



Brownells Bolt Body Shim Kit includes two sets of shims (front and rear), as well as one ampule of super-strength, anaerobic adhesive specially formulated for permanent bonding of metals. The kit is designed to take up the gap and center the bolt body after truing (or blueprinting) a bolt action, rifle receiver using the 715" Bolt-Way Reamer (#513-000-070) by Dave Manson Precision. Brownells unique shim system saves time and effort by eliminating the need to fabricate your own shims, undercut the bolt body and solder them in place. Each shim is manufactured to precise tolerances and pre-contoured for a perfect fit on any .700" diameter bolt body. After proper machining, the shims will ensure a snug fit of the bolt in the trued receiver.



WARNING



Never attempt to disassemble or reassemble a firearm unless you are absolutely certain that it is empty and unloaded. Visually inspect the chamber, the magazine and firing mechanism to be absolutely certain that no ammunition remains in the firearm. Disassembly and reassembly should follow the manufacturer's instructions. If such instructions are not immediately available, contact the manufacturer to see if they are available. If they are not available at all, then you should consult other reference sources such as reference books or persons with sufficient knowledge. If such alternative sources are not available and you have a need to disassemble or reassemble the firearm, you should proceed basing your procedures on common sense and experience with similarly constructed firearms.

With regard to the use of these tools, the advice of Brownells Incorporated is general. If there is any question as to a specific application it would be best to seek out specific advice from other sources and not solely rely on the general advice and warnings given.

PREPARATION

1. Verify the firearm is unloaded.
2. Remove bolt from receiver.
3. Thoroughly clean the bolt assembly and shims with a chlorinated solvent such as Brownells TCE Cleaner Degreaser (#083-060-024). Allow to air dryer completely. **DO NOT bend or beadblast the shims. Doing so will distort the curvature of the shims and render them unusable.**

INSTALLATION

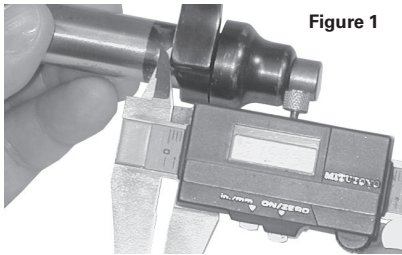


Figure 1

1. Measure .150" (3.8mm) from the top of the bolt handle forward, and draw a line around the circumference of the bolt at this spot using a permanent ink pen. This line will be used to properly align the rear shims so they fully contact the rear of the receiver. (See Figure 1).

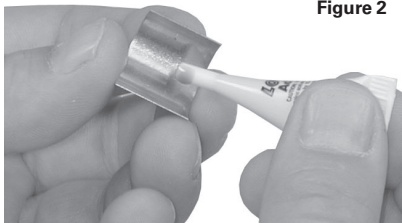


Figure 2

2. Note, the two wider shims are a matched set for use at the rear of the bolt. The narrower, front shims are installed at the front of the bolt, just behind the locking lugs. Begin by spreading a thin, even layer of adhesive over the entire inside surface of both rear shims. (See Figure 2).

3. Position the rear shims onto the bolt body. Align the back edges of the shims with the alignment mark forward of the bolt handle. Mate the edges of the shims at the top side of the bolt to form a tight seam. Make sure gap (A) at bottom side of bolt is aligned with cocking piece (B) as shown.

This will help ensure the space between the shims remains hidden during bolt lock-up. (See Figure 3).

4. Wrap the shims as tightly as possible with a rubber band to ensure their full contact with the bolt body. If the shims slide out of position, re-align them after the rubber band is in place. (See Figure 4).

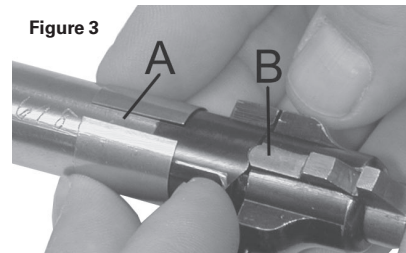


Figure 3

them after the rubber band is in place. (See Figure 4).

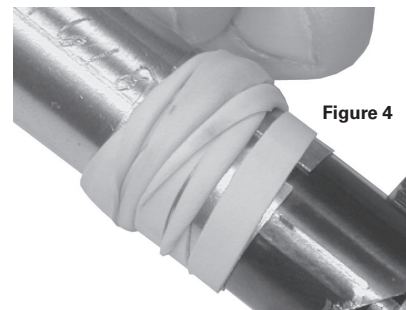


Figure 4

5. Attach the front shims in the same manner. Make sure the forward edges of the front shims are tight against bolt lugs (C). Then, using a straight edge, align the front shims so gap (D) is inline with the rear shim gap. (See Figure 5).
6. Check the shims a final time to ensure they have not shifted out of position. Allow to dry for 24 hours.
7. After the adhesive is completely dry, remove the rubber bands from the bolt. The bolt body is now ready for machining.
8. After reaming the receiver, the bolt-way I.D. should be .7150" (18.16mm). For benchrest rifles, it is recommended to machine

BROWNELLS[®] BOLT BODY SHIM KIT

#080-000-165



READ & FOLLOW THESE
INSTRUCTIONS

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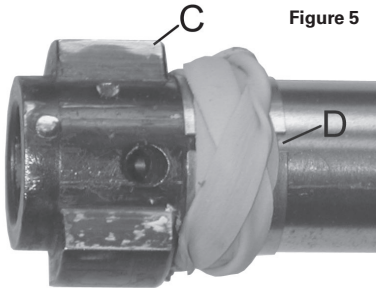


Figure 5

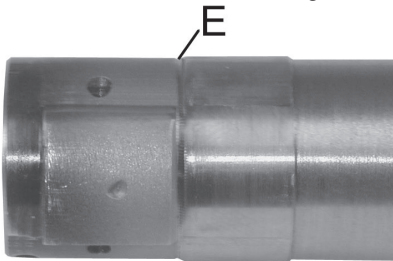


Figure 6

the shims to an O.D. of .7145" (18.15mm). This provides the minimum clearance necessary for competition rifles. To ensure reliable cycling in hunting rifles, we recommend the shims be machined to an O.D. of .7135"-.71.40" (18.12mm-18.13mm).

9. To ensure smooth forward bolt movement, machine a short, .45° chamfer (E) on the forward edge of the front and rear shims. (See Figure 6).
10. Using a polishing stone or rotary tool, create a slight radius along the edge of the top left corner (F) of the rear receiver ring to prevent binding. (See Figure 7).
11. Install bolt to receiver and check for smooth movement.

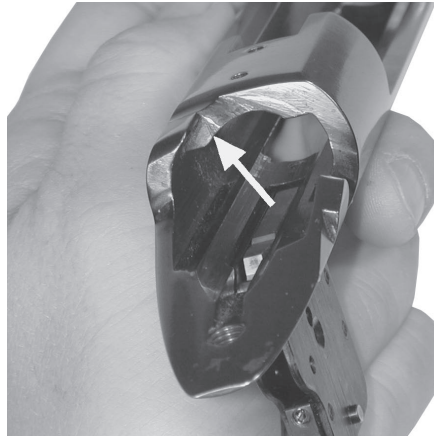


Figure 7

Reassemble the firearm according to the manufacturer's instructions. Check for proper functioning using **ACTION PROVING DUMMIES**. Make sure **ALL SAFETY MECHANISMS** are fully functional as designed and approved by the manufacturer. If these tests prove satisfactory, test-fire the firearm with live ammunition in a **SAFE** and **APPROPRIATE** manner. **IMPORTANT!** Start the live ammunition tests by first loading an **ACTION PROVING DUMMY**, then a live round, into the magazine. Only after several tests have been conducted in this manner should additional rounds be placed in the magazine and fired.