

Quick Reference Series

Gouging Techniques for Specific Materials

For carbon steel and low alloy steel, such as ASTM a514 and A517

Use DC electrodes with DCEP (electrode positive). AC electrodes with an AC transformer can be used, but for this application, AC is only half as efficient as DC.

For stainless steel

Use DC electrodes with DCEP (electrode positive). AC electrodes with an AC transformer can be used, but for this application, AC is only half as efficient as DC.

For cast iron including malleable and ductile iron (nodular)

Use 1/2" or larger diameter CCDC electrodes at the highest rated amperage. Use an angle of 70 off the workpiece and the depth of gouge should not exceed 1/2" per pass.

For copper alloys (copper content 60% and under)

Use CCDC electrodes with DCEN (electrode negative) at the electrode's highest amperage rating.

For aluminum bronze and aluminum nickel bronze (naval propeller alloy)

Use CCDC electrodes with DCEN (electrode negative) at the electrode's highest amperage rating.

For nickel alloys (nickel content over 80% of mass)

Use CCAC electrodes with AC current.

For nickel alloys (nickel content under 80% of mass)

Use CCDC electrodes with DCEP (electrode positive) at the electrode's highest amperage rating.

For magnesium alloys

Use CCDC electrodes with DCEP (electrode positive) and prior to welding, wire brush the groove

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For aluminum

Use CCDC electrodes with DCEP (electrode positive). You must brush with a stainless wire brush before welding. Electrode stick-out (length of electrode between torch and workpiece) should not exceed 3" (76.2mm).

For titanium, zirconium, hafnium, and their alloys

Do not cut or gouge to prepare for welding or remelting unless you mechanically remove the surface layer from the cut/gouge surface.

NOTE—If you preheat for welding, preheat for gouging.

