

Satiating your hunger
for excellence



Electroplated Diamond & CBN Tools
Metal/Resin Bonded Diamond & CBN Tools
Tungsten Carbide Dies & Wear Parts
Diamond Paste/Micron Powder/Boron Carbide
Diamond Dressers/PCD/PCBN Tools & Inserts



Varun Udyog
— an ISO 9001-2015 certified company —



We exist and grow to delight the customer by providing quality products and services. To achieve this, we have built an organisation with a trained and motivated work force. We continually improve customer satisfaction by resetting and reviewing measurable quality objectives. This will ensure prosperity of all interested parties.

ELECTROPLATED DIAMOND & CBN TOOLS



Varun Udyog Electroplated Diamond / CBN tools are processed using carefully selected diamond particles having rough edges. These tools have a single layer of diamond. The electroplated layer allows exotic forms to be accurately coated which is not possible in the sintering process. It gives very cool cutting on wet or dry applications.

DIAMOND FILES AND ANGLE PINS

Diamond Files are offered in the form of Needle Files, Riffler Files, Diprofile Files and in the normal sizes. Machine files can also be supplied according to customer's specifications. Angle pins for sizing carbide dies are available in standard 9 x 6 mm (12°, 18°), 6 x 6 mm (6°) in rough, medium and fine grit sizes.



Shapes : Flat, Round, Triangle, Square, Half Round, Taper Flat, Knife

The standard size of the needle file is :

160 mm Overall Length , 90 mm Coated Length | 220 mm Overall Length , 110 mm Coated Length



DIAMOND / CBN SLITTING SAWS

Varun Udyog Diamond Saws are highly efficient in cutting hard materials such as carbides, ferro magnets, glass fibre, bakelite, glass ,hard plastics, brake lining etc.

Standard sizes of 4, 6, 8, 10, 12, 18, 20 inches are readily available in thickness from 0.4 mm to 3.0 mm or as specified.

Grit Size : 80 / 100 (Rough), 120 / 140 (Medium), 200 / 240 (Fine), or as specified.

DIAMOND / CBN INTERNAL GRINDING WHEELS

Diamond Internal Grinding Wheels are suited for non ferrous materials such as Tungsten Carbide, Ceramics, Sapphire, Glass, Stones, Fibre Reinforced Plastics etc. CBN Internal Grinding Wheels are usually used for hard ferrous materials over 45 HRC such as High Carbon and High Carbon High Chrome Steels etc.

Available in sizes varying from 1.0 mm to 20 mm or as specified.

Grit Size: 80 / 100 (Rough), 120 / 140 (Medium), 200 / 240 (Fine) or as specified.



RE-PLATING/SPECIAL SERVICES

A complete refurbishing and re-plating service is available for both standard and custom diamond tooling.

Steel blanks in good condition can normally be re-plated.

Special process for coating on Aluminum, Stainless Steel, Carbide, etc.

BASICS OF ELECTROPLATED BOND

Normally for electroplated bonds a single layer of abrasive grain is applied. The abrasive grains are usually sprinkled on the wheel body and held in place by a metallic matrix.

Since Nickel is used as the bonding material, it lends its basic properties to the wheel :

- Hardness
- Toughness
- Adhesive Force
- Resistance to Wear



Grinding wheels
Covering of grit 50-70%



Dressing wheels
Covering of grits 85-100%

ADVANTAGES

The numerous grits projecting from the bonding matrix lend a lot of advantages for the electroplated bonded wheels.

1. Ability to grip firmly.
2. Extremely high grinding performance.
3. Can grind even strong ductile material.
4. Have a tool life of 1 to 100 ground meters depending on grit size and grinding.



Often the finished surfaces are somewhat rougher than those ground with the same grit size in bonds such as resin bond, metal bond or vitrified bond.

An improvement of the surface comes gradually with the microcrystalline wear of the grit points and the increase of cutting edges so that the electroplated grinding tool is always characterised by the variation of the achievable surface quality over the service life.

CHARACTERISTICS

1. Single grit layer in an extremely stable bond.
2. High geometric and proportion precision.
3. Extremely high grinding performance.
4. High abrasiveness due to high grit protrusion.
5. Very good dressing behaviour.
6. Body can be re-plated several times.
7. Long tool life.
8. High geometric stability.
9. No dressing procedure necessary.
10. Static grit arrangement on the steel body.



CASES WHERE ELECTROPLATED BOND WHEELS ARE IDEAL

In case of small and complex profiles.

If a high precision profile geometry is demanded.

If a stable profile geometry is demanded over a long period of time.

If there is no dressing possibility on the machine.

These electroplated bond grinding wheels are convenient for both roughing and finishing of grinding profiles.

HOW TO GET THE BEST OUT OF ELECTROPLATED BOND WHEELS

Medium or high in feed rates and grinding speed.

With cooling under enough pressure.

Machines should be very rigid and robust.

CBN TOOLS FOR FERROUS GRINDINGS IN AUTOMOTIVE AND AEROSPACE INDUSTRIES

Internal Grinding

Slot Grinding

Profile Grinding

General Pre-Grinding



DIAMOND TOOLS FOR NON-FERROUS INDUSTRIAL APPLICATIONS	
INDUSTRY	APPLICATION
CARBIDE	Grinding green and sintered tungsten carbide
CERAMIC	Grinding ceramics like SiC, AlO ₂ , ZrO etc.
AUTOMOTIVE	Grinding break liners and cutting re-enforced rubber mouldings
PHARMACEUTICAL	Grinding factitious knee joint
DENTAL	Profile rubber bonded grinding pins
FERRITE	Grinding magnetic parts
CHEMICAL	Grinding laboratory glass
GRAPHITE	Grinding graphite parts
FOOD	Cutting frozen food
GLASS	Grinding tubes, automotive components etc.
ORAL HYGIENE	Roundig of tooth brush bristles

METAL/RESIN DIAMOND & CBN TOOLS

Metal and Resin Bonded Diamond / CBN tools have multiple layers of Diamond / CBN impregnated with suitable Metal / Resin Bonds. Resin Bonds are employed for high stock removal while Metal Bonds are employed where heat generation is excessive.

METAL AND RESIN BOND DIAMOND / CBN WHEELS

Diamond and CBN Wheels are made according to International Standards. We also manufacture as per Customers' Drawings.

METAL BONDS

Metal Bonds are meant for high resistance to wear and give particularly long life. Resin Bonds are generally superior to Metal Bonds with regards to material removal rate. The use of coolant for metal bonds is a must. Dry grinding may be employed in exceptional cases of small contact surfaces.



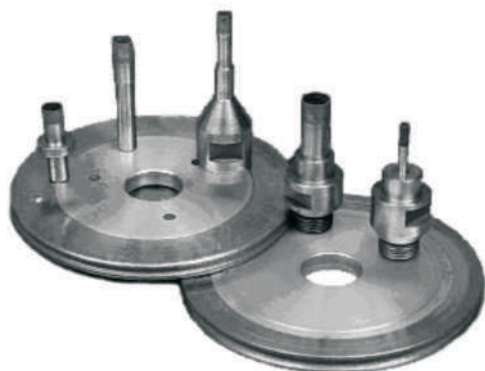
INTERNAL GRINDING WHEELS

Metal / Resin Bond Internal Grinding Wheels are available from 4.0 mm to 40.0mm diameter against specific orders.

SLITTING SAWS

Resin/Metal Bond Diamond Slitting Saws are made up to 350 mm diameter, suitable for slitting Tungsten Carbide, Ceramics, Quartz, Glass, Silicon Carbide, etc.

METAL BONDED DIAMOND TOOLS FOR GLASS INDUSTRIES



Diamond Tools are used for processing of Automotive Glasses, Plate Glasses etc.

Our product range for Glass processing includes Diamond Tube Drills, Pencil Edging Wheels, Slitting Wheels, Periphery Wheels, Cup Wheels, Flat/Bevel Grinding Wheels etc.

Diamond Tube Drills are available from 5mm to 100mm diameter. Pencil or edge wheels are available for 3mm to 12 mm thick glasses.

Other wheels like Slitting Wheels, Periphery wheels and Cup wheels can be made to the specifications of the customers.

TUNGSTEN CARBIDE DIES & WEAR PARTS



VARUN UDYOG offers a vast range of products which include Tungsten Carbide Dies and Wear Parts such as Cold Heading Dies, Warm Forging Dies, Reverse Extrusion Dies for Aerosol Cans, Wire Drawing and Metal Forming Tools.

COLD HEADING DIES

Varun Udyog carbide tools used in cold pressing screws, rivets, bolts & nuts give a high surface finish and great dimensional accuracy. This type of tool, which is often subjected to heavy blows, calls for high standards in the mounting of the carbide. Varun Udyog has developed special mounting methods giving tools a longer life which consequently results in low tool cost.

Where cold pressing tools are used, it is very important to see that the blank for the screw or rivets is cut off square before it enters the tool.

When sending the orders for heading dies, please include a drawing marked with all dimensions and tolerances .



CARBIDE TOOLING FOR FASTENER INDUSTRY

1. Dies and Punches for Bolt and Screw Forming
2. Dies with Straight Bore, Pointing and Extrusion
3. Dies for Nut Manufacturing
4. Double Extrusion, CSK Dies and Washer Face
5. Cut-Off Quills and Cutters
6. Dies for Warm Forging

CARBIDE TOOLS

1. Extrusion Dies for Zinc Cans/ Aluminum Aerosol Cans and Carbon Electrodes
2. Draw Dies and Punches for Caps and Cans
3. Wear Parts
4. Dies and punches for Powder Compaction
5. Dies and Punches for Currency Coin Production
6. Wear Parts for General Engineering Industry

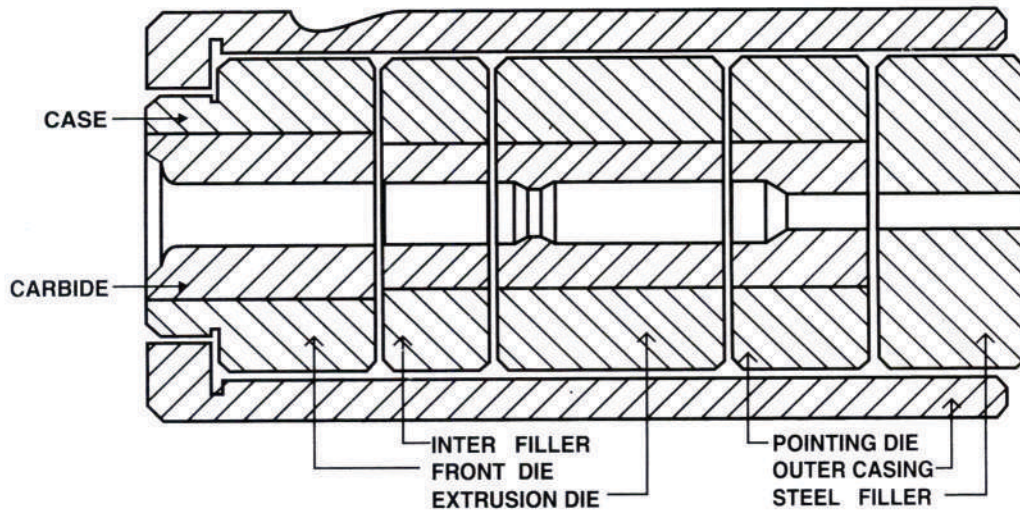


OTHER CARBIDE TOOLINGS

1. Cold Forging Dies for Auto Components
2. Extrusion Die Assembly
3. Brazed Cut off Knives and Cutting Dies
4. Wear Parts

CARBIDE TOOLING FOR DRAWING INDUSTRY

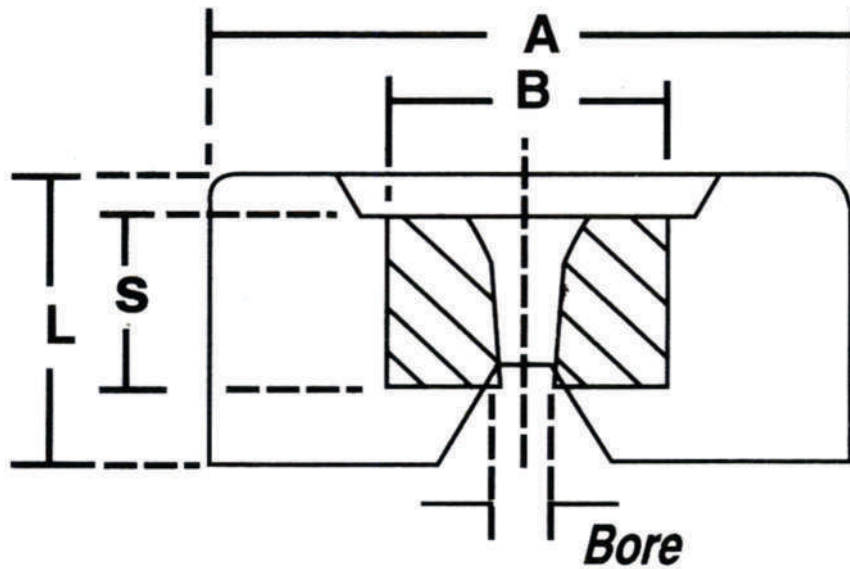
1. Wire, Bar and Tube Drawing Dies
2. Tools and Wear Parts for Welding Rod Industry
3. Rectangular / Square / Hex / Special Profile Dies
4. Customized Specials



Recommended Pellet and Case Dia of Tungsten Carbide Cold Heading Dies for Bolts / Screws.

All dimensions are in mm

BOLT/SCREW SIZE	CASE DIE	PELLET DIA				OUTER CASTINGS DIE (MIN)
		FRONT DIE	INTER FILLER	EXT DIE	PTG DIE	
M4	28	12	10	10	10	40
M6	28	12	10	10	10	40
M8 12A/F	40	15	10	10	10	50
M8 13A/F	40	18	12	12	12	50
M10 16A/F	56	20	15	15	15	70
M10 17A/F	56	22	15	15	15	70
M12 18A/F	56	24	20	20	20	70
M12 19A/F	56	24	20	20	20	70
M14 21A/F	75	30	24	24	24	90
M14 22A/F	75	30	24	24	24	90
M16	75	30	24	24	24	90
M18	90	35	30	30	30	110
M20	90	40	35	35	35	110
M22	90	40	35	35	35	110
M24	90	45	40	40	40	110



All dimensions are in mm

SR NO	CASE SIZE		PELLET SIZE		RANGE OF BORE	
	A	L	B	S	From	To
1	28	15	8	6	0.20	0.60
2	28	15	10	8	0.20	1.50
3	28	20	13	10	0.50	2.00
4	43	27	15	13	0.60	2.60
5	43	27	17	15	0.70	5.50
6	43	31	19	17	1.00	6.00
7	53	34	22	18	2.00	9.00
8	70	40	25	20	4.00	11.00
9	100	37	30	24	7.00	13.00
10	100	37	35	24	11.00	18.00
11	100	37	40	24	15.00	22.00
12	100	37	45	25	18.00	25.00
13	112	47	50	25	21.00	28.00
14	112	47	55	25	24.00	32.00
15	125	47	60	27	27.00	36.00
16	137	57	65	27	29.00	40.00
17	137	57	70	27	32.00	44.00
18	150	57	75	30	35.00	48.00
19	162	62	80	30	39.00	52.00
20	162	62	85	33	43.00	56.00
21	175	62	90	33	47.00	60.00

DIAMOND PASTE / POWDER BORON CARBIDE AND POLISHING CONSUMABLES

DIAMOND PASTE

Varun Udyog compounds are manufactured in strict compliance to achieve highest standards by uniform distribution of diamond particles in the paste. Micron powders and lapping pastes are used to obtain very close tolerances and desired surface finish. These compounds are available in standard packing of 5 gm syringes.

CLASSIFICATION	CODE	COLOUR CODE	RECOMMENDED USE
For fine finish and close tolerances	D 1/4 D-1 D-2	White White Light Pink	Metallographic finish on steel and hard metals. For finish on Tungsten Carbide Dies, Mirror polish on steels and hard steel moulds and gauges etc.
Final finishing grades for moulds, dies, seals, flat lapping and production lapping	D-3 / D-4 D-6 D-7 / D-10	Green Yellow	Mirror polish and high finish on Tungsten Carbide. Medium polish on steel , tungsten and diamond. Removal of working scratches on steel and pre-polishing of steel and soft metals. Medium polish on tungsten carbide pre-polishing on sapphire and ruby.
Grades for pre-finishing hard metallic and non - metallic materials, tungsten carbide, ceramics, etc.	D-15 / D-20 D-30/D-40	Pink Brown, Dark Brown	Rapid stock removal with better finish on steel and tungsten carbide. Uniform stock removal on steel ,generation of uniform surface and medium cutting.
Maximum stock removal in extremely hard materials	D-50/D-60 D-80/D-100	Red Dark Blue	Fast stock removal on Tungsten Carbide and for enlarging the bore of Drawing Dies. For speedy cutting on Tungsten Carbide and Steel.

BORON CARBIDE POWDER / PASTE

Due to high hardness, Boron Carbide powder is used as an abrasive in polishing and lapping applications. It can also be used as loose abrasive in cutting application such as water jet cutting.

Grits : Coarse, Medium, Fine, Super Fine
Packaging: 100 gm, 250 gm, 500 gm, 1000 gm
Sealed Jars

DIAMOND POWDER

Varun Udyog Diamond Powder consists of strong , blocky and well shaped diamond particles with many re-entrant surface and sharp well defined cutting edges manufactured from high quality diamonds. Diamond micron powders are available in all sizes from D-1/4 to D-140 , These are used for removal of stock (D-140) , roughness(D-30) and to give mirror polish (D-3 , D-1), in dies and tools.

POLISHING SPRAYS/LAPPING OILS

Varun Udyog polishing and lapping oils are widely used in polishing of Carbide Dies and Punches. Packaging : 500 ml , 1 liter sealed packing available



DIAMOND DRESSERS/PCD/PCBN TOOLS AND INSERTS

Varun Udyog manufactures a complete range of high quality Sintered Diamond Dressers, Tipped Tools, Inserts and Reamers etc. Polycrystalline Diamond (PCD) blanks are used for Turning, Grooving, Milling & Boring operations on a wide variety of non ferrous and non metallic materials.

Varun Udyog manufactures a complete range of high quality Polycrystalline Cubic Boron Nitride (PCBN) tipped tools, Inserts, Reamers etc. for machining ferrous materials. Our CBN blanks are designed to provide significantly increased tool life, consistent surface finish and dimensional control. As a direct result cost can be significantly decreased.

ADVANTAGES OF USING VARUN UDYOG PCD/PCBN TOOLS

- Higher material removal rates and improved cycle times.
- Significantly faster cutting speeds and feed rates compared to conventional cutting tools.
- Highly improved workpiece quality, excellent dimensional control and consistent surface finish.



DIAMOND DRESSERS & DIAMOND INDENTORS

Diamond Dressers are made of Diamonds that have Extreme Hardness and High Wear Resistance. The following types are manufactured :-

- Single Point Diamond Dressers
- Multi Point Diamond Dressers
- Impregnated Diamond Dressers

- Blade Type Diamond Dressers
- Chisel Point Diamond Dressers
- Cone Point Diamond Dressers

OTHER PRODUCTS

- Rockwell Diamond Indentors
- Diamond Honing Sticks
- Diamond Cone Laps

VARUN UDYOG started operations in 1987 as a small-scale unit engaged in the manufacture of diamond tools and carbide dies for cold forge industry.

From inception, our corporate values revolved around product development and customer satisfaction and driven by these values we expanded to form VARUN UDYOG.

We, at VARUN UDYOG, take care of all the tooling needs of the cold forging industry from designing to development to actual use at the shop floor. Our mission is to help our customers build better products with increased efficiency and at the same time economizing the tool cost. To keep up with our mission, we provide our customers with quality technical and application assistance with high quality dies and most responsive customer service.

To keep pace with ever demanding customers, we have made inputs in the form of state of the art machineries, technical people & management information systems. An extensive and sophisticated process control system ensures that the quality is built into the product at each step. This eventually leads to a completely documented & traceable finished products.

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USA, France, Australia, Malaysia, Singapore, UAE & growing