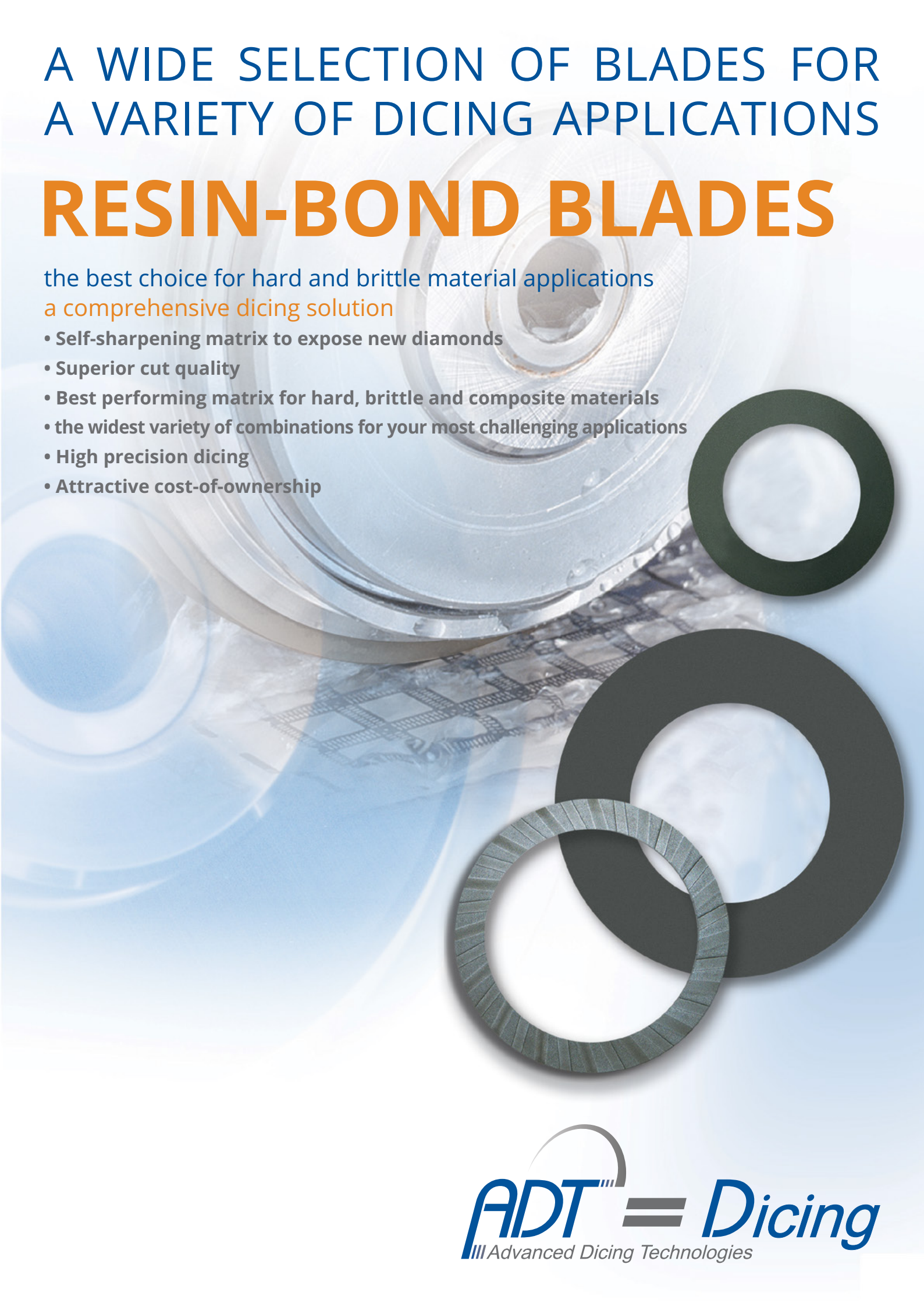
# A WIDE SELECTION OF BLADES FOR A VARIETY OF DICING APPLICATIONS

# RESIN-BOND BLADES

the best choice for hard and brittle material applications

a comprehensive dicing solution

- **Self-sharpening matrix to expose new diamonds**
- **Superior cut quality**
- **Best performing matrix for hard, brittle and composite materials**
- **the widest variety of combinations for your most challenging applications**
- **High precision dicing**
- **Attractive cost-of-ownership**



ADT = Dicing

Advanced Dicing Technologies

# RESIN-BOND BLADES PART NUMBER DESCRIPTION

| EDGE TYPE | O.D. & I.D. | GRIT SIZE** (µm) | THICKNESS* (mil) |
|---|---|---|---|
| **0** = Standard edge<br>**4** = Blade I.D. 3.5" (88.9 mm) | **1** = 2.188" x 40mm<br>**2** = 4.256" x 88.82mm<br>**3** = 3.0" x 40mm<br>**4** = 4.5" x 88.82mm<br>**5** = 5.0" x 88.82mm<br>**6** = 4.6" x 88.82mm<br>**7** = 4.7" x 88.82mm<br>**8** = 2.25" x 40mm<br>**9** = 2.5" x 40mm<br>**A** = 53mm x 40mm<br>**B** = 51mm x 40mm<br>**C** = 56mm x 40mm<br>**D** = 52mm x 40mm<br>**E** = 54mm x 40mm<br>**F** = 60mm x 40mm<br>**G** = 4.4" x 88.82mm<br>**H** = 58mm x 40mm<br>**K** = 4.45" x 88.82mm<br>**J** = 57mm x 40mm<br>**M**= 50mm x 40mm<br>**N** = 52.5mm x 40mm<br>**P** = 78mm x 40mm<br>**R** = 64mm x 40mm<br>**S** = 66mm x 40mm<br>**T** = 74mm x 40mm<br>**U** = 76.4mm x 40mm<br>**Q** = 4.8" x 88.82mm<br>**W**= 72mm x 40mm<br>**L** = 80mm x 40mm<br>**V** = 55mm x 40mm<br>**X** = 59mm x 40mm<br>**Y** = 77mm x 40mm<br>**Z** = 75mm x 40mm | **(003)** = 3<br>**(006)** = 6<br>**(009)** = 9<br>**(015)** = 15<br>**(020)** = 20<br>**(025)** = 25<br>**(030)** = 30<br>**(035)** = 35<br>**(045)** = 45<br>**(053)** = 53<br>**(063)** = 63<br>**(075)** = 75<br>**(088)** = 88<br>**(105)** = 105<br>**(125)** = 125<br>**(150)** = 150<br>**(200)** = 200 | **(003)** = 3<br>**(010)** = 10<br>**(811)** = 11.8<br>**(512)** = 12.5<br>**(020)** = 20<br>**(099)** = 99 |

EXAMPLE PART NUMBER: **X0 777 - 4 006 - 010 - XXX** PRODUCT FAMILY

| Standard Edge | 4.5" O.D. 88.82mm I.D. | 6µm Grit | 10 mil Thickness |
|---|---|---|---|

| EDGE TYPE | O.D. & I.D. | GRIT SIZE** (µm) | THICKNESS* (mil) |
|---|---|---|---|
| **0** = Standard edge<br>**4** = Blade I.D. 3.5" (88.9 mm) | **0** = 2" x 1"<br>**2** = 4.3" x 3"<br>**3** = 3" x 55mm<br>**4** = 4.5" x 2.75"<br>**5** = 5" x 3"<br>**6** = 4.6" x 3"<br>**8** = 2.25" x 1.5"<br>**9** = 4.25" x 2.75"<br>**A** = 2.188" x 39.92mm<br>**B** = 52mm x 1"<br>**C** = 3" x 52mm<br>**D** = 37mm x 1"<br>**E** = 78mm x 52mm<br>**F** = 78.2mm x 52mm<br>**G** = 4" x 2.75"<br>**H** = 80mm x 52mm<br>**K** = 2.5" x 1"<br>**M** = 82mm x 52mm<br>**Y** = 77mm x 52mm<br>**Z** = 53.2mm x 40mm | **(003)** = 3<br>**(006)** = 6<br>**(009)** = 9<br>**(015)** = 15<br>**(020)** = 20<br>**(025)** = 25<br>**(030)** = 30<br>**(035)** = 35<br>**(045)** = 45<br>**(053)** = 53<br>**(063)** = 63<br>**(075)** = 75<br>**(088)** = 88<br>**(105)** = 105<br>**(125)** = 125<br>**(150)** = 150<br>**(200)** = 200 | **(003)** = 3<br>**(010)** = 10<br>**(811)** = 11.8<br>**(512)** = 12.5<br>**(020)** = 20<br>**(099)** = 99 |

EXAMPLE PART NUMBER: **X0 767 - 5 020 - 020 - XXX** PRODUCT FAMILY

| Standard Edge | 5" O.D. 3" I.D. | 20µm Grit | 20 mil Thickness |
|---|---|---|---|

* Depends on diamond grit size
**Depends on blade thickness
Other thickness options, diameters, edge geometries and diamond grit size are available upon request.

## 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.

## MORE THAN 40 YEARS OF EXPERIENCE IN TAILORING SOLUTIONS TO SPECIFIC APPLICATIONS

ADT's Dicing Saws, Blades and Peripheral Equipment manifest a wealth of dicing know-how and experience accumulated over four 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

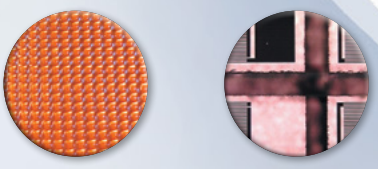
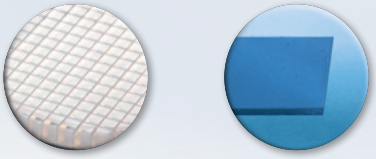
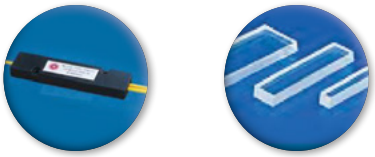
Strict monitoring at each critical stage of the production process insures that each ADT blade meets the desired specifications and dimensional tolerances. Our blades are tested extensively on the latest platforms, simulating the customer's operating conditions and process parameters.
A 100% final inspection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

## 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.

# RESIN-BOND BLADES

ADT's Resin-bond Blades are manufactured through a unique proprietary molding process. When cutting hard and brittle materials, the edge of the blade wears out at a controlled rate exposing new diamonds to constantly sharpen the blade and thus achieve highly accurate kerf, outstanding yield and exceptional blade life.

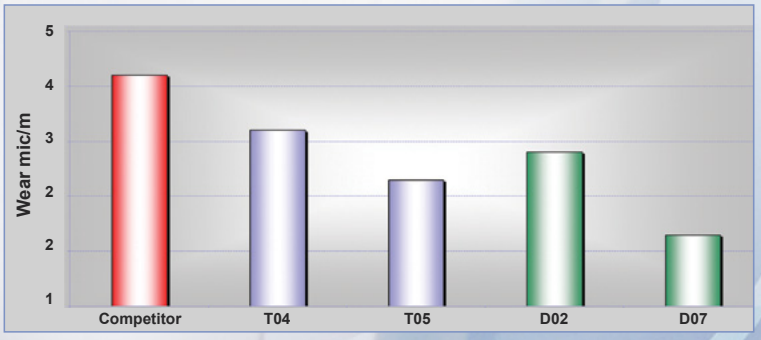
| Application | Recommended Grit Size | |
|---|---|---|
| **QFN**<br>Copper+Epoxy Molding | 45µm, 53µm, 63µm<br>75µm, 88µm, 105µm | |
| **Hybrid substrates and Ceramic Packages**<br>Alumina | 30µm, 45µm, 53µm<br>63µm, 88µm | |
| **SAW Devices**<br>LiTaO3 & LiNbO3 | 15µm, 20µm, 30µm |  |
| **SAW Devices**<br>Quartz | 25µm, 30µm, 35µm, 45µm | |
| **Glass Applications**<br>• Communication | | |
| • Optical Devices | 20µm, 25µm, 30µm, 35µm, 45µm |  |
| • Fiber Optics | | |
| **Optical Splitters**<br>Quartz | 25µm, 30µm, 35µm, 45µm |  |

# RESIN-BOND GENERATION

Keeping our commitments to constantly improve our products and our customers' CoO, ADT has released their new arsenal of Blades to support the new developments in the market.

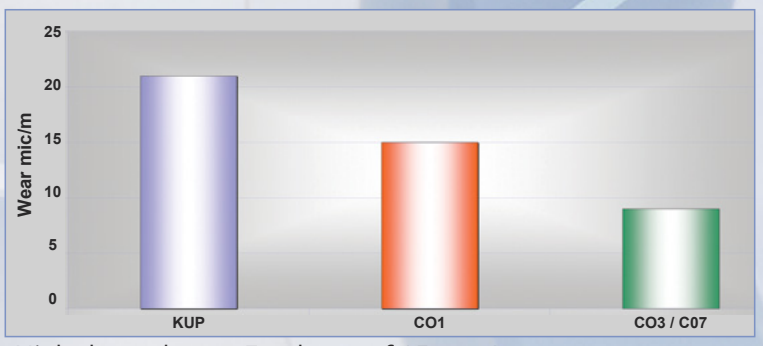
The new products for QFN package singulation, Ceramic substrates and Quartz applications provide best support to the tightest quality specifications, higher UPH and extended blade life requirements in today's competitive market.

## QFN Package Singulation - "D" series




• High throughput - Feed rate of 75 mm/sec

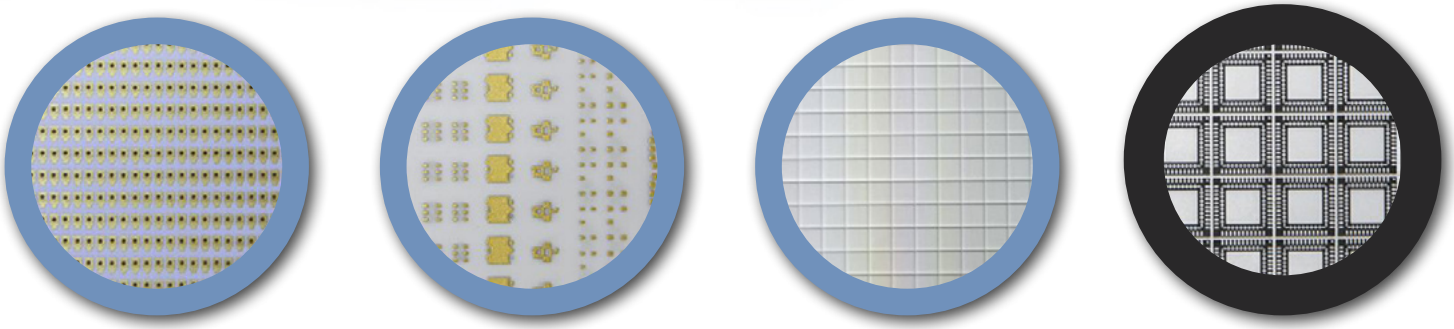
## Ceramic substrates - "C" series




•High throughput - Feed rate of 15 mm/sec

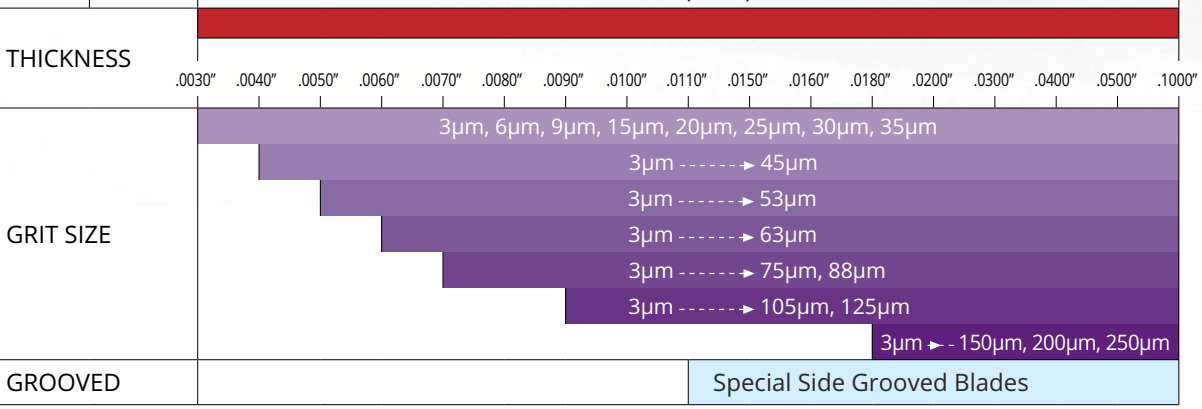
## Quartz applications - "E" series

• High throughput - Feed rate of 8 mm/sec



# RESIN-BOND BLADES STANDARD SIZES

| BLADE I.D. | | BLADE O.D. |
|---|---|---|
| inches | mm | inches (mm) |
| 40.0 | 1.575 | 2.000 (50.8) up to 3.000 (76.2) |
| 76.2 | 3.000 | 4.400 (101.6)<br>4.500 (114.3) |
| | | 5.000 (127.0) |
| 88.82 | 3.497 | 4.256 (108.1)<br>4.600 (116.8)<br>4.700 (119.4) |
| | | 5.000 (127.0) |
| 88.9 | 3.500 | 4.256 (108.1)<br>4.600 (116.8) |




## 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 avalable (as standard) in thickness range from .0150" to .1000"

## 2.

Make sure that the desired blade diameter is available in the desired thickness.

## 3.

All of the colored options bars below the red bar indicate the range of thickness, where that option is available.
For example, blades with 63µm grit size are only available (as standard) in thickness range from .0060" to .1000".

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 Resin-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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