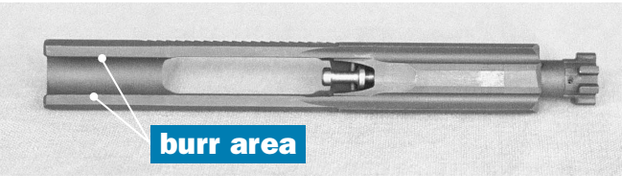
Installation Note

CWS™ fits all quality AR15 bolt carriers, and also the AR-10 and SR-25. CWS™ has been carefully engineered to work with a wide variety of bolt carriers. However, there may be an occasional bolt carrier that, due to its machining, may need to have additional metal removed from its surfaces. This has nothing to do with the CWS™. All that is normally required is a careful examination of where the interference occurs and then relieving the obstruction. Normally, this interference comes from the inside edges of the open area on the bottom of the bolt carrier [see photo below]. We recommend (careful) use of a rotary grinding tool or a flat file. Do not remove metal from the CWS™!

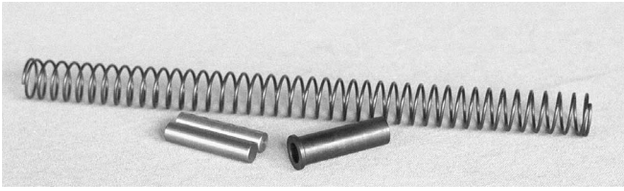
There will be no reduction or compromise in the function of the CWS™, the bolt carrier, or the rifle if it is necessary to de-burr the bolt carrier. Do, however, ensure that CWS™ will insert fully into the carrier so there is flush contact with the leading edge of the CWS™ flange.



Contact **(806) 323-9488** for technical assistance. Instructions and additional information are also provided on-line. Please check **www.davidtubb.com** or **www.zediker.com** for the latest updates and information on CWS™ and other Superior Shooting Systems Inc. products. Something new is always in the works!

CS AR15 Buffer Spring

CWS™ was tested and intended to operate in conjunction with the SpeedLock™ CS AR15 Buffer Spring. This is the only spring engineered specifically to handle the increased demands of High Power Rifle competition. It is constructed from Chrome Silicon alloy, a radically superior material to the common music wire construction found in all others. Due to the superior nature of its material, our CS spring has the same power as a conventionally constructed "extra power" spring, yet provide that extra energy using a lighter spring weight. Correct timing and resistance on the recoil stroke and a controlled rebound ensures reliable feeding with consistent forward thrust.



The CS Spring enhances the effect of the CWS™-equipped rifle in two ways. Resistance to unlocking is increased, thereby further influencing this aspect of CWS™. And the opportunity to realize reliable function with the CWS™ at maximum weight is also enhanced. This combination makes a big difference!

SpeedLock™ CS springs are duty rated for 500,000 compression cycles with maximum performance. A standard spring will go about 5000 rounds before changing enough to compromise function and loses as much as 25 percent of its capacity in less than one year — whether the rifle is used or not!

Call (806) 323-9488 to order.

CWS™ [carrier weight system] is a patented-for drop-in part that greatly enhances the functionality of AR-type firearms in extreme shooting conditions.

The addition of weight to the carrier slows its rearward start upon action cycling. Technically, it increases the *moment of inertia,* but that simply means that the rifle will stay "locked" a little longer. This additional time reduces the influence of pressures on the cartridge case and also softens rearward carrier movement. The result is much better brass life, fewer "pressure problems," and greater flexibility in velocities attainable using all bullets — especially the heavier bullets used in High Power Rifle competition. There is also noticeably less rifle movement during firing and longer parts life from a softer recoil pulse. CWS™ improves rifle function, so there are no worries about extraction or feeding failures. CWS™ in no way affects the amount of gas available to operate the rifle.

CWS™ also incorporates a flange that serves to secure it in the carrier, but this also significantly reduces bolt carrier overrun past the bolt stop. This flange is 0.080 inches thick. Reducing the distance the carrier must return to engage the bolt stop extends the life of this part and, again, reduces the amount of rifle movement apparent to the shooter. This, too, has been engineered to work perfectly with the majority of quality parts. There are specific instructions upcoming that will ensure carrier overrun is adequate for use in all rifles.

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CWS™ installation is simple, but please read all the instructions carefully, as there are special compensations necessary for assembly-disassembly and adjustment of the CWS™-equipped rifle.

Make certain that the firearm is unloaded! Remove the magazine and visually inspect the chamber after retracting the bolt to ensure that the rifle is safe.

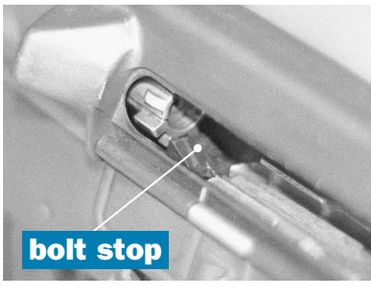
CWS™ Integration

The CWS™ is designed to be a "slip fit" into the rear of an AR15-type bolt carrier. As such, installation into the carrier itself is simple: just drop it in. The CWS™ is trapped by the buffer spring and cannot shift or loosen.

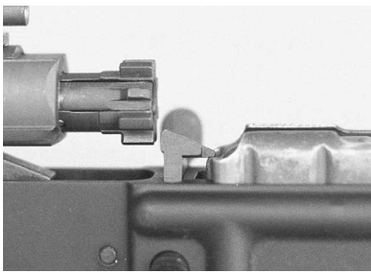
Normally, accessing the bolt carrier in an AR15-type rifle requires only sliding the rear receiver takedown pin outward and lifting the rear of the upper receiver. This pivots off the front takedown pin and allows the front pin to stay engaged. To install CWS™ you must also slide the front takedown pin clear so that the entire upper receiver assembly can be separated from the lower receiver assembly **(1)**. [On a Colt®, or other rifle equipped with front pin screws, the screws must be removed.] Refer to your owner's manual if you do not know how to do this.

The CWS™ flange creates the only complication in assembly since it is normally not possible to close the receivers without separating the front and rear pins. The flange on the CWS™ requires sliding the upper receiver straight back into alignment with the takedown pin holes.

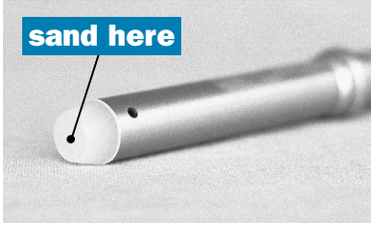
After installing the CWS™ in the bolt carrier **(2)**, reassemble the rifle by situating the upper assembly so that the corresponding takedown pin hole in the upper receiver is approximately one quarter inch forward of the rear takedown pin **(3)**. Engage the CWS™ with the buffer assembly and slide the upper assembly straight to the rear until the takedown pin holes align **(4)**. The CWS™ will meet resistance from the buffer spring. Insert or reinstall the front takedown pin to trap the receiver in place **(5)**, and then close the rear takedown pin **(6)**.



Next check for adequate overrun. Locate the bolt stop [see photos on right] and retract the bolt carrier fully. (This is easiest done with an empty magazine in place.) *Fully* retracted, there should be a gap of approximately 1/16 inch (the thickness of a dime) between the bolt face and the bolt stop. If the gap is much less than that, the bolt stop may not have time to fully extend prior to the bolt contacting it on the forward return of the carrier. If this gap space is inadequate, disassemble the buffer and spring assembly and remove material from the rearward-most polymer surface of the buffer [see photo on right]. A belt sander is recommended for this job.

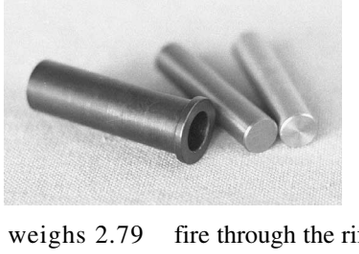


Rifle parts have been removed for illustration clarity. Check your rifle fully assembled.



CWS™ Adjustment

There are two accessory weight inserts packaged with your CWS™. One is stainless steel, one is carbide. The CWS™ itself, with no additional weight inserts, weighs 1.54 ounces. The CWS™ with the stainless insert weighs 2.79 ounces (1.25 insert weight) and the CWS™ with the carbide insert weighs 4.05 ounces (2.51 insert weight).



Due to shooter preference, ammunition, and original carrier configuration, it may or may not be possible to use the maximum weight combination. Some carriers are designed utilizing more metal in their structure. We have never had a rifle, regardless of carrier brand, that wouldn't function with the CWS™ alone.

For the competitive shooter, we recommend starting at the top. Install the carbide insert and test fire the rifle. Make sure to check its function with the lightest load you will fire through the rifle, magazine fed, and also check its function firing rounds from the standing position.

The carbide insert provides the maximum benefit to the pressure sensitive heavy bullet loads common in High Power competition. Otherwise, experiment with weight variables to your satisfaction. Some shooters may prefer a quicker cycling action or find that the carbide insert doesn't always function 100-percent with some lighter loads they may use.