

USE STRONG VENTILATION

WARNING: Melting lead and casting lead objects will expose you and others in the area to lead, which is known to cause birth defects, other reproductive harm and cancer.

REDUCING EXPOSURE: Lead contamination in the air, in dust, and on your skin is invisible. *Keep children and pregnant women away* during use and until cleanup is complete. Risk can be reduced — but not eliminated — with strong ventilation; washing hands immediately after use of these products before eating or smoking; and careful cleaning of surfaces and floors with disposable wipes, after lead dust has had a chance to settle. Use a lead-specific cleaner with EDTA, or a high-phosphate detergent (like most detergents sold for electric dishwashers), and bag wipes for disposal.



GENERAL INFORMATION

Casting dependable, accurate bullets, like any reloading operation, begins with dependable tools. RCBS Bullet Moulds begin with tough, pearlitic, malleable iron blocks. From these blocks, bullet cavities are meticulously machined one at a time. High grade tool steel is used exclusively in machining moulds to maintain precision tolerances. After machining, moulds are heat blued. Hardened steel pins provide alignment of the block halves throughout the casting sessions. The sprue cutters are made of tough steel plate, and are held flat and secure against the mould block by an adjustable pressure washer. This produces clean, flat cutting of bullet bases. RCBS mould blocks are interchangeable and lock firmly onto the mould handles with Allen-type setscrews. For a complete list of RCBS Bullet Moulds, consult our latest catalog or Special Order Catalog. RCBS Bullet Moulds are available in double cavity only unless otherwise indicated.

ASSEMBLY

When assembling the bullet moulds to the bullet mould handles, be certain that all parts are positioned as illustrated. Both mould halves are locked securely to the handle shafts by two Allen-type setscrews which enter from the bottom of each mould half. The Allen-type setscrews should not be over-tightened. Check the sprue cutter tension. It should ride smoothly over the mould surface with enough tension so that it will not swing loose on its own weight. The sprue cutter retaining bolt can be loosened or tightened as needed to ensure proper fit. Adjust the mould handle bolt and nut periodically to insure a snug fit. Mould halves may not close completely until they are "broken in". This is due to the interference fit between the locating pins and the locating holes in the mold block. To close the mould halves, lightly tap the side of the mould blocks with a wooden Mallet while squeezing the handles closed. This should become a standard practice to do while closing the mould each time.

MINIE BALL MOULD ASSEMBLY

Important: Be sure the minie ball mould plug is in place before attempting to cast bullets.

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 guns 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.

RECORD KEEPING

Protective clothing could include coveralls or one-piece jumpsuits. However, the clothing should not be used for any other activities. It should be laundered separately from other clothing. These precautions will minimize the likelihood of any lead dust being scattered around in other living areas.

- Maintain good housekeeping practices to ensure that surfaces are as free as practical of the accumulation of lead dust. Vacuuming is the preferred method. Compressed air should not be used.
- Hands, face and hair should be washed after working around lead dust, fumes or fuming fumes, and prior to eating, drinking, smoking or applying cosmetics to prevent lead ingestion.
- At all times, keep small children well away from the casting area.
- Do not smoke, eat or handle food when handling lead.
- Always make certain bullet mould, lead dipper and bullet metal are totally free of moisture.
- All electrical melting pots should be grounded to reduce risk of electrical shock.
- Be sure your melting pot and heat source are stable, and the table or bench is solid.
- An ingot mould or other container should be placed under the spout of bottom feed pots to catch lead that may leak.

RCBS

PRECISIONEERED® RELOADING EQUIPMENT

We think that we make the very best reloading equipment in the world.

If you agree, please tell your friends.

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Customer Service

1-800-533-5000 (US or Canada) or 530-533-5191

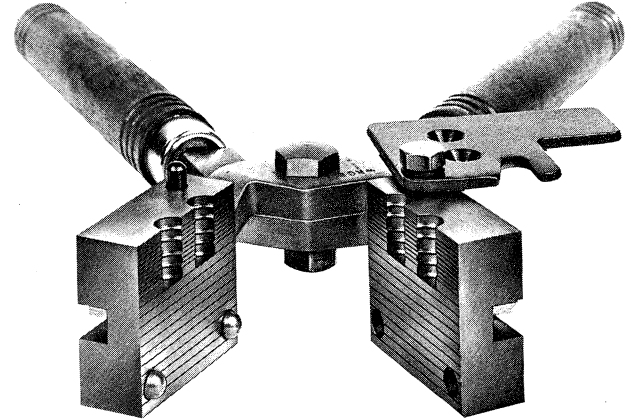
Hours: Monday - Thursday, 6:30am - 3:00pm Pacific Time

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RCBS

BULLET MOULDS



PRODUCT INSTRUCTIONS

SAFETY

Reloading is an enjoyable and rewarding hobby that can be conducted safely. However, carelessness or negligence can make reloading hazardous. This product has been designed from the beginning with the user's safety in mind.

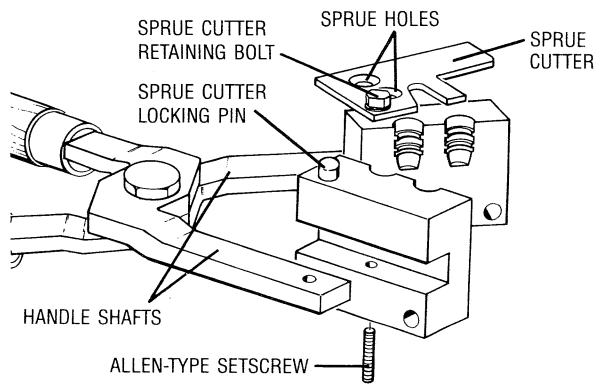
GENERAL

- Use all 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.

CASTING

Overexposure to lead can be harmful. Lead contributes to health impairment and diseases which occur after lead exposure over long periods of time.

- Bullet casting should not be conducted in a confined space or in an enclosed room. Ensure that well-ventilated areas are used to avoid build-up and breathing of lead dust, fumes and fuming fumes. Good ventilation includes continuous cross-ventilation by large amounts of fresh air.
- Face dust masks should be worn during bullet casting activities.
- When casting or otherwise working with molten lead, always wear effective eye protection, appropriate protective clothing, leather or thick cotton work gloves, and shoes that cover your feet and ankles completely.



RCBS minie ball moulds, with "in-place" plugs, greatly speed up the casting of minie balls. There is no plug to insert and remove because the plug stays in place between the mould halves. To assemble: Remove the two hex-head handle screws. These screws hold the mould handles and the plug bracket onto the mould blocks. Place the mould upside down with the widest part of the sprue cutter away from you. Place the plug and bracket in position. Place the mould handle into the slots of the mould blocks and replace the hex-head screws, making certain that the shoulders of the screws are in the slots of the brackets. Turn the hex-head screws to a soft stop. Excess tightening pressure is not required on the hex-head screws.

CARE & CLEANING

RCBS moulds have been carefully inspected and dipped in a rust preventive oil before shipment to protect the moulds while in storage. *Before using the moulds, all traces of this oil must be removed.* At a safe distance from open flame, saturate a soft cloth with a suitable solvent and very carefully clean the moulds, sprue cutter, etc. Do not attempt to burn off the oil by casting. This will only result in leaving gritty carbon deposits on the matching surfaces of the moulds or in the mould cavity itself. It is also important that moulds are cleaned before each casting session. After casting, allow the moulds to cool completely. Then re-oil before storing.

IMPORTANT

- Never cool the moulds by submerging in water.
- Never strike the moulds with a hard object. To prevent damage to the moulds we recommend using a wooden mould mallet.
- Never submerge the moulds in the molten metal.
- Never scrub the moulds with a wire brush or scrape them with a knife, screwdriver, etc.

BULLET ALLOYS

With the exception of the pure lead bullets used for muzzle loading, cast bullets are made by blending several metals into a suitable alloy. When you consider that the blend of an alloy greatly affects the weight of the finished bullet and its ability to group well, it becomes obvious that specific formulas for bullet metals are required.

RCBS pistol bullet moulds will produce their nominal weight and diameter when used with an alloy of 10 parts lead to 1 part tin. Both metals are easily available from your dealer.

This alloy was adopted as the RCBS standard for several reasons. First, this alloy is inexpensive and easy to obtain. Second, this alloy produces a relatively hard bullet, which our experience indicates is one of the keys to optimum accuracy. And third, we've found that bullets cast from this alloy that are properly lubricated, sized and loaded to an appropriate velocity will not foul the gun bore with lead.

Weights and diameters of RCBS rifle bullet moulds were established using an alloy of 85% lead, 4% tin, and 11% antimony. This alloy is commonly available as linotype metal and may be purchased from a local printer if your regular dealer does not carry a supply in stock. An alloy of a different formula may be equally acceptable. However, the bullet caster should realize that a variation in the alloy will create a variation in bullet weight and diameter. A harder alloy containing more tin creates a lighter bullet of larger diameter. A softer alloy containing more lead creates a heavier and smaller diameter bullet.

RCBS Cowboy Bullet Moulds were established using an alloy of 20 parts lead to one part tin.

Pure lead should be used to obtain the advertised weight and diameter of minie and round balls.

Consult a reliable Cast Bullet Manual for more information about bullet alloys.

BLENDING AND FLUXING

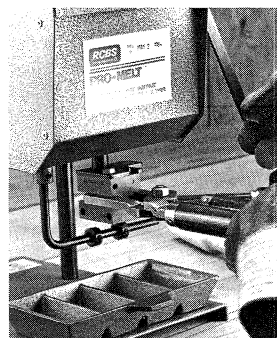
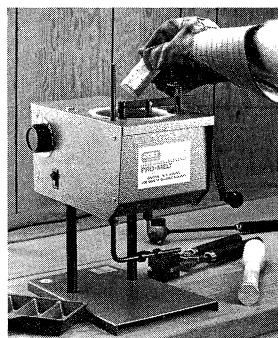
Fluxing is the method used to clean impurities from the alloy and to combine the various elements of metal. The importance of proper and periodic fluxing cannot be overstated. If the alloy is not kept properly blended, cast bullets will vary in composition and weight and result in poor performance.

Fluxing is best accomplished with one of the modern commercial preparations sold expressly for this purpose. The old practice of using tallow or bullet lube to flux has been found only marginally effective and has largely been abandoned. Use the modern fluxes according to the manufacturer's instructions.

After fluxing, stir the alloy with a dipper. As you stir, hold the dipper so that the cup side is down and raise it out of the mixture with each stirring stroke. This helps the fluxing process by introducing air into the mixture. When the alloy has been properly fluxed, the surface will appear almost mirror bright and flecked with small particles of black and brown impurities. These impurities should be skimmed off and discarded. A routine of fluxing each 15 minutes, and every time alloy is added to the pot is the best assurance of a uniform alloy.

CASTING BULLETS

After carefully cleaning the mould, lock the sprue cutter closed and place the mould near the heat source where it will slowly preheat. Cold moulds absorb heat and can result in poorly cast bullets. Place the alloy in the lead pot (or furnace) and allow sufficient time for it to melt. Then, place the dipper in the lead where it will heat to the temperature of the bullet alloy. When all the metals have liquefied and flow freely through the dipper, carefully flux the alloy as previously explained. The twenty or thirty minutes required to heat and flux the alloy should be sufficient to preheat the mould so it is ready for casting.



Fill the dipper approx. $\frac{3}{4}$ full of alloy. Tip the mould on its side.

Then place the pouring spout of the dipper against the pouring hole in the sprue cutter of the mould. Hold both units in alignment, turn and pour the alloy into the mould.

If a bottom-feeding melting unit is used, place the mould under the pouring spout in an upright position and carefully open the valve so the alloy will flow into the mould.

Allow ample time for the mould to fill. Large bullets and some very small bullets will not fill out properly unless the mould and dipper are held in position for sufficient time.

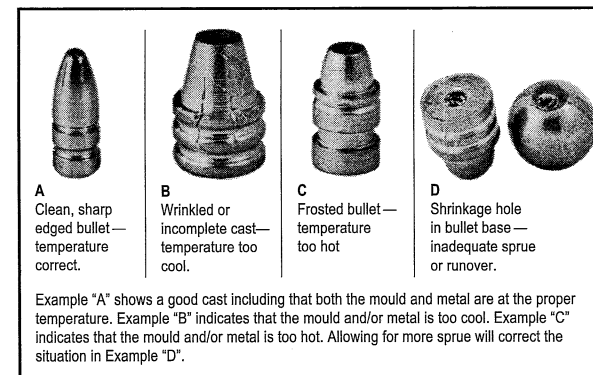
Fill time varies from 2 to 6 seconds, depending upon bullet size and shape. Experience with a specific bullet size will prove to be the best teacher.

After the mould has filled, tilt the dipper slightly to allow a small runover of alloy to build up on the top of the sprue cutter. This is important because if sufficient runover is not allowed, the cooling alloy will shrink to the point of leaving a hollow cavity in the bullet base.

When the mould has filled and the sprue has formed on the sprue cutter, quickly turn the dipper upright, cutting off the flow of metal and return the dipper to the pot. After the sprue has solidified (from 2 to 6 seconds), use wooden mould mallet to tap open the sprue cutter. Open the mould and allow the bullet to drop onto a soft pad on your loading bench. Normally the bullet will drop readily from the mould. If it doesn't, tap the mould handle hinge pin lightly (never the mould) on the side where the bullet is resting. Be sure the mould is

open before hitting the hinge pin. After the bullets have dropped, close the mould, lock the sprue cutter, and continue to cast. Following the above instructions, you should obtain a good cast very quickly. Until the mould heats sufficiently, the first bullets will probably be wrinkled. Reject these first few bullets and continue to cast until clean, sharp edged bullets are obtained with each pouring.

Try to cast at a pace that will keep the mould at the proper casting temperature. Speed up or slow down your casting pace as needed. Rejected bullets and sprues should be saved and re-melted.



WEIGHING BULLETS

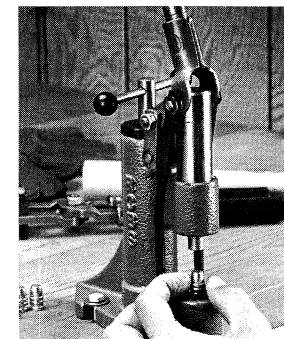
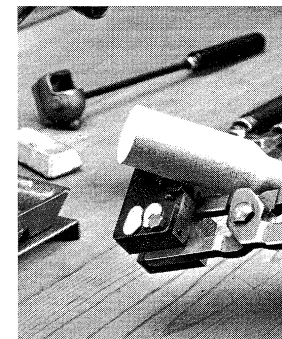
Due to variations in alloy, one lot of bullets may vary slightly in weight from the next lot. For this reason you should weigh each lot of bullets. An RCBS reloading scale is highly recommended for this purpose. First, establish an average weight for each lot. Then reject all bullets that vary more than $\frac{1}{2}$ grain from this average. Bullets which are considerably lighter than others in the same lot may contain air pockets which cannot be detected visually. Weighing will cut out these rejects and produce a better reload.

BULLET DESIGN, VELOCITY & ACCURACY

When choosing a load for your cast bullets, be sure that its velocity does not exceed the working velocity of the cast bullet design and alloy. Gas check bullets of linotype alloy may be driven at a maximum velocity of approximately 2,200 FPS. Plain base designs should be held to approximately 1,500 FPS or less. A gas check design may be used without the gas check if its velocity does not exceed that recommended for the plain base bullet. Gas checks should be used whenever possible for velocities in excess of 1,300 FPS. RCBS cast bullets are designed to be used with a crimp-on style gas check.

BULLET SIZING & LUBRICATING

Proper bullet sizing and lubricating are important to cast bullet accuracy. RCBS mould specifications were formulated after careful consideration of variations in standard bore and groove diameters. The nominal shrinkage of bullet alloys was also taken into consideration when setting these tolerances. When reloading with cast bullets, always use a die set with a separate expander die. For proper lubrication of bullets, consult the RCBS Lube-A-Matic Bullet Sizer-Lubricator instruction booklet.



When your casting session is complete, leave the last pour in the mould. Do not cut off the spruce or remove the moulded bullets. This will help to prevent the interior of the mould from rusting.