

SHOTSHELL RELOADING

WHY RELOAD SHOTSHELLS?

For folks who love squeezing the trigger, reloading is a money saving and rewarding hobby. It is also an activity that creates memories passed down to generations of gun enthusiasts.

First, reloading your own shells will save you money versus purchasing factory ammunition and give you a quality shell.

Second, reloading is truly an enjoyable hobby - done alone or with a friend, child or grandchild. In fact, we know of many hunting trips and tall tales that have been told around the reloader!

Third, for the person who loves shotgun shooting, there's nothing quite like the satisfaction of breaking a clay target, downing a game bird or scoring a hit on small game with your own reloaded shells.

As the maker of the **World's #1 Shotshell Reloader**, we share your passion for the sport. Visit www.mecoutdoors.com and click on our reloading cost comparison to see how much you can save by reloading your own shells.

CHOOSING THE RIGHT RELOADER

The type of reloader you choose will be directed by three considerations:

- what fits in your budget
- convenience you want
- the speed at which you want to reload

SINGLE-STAGE RELOADER

A single-stage reloader costs less compared to the progressive reloaders and overall is one of our best-selling reloaders of all time. With a single-stage reloader you manually move the hull from one station to the next as you go through the reloading cycle. Each shell is processed individually and finished before starting a new shell through the cycle. The single-stage reloader is usually the best type for the beginner or those who don't require high volume and maximum speed. Reloading 8 to 10 boxes per hour is not unusual with a MEC single-stage reloader. This option is a great way to start out your reloading hobby at an affordable price and gives you a better understanding of the reloading steps as you manually put the shell into each station.

PROGRESSIVE RELOADER

In a progressive reloader, six shells are processed through several reloading steps simultaneously, completing a finished shell with each pull of the handle. Trap, skeet, and sporting clays enthusiasts, who may shoot up 8 or more boxes of shells in one afternoon on the range, generally prefer progressive models to reload a high volume of shells fast. For the reloader who uses up many boxes of loaded shells or has physical limitations, there are hydraulically-operated models that eliminate the need to pull a handle. Our "9000HN Hydraulic" model adds high-speed hydraulic operation to our progressive reloader design. You can expect to reload 450 shells per hour. MEC became the world's leading producer of shotshell reloaders because of many patented and exclusive features developed throughout the years.

RELOADER TYPES AND MODELS



SINGLE-STAGE RELOADERS

- 600 Jr. Mark V
- Slugger
- Sizemaster
- Steelmaster



PROGRESSIVE RELOADERS

- 8567N Grabber
- 9000 Series

PRODUCT FEATURES

Every MEC Reloader comes with a variety of features designed to help you reload your own shells with ease.

CHARGE BAR:

Quick-change charge bar accommodates removable powder charge bushings to vary powder charges.

Shown with optional accessory:
Progressive Bottle Support
Item # 1008938 p. 26.

AUTOMATIC BAR MECHANISM:

Automatically moves the charge bar left or right, measuring precise amounts of powder or shot. Standard on 9000 series and 8567N models.

FLIP-TOP MEASURE:

Permits the measuring assembly to be flipped so powder and shot containers are inserted and removed in the upright position to avoid spilling.

AUTOMATIC PRIMER FEED:

Eliminates handling individual primers. Standard on some MEC models and accessory on others. Not available for .410 bore single-stage reloaders.

ADJUSTABLE RAMMER TUBE:

Rammer tube can be manually adjusted to apply the proper pressure to the wad column.

POWER RING COLLET RESIZER:

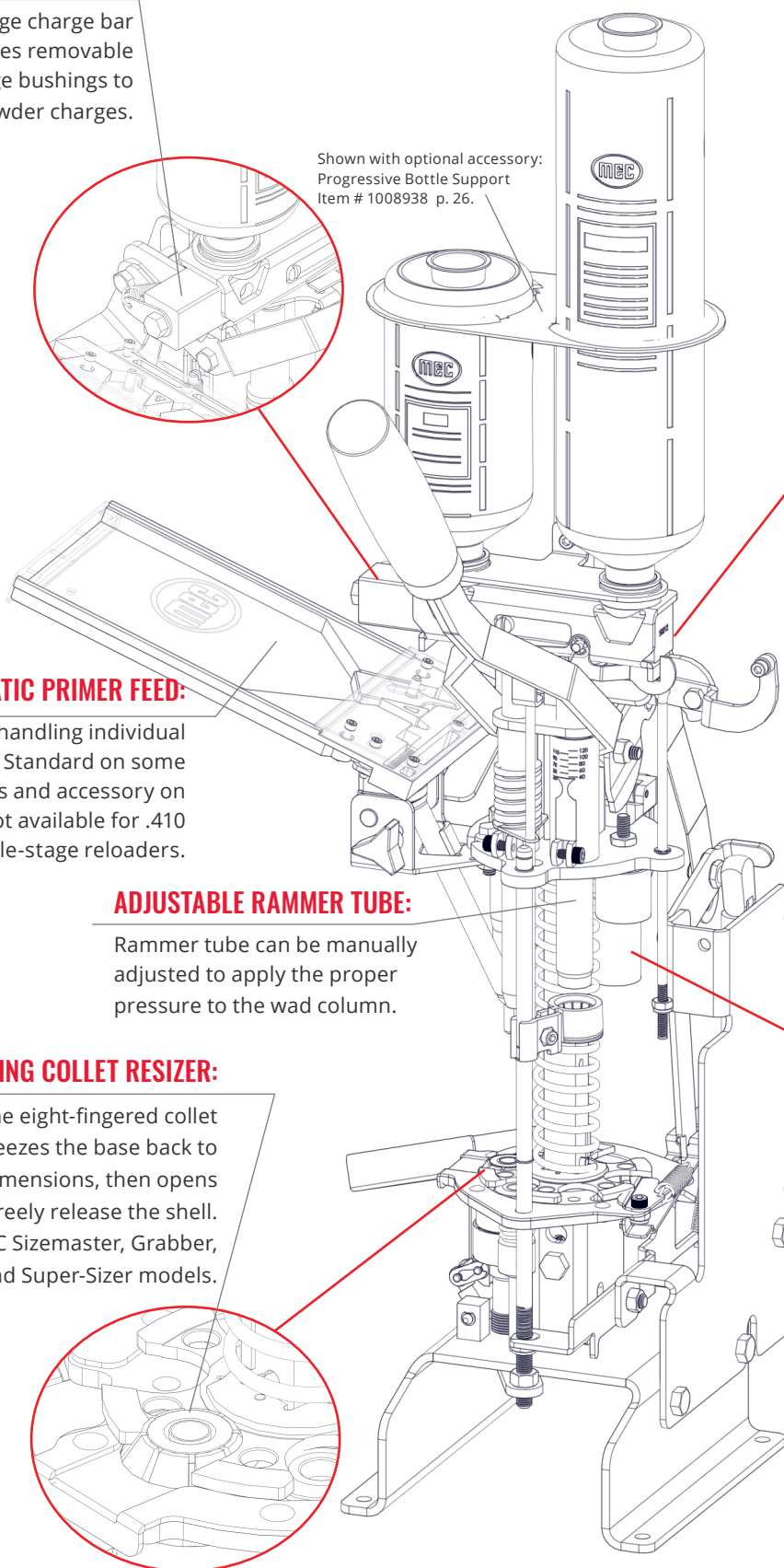
The eight-fingered collet squeezes the base back to original dimensions, then opens to freely release the shell. On MEC Sizemaster, Grabber, 9000GN and Super-Sizer models.

SPINDEX CRIMP STARTER:

Rotates automatically and realigns perfectly on the original crimp of the shell. Can be changed from 6 to 8 point.

CAM CRIMP:

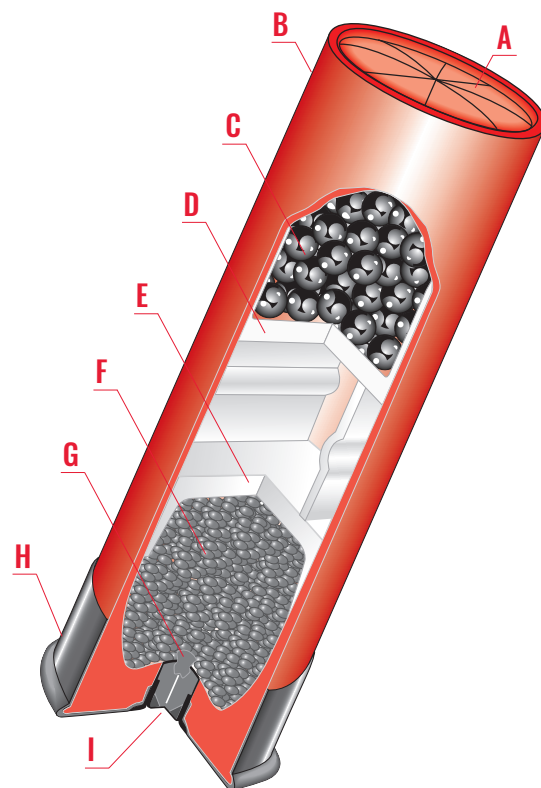
Adjusts for correct crimping and closing pressures. This assures the operator a perfect crimp every time.



SHOTSHELL - EDUCATION

COMPONENTS OF A SHOTSHELL

- A. CRIMP:** Seals all components tightly inside the hull. May be 6 or 8 point.
- B. HULL:** The outer case that holds the components. May be plastic or paper.
- C. SHOT:** Comes in variety of sizes and types for different shooting situations.
- D. SHOT CUP:** Plastic cup holds shot in the pattern as it leaves gun muzzle.
- E. WAD:** Confines powder for uniform ignition and separates powder from shot (Most used is a one piece shot cup and wad called a "wad column".)
- F. POWDER CHARGE:** When ignited by primer, powder charge, burning at a controlled rate, generates gas pressure which, with the aid of a wad column, propels shot out of the gun barrel.
- G. PRIMER:** Gun firing pin detonates component in primer, which ignites the main powder charge.
- H. BASE:** Holds primer and securely anchors shell in gun breech. May be brass or steel.
- I. PRIMER POCKET:** Opening in metal base into which primer is inserted.



HOW TO SELECT COMPONENTS

A shotshell is made up of several different components. There are many different variations of each component. Packed with every MEC Reloader are brochures supplied by leading component manufacturers.

This literature will show you numerous combinations of primer, powder charge, and the wad and shot you should use with each empty hull, for waterfowl, small game, trap, skeet, or sporting clays. Each combination of components has been carefully tested by ballistic experts for maximum effectiveness and safety. **Experimenting with combinations that are not recommended by a component manufacturer is extremely dangerous!**

CHOOSING THE HULL:

Proper choice of empty hulls is one of the most important choices you must make to keep your reloading simple. The problems encountered by trying to use any and all of the hulls you may find are usually quite discouraging. Not all hulls have the same capacity. Not all hulls have the same crimp. Each time that you use a hull with a different capacity (usually caused by different base wad height) you must assemble a different set of components to properly fill this case. We recommend that when starting to reload, you choose the most popular of the low brass trap, skeet, or sporting clays hulls in your area and choose a set of components to fit this hull. Usually, these hulls can be purchased for a nominal amount, and when you consider that a modern plastic case can be reloaded many times, it will add very little to the cost of your reloads. We are not recommending that you throw away all the non-standard hulls that you have but are advising you keep it simple until you have gained the experience necessary to assemble the different components. With the proper choice of components, all your loads from the heaviest magnum down to the lightest skeet, trap, or sporting clays load may be loaded in the same low brass hull.



THE SHOT:

There are two kinds of shot – lead and non-toxic. **Warning: Although lead and non-toxic shot are both easy to reload, it is absolutely essential that instructions for each are properly followed.** For instance, never substitute non-toxic shot for lead shot. This could result in chamber pressure high enough to burst the gun causing injury or death to the shooter or bystander. Wads that work fine with lead shot will not work with some non-toxic shot. When loading non-toxic shot, it is important that proper components are used and according to directions furnished by the manufacturer. As the size of the shot increases, fewer pellets can be loaded into the hull. The smaller sizes are used for trap, skeet, and sporting clays, doves, small game, etc. The larger shot sizes are for heavier game—ducks, geese, turkey, etc.

SHOT SIZES

Lead Shot		Buckshot	
No.	Dia.	No.	Dia.
9	.08"	4	.24"
8 1/2	.085"		
8	.09"	3	.25"
7 1/2	.095"		
7	.10"	1	.30"
6	.11"		
5	.12"	0	.32"
4	.13"		
2	.15"		
Air Rifle	.175"	00	.33"
BB	.18"		

SELECTING THE RIGHT WAD:

The wad is the part of the shotshell between the powder and the shot. A tight seal permits the expanding gas from the burning powder to push the shot column out of the gun barrel with maximum velocity. Modern “wad columns” combine both the shot cup and the wad in one piece. These one-piece wad columns are the easiest to reload, and therefore are the most popular. Use only the specific wad column recommended for the other components you are using.



A WORD ABOUT SAFETY

All Powder is Not Alike. Different powders have different burning rates, which make them useful for different jobs. The heavier the shot load, the slower the powder must burn. It takes longer to accelerate a heavy shot load than it does a light one. A fast-burning powder ignited behind a heavy shot load could cause excessive “breach pressure”, which might cause damage to the gun and even injury to the shooter. (Breach pressure is the pressure of the gas which is created by the burning powder. It is this breach pressure which forces the shot through the barrel.) On the other hand, using a slow-burning powder to propel a light load or shot will not work effectively. Without the proper pressure buildup, many powders will not burn uniformly and impart sufficient velocity to the shot. Never substitute powders for non-toxic shot loads. Just because a powder will work well with 1 1/8 oz. of lead does not mean it will do the same with non-toxic shot.

The primer ignites the powder. When you pull the trigger, the hammer falls on the firing pin, denting the primer cup. This causes the component in the primer to detonate, igniting the main powder charge. Different primers have different characteristics depending on their purpose. Use only the primer that is recommended by the component manufacturer for the hull, powder, wad, and shot load you are using. To make reloading safe, all it takes is common sense and the ability to read and follow the directions of the various component manufacturers. When you purchase your powder, get a copy of the “SAAMI” (Sporting Arms and Manufacturers Institute) pamphlet on the properties and storage of smokeless powder. Read this literature and abide by it. Modern smokeless powders must be confined to cause an explosion. The containers that powder is purchased in are designed to burst without causing an explosion if the powder is accidentally ignited.

Your powder should be kept in these containers until it is used up. It is unsafe to put powder in a glass jar or bottle or any other container which could cause pressure buildup. Store your powder where there is no chance of spark, fire, or flame, where it is cool and dry, and where children cannot reach it. Primers also require care in handling. Never take primers from the container that they come in until ready for use. Storage of primers in anything but the container that they were purchased in is unsafe. Exposing a primer to excessive heat, or to fire, flame or rough handling will cause it to explode. Do not store primers near your powder or where children can get at them. Always use manufacturers recommended components. Do not experiment or substitute components or you will get a shell which fails to perform satisfactorily and may inflict serious injury on you or someone who fires your reloaded shells. The manufacturers have extensively tested recommended loads and know how they perform.

Always follow these recommendations exactly. It is also recommended that safety glasses be worn when reloading.

SHOTSHELL - EDUCATION

SHOTSHELL RELOADING BASICS

On the next few pages you will find a general description of the steps involved in shotshell reloading. This discussion is not intended as a substitute for the instructions provided with your particular reloading equipment. Always read carefully the instructions provided by the manufacturer of your reloader.

1. EXAMINE THE HULL

The first step in reloading is to inspect your empty hulls to see that they are clean and dry, have no split ends, no cracked or split metal bases, and have no other visible damage. With the manual reloaders, be sure that all hulls have the same capacity and crimp (6 or 8 point). Don't mix paper and plastic hulls.



2. DEPRIME

With a progressive reloader, the initial pull of the handle pushes out the spent primer. On some reloaders, such as the MEC 600 Jr. Mark V, Sizemaster, 8567 Grabber and 9000 Series, this same pull of the handle resizes the metal base.



3. RESIZE

Almost all shotshell heads are made of brass or steel. Anytime one of these is fired in any gun, the head tends to expand to the size of the chamber in which it is fired. The most common resizing method is to force a hardened steel ring of the proper diameter down over the metal base, forcing it back to original size. As noted earlier, the newest method of resizing is the Power Ring collet resizer found only on the MEC Sizemaster, Grabber, and the 9000 Series models. Advantages of this method are that you never scratch the metal base, you don't increase the rim diameter, and you don't have to force the resized base out of a resizing ring (the collet fingers open so the shell may be freely removed). Although hull sides usually do not require resizing, you will sometimes find that paper hulls are oversize. This is because they swell when they absorb moisture. They must be brought back to size by drying them out before reloading.



4. REPRIMING

After the spent primer has been removed, a new primer must be inserted in the primer pocket. With most reloaders, a pull of the handle forces the shell down over the new primer. Not all primers are interchangeable. Be sure the primers you are using are compatible with the other components you are using.



5. CHARGING

Your next step is to put powder into the empty shell. The volumetric measure common to all MEC and most other reloaders consists of a bar containing a hole of a given volume. Powder falls into the hole, and is then dropped into the hull. This is the quickest method of measuring powder and is also much more accurate than hand dipping. The disadvantage is that it measures volume, which may cause variations in the load due to differences in various powder densities. Agitation of the reloader also causes the powder to compact, resulting in heavier powder loads.



6. INSERT THE WAD

Regardless of what system of reloading you use, the wad must be handled manually. The modern one-piece wad column is the most commonly used. You must, of course, use only the wad column of the proper height to match your other components.



7. ADDING SHOT

The last item to be added to the shell is the shot. This can be done several ways. Most reloaders use a built-in volumetric measure or "charge bar". This bar contains two holes: one for powder (discussed above) and one for shot.



8. CRIMP THE SHELL

After all the new components have been inserted in the shell, the last operation is to close the mouth of the shell. Almost all modern reloaders seal the shell with a "star" of folded crimp. The crimp usually takes from two to four operations. In most cases the first operation starts the crimp. Plastic hulls may require a 6 or 8 point "crimp starter", depending on the number of folds in the original hull. Paper cases are usually closed with a 6 point crimp. With most MEC reloaders, closing the hull is a two-step operation. First, a self-aligning "crimp starter" partially closes the hull, following the original folds of the shell. The shell is then tightly closed with a patented cam-actuated crimping die.



ADDITIONAL INFORMATION

THE CHARGE BARS

The charge bars on all MEC reloaders are equipped with a soft insert to help eliminate shearing when larger shot sizes and hard lead shot are used.



MEASURING

By following your instruction manual you should always get uniform loads and good performance. Of course, weighing each individual charge is the most accurate method. Obviously, it is also the slowest of the three methods. We do recommend, however, that when reloading you periodically check your charges on an accurate powder scale.



CHECKING YOUR FINISHED SHOTSHELL

Wad too short or too little powder or shot.



Wad too long or too much powder or shot.



Proper crimp - correct wad, powder and shot charges.



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