



FULLY AUTOMATIC DICING MACHINE

AD3000T-HC PLUS

Fast, refined and innovative



TWIN dicing concept with two opposing spindles

Fully automatic dicing machines for 300 mm wafers

This model builds on the design concept of AD3000T-PLUS.

As new added value, AD3000T-HC PLUS supports 2 different processes – wafer handling with a FOUP cassette and frame handling with a normal cassette. A single machine can be used for a variety of applications from half-cut to full-cut dicing.

Space-saving design

Unique diagonal layout design

Accessible from the front for all the work from normal operation to maintenance

High-performance, high-power spindle as standard

Rating: 1.8 kW, Max. rotation speed: 60,000 rpm

Enhanced productivity (throughput)

Gate-shaped structure + X-, Y-, and Z-axis servo motors

Achieves both a small footprint and high throughput
High rigidity and low vibration for improved cutting quality

Operability

17-inch touch panel + GUI (Graphical User Interface)

The machine can be operated with ease and comfort just by touching icon buttons

The operation method is the same as the familiar AD/SS series



Tokyo Seimitsu developed Japan's first wafer dicing machine, Model A-WD-75A, in 1970, making a tremendous contribution to the success of the semiconductor industry in its early days by providing more precise and more efficient die separation process technology.

A wealth of technological resources we have accumulated over five decades enables us to lead the world in dicing technology with our next-generation dicing machine, Model AD3000T-HC PLUS, which combines the latest fluidics, mechatronics, and energy conservation techniques.

TOKYO SEIMITSU CO., LTD.

Features

- 1 Automatic WH (Wafer Handling) / FH (Frame Handling) switchover function**
This function automatically switches between the wafer handling specification and the frame handling specification according to preset recipes. This helps reduce person-hours required for changeover work and prevent operation mistakes.
- 2 FOUP opener as standard**
Automatic opening and closing of the FOUP door reduces risks of wafer damage and environmental pollution during lot processing.
- 3 Cutting table in-plane correction function (Active-Z) as standard**
This function provides highly accurate height control by correcting for height variations in the table surface plane. Particularly, it supports highly accurate Z height control, which is required for half-cut dicing applications.
- 4 Edge trimming process as standard**
As the wafer becomes extremely thin, its periphery is prone to edge chipping due to round shapes, which increases the risk of wafer breaking. The edge trimming process removes the round shapes in the periphery in advance using a blade, thus eliminating the impact of edge chipping.
- 5 Enhanced productivity (throughput)**
2-axis spindle design with two opposing spindles enables waste-free dicing with minimized X-axis movement.
X axis 1,000 mm/sec, Y axis 300 mm/sec, and Z axis 80 mm/sec.
The X, Y, and Z axes are all equipped with servo motors for higher axis speeds.
Optimized control software and 3-axis synchronous control reduces dicing time.
2 optical cutter (OPC) setting units are provided as standard components.
Setting up the cutters simultaneously leads to a shorter standby time.

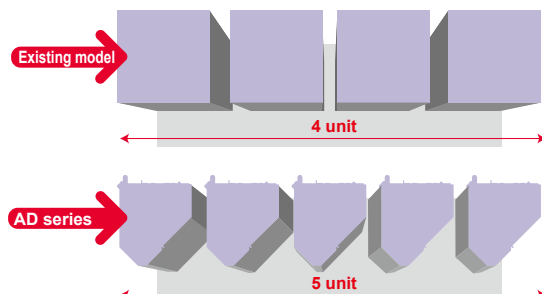
Specifications

Max. work size		Φ 305 mm
Max. number of frames		12 inch (SEMI G74-0699)
Spindle	Rotation	60,000 min-1 OP:80,000 min-1
	Max. blade diameter	Φ 60 mm (2-Inch)
	Rated Output	1.8 KW
X axis	Available cutting range	310 mm
	Max. Speed	1000 mm/s
Y1/Y2 axes	Available cutting range	310 mm
	Max. Speed	300 mm/s
	Resolution	0.078 μm
	Accuracy	0.002 mm / 310 mm
Z1/Z2 axes	Stroke	34 mm
	Resolution	0.002 μm
	Max. Speed	80 mm/sec
	Repeatability	0.001 mm
θ axis	Range of rotation	380°
Misc	Voltage	3 Phase AC200 to 220 V ±10 % (Transformer adoptable)
	Power consumption	6.0 kVA (MAX)
	Air pressure	0.55 to 0.7 MPa
	Avg. Air consumption	210 L/min (0.55 MPa)
	Avg. Clean Air consumption	140 L/min
	Cutting Water, and others (pressure)	0.3 to 0.5 MPa
	Cutting Water, and others (Max Flow)	Cutting Water:10.0 L/min Water curtain:3.0 L/min Others: 0.6 L/min
	Cooling Water (pressure)	0.3 to 0.5 MPa
	Cooling Water (Max Flow)	3.4 L/min (0.3 MPa)
	Exhaust	5.0 m³/ min more
Dimensions (W x D x H)		1290 mm x 1530 mm x 1900 mm
Weight		1330 kg

Space-saving design

Unique diagonal layout design.
Accessible from the front for all the work from normal operation to maintenance.
If multiple units are installed side by side, there is no need for side service clearance. Up to 5 AD3000T-HC PLUS units can be installed in a space that can accommodate no more than 4 existing models.

The AD series has succeeded in footprint reduction compared with the existing models.



Maintenance



The large door and spacious working chamber offer improved maintainability.
The machine is accessible from the front for operating all routine work such as blade replacement and maintenance.

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