

in the press. Position the window of the die to the front and set the lock ring. Insert the bullet, base first, into the bullet guide (*Photo 3*) and complete the bullet seating operation. Turn the thimble clockwise until the bullet is seated to the proper depth (*Photo 4*). Record the thimble setting in your reloading records to reduce set up time the next time the same bullet is loaded.

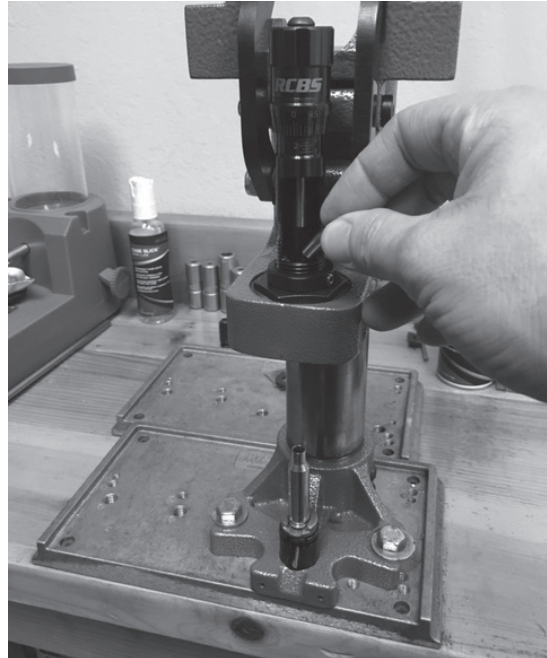


Photo 3



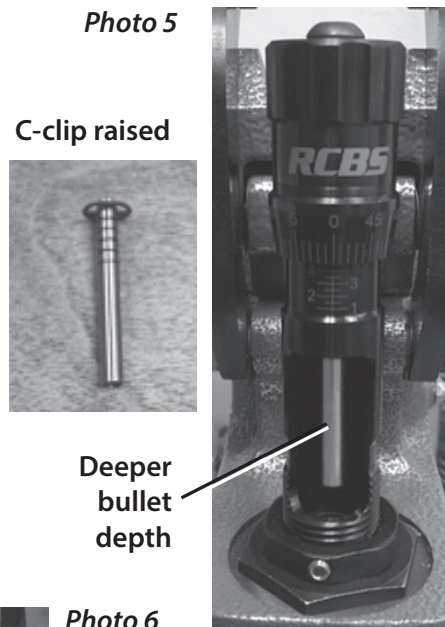
Photo 4

The .22 Hornet die requires the use of an extended shell holder for bullet seating. The extended shell holder is included in the die set.

If the bullet will not clear the seat plug to drop into the bullet guide, remove the thimble, allowing access to the seat plug and guide. The seat plug can then be removed from the top, the seat plug coarse height adjustment is accomplished by removing the c-clip and reattaching it to a lower notch raising the position of the seat plug.

If the thimble is at its lowest position and the bullet is not seated deeply enough in the cartridge case, follow the directions above but raise the c-clip to a higher notch to gain bullet seating depth (*Photos 5 & 6*).

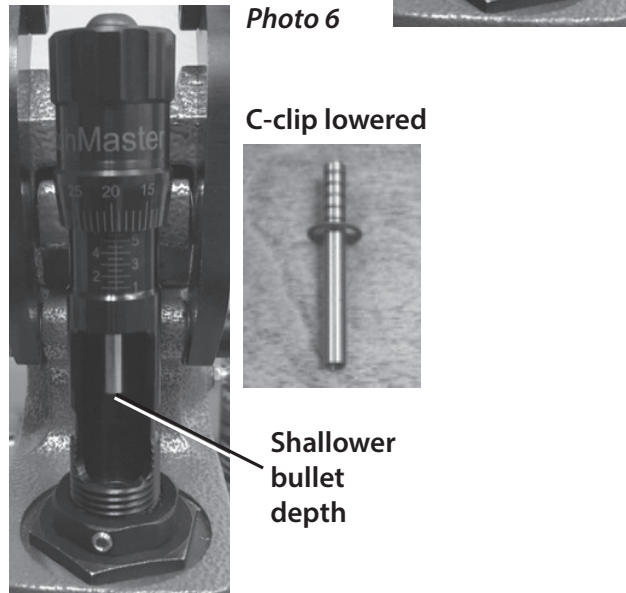
Photo 5



C-clip raised

Deeper bullet depth

Photo 6



C-clip lowered

Shallower bullet depth

**IMPORTANT: READ THIS SECTION FIRST**

Before using the RCBS MatchMaster™ die, read this instruction manual carefully to fully learn how to safely operate the related reloading equipment. Failure to properly operate certain reloading equipment can result in severe personal injury and/or property damage. If you have read these instructions, but do not clearly understand the described operation, call us at 1-800-533-5000 and a technician will assist you. This instruction manual contains specific safety and operating information. It should be considered a permanent part of your reloading equipment and remain with the equipment at all times for easy reference.

**SAFETY**

Reloading is an enjoyable and rewarding hobby that is easily conducted with safety. But carelessness or negligence can make reloading hazardous. This product has been designed from the beginning with the user's safety in mind. As with any reloading operation, safety rules MUST be followed. By observing these few rules, the chance of hazardous occurrence causing damage or injury becomes extremely remote.

**GENERAL**

- Use the reloading equipment as the manufacturer recommends. Study the instructions carefully and become thoroughly familiar with the operation of the product. Don't take short cuts.
- Observe "good housekeeping" in the reloading area. Keep tools and components neat, clean and orderly. Promptly and completely clean up primer and powder spills.
- Reload only when you can give your undivided attention. Do not reload when fatigued or ill. Develop a reloading routine to avoid mistakes. Avoid haste-load at a leisurely pace.
- Always wear adequate eye protection. You assume unnecessary risk when reloading without wearing safety glasses.

**LOADING DATA**

- Use only laboratory tested reloading data. We highly recommend the use of the SPEER Reloading Manual.
- OBSERVE ALL WARNINGS ABOUT THE USE OF MAXIMUM LISTED LOADS.

20042837 / 0419

**PRODUCT INSTRUCTIONS**



**DIES MATCHMASTER™ RCBS**

**RCBS**

**PRECISIONEERED RELOADING EQUIPMENT**

We think we make the world's best reloading equipment. If you agree, please tell your friends. If you disagree, tell us—we want to do something about it!

**Customer Service**

1-800-533-5000 (U.S. or Canada)  
E-mail [rcbs.tech@vistaoutdoor.com](mailto:rcbs.tech@vistaoutdoor.com)  
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**PRIMERS AND POWDER**

**WARNING** : Primers are designed to explode and will do so when subjected to heat or percussion. To avoid potentially severe bodily injury and/or property damage, always follow these simple rules:

- DO NOT deprime live primers.
- Never attempt to seat or reseat a primer in a loaded round.
- Store primers and powder beyond the reach of children and away from heat, dampness, open flames and electrical equipment.
- DO NOT use primers of unknown identity. Scrap unknown primers in accordance with applicable regulations.
- Keep primers in original factory container until ready to use. Return unused primers to the same factory packaging for safety and to preserve their identity.
- DO NOT store primers in bulk. The blast of just a few hundred primers is sufficient to cause serious injury to anyone nearby.
- DO NOT force primers. Use care in handling primers.
- DO NOT use any powder unless its identity is positively known. Discard all mixed powders and those of uncertain or unknown identity.
- If you use a powder measure, replace the lids on both the powder hopper and powder can after the powder hopper has been filled.
- Before charging cases, settle the powder in the powder hopper. Throw and check the weight of at least ten charges. This will assure you that the correct powder charge is being thrown.
- After a reloading session ends, pour the remaining powder back in its original factory container. This will preserve the identity and shelf life of the powder.
- DO NOT smoke while handling powder or primers.

**RECORD KEEPING**

- Keep complete records of reloads. Apply a descriptive label to each box showing the date produced, and the primer, powder and bullet used. Labels for this purpose are packed with SPEER bullets.

Since RCBS has no control over the choice of components, the manner in which they are assembled, the use of this product, or the firearms in which the resulting ammunition may be used, no responsibility, either expressed or implied, is assumed for the use of ammunition reloaded with this product.

## INTRODUCTION

RCBS MatchMaster™ dies are manufactured for the most demanding competitive marksmen, precision shooters, varmint and big game hunters. They offer features not available on standard RCBS reloading dies. First, the Sizer Die uses changeable neck bushings, available in .001” increments, to allow you to control the precise amount of neck tension desired. The Decapping Assembly utilizes a coated expander ball to reduce friction while expanding the neck of the case. The Seater Die features a micrometer bullet seating head that lets you dial the seating depth you want. Each graduation moves the seating depth 1/1000 of an inch. The handy bullet “window” lets you insert bullets through the side of the die instead of the bottom, while a special bullet cartridge case seating sleeve retains the bullet to be loaded and assures correct bullet to case alignment before and after seating.

All RCBS Dies feature a steel lock ring with a “hex” design that allows even tighter control over precise alignments. A solid brass setscrew locks the ring securely, yet will not damage the die threads. Once the large lock ring on the die is set, it can be locked in the desired position by lightly tightening the setscrew. The die will then hold the proper setting and may be reused in the same press without readjustment.

## PACKAGING

All RCBS Dies are packaged in convenient plastic storage boxes specially designed by RCBS to protect your dies in shipment and during storage. A unique cradle holds the dies firmly in place to prevent damage and rolling around. Each box contains a label for recording your favorite loads and can be mounted on the inside lid for quick reference. A label on the outside of the box lists the die caliber for easy identification.

## CUSTOMER SERVICE

All RCBS Dies are carefully checked and thoroughly inspected before shipping. Each die will reload fired cases from any standard chamber of the caliber stamped on the die. Should the die perform unsatisfactorily, call or write to RCBS, explaining the problem in detail. Be sure to mention the caliber of dies and the year of manufacture.

RCBS Customer Service  
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Oroville, CA 95965-5718  
rcbs.tech@vistaoutdoor.com  
1-800-533-5000

In most cases we can help you overcome the problem without the inconvenience and expense of returning the dies. If necessary, we will authorize the return of the dies. Do not attempt to alter the dies in any way.

Cases stuck in the Sizer Die may be removed with an RCBS Stuck Case Remover-2 Kit available from your dealer. Or you may return the die along with your name, address and \$5.00 for shipping and handling to the above address. We will remove the stuck case, inspect and return the die to you.

## PREPARING THE DIES

RCBS dies are coated with a rust inhibitor which must be removed prior to use.

Some Sizer Dies for bottleneck type cases have a tiny vent hole through which trapped air escapes during resizing. Sometimes the vent hole will plug up with debris. This debris will scratch and dent cases unless it is removed. The Neck only Sizer dies do not have this vent hole.

Unscrew the Expander-Decapping Assembly from the die. Insert a needle, straightened paper clip or similar object into the vent hole. This will push the debris into the die body and can be removed by cleaning the inside of each die using a patch saturated with Hoppe’s Solvent. Disassemble and clean the Seater die as well.

**Important Notice:** We find that most scratching of the interior of a die is caused by grit on the brass surface. The best method for cleaning brass cases of grit is to tumble them. Tumbling the cases will clean the surface and prevent scratching the internal die surface. Your cases should be cleaned periodically to protect both your dies and the chamber of your firearm.

The RCBS Rotary Case Cleaner, Vibratory Case Polisher or one of the Ultrasonic Case Cleaners are recommended for cleaning cases. As soon as you detect scratches on a resized case, we recommend cleaning and lightly polishing the interior wall of the Sizer Die in a lathe - using #320 (fine) emery cloth to remove dirt and other foreign particles.

## CASE PREPARATION

**The key to consistent and accurate reloading - case uniformity!**

Clean and inspect cases before lubricating and sizing. Discard any cases with indications of a split neck or partial head separation. Check cases for the correct overall length and trim if necessary. Cases should be

sorted by weight or water capacity. Uniformity is critical. If bullets are to be crimped, it is imperative that cases be trimmed to the same overall length. Trimmed case mouths should be deburred and lightly chamfered inside and out with an RCBS Deburring Tool. Flash holes should be deburred and primer pockets uniformed. Case necks should be turned for uniform thickness to allow even and consistent bullet tension.

Cases must be properly lubricated before sizing. Over-lubrication will result in a dented case shoulder. Improper or no lubrication will result in a case stuck in the Sizer Die. For best results use only RCBS Case Lube-2 applied to an RCBS Case Lube Pad or RCBS Case Slick spray lube. The inside of case mouths should be very lightly lubricated with an RCBS Case Neck Brush. These accessories are available from your retailer as individual items or combined in the RCBS Case Lube Kit.

Do not lubricate the shoulders of bottle-neck type cases. Spray lubes will coat the shoulders but will not cause problems unless too much spray lube is applied. After the cases are properly lubricated they are ready to go through the reloading steps.

## SHELL HOLDERS

The MatchMaster dies are designed to be used with standard RCBS shell holders. The .22 Hornet set includes an extended shell holder for proper bullet seating. The extended shell holder is not intended to be used with the Sizing die.

## NECK BUSHING SELECTION

Neck bushings are not included. Proper neck bushing size can be determined two ways. Measure the outside neck diameter of a sample loaded cartridge, subtract .002” to .003”. This allows approximately .001” of brass spring back for correct neck tension. The other is to measure the neck wall thickness of your case, multiply by two, add the diameter of your bullet and subtract .001”. For example: loaded case neck diameter is .333-.002=.331 neck bushing or .012 case neck thickness, .308 diameter bullet is .012+.012+.308 =.332-.001=.331 neck bushing. RCBS suggests that you have neck bushings one to two sizes above and below your target diameter.

Neck Bushings are available in Hardened Steel as well as a Coated Steel version. Lubricating the necks of the cases is not necessary with the Coated Bushings but is recommended when using the Hardened Steel Bushings.

## FULL LENGTH RESIZING

Screw the MatchMaster Full Length Sizer Die into the reloading press until the sizer die touches the standard shell holder with the ram at the top of the stroke. Lower the ram and set the die 1/8 to 1/4 turn further down so the press cams over center. Set the large lock ring and tighten the setscrew with a setscrew wrench. Remove the Neck Bushing retainer and insert your selected diameter Neck Bushing. Neck Bushings must be installed so that you can read what is stamped on its side, do not install upside down (*Photo 1*).



Photo 1



Photo 2

The Decap Rod assembly comes with an Coated Expander Ball/Decap Pin Holder installed to allow for the proper preparation of a new lot of brass. The Decap Pin Holder found in the accessory bag (*some sets come with Decap Pin Holder and Rod*) must replace the Expander Ball for proper use with the Neck Bushings (*Photo 2*). Reinstall your Neck Bushing Retainer. Do not tighten the Neck Bushing retainer down on the Neck Bushing, back it off slightly to allow the Neck Bushing to ‘float’ and center itself around the case neck. The end of the decapping pin holder must be at least 3/16” above the bottom of the die. The decapping pin should protrude below the bottom of the die just enough to knock out the spent primer. The Decap Rod is adjusted by loosening the small lock ring at the top of the die and turning the unit to the desired setting. Use a hand decapper or HD Decap Die to remove primers from military cases with crimped-in military primers.

The amount of the case neck that is resized is adjustable by adjusting the Neck Bushing retainer upwards. This allows the Neck Bushing to move upwards before neck resizing begins. A full turn is approximately .0712”, this creates a double diameter neck with the base of the case neck further helping to center the cartridge in the chamber of the firearm.

## NECK RESIZING

The MatchMaster Neck Sizing die only resizes the neck of the case. It does not touch the body of the case or change headspace. Follow the directions of the Full Length Sizer die for proper use. After multiple firings using the Neck only sizer die, it may be necessary to set headspace back a few thousandths to allow chambering. This can be done with the MatchMaster Full Length Sizer die with the neck bushing removed.

## “BUMPING” HEADSPACE

Bumping headspace is exactly what it sounds like, you are simply bumping the shoulder (headspace) back to allow the case to chamber into your firearm. The use of the RCBS Precision Mic or other quality gauges will help you to set headspace exactly to your firearm.

During firing, cases expand to fill the chamber or your firearm, after the bullet has left the muzzle, pressures drop and the cases shrink slightly to allow extraction from the chamber. The case, with some shrinkage, is now an accurate representation of the chamber of your firearm. This initial expansion of the case can change headspace by .005” or more. Rather than fully resizing the headspace and case dimensions back to SAAMI minimum, you can simply “bump” it back a few thousandths to insure chambering. This also gives you a more efficient use of the pressures created under firing by not having the case expand as much.

To set the MatchMaster Full Length Sizer die to “bump” headspace, with the shell holder in the ram and the ram at its highest point, screw the Sizer die down until it contacts the shell holder. Back the die up 1/2 turn and secure with the lock ring. Take a properly lubricated case that no longer chambered in the firearm and size it in the die. Remove the lubricant and check to see if it will now chamber. If it does not chamber, relubricate the case and adjust the die body down in 1/8 turn increments until it does chamber properly in your firearm.

## BULLET SEATING

The MatchMaster Seater die features a sliding case guide with bullet retention, floating seat plug and Micrometer adjustable bullet seating depth. The thimble of the MatchMaster Seater Die is adjustable in .001” increments. There is no provision to crimp the bullet with the MatchMaster Seater Die. To set up the seater die, turn the thimble counter-clockwise to near its maximum adjustment. Insert the die into the press screwing it down to almost touch the shell holder. Longer bodied cases require the Seater die body to be adjusted higher