

DIANAMIC® Abrasive Products, Inc.

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Email info@dianamic.com Web site www.dianamic.com

“OPTIMIZED SOLUTIONS for GRINDING PROBLEMS”

**2013 Information Catalogue
Single Layer Superabrasive
Products Resin, Metal and
Vitrified Bonds Sintered and
Reverse Plated Dressing
cBN and Diamond Inserts**

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Why choose DIANAMIC Single Layer Products?

DIANAMIC Abrasive Products, Inc. manufactures consistent **QUALITY ASSURED** single layer Superabrasive products, (commonly known as electroplated or galvanic bond) and metal bond products using only **VIRGIN DIAMOND and cBN** (cubic boron nitride commonly known as Borazon). Our products are designed and manufactured employing state-of-the-art equipment. and the finest quality materials. All manufacturing and coating processes are accomplished under the most stringent parameters. No products are shipped until they pass rigorous inspection in our quality assurance department. All out inspection tooling and optical comparators are traceable to National Standards.

DIANAMIC specializes in the design and manufacture of custom grinding products based upon individual requirements and specifications. For fast quotation on all your custom grinding products, either fax, call or write us with your requirements. **Strip and recoating** service is available on all products in steel, stainless or aluminum; or strip of brazed cores. Coating is available on supplied cores.

DIANAMIC Quality and Efficiency

The **single layer Superabrasive products** manufactured by **DIANAMIC** have many advantages over other abrasives. Due to their high quality, **DIANAMIC's Single Layer Superabrasive products** offer extended wheel life with no truing or dressing, fast and immediate removal of stock and re-coatable cores (which lower replacement costs).

Usage and Safety Recommendations

Optimum performance is achieved with flood coolant and filtration at 5 micron or finer. Care must be exercised in grinding, as with any other machining operation. Always wear NIOSHA approved safety glasses, use proper ventilation and follow each suppliers and manufacturer's guideline for safe operation. Prior to use, read applicable MSDS and follow ANSI B7.1-1988 standards. Adherence to all Federal, State and Local regulations regarding your particular industry is required.



Members of the Industrial Diamond Association of America since 1985

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What are SINGLE LAYER SUPERABRASIVES?

DIANAMIC Single Layer Superabrasive (electroplated) grinding wheels and products consist of a single layer of either **Virgin Diamond** or **cBN** which is nickel bonded to a steel or aluminum core. The exact form required is manufactured directly onto the steel core. Most larger OD form grinding wheels are manufactured with an indicating ring to align the wheel to individual spindle eccentricity and to minimize any possible run out. Our standard and custom ID grinding pins and mandrels have a maximum run out of .0002" between head and shank. Because the form holds true throughout the life of a **DIANAMIC Single Layer Superabrasive** product, reduced down time is experienced.

An advantage of **DIANAMIC Single Layer Superabrasives** is that the steel core(s) are re-coatable if not damaged. In most cases damaged wheels can be repaired and re-qualified for a fraction of the original wheel blank cost. As the Superabrasive (either Virgin Diamond or CBN) wears and becomes dull, the individual crystals micro fracture, thereby re-sharpening and exposing new cutting edges until their life is totally expended. Once the Superabrasive is expended, grinding pressures sharply increase and the wheel has seen its total useful life. The wheel core can be returned to **DIANAMIC** for stripping and recoating with Virgin Superabrasive. The cost of recoating a **DIANAMIC Single Layer Superabrasive product** is considerably less than the original cost. Savings range anywhere from 20% to 50%, depending on the complexity of the wheel form in comparison to purchasing a new wheel.

DIANAMIC Single Layer Superabrasive products excel when used to remove stock quickly at high and immediate feed rates, such as creep feed operations, hedge grinding, CNC grinding, jig grinding, etc. They also perform extremely well when precision form grinding is necessary such as carbide insert form grinding. **DIANAMIC Single Layer Superabrasive products** grind at a very fast rate and at a very cool temperature in comparison to other conventional abrasives and bonded Superabrasives. Even with very high feed rates, there is very little heat build-up. Using Virgin CBN on hardened steel of Rc 52+, under normal circumstances, will not cause burning or metallurgical damage.

DIANAMIC Single Layer Superabrasive products can be used to grind ferrous and non-ferrous materials. Exceptional results are received when grinding carbide, hardened steels and alloys, glass, glass reinforced plastics (GRP), composites, brake pads, ceramics in the green and sintered state, epoxy resin composites and other hard to machine and exotic non-ferrous materials.

The following are some of the possible processes where **DIANAMIC Single Layer Superabrasives** have been used successfully: OD-ID Grinding, Jig Grinding, Surface Grinding, CNC Form Grinding, Creep Feed Grinding, Hedge Grinding, Flute Grinding, Honing, Brake Pad Grinding, Single Pass Honing, Lapping, Sawing, etc.

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**Diamond and cBN Resin, Metal and Vitrified Grinding Wheels
Sintered / Reverse plated dressing tools
Diamond and cBN inserts**

Dianamic Abrasive Products, Inc. offers grinding wheels in Resin, Metal and Vitrified Bonds. All our bonded grinding wheels are manufactured in the USA. We also offer sintered and reverse plated dressing wheels and of course Diamond and cBN inserts new and re-lap service.

All the bonds offered by Dianamic have been developed for optimum performance. Only Virgin Diamond and cBN is use. We never use a mix of reclaim Superabrasives in any of our bonds.

Each wheel or tool is produced to exacting standards and ISO / FEPA shapes. Our grinding wheels meet all safety recommendations for normal use.

As there are hundreds of shapes and styles available as well as bond specifications and combinations, it is best if a wheel shape is designated along with any current bond information you have. Prints in AutoCAD release 2005 or sooner are best for accurate quoting and manufacturing purposes. We do have complete blank drawings for most common shapes available for you use to specify sizes.

Dianamic can assist you in qualifying the type of cBN and Diamond based on our 100+ years of application experience.

Required information for accurate quotes and manufacture include the following information and specifications:

1. Diameter and Arbor Hole Size
2. Width / form / radii
3. Current bond type if available
4. Diamond or cBN
5. Type of material ground
6. Type of machine
7. Type of coolant and delivery system
8. Expected micro finish required
9. As all our grinding wheels are made to your specifications, on the shelf stock is not available.

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Corporate Description of DIANAMIC Abrasive Products, Inc.

DIANAMIC Abrasive Products, Inc. was started as a new venture in January 1985. The corporation is privately held, and was officially formed on 15 March 1988.

DIANAMIC Quality Assurance Program incorporates continuous (SPC) statistical process controls in all the manufacturing processes, utilizes State-Of-The-Art equipment for all production and only Virgin Diamond and cBN for all products.

DIANAMIC manufactures Diamond and cBN (cubic boron nitride) Single Layer Superabrasives (electroplated) and services the world industrial marketplace in the following specific areas, to mention but a few:

Turbine Vane Products
Carbide. Steel and Form Grinding
API Thread Grinding
Rare earth magnetic / Ferrite
Heavy Equipment Gear Manufacture
Brake Grinding Wheels
End Mill Grinding Wheels
Automotive Products
Wood Products
Computer Board and Semiconductor Products
Broach Grinding
Aerospace Products
Glass, Ceramics & Refractory Products
Composites, GRP etc.
Medical Products
Gear Grinding
Routers / Hones / Wear Parts

Currently there are 11 employees directly involved in product manufacturing, processing, inspection and marketing. We manufacture to DIANAMIC specifications and quality Vitrified, Resin, Metal and Polyamide bond wheels as well as sintered and reverse plated diamond dressing rolls and cBN and Diamond Inserts both new and re-lap. Diamond Paste and Lapping compounds are offered.

DIANAMIC occupies an 11,000 sq' (1,021 m2) building in Troy Michigan, subdivided into 7,100 sq' (660 m2) of manufacturing; 500 sq' (47 m2) of inspection / quality control; 150 sq' (14 m2) of temperature and humidity controlled area and 2,400 square feet (223 m2) of office space.

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DIANAMIC SUPERABRASIVE PARTICLE SIZE REFERENCE CHART			
MESH	SIZE	TOLERANCE	APPLICATION
20/30	.0330"	+-.0030"	Extra Heavy Stock Removal
30/40	.0230"	+-.0025"	Very Heavy Stock Removal
40/60	.0160"	+-.0016"	Heavy Stock Removal Saw Grit
60/80	.0100"	+-.0015"	Coarse Roughing
80/100	.0070"	+-.0013"	Standard Roughing
100/120	.0060"	+-.0012"	General Purpose
120/140	.0050"	+-.0010"	General Purpose
140/170	.0040"	+-.0010	General Purpose
170/200	.0035"	+-.0010"	General Purpose
200/230	.0029"	+-.0010"	General Finishing
230/270	.0025"	+-.0009"	Finishing
270/325	.0021"	+-.0007"	Fine Finishing
325/400	.0017"	+-.0005"	Fine Finishing
DIANAMIC SUPERABRASIVE MICRON SIZE REFERENCE CHART			
MICRON	SIZE	TOLERANCE	APPLICATION
60	.0024"	+-.0009"	Finishing
45	.0018"	+-.0005"	Fine Finishing
30	.0012"	+-.0003"	Fine Finishing
15	.0006"	+-.0002"	Very Fine Finishing

The DIANAMIC Superabrasive (Diamond and cBN) Particle Size Chart should be used as a reference guide when manufacturing steel blanks for coating.

1. A MALE RADIUS should finish SMALLER than the required finish size. SUBTRACT the particle size from the finished size to achieve the correct pre coat dimension.

2. A FEMALE RADIUS should finish LARGER than the required finish size. ADD the particle size to the finished size to achieve the correct pre coat dimension.

DIANAMIC recommends that we are contacted for technical support and recommendations when manufacturing blanks. The above sizes are for use as a guideline only. Contact Dianamic for more selection assistance.

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MISSION STATEMENT

DIANAMIC Abrasive Products, Inc. is focused to provide the finest, consistent quality assured single layer and bonded and sintered Superabrasive products manufactured and available in the global marketplace. We strive to deliver our products in a timely method and with cost awareness geared around the needs and production requirements of our individual customers. We are committed to remain technologically abreast and to maintain the highest of ethical business standards and practices.

ORDERING INFORMATION

Purchase Orders may be placed by email, fax, conventional mail or telephone. Include on the purchase order the ship to and attention of information, part number if applicable, Diamond or cBN, Mesh and quantity.

SHIPMENT and TERMS

Terms for companies that qualify are NET 30 Days F.O.B. Troy Michigan. Orders may be shipped via open account, in the USA by COD, pre-payment, Visa, MasterCard, American Express or wire transfers. Our standard and quoted prices do not include transportation or insurance costs, which are added to your invoice. Shipments outside the USA are made via air courier and prepaid.

SPECIAL APPLICATIONS

DIANAMIC will meet ALL your special Diamond and cBN requirements. Our sales and engineering staff work closely with our customers to develop
“OPTIMIZED SOLUTIONS for GRINDING PROBLEMS”

For FAST, RELIABLE and PERSONAL SERVICE meeting ALL your single layer, bonded and sintered Diamond and cBN needs, call DIANAMIC

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