



# ELECTRODE GEOMETRY

In order to maximize electrode life, you need to maintain the correct diameter of the weldface for as long as possible and thereafter a consistent and predictable rate of wear. A number of different cap geometries are available that are used for different purposes and that have different wear characteristics.



**DOMESTYLE CAPS.** This style is the most popular style around the world. It is a good compromise that allows for play in the welding arms and forgives a small amount of misalignment in the weld arms. Often found as a full dome (see far left), with no flattened weldface. This style is often used on robots, as this configuration allows welding at shallow angles, allowing the gun arm to approach a difficult to reach spot that otherwise is unreachable. A universal cap electrode.

**BULLET & TRUNCATED STYLE.** Popular opinion is that these styles of caps, available in a wide variety of styles and angles, is the longest lasting of all caps. Perhaps the 45-degree angle is the most common. There is the argument that the steeper the angle, the slower the rate of increase in the diameter of the weldface, thus minimizing the need for rapid increase in current due to mushrooming and alloying during use. Alignment of the two gun arms is very important with these styles.



**PROTUSION STYLE ELECTRODES.** Those who appreciate the peel-away effect of the cap during use employ these caps. As this style of cap is used, a portion of the worn copper peels off, thus generally maintaining a relatively consistent weldface. This style of cap is generally much more difficult to set appropriate welding parameters and current stepper. They are often used in conjunction with a dome (see above), with the dome on the thicker metal being welded, or the moving gun arm. Less popular than truncated or domes.

**MALE VERSUS FEMALE.** Female caps are cheaper than male, and are generally easier to remove and easier to cool. Some believe that male caps last longer and provide more consistent welds from their more substantial structure. Male cap tapers are protected within the adaptor, and thus adaptor tapers generally last longer with male caps employed. The best advantage of male caps is their ability to be easily **redressed**, **recoated** and **reused** - a significant cost saving.

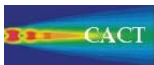


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