

BARREL BREAK-IN PROCEDURE

DOWNLOAD PDF

Barrel break in can be one of the most important and most misunderstood aspects of extracting the utmost accuracy from your rifle.

Essentially barrel break in is the act of smoothing or burnishing the bore and groove of your barrel. This creates better consistency of the bullets travel through the barrel. Today with the shooting industry's demand for accuracy, most high quality bbl makers lap their barrels to remove minor tooling marks and create as uniform a finish as possible. This is generally done when the barrel is at the "blank" stage before the barrel has been contoured, crowned and chambered. While this technique of lapping does give a great result the post lapping machining done during the chambering process adds more tooling marks. Now you may wonder. Why not just lap the barrel post all machining? While this can be done it is extremely difficult to do without damaging the barrel. What generally happens if this is not performed perfectly is material is removed from the crown unevenly as the lap passes back and forth through the muzzle causing uneven gas venting behind the bullet deteriorating accuracy. Also if special care is not exercised scratching and gouging of the throat is possible. Live fire barrel break in can minimize these problems and is much, much more fun!

Breaking in a barrel consists of a series of shooting and cleaning sequences. Everyone has their own specific sequences, but the end results are usually very close to the same. This sequence that we have developed over the last 15 years is very simple and has given good results.

NECESSARY SUPPLIES

SOLVENT

Ammonia Based Copper Solvent

Recommended: Barnes CR-10

BRUSHES

Nylon bore brushes, one the correct size for the caliber you are cleaning and one that is a size or two smaller

i.e. for a 30 caliber Barrel use a 30 caliber and a 270 caliber brush

CLEANING RODS

A high quality cleaning rod with ball bearing handles

Recommended: Tipton carbon fiber rods (Brownells # 100-012-231WB) They do not bend (a bent rod will ruin a barrel as fast as anything) and the carbon is gentle on the bbl steel.

CLEANING PATCHES

1 3/8 " cotton cleaning patch

Recommended: Brownells # 574-400-400WB for long action #574-400-200WB for short action

GUN OIL

for lubrication and neutralization of the ammonia

Recommended: Lucas Outdoor Extreme Duty Gun Oil

AMMO

50 Rounds (Can be several different kinds)

Tip: This is a good time to start load development along with scope adjustments. Remember that during this process you will be doing things with your rifle that you would not normally do when trying to nail down base line accuracy and point of impact information. So remember that at a different time you will want to verify any results that you achieve or think you have achieved. Also if things are not quite going the way you think, don't panic.

BORE GUIDE

To protect the bore throat and keep cleaning solvent from entering the trigger mechanism.

Recommended: Tipton carbon fiber rods (Brownells # 100-012-231WB) They do not bend (a bent rod will ruin a barrel as fast as anything) and the carbon is gentle on the bbl steel.

BARREL BREAK-IN PROCEDURE

01 CLEAR BORE

First make sure that the barrel is clean and free of any oil or solvents from shipping or the manufacturing processes. Fire either a 5 shot group or two three shot groups.

02 BOREBRUSH

With the bore guide inserted, run the soaked patch through the barrel breach to muzzle, removing it at the muzzle. Repeat this with a new soaked patch 3 times or until no black is showing on the patch. Then, using the correct- for- caliber size nylon brush soaked, scrub the barrel back and forth making sure the brush completely exits the muzzle and chamber before reversing direction. Repeat this step 20 times for a total of 40 passes through the barrel. Follow this with a dry patch removing as it exits the muzzle. Repeat this until the patch comes out clean and dry.

03 SMALL BOREBRUSH

Next, using the smaller brush, run a soaked patch through the bbl scrubbing back and forth for a total of 20 passes through the bbl. Again, make sure that the patch exits the bbl on both ends before reversing direction. You will notice a blue tint on the soaked patches, this is from the copper being dissolved. Follow with dry patches until the patches come out clean and dry. Repeat this process until the soaked patches show no blue coloration.

Note: The small- for- caliber nylon brush is meant to be used with a cleaning patch wrapped corner to corner like a diamond in place on a standard jag. The bristles of the brush keep the patch pressed tight against the bore and groove and increase the surface area of the patch to bbl contact.

04 SHOOT AGAIN

Shoot another 5 rounds or 2 Three-Shot groups

05 REPEAT STEPS 2-4

As you repeat this sequence, you will begin to notice that your patches start to become clean quicker. This is because the rough surfaces that are holding brass are being smoothed out a little at a time. Over my years as a custom gunsmith, I feel like 50 rounds on average is the sweet spot for most bbls. Some will smooth up faster and some will take longer depending on the bbl and the cartridge it is chambered for. I have had bbls that, in the prime of their life will clean up with no brushing with as little as five to ten passes with the soaked patch. Remember that every bbl is different; this is a guideline, not an absolute process and enjoy your time at the range with your rifle.

Note: After each cleaning sequence, you will want to make certain that there is no solvent or oil residue left in the chamber. When the cartridge is fired it expands and the brass will "grip" the chamber walls. Solvents and oils will not allow this to happen and will increase the amount of thrust directly to the bolt face. This can often times be misinterpreted as excessive chamber pressure.

