Commonly Encountered Problems in CNC Training/Customized Development

- Want to train new operators, but production can’t be stopped.
- Want to train local employees prior to starting overseas production.
- Anxious about using actual CNCs for training.
- Not being able to learn CNC operations using a personal computer.
- Not being able to edit CNC programs/check operations using a personal computer.
- Not being able to use a personal computer to check operations when developing customized screens or PLC programs.

NC Trainer and NC Trainer plus Offer a Comprehensive Solution!

Simulation of CNC Operation Using a Personal Computer is Now Possible

- Operation via a Single Personal Computer
  This software realizes display quality and operation at the same level as MITSUBISHI CNC M700V/M70V Series without the need for an NC unit, dedicated display or operation panel.
- Well Suited to Group Training
  Multiple users can use the software simultaneously via a single network-connection license key.
- Execute NC programs on CNCs
  Numerical control (NC) programs created using NC Trainer can be executed on actual machines.*
  * To avoid problems such as interference, be sure to check the program thoroughly before executing it on an actual machine.
- Training using Customized Screens
  NC Trainer is also available as an operation mastering tool that can be used by each customer. Use NC Trainer plus to create a machine operation panel according to individual machine tools, then load it into NC Trainer for training.

New product

for a greener tomorrow
**Functions of NC Trainer/NC Trainer plus**

**NC Trainer**
- Create/Check NC programs, perform setup and machine operations and output NC programs all via a personal computer. This software allows total personal computer-based CNC operation training and program reviews without having to use an actual CNC.
- **Create NC programs**
  - Create NC programs while referring to drawings.
  - Possible to use G code and dimension input (NAVI MILL/NAVI LATHE).
- **Check programs**
  - Visually check whether or not the NC program created operates correctly.
- **Setup operation**
  - Trainees can learn how to operate setting screens for parameters, workplace coordinates and tool offsets, all set prior to actual machining.
- **Program operation**
  - Possible to learn a series of operations via NC programs created and execute graphic tracing during operation.
- **Output**
  - The NC programs can be output and loaded to a machine for operation.

**NC Trainer plus**
- NC Trainer plus has the additional function of supporting customized development. Customize the operation panel, create and debug programmable logic controller (PLC) programs, make alterations to customized screens and output various data such as parameters or tool data all using a personal computer.
- **Customize the operation panel**
  - Flexibility to change the key layout of the operation panel.
  - PLC programs can be created and the operations can be checked using on-board function or “UX-Developer”.
- **Create PLC programs and check operations**
  - Customized screens created using “NC Designer” can be opened and checked with NC Trainer plus.
- **Check operations of customized screens**
  - Various data can be imported to NC Trainer to realize a dedicated operation training environment according to individual machine tool specifications.

**License type**

**Standalone**
- One user license is required for each computer. To enable use, simply install NC Trainer/NC Trainer plus on a personal computer and insert the USB license key.

**Network connection**
- License packs for 10, 20, 30 or 50 users are available. Simultaneous use is limited to the total number of licenses purchased.
- **Personal computer**
  - + NC Trainer
  - + License key

**Specifications**

<table>
<thead>
<tr>
<th></th>
<th>NC Trainer</th>
<th>NC Trainer plus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Machining center system</td>
<td>Machining center system</td>
<td>Lathe system</td>
</tr>
<tr>
<td>Lathe system</td>
<td>Lathe system</td>
<td></td>
</tr>
<tr>
<td>Number of control axes</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Maximum number of NC axes</td>
<td>16</td>
<td>16</td>
</tr>
<tr>
<td>Maximum number of NC axes (on total for all the part systems)</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Maximum number of spindles</td>
<td>16</td>
<td>16</td>
</tr>
<tr>
<td>Maximum number of PLC axes</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Minimum number of part systems</td>
<td>2</td>
<td>4</td>
</tr>
</tbody>
</table>

**Languages**
- 5 languages (Japanese, English, German, Italian, French, Spanish, Chinese (traditional and simplified characters), Hungarian, Dutch, Swedish, Turkish, Polish, Russian and Czech)
- 4 languages (Japanese, English and Chinese (traditional and simplified characters))

*Please contact Mitsubishi Electric for other specifications.*

**Operating environment**

<table>
<thead>
<tr>
<th>Item</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>OS</td>
<td>Windows® XP SP3 or later (32-bit version)/Windows Vista® SP2 or later (32-bit version)/Windows 7 (32-bit version/64-bit version) (Both versions for Japanese, English and Chinese (traditional and simplified characters)) Windows® 8 to be supported (Under development)</td>
</tr>
<tr>
<td>CPU</td>
<td>Speed of 1.8GHz or greater and containing 2 or more cores</td>
</tr>
<tr>
<td>Memory</td>
<td>2GB or more</td>
</tr>
<tr>
<td>Available hard disk space</td>
<td>200MB or more (excluding the free space necessary for running the OS)</td>
</tr>
<tr>
<td>Display</td>
<td>XGA (1024 x 768) or better resolution</td>
</tr>
<tr>
<td>Interface</td>
<td>CD-ROM or DVD drive, Ethernet and USB 1.1 or higher</td>
</tr>
</tbody>
</table>

(Note) Windows® is a trademark or registered trademark of Microsoft Corporation in the United States and other countries.

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Specifications are subject to change without notice.