



An overview of Sniper Extreme Ammunition



The Sniper a true force multiplier. A well-trained sniper with a \$5 round of ammunition can hold up a billion-dollar battle group.

Introduction

EPA has been specialising in Sniper Ammunition for over 15 years.

We have firmly established a good reputation for innovative products and solutions for Military and Police units all over the world.

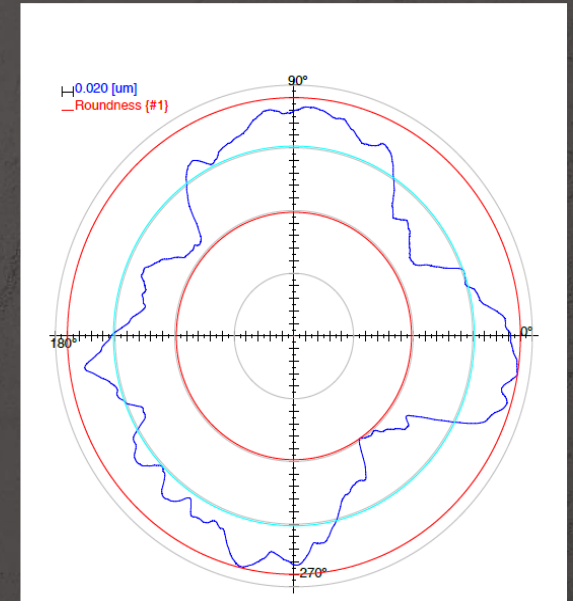
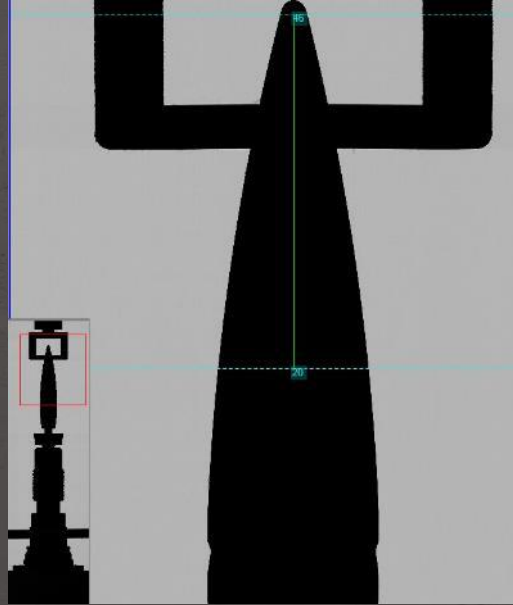
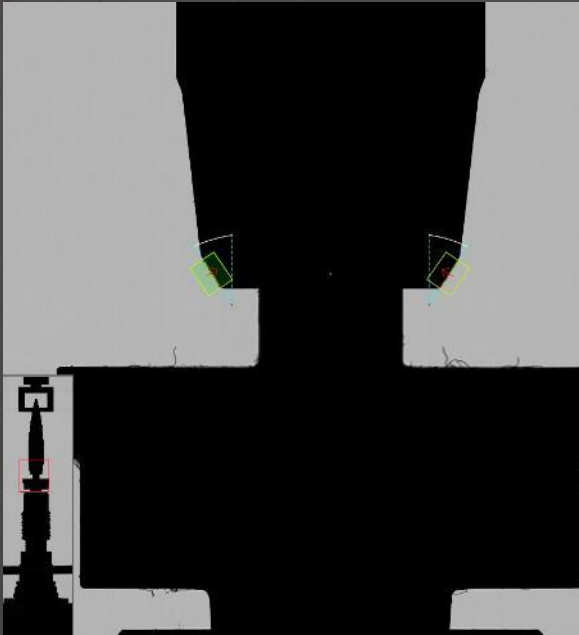
We are licenced for all types of energetics and pyrotechnics, Home Office approved for all types of weapons and ammunition.

EPA Manufacturing Ltd are continuously forward thinking we are always striving to improve and think of better ways to bring existing products into the 21st Century.

In addition to Specialist Ammunition, we also manufacture Counter IED products, Pyrotechnic Cartridges for Aircraft Ejection Seats and other related products.



Quality components are the first step in the pursuit of Extreme Performance



Consistency, Consistency, Consistency

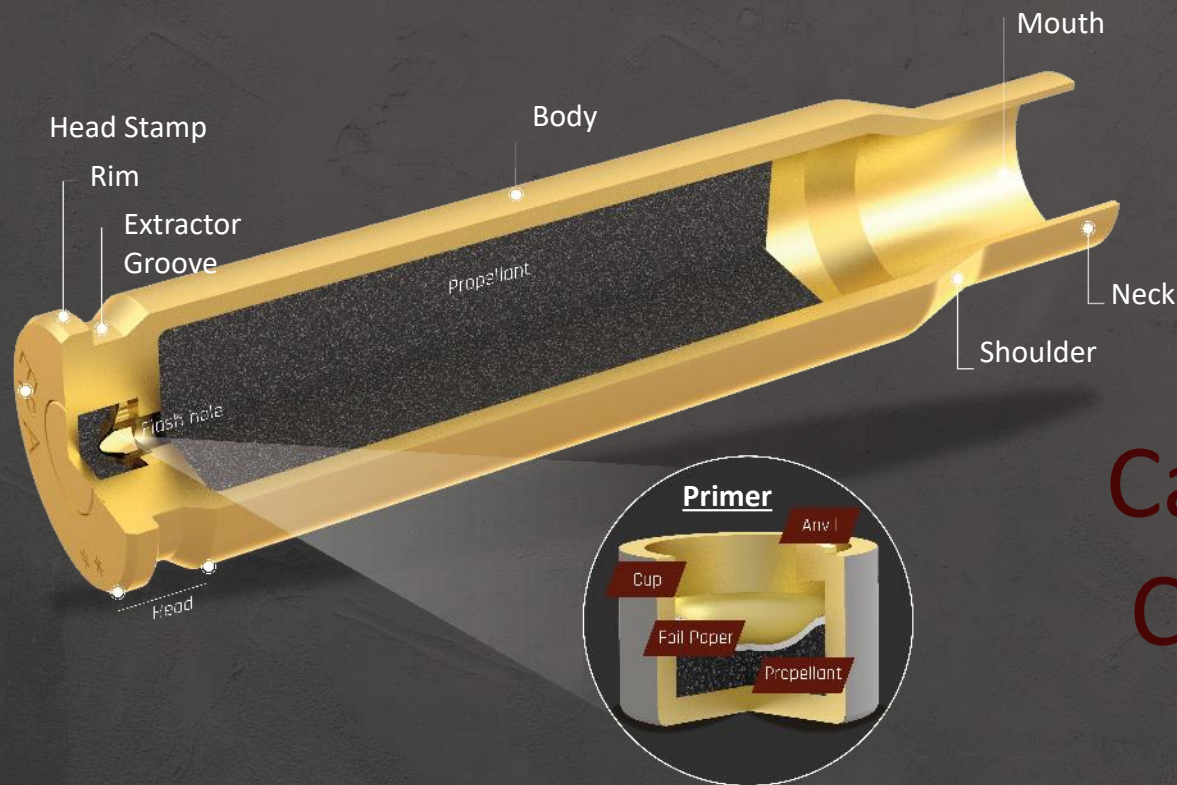
All our Sniper ammunition is carefully assembled and checked at every stage of manufacture, powder charges are weighed to within fractions of a grain, projectiles are perfectly concentric and weight variations are almost nonexistent, all this adds up to unparalleled accuracy and reliability.

Quality cartridge cases are essential in order to make quality ammunition. We offer all our ammunition in brass cases as standard but can supply bright or black nickel if required.

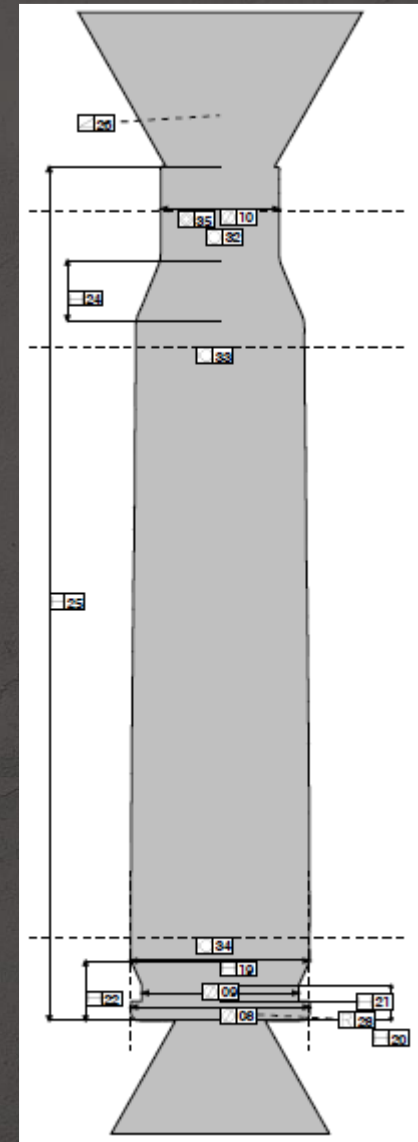
The cartridge case is very important, for Sniper Ammunition it needs to be consistent in terms of dimension, wall thickness, volume and concentricity.

The cartridge cases are checked for visual imperfections, all critical dimensions and volume to establish consistency.

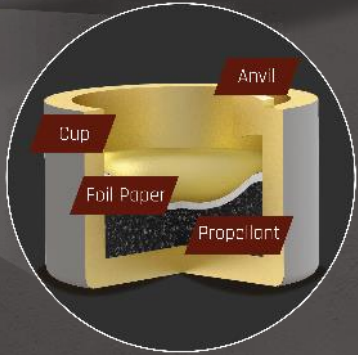
Metallurgical test are performed to make sure the case has the correct hardness gradients Too much variation and the lot is rejected.



Cartridge Cases



Primers



Primers contain a sensitive explosive mixture that when struck by the firing pin ignites and in turn ignites the propellant. Most are based on lead styphnate, although lead free is becoming more popular. Early priming compounds contained mercury but is no longer used.

Primers are a critical components and we conduct many quality checks and tests to ensure correct function.

First every lot of primers are checked visually and dimensionally

Then a random sample from each lot is pressure tested for consistency. If the pressure spread is too wide or out of our tolerance, the lot is rejected.

Next is safety, a fire, no fire test is conducted following MOPI

Propellant

Propellant comes in many types and shapes, some are single based , double based, or somewhere in between. They are designed to burn at different rates to produce different pressures and velocities, generally slower powders are used for heavier bullets, faster powders for lighter bullets.



We select propellants based on the performance our customer is looking for, we test to ensure correct function and accuracy in the weapon platform. Nothing is assumed, only extensive testing will yield the correct results.

Propellant is checked for moisture content.

We only use REACH compliant propellants

We test all loads at ambient, hot and cold to make sure performance is in line with client requirements and performance is not erratic at high and low temperatures.

Specially designed robots weigh each powder charge to .5mg. This eliminates human error and guarantees each round has the same powder charge as all the others. Essential for long range accuracy.

We have a capability to load 12000 individually weighed powder charges per day.

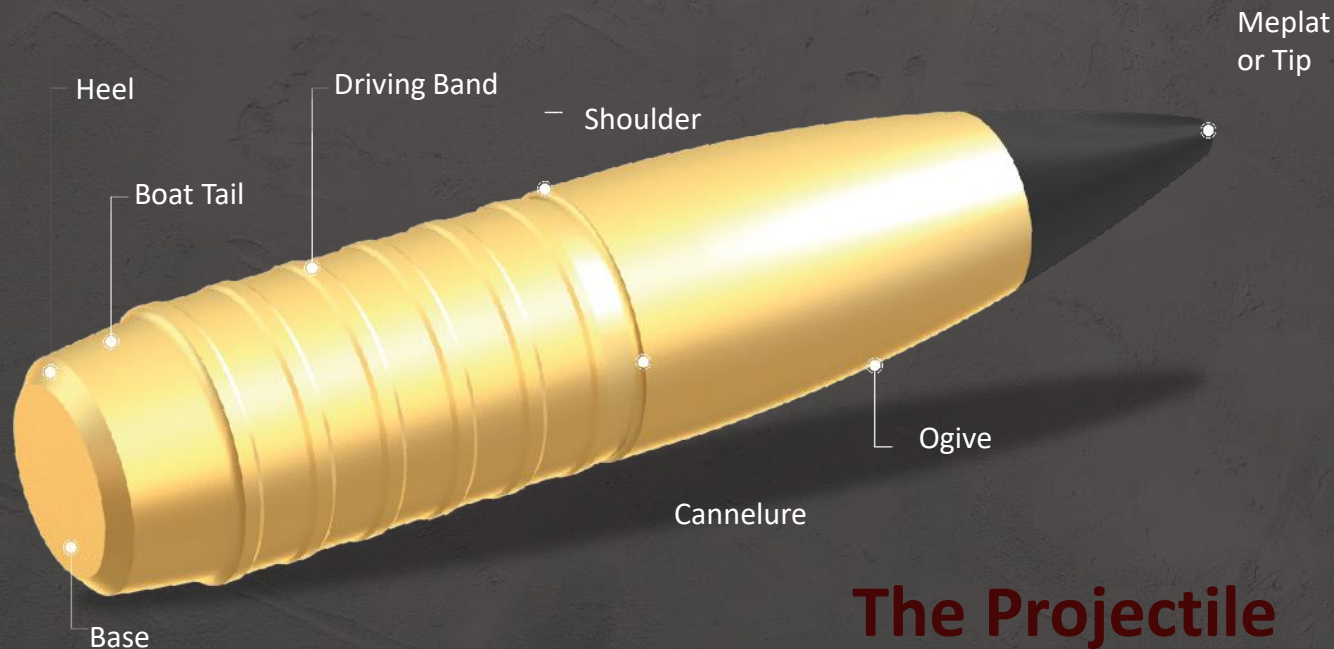
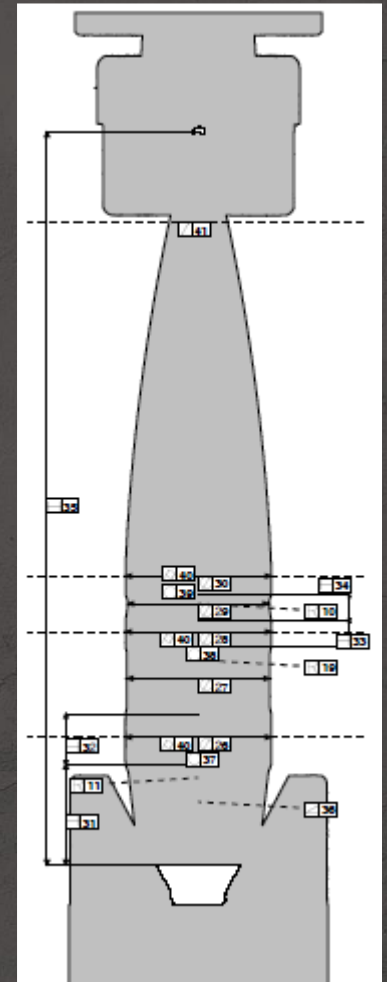


We manufacture in excess of 5 million CNC turned projectiles annually

All our Projectiles are dimensionally checked, using electronic measuring equipment, our projectile tolerances are within 5 microns.

Batches are weighed and checked for consistency to make sure there are minimal differences from projectile to projectile and batch to batch.

They are also checked for concentricity using laser scanning equipment..



The Projectile

THE PROCESS



SNIPER
EXTREME

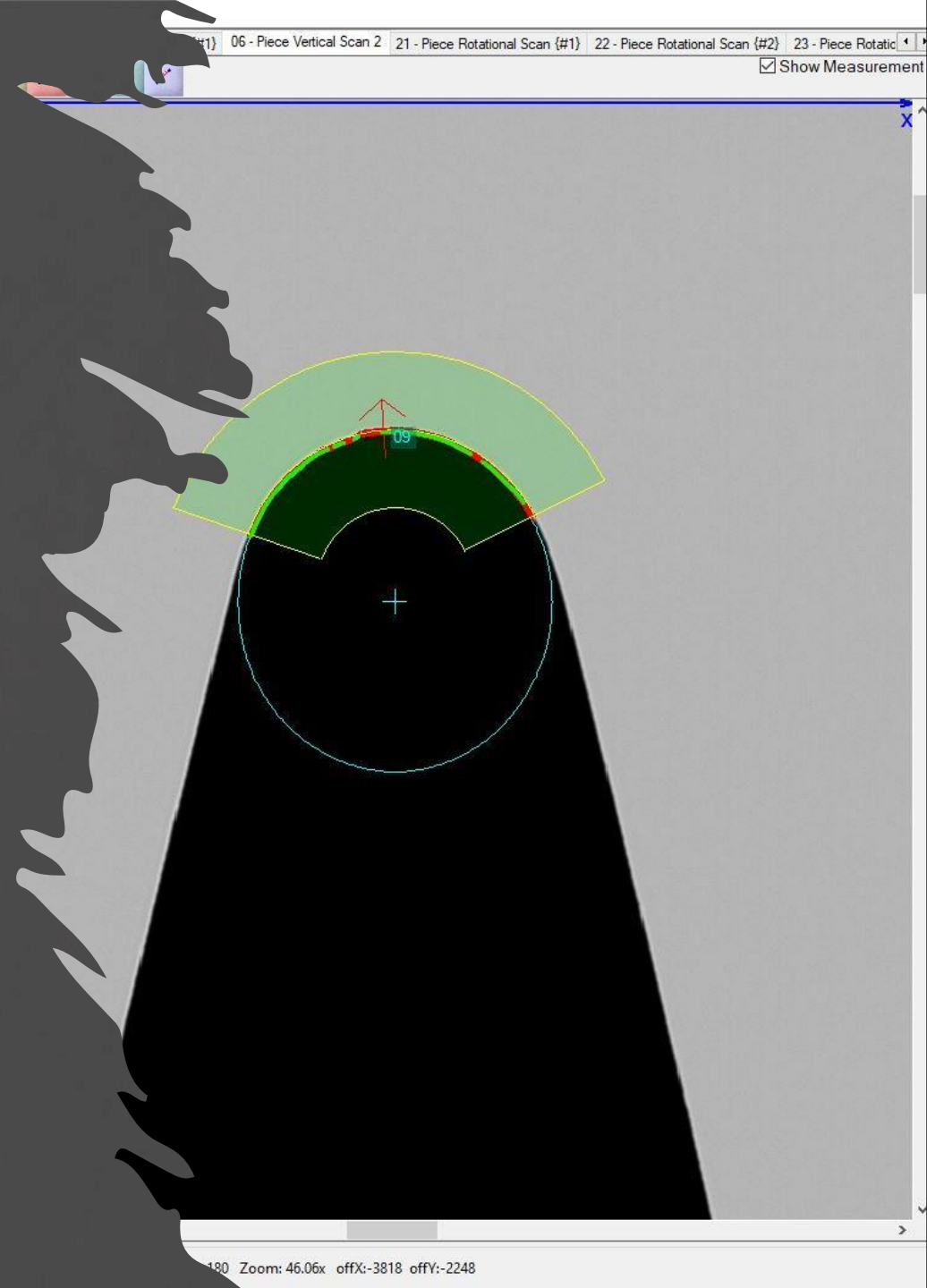
- Quality control of all the components.
- Quality Control of all energetic components, propellant and primers
- Load development and charge weight assessment to establish optimum load for production to begin.
- First 50 off checked for pressure, velocity, accuracy, water ingress, powder charge weight, bullet weight and function.
- All critical dimensions and concentricity, measured using gauges and laser scanning.
- Production begins and 5 off in every thousand checked continuously through production
- End of production final check, for pressure, velocity, water ingress, powder charge weight, bullet weight, accuracy, and function, before packing.



Sniper Extreme

What This Means

- Sniper Extreme is designed and manufactured by us, especially for the Police and Military.
- Our ammunition is tuned to specific weapon platforms to ensure the best ballistic performance possible, regardless of environmental conditions.
- It will consistently produce sub-MOA results, at extended ranges.
- All projectiles are CNC turned accurate to 5 microns and weight is consistent and to within .2 grains.
- The ammunition is assembled by hand and quality checked at every stage, all this adds up to the most consistent and accurate ammunition available.



Ammunition We Manufacture

Quality cartridge cases are essential in order to make quality ammunition. We offer all our ammunition in brass cases as standard but can supply bright or black nickel if required.



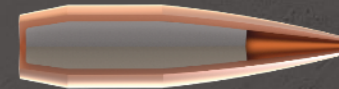
EBB (Enhanced Barrier Bullet)

A solid, monolithic projectile designed for good barrier penetration, when engaging targets in vehicles or building.



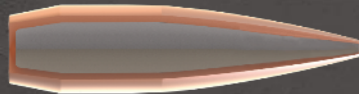
GP (Glass Penetrator)

Exactly the same as the EBB, but has a specially designed pointed tip that ensures reliable penetration through the glass



HPBT (Hollow Point Boat Tail)

A copper alloy jacket with a soft lead core. Offers limited expansion in soft targets



FMJ (Full Metal Jacket)

A copper alloy jacket with a soft lead core. Offers limited expansion in soft targets



EFP (Expanding Fracture Point)

A hollow point projectile that has an aluminium pin in the centre, on impact the pin is driven into the hole which expands the ogive



LPHP (Limited Penetration Hollow Point)

A unique two piece projectile that consist of a hollow point wedge shaped pin that is forced by hydraulic action into the rear part of the projectile causing it to expand and tumble



LPSP (Limited Penetration Solid Point)

Exactly the same as the LPHP, but has a solid wedge shaped pin that is forced by hydraulic action into the rear part of the projectile causing it to expand and tumble



HP (Hollow Point)

A hollow point projectile that ensures reliable expansion on soft targets and good weight retention



CDHP (Copper Double Hollow Point)

An almost pure copper projectile, with an engineered double hollow point to ensure reliable expansion on soft targets and good weight retention



CQB (Close Quarter Battle)

A light projectile designed to achieve high velocities. Designed to break apart on impact, reducing the chance of over penetration at close range



AP-TCC (Armour Piercing - Tungsten Carbide Core)

An armour piercing round with a tungsten carbide core, designed for maximum penetration of hard armour



AP-HSC (Armour Piercing - Hard Steel Core)

An armour piercing round with a hard steel core, designed for maximum penetration of hard armour



AP-HSA (Armour Piercing - Hard Steel Arrowhead)

An armour piercing round with a hardened steel core and a titanium tip, designed for penetration of hard armour with the added flash incendiary effect to see the flash at extended ranges



APFI-HSC (Armour Piercing Flash Incendiary - Hard Steel Core)

An armour piercing round with a hardened steel core and a titanium tip, designed for penetration of hard armour with the added flash incendiary effect to see the flash at extended ranges



APFI-TCC (Armour Piercing Flash Incendiary - Tungsten Carbide Core)

An armour piercing round with a tungsten carbide core and a titanium tip, designed for penetration of hard armour with the added flash incendiary effect to see the flash at extended ranges



FTI (Flash Tip Incendiary)

A Lehigh projectile with a titanium tip, designed for penetration of hard armour with the added flash incendiary effect to see the flash at extended ranges



F (Frangible)

A projectile that is made from a polymer copper mixture that's injection moulded, a process that ensures the projectiles integrity in the barrel

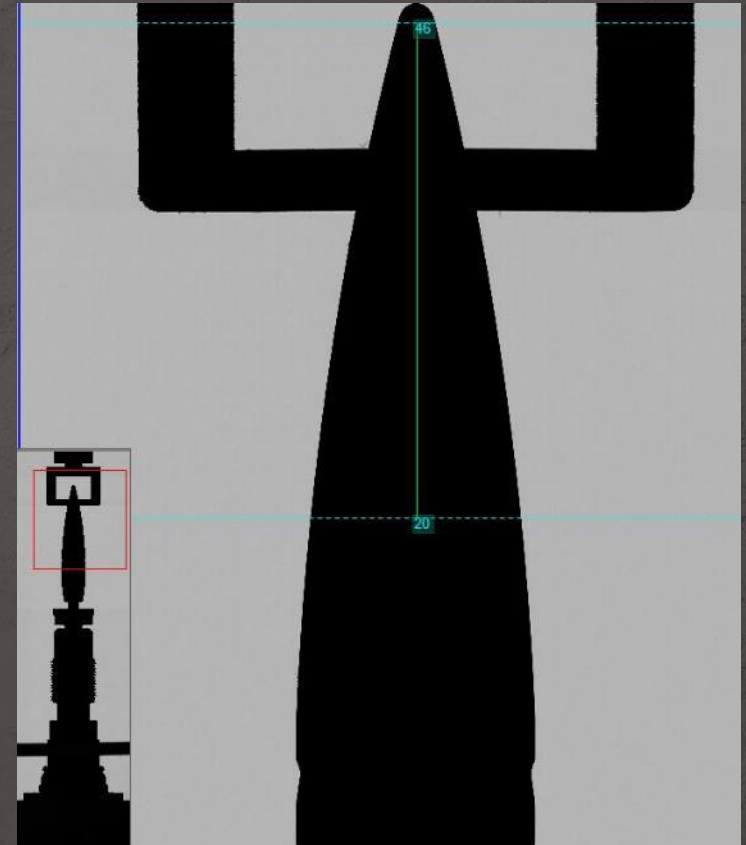


SJF (Semi Jacketed Frangible)

A projectile made from a polymer copper mixture that's injection moulded

Sniper Extreme Key Points

- Specifically designed for Police and Military Snipers
- All ammunition types available Solid, GP, AP, API, LP
- Insensitive munitions technology, no lead, chemicals or explosives to cause future problems
- Less issues with range or battlefield contamination
- Turned projectiles have higher Ballistic coefficient than current FMJ ammunition
- Projectiles are lighter than lead copper equivalents, reducing soldiers load.
- Projectiles travel faster, stay supersonic longer and carry energy further
- .
- Higher velocities mean they have flatter trajectories
- Armour penetration exceeds most current ammunition by at least 20%
- Incendiary effect using inert metals
- Accuracy Sub MOA, exceeds most current ammunition by at least 20%
- Careful manufacture ensures optimum weapon performance and reliability





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