

BRAZING CARBIDE INSERTS TO TEETH

Summary

Two different processes can be used to attach the carbide inserts to the tooth on a Cee-Jay Tool stone cutter. They are brazing and epoxy adhesive. Both processes are simple but need special attention to the surface preparation of the tooth to gain the full life of the carbide. Poor preparation will result in a poor bond and the carbide will slide, crack, or break.

Tools required

- A large nozzle torch for heating the tooth and carbide
- Brazing flux and brush or flat stick to apply it. Black flux is best.
- Brazing rod. Cee-Jay Tool uses a flux coated low fuming bronze rod from J.W. Harris, 15-FC, AWS A5.8 RBCuZn-C, 1/8" x 36" Rods.
- Sandblaster for cleaning the teeth. Other methods may be used but this is best.
- A ceramic rod or other high melting point rod to push the heated carbide.
- Typical brazing safety protective gear: Welding goggles, leather gloves, etc.

Procedure

1. Prepare the carbide and tooth by cleaning the braze surfaces. Sandblast the tooth groove and the three contacting surfaces on the carbide. **DO NOT TOUCH THE BRAZE SURFACES AFTER CLEANING.** The most important thing for a successful braze joint is to keep all dirt, grease, and oil off the surfaces to be brazed. Alcohol or detergent soap can be used for additional cleaning if necessary. After cleaning, handle the carbide only by the ends.
2. Coat the tooth groove surfaces with a good layer of flux. The flux removes oxides from the parts to enable the braze alloy to bond completely.
3. Lightly coat the three contacting sides of the carbide.
4. Place the tooth on a table or other support with the head facing up. Only touching the ends, preferable with clean gloves, center the carbide insert into the groove of the tooth. Slide the carbide back and forth slightly, but do not push down, to remove air pockets between the parts.
5. Heat the whole head of the tooth and carbide until the tooth glows a dark cherry red. The carbide and the tooth head must be hot all of the way through for the best joint, so take time to heat the whole area evenly.

6. Apply the brazing rod between the carbide and tooth joint. It should flow readily into the groove and around the bottom and cover the other side. If it only drips the parts are not hot enough. Use the ceramic rod to keep the carbide centered if it tries to move.
7. The flux will clean off with warm water and brushing.

