AUTOMATIC DICING SAW
DAD3000 series

DAD3220 : Compact model
DAD3230 : Wide model
DAD3430 : High accuracy model
Contents

- DAD3220/3230/3430 overview
- Main features
  - Feature 1: New electrical unit & GUI built-in
  - Feature 2: Auto alignment function
  - Feature 3: Enhanced automated functions
  - Feature 4: Condition monitoring function
  - Feature 5: Highly functional & compact structure
  - Feature 6: Newly developed 1.5 kW spindle
  - Feature 7: How to hold spindle
  - Feature 8: Improved throughput
  - Feature 9: Improved CoO

- Options
- Specification
- Accessories
- DAD3220/3230/3430 Dimensions
New lineup in 3000 series

160 mm sq workpiece is processable

DAD321

DAD3220
Compact model

DAD522

DAD3230
Wide model

DAD562

DAD3430
High accuracy model

DAD3350

(Reference)

Φ8" (max. 250 mm sq)
workpiece processable
DAD3000 series map

High accuracy model
Width: 730 mm
Y-axis accuracy: 0.5/1.5 μm
Improved accuracy of every axis
X-axis air slider

DAD3430
Model handling max. 250 mm sq
Width: 900 mm
Y-axis accuracy: 2/3 μm

DAD3350
Wide model
Width: 730 mm
Y-axis accuracy: 3/5 μm
Enhanced maintainability & expandability

DAD3220
Compact model
Width: 500 mm
Y-axis accuracy: 3/5 μm

DAD3230
High accuracy model
Width: 730 mm
Y-axis accuracy: 0.5/1.5 μm
Improved accuracy of every axis
X-axis air slider

X-axis cutting range (machine size/space flexibility)
## Maximum processable workpiece size

<table>
<thead>
<tr>
<th></th>
<th>DAD3220</th>
<th>DAD3230 DAD3430</th>
<th>DAD3350 (Reference)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Standard</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standard or optional accessory chuck table is used.</td>
<td>φ 6”</td>
<td>φ 6”</td>
<td>φ 8”</td>
</tr>
<tr>
<td><strong>User-specified</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jig and chuck table corresponding to user-specified specification are necessary.</td>
<td>160 mm sq</td>
<td>160 mm sq</td>
<td>250 mm sq</td>
</tr>
</tbody>
</table>

*1: Jig is necessary.
*2: Rotating range of the θ-axis is restricted.
### Footprint (Comparison with conventional machines)

<table>
<thead>
<tr>
<th></th>
<th>Width [mm]</th>
<th>Depth [mm]</th>
<th>Area [m²]</th>
</tr>
</thead>
<tbody>
<tr>
<td>DAD3220</td>
<td>500</td>
<td>900</td>
<td>0.45</td>
</tr>
<tr>
<td>DAD321</td>
<td>500</td>
<td>1050</td>
<td>0.525</td>
</tr>
<tr>
<td>DAD3230/3430</td>
<td>730</td>
<td>900</td>
<td>0.657</td>
</tr>
<tr>
<td>DAD5*2 series</td>
<td>760</td>
<td>850</td>
<td>0.646</td>
</tr>
</tbody>
</table>

- Reduced about 24%
- Almost the same
- 30 mm narrower width

**DAD3220 vs. DAD321**
- DAD3220: 0.450 m²
- DAD321: 0.525 m²

**DAD3230/3430 vs. DAC552/DAD562**
- DAD3230: 0.657 m²
- DAC552/DAD562: 0.646 m²

Either UPS or transformer can be built in (optional).

Both UPS and transformer can be built in.
### Main specification items (excerpts)

<table>
<thead>
<tr>
<th>Specification</th>
<th>Unit</th>
<th>DAD3220</th>
<th>DAD3230</th>
<th>DAD3430</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. workpiece size</td>
<td>-</td>
<td>6” diameter</td>
<td>6” square</td>
<td>6” square</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6” square</td>
<td>220 x 160 mm</td>
<td>220 x 160 mm</td>
</tr>
<tr>
<td>X-axis</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cutting range</td>
<td>mm</td>
<td>160</td>
<td>220</td>
<td>220</td>
</tr>
<tr>
<td>Transfer speed</td>
<td>mm/sec</td>
<td>0.1 to 500</td>
<td>0.1 to 500</td>
<td>0.1 to 300</td>
</tr>
<tr>
<td>Y-axis</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cutting range</td>
<td>mm</td>
<td>162</td>
<td>162</td>
<td>162</td>
</tr>
<tr>
<td>Index step</td>
<td>mm</td>
<td>0.0001</td>
<td>0.0001</td>
<td>0.0001</td>
</tr>
<tr>
<td>Positioning accuracy</td>
<td>mm</td>
<td>Within 0.005/160</td>
<td>Within 0.005/160</td>
<td>Within 0.0015/160</td>
</tr>
<tr>
<td></td>
<td>(Single error)</td>
<td>Within 0.003/5</td>
<td>(Single error) Within 0.003/5</td>
<td>(Single error) Within 0.0005/5</td>
</tr>
<tr>
<td>Z-axis</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum stroke</td>
<td>mm</td>
<td>32.2 (with 2” diameter blade)</td>
<td>32.2 (with 2” diameter blade)</td>
<td>32.2 (with 2” diameter blade)</td>
</tr>
<tr>
<td>Moving resolution</td>
<td>mm</td>
<td>0.00005</td>
<td>0.00005</td>
<td>0.00005</td>
</tr>
<tr>
<td>Repeatability</td>
<td>mm</td>
<td>±0.001</td>
<td>±0.001</td>
<td>±0.001</td>
</tr>
<tr>
<td>Max. available blade diameter</td>
<td>mm</td>
<td>58 (with 1.5 kW)</td>
<td>58 (with 1.5 kW)</td>
<td>58 (with 1.5 kW)</td>
</tr>
<tr>
<td>Spindle</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum rotating angle</td>
<td>deg</td>
<td>320</td>
<td>320</td>
<td>320</td>
</tr>
<tr>
<td>Rated output</td>
<td>kW</td>
<td>1.5 at 30,000 min⁻¹</td>
<td>1.5 at 30,000 min⁻¹</td>
<td>1.5 at 30,000 min⁻¹</td>
</tr>
<tr>
<td>Rated torque</td>
<td>N·m</td>
<td>0.48</td>
<td>0.48</td>
<td>0.48</td>
</tr>
<tr>
<td>Revolution speed range</td>
<td>min⁻¹</td>
<td>3,000 to 40,000</td>
<td>3,000 to 40,000</td>
<td>3,000 to 40,000</td>
</tr>
<tr>
<td>Maximum processable frame</td>
<td>-</td>
<td>2-6-1</td>
<td>2-6-1</td>
<td>2-6-1</td>
</tr>
</tbody>
</table>

* **DAD3220/3230**
  - When linear scale specification (optional accessory) is selected
  - Y-axis positioning accuracy: 0.002 mm/160 mm
  - Single error: 0.001 mm/5 mm

High accuracy
Contents

• DAD3220/3230/3430 overview
• Main Features
  – Feature 1: New electrical unit & GUI built-in
  – Feature 2: Auto alignment function
  – Feature 3: Enhanced automated functions
  – Feature 4: Condition monitoring function
  – Feature 5: Highly functional & compact structure
  – Feature 6: Newly developed 1.5 kW spindle
  – Feature 7: How to hold the spindle
  – Feature 8: Improved throughput
  – Feature 9: Improved CoO

• Options
• Specification
• Accessories
• Dimensions
Feature 1: New electrical unit & GUI built-in

- New electrical unit already used in the DFD6000 series and DAD3350 is built in.
- Software adopting GUI (Graphical User Interface) has been developed for the operational screens
  - Interactive operations adopted in the 300 and 600 series has further evolved and operability in the 500 series is also considered.
  - Quick, accurate and easy operations are realized.

- XGA 15” LCD display
- Pressure-sensitive touch panel that can be operated while wearing gloves
- Large and eye-friendly icon display
- FDD and HDD, previously optional, are built in as standard. Large volume device data can be saved.
Feature 2: Auto alignment function

Auto alignment

- Machine adjusts the focus.

Auto focus

Kerf check
(Checking a cut line)

- Max. chipping width
- Total chipping area
- Kerf center

Macro alignment (option)

Auto light level

- Direct lighting: LED lamp
- Oblique lighting: Halogen lamp

Fine alignment by micro alignment

Rough alignment by macro alignment
Feature 3: Enhanced automated functions

- Automated functions almost identical to the full auto machine are built in as standard, effective for preventing operational errors, enhancing uniformity, and reducing extra labor.
  - Auto alignment
  - Auto kerf check (cut line auto check)
  - Auto focus
  - Auto light level adjustment (co-axial direct & oblique lighting)
  - Lens shutter for preventing foreign substance from adhering
  - Scope blow

- An LED is adopted for the co-axial direct lighting.
  Response at the time of light level adjustment is good, realizing longer life and energy saving
  - The co-axial direct lighting can be changed to halogen for a workpiece whose reflectance is low (optional).
Feature 4: Condition monitoring function

- Condition monitoring function, which can check various conditions of the machine on a real time basis, is built in. → Processing condition can be checked easily.
- Data logging is also possible and effective for processing traceability.

**Chuck table vacuum pressure (standard)**

**Spindle current value (standard)**

**Wheel coolant flow meter (option)**
Feature 5: Highly functional & compact structure

For the DAD3430, a highly accurate air slider is installed to the X-axis. This, together with the high positioning accuracy of the Y-axis, provides high quality processing.
Feature 6: Newly developed 1.5 kW spindle

A dedicated spindle has been newly developed.
* 1.5 kW - 30,000 rpm, 0.48 N·m

Front thrust structure
Shaft lock mechanism
Flange (R-type), wheel mount and jig
  → Common to the DAD3350
Min. flange size: 48.2 mm diameter
Low expansion spindle
  (optional accessory)
ϕ 3” diameter blade usable
  (user-specified specification)
(Note: except for DAD3220)
### Feature 7: How to hold the spindle

In the DAD3220/3230/3430, as the spindle is held at the flange located at the backside, such structure is hard to be influenced by heat and contributes to compactness.

<table>
<thead>
<tr>
<th>Structure and applicable workpiece</th>
<th>DAD3220/3230/3430</th>
<th>DAD3350</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Holding point</strong></td>
<td><img src="image" alt="Diagram" /></td>
<td><img src="image" alt="Diagram" /></td>
</tr>
<tr>
<td><strong>6” dia.</strong></td>
<td></td>
<td><strong>8” dia. or more</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Characteristics</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Small diameter workpiece processable</td>
<td>Short spindle</td>
<td>Suitable for large diameter workpieces (8” or more), held by suspending at the front side of the spindle from the gate-shaped frame</td>
</tr>
<tr>
<td>Adoption of high-torque spindle</td>
<td>Thick motor</td>
<td></td>
</tr>
<tr>
<td>Held at the spindle backside flange</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Spindle thermal expansion/contraction</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Small thermal influence as the spindle is short and held at the flange</td>
<td></td>
<td>Small influence as the spindle is short and held at the front side</td>
</tr>
</tbody>
</table>
Feature 8: Microscope 1

- Binocular microscope (standard specification)
  - 7.5x ½ camera
    Magnification on the monitor: 223x  Y-direction viewpoint range: 0.64 mm
  - Lens shutter as standard accessory
  - Macro microscope installable (optional)
  - Objective lens magnification and camera size selectable (optional)

- LED lighting as direct lighting source (standard)
  - Direct lighting halogen lamp (optional)

- Ring-light lighting using halogen lamp (Option)
  - Especially when using the auto alignment, the use of ring-light is recommended. (It makes easier to search the target pattern)
Feature 8: Microscope 2

- Microscope viewable range
  - DAD3220: Refer to the table below.
  - DAD3230/3430: Workpiece whole surface

Values are as a reference. The range varies with the position of a workpiece placed on the chuck table.

<table>
<thead>
<tr>
<th>DAD3220</th>
<th>Visible range from the center of the table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Right</td>
<td>Full workpiece surface</td>
</tr>
<tr>
<td>Left</td>
<td>63 mm</td>
</tr>
<tr>
<td>Front</td>
<td>Micro-magnification microscope: 81 mm</td>
</tr>
<tr>
<td></td>
<td>Macro-magnification microscope: 41 mm</td>
</tr>
<tr>
<td>Rear</td>
<td>Micro-magnification microscope: 81 mm</td>
</tr>
<tr>
<td></td>
<td>Macro-magnification microscope: 81 mm</td>
</tr>
</tbody>
</table>
Feature 9: Improved CoO

- **Improved CoO**
  - **Energy saving**
    - Spindle air and spindle coolant are turned off when power is turned off.
    - Energy saving mode can be set at the time of machine stand-by.
  - **Maintenance saving**
    - Less frequency of lubrication
    - Concentration of grease nipples
Options

1. Macro/Micro alignment
2. NCS (non-contact setup)
3. BBD (blade breakage detector)
4. Cutting water flow rate control
5. Low expansion spindle
6. Measurement alignment package software
7. UPS (uninterruptible power supply)
Option 1: Macro/Micro alignment

<<Addition of macro (low magnification) microscope>>
Even in cases where accuracy of manual mounting and tape mounting accuracy cannot be secured, error can be reduced and alignment can be made speedily.

**Macro alignment**
- Rough alignment using large targets -

![Macro alignment image]

(Low-magnification microscope is used)

**Micro alignment**
- Fine alignment using small targets -

![Micro alignment image]

(High-magnification microscope is used)
Option 2: NCS (non-contact setup)

Setup method using the transmission sensor

Difference between the chuck table upper surface and the sensor position is obtained, thereby being able to position the table upper surface, without performing a contact setup.

Prevents the blade tip from being damaged to enhance cutting quality
Option 3: BBD (blade breakage detector)

- This accessory detects a blade breakage condition and stops the cutting operation immediately, thereby preventing yield loss caused by any damage due to a broken blade in the middle of the cut operation.

Sensor block

The transmission sensor detects blade breakage and abnormal wear.
Option 4: Wheel coolant flow rate control function

- Wheel coolant data is controlled and automatically managed, thereby reducing extra labor for processing control and enhancing processing reliability.
  - Loop control using the flow rate sensor is adopted so it is advantageous to stably supply wheel coolant and cope with fluctuation of source pressure.
  - Deteriorated processing quality due to adjustment error is avoidable.
  - Cutting water flow rate can be set for each device data.
Option 5: Low expansion spindle

- A material that is hard to expand is used for the spindle outer section so that the spindle displacement due to temperature fluctuation is reduced.

Area whose material has been changed (housing section)

<table>
<thead>
<tr>
<th></th>
<th>Low expansion type</th>
<th>Standard type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material (housing section)</td>
<td>Super Invar</td>
<td>SUS431</td>
</tr>
<tr>
<td>Displacement due to</td>
<td>Deviates 0.2 to 0.3 (\mu m) per (1^\circ C)</td>
<td>Deviates 2 to 3 (\mu m) per (1^\circ C)</td>
</tr>
<tr>
<td>temperature fluctuation of coolant</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

> If the temperature of the coolant is controlled, even the standard spindle has less displacement.
Option 6: Measurement alignment package

- Multiple workpiece mounting: Up to sixteen workpieces
- Handling of workpiece expansion/contraction

### Measurement alignment function

<table>
<thead>
<tr>
<th>Measurement alignment type</th>
<th>Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) 1-point alignment</td>
<td>Effective for workpieces whose contraction between blocks is extreme</td>
</tr>
<tr>
<td>(2) 2-point alignment</td>
<td>Effective for workpieces whose contraction in blocks is extreme</td>
</tr>
<tr>
<td>(3) All-line alignment</td>
<td>Effective when highly accurate cutting is required</td>
</tr>
</tbody>
</table>

Note: Including a part of AB alignment function (right and left different targets)

**1-point alignment**  
At each block

**2-point alignment**  
At start and end of each block

**All-line alignment**  
At cut line
Option 7: Uninterruptible power supply (UPS)

Thanks to the addition of the UPS, the machine and workpiece can be protected even in a region where the power supply condition is unstable or during an unprepared for power supply trouble (e.g. power interruption)

- Function to assure the power supply at the time of a momentary power interruption
  
  When the voltage drop or power interruption ends within two seconds, power is supplied by battery and the machine operation is guaranteed.

- Power interruption compensation function
  
  When the voltage drop or power interruption continues over two seconds, the function transfers to the compensation function to assure power supply during the momentary power interruption and the machine axis escapes.

When this accessory is built in
Photo taken from the machine lateral side
Photo: DAD3350
Based on a request of a customer, DISCO can provide various individual specifications. For details, contact your DISCO sales representative.
Specification

<table>
<thead>
<tr>
<th>Specification</th>
<th>Unit</th>
<th>DAD3220</th>
<th>DAD3230</th>
<th>DAD3430</th>
</tr>
</thead>
<tbody>
<tr>
<td>Workpiece size</td>
<td>-</td>
<td>φ 6” diameter</td>
<td>6” square</td>
<td>6” square</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6” square (*1)</td>
<td>220 x 160 mm</td>
<td>220 x 160 mm</td>
</tr>
<tr>
<td>X-axis</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cutting range</td>
<td>Mm</td>
<td>160</td>
<td>220</td>
<td>220</td>
</tr>
<tr>
<td>Transfer speed</td>
<td>mm/sec</td>
<td>0.1 to 500</td>
<td>0.1 to 500</td>
<td>0.1 to 300</td>
</tr>
<tr>
<td>Y-axis</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cutting range</td>
<td>mm</td>
<td>162</td>
<td>162</td>
<td>162</td>
</tr>
<tr>
<td>Index step</td>
<td>mm</td>
<td>0.0001</td>
<td>0.0001</td>
<td>0.0001</td>
</tr>
<tr>
<td>Positioning accuracy</td>
<td>mm</td>
<td>Within 0.005/160</td>
<td>0.005/160</td>
<td>0.005/160</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Single error)</td>
<td>(Single error)</td>
<td>(Single error)</td>
</tr>
<tr>
<td>Z-axis</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum stroke</td>
<td>mm</td>
<td>32.2 (with 2” diameter blade)</td>
<td>32.2 (with 2” diameter blade)</td>
<td>32.2 (with 2” diameter blade)</td>
</tr>
<tr>
<td>Moving resolution</td>
<td>mm</td>
<td>0.00005</td>
<td>0.00005</td>
<td>0.00005</td>
</tr>
<tr>
<td>Repeatability</td>
<td>mm</td>
<td>≤ 0.001</td>
<td>≤ 0.001</td>
<td>≤ 0.001</td>
</tr>
<tr>
<td>Maximum available blade diameter</td>
<td>mm</td>
<td>58 (with 1.5 kW)</td>
<td>58 (with 1.5 kW)</td>
<td>58 (with 1.5 kW)</td>
</tr>
<tr>
<td>ϑ-axis</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum rotating angle</td>
<td>deg</td>
<td>320</td>
<td>320</td>
<td>320</td>
</tr>
<tr>
<td>Spindle</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rated output</td>
<td>kW</td>
<td>1.5 at 30,000 min⁻¹</td>
<td>1.5 at 30,000 min⁻¹</td>
<td>1.5 at 30,000 min⁻¹</td>
</tr>
<tr>
<td>Rated torque</td>
<td>N·m</td>
<td>0.48</td>
<td>0.48</td>
<td>0.48</td>
</tr>
<tr>
<td>Range of revolution speed</td>
<td>min⁻¹</td>
<td>3,000 to 40,000</td>
<td>3,000 to 40,000</td>
<td>3,000 to 40,000</td>
</tr>
<tr>
<td>Maximum processable frame</td>
<td></td>
<td>2-6-1</td>
<td>2-6-1</td>
<td>2-6-1</td>
</tr>
<tr>
<td>Power supply</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power consumption</td>
<td>kW</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3-phase, 200 to 240 VAC (standard) *3</td>
<td>3-phase, 200 to 240 VAC (standard) *3</td>
<td>3-phase, 200 to 240 VAC (standard) *3</td>
</tr>
<tr>
<td></td>
<td>During warm-up</td>
<td>0.4</td>
<td>0.4</td>
<td>0.4</td>
</tr>
<tr>
<td>Utilities</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum power</td>
<td>kVA</td>
<td>3.5</td>
<td>3.5</td>
<td>3.5</td>
</tr>
<tr>
<td>Air pressure</td>
<td>MPa</td>
<td>0.5 to 0.8</td>
<td>0.5 to 0.8</td>
<td>0.5 to 0.8</td>
</tr>
<tr>
<td>Air maximum consumption</td>
<td>L/min (ANR)</td>
<td>170</td>
<td>170</td>
<td>200</td>
</tr>
<tr>
<td>Wheel coolant water</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pressure</td>
<td>MPa</td>
<td>0.2 to 0.4</td>
<td>0.2 to 0.4</td>
<td>0.2 to 0.4</td>
</tr>
<tr>
<td>Max. consumption flow rate</td>
<td>L/min</td>
<td>0.2 to 4.0</td>
<td>0.2 to 4.0</td>
<td>0.2 to 4.0</td>
</tr>
<tr>
<td>Spindle coolant water</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pressure</td>
<td>MPa</td>
<td>0.2 to 0.4</td>
<td>0.2 to 0.4</td>
<td>0.2 to 0.4</td>
</tr>
<tr>
<td>Max. consumption flow rate</td>
<td>L/min</td>
<td>1.5</td>
<td>1.5</td>
<td>1.5</td>
</tr>
<tr>
<td>Duct capacity</td>
<td>m³/min</td>
<td>1.5</td>
<td>2.5</td>
<td>2.5</td>
</tr>
<tr>
<td>Machine dimensions (W x H x D)</td>
<td>mm</td>
<td>500 x 900 x 1,670</td>
<td>730 x 900 x 1,670</td>
<td>730 x 900 x 1,670</td>
</tr>
<tr>
<td>Machine weight</td>
<td>kg</td>
<td>550</td>
<td>600</td>
<td>600</td>
</tr>
</tbody>
</table>

Note: Installation of optional accessory is required. For details, contact your DISCO sales representative.

*1: Jig is necessary.
*2: Rotating angle of the ϑ-axis is restricted.
*3: Use under a power voltage fluctuation range from 180 to 250 V.
### Standard accessories
- Fuse set (Glass) (3.15 A, 250 V)
- Halogen lamp (7.5 V, 50 W)
- Floppy disk case
- LED light
- Universal chuck table (6”)
- Torque screwdriver
- Bit
- Duct cuffs (nominal: 32)
- Duct cuffs (nominal: 50)
- Duct hoses (nominal: 32)
- Duct hoses (nominal: 50)
- Pipe band (nominal: 32)
- Pipe band (nominal: 50)
- Carbon brush assy. (for 1.5 kW spindle)
- Locating pin
- Axis metal fixture
- Wheel cover assy.

### Standard built-in
- External memory storage device (FDD)
- Hard disk use selection
- Coolant flow switch selection
- Scope blow selection
- Vacuum switch unit selection
- Microscope lens shutter selection

### Elective accessories
- Flange selection
- Label selection
- Attached manual selection

### Optional accessories
- Braided hose joint selection
- Braided hose selection
- Pipe band selection
- Tool set (bag) selection
- Chuck table selection
- Abrasive material for Non-contact setup sensor selection
- Lifting jig set selection
- Machine fixation anchor metal selection
- Metal fixture for crating
- Spare hub mount selection
- Spare R-type flange selection
- Axis metal fixture selection
- Non-contact setup selection
- Blade breakage detector selection
- Uninterruptible power supply selection
- Duct fan unit selection
- Transformer unit for overseas use selection
- Power cables selection
- Spare manuals selection
- Microscope specification selection
- Macro microscope
- Halogen lamp specification
- $\alpha$-axis rotating angle limitation selection
- Wheel cover selection
- Wheel coolant (shower) flow switch selection
- Wheel coolant (blade cooler) flow switch selection
- Controller for the wheel coolant water flow rate selection
- Water leakage sensor selection
- Kerf center alignment specification selection
- Slow-in cutting function selection
- Linear scale specification selection (standard built-in for 3430)
- Microscope lighting specification selection
- Low-expansion spindle-axis unit selection
- Auto blade dress function selection (except for 3220)
DAD3220/3230/3430 dimensions

Machine dimensions: 900 W x 1,050 D x 1,800 mm H
Machine weight: 1,300 kg
Footprint: 0.945 m²
Application

Blade

Machine

Fin.