Product Catalogue

Engineering

Notes...

Notes...

Contents

Introduction

Asahi Diamond Industrial is one of the world leaders in Diamond tooling servicing the Engineering, Construction and Mining sectors with high quality, reliable and cost effective products.

Technology advances are so rapid that one year old technology may be considered redundant. To keep pace with these technological advances we continually develop and modify our high precision, highly efficient tools, while promoting application development.

Used in a wide range of applications, Asahi tools are commonly used within the mining sector for drilling and geotechnical operations where high quality and reliability is required. They play an integral role in preventing excessive noise and protecting the environment. They are also used for dismantling buildings and bridges, seismic strengthening, upgrading infrastructure, and processing of various types of stone.

Through a stable supply of raw materials and a constant development process, Asahi Diamond can always guarantee stable, high quality products across the range.

Our Story

In 1947 Triefus Company Ltd. became a public company and its shares were quoted on the London Stock Exchange. At this time there became an increasing awareness of the importance of Diamond tools in the modern industrial world. An engineer was appointed to the team and following a small investment Triefus and Company Limited commenced manufacturing single point Diamond dressers.

By 1949 a small manufacturing company was established which made its first take-over in 1952. Expansion became rapid and profits grew. Also in 1949 a survey of Diamond tool and drilling potential was undertaken in Australia. Sales of rough Diamond commenced in 1950 and a small manufacturing plant was set up the following year. Similar plants were also established in other countries including France and India.

World demand for industrial Diamond products increased dramatically and the close links already established with industrial Diamond merchants and product manufacturers resulted in rapid growth for the Triefus group. A particularly close association developed between the Triefus UK manufacturing company and the Asahi Diamond Industrial Co. Limited, which had been established in Tokyo in 1937. This close association was later expanded to include cross shareholdings and eventually led to Asahi taking control of the Triefus Group in 1990.

Asahi Today

The Asahi group is one of the world's largest manufacturers of industrial Diamond products with an enviable reputation for service and expertise.

Here at Asahi Australia we were manufacturing and marketing industrial Diamond products at our principal office and factory located in Mona Vale NSW, a northern beaches suburb of Sydney, right up until 2002. Sales Offices are still maintained at these premises with products now being sourced from our Group Companies in Japan, France, South Korea, Taiwan and Indonesia. Our products and services are used in various Diamond application areas for:

- Mining and Exploration
- Precision Engineering
- Construction Projects

All of our mining products are manufactured in our state-of-the-art Jakarta factory. This is where our first factory was built in 1996, predominantly to supply and service the South-East Asian market.

Our Australian factory ceased production in 2002 and all our equipment and manufacturing expertise was transferred to the Asahi Jakarta plant, who now produce our extensive range of mining and exploration products that we supply globally. We are now in our third built factory in Jakarta having grown out of the previous two and we have recently been quality accredited with ISO9001 Certification.

Our Promise to You

In addition to aiming to exceed your expectations we promise to offer our customers:

Service: A personalised service from your first point of contact - access to unparalleled advice from our team of experts and products that are delivered on time.

Quality: Technologically advanced high performing products that are built to last.

Price: Exceptional prices on exceptional quality products.

Honesty: To deliver what we promise and to treat all our customers with honesty and integrity.

Short Facts

Global Head Office: Tokyo, Japan.

Number of employees: 2,147 worldwide.

Manufacturing countries: Japan, Indonesia, Taiwan, China and France

Global presence: Australia, Japan, Indonesia, Thailand, China, Taiwan, United States of America, Europe, Russia, Mongolia, Singapore, Malaysia, Vietnam, Cambodia, Philippines, South America, South Africa, DK Congo, Myanmar and India.

Diamond and CBN Wheels

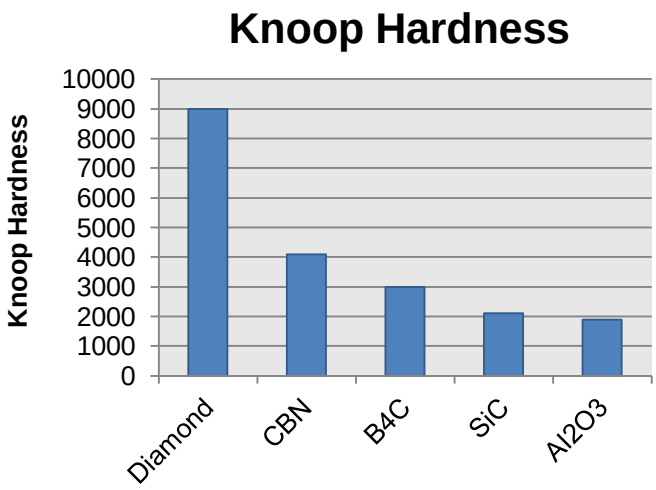
Grinding is an indispensible step of the manufacturing process.

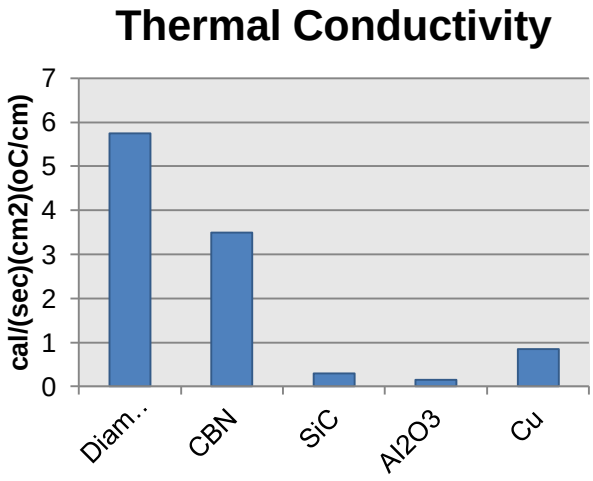
Asahi Diamond manufactures a comprehensive range of “super-abrasive wheels” using the highest quality Diamond and CBN (Cubic Boron Nitride) particles.

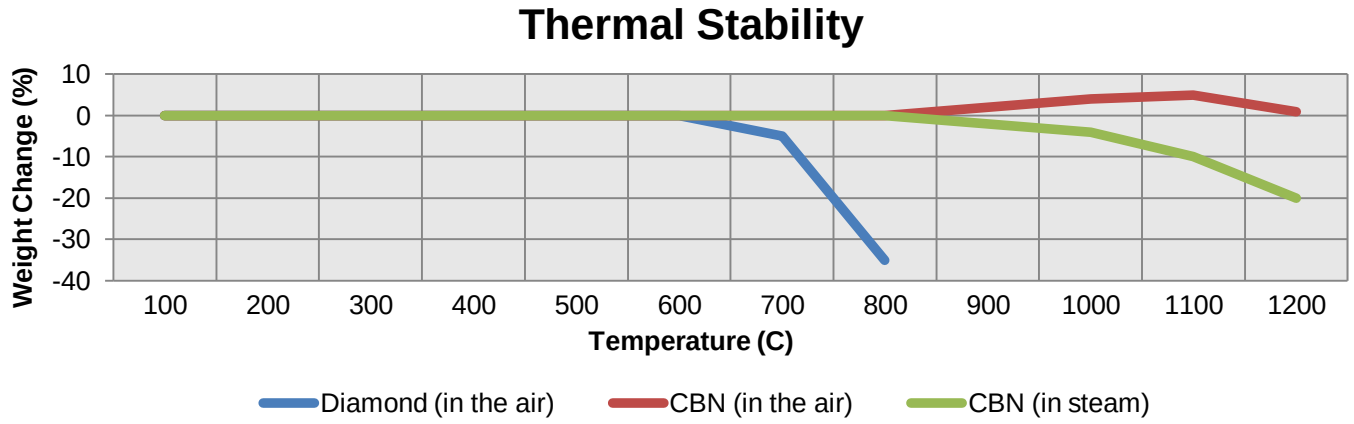
Super-abrasive wheels display the following excellent characteristics unfound in conventional abrasives:

- Faster cutting speeds
- Higher heat and wear resistance
- Improved accuracy and surface finish
- Minimal dust creation

These characteristics provide improved safety, increased operation efficiency and lower tool costs.







Diamond vs. CBN

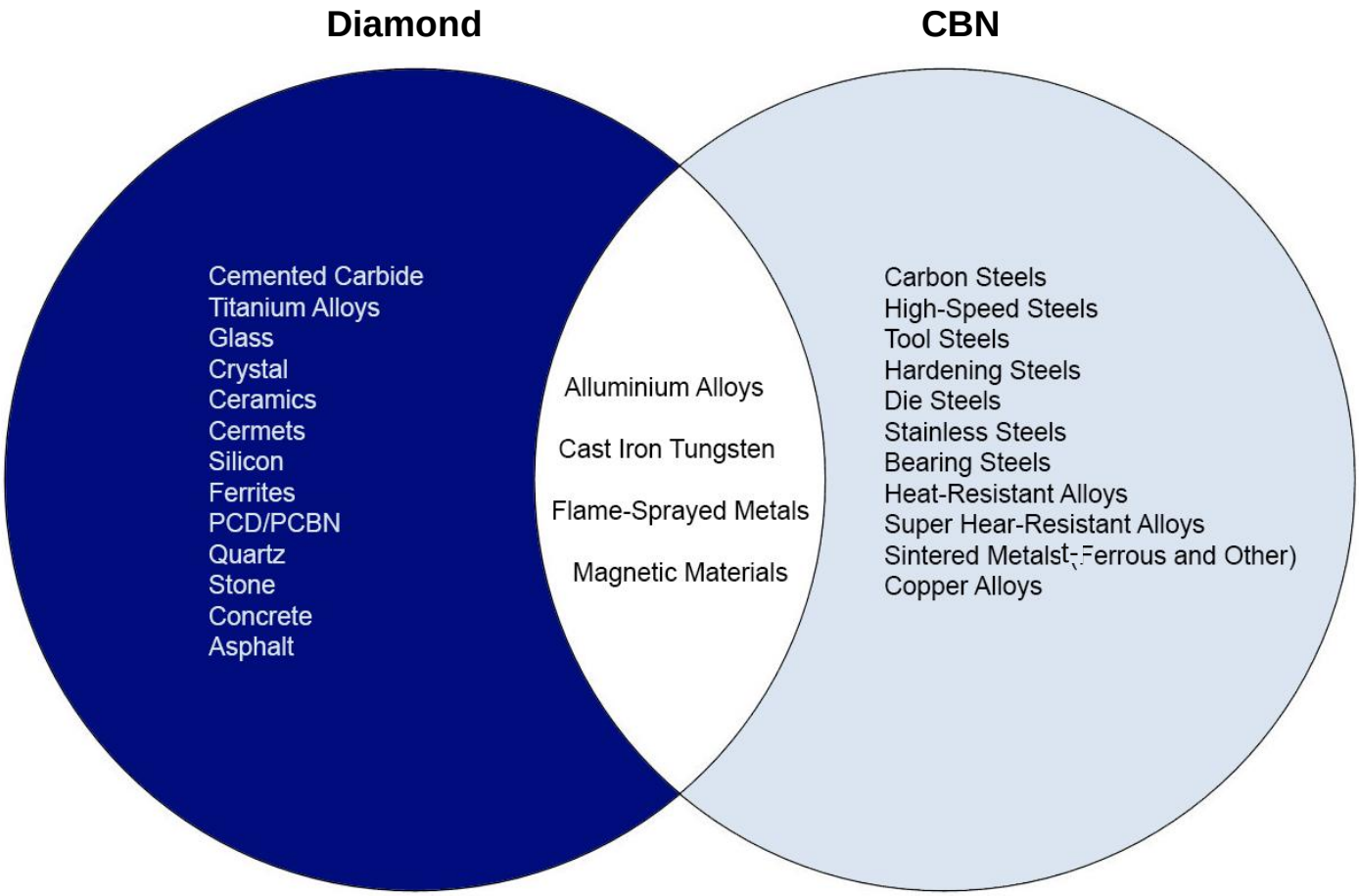
Diamond is the hardest material known to man and has great abrasion resistance.

These properties make Diamond wheels the preferred choice of abrasive when grinding materials such as sintered carbide, glass, ceramics and other hard non-ferrous materials.

CBN is a more suitable abrasive than Diamond when grinding ferrous materials. It has a heat resistance of 1200˚C, while Diamond begins to oxidize at 600˚C.

Unlike Diamond, CBN does not chemically react in a negative manner to iron. Therefore CBN wheels are
used when grinding steel alloys such as carbon tool steel, HSS, die steel and other hard alloys.

Materials to be Ground



Resin Bond Wheels

Resin bond is usually made with a heat-cured resin mostly composed of phenolic resin. They provide excellent grinding ability, surface finish and minimal chipping.

Resin bond super abrasive wheels are widely applied to difficult to machine materials such as cemented carbide, ceramics, glass, and silicon as well as ferrous materials such as tool steel, HSS, die steel and other hard metals.

Characteristics of resin bond wheels

- Resin bond usually has added organic and inorganic materials and metal filler. These materials are added to the phenolic resin in order to control wear resistance, heat resistance, grit retention and lubrication.
- Resin bond wheels are low in Young's modulus (elastic modulus). As a result excellent characteristics are achieved in processing efficiency, free cutting ability, surface finish and minimization of chipping.
- In comparison to metal bond wheels, resin bond wheels have weaker adhesion between the grit and the bond. This results in a much better cutting ability when processing hard to grind materials such as cermets, ceramics etc.
- The Diamond and CBN abrasives used in resin bond wheels are irregular shaped and easy to micro fracture. This allows new cutting edges to be constantly created while grinding.
- Resin bond wheels are typically used for wet grinding, but they can be used for dry grinding by adding some filler during the manufacturing process. The use of this filler reduces heat generated in the grinding process and improves cutting ability.

Applications of Resin Bond Diamond wheels

- Resin bond Diamond wheels are most commonly used for precision grinding of cemented carbide, cermets and ceramics.
- Because of the bond elasticity they are used for finish grinding of silicon, glass, ceramic made electrical parts etc. where excellent surface finishes are required.

Application of Resin Bond CBN wheels

- Resin bond CBN wheels are suitable for grinding ferrous metals such as cast iron, HSS and sintered iron.
- CBN is superior in precision grinding applications when compared to conventional abrasives. They wear less than conventional abrasives and are suitable for processing hard to machine materials due to the hardness of the CBN particles. Higher thermal conductivity also allows for less heat to be absorbed by the work piece during the grinding process.

Metal Bond Wheels

Metal bond is a binding material made of metallic powders comprising copper, tin, iron, cobalt etc. Metal Bond Wheels have excellent grit retention and wear resistance compared to other bond types.

Characteristics of Metal Bond Wheels

Divided into three major types:

1. Bronze type – superior in grinding ability
2. Cobalt type – superior in wheel life
3. Steel type – stands between bronze and cobalt types regarding grinding capabilities

- Excellent grit retention and wear resistance in comparison to resin bond wheels. Long tool life is achieved when processing difficult to machine materials such as glass, ceramics, semi-conductor electron materials etc.
- Due to its electric conductivity it can be used for electrolytic grinding and electrical discharge grinding (EDM).

Applications of Diamond Metal Bond Wheels

- With excellent grit retention and wear resistance Diamond metal bond wheels are used for rough/semi finishing difficult to machine materials such as: glass ceramics, ferrite, fireproof materials, stone etc. Exceptional results are achieved during chamfering processes.
- Widely used for form/profile grinding in which Diamond wheels are required to keep profile.

Applications of CBN Metal Bond Wheels

- Excellent wear resistance of the bond gives excellent efficiency in rough grinding of unhardened steel materials.
- Highly recommended for grooving of hardened steel and grinding which requires high efficiency and accuracy.

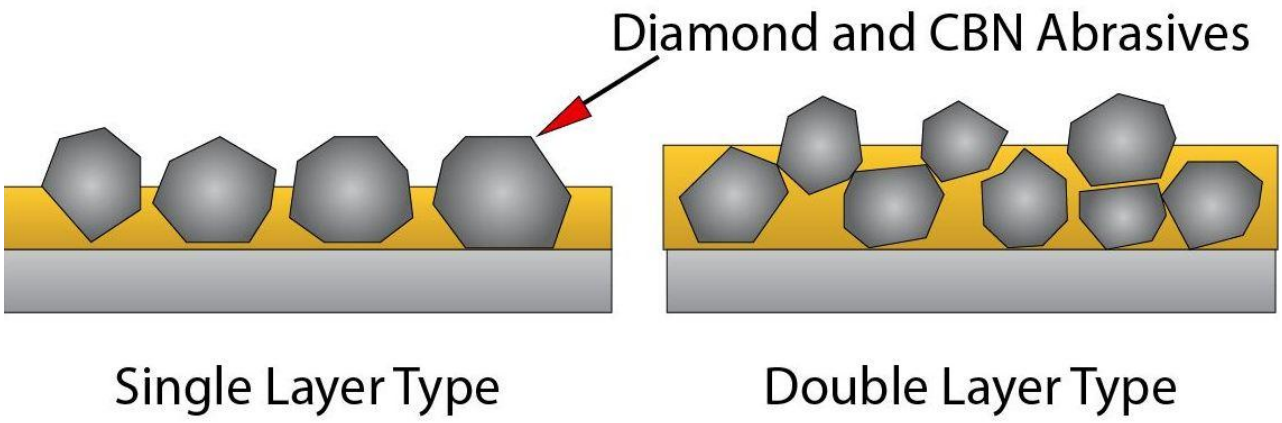
Electroplated Wheels

Electroplated wheels bring stable performance in grinding accuracy, grinding ability and wheel life. They have an excellent reputation in a variety of applications.

Characteristics of Electroplated Wheels

- Constant in grinding ability and can be used for many materials because of the high amount of abrasive material protruding from the bond.
- Capable of holding form at low cost, therefore suitable for form wheels.
- Best suited to produce small volume production in wide ranges. Electroplated wheels are inexpensive and wheel life is shorter than other bonds because they are typically a single layer of abrasive material.
- The consumed abrasive can be stripped and re-plated using the existing core (provided it is not damaged).

Structure of Electroplated Area



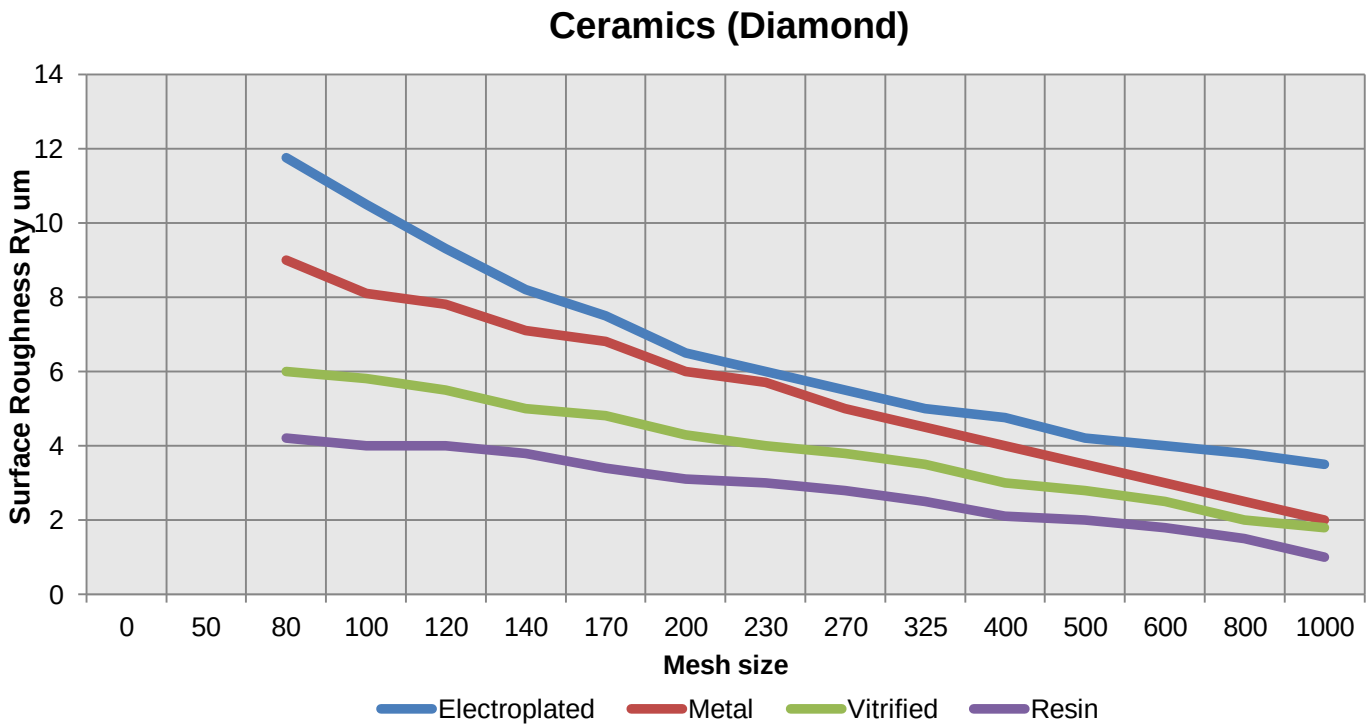
Wheel Selection

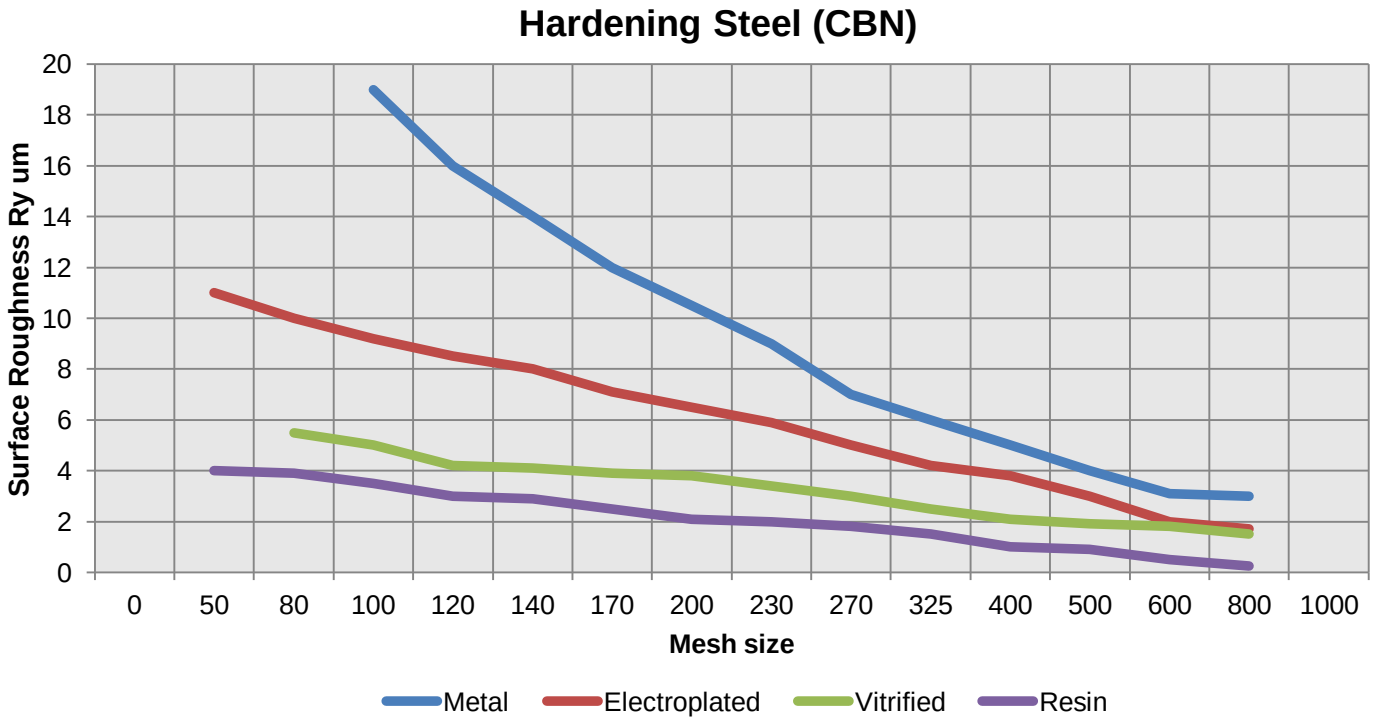
To successfully meet customers' requirements during wheel selection the following information is required:

1. Shape and dimensions of the wheel
2. Grit size
3. Concentration
4. Bond
5. Additional information regarding:
   a) Working condition
   b) Work piece material
   c) Required finish
   d) Any special requirements

A grinding enquiry sheet is included on the last page of this catalogue to help in providing the required information to your Asahi representative.

Grit Selection





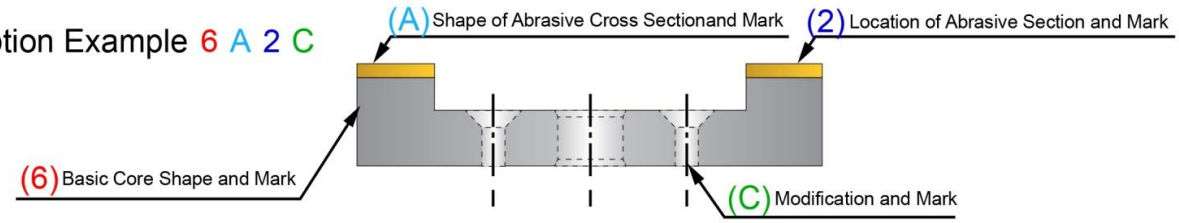
Grain Size Conversion Chart

Mesh Size	Average Diameter (µm)	JIS	U.S.A.	B.S.S.	FEPA
50	297	50 / 60	50 / 60	50 / 60	D301
60	250	60 / 85	60 / 85	60 / 85	D252
80	177	85 / 100	85 / 100	85 / 100	D181
100	149	100 / 120	100 / 120	100 / 120	D151
120	125	120 / 140	120 / 140	120 / 140	D126
140	105	140 / 170	140 / 170	140 / 170	D107
170	88	170 / 200	170 / 200	170 / 200	D91
200	74	200 / 230	200 / 230	200 / 240	D76
230	62	230 / 270	230 / 270		D64
270	53	270 / 325	270 / 325	240 / 300	D54
325	44	325 / 400	325 / 400		D46
400	37		36 - 54µ		M40
600	28		22 – 36µ	27 – 40µ	M25
1000	15		12 - 22µ	12 – 18µ	M16
1500	10		8 – 12µ	8 – 12µ	M10
2000	8		5 – 12µ		
2500	6		4 – 8µ	4 – 8µ	M6.3
3000	5		2 – 6µ	2 - 6µ	

Please note: Products listed in this Asahi catalogue use the mesh size as standard in product descriptions.

Basic Shape Code of Wheel

Description Example 6 A 2 C



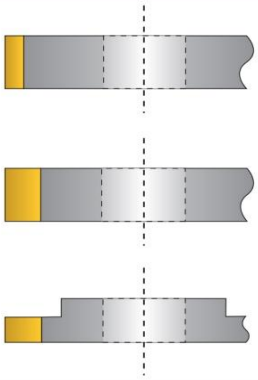
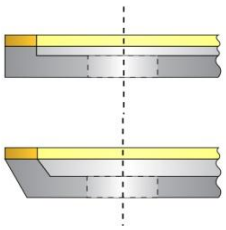
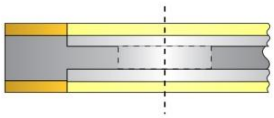
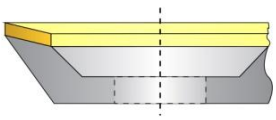
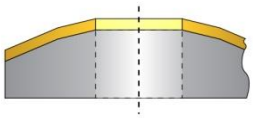
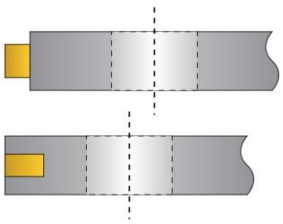
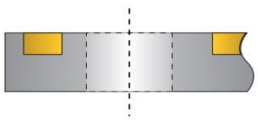
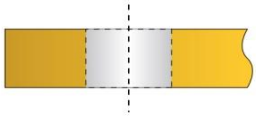
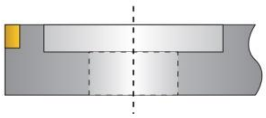
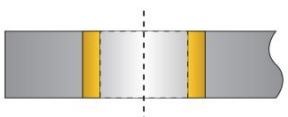
Basic Core Shapes and Marks

Mark	Basic Core Shape
1	
2	
3	
4	
6	
9	
11	Less Than 90° and Over 45°
12	Less Than 45°
14	
15	

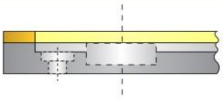
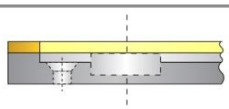
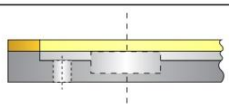
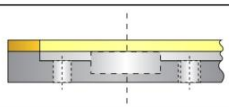
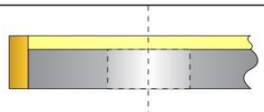
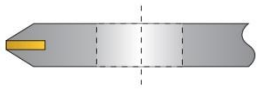
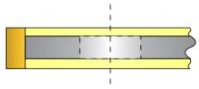
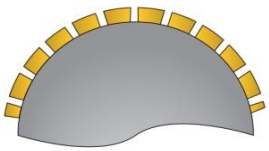
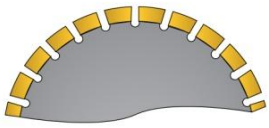
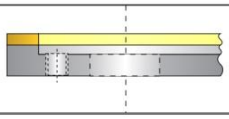
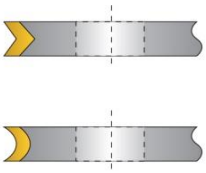
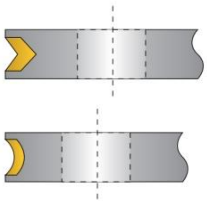
Shapes of Abrasive Cross Section

Mark	Shape of Abrasive Cross Section	Mark	Shape of Abrasive Cross Section
A		J	
AH		K	
B		L	
C		LL	
CH		M	
D		P	
DD		Q	
E		QQ	
EE		S	
F		U	
FF		V	
G		Y	
H			

Location of Abrasive Section and Marks

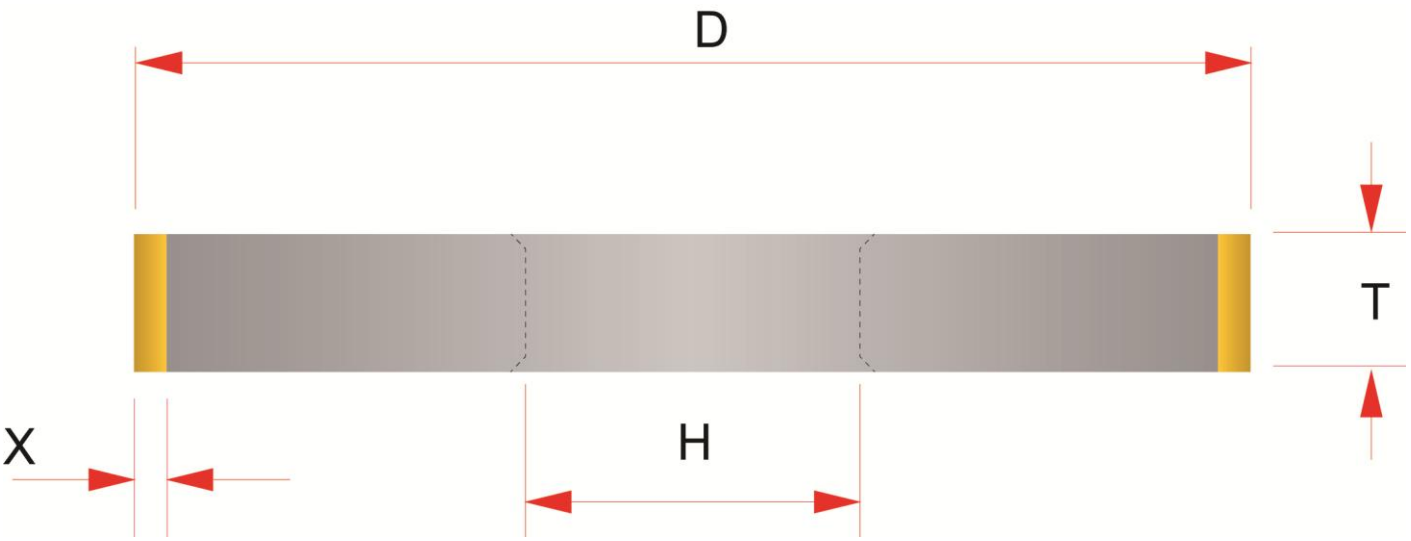
Mark	Location	Figure
1	Periphery	
2	Side	
3	Sides	
4	Inside Bevel or Arc	
5	Outside Bev or Arc	
6	Part of Periphery	
7	Part of Side	
8	Throughout	
9	Corner	
10	Internal	

Modifications and Marks

Mark	Modification	Figure
B	Drill and Counterbore	
C	Drill and Countersink	
H	Plain Hole	
M	Holes Plain and Threaded	
P	Relieved on One Side	
Q	Abrasive Section Inserted	
R	Relieved on Two Sides	
S	Abrasive Section Segmented	
SS	Abrasive Section Segmented and Slotted	
T	Threaded Holes	
V	Abrasive Section Reversed	
W	Stemmed	
Y	Abrasive Section Reversed and Inverted	

Standard Asahi Resin Bond Wheels

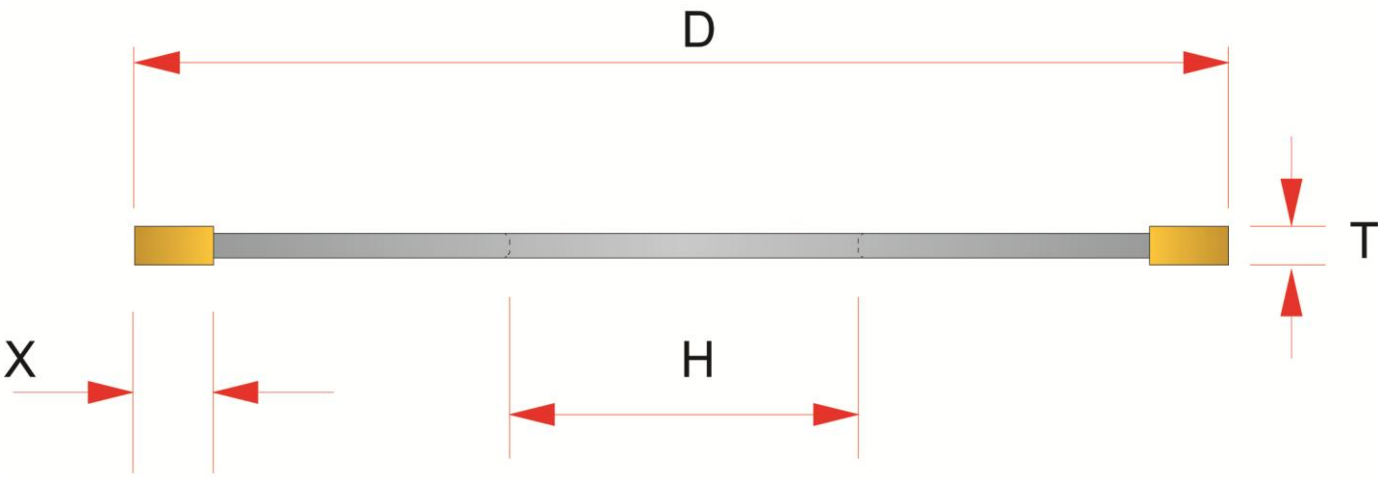
1A1



D	T	X	H	Grit	Conc.	Stock Code
50	12	3	12.70	SDC120	R75	4181
100	4	4	31.75	SDC140	R75	25-0100
100	4	5	20	SDC120	R75	6265
100	4	5	31.75	SDC120	C75	25-0148
100	4	5	31.75	SDC120	R75	6258
100	6	6	31.75	SDC170	R75	2834
100	6	6	32	SDC140	R100	25-0137
150	6	3	31.75	SDC140	N75	4183
150	10	3	31.75	SDC230	R75	25-0179
175	7	8	31.75	SDC120	R75	25-175
200	10	3	60	SDC200	R100	25-0185
350	12	3	127	SDC140	N75	9719

D	T	X	H	Grit	Conc.	Stock Code
50	10	3	12.70	CBN B80	N100	4567
125	2	6	32	CBN B60	R75	9361
150	6	6	31.75	CBN B140	R100	25-0287
200	10	3	60	CBN B140	R100	25-0216

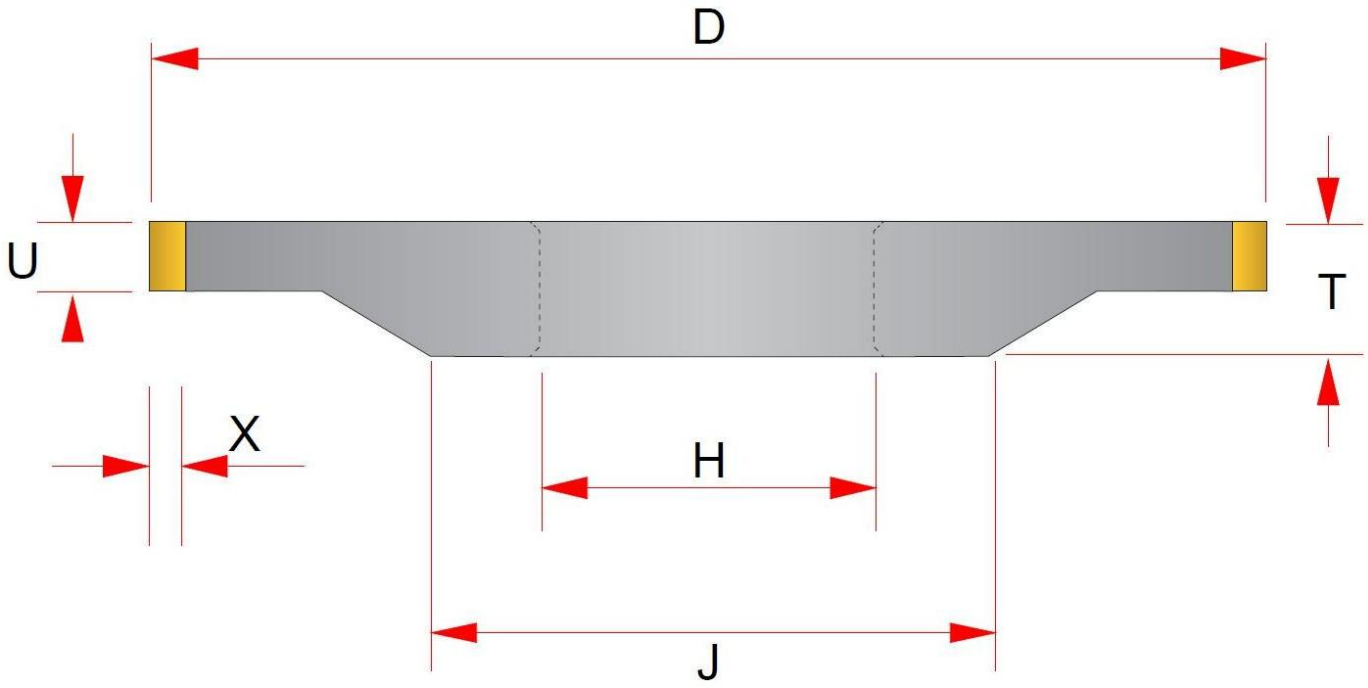
1A1R



D	T	X	H	Grit	Conc.	Stock Code
150	1	3	31.75	SDC120	P75	1305
150	1	5	31.75	SDC100	N100	6926
200	1.5	5	20	SDC100	N100	25-0218

D	T	X	H	Grit	Conc.	Stock Code
203	1.5	5	31.75	CBN B80	R100	25-0215

3A1



D	U	X	T	J	H	Grit	Conc.	Stock Code
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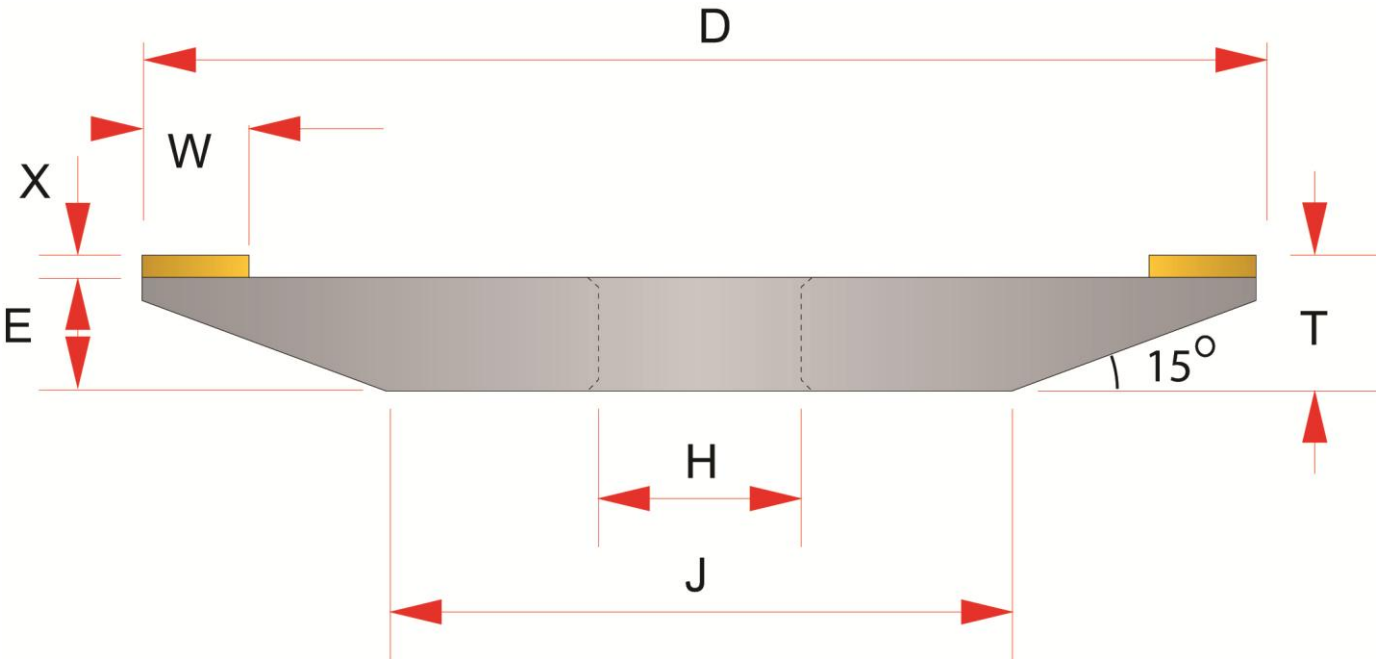
450	20	3	45	400	254	SDC80	N100	25-04501

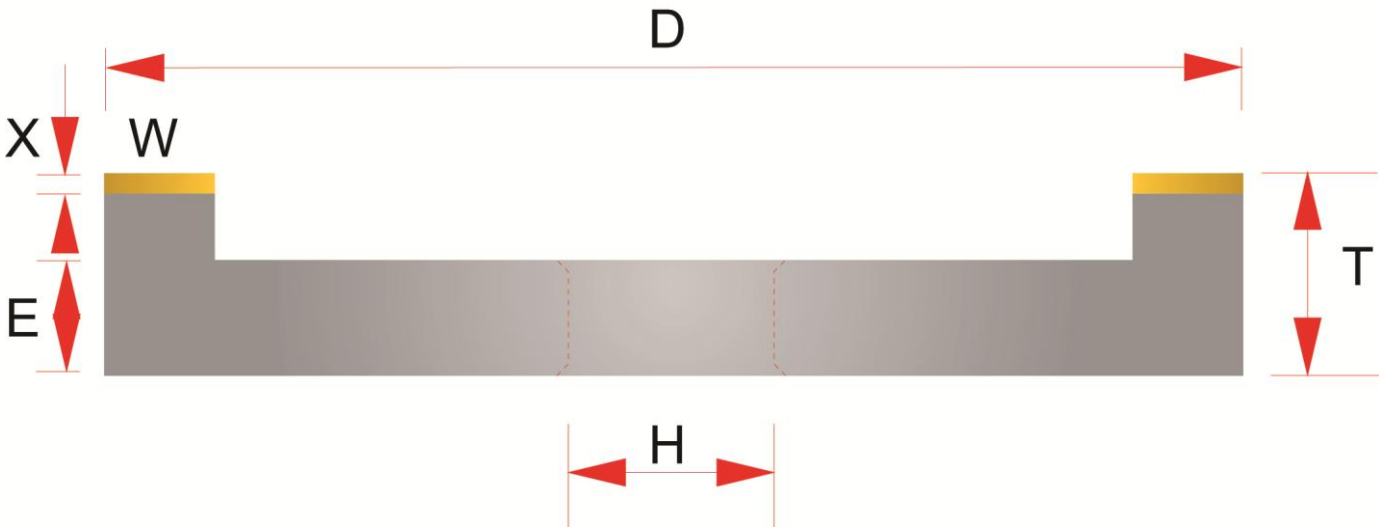
4A2



D	W	X	T	H	Grit	Conc.	Stock Code
100	5	3	10	25(k)	SDC400	R100	25-01021
115	3.5	6	11	31.75	SDC120	C75	25-005
125	3	3.8	14	32	SDC250	R100	25-012520
125	5	1	12	32	SDC200	R75	25-012518
125	5	2	12	32	SDC220	R75	25-012513
150	5	2	5	31.75	SDC325	R75	25-01523
150	5	3	7	31.75	SDC120	C75	25-0482
150	6	1.5	10.5	31.75	SDC240	R100	25-01515
150	6	2	8	31.75	SDC150	R75	25-01510
150	6	3	13	31.75	SDC150	R75	25-01509
150	6	3	18	31.75	SDC200	R100	25-0660
200	6.5	2	13	31.75	SDC230	R100	25-0222

D	W	X	T	H	Grit	Conc.	Stock Code
150	6	3	18	20	CBN B140	R100	25-0666
150	6	3	18	31.75	CBN B140	R100	25-0244

6A2



D	W	X	T	H	Grit	Conc.	Stock Code
125	5	10	20	32	SDC270	C125	25-01592
130	10	10	35	12	SDC230	C75	25-00230
150	15	10	40	11	SDC270	C75	25-270
150	15	10	40	11	SDC700	C75	25-700
150	3	8	16	31.75	SDC120	C75	25-01045
150	4	4	18	20	SDC200	R100	25-0444
200	6	8	30	50	SDC140	L75	9323

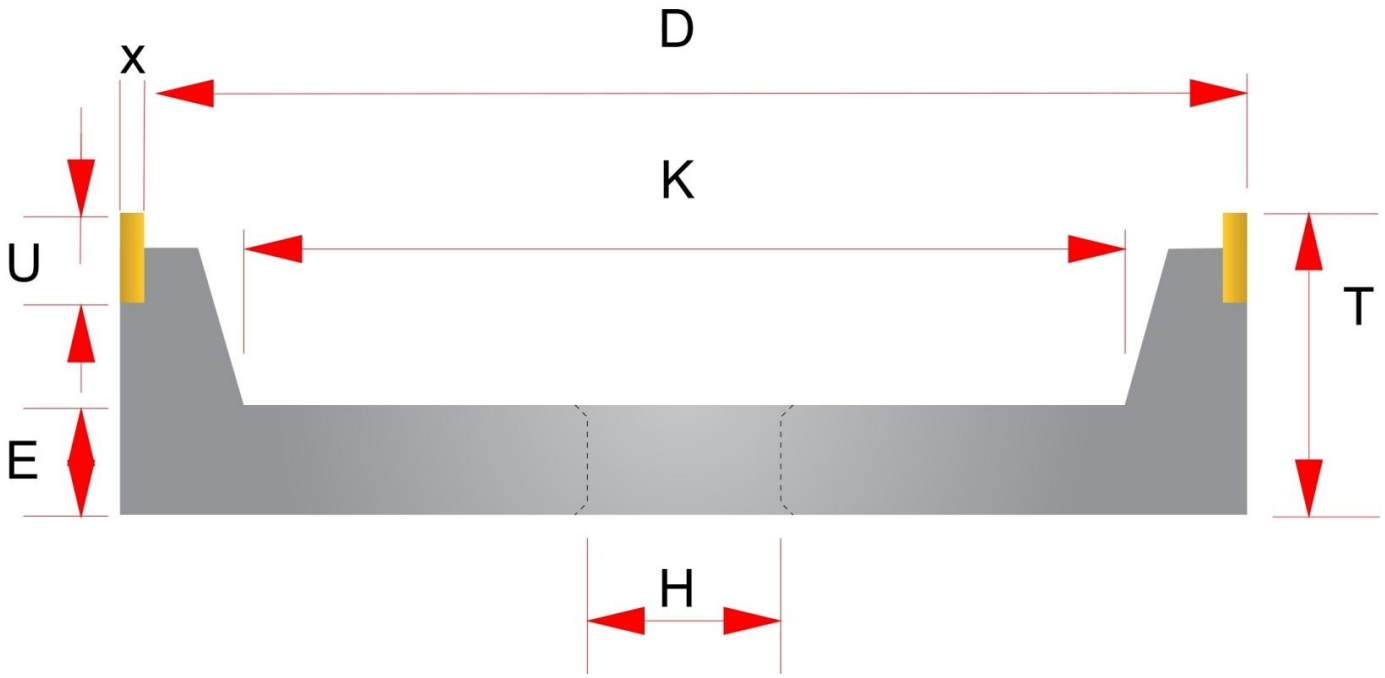
D	W	X	T	H	Grit	Conc.	Stock Code
100	4	9	36	20	CBN B140	R100	25-0119
125	6	6	40	31.75	CBN B170	R100	6598-1
200	6	8	30	50	CBN B60	N75	9326

6A2B (with bolt holes)

D	W	X	T	H	Grit	Conc.	Stock Code
125	4	9	18	20	SDC200	R100	9042

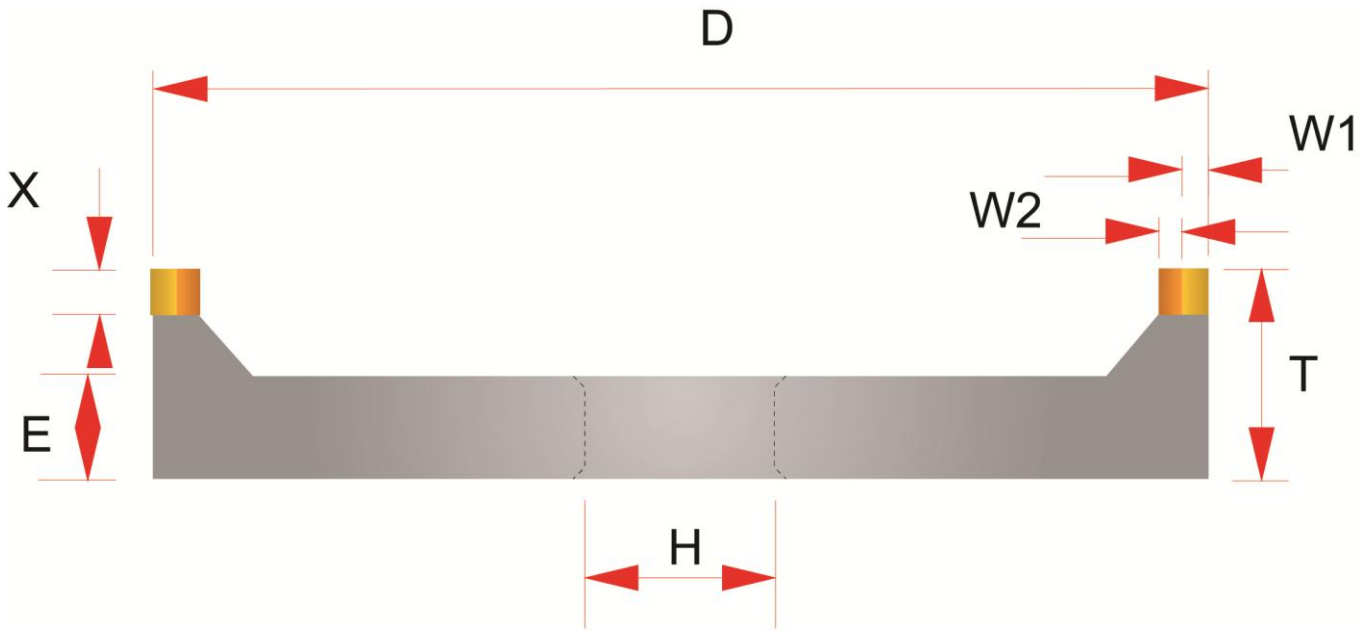
D	W	X	T	H	Grit	Conc.	Stock Code
125	4	9	18	20	CBN B140	N100	5720
125	4	9	18	20	CBN B80	R100	25-0289

6A9



D	U	X	T	H	Grit	Conc.	Stock Code
100	10	3.5	29	20	CBN B100	R100	25-05020

6VV9

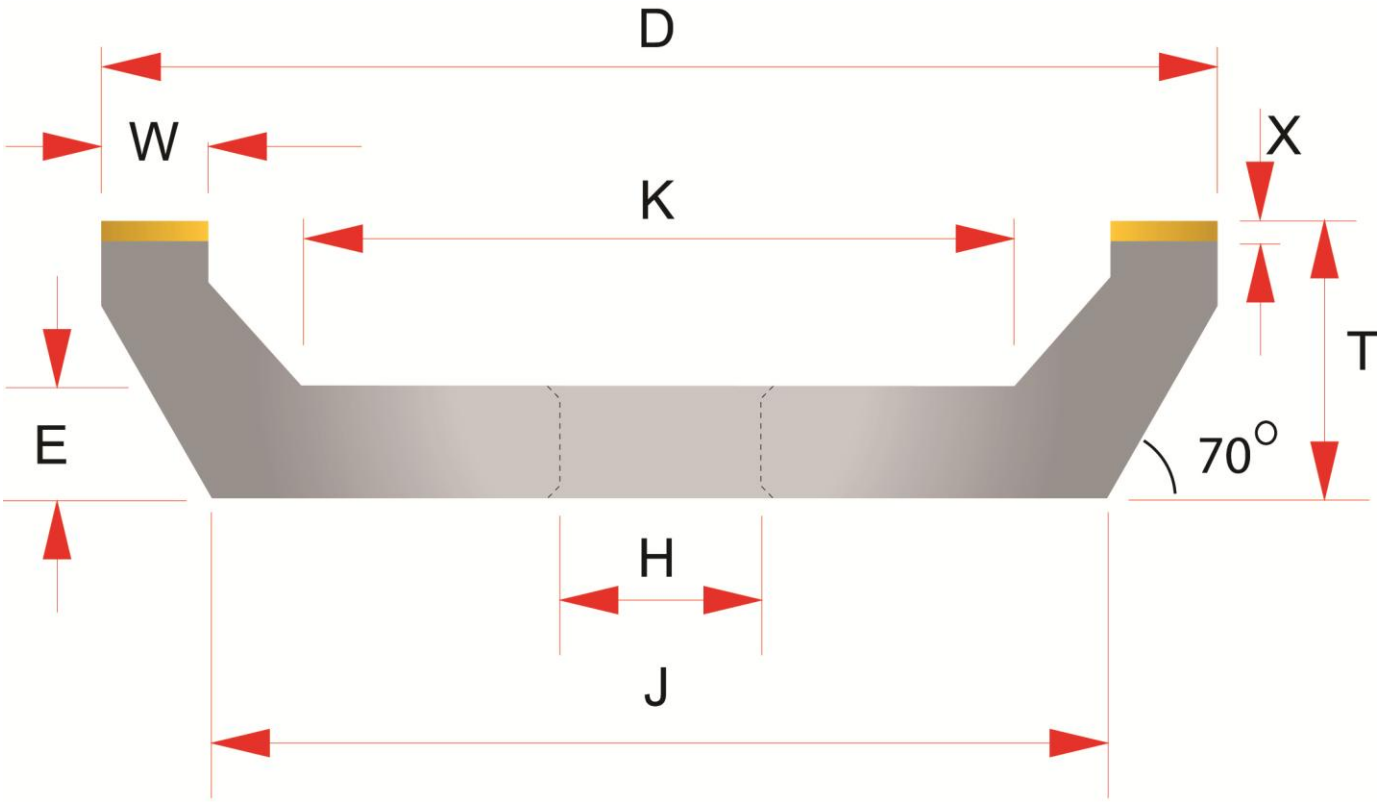


D	W1 + W2	X	T	H	Grit	Conc.	Stock Code
100	2.5+2.5	6	20	25(k)	SDC120/325	R100/75	1510
100	2.5+2.5	6	20	25(k)	SDC170/600	R100/75	1510-1
125	2.5+2.5	6	17	32	SDC120/325	R100/75	25-01258
125	2.5+2.5	10	20	32	SD200/400	C125/100	25-01050
125	2.5+2.5	10	20	32	SDC200/600	C125/100	25-01055

D	W1 + W2	X	T	H	Grit	Conc.	Stock Code
125	2.5+2.5	6	20	32	CBN B120/325	R100/75	25-01263

NOTE: (k) = Keyed

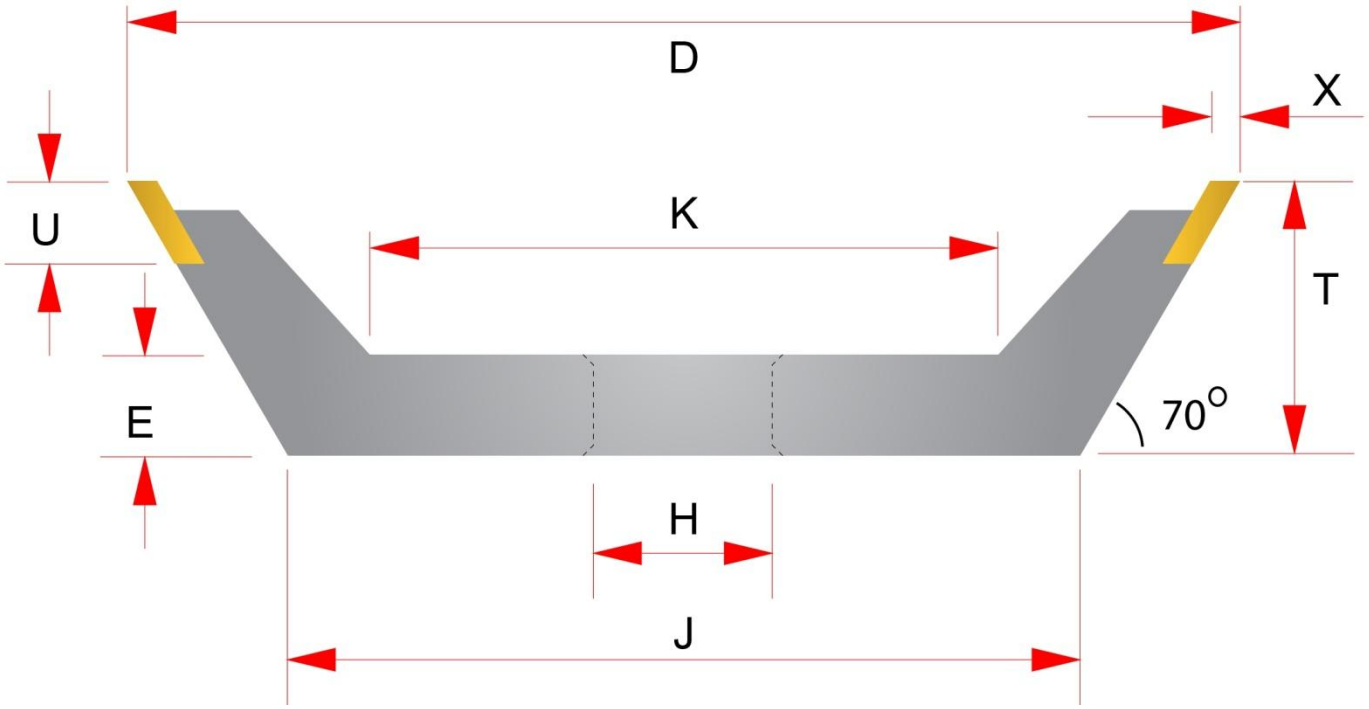
11A2



D	W	X	T	H	Grit	Conc.	Stock Code
100	10	3	40	31.75	SDC120	N75	8596

D	W	X	T	H	Grit	Conc.	Stock Code
150	6	5	45	31.75	CBN B60	N75	25-0272
150	6	6	45	31.75	CBN B120	R100	25-01560

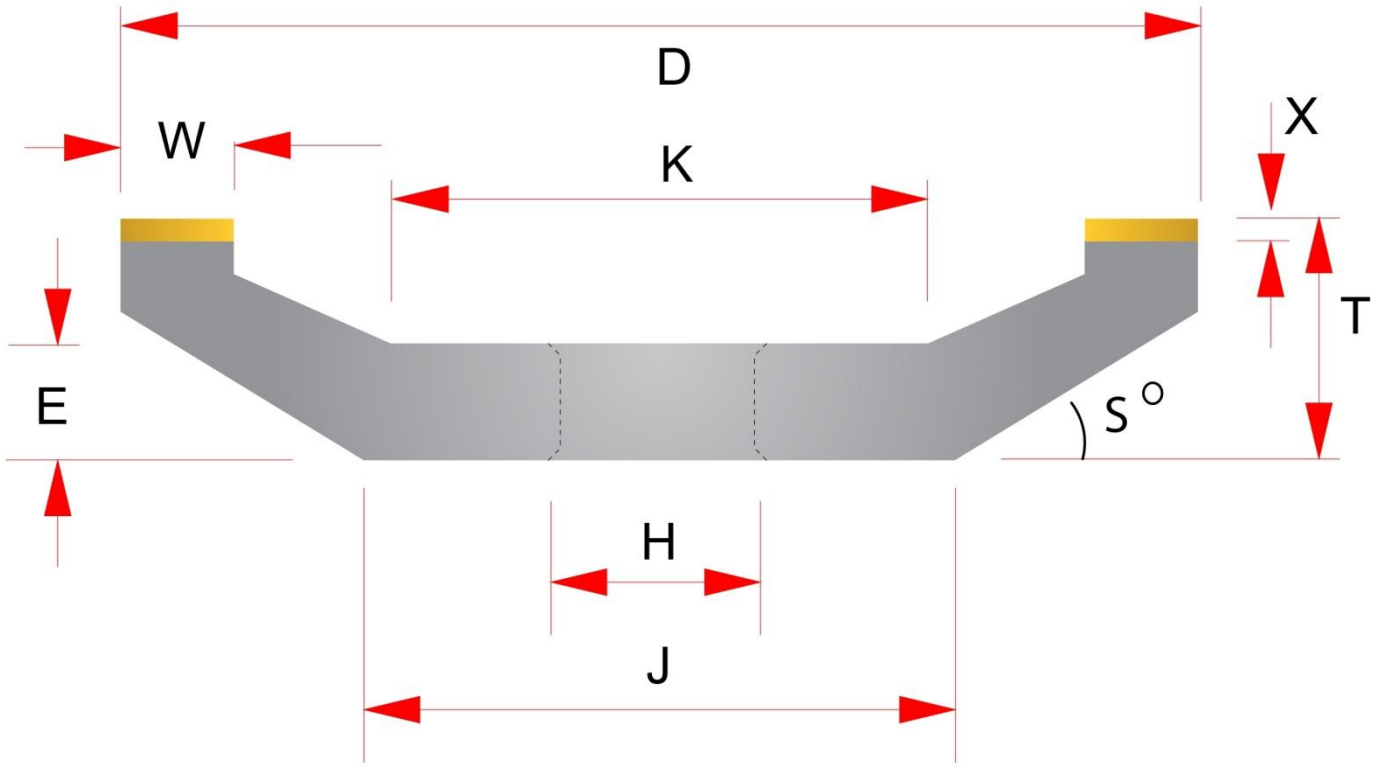
11V9



D	U	X	T	H	Grit	Conc.	Stock Code
50	6	1.5	25	14	SDC400	R100	25-0052
50	6	3	25	10	SDC120	R75	25-00502
75	10	3	30	31.75	SDC200	C75	25-0754
100	10	3	35	31.75	SDC120	C75	3082
100	10	3	35	31.75	SDC230	C75	3083
100	10	3	35	31.75	SDC325	R75	25-01037

D	U	X	T	H	Grit	Conc.	Stock Code
50	6	1.5	25	14	CBN B80	R75	25-0051
75	10	3	30	31.75	CBN B120	R75	25-759
100	10	2	35	31.75	CBN B230	R75	25-01027
100	10	3	40	31.75	CBN B120	N75	5000
125	10	3	40	31.75	CBN B60	R100	2244
150	12	5	50	31.75	CBN B60	N75	7311

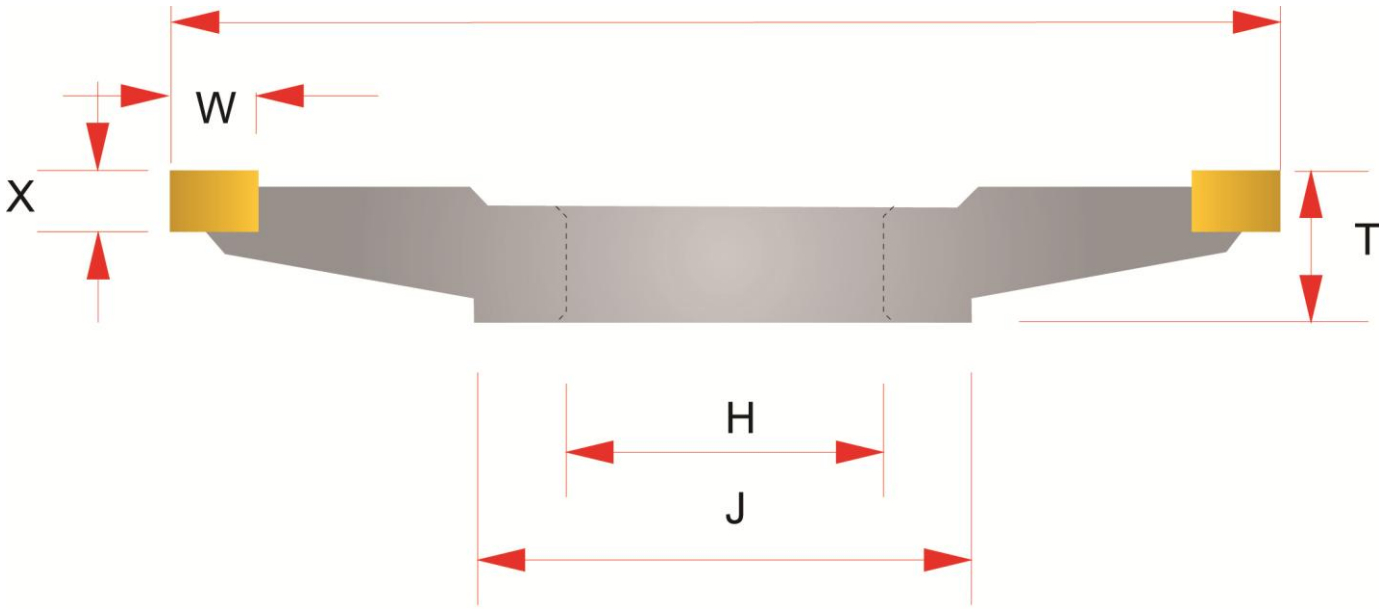
12A2



D	W	X	T	S	H	Grit	Conc.	Stock Code
100	6	2	12	20	31.75	SDC230	R100	25-0106
125	6	3	16	20	32	SDC220	R75	2832
125	6	6	18	20	32	SDC220	R75	7184
125	6	3	16	20	20	SDC140	R75	25-01251
125	6	3	16	20	31.75	SDC400	R100	2339
125	3	2	20	45	20	SDC250	N50	3461
150	6	3	18	20	31.75	SDC240	R75	9753
150	6	3	16	20	31.75	SDC120	R75	7612
150	6	3	16	20	31.75	SDC200	R100	25-0521
150	10	3	16	20	31.75	SDC170	R75	25-01556
175	6	3	19	20	31.75	SDC80	R100	8800
200	10	6	20	20	31.75	SDC120	C75	25-09010
250	10	6	20	20	31.75	SDC120	C75	25-09040

D	W	X	T	S	H	Grit	Conc.	Stock Code
100	6	3	30	45	32	CBN B170	C75	25-0143
150	6	3	18	20	31.75	CBN B120	R75	25-01533

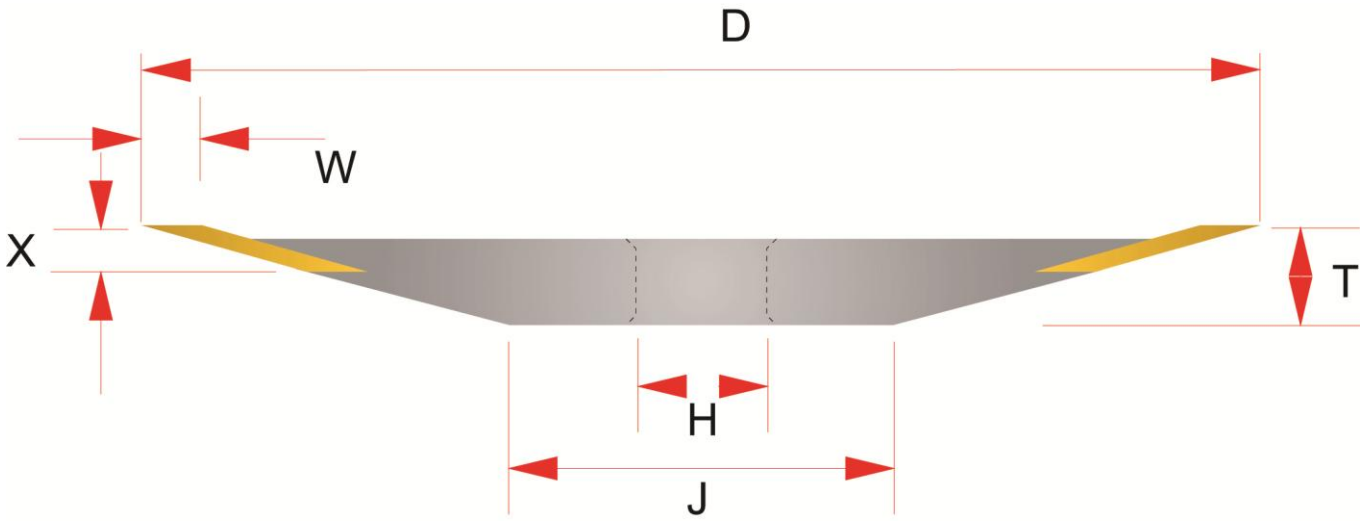
12B9



D	W	X	T	H	Grit	Conc.	Stock Code
100	6	4	14	20(k)	SDC200	R75	25-01008

D	W	X	T	H	Grit	Conc.	Stock Code
100	6	6	14	32	CBN B120	N100	25-01026

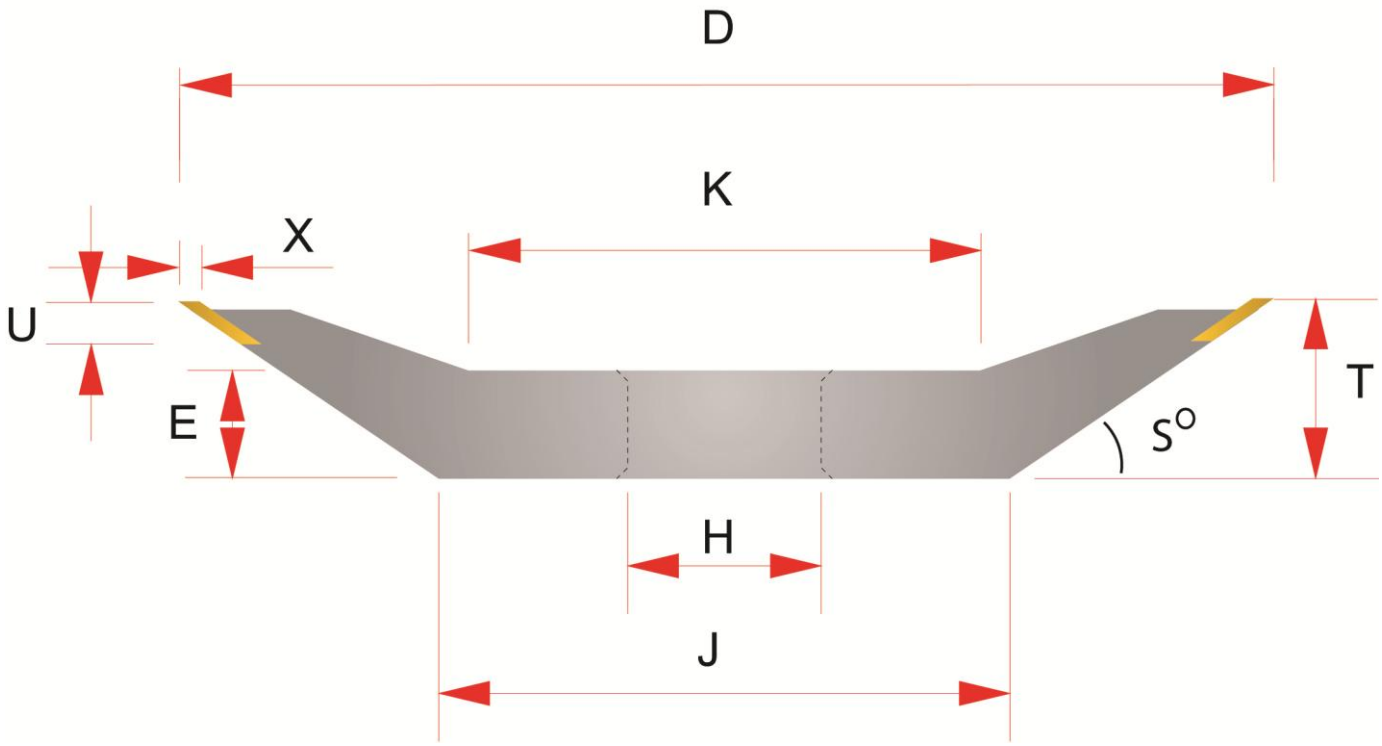
12V2



D	W	X	T	S	H	Grit	Conc.	Stock Code
100	6	4	13	20	25(k)	SDC325	C125	25-01210
125	2	5	12	20	32	SDC325	C125	25-01277
125	4	3	12	20	32	SDC325	N125	25-01257
150	4	2	14	30	32	SDC325	C125	25-01541
160	7	3	13	20	32	SDC325	R125	25-01280
175	4	2	13	20	32	SDC325	N125	25-0206
200	3	5.9	13	20	32	SDC200	C125	25-0204
200	4	5.9	13	20	32	SDC140	C125	25-0466

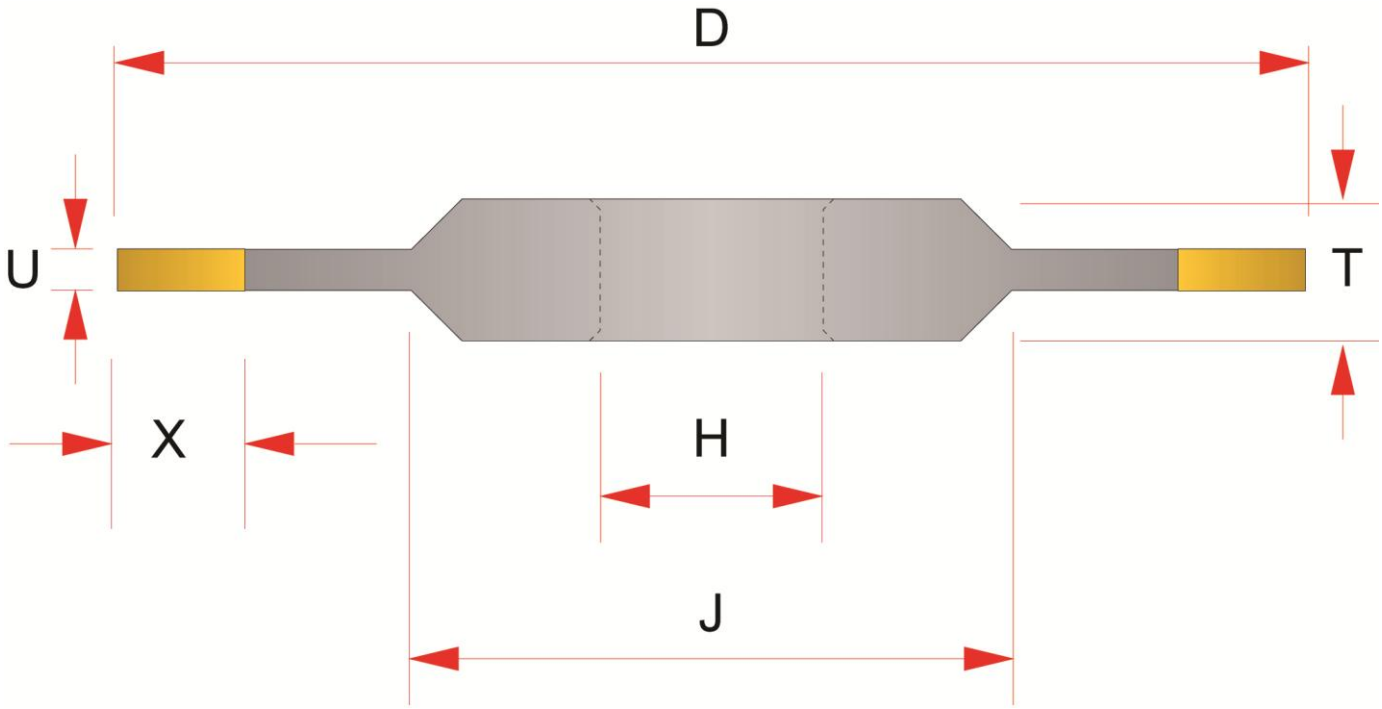
D	W	X	T	S	H	Grit	Conc.	Stock Code
200	4	2	13	20	32	CBN B200	R125	25-0203

12V9



D	U	X	T	S	H	Grit	Conc.	Stock Code
100	10	2	20	45	31.75	SDC230	R100	25-2033
100	10	3	20	45	31.75	SDC120	R100	25-0142
100	10	3	20	45	31.75	SDC325	R100	25-0102

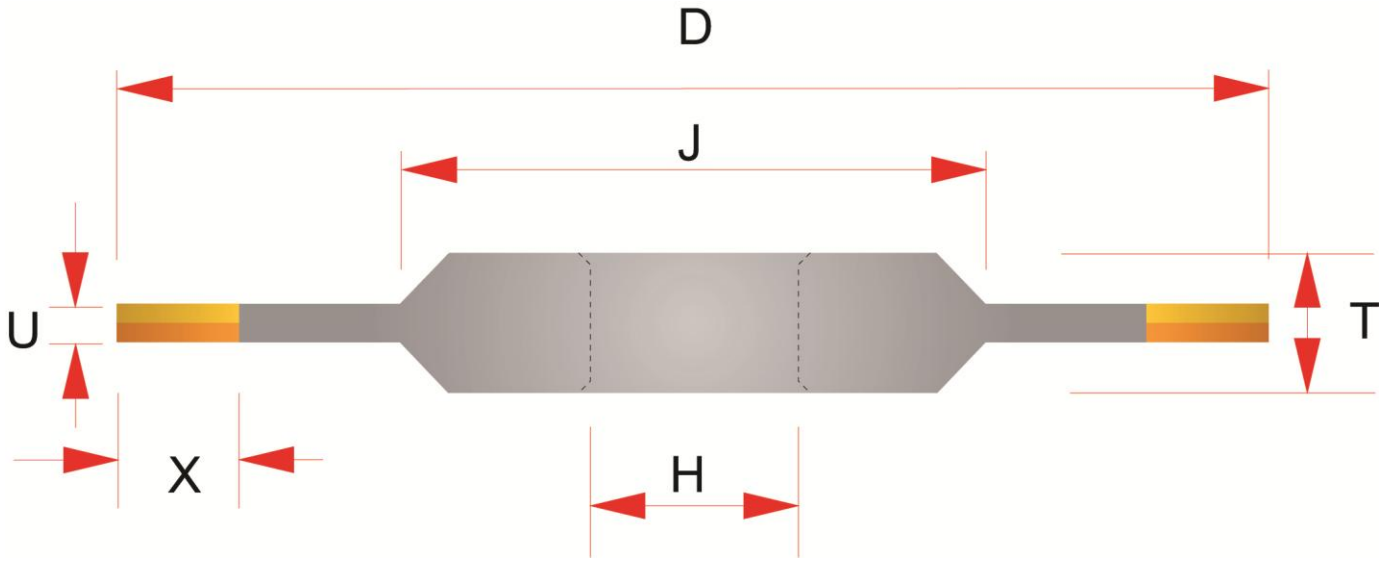
14A1



D	U	X	T	J	H	Grit	Conc.	Stock Code
200	2	6	10	140	20	SDC200	N100	7087
200	2	6	5	140	60	SDC140	R100	7090
200	3	6	5	160	60	SDC200	R100	25-0348
200	4	6	5	160	60	SDC200	R100	7089

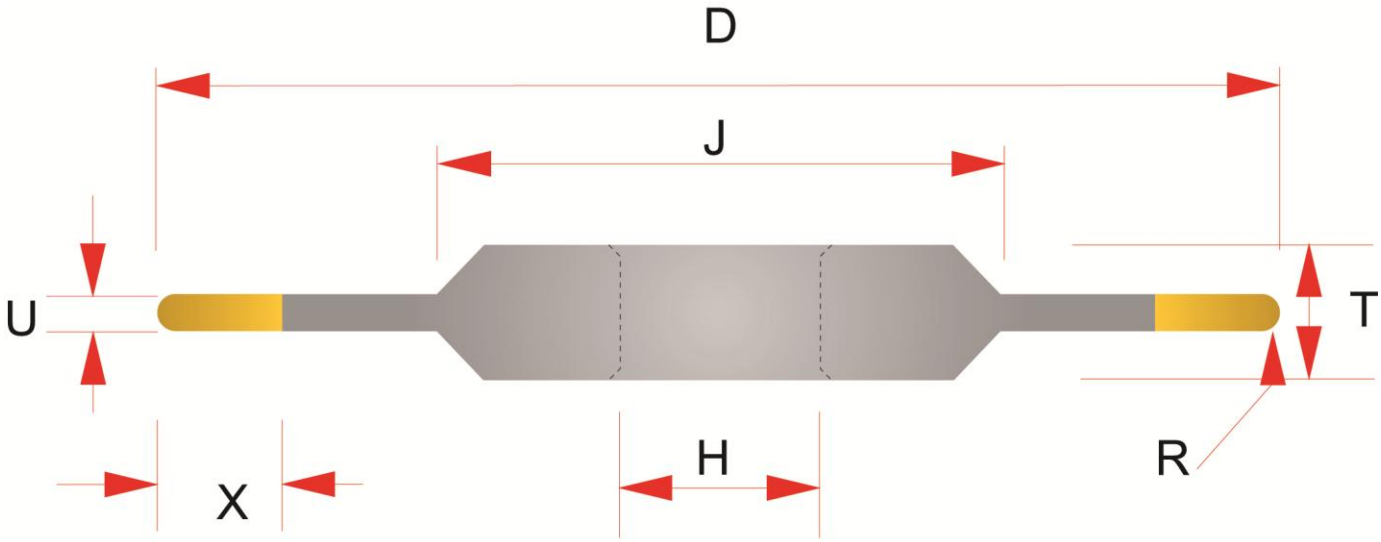
D	U	X	T	J	H	Grit	Conc.	Stock Code
200	3	6	5	160	60	CBN B140	R100	7131
200	4	6	5	160	60	CBN B140	R100	7092
200	4	6	5	150	31.75	CBN B140	R100	25-0214

14AA1



D	U	X	T	J	H	Grit	Conc.	Stock Code
125	2.5+2.5	8	10	95	32	SDC120/325	R125/100	25-012521
150	2.5+2.5	8	10	125	32	SDC140/325	R100/75	25-01250
200	2.5+2.5	10	10	170	32	SDC140/325	R100/100	25-01300

14F1



D	U	R	X	J	T	H	Grit	Conc.	Stock Code
200	1.5	0.75	5	170	8	60	SDC230	R100	25-02085
200	2	1	6	150	5	60	SDC60	R100	25-02010
200	2	1	6	160	5	31.75	SDC200	R100	25-0249
200	3	1.5	5	140	12	31.75	SDC400	N100	25-02039
200	3	1.5	6	150	5	60	SDC200	R100	25-0238
250	3	1.5	6	200	10	32	SDC120	R100	25-0257
200	4	2	6	150	5	60	SDC200	R100	25-0295

D	U	R	X	J	T	H	Grit	Conc.	Stock Code
150	1.5	0.75	6	125	8	32	CBN B80	R100	25-151
150	2	1	6	125	8	32	CBN B80	R100	25-162
150	2.5	1.25	6	125	8	32	CBN B80	R100	25-164
200	1.3	0.65	5	170	8	32	CBN B80	N125	25-02092
200	1.5	0.75	5	170	8	60	CBN B230	R100	25-02099
200	1.5	0.75	5	170	8	32	CBN B80	N125	25-02031
200	2	1	5	170	8	32	CBN B80	N125	25-02090
200	2	1	6	160	5	60	CBN B140	R100	25-0226
200	2	1	6	160	5	31.75	CBN B140	R100	25-0228
200	2.5	1.25	5	165	8	32	CBN B80	N125	25-02030
200	3	1.5	6	150	5	31.75	CBN B140	R100	25-0380
200	3	1.5	6	160	5	60	CBN B140	R100	25-0377
200	3	1.5	5	160	8	32	CBN B80	R125	25-02094
200	4	2	6	150	5	60	CBN B140	R100	25-0462

Diamond Dressing Tools

Asahi Diamond manufacture and supply a range of diamond dressers designed to meet the specific application demanded by industry.

Diamond dresser type, shape and size is determined by the type of grinding machine used and the properties of the grinding wheel selected.

Asahi technical staff are able to recommend which dresser is best suited for each specific application

Single Point Diamond Dressers

Asahi Diamond Single Point and Chisel Form Dressers have a carefully selected natural Diamond mounted firmly in the shank via sintering.

Standard Shank Dimensions:
12.7 dia x 150mm

Custom Shanks available upon request.

Diamond Grade	Carat	Stock Code
A	0.25	1014
A	0.50	1015
A	1.00	1017
A	1.50	954
A	2.00	951
AA	0.50	1019
AA	1.00	955

Chisel Form Diamond Dressers

The shape of an Asahi Diamond Chisel Form Dresser changes depending on the machine and application.

These Dressers have a wedge shape so that the corner of the Diamond does not touch the grinding wheel.

The sharper point Diamonds provide better forming and usually have a radius of 0.2mm. The blade has a negative angle to increase strength.

Custom specifications are available upon request.

Description	Specification	Stock Code
DF7 Chisel	40 degress x 0.125mm rad	953
DF7 Chisel	40 degrees x 0.250mm rad	1029
DF7 Chisel	40 degrees x 0.500mm rad	2016
DF7 Chisel	60 degrees x 0.125mm rad	952
DF7 Chisel	60 degrees x 0.250mm rad	1031
DF7 Chisel	60 degrees x 0.500mm rad	1032

Blade Type Diamond Dressers

Asahi Diamond Blade Type Dressers are used for dressing steps on conventional wheels of various sizes.

They are designed for use in line, step, radius and profile adjustment.

Wheel shape, dimensions and grit, determine which size dresser is approriate for each application.

Description	Specification	Stock Code
PBP-22-20	10W 1.5X 33L	8878-2
PBP-21-16	20W 1.5X 28L	998

Impregnated Diamond Dressers

Asahi Diamond Impregnated Dressers have Diamonds spread evenly in a metal binding material. Once the Diamonds are worn out, they are stripped and fresh, sharp Diamonds are exposed.

Compared with traditional Single Point Dressers, the multiple Diamonds continuously work evenly on the grinding wheel providing optimal grinding conditions.

Faster dressing feeds and dressing depths are achievable. Impregnated Dressers are economical and are a reliable choice of dressing tool.

Wheel Grain Size	Grit Symbol
54 grit and coarser	**C**
60 – 80 grit	**M**
90 grit and finer	**F**

Description	Diamond Section	Shank	Grit	Stock Code
BD130C	15 dia	11 dia x 50mm	C	20-110
BD130C	15 dia	9.53 dia x 50mm	C	966
PBP 1-16	6.35 x 19.05mm	11 dia x 25mm	C	999-1
PBP 1-16	6.35 x 19.05mm	12.7 dia x 100mm	C	999
PBP 1-16	6.35 x 19.05mm	Morse Taper 1	C	999MT1
PBP 2-16	4 x 9.5mm	12.7 dia x 50mm	C	7795
PBP 3-16	6.35 x 12.7mm	9.35 dia x 50mm	C	20-300
PBP 3-16	6.35 x 12.7mm	12.7 dia x 50mm	C	4801
PBP 3S-16	6.35 x 12.7mm (15 deg.)	11.11 dia x 38mm	C	CD0029
PBP 7-16	6.35 dia	8 dia x 50mm	C	1003
PBP 7-16	6.35 dia	12.7 dia x 50mm	C	1003A
PBP 7-20	6.35 dia	11.11 dia x 55mm	M	1004A
PBP 7-20	6.35 dia	12 dia x 30mm	M	1004
PBP 8-16	9.35 dia	9.53 dia x 50mm	C	963D
PBP 8-16	9.35 dia	11.11 dia x 60mm	C	963
PBP 8-16	9.35 dia	12.7 dia x 50mm	C	963A
PBP 8-20	9.53 dia	11.08 dia x 38mm	M	2083
PBP 8S-20	9.53 dia (15 deg.)	12 dia x 50mm	M	963E
PBP 9-20	4 dia	8 dia x 35mm	M	961
PBP 10-20	5 dia	11.11 dia x 25mm	M	3812
PBP 17	6.35 dia	11.11 dia x 25mm	*	1007

** used for truing resin bond CBN wheels*

Multipoint Diamond Dressers

Asahi Diamond Multipoint Dressers have several small Diamonds rigidly mounted in a pattern.

Longer tool life is obtained because several Diamond points are in contact with the wheel, reducing pressure on each point.

Multipoint Dressers are particularly suited for rough finishes used in conical grinding, inner-surface grinding, centre-less grinding. Finishing and dressing of convex surfaces and the side of grinding wheels.

Description	Specification	Stock Code
Multi Point DM 4	5 Diamonds x 3 Row	970

Handheld Dressers

Asahi Diamond Handheld Dressers are a simple way of dressing conventional grinding wheels.

Impregnated Handidressers provide a longer tool life by exposing fresh layers of Diamond as older worn Diamonds fall out.

Description	Stock Code
Impregnated Handidresser Light Duty	1043
Impregnated Handidresser Heavy Duty	1044
Electroplated T-Dresser	5156

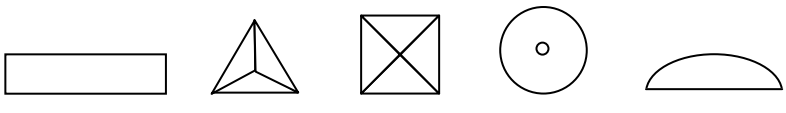
Electroplated Files

Asahi Diamond stocks a wide range of high quality Diamond and CBN electroplated engineers files.

These files can be used in the timber, injection molding, tool making and engineering industries as well as within the medical field. They are recommended for machining cemented carbide and hardened steel moulds.

- Standard fine grit files are 140mm long with 70mm electroplated Diamond section.
- Standard coarse files are 200mm long with 70mm electroplated Diamond section.

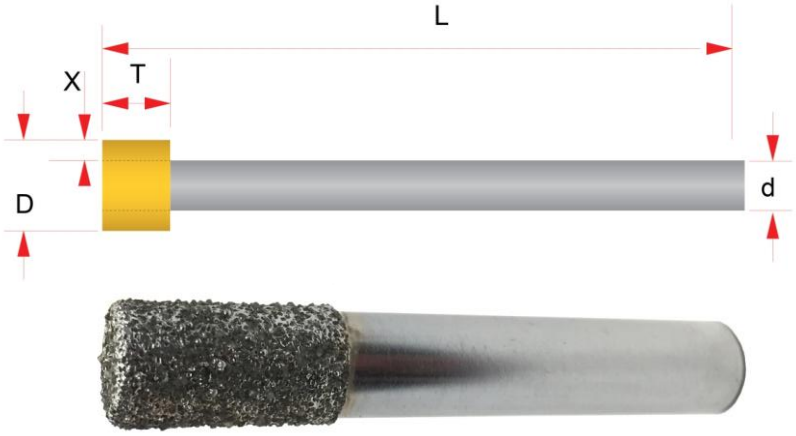
Diamond and CBN files are available in a five piece set.



When ordering CBN files please add ‘CBN’ to the end of stock code.

Description	Type	Mesh	Stock Code
NF-1	Flat	Fine D76	900
NF-4	Triangle	Fine D76	903
NF-5	Square	Fine D76	904
NF-6	Round	Fine D76	905
NF-7	Half Round	Fine D76	906
	5 Piece Set	Coarse	26-05

Internal Grinders



1A1W

Asahi Diamond Internal Grinders are used for small diameter machining with jig grinders and high speed grinders.

Diamond or CBN can be electroplated to any desired profile. This gives Internal Grinders a wide range of applications.

Metal bond and resin bond grinders are available upon request.

When ordering CBN Internal Grinders please add ‘CBN’ to end of stock code.

D (mm)	T (mm)	d (mm)	L (mm)	Mesh	Stock Code
1	4	3.175	50	150	21A06
1.5	4	3.175	50	150	21A10
2	4	3.175	50	150	21A14
2.5	4	3.175	50	150	21A18
3	4	3.175	50	150	21A22
3.5	4	3.175	50	150	21A26
4	4	3.175	50	150	21A30
4.5	4	3.175	50	150	21A34
5	4	3.175	50	150	21A38
5.5	8	6.35	75	100	21A40
6	8	6.35	75	100	21A42
7	8	6.35	75	100	21A46
8	8	6.35	75	100	21A50
9	8	6.35	75	100	21A54
10	8	6.35	75	100	21A58
12	8	6.35	75	100	21A62
15	8	6.35	75	100	21A66
20	8	6.35	75	100	21A68
25	8	6.35	75	100	21A70

Countersink Tools 90 deg

Asahi Diamond plated Countersinks are designed to countersink holes in materials such as glass, quartz, composites, graphite epoxy, carbon, boron, fiberglass, marble and other non-ferrous materials.

Diameter	Shank Type	Stock Code
30mm dia	Plain	7513
40mm dia	Plain	6380
50mm dia	Plain	7610
65mm dia	Plain	6728S
75mm dia	Plain	26-0075
30mm dia	Habit	26-0030
40mm dia	Habit	6380/H
50mm dia	Habit	6726
65mm dia	Habit	6728
75mm dia	Habit	26-0075H

Metal Bond Core Drills

Overall Length:	75mm
Barrel Length:	32mm
Wall Thickness:	1.0mm

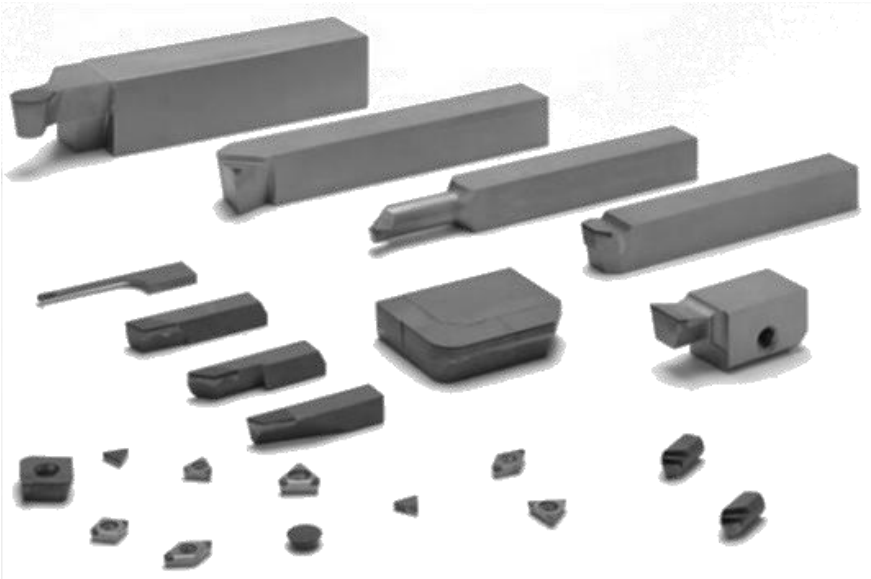
Metal Bond Core Drills are suitable for drilling glass, ceramics and natural stone.

All Metal Bond Drills are supplied standard with a Habit Shank. Euro Shank is available upon request.

Intermediate sizes from 3.0 to 110mm not listed below are also available.

Diameter	Shank Type	Stock Code
5	Habit	5415
10	Habit	5416
15	Habit	5406
20	Habit	5403
25	Habit	8404
30	Habit	5409
35	Habit	5410
40	Habit	4014
50	Habit	5411
60	Habit	9367
65	Habit	5405
70	Habit	5412
80	Habit	8673
90	Habit	5419
100	Habit	5445
110	Habit	5446

PCD and CBN Inserts and Tools



Asahi Diamond manufacture and stock a range of PCD and CBN (cubic boron nitride or Borazon) machining tools and inserts used in various manufacturing industries.

- PCD has high performance in machining abrasive non-metallic and non-ferrous materials.
- CBN is used to machine hardened steels, cast iron, powdered metals and super alloys.

With higher material removal rates, faster speeds and feeds and increased tool life, PCD and CBN products provide significant productivity and cost savings.

Description	Specification	Stock Code
Insert only	3mm cutting length	3886
Insert only	6mm cutting length	3887
Insert only	8mm cutting length	3891
Insert only	11mm cutting length	3898
Complete Tool	3mm cutting length	4536
Complete Tool	6mm cutting length	4539
Complete Tool	8mm cutting length	4596
Complete Tool	11mm cutting length	4864
PCD Button Insert	9.53 dia x 3.2mm	3170
PCD Button Insert	12.7 dia x 3.2mm	6217
CBN Button Insert	9.53 dia x 3.2mm no k-land	7775A
CBN Button Insert	9.53 dia x 3.2mm 20 deg x 0.2mm k-land	7775
CBN Button Insert	12.7 dia x 3.2mm 20 deg x 0.2mm k-land	6413
CBN Button Insert	12.7 dia x 3.2mm 20 deg x 0.5mm k-land	6052
CBN Square Insert	9.5mm 0.8R	9271

Diamond Lapping Compound

Premium ‘SS’ Range

Stock Code	Code	Mesh	Micron	Colour	Recommendation
66A06	SS-0.25H	100000	0 - 0.5	Grey	Ultra fine metallographic finish.
66A14	SS-1H	14000	0 - 2	Grey	Mirror finishes on tungsten carbide and hard steels.
66A20	SS-2H	11000	1 - 3	Pink	
6A24	SS-3H	8000	2 - 4	Yellow	Good fast polish on tungsten carbide and many final polishing operations but not fine enough to produce metallographic finishes.
66A28	SS-4H	6500	3 - 5	Yellow	
66A36	SS-6H	4000	2 - 6	Orange	
66A44	SS-8H	2300	6 - 10	Green	
66A46	SS-9H	1800	6 - 12	Green	Medium surface finish on tungsten carbide and pre-polishing or removing scratches on sapphire and ruby.
66A54	SS-15H	1200	10 - 20	Pale Blue	
66A62	SS-18H	1100	15 - 20	Dark Blue	Rapid stock removal, good surface finish on tungsten carbide and steels.
66A72	SS-25H	800	20 - 30	Red	
66A76	SS-30H	600	22 - 36	Red	Rapid stock removal on tungsten carbide and hardened steels.
66A92	SS-45H	450	40 - 50	Brown	
66A98	SS-60H	270	50 - 70	Purple	
66B08	SS-90H	230	75 - 110	Purple	Very rapid stock removal and roughing operations on tungsten carbide, hard steels and cermet.

- Available in 5 gram syringes.
- Water or oil soluble.
- All compounds supplied in HIGH CONCENTRATION.

Grinding Wheel Care and Practical Application

Please consider the following information when using Diamond and CBN Wheels.
Doing so will provide an environment for the best grinding performance
and service life of your Asahi wheel.

Wheel Mounting

After removing the previous wheel the mounting arbor or flange should be cleaned and checked to ensure that there are no burrs or score marks on any of the wheel bearing surfaces.

NOTE: Paper washers should never be used as packing materials.

Set the balancing weights on the arbor or flange to such a position that they are equidistant from each other.

Locate the wheel onto the arbor or flange and tighten the locknut sufficiently, allowing the wheel to move only when lightly tapped.

Using a dial indicator gauge and moving the wheel by hand, the periphery is gently tapped with a soft mallet or wooden block until minimum run-out is achieved. It should be possible to tap the wheel to within 0.01mm of running true.

Extreme care should be taken when tapping ceramic bonded wheels as they are by nature non resilient and are likely to fracture when subjected to physical shock.

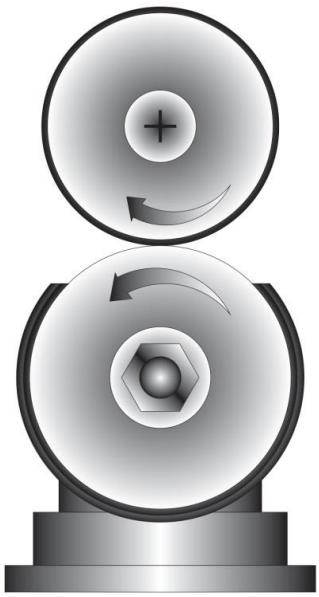
Tighten the locknut or bolts and clock the wheel again to check that it has not moved during tightening.

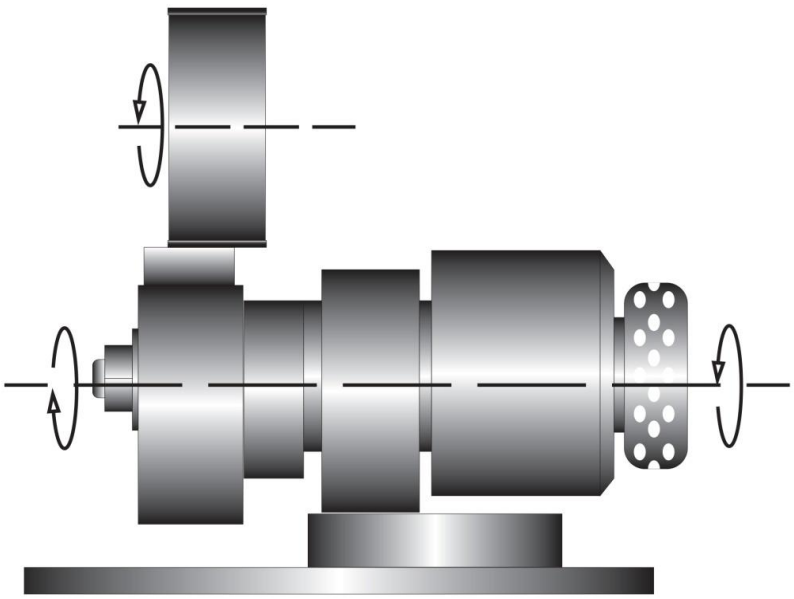
Truing and Dressing

Truing Diamond Wheels

The wheel is trued using a brake truing device as follows:

- The truing device is positioned so that the axis of its spindle is parallel to that of the machine bed or chuck, and directly beneath the Diamond wheel to be trued. (Fig 1).
- The device is then passed across the wheel face using the cross feed. This is repeated and the Diamond wheel bought down onto the truing wheel in increments of 0.01mm applied at each side of the wheel. (Fig 2).
- This process ensures that the Diamond wheel will be correctly trued with minimum wastage of time and Diamond.
- Once running perfectly true, wheels should then be balanced on its arbor or flanges either statically or dynamically.
- It is important to note that it is far more economical to true with a proper truing device than to let the wheel run-in.
- If the measured run-out of the wheel is 0.01mm it is only necessary to remove that amount to achieve running truth. However, to let the wheel run-in it may remove 10x that amount and still not be running true or in balance.
- If the wheel is resin bonded it is now ready for work. Ceramic and metal bonded wheels further require dressing to enable the wheel to operate at maximum efficiency.





Truing CBN Wheels

Resin bonded CBN Wheels are trued using a Diamond dresser (PBP-17 type, S/C 1007) as follows:

- The Dresser is held in a conventional holder and must be set on the centre line of the wheel.
- Approx 0.015mm deep light cuts are taken across the face, until face is trued right across.
- If the face of the trued wheel is glazed up and won't grind efficiently you must dress the wheel in order to expose the CBN particles.
- Metal bonded Wheels must be trued using a brake truing device with a silicon carbide wheel. Follow the same process as described for truing Diamond Wheels.

Dressing Diamond and CBN Wheels

Use a grade A80-GV aluminum oxide stick (S/C 9652).

For best practice, the stick should be held mechanically and fed into the wheel. Care should be taken that the dressing action is evenly applied over the full face of the wheel.

If the dressing stick is held by hand it will follow the contours of the wheel. As there are invariably differences in bond hardness round the periphery of the wheel, the stick will tend to remove material preferentially promoting run-out. Even a balanced wheel may run out of true if the dressing stick is held by hand.

The wheel is now ready for grinding.

In some cases dressing may be necessary to remove build up of braze or steel from the surface of the wheel during its life.

Storage

Diamond and CBN Wheels should be carefully stored in their own box or kept on their own arbor.

Machine

Machines should be rigid, well maintained and free of vibration.

Particular attention should be given to the running truth of the spindle and the condition of the spindle bearings.

Cutting Fluids

Diamond and CBN Wheels perform best when wet. Coolant measurably increases tool life, surface finish and grinding ability.

Pure oil is the best coolant; however, if not available water soluble oil can also be used.

Supplying coolant directly to the exact grinding point is most effective.

Wheels which are to be used without coolant require a bond composition specific for dry grinding. This bond can be recommended by Asahi technical engineering staff.

Speeds

Peripheral grinding speeds vary according to the working condition - Speeds greatly influence performance.

It is impossible to provide peripheral speeds for every conceivable circumstance, however, Asahi recommends the following general guidelines:

	Diamond		CBN	
Bond	Wet	Dry	Wet	Dry
Resin	17 – 30 m/sec	12 – 17 m/sec	25 – 40 m/sec	13 – 25 m/sec
Metal	12 – 18 m/sec	9 – 12 m/sec	13 – 25 m/sec	

Speed Chart

Wheel Speed Conversion Chart (RPM)

Diameter (mm)	Diameter (in.)	22.9 M/S (4,500 s.f.p.m) RPM	25.4 M/S (5,000 s.f.p.m) RPM	28.0 M/S (5,500 s.f.p.m) RPM	30.5 M/S (6,000 s.f.p.m) RPM
25.4	1	17,189	19,098	21,008	22,918
50.8	2	8,594	9,549	10,504	11,459
76.2	3	5,729	6,366	7,003	7,639
101.6	4	4,297	4,775	5,252	5,729
127	5	3,438	3,820	4,202	4,584
152.4	6	2,865	3,183	3,501	3,820
177.8	7	2,455	2,728	3,001	3,274
203.2	8	2,148	2,387	2,626	2,865
254	10	1,719	1,910	2,101	2,292
304.8	12	1,432	1,591	1,751	1,910
355.6	14	1,228	1,364	1,500	1,637
406.4	16	1,074	1,194	1,313	1,432
457.2	18	955	1,061	1,167	1,273
408	20	859	955	1,050	1,146
558.8	22	781	868	955	1,042
609.6	24	716	796	875	955

Diameter (mm)	Diameter (in.)	33.0 M/S (6,500 s.f.p.m) RPM	35.6 M/S (7,000 s.f.p.m) RPM	38.1 M/S (7,500 s.f.p.m) RPM	40.6 M/S (8,000 s.f.p.m) RPM
25.4	1	24,828	26,737	28,647	30,558
50.8	2	12,414	13,368	14,328	15,278
76.5	3	8,276	8,913	9,549	10,186
101.6	4	6,207	6,685	7,162	7,640
127.0	5	4,966	5,348	5,730	6,112
152.4	6	4,138	4,456	4,775	5,092
177.8	7	3,547	3,820	4,092	4,366
203.2	8	3,103	3,342	3,580	3,820
254	10	2,483	2,674	2,865	3,056
304.8	12	2,069	2,228	2,386	2,546
355.6	14	1,773	1,910	2,046	2,182
406.4	16	1,552	1,672	1,791	1,910
457.2	18	1,379	1,485	1,591	1,698
508.2	20	1,241	1,337	1,432	1,528
558.8	22	1,128	1,215	1,302	1,388
609.6	24	1,034	1,115	1,194	1,274

Wheel Enquiry Form

Company General Info	
Name	
Product	

Machine	
Type	
Make	
Model	

Grinding Condition	
Grinding mode	Automatic / Hand
Coolant	
Rpm	
Peripheral speed	
Feed rate	
Depth of cut	mm / pass
Total stock removal	
Dressing tool	

Work Piece	
Application	
Material	
Hardness	
Size / shape	
Surface finish	
Accuracy	

Current Tool	
Supplier	
Shape	
Size	
Bond	Resin/Metal/Electroplated/Vitrified
Spec	
Usage / method	
Unit price	
Issue	
Tool life	
Surface finish	
Accuracy	

Comments

Sketch

Notes…