

CHOOSING THE RIGHT BULLET FIT

We don't seem to like the idea that all rifles are individuals, but that's the way it is. Assuming a well-produced rifle, it is still necessary to find a dressed or "loaded sabot" that gives an interference fit of .003 to .004 inch to load smoothly, yet with some resistance, and shoot accurately. If they load tight, they tend to shoot tight, all other things being equal.

This is important enough to discuss in more detail. We have compiled a list of assembled bullet sabot outside diameters. MMP refers to these as "loaded" diameters; what they mean is a sabot with a bullet "loaded" into it. Contingent on manufacturer, these dimensions are characterized as "dressed" diameters, loaded diameters, and so forth. Assembled outside diameter seems to be the most appropriate way to cite these dimensions.

As a generalization, an assembled outside diameter exceeding the muzzle-loader bore by .003 to .004 inch is about right, offering accuracy with reasonable ease in loading. In other words, a 3 to 4 thousandths interference fit has proven to be ideal. A few thousandths more of an interference, and we have the complaints of "I can't load my muzzleloader." Less than the 3 to 4 thousandths, you'll hear "My gun won't shoot."

Here are the representative dimensions:

Bullet Diameter	Assembled Outside Diameter
.452 XTP/short "MMP" sabot.....	508 in.
.451 .452 bullets with MMP HPH-12 sabot507-.508 in.
.451/.452 bullets with MMP HPH-24 sabot505-.506 in.
.451/.452 bullets with MMP 3P-EZ sabot*502-.504 in.
.458 bullets with MMP .458/.50 Orange Sabot	507 in.
451/.452 bullets w/Thompson "Superglide 2-petal sabots504-.506 in.

(*Note: This three-petal sabot, black in color from MMP, is what Hornady sells as its red Low Drag High Velocity sabot.)

There is a bit more to it, of course, than assembled bullet diameter only. A short, stubby bullet like an XTP has a comparatively short bearing surface compared to the longer Barnes MZ-Expander heat-treated copper-alloy bullets: the same goes for the 250-grain XTP vs. the 300-grain XTP's. Where a 250-grain XTP may load tight but tolerable in an individual application, the 300 grain may be just enough of a difference in loading ramrod pressure to generate complaints. A further consideration is bore condition. Our standard testing protocol was with Blackhorn 209 propellant that needs no swabbing between shots. If you use a higher residue propellant, the sabot you use must have a bit smaller loaded diameter to compensate even with "spit-patching."