 485 GR. CAST LFP Dia: .458″ Col: 2.540″						
H4895	32.0	1010	15,600 CUP	39.0	1209	22,700 CUP
H4198	28.0	1065	16,400 CUP	32.0	1233	20,400 CUP

480 RUGER

Case: Hornady Twist: 1:18″
Barrel: 7 1/2″ Trim: 1.275″ Primer: Winchester LP, Large Pistol

Bullet: 325 GR. HDY XTP Dia: .475″ Col: 1.620″						
H4227	24.0	1295	32,600 PSI	27.2	1477	45,600 PSI
296	25.0	1416	37,300 PSI	27.0	1518	44,900 PSI
H110	25.0	1416	37,300 PSI	27.0	1518	44,900 PSI
Lil'Gun	22.5	1416	39,300 PSI	25.1	1525	45,200 PSI
Longshot	13.0	1217	38,800 PSI	14.5	1330	47,000 PSI
Titegroup	9.0	1016	34,900 PSI	10.7	1158	46,200 PSI
Bullet: 355 GR. BTB LFN GC Dia: .476″ Col: 1.630″						
IMR 4227	25.0	1363	38,500 PSI	28.0C	1485	46,500 PSI
296	26.0	1415	34,700 PSI	27.0	1464	38,400 PSI
H110	26.0	1415	34,700 PSI	27.0	1464	38,400 PSI
Lil'Gun	24.0	1395	34,400 PSI	26.5	1531	44,300 PSI
Longshot	13.0	1221	37,300 PSI	14.5	1313	45,400 PSI
Trail Boss	5.0	621	16,700 PSI	6.5	740	22,700 PSI
Titegroup	9.7	1101	37,100 PSI	10.8	1172	45,000 PSI
Bullet: 370 GR. CPB LFP Dia: .475″ Col: 1.640″						
H4227	22.5	1248	32,800 PSI	26.0C	1427	45,900 PSI
296	24.0	1348	33,400 PSI	26.0	1454	41,500 PSI
H110	24.0	1348	33,400 PSI	26.0	1454	41,500 PSI
Lil'Gun	22.0	1354	34,300 PSI	26.0	1539	46,800 PSI
Longshot	12.0	1162	36,300 PSI	13.8	1272	45,800 PSI
Trail Boss	4.5	597	16,000 PSI	5.7	689	20,900 PSI
Titegroup	9.0	1047	36,300 PSI	10.3	1137	45,800 PSI
Bullet: 400 GR. HDY XTP Dia: .475″ Col: 1.620″						
H4227	18.0	1026	31,600 PSI	21.0	1211	46,100 PSI
296	18.0	1115	34,400 PSI	20.5	1258	46,600 PSI
H110	18.0	1115	34,400 PSI	20.5	1258	46,600 PSI
Lil'Gun	15.0	1067	34,200 PSI	18.0	1229	45,600 PSI
Longshot	9.5	965	37,900 PSI	11.0	1082	46,900 PSI
Titegroup	7.0	816	35,000 PSI	8.5	959	46,800 PSI
Bullet: 405 GR. CPB (w/GCK) Dia: .475″ Col: 1.620″						
H4227	19.0	1112	33,200 PSI	21.7	1255	45,500 PSI
296	20.0	1213	35,500 PSI	22.3	1328	45,200 PSI
H110	20.0	1213	35,500 PSI	22.3	1328	45,200 PSI
Lil'Gun	19.0	1219	34,400 PSI	21.0	1337	43,900 PSI
Longshot	10.0	1023	33,400 PSI	11.8	1140	46,100 PSI
Trail Boss	3.5	469	15,200 PSI	5.5	645	25,700 PSI
Titegroup	7.5	927	36,100 PSI	8.8	1019	46,500 PSI
Bullet: 420 GR. BTB LFN GC Dia: .476″ Col: 1.640″						
H4227	19.5	1125	39,100 PSI	21.3C	1214	46,400 PSI
296	19.0	1145	34,200 PSI	20.0	1203	38,700 PSI
H110	19.0	1145	34,200 PSI	20.0	1203	38,700 PSI
Lil'Gun	18.0	1157	37,000 PSI	20.0	1267	46,000 PSI
Longshot	9.8	994	37,500 PSI	11.0	1080	46,600 PSI
Trail Boss	3.5	467	16,200 PSI	5.0	597	24,300 PSI
Titegroup	7.0	862	34,100 PSI	8.3	962	46,100 PSI

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure

500 S&W MAGNUM

Case: Starline Twist: 1:18″
Barrel: 10″ Trim: 1.615″ Primer: Winchester LRM, Large Rifle Magnum

Bullet: 275 GR. BAR XPB Dia: .500″ Col: 2.085″						
CFE BLK	46.0	1616	22,500 PSI	54.0C	1861	31,000 PSI
H4227	40.0	1891	41,000 PSI	44.0	2047	48,400 PSI
296	42.0	1965	43,900 PSI	45.0	2082	49,300 PSI
H110	42.0	1965	43,900 PSI	45.0	2082	49,300 PSI
Lil'Gun	40.5	1977	41,100 PSI	44.0	2137	50,800 PSI
Longshot	20.0	1594	35,000 PSI	24.5	1824	48,900 PSI
Titegroup	11.0	1170	22,800 PSI	20.0	1707	50,300 PSI
Bullet: 325 GR. BAR XPB Dia: .500″ Col: 2.290″						
CFE BLK	46.9	1540	22,800 PSI	54.0C	1793	31,200 PSI
H4227	40.0	1788	40,700 PSI	43.0	1920	49,200 PSI
296	42.0	1813	40,000 PSI	45.3	1951	48,900 PSI
H110	42.0	1813	40,000 PSI	45.3	1951	48,900 PSI
Lil'Gun	40.0	1862	43,700 PSI	44.5	2002	49,100 PSI
Longshot	22.5	1599	43,300 PSI	24.5	1684	49,500 PSI
Titegroup	12.0	1144	25,600 PSI	20.0	1575	50,700 PSI
Bullet: 350 GR. HDY XTP Dia: .500″ Col: 1.985″						
CFE BLK	46.0	1528	24,600 PSI	54.0C	1836	35,700 PSI
H4227	38.0	1675	41,400 PSI	42.5	1863	49,900 PSI
296	39.0	1712	41,500 PSI	43.0	1877	50,600 PSI
H110	39.0	1712	41,500 PSI	43.0	1877	50,600 PSI
Lil'Gun	35.0	1697	41,500 PSI	42.0	1912	48,100 PSI
Longshot	21.0	1482	41,400 PSI	23.0	1602	50,000 PSI
Titegroup	11.0	1032	23,100 PSI	18.5	1461	50,000 PSI
Bullet: 370 GR. CPB LGC Dia: .500″ Col: 2.020″						
CFE BLK	46.0	1470	22,300 PSI	54.0C	1752	31,600 PSI
H4227	40.0	1688	38,700 PSI	42.0	1784	48,900 PSI
296	44.5	1801	42,800 PSI	47.0	1909	49,900 PSI
H110	44.5	1801	42,800 PSI	47.0	1909	49,900 PSI
Lil'Gun	41.0	1831	44,900 PSI	44.5	1949	50,400 PSI
Longshot	21.5	1476	42,000 PSI	23.3	1576	50,000 PSI
Trail Boss	8.0	746	13,500 PSI	12.0	926	19,000 PSI
Titegroup	16.0	1326	40,600 PSI	18.5	1431	49,600 PSI
Bullet: 375 GR. BAR XPB Dia: .500″ Col: 2.290″						
CFE BLK	41.6	1431	24,900 PSI	49.0C	1641	35,300 PSI
H4227	33.0	1550	38,000 PSI	36.8	1717	50,500 PSI
Lil'Gun	31.0	1605	39,700 PSI	34.0	1738	49,900 PSI
Longshot	18.0	1347	38,300 PSI	21.0	1487	49,600 PSI
Titegroup	14.0	1213	37,000 PSI	17.0	1375	50,500 PSI
Bullet: 385 GR. REM. HP Dia: .500″ Col: 2.150″						
H4227	37.0	1644	41,900 PSI	41.0	1788	51,800 PSI
296	39.0	1648	38,700 PSI	42.5	1794	47,300 PSI
H110	39.0	1648	38,700 PSI	42.5	1794	47,300 PSI
Lil'Gun	38.0	1727	42,700 PSI	41.0	1852	51,100 PSI
Longshot	20.0	1398	39,900 PSI	23.0	1523	49,300 PSI
Titegroup	15.5	1250	38,300 PSI	18.5	1396	49,500 PSI
Bullet: 400 GR. SIE JSP Dia: .500″ Col: 2.050″						
CFE BLK	44.2	1481	27,500 PSI	52.0C	1759	40,900 PSI
H4227	36.5	1585	42,000 PSI	39.5	1698	49,100 PSI
296	34.0	1514	38,000 PSI	40.0	1721	49,700 PSI
H110	34.0	1514	38,000 PSI	40.0	1721	49,700 PSI
Lil'Gun	31.0	1520	38,500 PSI	37.0	1725	49,300 PSI
Longshot	18.0	1274	36,500 PSI	22.0	1458	49,000 PSI
Titegroup	15.0	1208	39,700 PSI	17.5	1335	49,900 PSI
Bullet: 440 GR. CPB LGC Dia: .500″ Col: 2.025″						
CFE BLK	41.6	1473	28,300 PSI	49.0C	1672	36,600 PSI
H4227	34.0	1496	41,900 PSI	37.0	1609	49,400 PSI
296	34.0	1509	40,700 PSI	38.0	1654	49,900 PSI
H110	34.0	1509	40,700 PSI	38.0	1654	49,900 PSI

Powder	Starting Loads Grs.	Vel.	Pressure	Maximum Loads Grs.	Vel.	Pressure
Lil'Gun	30.0	1483	40,200 PSI	35.0	1653	50,500 PSI
Longshot	18.5	1300	41,900 PSI	20.7	1393	50,500 PSI
Trail Boss	7.0	643	14,600 PSI	10.0	799	21,200 PSI
Titegroup	14.5	1191	42,700 PSI	16.5	1278	50,600 PSI
Bullet: 500 GR. HDY SP			**Dia: .500″**		**Col: 2.065″**	
CFE BLK	40.8	1444	36,700 PSI	48.0C	1628	51,100 PSI
H4227	30.0	1360	42,300 PSI	32.2	1436	49,300 PSI
296	31.0	1400	34,400 PSI	33.0	1482	51,900 PSI
H110	31.0	1400	34,400 PSI	33.0	1482	51,900 PSI
Lil'Gun	27.0	1356	41,700 PSI	30.0	1463	50,100 PSI
Longshot	16.0	1115	39,200 PSI	18.5	1222	50,400 PSI
Titegroup	13.0	1020	40,200 PSI	15.0	1111	50,000 PSI

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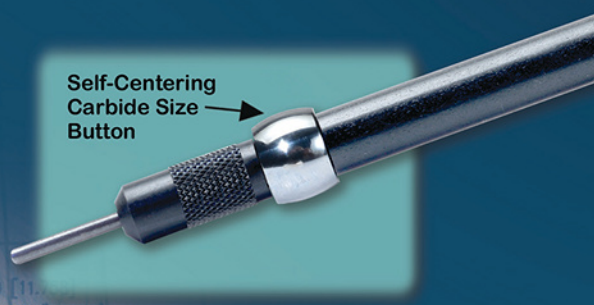

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