A well-reputed DX series incorporates the CNC system. Highly sophisticated original software matching the hardware presents you with ideal grinding machining.

OKAMOTO's precision grinding machine series generalizes that high accuracy and high efficiency are common to grinding machines. Various features ranging from basic items of precision grinding machine such as unique and rigid column structure and thermal deviation to maintenance free systems and a variety of optional specifications as well as original detail design for high grinding efficiency, high maneuverability based on the ergonomics, and fail-safe mechanism have led to an evaluation that "OKAMOTO's today's mechanisms are standards of tomorrow". Now, we are facing the 21 centuries. OKAMOTO is committing to development of unique softwares that can release highly complete machines from specialized operators with the emphasis put on the high precision grinding that does not require skilled operators through establishment of next-generation technology. New CNC series presents a new grinding scene that will remind you of next generation.
ITH BUILT-IN HIGHLY COMPLETED DECISION SURFACE GRINDING FAMILIAR.

HIGHLY RIGID MACHINE STRUCTURE ENSURES THE LEAST INPUT INCREMENT OF 0.1μm.

Guideways most suitable for functions in each part

Vertical: Guideway of H-shaped structure having 3 taper gids, subjected to Turcite processing.

Cross: Use of flat cage for V-V guideway with high feed accuracy.

Longitudinal: V-V guideway made of cast iron that maintains stable accuracy for a long period of time.

Reinforced maintenance-free oriented design

Maintenance-free features are further improved by employing AC servomotors, non-contact switches, permanent grease sealed wheel spindle. The use of ladder display function facilitates inspection, and has realized simplified maintenance work, eliminating troublesome jobs and time loss.

Standard specification of countermeasures against thermal deviation that remarkably reduces temperature change.

Various measures including air cooling oil cooler and heat insulating covers are used against thermal deviation, so that influence of heat on machining is restricted to the minimum.
The built-in versatile grinding pattern can support any kind of grinding applications.

Only selection of a grinding pattern and form pattern from the built-in menu and input of conditions and final dimensions can start machining immediately. As grinding pattern, you will select either of (1)Increment plunge, (2) Continuous plunge, (3) Traverse or (4) Griss Cross, then one of the six form patterns shown below. A combination of these patterns can clear general grinding needs, and additional programming is therefore not required.

As a result, even preparation and input of data that conventionally took more than one hour for a skilled operator in the G code input mode can be completed in 5 minutes.

Selection of a grinding cycle with just a finger's touch.

Either of four grinding cycle patterns that will suit the purpose can be selected with a single fingertip operation. Then, the machine executes the optimum grinding including intermediate dressing. Of course, optional dressing during an automatic cycle is available.

Troublesome operations are all undertaken by the CNC.

Sizing and position data can easily be input. Owing to the teaching system, simply pressing the CYCLE START switch completes input. Operation can start with arbitrary position, thus eliminating positioning of machining start point and idle time. Additional troublesome operations are all undertaken by the CNC system.

Conversational input system
Easy Operation not Requiring a Skilled Operator

Conventionally, it has been seemed that the degree of completion of a precision grinding depends on the experience and sense of skilled operator, and also the CNC machining requires time and manpower for programming, and therefore, it is still far from true rationalization.

OKAMOTO’s new CNC series provides a solution for this subject by developing unique softwares. Only learning simple basic operations allows even unskilled operator to operate the machine with the maximum grinding performance of the DXNC series.

High Reproducibility Makes a Contribution to Rationalization and QC.

Freely saving and reproduction of grinding data provide a merit in CNC grinding. The use of RS-232-C interface enables saving and reproduction of machining data. This function is effective for unscheduled small-lot machining and also it can reproduce the same machining even if the operator is substituted. In addition, simultaneous operation of several machines can attain rationalization and quality control easily.

Remarkably Reduced Cycle Time.

- G code program (in the case of jump grinding)
- Conversational input

New CNC series provides easy-to-operate functions, not requiring programming. The use of the conversational input system (optional) starts machining by only answering the prompt displayed on the CRT screen (for about 5 minutes) since various machining patterns are built in. The above figures show a comparison between G code input and pattern data input; 4H 35M in G code input is reduced to 2H 5M, less than half.

New Operation System Improving Machine Image.

Almost all switches, keys and lamps are centralized to the movable operation unit. Easy-to-operate and visible panel layout determined by taking operation procedure and frequency into account. Just a finger’s touch of sheet key changes the machine image.
## Specifications

<table>
<thead>
<tr>
<th>Item</th>
<th>Unit</th>
<th>52DXNC</th>
<th>63DXNC</th>
<th>64DXNC</th>
<th>65DXNC</th>
<th>84DXNC</th>
<th>95DXNC</th>
<th>105DXNC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item</td>
<td></td>
<td>Table Working Cap. (Length x Width)</td>
<td>mm</td>
<td>550 x 200</td>
<td>600 x 300</td>
<td>650 x 400</td>
<td>650 x 500</td>
<td>850 x 400</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Distance from Table to Underside of Wheel</td>
<td>mm</td>
<td>47.5 - 397.5</td>
<td>47.5 - 322.5</td>
<td>22.5 - 322.5</td>
<td>22.5 - 522.5</td>
<td>47.5 - 647.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Dim. of Standard Chuck (L x W x H)</td>
<td>mm</td>
<td>500 x 200 x 30</td>
<td>600 x 300 x 36</td>
<td>650 x 400 x 40</td>
<td>650 x 500 x 40</td>
<td>800 x 400 x 40</td>
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<tr>
<td></td>
<td></td>
<td>Table Load Capacity including Chuck</td>
<td>kg</td>
<td>200</td>
<td>420</td>
<td>700</td>
<td>700</td>
<td>700</td>
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<td>T-Slot (Width x No.)</td>
<td>mm</td>
<td>17 x 1</td>
<td>17 x 3</td>
<td>17 x 3</td>
<td>17 x 3</td>
<td>17 x 3</td>
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<tr>
<td>Longitudinal Feed</td>
<td></td>
<td>Max. Travel</td>
<td>mm</td>
<td>650</td>
<td>750</td>
<td>950</td>
<td>950</td>
<td>950</td>
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<tr>
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<td>Longitudinal Feed per Revolution</td>
<td>m/min</td>
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<td>3 - 25</td>
<td>3 - 25</td>
<td>3 - 25</td>
<td>3 - 25</td>
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<td></td>
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<td>Wheel</td>
<td>mm</td>
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<td>47.5 - 322.5</td>
<td>22.5 - 322.5</td>
<td>22.5 - 522.5</td>
<td>47.5 - 647.5</td>
</tr>
<tr>
<td>Cross Feed (Z axis)</td>
<td></td>
<td>Max. Travel</td>
<td>mm</td>
<td>350</td>
<td>500</td>
<td>500</td>
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<td></td>
<td>Cross Feed</td>
<td>mm</td>
<td>0.5 - 12</td>
<td>0.5 - 20</td>
<td>0.5 - 20</td>
<td>0.5 - 20</td>
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<tr>
<td></td>
<td></td>
<td>Grinding Feed</td>
<td>mm</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
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<tr>
<td></td>
<td></td>
<td>Jog Feed</td>
<td>mm</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
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<tr>
<td></td>
<td></td>
<td>Manual Pulser Feed</td>
<td>mm</td>
<td>0.0001 / 0.001 / 0.01</td>
<td>0.0001 / 0.001 / 0.01</td>
<td>0.0001 / 0.001 / 0.01</td>
<td>0.0001 / 0.001 / 0.01</td>
<td>0.0001 / 0.001 / 0.01</td>
</tr>
<tr>
<td>Vertical Feed (Y axis)</td>
<td></td>
<td>Max. Travel</td>
<td>mm</td>
<td>350</td>
<td>500</td>
<td>500</td>
<td>500</td>
<td>500</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Vertical Feed</td>
<td>mm</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Jog Feed</td>
<td>mm</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Manual Pulser Feed</td>
<td>mm</td>
<td>0.0001 / 0.001 / 0.01</td>
<td>0.0001 / 0.001 / 0.01</td>
<td>0.0001 / 0.001 / 0.01</td>
<td>0.0001 / 0.001 / 0.01</td>
<td>0.0001 / 0.001 / 0.01</td>
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<tr>
<td>Motors</td>
<td></td>
<td>Grinding Wheel spindle</td>
<td>kW</td>
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<td>2</td>
<td>3.7</td>
<td>5</td>
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<tr>
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<td></td>
<td>Cross Feed (AC Servo Motor)</td>
<td>kW</td>
<td>0.9</td>
<td>1.2</td>
<td>1.2</td>
<td>1.2</td>
<td>1.2</td>
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<tr>
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<td></td>
<td>Vertical Feed (AC Servo Motor)</td>
<td>kW</td>
<td>0.56</td>
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<td>0.7</td>
<td>0.7</td>
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<tr>
<td></td>
<td></td>
<td>Hydraulic Oil Pump</td>
<td>kW</td>
<td>0.75</td>
<td>1</td>
<td>1.5</td>
<td>2</td>
<td>2.2</td>
</tr>
<tr>
<td>Power Supply</td>
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<td>Motions</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Grinding Diameter (50/60) x Width x Bore</td>
<td>mm</td>
<td>205 - 140 x 240</td>
<td>275 - 225 x 240</td>
<td>275 - 225 x 260</td>
<td>275 - 225 x 260</td>
<td>275 - 225 x 260</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Wheel Speed (50/60 Hz)</td>
<td>rpm</td>
<td>3000 / 3600</td>
<td>1800 / 1800</td>
<td>1800 / 1800</td>
<td>1800 / 1800</td>
<td>1800 / 1800</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Grinding Wheel spindle</td>
<td>kW</td>
<td>1.5</td>
<td>2</td>
<td>3.7</td>
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<td>3.7</td>
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<tr>
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<td></td>
<td>Cross Feed (AC Servo Motor)</td>
<td>kW</td>
<td>0.9</td>
<td>1.2</td>
<td>1.2</td>
<td>1.2</td>
<td>1.2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Vertical Feed (AC Servo Motor)</td>
<td>kW</td>
<td>0.56</td>
<td>0.7</td>
<td>0.7</td>
<td>0.7</td>
<td>0.7</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hydraulic Oil Pump</td>
<td>kW</td>
<td>0.75</td>
<td>1</td>
<td>1.5</td>
<td>2</td>
<td>2.2</td>
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<tr>
<td></td>
<td></td>
<td>Power</td>
<td>KVA</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td>Desired Power Consumption</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Magnetic Chuck and Coolant System</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Net Weight</td>
<td>kg</td>
<td>2100</td>
<td>2800</td>
<td>3200</td>
<td>3500</td>
<td>4000</td>
</tr>
</tbody>
</table>

Note: The contents of this catalogue are subject to change without notice.

## NC Unit for PSG / ACC-DXNC Series

<table>
<thead>
<tr>
<th>Description</th>
<th>Specification</th>
<th>Description</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Controlled axis</td>
<td>2 axes: vertical(Y), cross(Z)</td>
<td>13 Feed rate command</td>
<td>F •••• (4 digits)</td>
</tr>
<tr>
<td>2 Simultaneously controlled axes</td>
<td>2 axes</td>
<td>14 Tape memory length</td>
<td>10m</td>
</tr>
<tr>
<td>3 Least input increment</td>
<td>0.0001mm</td>
<td>15 Tool offset memory, Cutter compensation G</td>
<td>±6 digits, X 32 Pairs</td>
</tr>
<tr>
<td>4 Interpolation</td>
<td>Positioning, Linear, circular</td>
<td>16 Manual feed</td>
<td>Manual pulse generator, 1 pulse = 0.0001mm</td>
</tr>
<tr>
<td>5 Max. Programmable dimension</td>
<td>±7 digits</td>
<td>17 Other function</td>
<td>Jog: 0-790 mm/min.</td>
</tr>
<tr>
<td>6 Feedback</td>
<td>Pulse encoder</td>
<td></td>
<td>Rapid feed: 1000 mm/min.</td>
</tr>
<tr>
<td>7 Display</td>
<td>9-inch monochrome CRT/MDI character display</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8 Delta input system</td>
<td>Keyboard-type manual</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9 Tape code</td>
<td>ELA RS232-A or ISO840 (automatically selected when entering tape program)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 Command system</td>
<td>Combined use of Absolute/Incremental</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11 Preparatory functions</td>
<td>G (-2 digits)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12 Auxiliary function</td>
<td>M (-2 digits)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Speed of Standard Wheels

<table>
<thead>
<tr>
<th>PSG/ACC-52DXNC</th>
<th>PSG/ACC-63DXNC, 64DXNC, 65DXNC, 84DXNC, 95DXNC, 105DXNC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
<td>Outside Diameter of Standard Wheel</td>
</tr>
<tr>
<td>50Hz</td>
<td>205mm</td>
</tr>
<tr>
<td>60Hz</td>
<td>3600 rpm</td>
</tr>
</tbody>
</table>
## Optional Accessories

**Micro Balancer**
A fine balance adjustment important for improving grinding surface accuracy can be conducted by just a fingertip operation following the display on the screen.

**Wheel Dresser (Retract Type)**
The dresser is stored in the table except during dressing, so that it does not block grinding operation.

**Cross Manual Pulse Generator**
It is very convenient for entering position data by teaching operation in the cross direction.

---

### Standard Accessories

<table>
<thead>
<tr>
<th>No.</th>
<th>Item</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>NC System (FANUC O-MC)</td>
<td>1Set</td>
</tr>
<tr>
<td>2</td>
<td>Oil Cooler (Air Cooled Type)</td>
<td>1Set</td>
</tr>
<tr>
<td>3</td>
<td>Grinding Wheel (WA-46 HmV)</td>
<td>1Pc.</td>
</tr>
<tr>
<td>4</td>
<td>Wheel Adapter</td>
<td>1Set</td>
</tr>
<tr>
<td>5</td>
<td>Wheel Dresser with Diamond Tool</td>
<td>1Set</td>
</tr>
<tr>
<td>6</td>
<td>Necessary Tools</td>
<td>1Set</td>
</tr>
<tr>
<td>7</td>
<td>Leveling Screws with Plate</td>
<td>1Set</td>
</tr>
<tr>
<td>8</td>
<td>Armrest for Grinding Wheel Spindle Load</td>
<td>1Set</td>
</tr>
<tr>
<td>9</td>
<td>Automatic Demagnetizing Controller MA-3</td>
<td>1Set</td>
</tr>
<tr>
<td>10</td>
<td>Auto Circuit Breaker</td>
<td>1Set</td>
</tr>
<tr>
<td>11</td>
<td>Programming Manual</td>
<td>1Pc.</td>
</tr>
</tbody>
</table>

---

- Coolant & Dust Suction System with Magnetic Dust Separator
- Coolant System with Magnetic Dust Separator & Paper Filter Attachment
- Electro-Magnetic Chuck
- Electro-Magnetic Chuck, Inclining Type
- Permanent Magnetic Chuck, Inclining Type
- Cylindrical Grinding Attachment
- Indexing Device, Manual Type
- Demagnetizer
- Spare Wheel Adapter
- Spare Spindle Unit
- Wheel Balancing Apparatus with Arbor
- Wheel Balancing Arbor
- Micro Balancer
- Wheel Adapter for Micro Balancer
- Working Light
- Hydraulic Oil
- Special Paint (Standard: Munsell 5Y6/1 Grey)
- Hydraulic Oil Temperature Regulator
- Diamond Wheel Trueing Device
- Table Fitting Wheel Dresser, 2 point Type
- Table Fitting Wheel Dresser, 3 point Type
- Wheel Dresser, Retract Type
- Wheel Dresser Mounted Wheelhead, NC Control Type
- Diamond Rotary Dress Driving Device
- Contrary Ventilator Type Spindle Motor
- Spindle Motor Output Upbuilder (52 DXNC: 3.7kW, 63-84 DXNC: 7.5kW)
- Speed Variator Device for Spindle (Max. 7.5kW)
- Wheel Fixed Pompom Speed Device (with Speed Variator Device)
- Interlock for Electro-Magnetic Chuck
- Signal Tower (1-3 Colors: Red, Yellow, Blue)
- Buzzer
- Calendar Timer
- Tape Memory Length & Edit
- CRT Indication for Running Time & Processed Count
- Inch/Metric Changecover
- Conversation Type NC Control with Graphic Function
- Cross Manual Pulse Generator
- Table NC Control (Ball Screw Feed)
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