

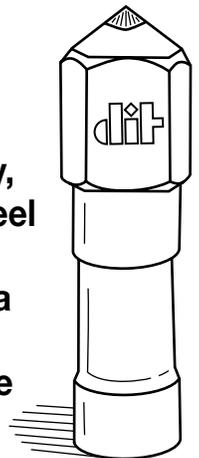
Indexing Single Point Natural Diamond Dressing Tools

Natural diamond single point dressing tools that require indexing are usually crystal octahedron shaped tool stones. They have six pyramid shaped corners. One on top. One on the bottom, and four in the middle. The pyramid shapes are progressive. The best defined one is the primary point. This one is followed in progression with the other five when being reset. But all the five other pyramid points are rarely reset as all points are never that perfectly shaped. Also chances are that the diamond gets worn too far and the points just below the metal setting were ground into.

Three quarters of the octahedron shaped natural diamond tool stone is set below the tool metal setting. The one quarter that is protruding is the portion which has the hard grain direction showing.

Should you grind into the area below the tool metal setting the other pyramid points get worn away and can't be used in future resettings.

Diamonds can be damaged if not indexed properly. Diamonds that are first quality, and will be reset, are set in steel shanks with a hexagon head. The hexagon head is used as a visual aid when indexing. Indexing is done by turning the diamond tool 1/6th to 1/12th per one revolution of the dressing tool. Index one corner at a time or one corner then to one flat and then to the next corner till you finally have rotated the dressing tool one revolution. Doing this will keep the diamond pyramid on center and pointed.



- Continued on Tech Brief T180 -

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Should you index more often the point stays sharper. Otherwise the point becomes flatter for finish dressing. A sharper point dresses the wheel with a groove so that it can grind quicker and more aggressively.

Dressing infeed should always be normally below .001. Deeper dressing infeed will crush the vitrified bond. This will crack the bond and the abrasive particles will fall out. This opens and makes voids on the surface and the swarf will fill in and load the wheel. This loading causes glazing and poor finishes.

Remove the set screw that holds the diamond dressing tool and grind the screw end flat on a bench grinder. This will help prevent deforming the dressing tool shank.

When getting close to the metal setting pull the tool and send the tool in for resetting before diamond damage occurs.

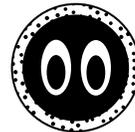
Using diamond single point dressers gives you the opportunity to condition the wheel face as you require. A roughing dress is done with a faster traverse. Finishing dress is done with an even lighter infeed of .0002 and a very slow traverse. True both sides of the wheel straight and parallel. Then with a piece of boron carbide put a 1/64" radius on both wheel corners unless you need the sharp corner.

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