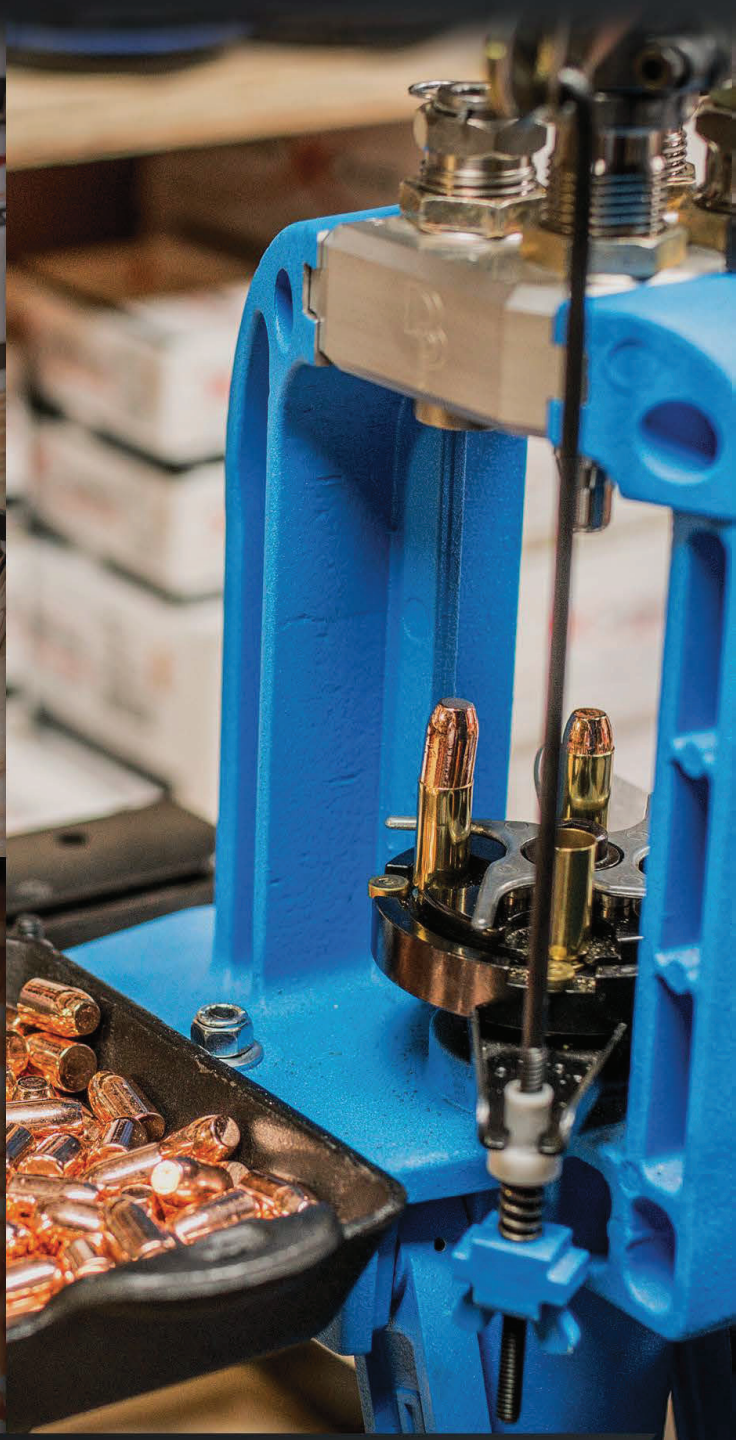
X-TREME® BULLETS



Reloading Guide

FIRST EDITION

INTRODUCTION

In your hand(or on your screen), is a comprehensive collection of reloading data for plated bullets. A year ago, we set out to create the First Edition of the X-Treme Bullets Reloading Guide, which would include a recommended load for every projectile currently in our catalogue. X-Treme Bullets are the best performing plated projectiles on the market, so we felt the pressure of living up to that reputation with our load data. It was not a quick or easy task by any means. Creating this manual took an immense amount of planning, procurement, loading, testing, and retesting. Without the hard work, dedication and support of our technical team, this project would have never come to fruition. We are incredibly proud of the results that this team produced, with each member of the project team contributing their unique skills and backgrounds toward the common goal of creating this guide.

All pressures and velocities have been captured using SAAMI Specification processes, equipment, and barrel lengths. All of the data contained within these pages was observed, verified, and then function tested through a firearm by our Ballistics Team in our climate controlled, underground laboratory. However, please understand that you will see some variation based on the normal differences between production lots of powder, primers, bullets, and cases. Additionally, you're likely to see some variation based on your exact barrel length and firearm. What we are trying to say is that if you're looking for an exact velocity, please be sure to use a chronograph and verify the velocity to your particular circumstance. Our loads are not a "Min/Max", these cartridge lengths, powder charges, and associated data is what are recommended by our trained ballistics technicians for the best overall performance. As stated, while minor variations are expected, major adjustments to the data should not be performed without using calibrated ballistic equipment.

All Data Listed Falls Under These Units of Measure:

Charge: Grains
Accuracy: Inches
Velocity: Feet Per Second
Pressure: PSI

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TOOLS OF THE TRADE

Stepping into the hobby, or as some would say, obsession, of reloading can be daunting. Recipes are seemingly endless, as are opinions on various components and equipment. While no one can decide the absolute best recipe of components for your application except for you, it is easy to explain the basic equipment you need to assemble case, powder, primer, and bullet into a complete cartridge.

While this is certainly not an all inclusive list of the various types of dies, presses, and scales you may encounter in your new hobby, it has all of the basic equipment you need to take the first steps.

Reloading Press:

The first and most important piece of equipment you're going to need is a reloading press. Most novice reloaders start out with a single stage press, which works just about like it sounds. You'll be handling one piece of brass at a time, and completing one operation in the loading process each time. Since there are 3-4 operations to make a complete round of ammunition, you generally want to complete each step in batches to avoid changing the reloading die over and over again. Many manufacturers offer a kit, which includes a press, and all of the other needed equipment, sans the proper dies and shell holders. As your production needs grow, you can step-up to a progressive press, where multiple operations are being completed with each pull of the handle and speeds are greatly increased.

Dies and Shell Holder:

The next most important thing you're going to need are proper dies and shell holders for the cartridges you're planning to reload. Most sets of pistol caliber dies are comprised of 3 or 4 different dies, each doing a specific operation. Generally speaking, these dies are:

Decapping/Sizing die:

This die removes the old primer and sizes the case back the proper dimensions. It's critical that your sizing die is set-up correctly to ensure that you have both proper bullet hold and you don't experience any failures to chamber because the case won't fit into the chamber. Dies for pistol calibers are most often carbide, whereas rifle dies are mostly steel. In both cases, we find it better to lube the cases before running them through the re-size. Case lube isn't required with most carbide dies; however it is a must when using steel dies.

Loading Fact: We find the best way to set up your sizing die is to place a piece of paper on the shell holder, and screw the die down until you're barely able to pull the sheet out from in between the die and shell holder when the press is at its range of motion. A sheet of paper is about .003 thick, so if you set your die up with this method, you ensure that you're getting the sizing die all the way to the base of the case, without any contact between the shell holder and die; which can damage the die.

Expansion/Belling Die:

This operation will "flare" or "bell" the mouth of the case so that a bullet can be inserted. This is an especially critical step when loading plat-ed bullets, as they are more susceptible to accuracy issues if the case is not belled properly.

Seating/Crimp Die:

In a standard 3 die set, this operation will seat the bullet to the proper depth in the case, and crimp the case mouth back to its proper spec for feeding and chambering. In contrast, a 4 die set will seat the bullet in one operation, and crimp the case mouth in another. We believe that seating and crimping in separate operations is far superior to the combination die. Seating and crimping in a single step can lead to a variety of issues, the biggest of which is scraping copper off the bullet as it squeezes the case mouth and pushes the bullet into the case simultaneously.

Loading Fact: If you can't find a 4 die set, you can use a 3 die set as a 4 die set by simply backing the die body out until the case doesn't contact the crimping ring with the seating plug screwed down to get the proper depth. After you have all of the bullets seated, you can remove the seating plug, and screw the die down until you reach the proper crimp.

Powder Measure:

The powder measure can take several forms, but the purpose is always the same, get the desired amount of powder into the case, every time. For most applications, it's not necessary to measure each individual charge, as any quality powder measure is accurate to within .1-.2 grains.

Scale:

Since powder weights are measured in grains, you're going to need a fairly accurate scale. Most major brands of reloading equipment offer both digital and balance beam scales.

Calipers:

Correct cartridge OAL is critical to producing quality ammunition. A good set of calipers that can measure down to .001 will be needed to complete your ammo.

Bullet Puller:

Even the best of us can make mistakes. Having a kinetic bullet puller will allow you to disassemble any bad rounds and salvage some components.

And that's all that's needed to begin reloading. There are many more tools that are available to make your life a little easier at each step of the process, but for the most part, these are purely optional. Based on our experience, we highly recommended getting your feet wet in reloading before purchasing a lot of equipment.

PLATED, JACKETED, & HARD CAST BULLETS... WHAT GIVES?

Jacketed, Plated, Hard Cast? What does it all mean? Aren't all bullets lead anyway? Well, there are some differences between different bullet types, and what they might be appropriate for.

Let's start with the basics, Hard Cast Lead.

Cast bullets are made just like they sound. A lead alloy, generally containing 3-6% antimony to increase hardness, is melted down and poured into a mold to cast the molten metal into a bullet. They are then sized to the correct diameter, lubed, and ready to load. Hard Cast bullets are generally the least expensive to manufacture; therefore the cheapest option for basic target shooting. Hard cast bullets with even higher hardness ratings are also a popular choice for handgun hunters looking for good external ballistic performance on thick skinned animals such as bears. Downsides to cast bullets include additional exposure to lead, more smoke while firing, and increased leading in your barrel, especially at higher velocities.

Jacketed Bullets

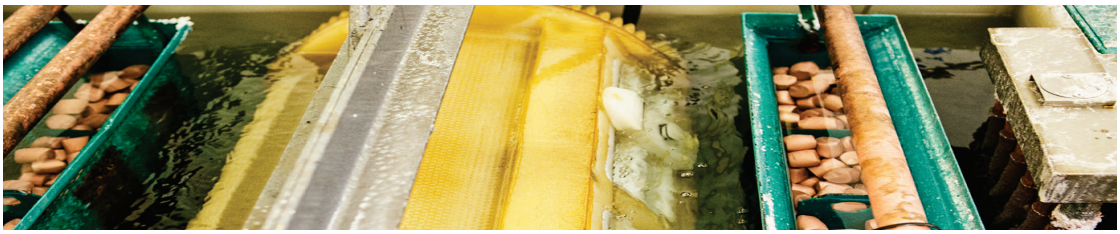
Jacketed bullets came about to solve the problem of increased leading and accuracy problems as powder technology improved, and velocities increased. Jacketed bullets can be shaped much more precisely than hard cast, creating a much more uniform and higher performance product. The manufacturing process begins by swaging a bullet core from lead wire, while using another punch press to form a jacket cup from a harder metal, generally copper gilding metal.

** The cores and cups for 55 grain FMJ-BT's 223 Remington ready to go into the press.*

Bullet core and jacket are then united in another transfer press operation before being washed, polished and sent to the next happy customer. Jacketed bullets, by nature, are very consistent and hard, but this also makes them the most expensive to manufacture.

This leads us to the specialty of X-Treme Bullets, plated projectiles.

Plated bullets combine the best of both worlds. You get the reduced smoke and leading of jacketed bullets, with a much lower cost of manufacturing. Making plated bullets starts out very similar to jacketed, in which the core is swaged from lead wire. After that, it very quickly starts to look like a custom bumper shop, as the process of plating copper onto lead to is very similar to chrome plating a part for your custom hot rod.



The Anode (in this case copper) is attached to a power source which draws an electron from the material and deposits it into the cathode (in this case, the lead bullet cores). This makes for positively charged copper, and negatively charged lead cores, which are submerged in a tank with a cyanide solution that breaks down the copper, allowing it to flow freely and build up on the lead cores. In most cases, it takes between 8-14 hours for that process to be completed, with quality checks throughout the process. After a quick wash to remove the plating solution, and a trip through a dryer, X-Treme Bullets undergo a full re-strike operation to ensure absolute consistency in final diameter and shape. This allows us to have absolute control over the finished product to ensure you see the best results possible. Another advantage of plated bullets is that they are completely clad in copper, whereas most traditional jacketed pistol bullets still have an exposed lead base, which can create additional smoke during firing, and lead exposure when hand loading.

Now, that's the technical explanation, but what does it all mean for the shooter? In the course of a career, a professional competitive shooter may personally hand load or shoot over 1,000,000 rounds of ammo, mostly using jacketed or plated bullets. Our experience is that a properly made plated bullet is extremely consistent in respect to overall dimensional, weight, and diameter. This consistency leads to better accuracy, and more consistent velocity, which is reassuring when you head to the chronograph station at a world championship. Yes, there are certain factors you need to pay closer attention to when loading plated over jacketed bullets, such as powder burn speed, and especially crimp, but we would hope you're paying careful attention to all of the factors of your match ammunition.

In our opinion, plated bullets, made using current technology, production techniques, and quality systems are superior in almost every way to a jacketed bullet for use in pistol ammunition.

WHAT ABOUT PRIMERS?

Overall, very little reliable information on the exact factors that effect primer ignition and performance has ever been published. Primer manufacturing is both an art and a lot of science, and very few want to talk out of school. While most talk about primers in terms of "hard" or "soft", there is a whole lot more to the story.

Before we get too far into the components of primers, let's talk about the most common factor for misfires, or "light strikes", and that is seating depth. Not every priming tool used by the hobby shooter and reloading are created equal. The goal is to seat the anvil firmly against the bottom of the primer pocket in the shell case, which in most cases ends up being about .002-.004 below flush with the case head. If the anvil isn't against the bottom of of the primer pocket, it will not be able to crush correctly when struck by the firing pin. Since not all head tools are created equal, it's recommended to use a bench mounted priming device, or a system integrated into your press to get the maximum leverage.

Now, beyond proper fit and seating within the shellcase, the two most important aspects of primers are **Sensitivity** and **Ignition** characteristics.

Sensitivity is defined as the susceptibility or resistance to initiation (initiation being the point where the chemical reaction in the primer begins, whereas, ignition involves the powder charge), resulting from a centered firing pin impact upon the primer. Too little sensitivity can produce misfires. Too much sensitivity can result in unwanted initiation such as slam fires. Either of those extremes can be a safety hazard depending on the situation. Primers are constructed to fit in the relatively narrow band of acceptable sensitivity.

All commercial primer manufacturers and the U.S. Military assess primer sensitivity with a Ball-Drop tester. Primed shellcases are placed into a steel fixture, under a steel ball of a specified weight. The ball is dropped from incrementally greater heights until values are established for heights in which no primers fire, and all primers fire. Those heights are designated respectively as the "No Fire" height and the "All Fire" height. The "Average Height" or "H-Bar" can be then be calculated to establish the height at which half of the primers are expected to fire, and the other half are expected to misfire.

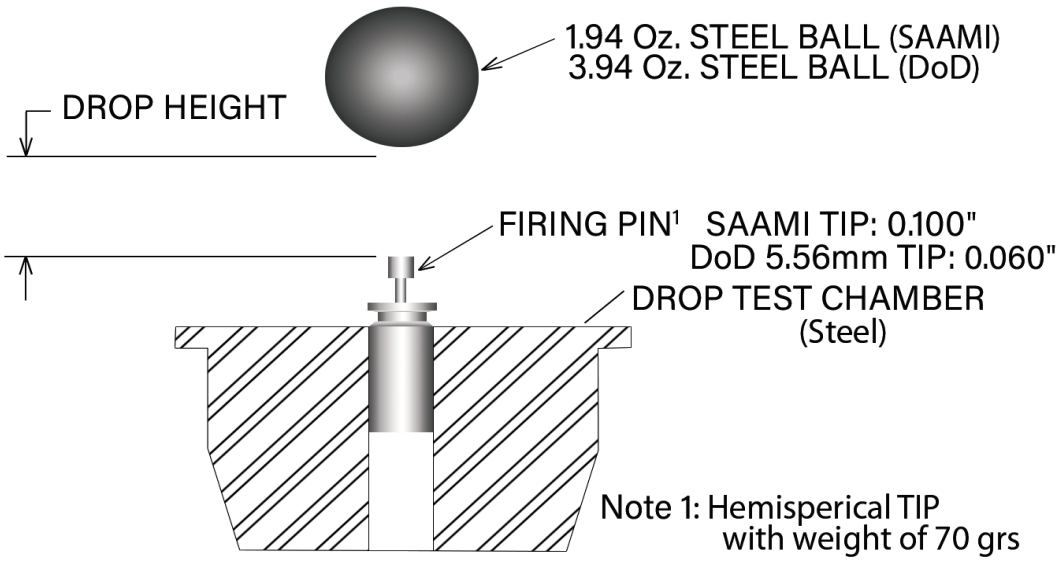
All aspects of the testing such as the shellcase fixture chamber, ball weight, firing pin weight and tip configuration are tightly specified to ensure repeatable results. The Sporting Arms and Ammunition Manufacturers Institute (SAAMI) and Department of Defense (DoD) use different standards and specifications but the concepts are identical.

Typical Ball Drop Test Data

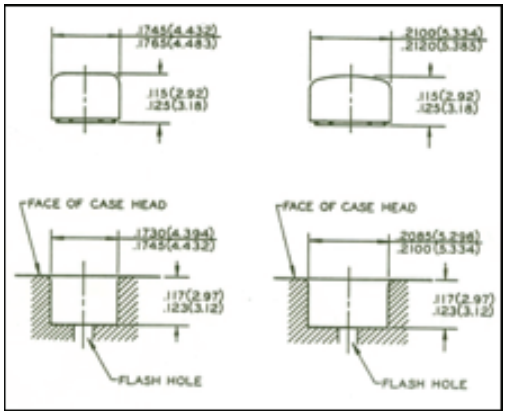
NUMBERS PRIMER/LEVEL	**25**
DROP INCREMENT	**1.0”**
THIS LOT ALL-FIRE HEIGHT	**6.0”**
THIS LOT NO-FIRE HEIGHT	**3.0**

DROP HEIGHT	NUMBER FIRED	NUMBER MISSED
2	_	_
3	0	25
4	11	14
5	22	3
6	25	0
7	_	_
8	_	_

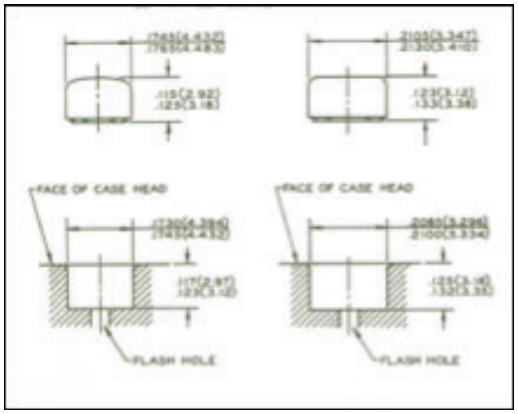
PRODUCT:	Small Pistol Primer
LOT No:	_____
LOT SIZE:	_____
BALL:	1.94 oz
FIRING PIN:	SAAMI 0.100” DIAM
H-BAR	4.18”
SIGMA	0.63”
H-BAR -2	2.83”
H-BAR -3	2.15”
H-BAR +3	6.21”
H-BAR +4	6.89”
SKEWNESS	0.556”
KURTOSIS	0.456”
S.E. H-BAR	0.1187
S.E. SIGMA	0.0598



SAAMI Recommended Primer Pocket Configurations



Pistol



Rifle

Primer component factors that affect sensitivity:

The primer cup itself is usually brass and frequently nickel-plated for appearance and oxidation protection. Many shotshell primers incorporate steel cups but steel is rarely used for pistol or rifle primer cups.

The cup bottom thickness definitely affects sensitivity as most people would suspect. The hardness of brass primer cups, however, does not affect sensitivity as many well designed experiments have documented. Specifying cup bottom thickness is a delicate engineering trade-off between ensuring adequate sensitivity and simultaneously resistant to pierced primers.

Anvil height and shape are also significant factors in sensitivity. The height determines the space between the cup and anvil and is known as Bridge Thickness. Like so many other aspects of primers and their manufacture, there is only a narrow band of bridge thickness acceptability with respect to sensitivity.

Modern primer mix ingredients:

Aluminum Powder (Fuel), Antimony Sulfide (Fuel), Barium Nitrate (Oxidizer), Calcium Silicide (Initiator), Diazodinitrophenol (Initiator), Glass Powder (Sensitizer), Gum Arabic (Glue), Lead Dioxide (Oxidizer), Lead Styphnate (Initiator), Smokeless Gun Powder (Fuel), Potassium Nitrate (Oxidizer), Pentaerythrite Tetranitrate (Fuel & 2nd Explosive), Strontium Nitrate (Oxidizer) and Tetrazine (Sensitizer).

While published primer mix formulas are readily available on the internet and elsewhere, it is exceedingly dangerous to attempt to create them at home. The safety rules promulgated over the past 165 years were all written in blood, attempting to warn future chemists what not to do. In other words, there's probably not a primer factory in the whole world that hasn't had an incident involving serious bodily injury or death.

Chemical aspects of Ignition:

The basic purpose of primers is to ignite propellant powder within ammunition cartridges reliably, while maintaining structural, gas-tight integrity. Powder ignition is more difficult than one might expect, depending upon temperatures, load densities and powder positioning within the cartridge.

Most propellant powders are coated with flame resistant chemicals known as "Deterrents" to slow flame propagation as the first particles begin to burn. It's well known that cold temperatures slow almost all chemical reactions. Igniting and burning smokeless powder is not an exception. Under extreme cold temperatures and with certain primer mixes, the powder combustion can actually stop and leave a bullet stuck in the bore. Because of this, the military tests primer and powder compatibility at -65° F. Hot temperature tests are conducted at 125° F, as well as the normal ambient temperature of 72° F.

Engineering trade-offs are frequently necessary in primer design. Some primer mix components that are beneficial to ignition are detrimental to sensitivity and vice versa. As outlined in the ingredient listing above, each material has a specific purpose that encompasses the range of primary initiator, sensitizers, fuels, oxidizers, secondary explosives and glue to hold the ingredients together. Most manufactures also add a lacquer based sealant that may be colored for identification and other purposes.

The relative percent of each ingredient can greatly affect the primer performance in terms of both sensitivity and ignition characteristics. The resulting primer mix is a generally considered a mixture, rather than a truly new compound. Generally speaking, smaller particle sizes, and a well-mixed, homogenous batch create better and more consistent results.

Mechanical aspects of ignition:

The quantity of primer mix in each primer is obviously a major contributor to propellant ignition. More is generally better, but is restricted to the rather small space within a primer. Too little is very undesirable and can produce inadequate ignition, causing a variety of issues. Uniformity is the key to satisfactory internal ballistic performance.

The shellcase flash hole size also greatly affects ignition characteristics. Generally, smaller is preferable to larger, creating a more focused path of ignition, but there is a limit with respect to smaller diameters when removing the fired primers to reload the shellcases.

Primer Output:

It is the combustion gas temperature, not heat or volume, that ignites smokeless powder. Electrical sparks, such as static electricity, have no heat or volume, yet can ignite powder. The flame temperature of conventional primer combustion gas ranges between 3000^0 F and 3700^0 F.

Some primer mixes also expel molten metals into the powder charge to aid ignition. Magnum primers and military primers usually employ 'hotter' primer mixes to ignite highly deterred spherical shaped powder granules.

Some lead-free primers utilize mixes that have excessive brisance and gas pressure within the primer that is considerably higher than the accompanying peak chamber pressure. Repeated firing with excessively brisance primers can produce peening of the firearm breach face. Such a condition can eventually restrict the firing pin hole and restrict revolver cylinder rotation. Several ammunition manufacturers have increased the shellcase flash hole diameter to relieve the primer pressure and minimize breach peening.

Primer Misfires:

As we discussed at the beginning of the article, the most common reason for primer misfires is incorrect seating depth. Other root causes include:

Primer Induced
Missing Component
1. Priming Mix
2. Anvil

Misassembled
1. Upside Down Anvil
2. Double Anvil

Ammunition Loading
1. Upside Down or Sideways Primer Insertion

Firearm Induced
1. Weak or Altered Firing Pin Spring
2. Damaged Firing Pin
3. Inadequate Firing Pin Protrusion
4. Off-Center Firing Pin

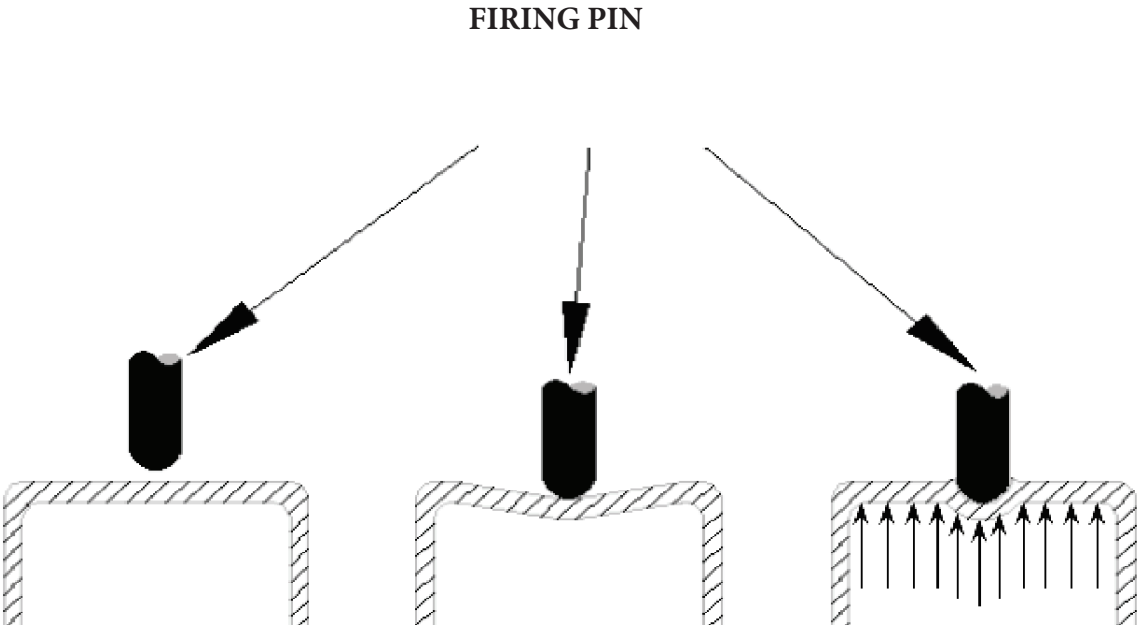
Shooter Induced
1. Contamination by lubricants or water

Misfire Analysis:

Visual (Prior to decapping)
1. Primer
   a) Missing
   b) Inserted Upside down or sideways
2. Firing Pin indent upon primer cup
   a) Presence
   b) Depth
3. How well centered (within 0.030")
4. Misshapen due to firing pin damage
5. Cushioned because of debris

Visual (After decapping)
1. Wrong primer? (Identified by cup bottom thickness, etc.)
2. Did cartridge contain propellant?
3. Did primer fire but not ignite propellant?
4. Missing or double anvil?

Firing Pin Indents



The firing pin indent upon a misfired cup appears quite different from the indent upon a fired primer cup. After primer ignition, internal pressures within the cup force the cup firmly back into the firearm breech face and around firing pin tip. There is enough inertia in the firing pin, plus the spring force, to momentarily imobilize the firing pin, which allows primer cup material to flow back around the firing pin tip. At times, the primer cup material will flow further back into the firing pin hole, leaving cratered appearance on the cup.

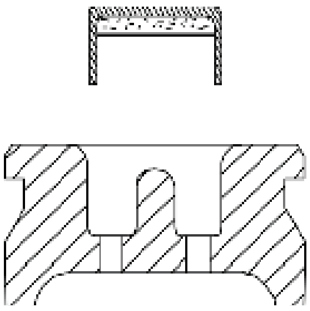
Shellcase Considerations:

Primer Types: U.S. commercial and small caliber military shellcases are almost universally primed with Boxer type primers that incorporate a separate anvil within the primer assembly. Boxer primed shellcases are easily reloaded by replacing the fired primer with a new primer of the same type.

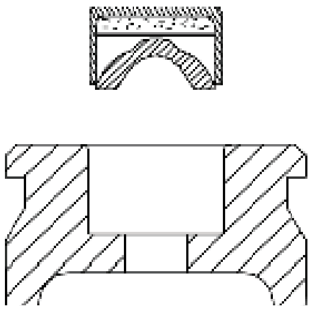
Foreign military and some foreign commercial shellcases utilize the Berdan priming system. The Berdan shellcases incorporate an integral anvil within the shellcase primer pocket. Two small flash holes are drilled adjacent to the anvil post

WHAT ABOUT PRIMERS?

Berdan primed shellcases are very difficult to reload because there is no easy means of removing fired primers and replacement primers are difficult to obtain. Any brass you pick-up from the range that you suspect is foreign manufactured should be examined closely before attempting to resize and decap the fired primer, otherwise you're very likely to damage your decapping pin. Berdan primed shellcases can be identified using a small light aimed at the bottom interior of the shellcases to reveal the two small flash holes rather than a single, larger flash hole.



Berdan Primimg System



Boxer Priming System

POWDER

Modern smokeless propellant powder is a fairly straight forward subject. Nitrocellulose, a byproduct of the wood pulping process, is the primary ingredient of virtually all domestically produced smokeless powder intended for use in small arms ammunition. Some foreign manufactures, such as Vihtavuori, have used gun manufactures cotton, produced from cotton fibers, for the same purpose. Other materials and chemicals may be added to modify burning characteristic and for other purposes.

Such ingredients may include:
1. Nitroglycerin is added to give a higher energy content for a given volume, and reduce cost. Powders containing only nitrocellulose are considered "single base", and powders containing both nitrocellulose and nitroglycerin are known as "Dou-ble Based". Pistol powders are typically double base to pack enough energy into the relatively small volume, whereas rifle powders can easily be either.

2. Deterrents are Chemical coatings applied on the powder granule surfaces to resist easy ignition. That may seem counter intuitive but will be explained later.

3. Stabilizers are added to extend the shelf-life.

4. Flash Suppressants can be used to reduce or virtually eliminate flash.

5. Graphite coating is needed to improve powder flow in metering equipment.

Smokeless powder is typically the most uniform component of ammunition, and has less lot to lot variation than other ammunition components due to the very nature of how it is manufactured and finally blended.

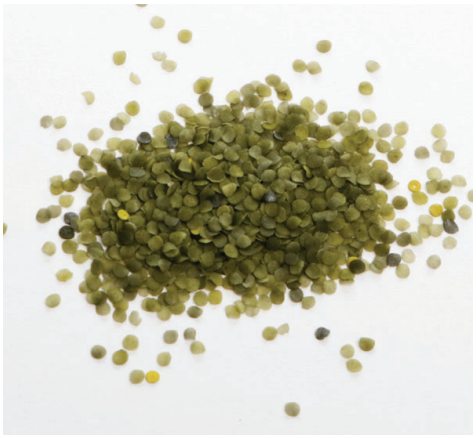
Detailed records and samples are retained for all production lots. When the production of a new lot of specific powder type is to be made, it is known the percent of deterrent coated and deterrent uncoated are historically required to achieve desired performance.

If, for instance, a particular type powder has historically required a 50/50 blend of coated and uncoated granules, one half of the new production lot will be coated and the left uncoated. A small sample of a 50/50 mix will be blended, and tested in a laboratory to compare to historical data. The shell cases, primers and bullets used for testing match the historical testing as well.

The ballistic results of the new production have to be equivalent to that of the retained "Master" sample. If not, the proportions of coated and uncoated powder will be adjusted, and re-tested until the desired results are achieved. This means that the final performance results are adjusted to be correct rather than just taking changes with normal production variability.

You can think of the the powder blending process being similar to a paint manufacturer producing pink paint. White and red paint are produced, mixed in known proportions, and tested for color match. If the color match isn't perfect, more red, or white paint is mixed until the color is just right.

Physical granule shapes also can also affect the burn rates, because of the surface area to volume ratios. Spherical granules have the lowest surface area per unit volume. In some applications this is desirable while, in other applications it is not. Some spherical type powders have the granules rolled to a flatter configuration to change the surface area to volume ratio. The diameters and thickness or lengths of flake and stick shaped powder granules are designed for specific burn rates.



Flake style are typically used in shotgun shells and fast burning pistol powders. Metering is typically difficult through most powder measures.

Extruded or stick powders are generally used in large caliber and magnum rifle rounds to give the best energy content and maximum pressure to reach the velocity needed. Since the extrusions can be difficult to meter, many manufacturers offer a "short cut" version of their most popular powders to improve usability.

Ball powders are the least expensive to produce, and used most often in pistol and smaller rifle cartridges. Ball powders are easy to meter, and typically produce extremely consistent results through powder measures. Since a sphere has the lowest surface area volume, ball powders tend to be slightly more temperature sensitive than other powder types, and care should be taken in extreme cold temperatures, below zero degrees F.

Flat Ball Powders are ball powders that are simply rolled flat to adjust burning characteristics. These are typically used for pistol powders.

ABNORMAL PRESSURE INDICATIONS

All of the loads listed in this manual have been pressure tested using the equipment, procedures and techniques recommended by the Sporting Arms and Ammunition Manufactures Institute (SAAMI).

However, all components can be expected to vary somewhat, even between production lots of the same products. Components from different manufactures can vary significantly, especially primers. Firearm chambers and environmental conditions can vary greatly. Any particular combination of variables could raise chamber pressures to a point of concern. Reloaders and shooters should always be aware of the sometimes subtle indicators of either abnormally high or unexpected low pressures. Those indicators include:

1. Difficult (sticky) shellcase extraction from rifles and revolvers.

2. "Dropped" or "Blown" primers. (Primers dislodged from shellcase by chamber pressure)

3. Distorted, marked or enlarged shellcase head.

4. Excessively flattened primer.

5. Firearm breech face machining marks embossed upon primer cup.

6. Cratering around the firing pin indent.

7. Enlarged primer pockets evidenced by dropped primers or gas leakage.

**Note: Glock pistols have a significantly different firing pin strike than most other pistols. That is considered normal for those pistols and is not a good guide to chamber pressures or abnormal conditions.*

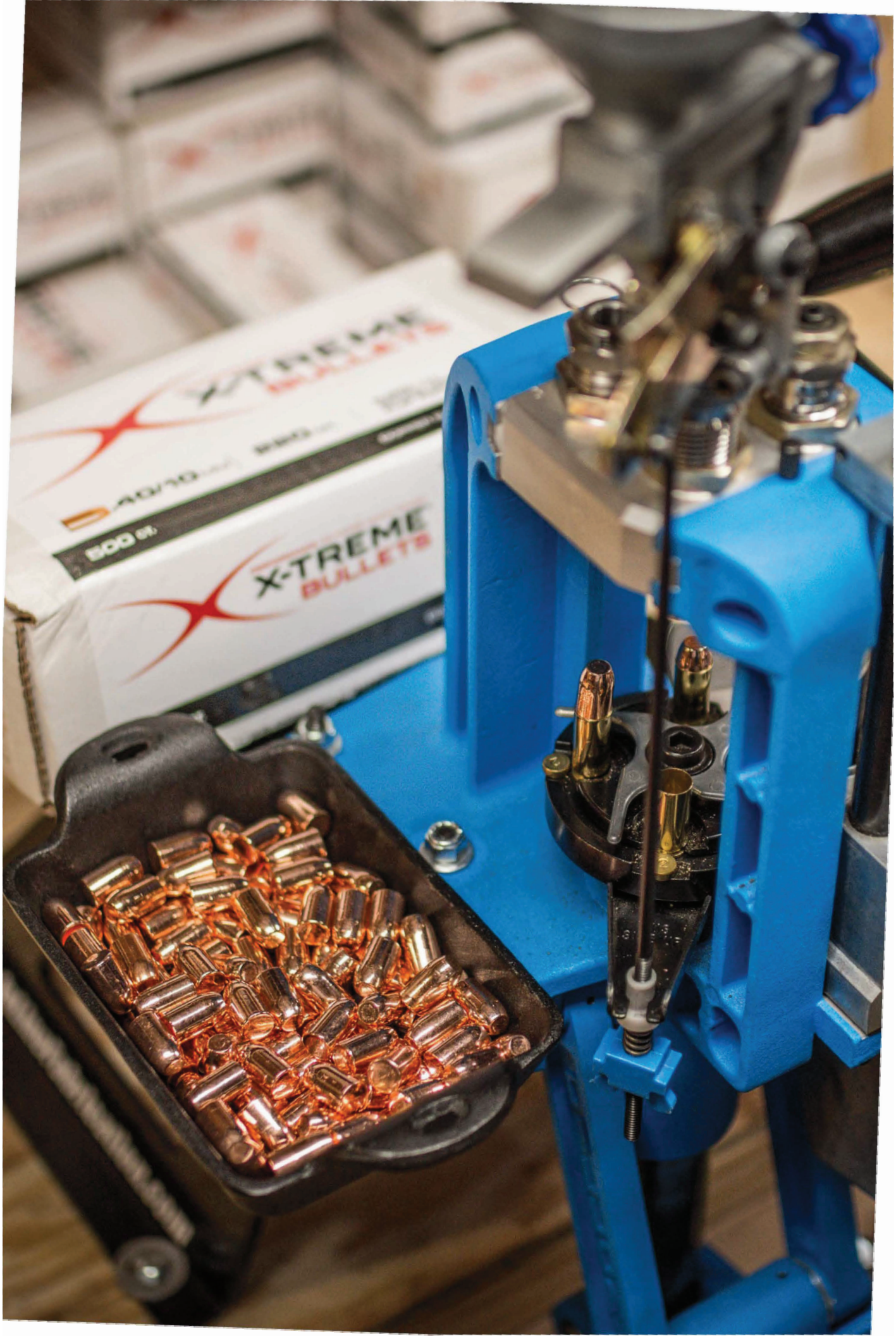
The art of reading primers as a tool to estimate peak chamber pressures is unreliable, and difficult at best, especially cartridges with low pressure limits. Many handgun cartridges were standardized with pressures so low that excessive pressures in the guns for which they were chambered may not leave any telltale signs of excessive pressure on either the primer or shellcase.

Reading rifle primers is somewhat more reliable but should never be used solely to judge the safety of the ammunition in question. All ammunition should be loaded with laboratory pressure tested data. Below are shown some general rule-of-thumb guidance concerning what certain indicators may mean.

The primer of the left displays normal fired primer indications. Note the gentle radiuses around the firing pin indent and around the primer cup periphery. The fired primer on the right, however, shows indications of high pressure, but not necessarily above safety limits. Note the flattened primer cup with circular breech face machining marks embossed on the primer face. It also displays a very cratered primer which could be due to high pressure of simply too much clearance between the firing pin and firing pin hole.

The adjacent pictured shellcase displays several classic signs of excessive chamber pressure. Most notable is the ejector pin hole displayed at the 10 O'clock position. This occurred because chamber pressure was higher than the shellcase yield strength and cartridge brass flowed back into the ejector pin hole. This indicator supplies indisputable evidence of excessive pressure for the subject shellcase. A flattened cup and firing pin indent are also displayed, but are usually not considered quite as serious.

Dropped or blown primers are the most serious sign, occurring just below the pressure of complete shellcase failure.


X-TREME
BULLETS
500 ST.
X-TREME
BULLETS

380 AUTO

The 380 auto was designed by John Browning in 1912 for his series of small, concealable pocket pistols. The ballistics of 380 Auto are superior to 25 Auto or 32 Auto, while fitting into much more compact platforms than 9mm Luger. It is generally considered to be the minimal useful cartridge for personal defense.

The 100 Grain RNFP is X-Treme's most popular projectile for 380 Auto and has long been noted for it's accuracy.

Loading Facts: 380 Auto is also known by the names 9x17mm, 9mm Kurz, and 9mm Browning Court.

RN 95GR

CASE: X-TREME® | PRIMER: X-TREME® | C.O.A.L.: 0.960"

POWDER	ALLIANT	HODGDON	VIHTAVUORI
TYPE	POWER PISTOL	TITE GROUP	N-320
CHARGE	4.3	3.0	3.4
ACCURACY	2.4	1.8	1.7
VELOCITY	970	961	951
PRESSURE	17,795	17,797	16,892

HP 100GR

CASE: X-TREME® | PRIMER: X-TREME® | C.O.A.L.: 0.950"

POWDER	ALLIANT	HODGDON	VIHTAVUORI
TYPE	POWER PISTOL	UNIVERSAL	3N38
CHARGE	4.3	3.7	5.8
ACCURACY	2.4	1.8	2.0
VELOCITY	960	945	957
PRESSURE	19,333	19,434	19,164

RNFP 100GR

CASE: X-TREME® | PRIMER: X-TREME® | C.O.A.L.: 0.950"

POWDER	ALLIANT	HODGDON	VIHTAVUORI
TYPE	POWER PISTOL	CFE PISTOL	3N38
CHARGE	4.2	4.1	5.7
ACCURACY	3.1	2.3	2.9
VELOCITY	963	962	925
PRESSURE	18,551	19,327	17,838

9MM LUGER | 115 GRAIN

9MM LUGER

The 9mm Luger was designed by Georg Luger in 1902 for Germany's DWM Luger semi-auto pistol. It is the world's most popular center-fire pistol cartridge, used by many police departments and military forces around the world since its inception. The cartridge was not particularly popular in the U.S. for the first seven decades, however by the 1980's, law enforcement departments were rapidly transitioning to semi-auto pistols. These new, high capacity pistols were almost universally chambered in the 9mm Luger cartridge. High performance hollow-point bullets were also being developed which greatly improved 9mm Luger terminal ballistic performance.

The most popular X-Treme Bullet for 9mm is the 115 grain RN, due to its low cost and history of reliability. If you're a competitive shooter, we recommend the 124 or 135 gr hollow point. These two particular bullets have been used to win numerous National and World Championship titles and are loved by top shooters for their accuracy and consistency.

Also known as:
9x19mm, 9mm Parabellum

RN 115GR

CASE: X-TREME® | PRIMER: X-TREME® | C.O.A.L.: 1.150"

POWDER	ALLIANT	HODGDON	VIHTAVUORI
TYPE	BE-86	TITE GROUP	N-320
CHARGE(GRS)	5.3	4.2	4.5
ACCURACY	2.0"	2.3"	1.5"
VELOCITY	1121	1132	1114
PRESSURE	25,974	29,516	29,135

HP 115GR

CASE: X-TREME® | PRIMER: X-TREME® | C.O.A.L.: 1.075"

POWDER	ALLIANT	HODGDON	VIHTAVUORI
TYPE	BE-86	TITE GROUP	N-320
CHARGE (GRS)	5.0	4.1	4.3
ACCURACY	0.7	1.1	1.3
VELOCITY	1111	1122	1107
PRESSURE	27,079	30,563	29,718

FMJ 115GR

CASE: X-TREME® | PRIMER: X-TREME® | C.O.A.L.: 1.150”

POWDER	ALLIANT	HODGDON	VIHTAVUORI
TYPE	BE-86	TITE GROUP	N-320
CHARGE (GRS)	5.7	4.5	4.7
ACCURACY	2.8	2.9	1.5
VELOCITY	1165	1157	1142
PRESSURE	27,811	31,746	30,530

HPCB RN 115GR

CASE: X-TREME® | PRIMER: X-TREME® | C.O.A.L.: 1.150”

POWDER	ALLIANT	IMR	VIHTAVUORI
TYPE	BE-86	HI-SKOR 700 X	N-330
CHARGE (GRS)	5.3	4.3	5.1
ACCURACY	1.4	1.3	1.2
VELOCITY	1113	1093	1131
PRESSURE	24,559	24,634	27,176

FP 124GR

CASE: X-TREME® | PRIMER: X-TREME® | C.O.A.L.: 1.050”

POWDER	ALLIANT	IMR	VIHTAVUORI
TYPE	BE-86	HI-SKOR 700 X	N-320
CHARGE (GRS)	4.8	3.9	4.5
ACCURACY	1.2	1.9	1.2
VELOCITY	1070	1044	1075
PRESSURE	27,691	26,643	30,629

RN 124GR

CASE: X-TREME® | PRIMER: X-TREME® | C.O.A.L.: 1.150”

POWDER	ALLIANT	HODGDON	VIHTAVUORI
TYPE	BE-86	TITE GROUP	N-320
CHARGE (GRS)	5.1	4.0	4.1
ACCURACY	1.3	1.8	1.7
VELOCITY	1075	1065	1060
PRESSURE	25,628	29,884	29,858

9MM LUGER | 124/130 GRAIN

HP 124GR

CASE: X-TREME® | PRIMER: X-TREME® | C.O.A.L.: 1.060”

POWDER	ALLIANT	HODGDON	VIHTAVUORI
TYPE	BE-86	TITE GROUP	N-330
CHARGE (GRS)	4.8	3.7	4.4
ACCURACY	0.7	1.0	0.7
VELOCITY	1073	1039	1068
PRESSURE	27,505	30,659	29,795

FMJ 124GR

CASE: X-TREME® | PRIMER: X-TREME® | C.O.A.L.: 1.140”

POWDER	ALLIANT	IMR	VIHTAVUORI
TYPE	BE-86	HI-SKOR 700 X	3N38
CHARGE (GRS)	5.6	4.8	7.3
ACCURACY	1.3	2.3	2.7
VELOCITY	1170	1147	1171
PRESSURE	30,604	30,248	30,753

HPCB RN 124GR

CASE: X-TREME® | PRIMER: X-TREME® | C.O.A.L.: 1.150”

POWDER	ALLIANT	HODGDON	VIHTAVUORI
TYPE	BE-86	TITE GROUP	N-320
CHARGE (GRS)	4.7	3.7	4.0
ACCURACY	0.6	1.1	1.1
VELOCITY	1052	1059	1070
PRESSURE	25,273	31,049	32,915

HPCB RN 130GR

CASE: X-TREME® | PRIMER: X-TREME® | C.O.A.L.: 1.150”

POWDER	ALLIANT	HODGDON	VIHTAVUORI
TYPE	BE-86	TITE GROUP	N-320
CHARGE (GRS)	4.5	3.6	3.8
ACCURACY	1.1	0.9	1.5
VELOCITY	991	1021	1012
PRESSURE	24,141	29,199	28,500

RNFP 135GR

CASE: X-TREME® | PRIMER: X-TREME® | C.O.A.L.: 1.130”

POWDER	ALLIANT	HODGDON	VIHTAVUORI
TYPE	BE-86	TITE GROUP	N-320
CHARGE (GRS)	4.5	3.7	3.7
ACCURACY	0.6	1.5	0.7
VELOCITY	993	1014	1003
PRESSURE	25,351	31,854	30,558

HP 135GR

CASE: X-TREME® | PRIMER: X-TREME® | C.O.A.L.: 1.130”

POWDER	ALLIANT	HODGDON	VIHTAVUORI
TYPE	BE-86	TITE GROUP	N-320
CHARGE (GRS)	4.6	3.6	3.8
ACCURACY	0.9	0.5	0.5
VELOCITY	986	991	986
PRESSURE	24369	29030	27560

RN 147GR

CASE: X-TREME® | PRIMER: X-TREME® | C.O.A.L.: 1.150”

POWDER	ALLIANT	IMR	VIHTAVUORI
TYPE	BE-86	HI-SKOR 700 X	N-330
CHARGE (GRS)	3.9	3.3	3.7
ACCURACY	0.9	0.8	0.9
VELOCITY	907	900	922
PRESSURE	25,063	25,616	28,330

HP 147GR

CASE: X-TREME® | PRIMER: X-TREME® | C.O.A.L. 1.130

POWDER	ALLIANT	HODGDON	VIHTAVUORI
TYPE	BE-86	TITE GROUP	N-320
CHARGE (GRS)	4.0	3.2	3.3
ACCURACY	0.7	0.7	1.0
VELOCITY	906	910	889
PRESSURE	24,580	29,159	26,258

9MM LUGER | 147/165 GRAIN

HPCB RN 147GR

CASE: X-TREME® | PRIMER: X-TREME® | C.O.A.L.: 1.150”

POWDER	ALLIANT	HODGDON	VIHTAVUORI
TYPE	BE-86	TITE GROUP	N-330
CHARGE (GRS)	3.9	3.1	3.7
ACCURACY	0.9	1.2	0.9
VELOCITY	896	913	922
PRESSURE	24,056	32,089	28,330

RN 165GR

CASE: X-TREME® | PRIMER: X-TREME® | C.O.A.L.: 1.150”

POWDER	ALLIANT	HODGDON	VIHTAVUORI
TYPE	BE-86	TITE GROUP	N-330
CHARGE (GRS)	3.4	2.6	3.0
ACCURACY	1.3	2.2	1.8
VELOCITY	807	781	788
PRESSURE	26,888	33,390	30,210

38 SUPER AUTO +P

Based on John Browning's 38 Auto cartridge, the 38 Super Auto can provide velocity on par with some 357 Magnum loads. It was originally designed in 1929 and designated as the .38 Super Auto to differentiate it from the older, lower pressure version. 38 Super has been traditionally chambered in 1911 style pistols, and became very popular with competitive shooters in the late 1980's, but otherwise has not seen mainstream popularity.

Loading Facts: While you can use any of X-Treme's 9mm bullets for 38 Super, you'll see the best success with the heavy plated or hollow point profiled bullets due to the higher velocities.

HPCB RN 115GR

CASE: ARMSCOR® | PRIMER: X-TREME® | C.O.A.L.: 1.270"

POWDER	ALLIANT	HODGDON	VIHTAVUORI
TYPE	BE-86	UNIVERSAL	N-105
CHARGE (GRS)	7.4	6.4	9.4
ACCURACY	2.5	1.8	1.7
VELOCITY	1366	1325	1356
PRESSURE	31,845	31,997	29,341

HP 124GR

CASE: ARMSCOR® | PRIMER: X-TREME® | C.O.A.L.: 1.250"

POWDER	ALLIANT	HODGDON	VIHTAVUORI
TYPE	BE-86	LIL' GUN	N-105
CHARGE (GRS)	6.6	12.3	8.7
ACCURACY	1.4	0.9	0.8
VELOCITY	1253	1261	1239
PRESSURE	29,941	26,960	27,119

38 SUPER | 124/130/135 GRAIN

HPCB RN 124GR

CASE: ARMSCOR® | PRIMER: X-TREME® | C.O.A.L.: 1.280”

POWDER	ALLIANT	HODGDON	VIHTAVUORI
TYPE	BE-86	UNIVERSAL	N-105
CHARGE (GRS)	6.6	6.0	8.7
ACCURACY	2.4	2.0	UNLISTED
VELOCITY	1242	1247	1252
PRESSURE	29,211	31,796	27,120

HPCB RN 130GR

CASE: ARMSCOR® | PRIMER: X-TREME® | C.O.A.L.: 1.280”

POWDER	ALLIANT	HODGDON	VIHTAVUORI
TYPE	BE-86	UNIVERSAL	N-105
CHARGE (GRS)	6.4	5.7	8.0
ACCURACY	3.2	3.0	2.0
VELOCITY	1221	1201	1201
PRESSURE	30,246	31,872	26,117

HP 135GR

CASE: ARMSCOR® | PRIMER: X-TREME® | C.O.A.L.: 1.250”

POWDER	ALLIANT	HODGDON	VIHTAVUORI
TYPE	BE-86	LIL' GUN	N-105
CHARGE (GRS)	6.3	11.6	8.2
ACCURACY	1.8	1.2	1.0
VELOCITY	1201	1220	1196
PRESSURE	30,807	28,009	28,387

RNFP 135GR

CASE: ARMSCOR® | PRIMER: X-TREME® | C.O.A.L.: 1.250”

POWDER	ALLIANT	HODGDON	VIHTAVUORI
TYPE	BE-86	UNIVERSAL	N-105
CHARGE (GRS)	6.2	5.7	8.0
ACCURACY	3.1	2.8	2.3
VELOCITY	1185	1175	1214
PRESSURE	29,806	31,096	29,767

HP 147GR

CASE: ARMSCOR® | PRIMER: X-TREME® | C.O.A.L.: 1.250”

POWDER	ALLIANT	HODGDON	VIHTAVUORI
TYPE	BE-86	UNIVERSAL	N-105
CHARGE (GRS)	5.8	5.6	7.6
ACCURACY	UNLISTED	UNLISTED	UNLISTED
VELOCITY	1102	1095	1104
PRESSURE	29,460	32,316	28,007

HPCB RN 147GR

CASE: ARMSCOR® | PRIMER: X-TREME® | C.O.A.L.: 1.275”

POWDER	ALLIANT	HODGDON	VIHTAVUORI
TYPE	BE-86	UNIVERSAL	N-105
CHARGE (GRS)	5.8	5.3	7.2
ACCURACY	UNLISTED	2.2	UNLISTED
VELOCITY	1109	1093	1094
PRESSURE	29,409	30,389	27,187

RN 165GR

CASE: ARMSCOR® | PRIMER: X-TREME® | C.O.A.L.: 1.275”

POWDER	ALLIANT	HODGDON	VIHTAVUORI
TYPE	BE-86	UNIVERSAL	N-105
CHARGE (GRS)	5.2	4.6	6.3
ACCURACY	UNLISTED	2.9	UNLISTED
VELOCITY	1003	985	1008
PRESSURE	30,040	31,309	28,507

357 SIG | 125 GRAIN

357 SIG

The 357 Sig was designed in 1994 at the request of Sig Sauer® to achieve .357 Magnum level ballistic performance, in a semi-auto pistol platform. The cartridge is based upon a 40 S&W, necked down to accept a 9mm diameter projectile. It headspaces off the mouth, as is standard in semi auto pistols, rather than the shoulder like many other bottle necked cartridges. Its greatest success was with various law enforcement agencies, and saw immediate adoption by the Secret Service, Texas Department of Public Safety and the Federal Air Marshalls. In recent years however, the popularity has started to decline due to the cost of ammunition, and relatively heavy recoil and muzzle blast.

Loading Facts: While the 357 Sig case can accept most standard 9mm bullets, the nature of this cartridge demands some special design parameters. The plating thickness, and ogive design of the X-Treme 125 gr FP are optimized specifically to account for the needs of 357 Sig.

FP HPCB 125GR

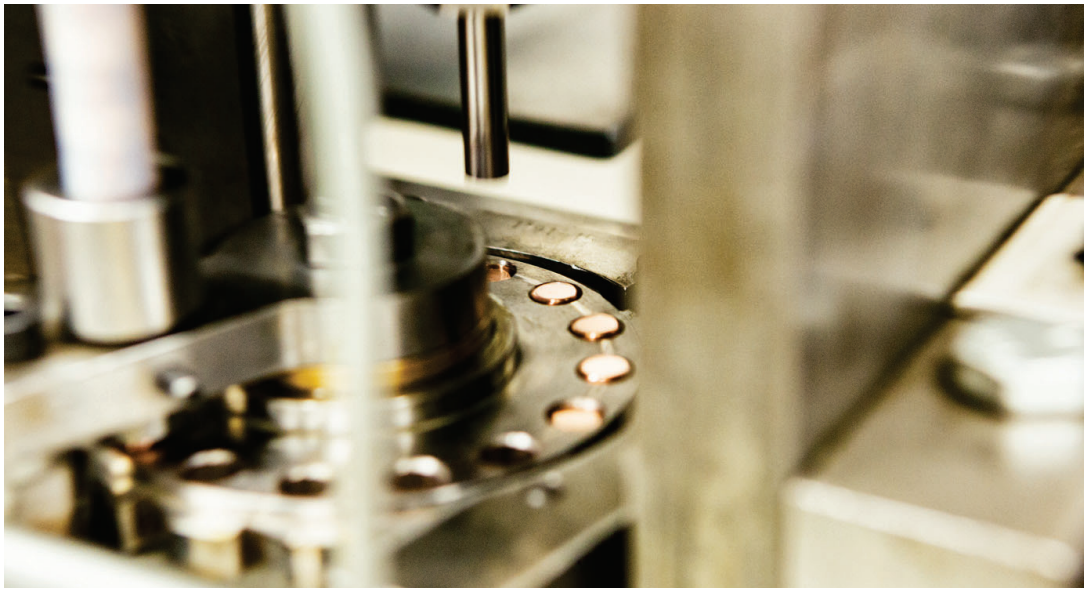
CASE: X-TREME® | PRIMER: X-TREME® | C.O.A.L.: 1.150”

POWDER	ALLIANT	IMR	VIHTAVUORI
TYPE	POWER PISTOL	Hi-SKOR 800 X	3N38
CHARGE (GRS)	5.0	8.4	9.8
ACCURACY	3.9	0.4	0.4
VELOCITY	1339	1328	1337
PRESSURE	34,932	32,072	35,102

40 S&W

The 40 S&W was designed by Winchester in 1989 at the request of Smith & Wesson to produce a shorter length version of the 10mm Auto . The new cartridge design criteria was to downsize the 10mm Auto, reducing the recoil, and size of the pistol platforms it fit into. With its perceived ballistic improvement over 9mm, the 40 S&W saw very, very quick adaptation in the law enforcement community. Very few new cartridges have ever received such immediate success and popularity. Today, the 40 S&W still sees widespread use in law enforcement and personal defense. Due to improvements in bullet and powder, the gap in terminal performance between 40 S&W, 9mm, and 45 Auto is virtually non-existent.

Loading Facts: Since 40 S&W tends to be a high pressure cartridge, using fast burning powders to achieve the desired velocities, special care when setting the crimp is needed. For the best accuracy results, we recommend using powders on the slower burning end of spectrum for this cartridge.



RNFP 155GR

CASE: X-TREME® | PRIMER: X-TREME® | C.O.A.L.: 1.120”

POWDER	ALLIANT	HODGDON	VIHTAVUORI
TYPE	POWER PISTOL	CFE PISTOL	N-330
CHARGE (GRS)	7.4	7.1	6.6
ACCURACY	1.4	1.2	1.3
VELOCITY	1126	1128	1110
PRESSURE	26,418	28,274	28,463

40 S&W | 165/180 GRAIN

RNFP 165GR

CASE: X-TREME® | PRIMER: X-TREME® | C.O.A.L.: 1.120”

POWDER	ALLIANT	HODGDON	VIHTAVUORI
TYPE	POWER PISTOL	TITE GROUP	N-330
CHARGE (GRS)	6.3	4.8	5.9
ACCURACY	1.5	2.4	1.1
VELOCITY	1002	1012	1027
PRESSURE	22,347	27,926	26,137

HP 165GR

CASE: X-TREME® | PRIMER: X-TREME® | C.O.A.L.: 1.120”

POWDER	ALLIANT	HODGDON	VIHTAVUORI
TYPE	POWER PISTOL	TITE GROUP	N-330
CHARGE (GRS)	6.3	4.7	5.7
ACCURACY	1.3	1.4	0.9
VELOCITY	1024	1017	1018
PRESSURE	24,416	29,926	27,538

RNFP 180GR

CASE: X-TREME® | PRIMER: X-TREME® | C.O.A.L.: 1.120”

POWDER	ALLIANT	HODGDON	VIHTAVUORI
TYPE	BE-86	TITE GROUP	N-330
CHARGE (GRS)	5.8	4.5	5.4
ACCURACY	1.0	1.1	1.0
VELOCITY	970	970	954
PRESSURE	24,718	31,093	27,366

HP 180GR

CASE: X-TREME® | PRIMER: X-TREME® | C.O.A.L.: 1.120”

POWDER	ALLIANT	IMR	VIHTAVUORI
TYPE	POWER PISTOL	HI-SKOR 800 X	N-340
CHARGE (GRS)	5.8	6.4	5.2
ACCURACY	1.1	1.7	1.5
VELOCITY	996	982	979
PRESSURE	27,337	26,721	31,139

RNFP 200GR

CASE: X-TREME® | PRIMER: X-TREME® | C.O.A.L.: 1.120”

POWDER	ALLIANT	HODGDON	VIHTAVUORI
TYPE	POWER PISTOL	TITE GROUP	N-340
CHARGE (GRS)	5.0	4.0	4.8
ACCURACY	1.9	1.8	2.0
VELOCITY	856	862	876
PRESSURE	23,164	31,493	29,496

RNFP 220GR

CASE: X-TREME® | PRIMER: X-TREME® | C.O.A.L.: 1.120”

POWDER	ALLIANT	IMR	VIHTAVUORI
TYPE	POWER PISTOL	HI-SKOR 800 X	N-340
CHARGE (GRS)	4.2	4.9	4.0
ACCURACY	1.5	1.1	1.6
VELOCITY	771	809	776
PRESSURE	25,914	28,718	29,997

10MM AUTO | 180 GRAIN

10MM AUTO

The 10MM was designed in 1983 by Norma at the request of Dornaus & Dixon for their Bren Ten semi-auto pistol. The 10mm Auto mimics the ballistics of a 41 Remington Mag, fired from a 4" barrel revolver. The concept was championed by the late Jeff Cooper, a popular gun writer at the time. Colt was the first American pistol company to manufacture a pistol, the Delta Elite, in 10mm. The cartridge saw some initial popularity in law enforcement, however it was quickly found most inexperienced shooters struggled to control the recoil and muzzle blast of this cartridge. Today, the 10mm retains a near cult following, and is very popular for handgun hunting.

Loading Facts: While you can use any of X-Treme's 40 S&W bullets for 10mm, you'll see the best success with the heavy plated or hollow point profiled bullets due to the higher velocities.

HP 180GR

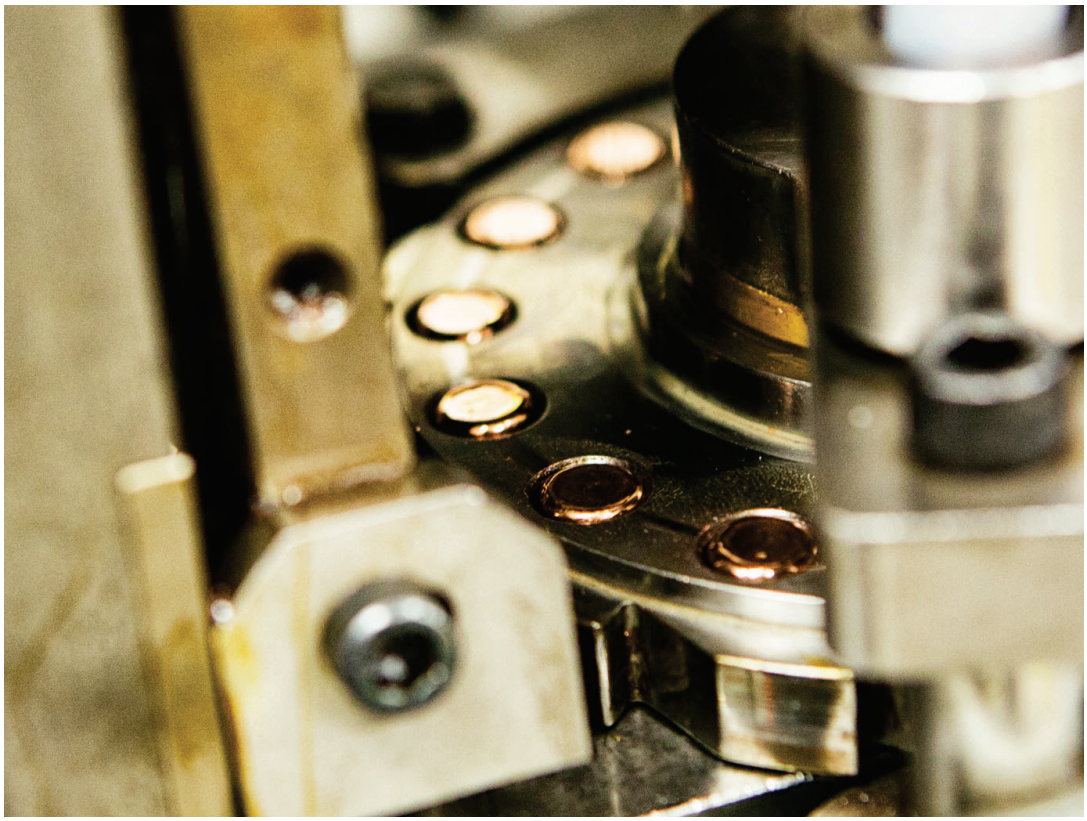
CASE: X-TREME® | PRIMER: X-TREME® | C.O.A.L.: 1.250"

POWDER	ALLIANT	HODGDON	VIHTAVUORI
TYPE	POWER PISTOL	CFE PISTOL	N-350
CHARGE (GRS)	7.0	7.1	7.0
ACCURACY	1.5	1.2	1.6
VELOCITY	1127	1129	1112
PRESSURE	27,511	29,687	30,444

RNFP HPCB 180GR

CASE: X-TREME® | PRIMER: X-TREME® | C.O.A.L.: 1.250"

POWDER	ALLIANT	HODGDON	VIHTAVUORI
TYPE	POWER PISTOL	TITE GROUP	N-350
CHARGE (GRS)	7.1	7.1	7.2
ACCURACY	1.2	1.6	1.3
VELOCITY	1125	1125	1111
PRESSURE	27,084	30,176	29,219



RNFP HPCB 200GR

CASE: X-TREME® | PRIMER: X-TREME® | C.O.A.L.: 1.250”

POWDER	ALLIANT	HODGDON	VIHTAVUORI
TYPE	POWER PISTOL	TITE GROUP	N-350
CHARGE (GRS)	5.6	4.4	5.7
ACCURACY	1.4	2.2	1.5
VELOCITY	906	896	912
PRESSURE	20,478	24,119	20,717

RNFP 220GR

CASE: X-TREME® | PRIMER: X-TREME® | C.O.A.L.: 1.250”

POWDER	ALLIANT	HODGDON	VIHTAVUORI
TYPE	POWER PISTOL	TITE GROUP	N-350
CHARGE (GRS)	4.6	3.7	4.7
ACCURACY	1.7	1.7	1.2
VELOCITY	793	810	789
PRESSURE	19,361	25,236	19,496

45 AUTO | 200 GRAIN

45 AUTO

The 45 Auto was designed by John Browning in 1905 for Colt's semi-automatic pistols. The 45 Auto's original designation was ".45 Automatic Colt Pistol (ACP)". While the name was officially changed by SAAMI to "45 Auto" many years ago, the names are generally still interchanged with no confusion. The U.S. military adopted the cartridge in the M1911Colt pistols and designated it, "Cartridge, Ball, Caliber 45, Model 1911". The 45 Auto was at the time an excellent cartridge in the early days of semi-auto pistols, and still enjoys extremely widespread use in almost all areas of the market.

Loading Facts: In the early days, 1911 style pistols were notorious for mis-feeding any bullet profile except for the original round nose design. Though many of those issues have been cured by advances in firearm and magazine technology, the X-Treme HP profile very closely mimics the RN profile for the best reliability in all platforms.

RN 200GR

CASE: X-TREME® | PRIMER: X-TREME® | C.O.A.L.: 1.260"

POWDER	ALLIANT	HODGDON	VIHTAVUORI
TYPE	POWER PISTOL	TITE GROUP	N-320
CHARGE (GRS)	6.5	5.1	5.9
ACCURACY	1.4	1.4	0.8
VELOCITY	861	890	863
PRESSURE	13242	15977	13392

HP 200GR

CASE: X-TREME® | PRIMER: X-TREME® | C.O.A.L.: 1.230"

POWDER	ALLIANT	HODGDON	VIHTAVUORI
TYPE	POWER PISTOL	TITE GROUP	N-320
CHARGE (GRS)	6.5	4.8	5.7
ACCURACY	0.9	0.9	0.9
VELOCITY	873	867	868
PRESSURE	14,439	15,958	14,697

SWC 200GR

CASE: X-TREME® | PRIMER: X-TREME® | C.O.A.L.: 1.245”

POWDER	ALLIANT	HODGDON	VIHTAVUORI
TYPE	POWER PISTOL	TITE GROUP	N-320
CHARGE (GRS)	6.4	4.7	5.5
ACCURACY	1.3	1.3	1.5
VELOCITY	877	858	860
PRESSURE	14,439	15,958	14,697

RN 230GR

CASE: X-TREME® | PRIMER: X-TREME® | C.O.A.L.: 1.260”

POWDER	ALLIANT	HODGDON	VIHTAVUORI
TYPE	POWER PISTOL	TITE GROUP	N-320
CHARGE (GRS)	6.1	4.7	5.3
ACCURACY	1.2	1.7	2.0
VELOCITY	828	834	832
PRESSURE	15,634	18,513	16,970

HP 230GR

CASE: X-TREME® | PRIMER: X-TREME® | C.O.A.L.: 1.230”

POWDER	ALLIANT	HODGDON	VIHTAVUORI
TYPE	POWER PISTOL	CFE PISTOL	N-320
CHARGE (GRS)	6.1	5.9	5.2
ACCURACY	1.0	1.0	1.2
VELOCITY	856	828	831
PRESSURE	17,243	16,943	18,169

RN 250GR

CASE: X-TREME® | PRIMER: X-TREME® | C.O.A.L.: 1.260”

POWDER	ALLIANT	HODGDON	VIHTAVUORI
TYPE	POWER PISTOL	CFE PISTOL	N-320
CHARGE (GRS)	6.0	5.8	5.1
ACCURACY	2.2	1.0	1.5
VELOCITY	817	802	786
PRESSURE	17,545	17,625	17,973

357 MAGNUM | 125 GRAIN

357 MAGNUM

The 357 Magnum was designed by D.B. Wesson in 1935. Taking the existing 38 S&W Special case, and adding approximately .125" to the case length, the design by Wesson produced almost twice the pressure of its parent cartridge, and, at the time of introduction, it was the world's most powerful pistol cartridge. It was quickly adopted by the FBI and served law enforcement agencies well until semi-auto pistols started to replace revolvers in the 1980s. The .357 Magnum is by far one of the most versatile handgun cartridges, allowing for the use of mild 38 Special target loads, as well as high pressure heavy hitting loads, for medium sized game animals and emergency protection against black bears.

Loading Facts: Due to the large case capacity, it is not recommended to use 357 Mag cases to load for target shooting. Instead, use 38 Special cases and loading data.

FP 125GR

CASE: STARLINE® | PRIMER: X-TREME® | C.O.A.L.: 1.570"

POWDER	ALLIANT	HODGDON	VIHTAVUORI
TYPE	POWER PISTOL	TITE GROUP	N-340
CHARGE (GRS)	8.7	7.3	8.6
ACCURACY	1.4	1.1	1.2
VELOCITY	1520	1487	1501
PRESSURE	27,148	31,414	30,752

RN 125GR

CASE: STARLINE® | PRIMER: X-TREME® | C.O.A.L.: 1.570"

POWDER	ALLIANT	HODGDON	VIHTAVUORI
TYPE	POWER PISTOL	TITE GROUP	N-110
CHARGE (GRS)	8.6	7.5	15.6
ACCURACY	1.2	1.3	1.5
VELOCITY	1517	1505	1514
PRESSURE	26,528	31,012	23,558

HP 125GR

CASE: STARLINE® | PRIMER: X-TREME® | C.O.A.L.: 1.550"

POWDER	ALLIANT	HODGDON	VIHTAVUORI
TYPE	POWER PISTOL	TITE GROUP	N-110
CHARGE (GRS)	8.8	7.3	15.5
ACCURACY	1.0	1.2	1.1
VELOCITY	1485	1477	1515
PRESSURE	27,519	31,219	23,892

FP 158GR

CASE: STARLINE® | PRIMER: X-TREME® | C.O.A.L.: 1.568”

POWDER	ALLIANT	HODGDON	VIHTAVUORI
TYPE	POWER PISTOL	CFE PISTOL	N-110
CHARGE (GRS)	7.5	7.6	12.5
ACCURACY	0.8	0.7	1.0
VELOCITY	1308	1304	1301
PRESSURE	28,478	30,534	22,953

RN 158GR

CASE: STARLINE® | PRIMER: X-TREME® | C.O.A.L.: 1.570”

POWDER	ALLIANT	HODGDON	VIHTAVUORI
TYPE	POWER PISTOL	CFE PISTOL	N-105
CHARGE (GRS)	6.7	6.7	9.5
ACCURACY	1.1	1.4	1.2
VELOCITY	1302	1296	1309
PRESSURE	27,381	28,726	25,022

RNFP 158GR

CASE: STARLINE® | PRIMER: X-TREME® | C.O.A.L.: 1.570”

POWDER	ALLIANT	HODGDON	VIHTAVUORI
TYPE	POWER PISTOL	CFE PISTOL	N-110
CHARGE (GRS)	7.6	7.7	12.5
ACCURACY	1.9	1.3	1.6
VELOCITY	1296	1294	1295
PRESSURE	27,719	28,929	23,174

HP 158GR

CASE: STARLINE® | PRIMER: X-TREME® | C.O.A.L.: 1.570”

POWDER	ALLIANT	HODGDON	VIHTAVUORI
TYPE	POWER PISTOL	CFE PISTOL	N-110
CHARGE (GRS)	7.6	7.6	12.5
ACCURACY	0.6	0.6	0.8
VELOCITY	1281	1289	1298
PRESSURE	28,326	29,378	23,469

38 SPECIAL

Designed and introduced by Smith & Wesson in 1902 for their revolvers, it was by far the most popular center fire handgun cartridge for over seven decades in the U.S.A. The .38 Special cartridge is a genuine, all-purpose cartridge that has excelled in law enforcement, personal defense, competitive shooting, and other forms of recreational shooting.

X-Treme Bullets most used bullet for the 38 Special is the 158 gr RNFP, offering a combination of cleaner holes in targets, and ease of chambering the more rounded bullet profile.

Loading Facts: Care should be taken to use slower burning, bulkier powders due to the large case capacity of 38 Special. This will help reduce variations in velocity and pressures.

FP 125GR

CASE: STARLINE® | PRIMER: X-TREME® | C.O.A.L.: 1.440”

POWDER	ALLIANT	HODGDON	VIHTAVUORI
TYPE	POWER PISTOL	TITE GROUP	N-340
CHARGE (GRS)	5.9	4.3	6.0
ACCURACY	0.9	1.6	2.7
VELOCITY	1022	995	1041
PRESSURE	12,811	15,834	15,119

RN 125GR

CASE: STARLINE® | PRIMER: X-TREME® | C.O.A.L.: 1.450”

POWDER	ALLIANT	HODGDON	VIHTAVUORI
TYPE	POWER PISTOL	TITE GROUP	N-340
CHARGE (GRS)	6.0	4.3	5.8
ACCURACY	2.7	2.7	3.0
VELOCITY	998	1010	1010
PRESSURE	13,626	15,268	14,248

HP 125GR

CASE: STARLINE® | PRIMER: X-TREME® | C.O.A.L.: 1.430”

POWDER	ALLIANT	HODGDON	VIHTAVUORI
TYPE	POWER PISTOL	TITE GROUP	N-340
CHARGE (GRS)	6.0	4.3	5.8
ACCURACY	2.0	3.0	1.9
VELOCITY	999	993	997
PRESSURE	14,348	15,669	14,969

WC 148GR

CASE: STARLINE® | PRIMER: X-TREME® | C.O.A.L.: 1.210”

POWDER	ALLIANT	HODGDON	VIHTAVUORI
TYPE	POWER PISTOL	TITE GROUP	N-340
CHARGE (GRS)	3.7	2.8	3.5
ACCURACY	1.0	1.1	1.0
VELOCITY	762	749	753
PRESSURE	13,708	15,630	13,785

FP 158GR

CASE: STARLINE® | PRIMER: X-TREME® | C.O.A.L.: 1.440”

POWDER	ALLIANT	HODGDON	VIHTAVUORI
TYPE	POWER PISTOL	UNIVERSAL	3N38
CHARGE (GRS)	4.9	5.0	7.0
ACCURACY	2.2	1.2	1.5
VELOCITY	873	881	882
PRESSURE	14,533	16,150	15,824

RNFP 158GR

CASE: STARLINE® | PRIMER: X-TREME® | C.O.A.L.: 1.440”

POWDER	ALLIANT	HODGDON	VIHTAVUORI
TYPE	POWER PISTOL	TITE GROUP	N-340
CHARGE (GRS)	5.2	3.8	5.0
ACCURACY	3.1	2.5	2.0
VELOCITY	898	877	884
PRESSURE	14,918	16,158	15,625

44 S&W SPECIAL

Designed by Smith & Wesson for their revolvers in the early 1900s as a lengthened version of the 44 Russian. The 44 Special was looking to capitalize on the then state-of-the-art smokeless powder. As the smokeless powder technology was refined, so was the 44 Special. Eventually, even more power was desired, which brought on the 44 Remington Magnum, relegating the 44 Special to a niche following.

RNFP 200GR

CASE: STARLINE® | PRIMER: X-TREME® | C.O.A.L.: 1.400”

POWDER	ALLIANT	HODGDON	VIHTAVUORI
TYPE	POWER PISTOL	TITE GROUP	N-105
CHARGE (GRS)	6.5	6.6	10.9
ACCURACY	3.1	4.0	5.5
VELOCITY	899	890	890
PRESSURE	14,475	14,900	13,746

RNFP 240GR

CASE: STARLINE® | PRIMER: X-TREME® | C.O.A.L.: 1.400”

POWDER	ALLIANT	HODGDON	VIHTAVUORI
TYPE	POWER PISTOL	CFE PISTOL	N-105
CHARGE (GRS)	5.8	5.9	9.4
ACCURACY	3.5	3.9	3.7
VELOCITY	801	809	786
PRESSURE	14,389	14,702	13,731

44 REM MAGNUM

The 44 Rem Magnum was designed and introduced by Remington in the 1950's at the request of 44 Special enthusiasts, called the "44 Associates, desiring higher performance. It followed the same concept as the .357 Magnum design wherein an extra .125" of length was added to the 44 Special case, allowing for higher pressures, and therefore; velocity. While the most popular use for 44 Magnum is handgun hunting, it's most noted appearance is in the movie Dirty Harry, in which Clint Eastwood's character carries a S&W Model 29.

X-Treme Bullet's 200 and 240 gr Heavy Plate RNFP bullets are some of the only plated bullets to stand up to true 44 Magnum level pressures and velocities, so don't be afraid to get maximum performance.

RNFP HP (HEAVY PLATE) 200GR

CASE: STARLINE® | PRIMER: X-TREME® | C.O.A.L.: 1.551"

POWDER	ALLIANT	HODGDON	VIHTAVUORI
TYPE	POWER PISTOL	CFE PISTOL	N-105
CHARGE (GRS)	13.0	13.2	15.5
ACCURACY	3.8	4.5	3.9
VELOCITY	1445	1454	1442
PRESSURE	26,403	31,190	24,750

RNFP HP (HEAVY PLATE) 240GR

CASE: STARLINE® | PRIMER: X-TREME® | C.O.A.L.: 1.556"

POWDER	ALLIANT	IMR	VIHTAVUORI
TYPE	POWER PISTOL	HI-SKOR 800 X	N-105
CHARGE (GRS)	12.3	12.5	14.4
ACCURACY	4.9	4.2	3.7
VELOCITY	1339	1347	1334
PRESSURE	31,413	31,106	30,090

45 COLT

Designed in 1873 for the classic Colt Single Action Army (SAA) revolver as a black powder cartridge, the 45 Colt was almost immediately adopted by the U.S. Army. It also saw immense popularity and widespread use in the civilian market, by lawmen and outlaws alike. An interesting design feature of the cartridge is the smaller than typical rim diameter. This made for a smaller overall handgun that still held 6 rounds, this design however, was not without downsides. The narrow rim was more difficult for an extractor to hold, which caused some reliability problems in the lever action repeating rifles of the period. While officially designated the "45 Colt" by SAAMI, over the years, many have taken to calling it the 45 Long Colt to avoid confusion with the 45 Auto cartridge, which originally was designated 45 ACP.

No matter what you call it, 45 Colt, with its 145 years of continuous production and service, is one of the only cartridges to successfully make the transition from black powder, to smokeless powder with very little change.

Loading Facts: Although the bullet diameter is the same as 45 Auto, most bullets do not interchange due to the different length requirements to fit into a revolver cylinder versus a semi auto magazine.

FP 225GR

CASE: STARLINE® | PRIMER: X-TREME® | C.O.A.L.: 1.580"

POWDER	ALLIANT	IMR	VIHTAVUORI
TYPE	BULLSEYE	HI-SKOR 800 X	N-105
CHARGE (GRS)	7.5	10.0	15.0
ACCURACY	1.5	1.7	2.1
VELOCITY	894	903	915
PRESSURE	13,372	12,834	11,618

FP 255GR

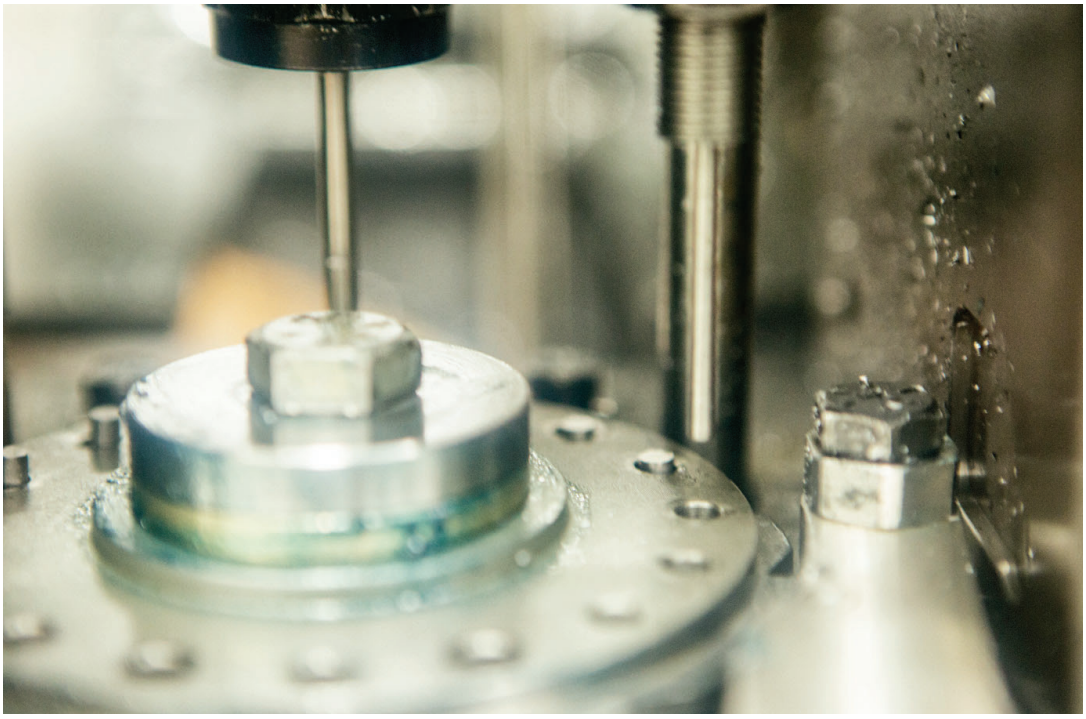
CASE: STARLINE® | PRIMER: X-TREME® | C.O.A.L.: 1.580"

POWDER	ALLIANT	IMR	VIHTAVUORI
TYPE	BULLSEYE	HI-SKOR 800 X	N-330
CHARGE (GRS)	6.0	7.8	8.0
ACCURACY	1.7	2.3	1.8
VELOCITY	780	798	750
PRESSURE	12,808	12,263	12,767

50 ACTION EXPRESS (AE)

The 50 AE was designed for use with the Desert Eagle pistol and incorporates a rebated rim, the same size as 44 Magnum size to operate within the pistols chambered for 44 Magnum by simply changing barrel and magazine. While not the first, the Desert Eagle is the only widely sold pistol chambered for 50 AE, making the cartridge and the firearm almost inseparable. With its size, and rather unique aesthetics, the Desert Eagle quickly gained a place in pop culture. It's estimated that the Desert Eagle has appeared in over 500 films, video games, and has even been featured on the cover of Playboy magazine.

Loading Facts: The COAL for 50 AE is almost always fixed at 1.575 due to case capacity and magazine length. While some variation in bullet weight is seen, 325gr is the universally standard weight.



RNFP 325GR

CASE: STARLINE® | PRIMER: X-TREME® | C.O.A.L.: 1.575"

POWDER	ALLIANT	HODGDON	VIHTAVUORI
TYPE	2400	H110	N-110
CHARGE (GRS)	27.8	31.7	28.2
ACCURACY	0.6	1.0	0.6
VELOCITY	1360	1350	1373
PRESSURE	33,579	28,996	32,949

458 SOCOM | 300/450 GRAIN

458 SOCOM

The 458 Socom was designed in 2000 by Marty Ter Weeme of Teppo Jutsu. This cartridge was developed based on discussions with some members for the Military's Special Operations Command (SOCOM) about some of the lack of effectiveness of 5.56 NATO cartridge seen during various combat operations. The cartridge fits into a standard AR-15 sized rifle with minimal modifications, even using a standard 223 magazine for a 7-10 round capacity. Since it's introduction, it has gained a considerable following among hunters and big-bore enthusiasts.

Loading Facts: Since 458 SOCOM is not currently a SAAMI cartridge, there does tend to be some variation in chamber dimensions, and different thoughts on maximum safe pressures. You should take care while setting up your sizing dies, as the shoulder is very easy to buckle during sizing, which will cause feeding issues in most rifles.

RNFP 300GR

CASE: STARLINE® | PRIMER: X-TREME® | C.O.A.L.: 1.985"

POWDER	ALLIANT	HODGDON	VIHTAVUORI
TYPE	RELOADER 7	H4198	N-133
CHARGE (GRS)	42.4	41.2	48.2
ACCURACY	0.9	1.6	1.4
VELOCITY	1803	1796	1795
PRESSURE	31,249	32,015	28,707

RNFP 450GR

CASE: STARLINE® | PRIMER: X-TREME® | C.O.A.L.: 1.985"

POWDER	ALLIANT	HODGDON	VIHTAVUORI
TYPE	RELOADER 7	H4198	N-133
CHARGE (GRS)	24.0	24.7	28.5
ACCURACY	1.7	1.4	1.5
VELOCITY	998	994	1001
PRESSURE	19,919	19,733	17,975

223 REMINGTON

The 223 Remington was designed by Remington and submitted to SAAMI in 1962 as the commercial counterpart of the newly introduced military cartridge, 5.56x45MM. While often seen as underpowered by some traditionalists, the 223 Remington, and 5.56x45 NATO cartridges have faithfully served shooters, hunters, and soldiers alike for almost 60 years. The 223 Remington is ideal for a variety of uses, including hunting, personal defense, and competition. It has become the most popular rifle cartridge in North America by a very large margin.

Loading Facts: There is no dimensional difference between the 223 Remington and 5.56x45 cartridges themselves. The difference lies in the chamber design, with 5.56 having a much longer leade. This leads to lower overall chamber pressures, which in most cases allows 5.56 ammunition to be loaded to a higher velocity. Ammunition loaded to 223 Remington specs can safely be fired through a 5.56 chamber, however it is not recommended to fire ammunition loaded to 5.56 specs through a SAAMI Spec 223 Remington chamber.

FMJ 55GR

CASE: FEDERAL® | PRIMER: X-TREME® | C.O.A.L.: 2.215”

POWDER	ALLIANT	HODGDON	VIHTAVUORI
TYPE	RELOADER 15	CFE-223	N-540
CHARGE (GRS)	26.5	26.5	26.0
ACCURACY	1.0	UNLISTED	0.9
VELOCITY	3197	3206	3208
PRESSURE	49,292	45,895	50,762

FMJ 62GR

CASE: FEDERAL® | PRIMER: X-TREME® | C.O.A.L.: 2.244”

POWDER	ALLIANT	HODGDON	VIHTAVUORI
TYPE	RELOADER 10X	CFE-223	N-140
CHARGE (GRS)	22.5	26.8	26.3
ACCURACY	UNLISTED	UNLISTED	UNLISTED
VELOCITY	2995	2992	2995
PRESSURE	47,653	46,468	46.448

PERFORMANCE DELIVERED DOWN RANGE

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