

AN ON-GOING SUCCESS STORY

# 7120/7130 Series

**2" and 4" spindle Dicing System**

**A comprehensive Dicing Solution**

- Automation
- Enhanced Productivity
- High Flexibility
- Advanced Process Capabilities

**Series Highlights**

- Multi-Panel Dicing
- Easy Load and Unload Area
- Easy Access for Maintenance
- Custom Process Solution



**ADT = Dicing**  
Advanced Dicing Technologies



# AN ONGOING

## 7120/7130 Series

### 2" and 4" Spindle Dicing Systems

The 7120/7130 families of 2" and 4" spindle dicing systems deliver a high level of affordability and flexibility to support your needs.

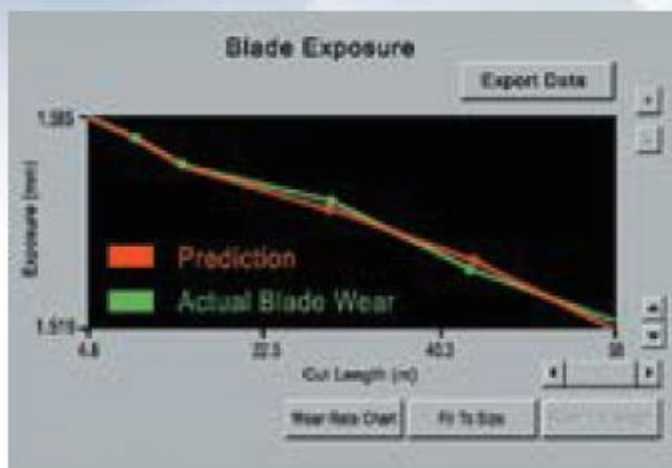
With multiple models to choose from the 7120/7130 Series covers the widest range of applications, offering the lowest Cost-of-Ownership while providing the most advanced dicing technology available.

- Ceramic Substrates
- Thick-film Devices
- Glass
- Glass on Silicon (Sensors)
- PZT
- SAW Filters
- MEMS
- LED & LED Packages
- Package Singulation (BGA, QFN, LTCC)
- Opto-electronic Components
- IC Wafers

### System highlights

The upgraded 7120 / 7130 Series is an improved model of the 7100 Dicing System. This includes:

- Industrial PC
- Low vibration spindle
- Turn table with high torque and high accuracy (1 micron)
- High resolution camera (2000 X 2000 Pixels)
- High microscope resolution
- Large travel of X axis for easy load/unload
- Service window for easy maintenance access
- Vacuum canister for 30% reduction of air consumption



### Blade Wear Forecast Algorithm

A unique algorithm predicts blade wear rates based on blade wear averaged time up to one-third of conventional methods and increases UPH.



# 7120/7130 Models



## 7122

**Front mount 2" air bearing spindle, up to 1.2KW at 60krpm. DC Brushless motor provides close-loop speed control.**

Compatible with 2" - 3" hub and annular blades. Covering up to 8" x 8" products.

The system is equipped with close loop turn table, optimized for variety of products such as:

- Silicon wafers
- Thin-film devices
- High-brightness LED Packages
- SAW Filters
- Glass/Silicon Sensors
- PZT and more....



## 7132

**Front mount 2" air bearing spindle, up to 1.2KW at 60krpm. DC Brushless motor provides close-loop speed control.**

Compatible with 2" - 3" hub and annular blades. Covering up to 12" round product, 12" X 9" square substrates with frame or 12" X 12" chuck without frame.

The system is equipped with close loop turn table, optimized for large panels and multi panels such as:

- PCB, QFN and BGA Panels
- High-brightness LED Packages
- 12" and 8" Silicon Wafers
- SAW Filters



## 7124

**4" high power air bearing spindle, up to 2.5KW at 30 krpm. DC Brushless motor provides close-loop speed control.**

Compatible with 4" and 5" annular blades and covering up to 8" x 8" products.

The system is equipped with close loop turn table, optimized for variety of products such as:

- Ceramic substrates
- Alumina
- Hybrids
- Thick film devices and more...



## 7134

**4" high power air bearing spindle, up to 2.5KW at 30 krpm. DC Brushless motor provides close-loop speed control.**

Covering up to 12" round product or 12" X 9" square substrates with frame or 12" X 12" chuck without frame. The system is equipped with close loop turn table, optimized for multi-angle dicing suitable for variety of products such as:

- Ceramic substrates
- Alumina
- Hybrids
- Thick film devices and more...



# SUCCESS STORY

## 7120/7130 Options

### 71TS

The Tilting Spindle dicing system is designed to meet the needs of Optoelectronic component manufacturers by providing both perpendicular cuts and 8° angular cuts needed to suppress back-reflection in fiber optic components.

The 71TS has the same machine specification as 7122 with 0.1 angular repeatability and resolution.

The system has dedicated programmable work stations for both angular settings.

It is quick changeover from perpendicular (0) to any angle up to 15°.

The 71TS permits angular dicing of Planar Wave Guides such as:

- Silicon, Silica-on Silicon
- Polymers on Si
- InP
- GaAs
- Fiber Wave Guides
- LiNbO<sub>3</sub>
- Fused Silica



### 7100 XLA

The Extra Large Area (XLA) dicing saw can be configured with a 2" or 4" spindle assembly.

It can cover large panels up to 24" X 18" and it can support 450mm round products.

The monitor is adjustable rotating with a USB hub panel.

The 7100XLA is designed for easy access for maintenance.

Typical applications:

- Large glass panels
- PCB and FR4
- QFN packages and more...



### 71MD

The 71MD dicing saw system is designed for a demanding and tight application such as PZT.

The system is equipped with Height on parts measuring system and it can be provided with large Z clearance in order to support thick jig's.

Z linear encoder is equipped with the 71MD machine for best cut depth accuracy. It can be supplied with spindle balancing system for minimizing the spindle vibration.

Typical applications for Ultra-Sound sensors.

## Geometric Model Finder (GMF)

The Geometric Model Finder (GMF) uses geometric features (e.g., contours) to find an object.

The GMF is capable to overcome uneven changes in illumination or background of the eye point.





# 7120/7130 Options

## Dicing Floor Management (DFM)

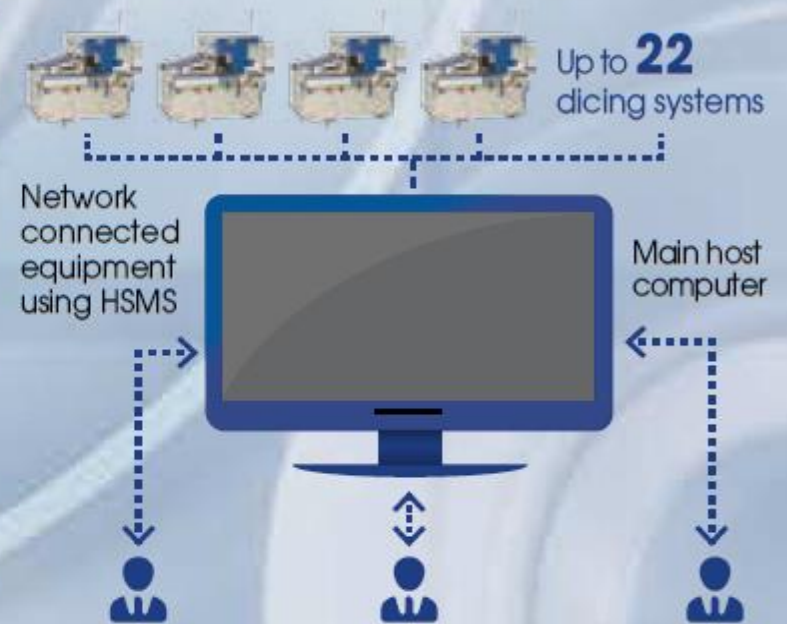
DFM (Dicing Floor Management) is a software tool based on SECS/GEM communication protocol that collects data and monitors all dicing saw machines at the production floor.

The DFM will generate details reports such as UPH, up time, production data and other useful information for the production managers.

It can collect the data from 22 different dicing saw machines.

The main advantages:

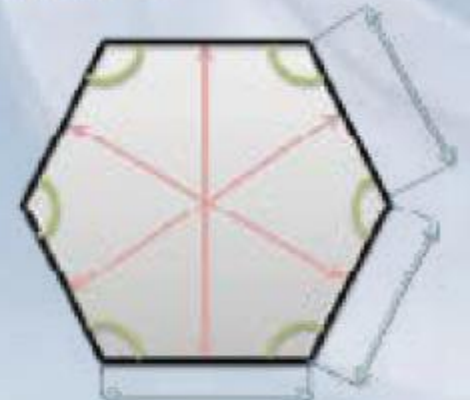
- Transparency & real time visibility of the production floor
- Progressive production monitoring
- Monitoring the production efficiency
- Tracking operator performances
- Increasing productivity
- Increased reliability and quality
- Easy to file reports (daily, weekly and monthly)
- Blade inventory management
- Recipe backups
- Capability to transfer recipe between the systems



## Hexagonal Measuring Software Feature

This feature was developed to customers who wish to dice at hexagonal shapes.

The unique software will provide automatically measuring system which will display the distance between the cuts including the length of each edge. In addition, it will measure the angle between the edges.



## Large Dress Station

Keeping the blade square shape is critical for minimizing back side chipping, preventing the diamond clog resulting high spindle load and cut quality deterioration.

In order to maintain the blade shape, ADT has developed an off chuck dress station for blade reshaping and cleaning.

It has an easy access for changing the dress block and it supports variety of thickness for dress substrates (1mm to 3mm thick).



## Customization

For any software or hardware modification on the Dicing System please contact your local representative.

Contact information is available on ADT website.



# 7120/7130 Series

## Specifications

| Model                | 7122  | 7132                | 7124   | 7134                |
|----------------------|---|---------------------|--|---------------------|
| Workplece Size       | Up to 200mm X 200mm   | Up to 300mm X 300mm | Up to 200mm X 200mm                              | Up to 300mm X 300mm |
| Spindle              | Air-bearing, DC-Brushless<br>60,000 rpm / 1.2 KW  |                     | Air-bearing, DC-Brushless<br>30,000 rpm / 2.5 KW |                     |
|                      | High Power (optional) 60,000 rpm / 2.4 KW   |                     | -  |                     |
| Blade Size           | 2" - 3"   |                     | 4' - 5'  |                     |
| Y Axis               | Ball bearing lead screw with stepper motor<br>Linear encoder<br>0.1 µm<br>1.5 µm<br>1.0 µm  |                     |  |                     |
| Drive                |   |                     |  |                     |
| Control              |   |                     |  |                     |
| Resolution           |   |                     |  |                     |
| Cumulative Accuracy  |   |                     |  |                     |
| Indexing Accuracy    |   |                     |  |                     |
| X Axis               | Air slide<br>Ball bearing lead screw with DC-brushless motor<br>Up to 600 mm/sec  |                     |  |                     |
| Drive                |   |                     |  |                     |
| Feed Rate            |   |                     |  |                     |
| Z Axis               | Ball bearing lead screw with stepper motor<br>Rotary encoder<br>0.2 µm<br>2.0 µm<br>1.0 µm<br>50mm<br>Optional<br>Optional                              |                     |  |                     |
| Drive                |   |                     |  |                     |
| Control              |   |                     |  |                     |
| Resolution           |   |                     |  |                     |
| Accuracy             |   |                     |  |                     |
| Repeatability        |   |                     |  |                     |
| Stroke               |   |                     |  |                     |
| Z Linear encoder     |   |                     |  |                     |
| Z Clearance up to 3" |   |                     |  |                     |
| Ø Axis               | Closed-loop<br>Direct-drive<br>DC brushless<br>4 arc-sec<br>4 arc-sec<br>350°   |                     |  |                     |
| Drive                |   |                     |  |                     |
|                      |   |                     |  |                     |
| Accuracy             |   |                     |  |                     |
| Repeatability        |   |                     |  |                     |
| Stroke               |   |                     |  |                     |
| Vision System        | Digital camera, High bright LED illumination (vertical and oblique)<br>Continuous digital magnification from X55 to X210 or from X35 to X140 (optional) |                     |  |                     |
| Utilities            | 200-240 VAC , 50/60 Hz, single phase<br>260 L/min @ 5.5 bar<br>1.1 L/min tap water<br>Up to 3 L/min   |                     |  |                     |
| Electrical           |   |                     |  |                     |
| Air                  |   |                     |  |                     |
| Spindle Coolant      |   |                     |  |                     |
| Cutting Water        |   |                     |  |                     |
| Dimenslons (WxDxH)   | 965 x 1,300 x 1,600 mm  |                     |  |                     |
| Weight               | 900 kg  |                     |  |                     |
| Environmental        | Typical room temperature: 20° C - 25° C<br>< 70% (relative, non-condensing)<br>Floor must be vibration free   |                     |  |                     |
| Temperature          |   |                     |  |                     |
| Humidity             |   |                     |  |                     |
| Floor                |   |                     |  |                     |

Note: Specifications are subject to change without notice.



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