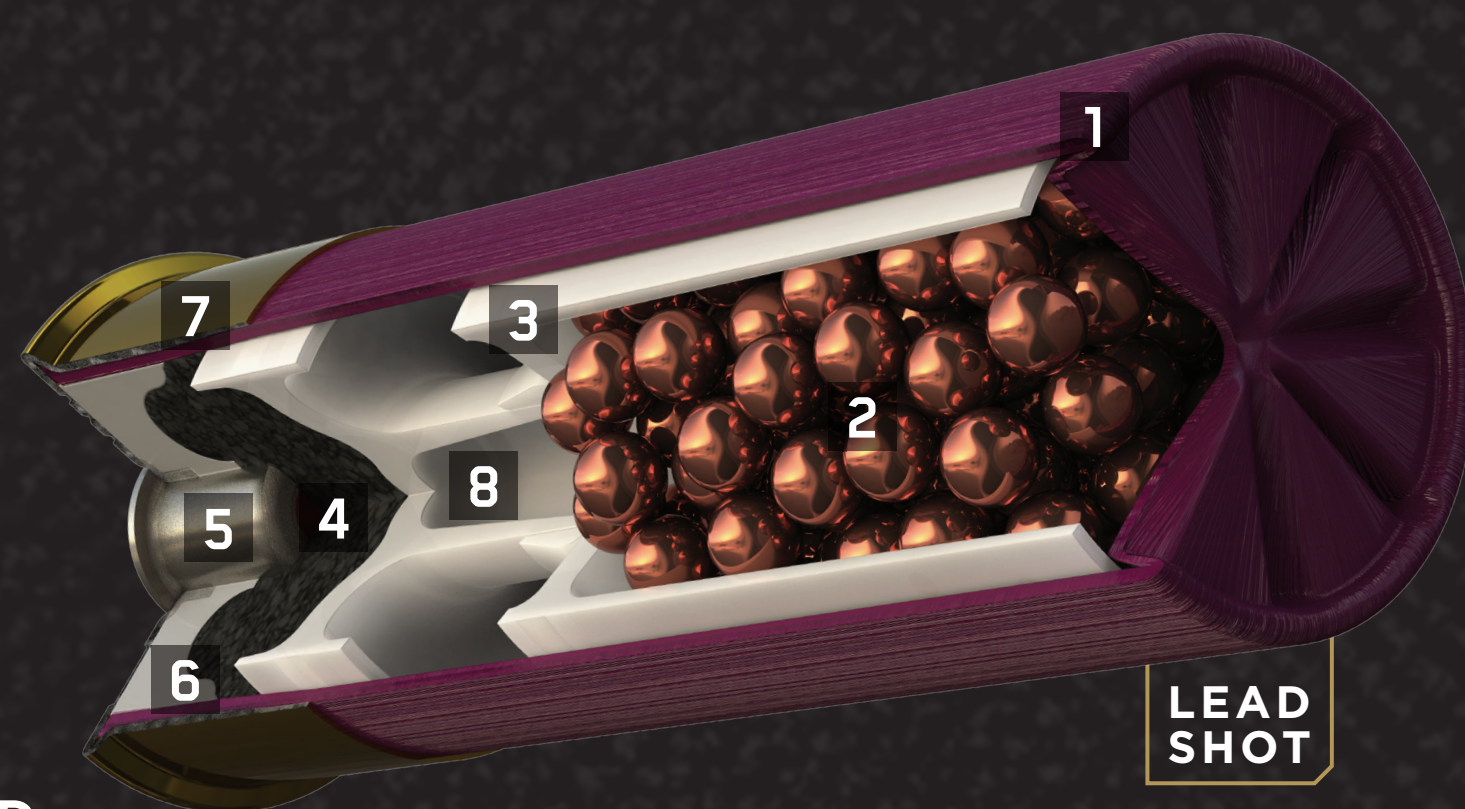


SHOTSHELL AMMUNITION BASICS

ANATOMY OF A SHOTSHELL



- 1. HULL
- 2. SHOT
- 3. WAD
- 4. POWDER
- 5. PRIMER
- 6. BASE WAD
- 7. HEAD
- 8. CUSHION



Federal loads eight gauges of shotshells: 10, 12, 16, 20, 28 and .410—in addition to specialty loads like 24 and 32 gauge. Shells can range in length from 1¾ to 3½ inches and in payload weight from ¾ ounce to 2½ ounces. They are loaded with lead, steel, bismuth and tungsten alloy shot, as well as slugs and buckshot.

All shotshells share a few common traits. The head and primer are similar in all shells. The hull and base wad are paper or plastic. The wad design and powder vary with the type of shotshell and its intended use.

LEAD SHOT: Pellets and buckshot are formed by pouring melted lead through a sieve or they are swaged (formed in a die). Traditional wads for lead shot are molded from flexible, low-density polyethylene plastic and have a cushion section on the bottom. The cushion helps reduce the number of deformed pellets and the amount of felt recoil.

STEEL SHOT: These pellets are made by cutting steel wire into short lengths which are formed and ground. Premium® steel shot is coated with a rust inhibitor. Wads for steel shot are molded from high-density polyethylene, with thick sidewalls to prevent the pellets from contacting the shotgun bore surface. Steel shot ammunition requires large charges of special slow-burning powders to give the large shot column a gentler start but a faster exit from the muzzle.

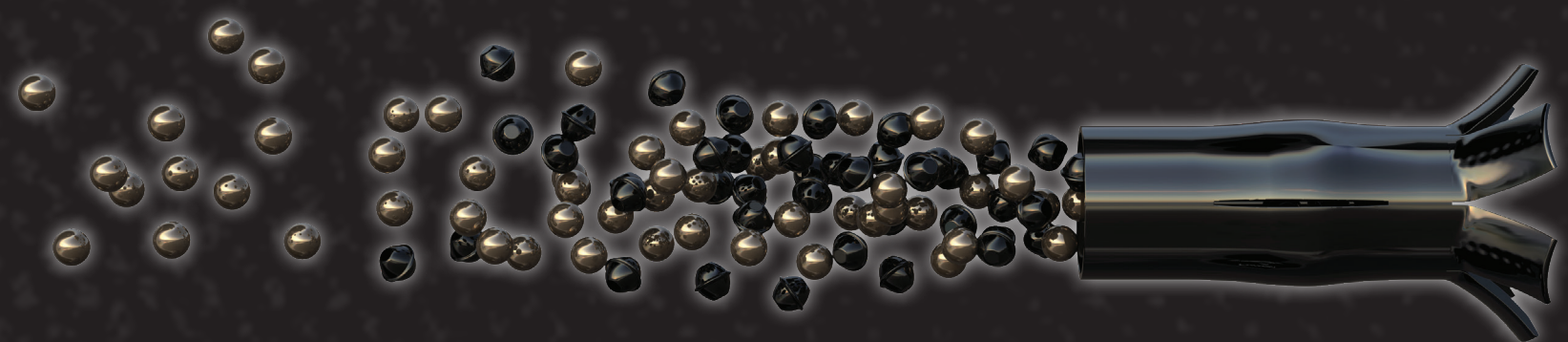
TUNGSTEN SUPER SHOT: These pellets are made of tungsten-alloy that's 56 percent denser than lead. This allows hunters to use smaller shot without sacrificing downrange energy, increasing pellet counts and improving pattern density.

BISMUTH SHOT: Bismuth pellets are almost as dense as lead, 9.6 g/cc, for lethality at longer ranges than steel payloads. The material meets non-toxic requirements, is more affordable than tungsten, and safe and effective for use in all shotguns.

FLITESTOPPER® SHOT: Available in all-steel pellets for waterfowl and upland birds, and lead pellets for upland birds and turkeys. The pellet is ringed by a raised cutting edge for more lethal wound channels and even edge to edge patterns.



FLITECONTROL FLEX WAD

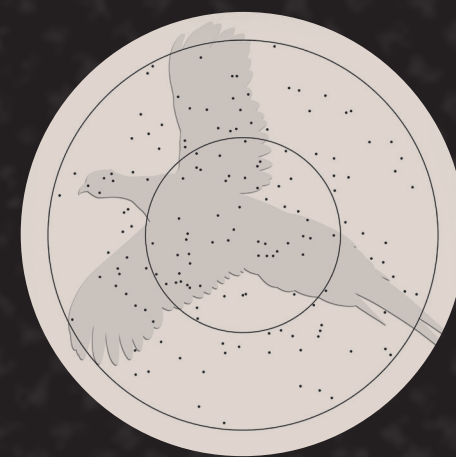


The FLITECONTROL FLEX® wad opens at the rear, creating an air brake that pulls the wad off the shot string. The pellets are released at the optimum moment for accuracy and power. The wad is combined with unique shot types to get better performance on target.

PATTERNING A SHOTGUN

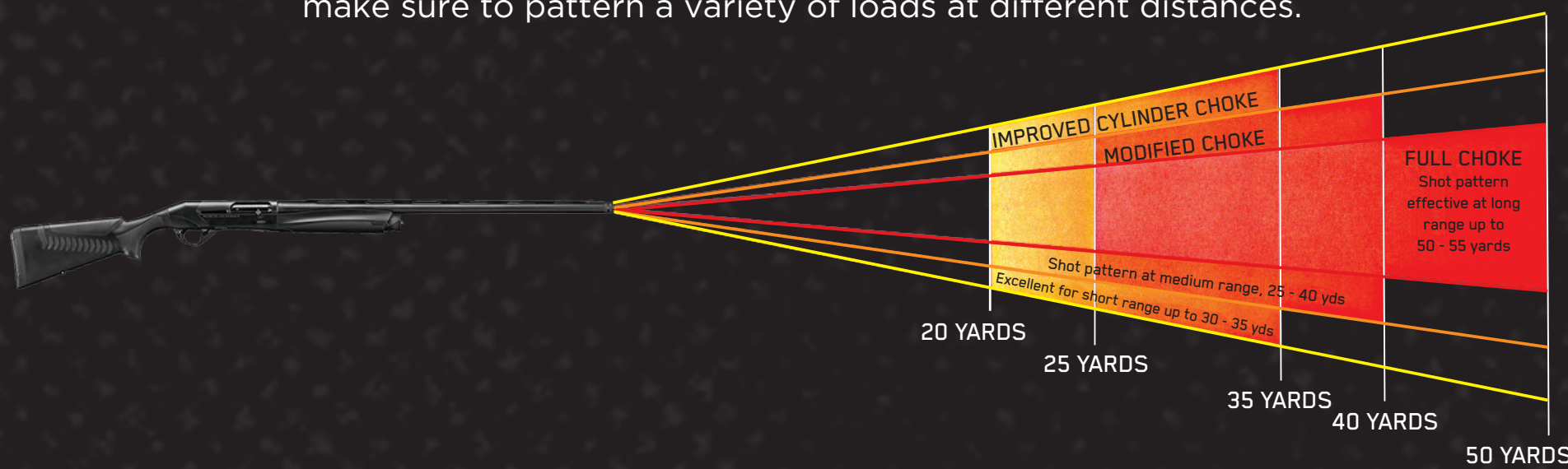
Use this process to pattern your gun before taking it to the field:

1. Select an area that provides a safe backdrop.
2. Wear a good pair of shooting glasses and hearing protection.
3. Set up patterning paper at least 40 inches square and mark an aiming point near the center.
4. Select the shotgun/load combination to be tested and measure off the distance you usually shoot in the field.
5. Shoot at least five test patterns, each on a separate pattern sheet.
6. Outline a 30-inch circle around the densest portion of the pattern.
7. Check the pattern for uniformity.
8. Determine if the pattern is dense enough for the game you are hunting. Remember, small game requires dense patterns with small shot and larger game needs bigger pellets with a less dense pattern.



CHOKES

Constriction in a shotgun's muzzle is referred to as "choke." The three most common chokes are full, modified and improved cylinder. Lead, steel, bismuth and tungsten pattern differently in each of these chokes. To determine which load provides the best pattern density and most even pellet distribution, make sure to pattern a variety of loads at different distances.



SHOTGUN GAUGES

The gauge of a shotgun was first determined by a simple method that used lead balls. A gun maker would use lead balls the same diameter of the shotgun bore, and then count how many of those balls it takes to equal one pound of weight. For example, it takes 12 lead balls the size of a 12 gauge shotgun bore to weigh a pound. The only exception is the .410, which is measured in inches. Shotguns and shotgun shell should also be matched. Failure to properly match the ammunition to the firearm can cause firearm damage and/or personal injury.



Note: Black Cloud 12-gauge loads feature all-black hulls.

SHOTGUN SLUGS

SABOT SLUGS feature a lead or copper bullet enclosed in a polyethylene sleeve that grips the rifling to provide spin and increased accuracy. Sabot slugs should only be used in rifled barrels.

RIFLED OR "FOSTER" SLUG has helix ribbing to enhance stability through the bore. It has a hollow point that is designed for maximum expansion. The rifled slug is recommended for smoothbore shotgun barrels.



TRUBALL® RIFLED SLUG

SHOT SIZES

(ACTUAL SIZE)

PELLET	T	BBB	BB	1	2	3	4	5	6	7	7.5	8	8.5	9	10
DIAMETER INCHES	.20	.19	.18	.16	.15	.14	.13	.12	.11	.10	.095	.09	.085	.08	.07
DIAMETER MM	5.08	4.83	4.57	4.06	3.81	3.56	3.30	3.05	2.79	2.54	2.41	2.29	2.16	2.03	1.78

BUCKSHOT SIZES

(ACTUAL SIZE)

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

FEDERAL