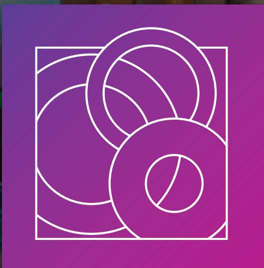
ADT
Advanced Dicing Technologies

www.adt-co.com

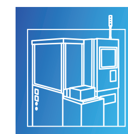


DICING BLADES

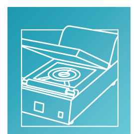
ADT specializes in the manufacturing of annular diamond dicing blades.
ADT blade's range includes Hubless Resin, Metal-sintered and Nickel blades, as well as Hub blades.
ADT blades are the perfect solution for dicing a variety of materials and substrates such as QFN, BGA, ceramic, glass, quartz, sapphire and more.
Responding to ever-growing customer demands and special requirements, ADT offers customized solutions for challenging materials and applications.

Quality Standards

Complete Dicing Solutions


Saws

Blades


Peripherals

RESIN BLADES

Soft bond for hard material.
Resin binder enables blade wear management.
Resin-bond Blades are an excellent choice for hard and brittle materials such as: QFN/MLF, Thick Ceramic substrates, HTCC and Glass.

Blade thickness: 75 – 2500µm
Diamond grit size: 3 – 250µm

SINTERED BLADES

With a slower wear rate than Resin but faster than Nickel, Metal-bond (Sintered) blades are best suited for retaining package shape and size in applications such as: BGA, Soft Alumina, TiC, LTCC, Ferrite.

Blade thickness: 80 – 1500µm
Diamond grit size: 2 – 70 µm
Serrations:
Serrations available for sintered blades as well as various edge shapes

NICKEL BLADES

The Nickel binder provides longer blade life and lower wear rate.
Nickel-bond Blades are a perfect choice for soft material applications such as: PCB, Silicon and BGA.

Blade thickness: 50 – 300µm
Diamond grit size: 3 – 50µm
Serrations:
Serrations available for Nickel blades as well as various edge shapes

HUB BLADES

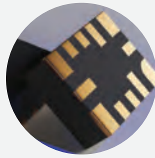
A perfect solution for the optimization of the dicing process for various types of materials such as: Silicon, GaAs and other wafers.

Our hub blades provide:

- Improved cut quality
- Longer blade life
- Higher UPH

PACKAGE SINGULATION

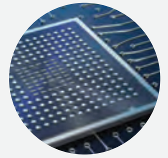
QFN packages



Blade:
Resin matrix type: E, D, P
OD Ø: 2", 3", 4"
Diamond grit size: 45 – 105 µm
Thickness: .008" – .020" (0.2 – 0.5 mm)

Process Parameters:
Feed rate: 20 – 100 mm/sec
Spindle speed:
2": 20 – 40 krpm
3": 15 – 25 krpm
4": 8 – 15 krpm

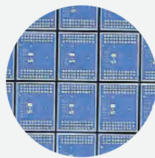
BGA packages



Blade:
Metal Sintered matrix type: C, R
OD Ø: 2", 3"
Diamond grit size: 35 – 70 µm
Thickness: .004" – .020" (0.1 – 0.5 mm)

Process Parameters:
Feed rate: 20 – 250 mm/sec
Spindle speed:
2": 30 – 45 krpm
3": 20 – 30 krpm
4": 8 – 15 krpm

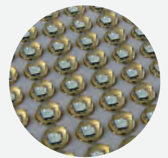
LTCC



Blade:
Resin matrix type: Q, K, C
OD Ø: 2", 3", 4"
Diamond grit size: 15 – 45µm
Thickness: .006" – .020" (0.15 – 0.5 mm)

Process Parameters:
Feed rate: 5 – 25 mm/sec
Spindle speed: 10 – 40 krpm depending on blade O.D.
Multi panel mounting on UV tape

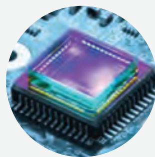
LED packaging



Blade and process parameters:
ADT developed a dicing solution tailored to the specific package type:
Ceramic, PCB and EMC/MLF

MICROELECTRONIC COMPONENTS (MEC)

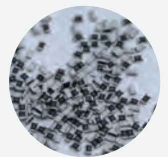
Glass packages



Blade:
Resin matrix type: Q, E30
Sintered Metal matrix type: P1
OD Ø: 2", 3"
Diamond grit size: 10 – 20 µm
Thickness: .004" – .012" (0.1 – 0.3 mm)

Process Parameters:
Feed rate: 2 – 20 mm/sec
Spindle speed:
2": 20 – 30 krpm
4": 8 – 15 krpm

Ceramic (Alumina) packages

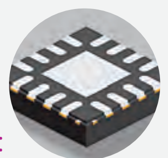


Blade:
Resin matrix type: Q, C
Sintered Metal matrix type: P9
OD Ø: 2", 3", 4"
Diamond grit size: 30 – 88 µm
Thickness: .006" – .012" (0.15 – 0.3 mm)

Process Parameters:
Feed rate: 2–20 mm/sec
Spindle speed:
2": 20 – 30 krpm
4": 10 – 15 krpm

AUTOMOTIVE

Blades for Wettable H/E QFN



1st Cut - Shallow cut

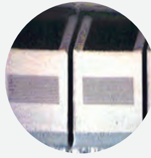
Blade and process parameters:
Resin matrix: P07
OD: Ø 2"
Diamond grit size: 45-88 µm
Feed rate: 20 – 40 mm/sec
Spindle speed: 20 – 25 krpm

2nd Cut - Cut Through/Singulation

Blade and process parameters:
Resin matrix: D02
OD: Ø 2" – 3"
Diamond grit size: 45 – 88 µm
Feed rate: 50 – 80 mm/sec
Spindle speed: 22 – 30 krpm

MICROELECTRONIC COMPONENTS (MEC)

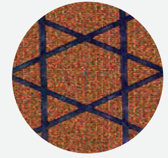
MLCC



Blade:
4" Nickel (standard or serrated edge) and steel core Nickel Blades
OD Ø: 2", 3", 4"
Diamond grit size: 30 – 70 µm
Thickness: .006" – .014" (0.15 – 0.35 mm)

Process Parameters:
Feed rate: 50 – 250 mm/sec
Spindle speed: 12 – 30 krpm
Possible for both 'dry' and 'wet' dicing
Relatively frequent dressing to clean blade from debris

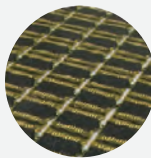
PZT



Blade:
2" Hub or Annular Nickel Blades
Diamond grit size: 3 – 6 to 10 µm
Thickness: .0008" – .0030"

Process Parameters:
Feed rate: 1 – 6 mm/sec
Spindle speed: 20 – 30 krpm

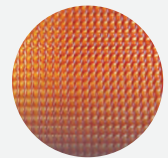
PCB



Blade:
2" and 4" Nickel blades (serrated and standard edge): T, V matrixes
Diamond grit size: 10 – 50 µm
Thickness: .003" – .012" (0.075 - 0.3 mm)

Process Parameters:
Feed rate: 50 – 150 mm/sec
Spindle speed:
2": 25 – 30 krpm
4": 12 – 20 krpm

SAW devices

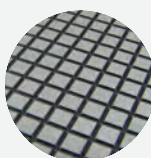


Blade:
2" Resin blades: Q, K matrixes
Thickness: .004" – .008" (0.1 – 0.2 mm)

Process parameters:
Feed rate: 5 – 20 mm/sec
Spindle speed:
2": 15 – 30 krpm
4": 8 – 15 krpm

SEMICONDUCTOR DICING

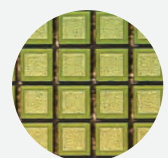
Silicon wafers and discrete devices



Blade:
HUB and Annular Nickel blades
OD Ø: 2"
Diamond grit size: 1500 – 5000 mesh
Thickness: 0.015 – 0.120 mm

Process Parameters:
Feed rate: 10 – 120 mm/sec
Spindle speed: 30 – 50 krpm
Mounting: Blue or UV tape
Cooling type: DI water with and without additives
Carbon dioxide bubbler is optional

LED – gallium arsenide



Blade:
HUB and Annular Nickel blades
OD Ø: 2"
Diamond grit size: 1500 – 5000 mesh
Thickness: 0.015 – 0.120 mm

Process Parameters:
Feed rate: 10 – 120 mm/sec
Spindle speed: 30 – 50 krpm
Mounting: Blue or UV tape
Cooling type: DI water with and without additives
Carbon dioxide bubbler is optional

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