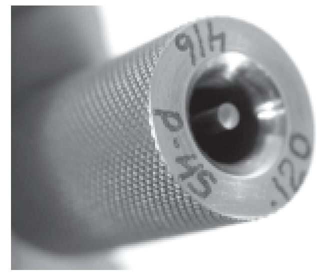
CORBIN™

Minimum Meplat Diameter

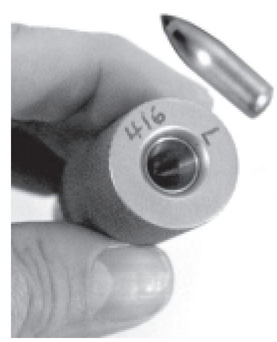
The “meplat” is the diameter of an open tip bullet, or the diameter of a flat at the end of a lead tip bullet. In bullets formed in the high precision core seat / point form one-piece die system (as opposed to the single two-part die system), there is a minimum practical size of meplat determined by these factors:



1. **The caliber (bullet diameter).** Smaller caliber bullets normally require less ejection force than larger calibers, because they have less surface area gripping the die walls. Lower ejection force means less chance of penetrating the jacket and core with the punch tip.
2. **The ogive shape**. Longer, more shallow tapers of noses (ogives) grip the die more firmly and require higher ejection force than more blunt or rounded shapes, which have less contact area.
3. **The jacket and core material.** Softer materials and thinner jackets may yield under the ejection force of a small pin, causing penetration of the bullet instead of ejection. The area of the pin is determined by its diameter.. The pressure on the material is inversely proportional to the area of the pin tip.
4. **The amount of core material supporting the jacket tip**. If the core is far down inside the jacket, the jacket walls are not internally supported and may collapse inward or open to allow the ejection pin to force itself inside, unless the pin is large enough to spread the force of ejection over a large enough meplat area.

The minimum ejection pin size for a point forming die is determined by long experience, and is established both to take advantage of standard available sizes of oil tempered spring wire (.049, .062, .072, .082, .092, .102, .120, .134, etc.) and to make it less likely that you will experience bullet penetration, sticking, or pin bending under normal use. Each caliber and shape range has a standard ejection pin size that can be guaranteed and supported because of this long experience of over 30 years testing and observation.

If you want a smaller tip on the bullet than can reliably be provided by using a smaller ejection pin, there are three ways to achieve it.



1. **Use a “tip closing” die, LT-1-SC or LT-1-HC**. This is a standard lead tip forming die equipped with a special hardened blind-hole tip-shaping punch. The open tip bullet is pressed firmly into the die to “nudge” the edges of the meplat closer together. There is a limit to how far the tip can be closed; the theoretical limit is twice the wall thickness of the jacket, but in practice the jacket may begin to fold or buckle before this point.
2. **Use an FX-1** two-piece, blind ogive forming die instead of the PF-1 point forming die. This is also called the “bullet fixer” die because it traditionally is used to reshape damaged, pulled bullets to restore and improve accuracy. It is a high pressure, two-part die that can form the tip in a closed chamber without an ejector. The die separates so that the shank and ogive are pulled apart, and the bullet is ejected from the cylindrical lower half of the die. This method can provide tightest closure but is also the most expensive kind of die to build.
3. **Use a machined tip insert.** By partly closing the tip and then inserting a machined point, such as a brass or copper tip with a modified LT-1 die, you can achieve zero tip diameter. Copper provides much greater density than plastic for a higher BC.