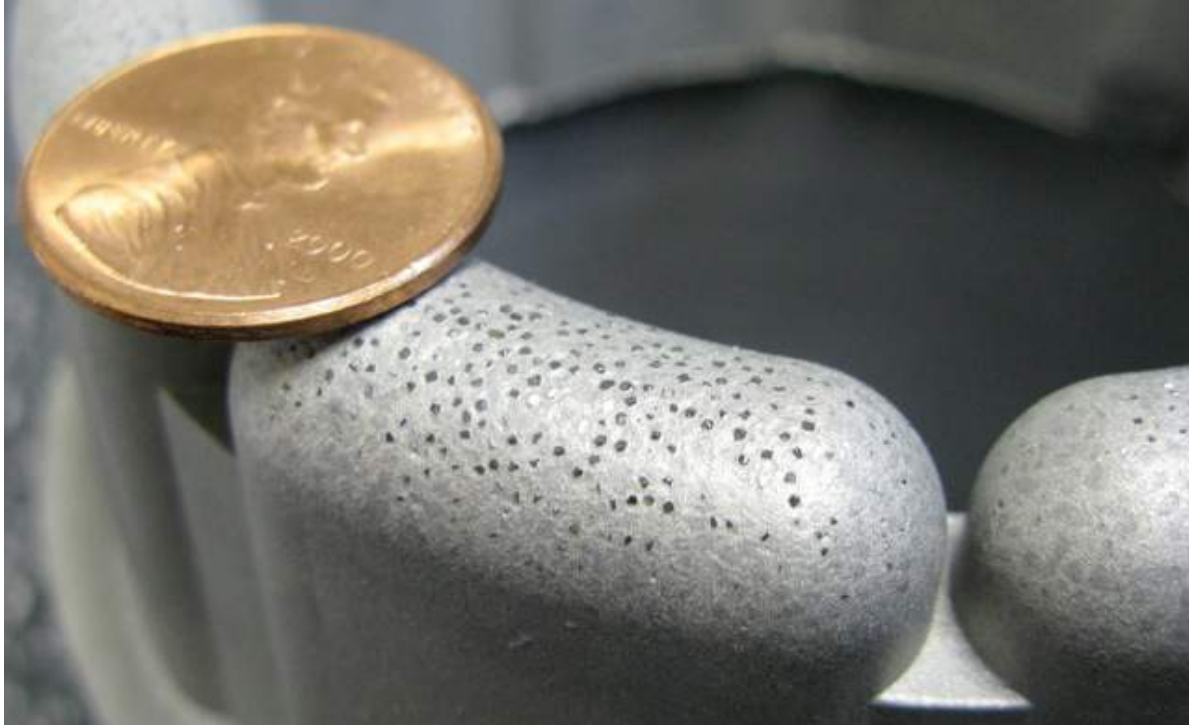


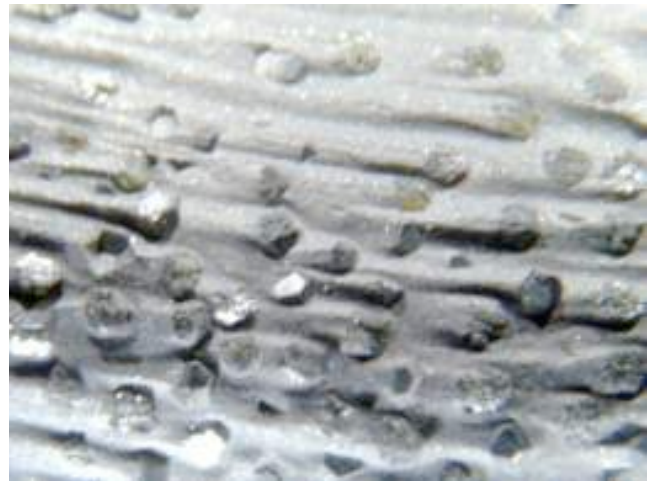
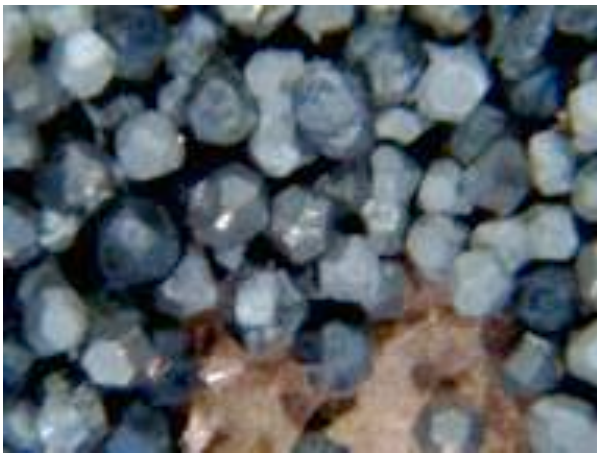


## XDS Diamond Shoe Suggested Operation

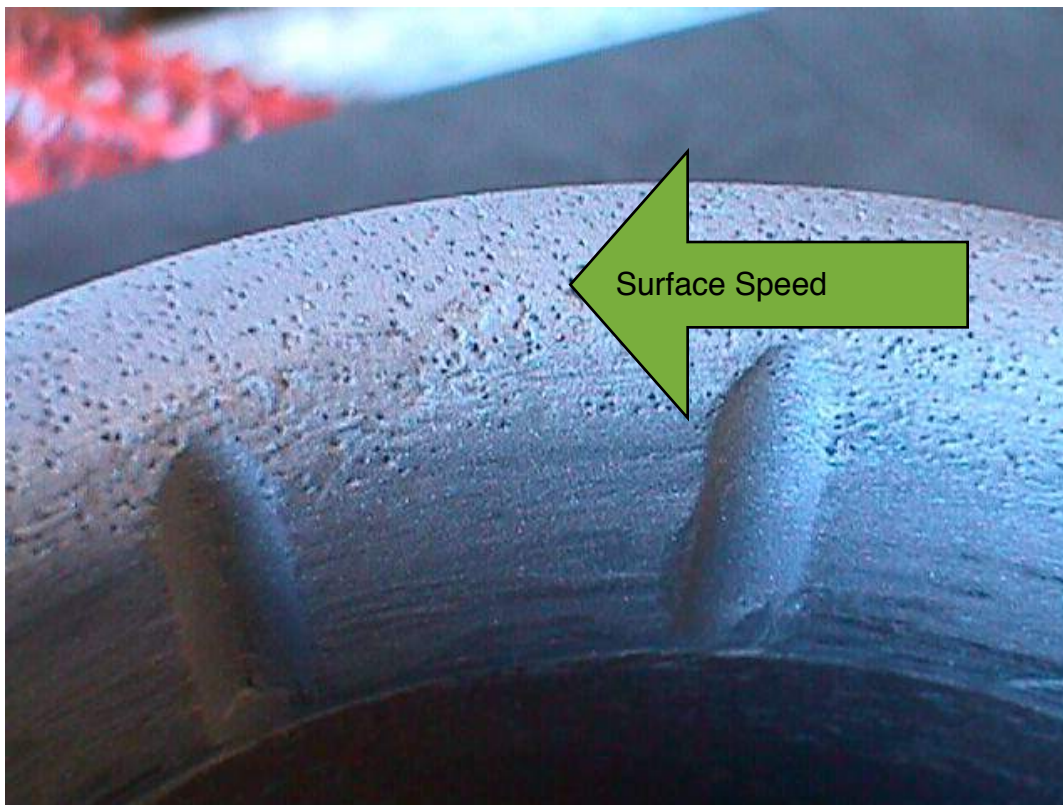
Our XDS burn shoes have a tungsten carbide matrix head that is impregnated with 30-40 mesh diamonds from the surface to about 1/2" deep into the shoe face. As work is done the diamond will be sloughed off as it dulls and fresh grit will be exposed to do work.



The shoe head has a valid cutting structure until this 1/2" is used up. This type of cutting structure has been used to cut hard steel, case hard steel, carbide, 13 chrome, inconel, as well as many softer components.



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### **XDS**

shoes have been run with as little as 60 feet per minute surface speed on power swivel and as high as 600 feet per minute on high speed motors.

XDS shoes generally work best with moderate WOB. Most hard steels with carbide buttons (IBS) will cut best with about 100 to 400 psi WOB as transferred through the shoe face when fully seated. Since some applications may have the shoe face only in contact with about 50-60% of its face area because the target is offset...care should be taken not to overload the shoe to keep from belling the head.

Your 8.5" x 7" XDS = about 18 sq.in.area. We estimate your best range of WOB to be about 900 lbs to 3,600 lbs at an RPM between 60 and 120. Since the shoe is only about 1/3 of an 8 1/2" drill bit you would be best served at between 100 and 150 GPM.

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## XDS Diamond Shoe Suggested Operation



This XDS shoe was used on jointed pipe to burn over one plug with carbide slip buttons and then was used without rotating to push downward on the fish with 20,000 pounds which belled the shoe head. The internal failsafe mechanical locking of the worked so that only a small amount was lost downhole. XDS shoes are not intended to have such high forces transferred through them...especially when not rotating.

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## **XDS Diamond Shoe Suggested Operation**



**Your XDSS shoe has an added feature of having 33 exposed plots in four of the eight “pods”. These are intended to give you an initial low area to penetrate (est 900 to 1800 lbs) so if your target is softer than expected you can take advantage with this small area. There are two 1/8” star-bide pellets in each plot. If harder target is cut they should wear down to the diamond-impreg without much effort. From that point you have 1/2” of diamond grit that is about 30% of the volume of the shoe head.**

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