2000 DCL SERIES

DIGITAL CONTROL LATHE

FEATURES

- FANUC 20-TA CNC control
- CNC Assisted manual machining
- Teach-in / playback operation
- Full CNC automatic operation
- Tool radius & geometry compensation
- FANUC industry standard G-codes
- Rugged cast iron construction
- Consent surface speed (vector control)
- Triple electronic handwheels
- Auto lubrication & coolant system
- Cartridge type spindle head with 3.2" spindle bore

• Configuration are subject to change without notice for further design improvement
Cartridge type heavy duty spindle head with 3.2" spindle bore

2 speed ranges (constant surface speed std.)

Powerful FANUC 20-TA CNC control (Conv. Graphics & Teach-in Function)

Quick change tool post

CNC controllable worklight

Conveniently mounted machine controls

Full length rear splash guard

Vector controlled spindle motor 15 HP

Triple electrical handwheels (X, Z & programmable)

Chip tray

Rigid tailstock

Auto lubrication for all slideways & ballscrews

Sliding door insures operator safety

Chip tray
The Dynamic Power of this Machine
FANUC 20-TA CNC Control

• "Machine guidance" feature allows complete manual control of complicated automatic machining operations
• "Teach-in" capability allows easy record & playback of automatic machining operations
• Equipped with full array of canned cycles with conversational graphics to ease programming
• Full CNC G-Code operation (CAD/CAM)
• Constant Surface Speed Standard (Variable Speed Drive)
• Multiple M-Code processing (up to 3 M-Codes per line)
• Triple electronic handwheels
• Ball screw backslash & pitch error compensation
• Tool geometry & wear offsets with radius compensation
• Tool path graphics to review part programs

Intuitively "Easy-to-Learn" Control Panels

The future of lathes are going the way of computers. VICTOR has created an amazingly functional and easy to use CNC lathe using the FANUC 20-TA CNC. The FANUC 20-TA CNC is the key to the power of this machine. This CNC allows the operator to run the machine in many ways, ranging from a manual mode all the way to a full G-Coded CNC mode. The manual mode allows the operator to use the X-axis, Z-axis, and Machine Guidance handwheels to turn complicated parts easily with practically no programming required. While the fully functional G-Code processor, allows the G-Code experienced machinist to quickly and efficiently run this machine in a way that he is already familiar with.

The Machine Guidance Mode allows the operator to quickly program a part via graphics conversational screens. The machine moves are then generated by the CNC and can be memorized by the TEACH-IN feature. This teach-in feature allows the CNC to "remember" every machining step by automatically converting the required movements to G-Codes. This TEACH-IN feature not only teaches positional movements of the machine, but spindle speeds, Constant Surface Speeds, and other cutting conditions as well. This true teach-in feature allows a part program to be created and replayed instantly, having the CNC repeat everything exactly as the first time. This mode is ideal for the non-CNC operator to quickly and efficiently utilize the full power of a CNC machine without the extensive training usually required.

In addition to the Graphics Conversational programming, this machine is also a fully G-Code capable CNC. Industry standard G-Codes may be used to program and run this machine in a completely automatic mode. Because of the G-Code compatibility, numerous CAD/CAM software packages may be interfaced with this machine to fully take advantage the available CNC technology.

A CNC lathe is a major investment and should be considered carefully. We believe that to build a successful CNC lathe not only requires a strong mechanical frame, but also a control system that will make the machine "Dance". In searching for a control system to integrate to our machine, we passed up on many of the "PC-Based Systems" due to lack of power. The obvious choice became to pick the most well respected name in the CNC industry; the choice was to go with the FANUC 20-TA CNC system. After researching our competitors, we are sure that you will agree that we made the right decision in choosing the FANUC 20-TA as our control system.
# Specifications

<table>
<thead>
<tr>
<th>ITEMS</th>
<th>MODEL</th>
<th>2040 DCL</th>
<th>2060 DCL</th>
<th>2080 DCL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CAPACITY</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Swing over bed</td>
<td></td>
<td>19.7&quot; (500 mm)</td>
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<td></td>
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<tr>
<td>Swing over cross-slide</td>
<td></td>
<td>11.4&quot; (290 mm)</td>
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<td></td>
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<tr>
<td>Distance between center</td>
<td>39.4&quot; (1,000 mm)</td>
<td>59&quot; (1,500 mm)</td>
<td>78.7&quot; (2,000 mm)</td>
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<tr>
<td>Width of bed</td>
<td></td>
<td>13.5&quot; (343 mm)</td>
<td></td>
<td></td>
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<tr>
<td>Spindle bore</td>
<td></td>
<td>Ø 3.2&quot; (Ø 82 mm)</td>
<td></td>
<td></td>
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<tr>
<td>Spindle nose</td>
<td></td>
<td>D1-8 Camlock / A1-8</td>
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<tr>
<td><strong>SPINDLE</strong></td>
<td></td>
<td>Low Gear: 60 ~ 520 rpm</td>
<td>High Gear: 300 ~ 1,650 rpm</td>
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<tr>
<td>(2 Steps-Ininitely Variable)</td>
<td></td>
<td>Vector Torque Control</td>
<td></td>
<td></td>
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<tr>
<td>Spindle speeds</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Chuck size</td>
<td></td>
<td>10&quot; (254 mm)</td>
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<td></td>
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<tr>
<td>Spindle motor</td>
<td></td>
<td>AC 15 HP</td>
<td></td>
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<tr>
<td><strong>CARRIAGE</strong></td>
<td></td>
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<tr>
<td>Cross slide travel (X axis)</td>
<td></td>
<td>10.8&quot; (274 mm)</td>
<td></td>
<td></td>
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<tr>
<td>Longitudinal travel (Z axis)</td>
<td>34&quot; (836 mm)</td>
<td>54&quot; (1,372 mm)</td>
<td>74&quot; (1,880 mm)</td>
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<tr>
<td>Rapid traverse X/ Z axis</td>
<td>200 ipm / 350 ipm</td>
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<tr>
<td>Toolpost shank</td>
<td>1&quot; x 1&quot; (25 mm x 25 mm)</td>
<td></td>
<td></td>
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<tr>
<td>Servo motor torque (X/ Z axis)</td>
<td>51.4 in-lbs (6 Nm) / 102.8 in-lbs (12 Nm)</td>
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<tr>
<td><strong>TAILSTOCK</strong></td>
<td></td>
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<tr>
<td>Tailstock quill diameter</td>
<td>Ø 2.95&quot; (Ø 75 mm)</td>
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<tr>
<td><strong>MACHINE</strong></td>
<td></td>
<td></td>
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<tr>
<td>Floor space required (L x W)</td>
<td>120&quot; x 90&quot;</td>
<td>140&quot; x 90&quot;</td>
<td>160&quot; x 90&quot;</td>
<td></td>
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<tr>
<td>Gross machine weight</td>
<td>7,560 lb</td>
<td>8,030 lb</td>
<td>8,650 lb</td>
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</tbody>
</table>

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## Standard Accessories

1. Automatic lubrication System  
2. Halogen work light  
3. Coolant system  
4. Sliding door with inspection window  
5. Tailstock M.T. #5  
6. Super quick change tool post  
7. Dead center (M.T. #5)  
8. Center sleeve  
9. Set of hexagon T-type wrenches  
10. Tool box  
11. Touch-up paint  
12. Wrench for spindle  
13. Gun oiler  
14. Leveling Mounts  
15. Removable Gap

## Standard CNC Features

1. Manual machining function  
2. Guidance machining function  
3. Teach & playback programming  
4. Conversational graphics programming  
5. Full G-Code CNC capability  
6. Constant surface speed control  
7. Auto spindle jog during gear changes  
8. Vector control spindle drive  
9. Simultaneous multiple M-codes (Up to 3)  
10. Feedrate override: 0% to 200%  
11. Spindle override: 50% to 150%  
12. RS-232 serial port  
13. Animated Tool path Graphics  
14. 16 tool geo offsets w/ nose radius  
15. 63 part program memory (40M)  
16. Backlash error compensation  
17. Ballscrew pitch error compensation

## Additional CNC Features

- Super 28-point roughing cycle  
- Easy "One-Step" part coordinate setting  
- Simultaneous TRIPLE handwheel operation  
- Tool Geometry & Tool Wear Offset  
- 8-Position automatic turret control (Option)  
- Power chucking / control (Option)

## Optional Accessories

- AC Inverter duty motor  
- 3-jaw high speed chuck  
- 4-jaw high speed chuck  
- Qudra Q.C. tool post  
- 8-Position automatic turret  
- Power Chucks  
- Live center (M.T. #5)  
- 5C collet closer  
- Gang type tooling

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**Victor Solutions, Inc.**

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