



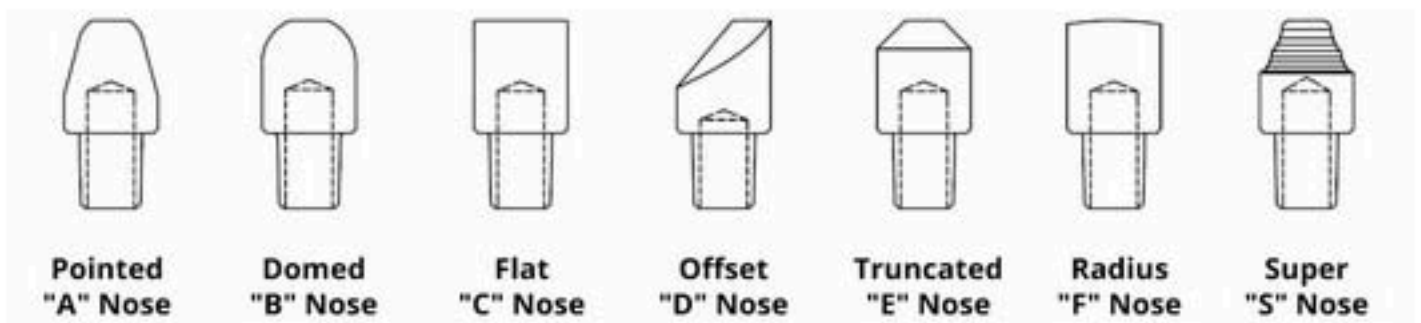
TECH TIP: Weld Cap Importance

When it comes to spot welding in the collision repair industry, there are several crucial variables to consider. However, none is more important than the shape and condition of your weld cap. Unfortunately, this area tends to be overlooked in many shops, with a majority of them using dirty, worn, and misshaped weld caps. These issues can lead to poor welds that compromise driver safety in the event of another collision.





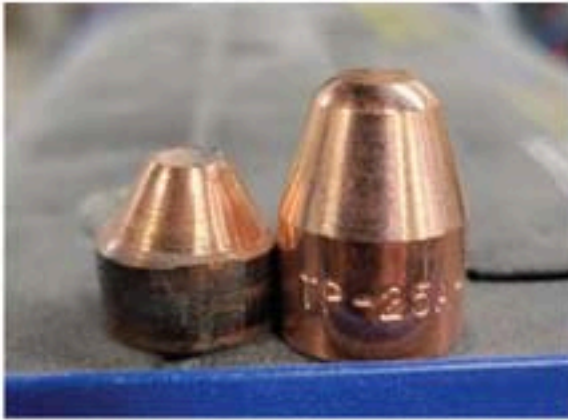
In today's collision industry, the majority of Spot welders sold and purchased are known as "smart welders" or "auto" welders. These advanced machines eliminate the need for the welding technician to manually choose the correct power setting and recipe. Instead, the welder senses the required variables and creates a "perfect" weld based on readings and programmed software. Notably, smart or auto welders heavily rely on the shape and size of the weld cap when determining the appropriate welding recipe.



For instance, the difference in power between a smaller "a" style cap and a larger, more domed or flat style "f" cap can be as much as a 30% variance in applied welding current. This means that as an "a" cap wears down and changes shape over time, flattening out, the welder may fail to apply sufficient weld current, resulting in compromised weld quality.

Unfortunately, there is no fixed number of welds that a cap can handle before it needs replacing or reshaping, as it varies depending on the type of steel being welded. Mild steels, for example, allow the cap to be used for a longer duration compared to HSS or UHSS. Therefore, technicians must regularly inspect the cap, use a tip dresser to reshape it when necessary, and employ red Scotch-Brite to clean it between weld cap changes and dressings. Both the shape and length of the weld caps are important factors to consider (refer to the examples below).

When in doubt, it is crucial to replace the caps to ensure optimal welding performance and maintain high-quality repairs.



Overdressed weld caps or possibly wrong tip dresser shape used.



When the caps are too short the welds tend to blow out due to loss of pressure at the tips.



Even flat caps will lose shape and the surface area will change affecting weld integrity.



Having spare caps is a must, even if just to compare!