

Precision Cutting Tools

Asahi Diamond is a World-wide Brand

Digital equipment keeps improving day by day, increasing the importance of precision grinding/cutting technologies as a key element of the production process.

With continued miniaturization while increasing capacity of the PC and wireless devices, they have become an essential house hold appliance. Due to the increased awareness of conservation and the use of alternative clean energies, the use of solar energy is very popular, increasing the demands for larger panels and efficient methods of manufacture.

Many different materials are advancing various applications and spurring on the technological innovation of the many types of materials suited for new applications, such as silicon for semiconductor chips, sapphire for Blue LED devices. Sapphire is the single-crystal form of aluminum oxide. The best solution for cutting or grinding sapphire with a Mohs hardness of 9.0, are diamond tools. Amazing advancements in technology are dramatically changing our lives. Diamond tools are used for cutting and grinding miniaturized and ultra-precision parts in new materials developed for these advancements to take place.

As a leading diamond tool manufacturer, Asahi Diamond Industrial Co., LTD. provides the best solution for all types of precision cutting and grinding applications, by using our vast expertise and experience in supplying diamond products to the worldwide market.



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Sintered blades

Metal bond (AD-2U)

Metal bond blades, using sintered metal powder as the bonding agent, have the excellent ability to hold its shape for a longer period of time and increase the life of the blade.

Standard metal bond

(Bond label: M303, MST)

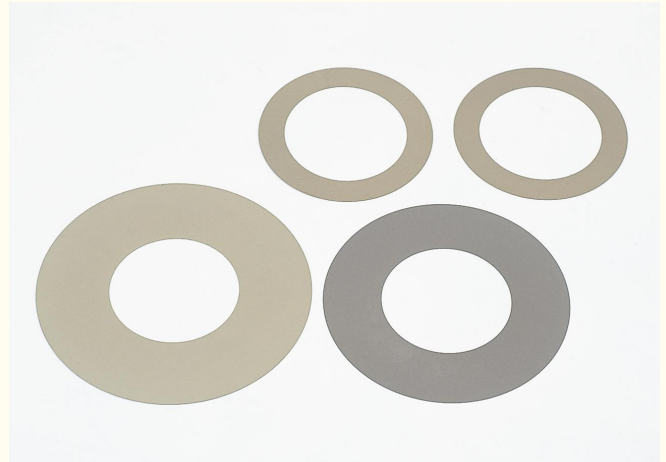
Standard metal bond blades are used for high precision grooving/cutting of materials such as; semiconductor packages, glass, ceramics, and magnetic materials used in the hard drive industry.

High rigidity metal bond

(Bond label: TC, TCR)

High rigidity metal bond blades cut equivalent to electroformed nickel blades. This makes them excellent for holding their shape when precision dicing is required.

Applications: Package cutting, profiled contouring etc.



High elasticity metal bond

(Name: SUNNOVEL, Bond label: ML)

High elasticity metal bond blades combine the strength of a metal bond with the cutting performance of a resin bond blade.

Applications: Quartz, crystal, LT, LN, sapphire, etc.

Specifications and sizes

Specification code

SD 600 L 75 MST

- SD: Abrasive grain type
- 600: Grit size (Mesh)
- L: Bonding hardness
- 75: Concentration
- MST: Bond name

54D-0.2T-40H 16-ST 1W 1L

- 54D: Outer diameter
- 0.2T: Blade thickness
- 40H: Inner diameter
- 16-ST: Slit width
- 1W: Slit depth
- 1L: Number of slits

Abrasive grain type

SD	DIAMOND
B	CBN

Concentration

25	Low ↑ ↓ High
50	
75	
100	
125	

Bonding hardness

J	Soft ↑ ↓ Hard
L	
N	
P	
R	
S	

Grit size (Mesh)

6000	1-2 μm
4000	2-4 μm
3000	2-6 μm
2500	4-6 μm
2000	4-8 μm
1500	5-10 μm
1200	8-16 μm
1000	10-20 μm
800	15-25 μm
600	20-30 μm
500	30-40 μm
400	40-60 μm
325	#325/400
270	#270/325
230	#230/270
200	#200/230
170	#170/200

Bond name

Standard	
M303	MR303
MST	MRST
MS2	MRS2
MS4	MRS4
High rigidity type	
TC30	TCR30
High elasticity type	
ML520	ML520R

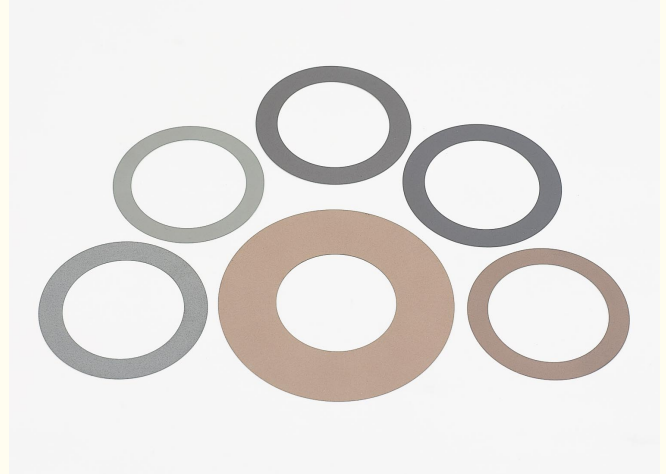
		Outer diameter (mm)			Grit size (Mesh) / tolerance of blade thickness			
		49-77	78-105	106-110	800-6000	400-600	270-325	170
					T±0.005	T±0.01	T±0.015	T±0.02
Blade thickness (μm)	75	●			●			
	100	●			●			
	150	●			●	●		
	250	●			●	●	●	
	300	●	●		●	●	●	●
	500	●	●	●	●	●	●	●

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Resin bond (AD-2U, AD-2J)

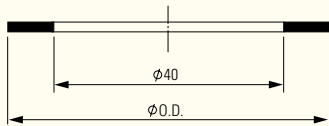
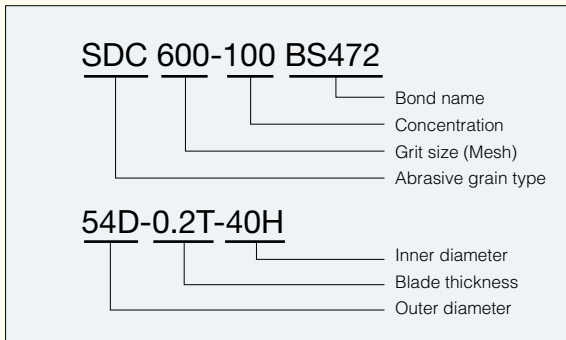
Resin bonded blades have excellent cutting ability that help reduce chipping, fractures, and achieve smooth surface finish. Various bond types and controlled diamond concentration make resin bond blades suited for dicing of hard, fragile material.

Applications: Crystal, ceramics, glass, etc.



Specifications and sizes

Specification code



Abrasive grain type

SD	Diamond
SDC	Coating diamond
B	CBN
BC	Coating CBN

Concentration

50	Low ↑ ↓ High
75	
100	
125	

Grit size (Mesh)

6000	1-2 μm
4000	2-4 μm
3000	2-6 μm
2500	4-6 μm
2000	4-8 μm
1500	5-10 μm
1200	8-16 μm
1000	10-20 μm
800	15-25 μm
600	20-30 μm
500	30-40 μm
400	40-60 μm
325	#325/400
270	#270/325
230	#230/270
200	#200/230
170	#170/200

Bond name

B382	BSJ5
B38	BS472
BJ5	BSG47
BG2	BS662
BGM2	BS66
B472	BSAT
BG47	
B662	
B66	
BAT	
BN31	
B1484	

		Outer diameter (mm)				Grit size (Mesh) / tolerance of blade thickness				
		49-56	57-62	63-80	81-110	800-6000	500-600	325-400	230-270	170-200
						T±0.005	T±0.005	T±0.01	T±0.01	T±0.01
Blade thickness (μm)	50	●				●				
	75	●				●				
	100	●				●	●			
	150	●				●	●	●		
	200	●				●	●	●	●	
	250	●				●	●	●	●	●
	300	●				●	●	●	●	●
	400	●				●	●	●	●	●
	500	●				●	●	●	●	●
	1000	●				●	●	●	●	●
2000	●				●	●	●	●	●	

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Electroforming blades

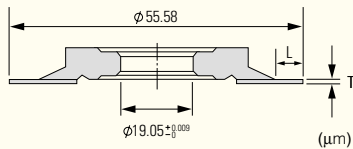
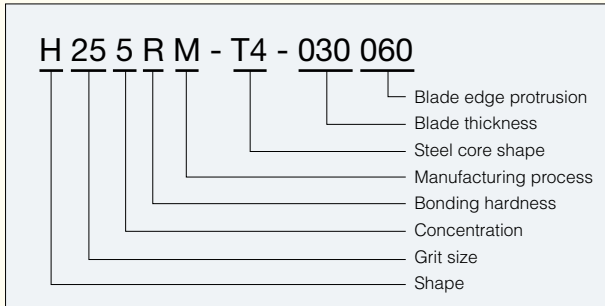
Hub type (AD-2H)

Hub type nickel plated blades were developed for dicing of silicon wafers, and compound semiconductor wafers such as GaAs and SiC. The aluminum hub allows for easy handling of ultra thin blades. A wide variety of standard and custom specifications are available for tough applications such as cutting ultra-thin wafers, as well as wafers with metals in the street.



Specifications and sizes

Specification code



Shape

H	Standard
I	With slits

Concentration

3	Low
5	Standard
7	High

Bonding hardness

J	Soft
N	Standard
R	Hard

Grit size (mesh and μm)

60	6000	0.5-3
50	5000	1-3
40	4000	2-4
35	3500	2-5
33	3300	3-5
30	3000	2-6
27	2700	3-6
25	2500	4-6
23	2300	3-8
20	2000	4-8
18	1800	6-8
15	1500	5-12
12	1200	8-16

Core shape

T3	Standard
T4	For high peripheral speed

Manufacturing process

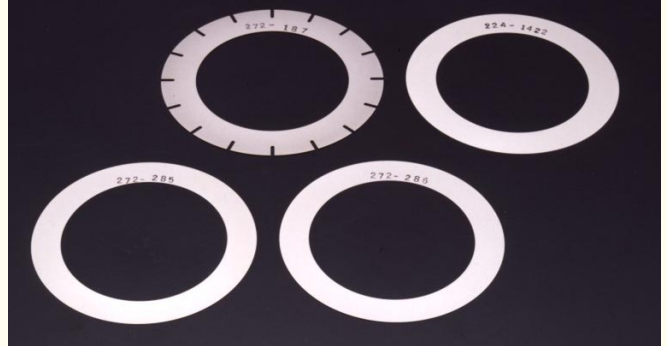
M
N
S
P
V

			Blade edge protrusion (X10 μm)																			
			030	040	050	060	070	080	090	100	110	120	130									
			± 50																			
Blade thickness (μm)	15	± 2	015030	015040	015050																	
	20		020030	020040	020050	020060	020070															
	25		025030	025040	025050	025060	025070	025080														
	30		030030	030040	030050	030060	030070	030080	030090													
	35		035030	035040	035050	035060	035070	035080	035090	035100												
	40			040040	040050	040060	040070	040080	040090	040100	040110											
	45				045050	045060	045070	045080	045090	045100	045110	045120										
	50				050050	050060	050070	050080	050090	050100	050110	050120										
	55					055060	055070	055080	055090	055100	055110	055120										
	60					060060	060070	060080	060090	060100	060110	060120	60130									
	65				065060	065070	065080	065090	065100	065110	065120	65130										
	70				075060	075070	075080	075090	075100	075110	075120	70130										
	75					075070	075080	075090	075100	075110	075120	75130										
	80					080070	080080	080090	080100	080110	080120	80130										
	85					085070	085080	085090	085100	085110	085120	85130										
	90					090070	090080	090090	090100	090110	090120	90130										
	95					095070	095080	095090	095100	095110	095120	95130										
	100		± 5					100080	100090	100100	100110	100120	100130									
	105							105080	105090	105100	105110	105120	105130									
	110							110080	110090	110100	110110	110120	110130									
115							115080	115090	115100	115110	115120	115130										
120							120080	120090	120100	120110	120120	120130										
125							125080	125090	125100	125110	125120	125130										
130							130080	130090	130100	130110	130120	130130										
135							135080	135090	135100	135110	135120	135130										
140							140080	140090	140100	140110	140120	140130										
145							145080	145090	145100	145110	145120	145130										
150						150080	150090	150100	150110	150120	150130											

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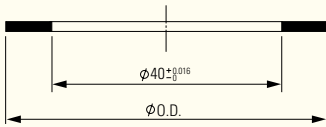
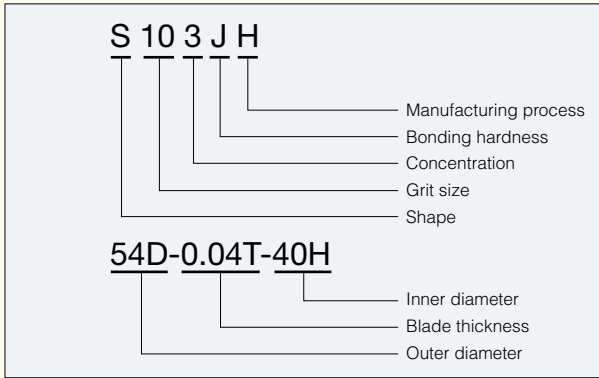
Ring type I (AD-2U)

Ring type I blades are suitable for various cutting and grooving applications, such as silicon wafers, compound semiconductor wafers, etc. Nickel plating is the bonding material and with the proper diamond size, blades as thin as 15µm in thickness are available. The various specifications available, make it possible to choose the best blade for your requirements.



Specifications and sizes

Specification code



Shape

S	Standard
T	With slits

Concentration

3	Low
5	Standard
7	High

Bonding hardness

A	Very soft
J	Soft
N	Standard
R	Hard

Grit size (mesh and µm)

60	6000	0.5-3
50	5000	1-3
40	4000	2-4
35	3500	2-5
33	3300	3-5
30	3000	2-6
27	2700	3-6
25	2500	4-6
23	2300	3-8
20	2000	4-8
18	1800	6-8
15	1500	5-12
12	1200	8-16
10	1000	10-20
08	800	12-25
07	700	15-25
06	600	20-30

Manufacturing process

F
G
H

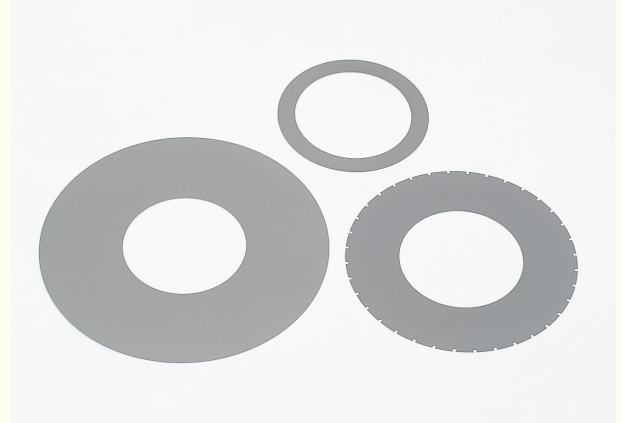
		Outer diameter (mm)			Grit size										
		49-58	70-77.8	90-110	20 60	18	15	12	10	08	07	06			
Blade thickness (µm)	15	±2				●									
	20					●									
	25					●	●								
	30					●	●	●							
	35					●	●	●	●						
	40					●	●	●	●						
	45					●	●	●	●						
	50					●	●	●	●	●					
	55					●	●	●	●	●					
	60					●	●	●	●	●					
	65				●	●	●	●	●	●					
	70				●	●	●	●	●	●	●				
	75				●	●	●	●	●	●	●				
	80				●	●	●	●	●	●	●	●			
	85				●	●	●	●	●	●	●	●	●		
	90				●	●	●	●	●	●	●	●	●	●	
	95				●	●	●	●	●	●	●	●	●	●	
	100				●	●	●	●	●	●	●	●	●	●	
	105				●	●	●	●	●	●	●	●	●	●	
	110				●	●	●	●	●	●	●	●	●	●	
115				●	●	●	●	●	●	●	●	●	●		
120				●	●	●	●	●	●	●	●	●	●		
125				●	●	●	●	●	●	●	●	●	●		
130				●	●	●	●	●	●	●	●	●	●		
135				●	●	●	●	●	●	●	●	●	●		
140				●	●	●	●	●	●	●	●	●	●		
145				●	●	●	●	●	●	●	●	●	●		
150				●	●	●	●	●	●	●	●	●	●		

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Electroforming blades

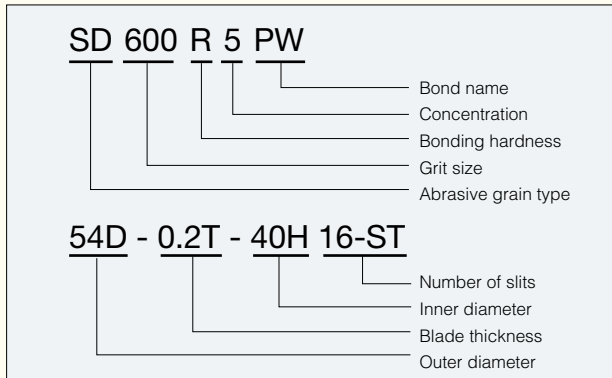
Ring type II (AD-2G)

Ring type II blades are available when a blade thicker than 100µm, and larger diamond sizes are required. These nickel bond blades are more rigid and durable than metal bond blades. Suitable for cutting and grooving of ceramics, semiconductor packages, and other hard or brittle materials.



Specifications and sizes

Specification code



Abrasive grain type

SD	DIAMOND
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Concentration

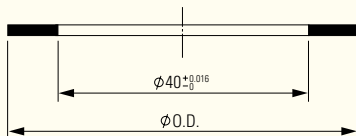
5	Standard
---	----------

Bonding hardness and bond name

N	PS (Soft)
R	PW (Standard)

Grit size (µm)

6000	0.5-3
5000	1-3
4000	2-4
3000	2-6
2500	4-6
2000	4-8
1500	5-12
1200	8-16
1000	10-20
800	12-25
600	20-30
500	30-40
400	40-60
325	40-80

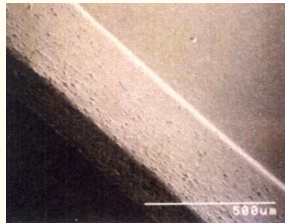


			Grit size				
			800 6000	600	500	400	325
Blade thickness (µm)	100	± 3 ~ 5	●				
	110		●				
	120		●				
	130		●				
	140		●				
	150		●				
	160		●	●			
	170		●	●			
	180		●	●			
	190		●	●			
	200		●	●	●		
	210		●	●	●		
	220		●	●	●		
	230		●	●	●		
	240		●	●	●		
	250		●	●	●	●	
	500		●	●	●	●	●
Outer diameter (mm)	49-60						
	61-80						
	81-110						

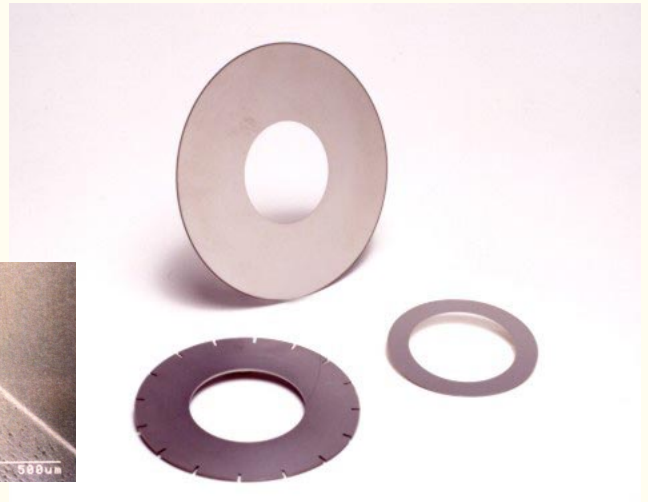
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With steel core type (SUNMIGHTY) (AD-2H)

The SUNMIGHTY blades have a high tensile strength stainless steel core with nickel bonded diamonds on the outside edge. The recess between the core and abrasive layer help to improve coolant flow, and easy removal of the particles generated during dicing. This achieves reduced blade wear to the side of the cutting edge. Excellent for applications where tight final die size tolerance is required. Suitable for cutting and grooving of ceramics, and semiconductor packages.

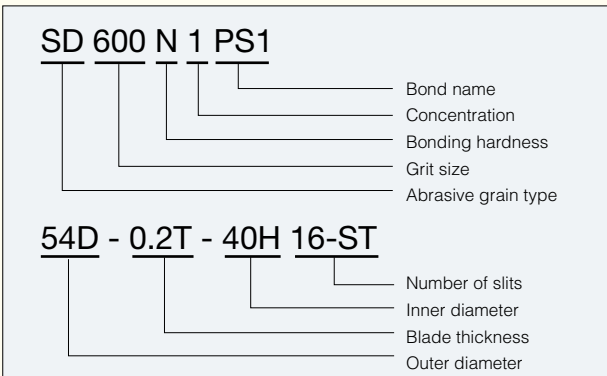


Close up of blade edge



Specifications and sizes

Specification code



Abrasive grain type

SD	DIAMOND
----	---------

Concentration

1	Low
3	Standard

Bonding hardness

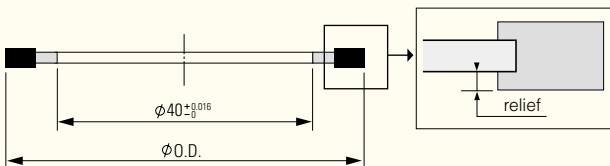
L	Soft
N	Standard

Grit size (μm)

1500	5-12
1200	8-16
1000	10-20
800	12-25
600	20-30
500	30-40
400	40-60
325	40-80

Bond name

PS1
PS3



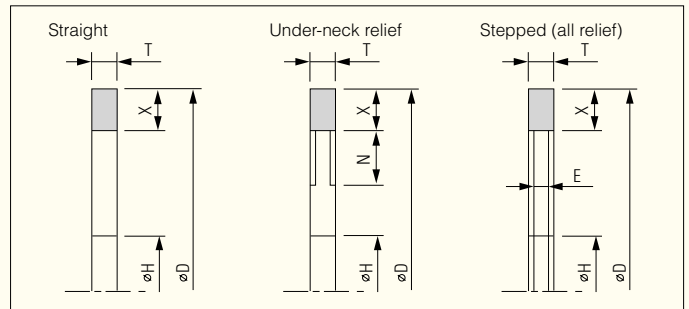
		Grit size				
		800 1500	600	500	400	325
Blade thickness (μm)	100	•	•			
	150	•	•	•		•
	200	•	•	•	•	•
	210 ⋮ 2000	•	•	•	•	•
	± 10					
Outer diameter (mm)	52, 54, 55, 56, 58, 63					
	70, 76.2, 78					
	100					

*The above table is our standard product line-up. If there is a combination you need and it is not listed, please contact our local sales representative.

Sintered cutting wheels

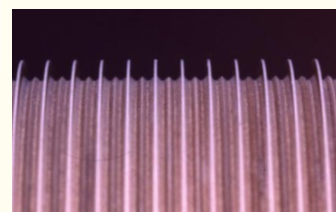
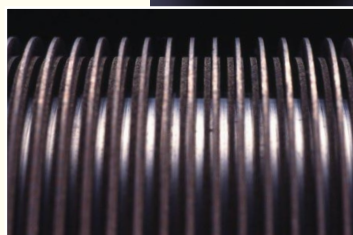
Single type (AD-2A)

Single type cutting wheels have a steel core with a diamond or CBN abrasive grain on the outer rim. Available with various selections of grains (diamond or CBN), bond (metal, resin, electroplated), cutting edge shape (V, R-shape) and core design (Straight, Under-neck relief, All relief).



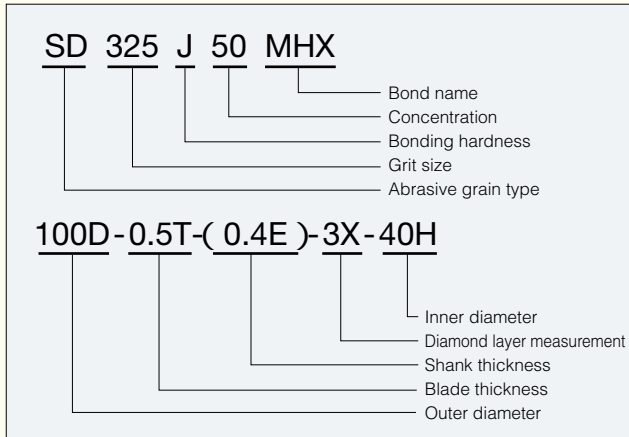
Multi type (AD-26)

Multi set blades are best suited for mass production applications requiring high precision cutting and grooving. Asahi Diamond's advanced manufacturing technology, ensure high quality of blade edge shape, pitch accuracy and cumulative accuracy.



Metal bond

Specification code



Abrasive grain type

SD	Diamond
B	CBN

Concentration

25	Low ↑ ↓ High
50	
75	
100	
125	

Bonding hardness

G	Soft ↑ ↓ Hard
J	
L	
M	
N	
P	
R	
S	

Grit size

1500	5-10 μm
1200	8-16 μm
1000	10-20 μm
800	15-25 μm
600	20-30 μm
500	30-40 μm
400	40-60 μm
325	#325/400
270	#270/325
230	#230/270
200	#200/230
170	#170/200
140	#140/170
120	#120/140
100	#100/120
80	#80/100
60	#60/100

Bond name

Standard	
MHX	MRHX
MYD	MRXD
MS2	MRS2
MHX25	MRHX25
SUNNOVEL	
ML820	

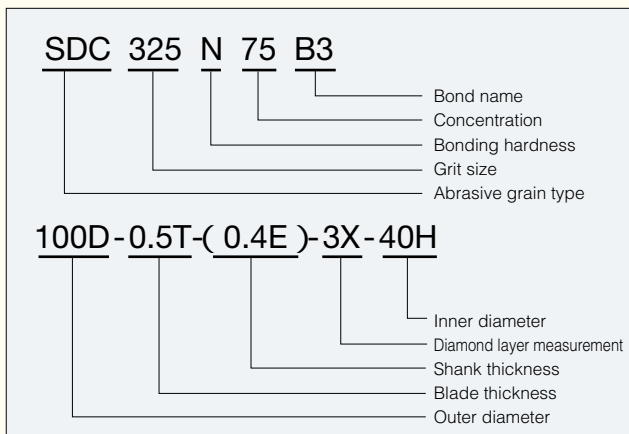
T \ O.D.	52-120	125-150	152-180	200-205	Grit size (Mesh)
0.2	●				230-1000
0.25	●	●			200-1000
0.3	●	●			170-1200
0.4	●	●	●		100-1500
0.5	●	●	●	●	100-1500
0.6 ~ 1.0	●	●	●	●	80-1500
1.01 ~ 1.6	●	●	●	●	60-1500
1.61 ~ 10.0	●	●	●	●	60-1500

*The above table is our standard product line-up. If there is a combination you need and it is not listed, please contact our local sales representative.

(Unit: mm)

Resin bond

Specification code



Abrasive grain type

SD	Diamond
SDC	Coating diamond
B	CBN
BC	Coating CBN

Concentration

50	Low ↑ ↓ High
75	
100	
125	

Bonding hardness

J	Soft ↑ ↓ Hard
N	
P	
R	

Grit size

6000	1-2 μm
4000	2-4 μm
3000	2-6 μm
2500	4-6 μm
2000	4-8 μm
1500	5-10 μm
1200	8-16 μm
1000	10-20 μm
800	15-25 μm
600	20-30 μm
500	30-40 μm
400	40-60 μm
325	#325/400
270	#270/325
230	#230/270
200	#200/230
170	#170/200
140	#140/170
120	#120/140
100	#100/120
80	#80/100
60	#60/100

Bond name

B66	DS03
B662	BG
B3	BGX
BH	BG2
SN100	B50
BMD16	BA
BMS03	BC

T \ O.D.	25-155	175-205	215-230	250-300	305-400	450-550	600-650	700-760	Grit size (Mesh)
0.3	●								230-6000
0.4 ~ 0.7	●	●							170-6000
0.8 ~ 0.9	●	●	●						80-6000
1.0 ~ 1.3	●	●	●	●					60-6000
1.4 ~ 1.9	●	●	●	●	●				60-6000
2.0 ~ 2.3	●	●	●	●	●	●			60-6000
2.4 ~ 2.9	●	●	●	●	●	●	●		60-6000
3.5 ~ 5.0	●	●	●	●	●	●	●	●	60-6000

*The above table is our standard product line-up. If there is a combination you need and it is not listed, please contact our local sales representative.

(Unit: mm)

Electroplated wire

Electroplated wire (AD-2Y)

Using a unique electroplating technology Asahi is able to diamond coat high tensile wire very precisely. This manufacturing technology provides a significant improvement over conventional slurry type wire saw. Observed advantages are reduced cutting time, less kerf loss, improved flatness when sawing silicon, sapphire and other hard and brittle materials.

The use of water soluble coolant can now be possible to reclaim swarf to reduce production cost and to meet ever increasing environmental requirements. Technical support can also be provided through our R&D sections own sawing equipment to the meet your specific needs.

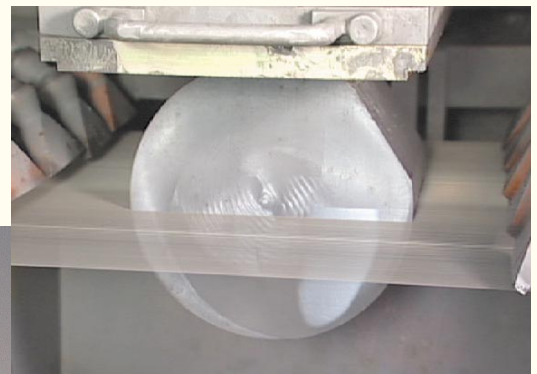


Electroplated wire sizes

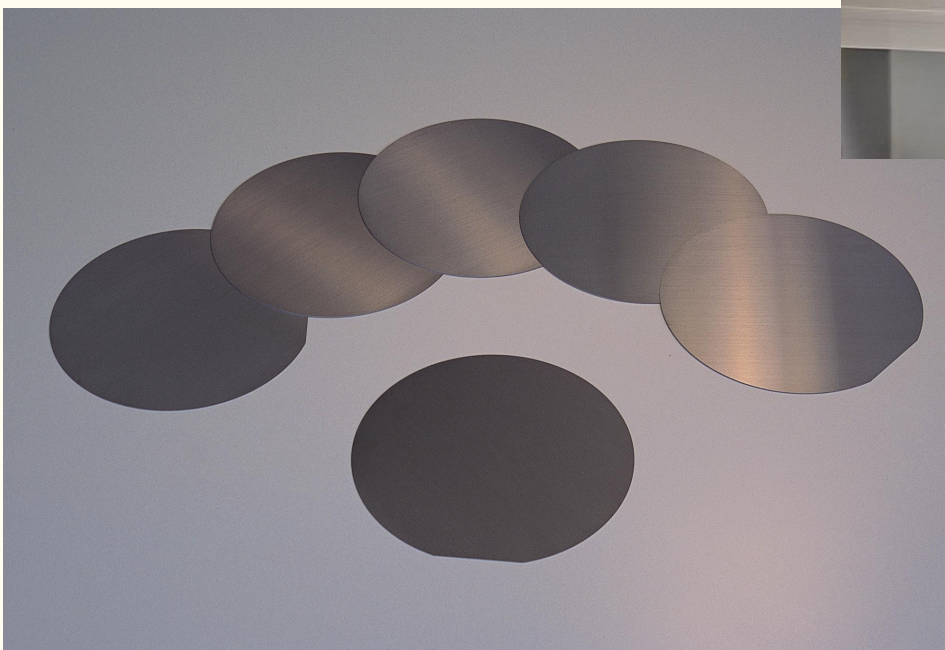
Application	Uncoated wire size (mm) - grain (μm) (finished diameter mm)	Length (km)
Si	φ0.14-10-20 (φ0.160)	10~50
	φ0.14-8-16 (φ0.155)	
	φ0.12-10-20 (φ0.140)	
Sapphire Glass Neodymium ferrous SiC	φ0.18-30-40 (φ0.260)	
	φ0.16-30-40 (φ0.240)	
	φ0.14-30-40 (φ0.220)	

*The above table is our standard product line-up.
If there is a combination you need and it is not listed, please contact our local sales representative.

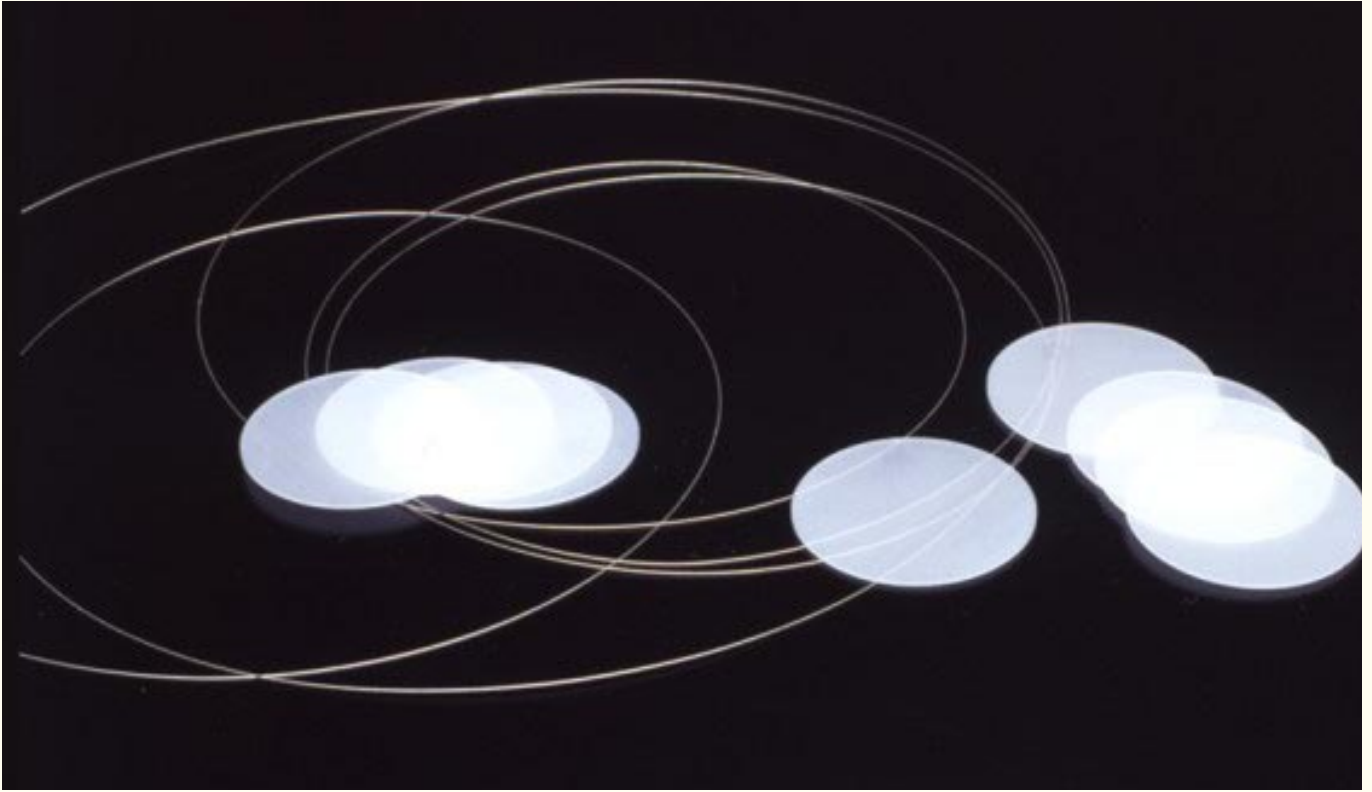
Silicon slicing



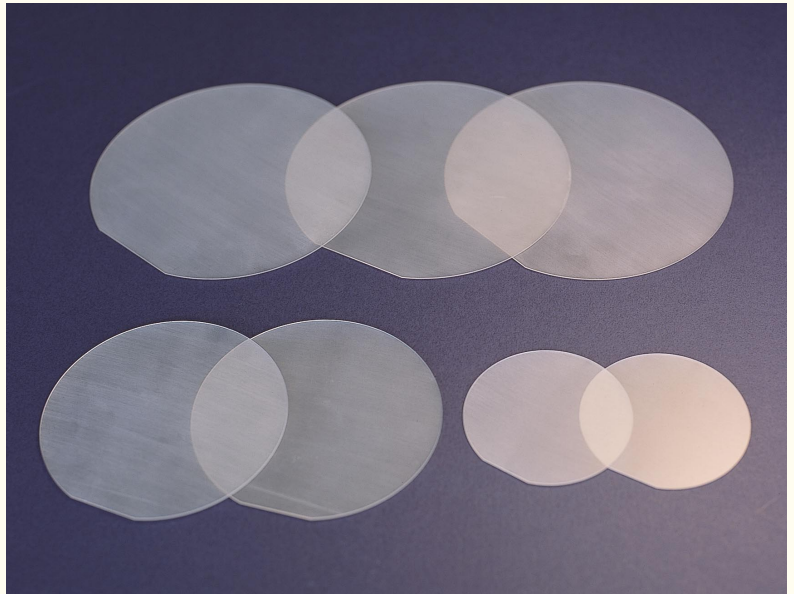
A diamond electroplated wire slices a six-inch silicon ingot.



Sapphire slicing



A diamond electroplated wire slices a sapphire ingot.



Sapphire wafer (2", 3", 4")

Band saws

Electroplated band saws (AD-2B)

Electroplated band saw provides precision, accuracy and high efficiencies when the optimal blade edge configuration is selected.

Size

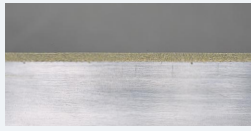
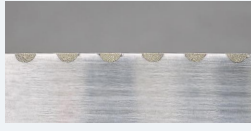



Sizes	Length (mm)	Steel core width (mm)	Steel core thickness (mm)
Narrow Type	500 ~ 3,000	3 ~ 25	0.15 ~ 1.33
Wide Type	2,500 ~ 9,000	26 ~ 125	0.15 ~ 1.33

*The above table is our standard product line-up.

If there is a combination you need and it is not listed, please contact our local sales representative.



Blade edge shapes

Type	Abrasive grain layer	Features
Continuous		<ul style="list-style-type: none"> Standard continuous band saw provide good surface finish and are available in a variety of widths to meet your cutting application needs. Very suitable for dry cutting of hard carbon materials, ceramics and glass.
Segmented (Half moon type)		<ul style="list-style-type: none"> Band saw width 26mm and wider, providing excellent cutting ability and life of cutting hard and brittle materials. Suitable for precision and efficient cutting of mono-crystal silicon. Customized segment design (half moon size, pitch), back-taper is also available.
Serrated		<ul style="list-style-type: none"> For band width 26mm and wider Suitable for soft materials etc., which are prone to loading with standard band saw. Excellent cutting ability for hard materials.
Saw blade		<ul style="list-style-type: none"> Diamond plated on metal application band. Provides excellent cutting ability.
Porous		<ul style="list-style-type: none"> Excellent cutting ability provided by porous edge. Can be cut to size fit to vertical cutting band saw. High performance cutting of small optical glass cores.

Metal bond band saws (AD-2B)

Segmented metal bond diamond band saw offers more rigidity verses electroplated band saws while providing excellent large diameter cutting performance. Available with band width of 50 up to 150mm. Mainly used for large horizontal saws.

Size


Length (mm)	Steel core width (mm)	Steel core thickness (mm)
3,700 ~ 9,800	50 ~ 155	0.5 ~ 1.25

*The above table is our standard product line-up.

If there is a combination you need and it is not listed, please contact our local sales representative.



Blade edge shape

Metal	Abrasive grain layer	Features
Serrated		<ul style="list-style-type: none"> ■ Serrated slots to avoid brazing heat effect. ■ Selection of Diamond grit size, bond is available to suit various materials and cutting requirement.

Band type selection by materials

The type of material must be taken into consideration when selecting electroplated band saws or metal bonded saws. Refer to the chart below.

Selection guidelines

Electroplated band saws	Metal bond band saws	Features
Silicon (single crystal)		Electroplated band saw Metal band saws can also be used
	Silicon (multi crystalline)	Metal band saw Because this material is generally used in large sizes for solar cells
	Quartz glass	<ul style="list-style-type: none"> ■ Small sizes Electroplated band saw can also be used ■ Large sizes Metal band saw
Carbon		<ul style="list-style-type: none"> ■ Standard method is to dry cut with electroplated band saw
	Synthetic quartz	<ul style="list-style-type: none"> ■ High yield cutting Small sizes Electroplated band saw ■ Large sizes Metal band saw
	Firebrick	<ul style="list-style-type: none"> ■ Dense brick Electroplated band saw ■ Normal brick Metal band saw
	Precious stone (Sapphire)	<ul style="list-style-type: none"> ■ Yield given priority Electroplated band saw ■ Tool life given priority Metal band saw
	Ferrite	<ul style="list-style-type: none"> ■ High yield cutting Electroplated band saw ■ Tool life given priority Metal band saw
	Ceramic	<ul style="list-style-type: none"> ■ Green ceramic Small sizes Electroplated band saw Large sizes Metal band saw

Working conditions

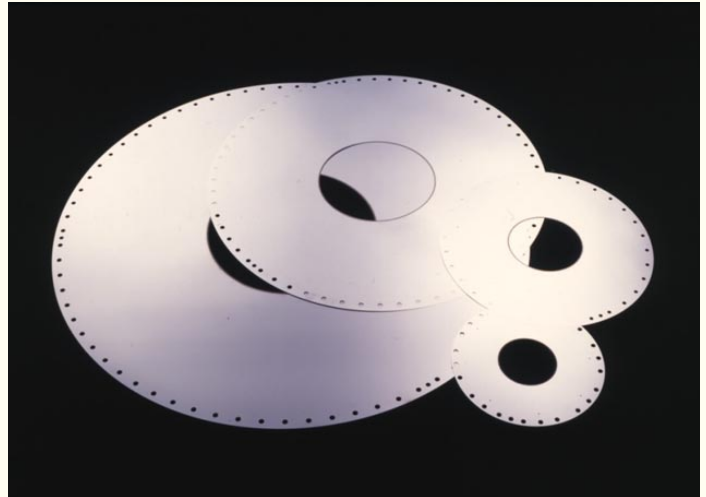
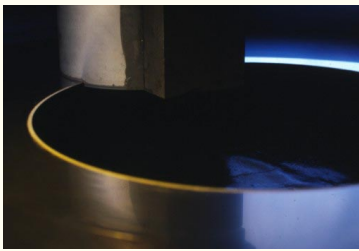
Item	Electroplated band saws	Metal bond band saws
Peripheral speed	150 ~ 1,500m/min	850 ~ 1,000m/min
Tension	100 ~ 200N/mm ²	150 ~ 200N/mm ²
Cutting speed	5 ~ 50mm/min	5 ~ 30mm/min

*Cutting speed is adjusted according to type and size (width) of material.

ID Blades

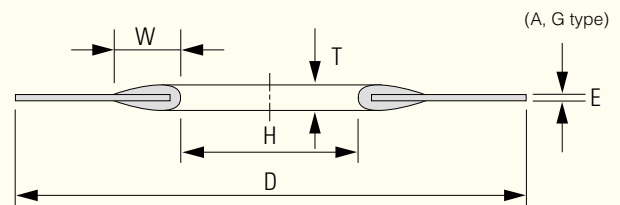
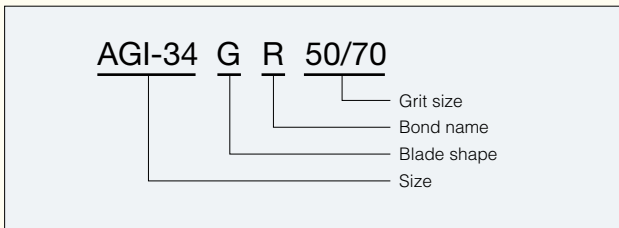
ID Blades (AD-2I)

ID blades slicing applications of silicon wafers, semiconductors, glass and magnetic materials such as neodymium ferrous and ferrite are very common. The high tensile strength stainless steel core provides excellent cutting quality and increased yield. Asahi provides a wide selection of diamond mesh size, kerf thickness, kerf shape, bond hardness for various precision applications.

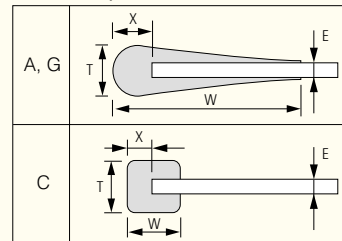


Specifications and sizes

Specification code



Blade shape



Bond name

R	Soft ↕ Hard
Q	
U	
K	

ID Blade (AD-2I) sizes

Size	Outer diameter (D: mm)	Inner diameter (H: mm)	Core thickness (E: mm)	Blade width (W: mm)	Blade thickness (T: mm)	Grit size (μm)	
AGI-11	246	91	0.10, 0.12, 0.13, 0.15, 0.18	2	210-260	30/50, 40/60	
AGI-15	380	130		2			
AGI-16	422	152		2	260-350	40/60, 50/70	
AGI-17	434	152		2			
AGI-21	546	184		2, 3			
AGI-21		203		2			
AGI-22	559	203		2, 3			
AGI-22		240		3			
AGI-23	597	204		2, 3			
AGI-25	648	220		2, 3			
AGI-27	690	240		2, 3, 5			40/60, 50/70, 60/80
AGI-34	860	305		0.13, 0.15, 0.18			
AGI-46	1180	410	0.18	4	360-400	60/80	

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Selection guide of diamond and bond specification by application

Abrasive grain type

Diamond grain

Both natural diamonds and synthetic diamonds are available. Synthetic type diamond is more prevalent for diamond tool use rather than natural diamonds, which are used for cutting glass, ferrite, ceramics, semiconductor materials such as Si, GaAs, GaP etc, tungsten carbide and other hard brittle materials. Metal coated diamond grains are often used with resin bonds in order to provide a mechanical bonding of the diamond grains to prevent grain pull out.

CBN grain

CBN is the second hardest materials to diamond providing excellent heat resistance, when grinding/cutting of various steel materials (Sendust, Permalloy, Al-Ni-Co, hardened steel, High speed steel etc). Metal coated CBN grains are used with resin bond in order to hold CBN grains securely.

Dressing wheels and plates

Various dressing wheels and plates are available for dressing applications.



Ring type dicing blade flanges

Outer diameter specifications

ϕ 49.6 X 40H	ϕ 48.0 X 40H
ϕ 49.2 X 40H	ϕ 47.6 X 40H
ϕ 48.8 X 40H	ϕ 47.2 X 40H
ϕ 48.4 X 40H	

Bond types

Resin bond (B)

A Phenolic resin bond provides excellent surface finish such as roughness and edge quality, although metal bond is superior to resin bond in wear rate. Also Polyimide resin bond provides superior heat resistance and the Resi-Metal bond which combines the characteristics between metal and resin bonds are also available.

Metal bond (M)

Metal (bronze, steel and etc) is used as bond material, which has excellent wear rate and is suitable for precision form-grooving applications.

Electroplated (P)

Diamond or CBN is plated with a nickel bond. Diamond or CBN single layer has excellent grain exposure, which provide excellent cutting ability.

Electroforming (P)

The cutting edge has multi-layered diamonds formed with Asahi nickel plating technology. Suitable for ultra-thin dicing blades which requires high rigidity in the cutting edge and long tool life.

Work piece and bonds

WORK PIECE	APPLICATIONS (example)	BONDS		
		B	M	P
Silicon (single crystal)	IC, Discrete			●
GaAs, GaN, GaP	IC, Opto-electronics device			●
SiC(single crystal)	IC, Opto-electronics device		●	●
Glass-Epoxy plate + Resin	BGA, CSP		●	●
Copper plate + Resin	QFN	●	●	●
Ceramics plate + Resin	BGA, CSP	●	●	●
Polyimide plate + Resin	TBGA	●	●	
LTCC, HTCC	Package plate	●	●	
Ferrite(single crystal)	VTR head	●	●	●
Soft-Ferrite	Transformer, Inductor	●	●	●
Neodymium ferrous	Magnet	●	●	●
ALTiC	MR head		●	●
Crystal	Oscillator, Filter	●	●	
Sapphire	LED plate, LD plate	●	●	●
Lithium Tantalate, Lithium Niobate	SAW device		●	●
PZT	Piezoelectric material		●	●
Barium titanate	Condenser		●	●
Potassium titanate	Heat resisting material		●	●
Aluminum nitride	Heat sink	●	●	
Quartz	Optical Fiber	●	●	
Glass	Optical pick-up	●	●	
Borosilicate glass	LCD panel	●	●	

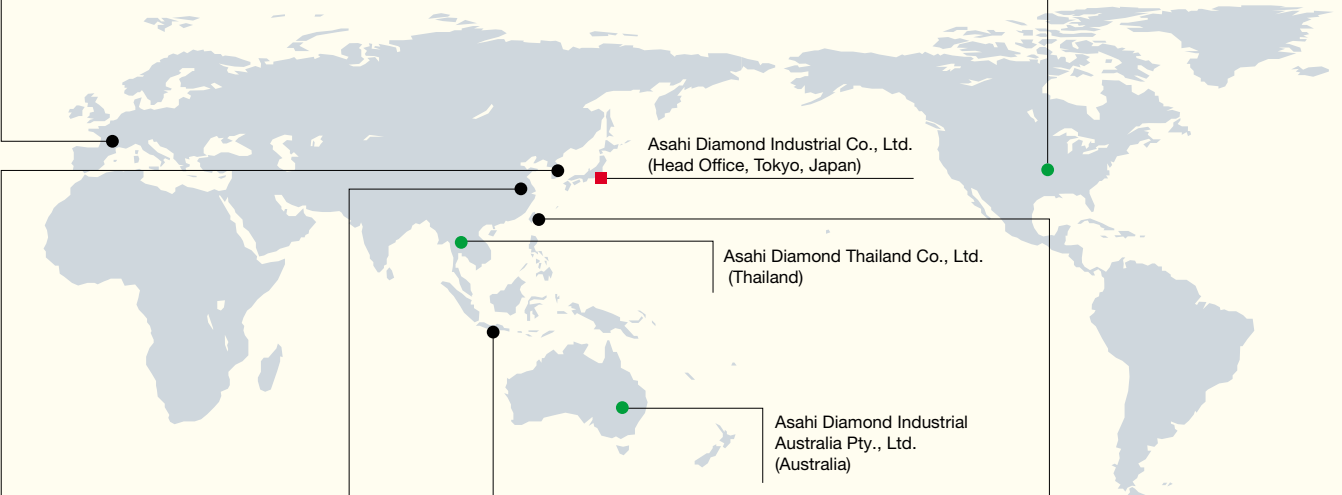
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Shape the Innovation

私達の革新で、お客様の革新をカタチにする

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