
Observations & Precautions

1. Although the DTS spindles are compact units, they possess deceptively high power. The DTS spindles have considerably more power than most electrical spindles in their size range. Do not operate a spindle unless the spindle is properly secured. When activated, it can jump and cause damage to people and equipment.
2. DTS spindles operate under air purge. Therefore, it is acceptable to flood grinding machine coolant over the motor housing of the spindle. Consult factory if coolant pressure exceeds 60 psig.
3. The motors used in DTS spindles are high power brushless DC motors that operate with special electronic drives that provide commutation and speed control. Heat build up is one characteristic of these high torque motors. As a general rule, do not run the spindle if the motor is too hot to touch. The spindle should operate with a duty cycle with sufficient pauses to allow time for motor cooling. If no liquid coolant is used, the DTS spindle should only have a 25% duty cycle per any 30-minute period. If DTS spindles are used in a continuous operating mode, it is mandatory to spray coolant directly onto the motor housing.
4. If the DTS spindle is mounted vertically, the air purge unit must be on at all times to prevent coolant from entering the spindle bearing housing.
5. The DTS spindles, although rugged, contain precision bearings. In the event of a crash, these bearings may be damaged, severely affecting the spindle runout.

Rotary Dressing & Truing Tips

1. With rotary dressing and truing, heat is the enemy. If there is any visible light produced at the point of contact between the diamond roll and the grinding wheel, then too much heat is being generated. The result is the diamond is being burned away.
2. Rotary dressing and truing is not a bulk material removal process, but a repeatable method of controlling the form of a grinding wheel. Removal of too much material from the grinding wheel will result in excessive wear of the diamond roll. For cost effective grinding, the goal is to remove the minimum material to maintain the form of the wheel while producing the desired grit exposure.
3. Rotary dressing and truing is capable of producing a more open grinding wheel than single point dressing and truing and allows for more aggressive grinding.
4. In most dressing and truing operations, the DTS spindle and grinding wheel should move in the same direction at the point of contact, known as "unidirectional" dressing and truing. This means that from the same viewing perspective the wheels are rotating in opposite directions.
5. Establish an initial depth of cut per pass from .0005" for conventional grinding wheels and approximately 0.00005" for superabrasive grinding wheels.
6. Set the speed at which the dressing/truing roll travels across the grinding wheel to attain a 60% overlap ratio. In other words, any discrete point on the grinding wheel should move 40% of the way across the width of the diamond roll per grinding wheel revolution.
7. In the initial process development, set the spindle speed so that the surface speed of the diamond roll is:
 - 20% higher than the surface speed of a **diamond** grinding wheel,
 - 20% lower than the surface speed of a **CBN** grinding wheel,
 - 30% - 40% lower than surface speed of a **conventional** grinding wheel.



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