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United States of America

For Immediate Release May 8, 2008

Meister Abrasives Unveils New Hybrid Diamond Dressing Technology

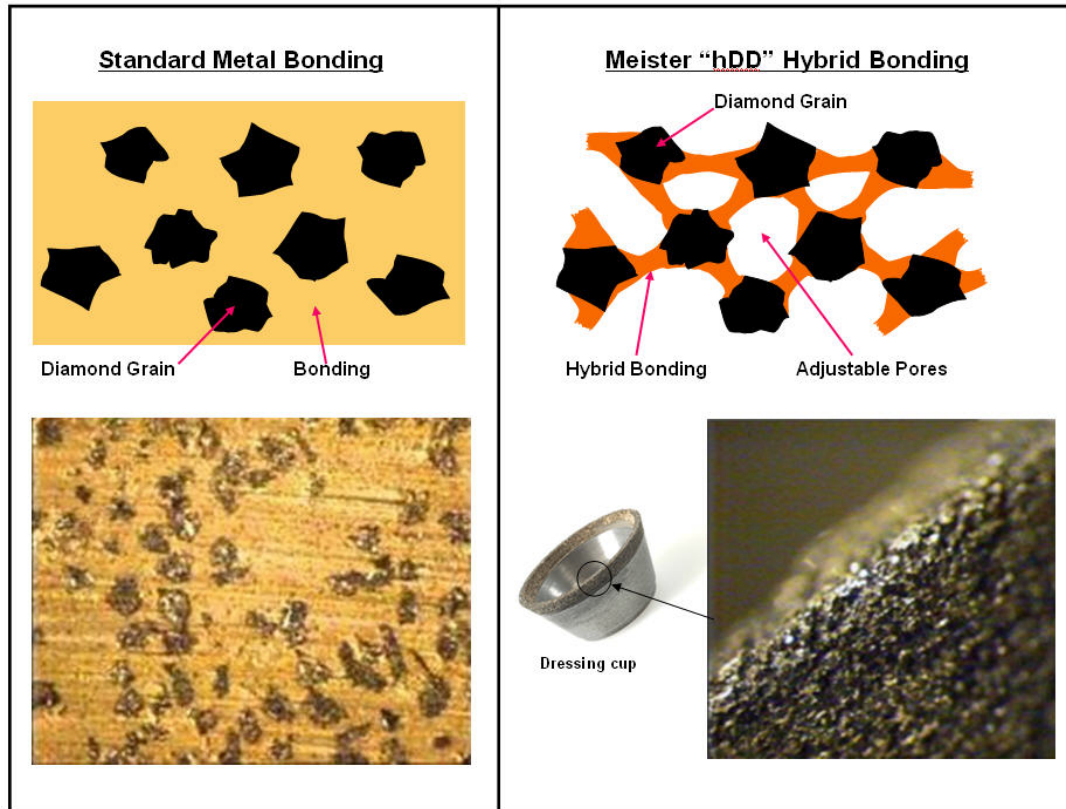
Grinding wheels perform consistently better;
Dressing tools never require conditioning.



NORTH KINGSTOWN, RI -- Meister Abrasives has introduced a remarkable new hybrid bonding technology for rotary diamond products used to dress CBN grinding wheels. The company's new hDD (hybrid diamond dressing) tools combine the toughness of metal bonding with the natural porosity of a vitrified bond structure, comparable to porosity found in vitrified CBN grinding wheels.

The many advantages of this new combination include more efficient dressing cycles that lead to more consistent CBN grinding wheel performance, increased intervals between dresses resulting in longer grinding wheel life, improved longevity of the dressing tool itself, and total elimination of the need to change out the dressing tool for re-conditioning.

One of the secrets of this new technology is a proprietary manufacturing process that both mechanically and chemically bonds the diamond particles within the tool to insure that they will be held securely. As a result, metal posts or "bridges" that attach to the diamond crystals in the bonding matrix can be slender, allowing for large pores to be naturally distributed between the crystals.



The improved porosity means that hDD rotary dressing tools are freer cutting, carrying more material and heat away from the CBN wheel with every revolution. This creates a better surface condition on the CBN wheel and does it faster. More efficient dressing means that CBN grinding wheels last longer, because less superabrasive needs to be removed, less often, to return the wheel to optimal condition.

The porosity and thin metal bond-posts also allow each crystal to stand out proudly for exceptional sharpness. When the diamond ultimately wears to the level of the metal matrix, the thin posts fracture, allowing the crystals to readily break away from the bond, thus revealing new layers of thoroughly exposed diamond. Since the dressing tool remains consistently sharp without ever needing to be removed for conditioning, the surface of the CBN wheel is restored to the same condition after every dressing cycle. This gives the manufacturer a more consistent grinding process from beginning to end.

These dressing tool performance characteristics are in contrast to conventional metal-bond dressing tools, which have no pores, leaving most of the diamond grain fully encapsulated within a solid metal matrix. In addition, these tools must typically be removed for aggressive conditioning so that worn diamond crystals can be removed from the bond matrix and new diamonds can be exposed. Not only is this time consuming but dressing tools that have reached this point also result in substantially degraded CBN grinding wheel performance.

Bruce Northrup, General Manager of Meister Abrasives USA said, "The new hDD Technology will come as welcome news especially to high volume shops that keep tight statistical control over their processes. The hybrid dressing technology maintains the CBN wheel's shape and cutting condition without ever allowing it to become dull. This greatly reduces, and in many cases eliminates, sudden changes in part size, surface finish, roundness, etc, that often occur before and after a dressing cycle.

"Specialty shops will appreciate the improved precision of their grinding processes. The new hDD Dressing Tools will also appeal to others who are using or considering metal bond dressing tools but would like a more efficient tool that does not require conditioning. What's more, like our HPB (High Performance Bond) CBN grinding wheels, every hDD Dressing Tool is custom engineered to meet the requirements of the application," he concluded.

The hDD Dressing Tools can be manufactured in a broad range of sizes and shapes to suit all machine and dressing spindle designs. They are offered at competitive prices and deliveries.

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Meister Abrasives Corporation is an international manufacturer of high precision industrial abrasive products. We offer superabrasive grinding wheels, dressing tools, ancillary equipment, and free technical support to provide our customers with complete, customized turnkey solutions to their grinding requirements. Visit Meister Abrasives USA on the web at <http://www.meister-abrasives-usa.com>.