Installing Cylinder Shims in a Charter Arms Bulldog

What Are Cylinder Shims and Why Install Them?

Cylinder shims (also called endshake shims) are thin washers or spacers used in revolvers like the Charter Arms Bulldog (.44 Special snubnose model) to reduce excessive "endshake"—the fore-and-aft play in the cylinder along the crane (yoke) axis. Over time, wear can cause the cylinder to wobble, leading to issues like:

- Inconsistent barrel-to-cylinder (B-C) gap, which affects accuracy and velocity.
- Light primer strikes or misfires.
- Cylinder binding or scrubbing against the barrel during rotation.

For Charter Arms double-action revolvers like the Bulldog, shims are custom-fit between the cylinder's gas ring (or bushing) and the yoke. They come in thicknesses from 0.002" to 0.006" (full-temper stainless steel, with an outer diameter of $\sim$0.345" and inner diameter of $\sim$0.299"). The goal is to minimize endshake to 0.001"–0.004" while maintaining a safe B-C gap of 0.003"–0.006" (measured with a feeler gauge when the cylinder is fully forward).

Note: Always unload the revolver completely before working on it. If you're not experienced with gunsmithing, consult a professional to avoid damage or safety risks. Shimming too tightly can cause binding.

Tools and Materials Needed

- Cylinder shims for Charter Arms DA revolvers (available from TriggerShims.com in packs; start with an assortment of 0.002"–0.004" thicknesses).
- Feeler gauges (for measuring endshake and B-C gap).
- Small screwdriver or pin punch.
- Cleaning rod or non-marring tool for disassembly.
- Optional: Reduced-power mainspring (e.g., Wolff) if pairing with hammer shims for DA pull improvement.

Step-by-Step Installation Guide

Based on standard procedures for Charter Arms revolvers (adapted from manufacturer videos and expert sources like TriggerShims.com), here's how to install cylinder shims. This doesn't require removing the sideplate.

1. **Safety and Prep:**
    - Ensure the revolver is unloaded: Open the cylinder, remove all rounds, and visually/physically check the chambers and barrel.
    - Measure current endshake: With the cylinder closed, push it fully rearward (using thumb pressure on the back of the cylinder). Use a feeler gauge between the cylinder face and recoil shield (frame) to measure play (0.001"–0.004" is ideal). Then, measure B-C gap (barrel end to cylinder front) with the cylinder forward—aim for 0.003"–0.006".
2. **Disassemble the Cylinder and Yoke:**
    - Open the cylinder by pushing the release latch forward and swinging the yoke out to the left.
    - Unscrew the ejector rod knob counterclockwise (it's often left-hand threaded—turn clockwise to loosen if standard; hold the rod to prevent parts from flying out).
    - Separate the extractor star, spring, and rod from the cylinder. The cylinder bushing/gas ring may need gentle tapping to remove if stuck.
3. **Install the Shim:**
    - Select the thinnest shim that reduces endshake without over-tightening (test-fit 0.002" first; stack if needed, but avoid multiples to prevent loss during cleaning).
    - Place the shim(s) on the yoke shaft (the pin that holds the cylinder), against the yoke's end or the cylinder's inner bushing. For Charter Arms, it fits *outside* the cylinder, between the gas ring/bushing and yoke—not inside like some S&W J-frames.
    - Reassemble: Slide the cylinder onto the yoke shaft over the shim, then reinstall the extractor spring, star, and ejector rod (tighten counterclockwise if left-hand thread). Secure the knob firmly but not excessively.
4. **Reinstall and Test:**
    - Swing the yoke back into the frame and latch it closed.
    - Recheck measurements: Endshake should now be minimal, and B-C gap unchanged or slightly adjusted (push cylinder forward to verify 0.004" gap).
    - Dry-fire (unloaded) several times in single- and double-action to check for smooth rotation—no binding or scrubbing.

- Function test at the range: Fire 20–50 rounds, monitoring for misfires or issues. Readjust if needed.

Tips and Common Issues

- **Shim Sizing:** Start thin; over-shimming reduces B-C gap too much, risking bullet-to-forcing-cone contact. Charter-specific shims from TriggerShims.com are pre-sized for the Bulldog's 0.299"–0.345" dimensions.
- **Maintenance:** Shims stay in place during cleaning but may need removal for deep cleans—mark or store extras safely.
- **Related Mods:** Many Bulldog owners pair this with hammer shims (installed between hammer and frame) to fix DA light strikes or rub. See the TriggerShims video for that.
- **Sources for Shims:** Order from `http://TriggerShims.com` (they ship free in the U.S. and have customer success stories for Bulldogs). Avoid generic S&W shims—they won't fit perfectly.
- **Official Resources:** Charter Arms has disassembly videos on their site (e.g., "Cylinder Assembly of a Charter Firearm" on YouTube), which show yoke removal basics.

If endshake persists or you're dealing with a specific serial number/vintage Bulldog (e.g., pre-2000 models), contact Charter Arms support for model-specific advice.