# 77 Cast Iron Electrode Instructions

Begin by beveling the joint. Drill holes 1/2 from each end of the crack to prevent further cracking while welding. Tack weld to retain alignment. Use AC or DC reverse polarity, electrode positive. (50-70 amps for 3/32, 60-110 amps for 1/8 rods, 90-140 amps for 5/32 rods) Maintain a short arc and make short passes and peen each pass promptly to chip off slag before cooling. Continue back whipping and overlapping until all deposits are connected. Cool naturally.

## Tips

- For best results clean and bevel the cast iron before welding. Remove all surface oil and grease along with rust, paint, etc. A bright shiny surface by grinding or sanding disk is optimal for the best penetration.
- Never cool the cast iron with water.
- Welding with wind blowing on your cast is not advised.
- Soaking electrodes in water will help remove the coating for TIG welding. TIG welders usually use 3/32" or for thinner cast or 1/8" rods for heavier sections.
- Never weld more than 2 inches at a time and allow cast to cool for 2 minutes between passes. For some cast irons you may only want to weld an inch or less and let cool 1 minute between passes.
- Our electrodes work best when used on clean, un-welded surfaces, if using over an existing weld thoroughly remove existing weld.
- Try not to heat or preheat the cast iron excessively. Cast iron welds are susceptible to cracking from rapid hot to cool descending temperatures.
- If the rod is not penetrating check the ground, amperage, and machine settings.

- Low and slow is the key to a sound cast iron weld.
- You can use a mild steel patch over large holes, the 77 and 72 will weld the steel to the cast iron.
- Many welders use the 3/32 rods to keep the heat lower.
- TIG welders usually will work with the 3/32 size rods
- Gently pre-heat the cast iron if possible, no need to get it red hot but it will lay flatter when you first start your bead and preheating removes moisture out of the cast to prevent pinholes and porosity.
- If the rod undercuts, turn your amperage down.
- If the rod looks ropey or doesn't penetrate, turn your amperage up.
- Remove any JB Weld or previous rod before welding with MuggyWeld products.
- Be aware of any engine sealants before welding as it may contaminate the weld.
- Drill holes at the end of any cracks to stop propagation.
- If machining is necessary after, use the 77 electrode.
- If anchoring in to burnt cast iron, use the 72 electrode first, then follow with the 77 electrode for crack resistance and machineability.

## 72 Burnt Cast Iron Electrode Instructions

Begin by beveling the joint. Drill holes 1/2 from each end of the crack to prevent further cracking while welding. Tack weld to retain alignment. Use AC or DC reverse polarity, electrode positive. (50-70 amps for 3/32, 70-110 amps for 1/8 rods, 95-140 amps for 5/32 rods) Maintain a short arc and make short passes and peen each pass promptly to chip off slag before cooling. Continue back whipping and overlapping until all deposits are connected. Cool naturally.

## Tips

- For best results clean and bevel the cast iron before welding. Remove all

surface oil and grease along with rust, paint, etc. A bright shiny surface by grinding or sanding disk is optimal for the best penetration.

- Never cool the cast iron with water.
- Welding with wind blowing on your cast is not advised.
- Soaking electrodes in water will help remove the coating for TIG welding. TIG welders usually use 3/32" or for thinner cast or 1/8" rods for heavier sections.
- Never weld more than 2 inches at a time and allow cast to cool for 2 minutes between passes. For some cast irons you may only want to weld an inch or less and let cool 1 minute between passes.
- Our electrodes work best when used on clean, un-welded surfaces, if using over an existing weld thoroughly remove existing weld.
- Try not to heat or preheat the cast iron excessively. Cast iron welds are susceptible to cracking from rapid hot to cool descending temperatures.
- If the rod is not penetrating check the ground, amperage, and machine settings.
- Low and slow is the key to a sound cast iron weld.
- You can use a mild steel patch over large holes, the 77 and 72 will weld the steel to the cast iron.
- Many welders use the 3/32 rods to keep the heat lower.
- TIG welders usually will work with the 3/32 size rods
- Gently pre-heat the cast iron if possible, no need to get it red hot but it will lay flatter when you first start your bead and preheating removes moisture out of the cast to prevent pinholes and porosity.
- If the rod undercuts, turn your amperage down.
- If the rod looks ropey or doesn't penetrate, turn your amperage up.
- Remove any JB Weld or previous rod before welding with MuggyWeld products.
- Be aware of any engine sealants before welding as it may contaminate the weld.
- Drill holes at the end of any cracks to stop propagation.
- If machining is necessary after, use the 77 electrode.

- If anchoring in to burnt cast iron, use the 72 electrode first, then follow with the 77 electrode for crack resistance and machineability.

**Please visit http://www.aws.org/technical/facts/ prior to using Muggy Weld products, and adhere to all AWS welding safety guidelines. Further product safety information is available at http://muggyweld.com/safety-guidelines.**

**Muggy Weld LLC shall not be liable for any loss, injury, claim, liability, or damage of any kind resulting in any way from (a) your use of Muggy Weld products, (b) any errors in or omissions from these instructions.**

**BY OFFERING FOR SALE WELDING ALLOYS THROUGH ITS WEBSITE, MUGGY WELD LLC DOES NOT REPRESENT OR WARRANT THAT WELDING IS WITHOUT RISK, AND IS NOT LIABLE FOR DAMAGES OR LOSSES THAT MAY RESULT FROM PARTICIPATION IN SUCH ACTIVITIES.**