

# A WIDE SELECTION OF BLADES FOR A VARIETY OF DICING APPLICATIONS

## Nickel-bond Blades

The best choice for soft material and machinable hard material applications

### A Comprehensive Dicing Solution

- The hardest binder for superior wear resistance
- The thinnest blade available (down to .0008")
- Excellent rigidity for higher exposer
- Exceptionally long blade life
- High precision dicing
- Attractive cost-of-ownership



**ADT = Dicing**  
Advanced Dicing Technologies

## A wide selection of annular blades

Our blade selection is comprised of three product families distinguished by the type of binder: Resin-bond Blades, Nickel-bond Blades and Metal-bond (Sintered) Blades. Nickel-bond and Metal-bond (Sintered) Blades are characterized by long blade life and endurance, while Resin-bond Blades wear off faster and create less heat & friction. Resin-bond Blades are therefore best suited for hard and brittle materials such as alumina, glass and quartz, whereas Nickel-bond and Metal-bond (Sintered) Blades are an excellent choice for softer materials/substrates such as: PCB, Silicon and BGA.

## 30 years of experience in tailoring solutions to specific applications

ADT's Dicing Saws, Laser Scriber System, Annular Blades and Peripheral Equipment manifest a wealth of dicing know-how and experience accumulated over three decades. We offer our customers a comprehensive solution- a unique blend of research, development, process mastery and skill.



## State-of-the-Art Manufacturing Technology

Our blades are composed of abrasive materials embedded in a resin or metal matrix. Resin-bond Blades are cured under pressure and high temperature, Metal-bond Blades are sintered and Nickel-bond Blades are manufactured using a tightly controlled electroforming process.

## The highest standards of quality assurance & process control

Strict monitoring at each critical stage of the production process insures that each ADT blade meets the desired specifications and dimensional tolerances. Our blades are tested extensively on the latest platforms, simulating the customer's operating conditions and process parameters. **A 100% final inspection is conducted on all products leaving the factory.**

## A highly efficient customer support structure

By utilizing a tiered, global customer support structure we insure efficient support and fast response time to our customers' needs.

**Tier 1:** Headquarters and Factory-based support

Including customer support, application development centers and training

**Tier 2:** Regional support

Including technical support, application support, sales representation and training

**Tier 3:** Field support

Including service, process support and local sales

## Attractive cost-of-ownership













By continuously lowering the cost of manufacturing, improving the quality and longevity of our products and maintaining a competitive, premium pricing policy, we lower the total cost-of-ownership and add value to your dicing operation.

# Nickel-bond Blades

## For soft material and machinable hard material applications

ADT's **Annular Nickel Blades** are produced using a state-of-the-art, tightly controlled electroforming process which guarantees a uniform distribution of diamonds throughout the Nickel layer. This process not only allows for blades to be produced to very tight tolerances, but also permits optimization of grit size, hardness and geometry to meet the particular requirements of your applications.

The Nickel binder provides longer blade life and lower wear rate and together with the abrasive makes Nickel-bond Blades a perfect choice for softer applications such as:

Application	Recommended Grit Size		
PCB (LED Packages) FR4 and BT Resin	10 $\mu\text{m}$ , 13 $\mu\text{m}$ , 17 $\mu\text{m}$		
PBGA FR4 and Epoxy Molding	30 $\mu\text{m}$ , 50 $\mu\text{m}$		
Multi-layer Capacitors Green Ceramic	30 $\mu\text{m}$ , 50 $\mu\text{m}$ , 70 $\mu\text{m}$		
Ultrasound Sensors, Micro-positioners PZT	6-8 $\mu\text{m}$ , 10 $\mu\text{m}$		
Tape Heads Ferrite	3-6 $\mu\text{m}$ , 10 $\mu\text{m}$ , 13 $\mu\text{m}$		
Magnetic Heads TiC	3-6 $\mu\text{m}$ , 10 $\mu\text{m}$ , 13 $\mu\text{m}$		

New



## "FAST" and Easy Blade Selection

There is nothing trivial about choosing the right blade composition for your process. The task requires taking into consideration, thickness, geometry, diamond concentration, binder hardness and many more variables. With "FAST", our Sample Selection Assistant, you can enjoy the benefit of our 30 years of process experience. Our "FAST" & friendly assistant will walk you through the selection process taking your particular requirements into consideration and producing an educated ADT recommendation for a **first trial, sample blade, part number**. Based on the submitted information, a sample blade will be shipped to your address. The "FAST" assistant is now available through the ADT Website. Please visit: [www.adt-dicing.com](http://www.adt-dicing.com). In addition, as always, our engineers are available to assess your needs and assist you in the blade selection process. For further assistance please contact your local sales representative. Contact information is available on the ADT website.

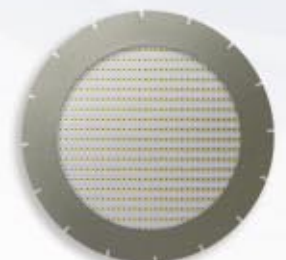
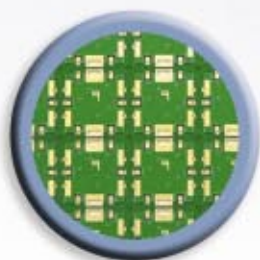
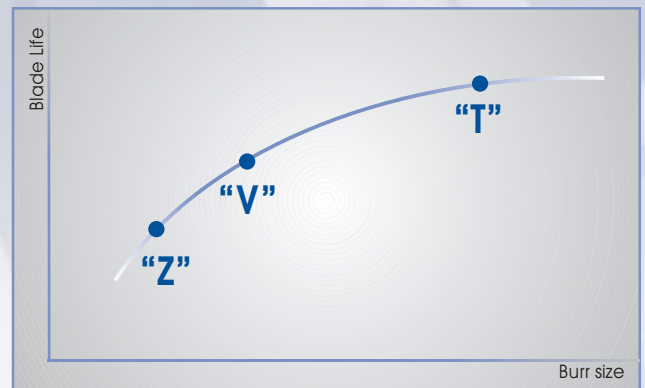
## Special Offerings

### New "T", "V" & "Z" blades for minimal burrs

To meet the demanding requirements involved in achieving consistent, high-quality results while dicing PCB-based packages, ADT has developed three new types of Nickel-electroformed Blades – "T", "V" & "Z".

- "T" type Nickel Blades offer extended blade life
- "V" type Nickel Blades offer above average cut quality
- "Z" type Nickel Blades exhibit superior cut quality

- Small burrs
- Superior cut quality
- High throughput
- Longer blade life compared to standard Nickel Blades



# Nickel-bond Blades Part Number Description

I.D.	O.D.	GRIT SIZE (µm)	EDGE GEOMETRY**	O.D. SHAPE	THICKNESS (mil) *	THICKNESS TOLERANCE *
0=88.82 mm 1=40 mm 3=2.75" 4=3.5" (88.9 mm) 5=3" 6=2" 8=55 mm 9=52 mm	1=4.256" 2=2.188" L=75 mm 3=3" H=77 mm 4=4.6" 5=5" 6=4" 7=4.4" 8=4.8" 9=4.5" 0=4.34"	(1)=2-4 (2)=3-6 (3)=10 (4)=17 (5)=30 (6)=50 (7)=70 (9)=10-15 (B)=6-8	0=Standard 1=Serrated	1=Edge Grounded	(010)=1.0  ↓ (200)=20.0	A=±.0001"*** B=±.0002"*** C=±.0003" D=±.0005" F=±.0010"
EXAMPLE PART NUMBER <b>X4776-8201-070-CXX</b> product family						
3.5" I.D.	4.8" O.D.	3-6 µm GRIT	STANDARD	EDGE GROUNDED	7 mil	±.0003"

I.D.***	O.D.	GRIT SIZE (µm)	EDGE GEOMETRY**	THICKNESS (mil) *	THICKNESS TOLERANCE *
<b>Special 2" nickel Blade Designator 40 mm I.D. Only</b>	0=55 mm 1=50.1 mm 2=50.2 mm 3=50.4 mm 4=50.6 mm 5=50.8 mm 6=51 mm 7=51.2 mm 8=51.4 mm 9=52 mm A=58 mm B=56 mm C=54 mm D=60 mm E=50.5 mm F=51.5 mm M=2.25"	(1)=2-4 (2)=3-6 (3)=10 (4)=17 (5)=30 (6)=50 (7)=70 (9)=10-15 (B)=6-8	1=Edge Grounded 2=Serrated	(010)=1.0  ↓ (200)=20.0	A=±.0001"*** B=±.0002"*** C=±.0003" D=±.0005" F=±.0010"
EXAMPLE PART NUMBER <b>4B776-3231-045-BXX</b> product family					
40 mm I.D.	50.2 mm O.D.	10 µm GRIT	EDGE GROUNDED	4.5 mil	±.0002"

\* Depends on diamond grit size

\*\* Depends on blade thickness and diamond grit size

\*\*\* All special 2" Nickel Blades have an I.D. of 40 mm

Other thickness options, diameters, edge geometries and diamond grit sizes are available upon request.



# Nickel-bond Blades Standard Sizes

BLADE I.D.		BLADE O.D.			
inches	mm	inches (mm)			
1.000	25.4	2.204 (56)			
1.984	(50.4)	1.972 (50.1)	2.024 (51.4)	2.362 (60.0)	
		1.976 (50.2)	2.047 (52.0)	2.953 (75.0)	
		1.984 (50.4)	2.126 (54.0)	3.031 (77.0)	
		1.992 (50.6)	2.165 (55.0)		
1.575	40.0	2.000 (50.8)	2.188 (55.6)		
		2.008 (51.0)	2.204 (56.0)		
		2.016 (51.2)	2.250 (57.15)		
1.575	40.0	3.000 (76.2)			
2.165	55.0				
2.750	69.8	4.400 (111.8)			
		4.500 (114.3)			
3.000	76.2	4.000 (101.6)			
3.497	88.82	4.256 (108.1)			
		4.340 (110.2)			
		4.400 (111.8)			
		4.500 (114.3)			
3.500	88.9	4.600 (116.8)			
		4.800 (121.9)			
		5.000 (127.0)			
<b>THICKNESS</b>					
		.0008" .0015" .0030" .0040" .0050" .0070" .0090" .0110" .0130" .0140" .0200"			
<b>GRIT SIZE</b>		2-4 μm			
		3-6 μm			
		6-8 μm			
		10 μm			
		10-15 μm			
		17 μm			
		30 μm			
		50 μm			
		70 μm			

1. Locate your desired blade diameter (O.D. and I.D.) in any one of the gray shaded bars at the top of the chart. The horizontal length of the shaded bar, in comparison to the red bar indicates the range of thickness in which blades in the gray bar are available. For example, 5" O.D. blades are only available (as standard) in thickness range from .0070" to .0130".
2. Make sure that the desired blade diameter is available in the desired thickness.
3. All of the colored option bars below the red bar indicate the range of thickness, where that option is available. For example, blades with 17 μm grit size are only available (as standard) in thickness range from .0015" to .0140".

After you have determined (using the chart above) that your blades' O.D., I.D., thickness and grit size are available, please refer to the Nickel-bond Blades Part Number Description table for ordering information.

**Please note:** Other diameters, grit sizes and thickness options are available upon request.



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