

DIAMOND AND CBN WHEEL MOUNTING, TRUING AND DRESSING GUIDE

Diamond and cBN Wheel Mounting, Truing and Dressing Guide

To achieve the best results using Norton diamond and cBN products, the following steps for mounting, truing and dressing should be practiced:

MOUNTING – Putting Wheel on Machine Spindle

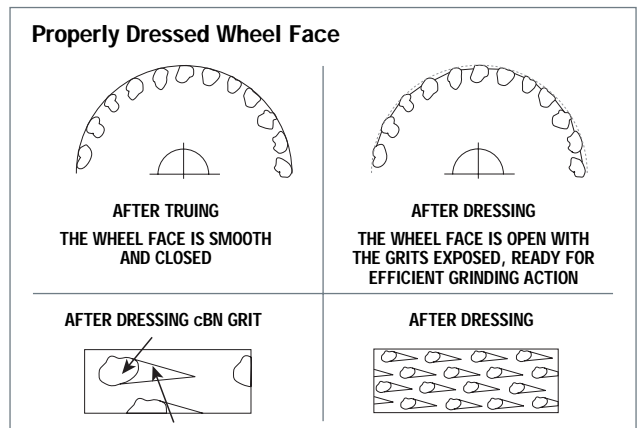
- Examine wheel flanges and spindle carefully.
- Be sure flanges' surfaces are clean and free of damage.
- Ensure that the mounting flanges are flat and of equal diameter, especially on wheels with rigid centers, such as vitrified bond wheels.
- Paper or plastic blotters should only be used when mounting superabrasive wheels with vitrified cores. Using paper or plastic blotters on any other core material may result in the wheel loosening during grinding.
- Inspect machine spindle for excessive runout.
 - TIR (Total Indicated Runout) should be no greater than 0.0002".
- Mount wheel between hand-tightened flanges.
- Using a dial indicator, tap the wheel lightly with a rubber or wooden block to minimize runout to less than .0010".
- Tighten flange securely and recheck with indicator.
- Allow a newly mounted wheel to operate for one full minute before grinding.
- The use of one permanent mounting for the life of the wheel is recommended whenever possible:
 - If the grinding machine has a tapered spindle, mount each straight, flaring cup or dish wheel on a separate collet or adapter.
 - When changing wheels the entire unit is removed, keeping the wheel in running truth.
 - When needed again, the entire unit can be placed directly on the spindle or arbor, thereby eliminating the time and abrasive lost in retruing.

TRUING – Making Wheel Round and Concentric with the Spindle Axis

- Prior to truing the wheel, run a wax crayon over the wheel face. Important: do not use any liquid-based ink on superabrasive wheels.
- Any crayon left on the wheel face after truing will reveal untrued areas.
- Indicate the superabrasive wheel runout before starting... usually within .001" to .002", to minimize wheel loss.
- Norton brake controlled truing devices are most commonly used to true Diamond and cBN straight, cup and cylinder wheels.
 - Mount the device spindle parallel to the wheel spindle to ensure proper straight face truing.
 - For cup wheels, the device spindle will be mounted perpendicular to the wheel spindle.
 - Always use brake controlled truing device dry.
 - Bring the diamond/cBN wheel and the truing wheel together until they almost touch.
 - Start the diamond/cBN wheel to normal speed; start the truing wheel in the same direction.
 - Bring the two wheels together until they touch.
 - Make sure the truing wheel is spinning at time of contact.
 - Traverse the wheel back and forth at 30 to 60 inches per minute.
 - Downfeed .0005" to .001" at the end of each traverse.
 - At the end of truing, the diamond/cBN wheel should be smooth and in truth.
 - Apply a dressing stick to sharpen the truing wheel.

DRESSING – Opening the Face of a Trued Wheel

- Dressing the abrasive – a cleaning/sharpening process to expose sharp, free-cutting grit:
 - For resinoid and vitrified bond wheels, the dressing stick should be one or two grit sizes finer than the abrasive in the diamond/cBN wheel – in a soft grade such as H or I.
 - For metal bond wheels, choose a stick with the same grit or one grit coarser than the wheel abrasive – in a medium grade (K – N).
 - See the "Dressing Stick" section for recommendations.
- Dressing the core – The core material (the part of the wheel that holds and supports the abrasive-bearing section) should never contact the work piece during grinding; rubbing will generate excessive heat. As the abrasive section of a cup wheel wears, the core material might become exposed, necessitating dressing.
 - Use a single-point carbide or steel tool to dress an exposed resaloy core.
 - Clamp the tool in a vise.
 - Direct the cutting edge accurately to leave a 1/16" of abrasive section exposed.



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