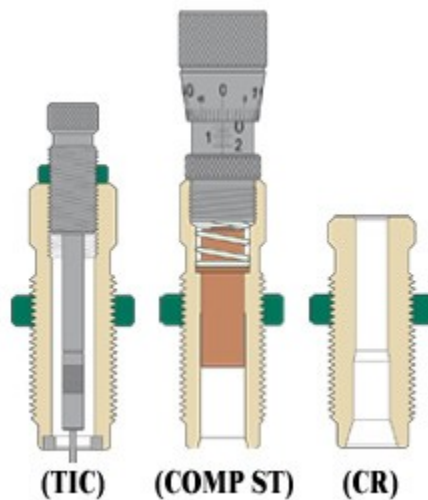


Competition Pro Series Die Sets In Titanium Carbide

The "Pro Series", for use in progressive reloading machines, is a specially prepared three (3) die set. Since the most popular machines do not make use of an expander (TIC) (PRO ST) (CR) die, it has been eliminated in the new "Pro Series" sets. The sizing die is the extraordinary Redding Titanium Carbide, complete with a decapping unit. A superior crimp can be accomplished if it is done in a separate operation from the bullet seating. For this reason the "Pro Series" bullet seating die is designed for bullet seating only, with no crimping feature. Our Profile Crimp die is supplied for the final crimping.

For cartridges that headspace on the case mouth, a Taper Crimp die is substituted. All dies in the set have a special large radius at the mouth for easy case entry, a necessary feature for progressive machines.



Cartridge	Competition Pro Series Die Set	Titanium Carbide Sizing Die	Competition Seating Die	Taper Crimp Die	Profile Crimp Die	Trim Die
Price	\$252.50	\$115.00	\$123.00	\$38.00	\$38.00	\$43.00
9MM Luger	58172	87172	55172	85172	N.A.	83172
38 Special/357 Magnum	58282	87282	55282	85282	86282	N.A.
38 Super Auto	58271	87271	55271	85271	N.A.	83271

Working With Your Competition Seating Die

The Redding Competition Seating Die is a very specialized instrument. At first glance, you will note that its appearance and construction differs greatly from that of a standard Seating Die. Through examination and use, you will understand and appreciate the amount of engineering that was required to offer you the finest precision Bullet Seating Die on the market.

You've undoubtedly noticed that the Competition Seating Die is equipped with a Micrometer. This Micrometer is easily adjustable for bullet seating depth with each increment equaling .001" on the micrometer barrel, or .050" per revolution. This feature enables the handloader to make fast, accurate, and repeatable changes in bullet seating depth, with no guesswork required.

The Micrometer, though very convenient, is just one of the Die's many innovations. Handloaders concerned with crafting the most concentric ammunition possible should put the Competition Seating Die at the top of their wish list!

Here's why:

The Internal Sleeve is housed within the threaded Die Body and marked with the Die's Cartridge Designation. Using the same techniques as a Custom Riflesmith, a one-piece reamer is used to cut a "chamber" to dimensions that are in accordance with SAAMI and/or CIP Chamber Specifications. This enables the sleeve to hold and align the cartridge case concentrically as it enters the Die. The dimensions of this chamber match the aforementioned specifications very closely. In fact, brass that has been fired in an oversized or otherwise "out of spec" chamber may not fit into the Sleeve.

In much the same manner that the cartridge case is aligned as it enters the Die, the Internal Sleeve has been designed to align the bullet as well. This is accomplished by way of the Bullet Alignment Bore.

Rather than inundating you with all sorts of specifications and tolerances with regard to how well the bullet is held in alignment with centerline of the cartridge case, we would like to walk you through an experiment that will illustrate it.

- 1) First, disassemble the Die. Removing the Micrometer will allow the Die's internal parts to be removed from the threaded Die Body.
- 2) Hold the Internal Sleeve vertically in your hand, oriented so that the Bullet Alignment Bore is facing upwards.
- 3) Remove the Seating Stem from the Bullet Alignment Bore.
- 4) Place your thumb over the Chamber end of the Internal Sleeve so that the hole is completely covered, creating an airtight seal.
- 5) Partially insert the Seating Stem into the Bullet Alignment Bore (1/8" to 3/16") is sufficient.
- 6) Using your free hand, gently tap the top of the Seating Stem with your finger. Because the Bullet Alignment Bore and Seating Stem are so closely matched, the air within the Internal Sleeve does not escape; it is compressed. Watch as the Seating Stem "jumps" as the compression reacts upon the Seating Stem.

7) Now, repeat the experiment using a standard jacketed bullet in place of the Seating Stem, you will see the same results. You have just demonstrated that the Seating Stem and the bullet are so closely matched that they will float on a column of air!

As you reassemble the Die, notice that the seating stem moves independently of the Micrometer. This patented design feature assures that the Seating Stem can be held perfectly aligned with the cartridge case, with no error induced by other parts of the Die.

To hold the bullet concentrically, the Bullet Alignment Bore and the Seating Stem have been honed and ground to virtually the same diameter as a jacketed bullet. As a result, the seating stem walls are relatively thin and not as inherently robust as the Seating Plug in a standard Seating Die. Though the Stem is heat treated to make it as strong as possible, it will not endure the excess seating pressure of Compressed Charges. This excess seating pressure will crack the Seating Stem which will, in turn, damage the other internal parts of the Die. Please be mindful because replacement parts are costly and NOT covered under Warranty. Please remember that your Competition Seating Die is a precision instrument and should be used and treated as such. A handloader using this Die to compress powder is tantamount to a machinist using a Micrometer as a C-Clamp.

Because the Cartridge Case and the Bullet are held perfectly in alignment throughout the seating operation, you can be certain that there will be no runout induced by the Seating Die or the Seating Operation. So long as proper handloading techniques are used and brass is sorted for uniformity, the eccentricity of your loaded cartridges will be minimal. If you encounter any trouble, investigate the processes and components used to assemble the cartridges so that you can identify and mitigate any problems.

With proper care and consideration, you will undoubtedly have years of reliable service from your Competition Seating Die. Should you have any questions or require any additional information about our products, please don't hesitate to contact us, we'd be happy to help you.

Seating Depth Variation

There are many factors that can cause bullet seating depth to vary when using our Competition Seating Die. First, make sure you're comparing bullet seating depths correctly. You cannot check bullet seating uniformity by measuring cartridge overall length off the bullet point. You must use a bullet comparator, like our Instant Indicator, to compare bullet seating depths. A comparator contacts the bullet at the bore diameter contact point. This is important, as bullets can vary slightly in overall length.

We have designed the seat stem in our Competition Seating Die to contact the bullet ogive as far down as possible. Our Competition Seating Die features a bullet guide that is only .0005-.001" larger than bullet diameter. This tight fit between the bullet guide and bullet ensures that the bullet is seated straight in the case neck. It also limits how far down the ogive the seat stem can contact the bullet. If the ogive of your bullets aren't uniform, you may notice a slight difference in seating depth. Generally, this isn't a problem as modern bullets are very uniform. In rare

instances, when using inexpensive bulk bullets, you may find that the bullets were made on several different machines and then blended.

If your loading press is worn, the ram may not stop in exactly the same spot each time you raise it. Obviously, this will cause variations in bullet seating depth. Although our instructions warn against it, raise the shellholder and adjust the outer, threaded die body to make light contact with the shellholder. (Make sure you keep the contact light, so you don't damage the die.) This creates a "dead length" seating chamber that is unaffected by where the shellholder stops. The only disadvantage to using the die adjusted this way, is that it may be awkward to read the micrometer if it ends up on the back side of the die.

Inadequate or excessive neck tension can also cause bullet seating depth variations. If you're using a bushing style sizing die, make sure you've selected the correct diameter bushing to size the case necks. Our current recommendation, is to select a bushing that is .001" smaller than the neck diameter of your loaded cartridges. (See the bushingselection newsletter in the "Tech Line" section of our website for more information.) As cases are fired over and over, their necks become progressively harder. This can cause the necks to "spring-back" excessively when they are sized, which reduces the neck tension on the bullet. Either anneal the case necks after several firings, or discard the cases and start with new, soft ones.

Heavily compressed loads can create problems when seating bullets. Our Competition Seating Die is not a powder compression die. The excessive force required to seat a bullet on a compressed load can damage the die and may cause seating depth variations. Switching to a faster burning or ball powder may eliminate the need to excessively compress the powder charge.

If you have any further questions, please feel free to call our technical support line at 607-753-3331.

Competition Seaters and COAL

Question: I cannot seat my bullets deep enough in my cases to achieve my desired C.O.A.L. using my Competition Seating Die. What am I doing wrong?

Answer: Due to the complex nature of a Redding Competition Seating Die, additional care should be taken as to be certain that the Die is set up correctly. Please see our "Quick Start Guide" for easy to follow instructions.

Typically, problems achieving the correct C.O.A.L. with a Competition Seating Die are caused by one of the following problems:

1) The large Reamed Sleeve (marked with Cartridge Designation) is not being compressed against the shellholder.

The sleeve should be compressed (**NEARLY** flush with the outer Die Body) when the Ram/Shellholder is raised to its uppermost position. Please note that when the sleeve is completely compressed, the Die Body itself will need to be backed away slightly as to not contact the shellholder or damage may result. For more information, please refer to the Competition Seating Die Instructions or the Quick Start Guide.

2) The Set Screw located in the Micrometer Top needs to be adjusted.



The Set Screw mentioned above can be adjusted using the large Allen Wrench that was included with your Competition Seating Die.

Turning the screw Clockwise will lower the screw; allowing the bullet to be seated deeper with the same relative micrometer setting. Conversely, turning the screw counter-clockwise will raise the position of the screw producing a longer C.O.A.L. with the same relative Micrometer setting.

If the C.O.A.L. of your cartridges cannot be adjusted deep enough, try lowering the position of the setscrew. When the setscrew is adjusted, the Die will have to be adjusted from “scratch” in your press as to avoid damage. For more information, please reference the section entitled “Micrometer Adjustment and Zero” in the Competition Seating Die instructions and the Quick Start Guide.

*From the factory, a small amount of adhesive has been applied to the setscrew. As a result, the screw’s initial adjustment will require more force than subsequent adjustments.