

README FILE

Peter Smid

CNC PROGRAMMING HANDBOOK

Third Edition with CNC Projects CD-ROM v3.0

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The first and second editions of the **CNC Programming Handbook** have met with great success and each became an instant international bestseller. Many CNC programmers, machinists and operators, managers, supervisors, engineers, instructors, students and other readers have found the handbook an invaluable resource of information and illustrative examples.

This **Third Edition** of the **CNC Programming Handbook** goes another step further and provides enhanced chapters and illustrations, hundreds of practical examples (many new ones), solutions to problems, reference files, handouts and many other resources. Index has also been enlarged, for easier subject search. Within text, there are many references to actual page numbers, also to simplify search for related subjects. One of the most significant changes in this edition is the inclusion of a toolpath simulation software called **NCPlot** ([NCPlot website](http://www.ncplot.com)). This 15-day, fully functional shareware version, supports virtually all subjects covered in this handbook. All these additional resources are on the CD-ROM enclosed with the **CNC Programming Handbook**.

CD-ROM

If every page of every file on the CD-ROM were to be printed, the number of sheets of paper would go well into many hundreds. This special CD offers a unique experience in finding any required material - the file search uses a logical menu structure with graphical preview, whenever applicable.

For the instructors using the *First Edition* for training

The major addition to the *Second Edition* and *Third Edition* is the inclusion of the CD-ROM. The hardcover book did get a fresher look, but its contents were virtually intact in the *Second Edition*. There are no changes to the page numbers in the *Second Edition*. This *Third Edition* offers a significant change in forms of additions - no subject has been removed - which resulted in changes to page numbers.

To instructors, it means a little bit of work, because any training material already prepared that uses page numbers as references does need updating.

Inclusion of the CD with toolpath simulation will enhance the existing training, as the majority of projects are based on **CNC Programming Handbook** chapters and also follow the numbering of individual chapters.

Why the CD-ROM?

The high item on the wish list from the users of the first edition was a desire to have not only the examples that are already in the book, but also actual programming projects and exercises. It would be virtually impossible to add even a few such projects to the book without making it too big and, therefore, more expensive. The author has chosen the approach of providing these projects on a CD-ROM, included with the *Second/Third Edition* and - at no additional cost. Another wish list that was high on the minds of many readers was the lack of toolpath simulation software. That has been fixed and NCPlot 15-day evaluation shareware is included on the CD. Special pricing for students enrolled in CNC classes may be available - check at www.ncplot.com.

Automatic Startup and Setup

The enclosed CD-ROM is self-running, using the 'autorun' technology - when you place the CD into the CD-ROM drive of your computer, the operating system should automatically show *Setup Wizard*. In case this does not happen, chances are that your operating system is not configured to accept 'autorun' feature. Either enable 'autorun' in Windows or - from the Explorer, select **Setup.exe** on the CD.

Installing to the Hard Drive

Even a fast CD-ROM is still much slower than modern hard drives. For this reason, when the CD-ROM is detected when placed into the drive, all files will automatically be installed to your hard drive and a shortcut icon will be placed on the desktop. If you do have to run from the CD, run file **CNC Projects.exe**

Uninstalling the Software

All installed software can be uninstalled automatically. The suggested procedure is to uninstall from the Windows **Start** menu, by clicking **CNC Projects**, then selecting **Uninstall CNC Projects**. You may also uninstall from the **Control Panel** - select **Add/Remove Programs**, then select **CNC Projects**.

Main Menu

The one second long welcome screen is the gateway to all other menu selections via the **Main Menu**. All other selections originate from the **Main Menu**. You can return to the **Main Menu** from any displayed page.

Menu Structure

Menu selections follow established hierarchical menu development format. All files can be accessed with only a few mouse clicks. To help you understand each menu heading, a short explanation and/or information is given when the mouse is positioned over the menu item. Also, in most cases, a preview image will also appear, for additional convenience.

Why are some menu items greyed out?

The majority of menus are developed along a logical hierarchical structure - the menu for the enclosed CD is no different. Such a structure allows a very efficient method to select the desired menu item with only a few mouse clicks. It also means that menu items have to be very tightly grouped and only so many can be placed on a single menu page. For the projects and exercises based on book chapters, the menu has been designed for twelve menu items maximum on a single menu page.

Ideally, if every one of the 53 chapters had 12 menu items (various programming projects and exercises), each menu would also have the same appearance. It is not necessary for every chapter to have so many exercises, so the problem arises when some chapters have only one or two menu items - the unavailable items would have to be blank and the overall appearance of the menu page would suffer.

Considering that any work dealing with CNC programming projects and exercises can really never be completed, the author has chosen to offer the available menu items to the **CNC Programming Handbook** users for suggestions and contributions. When you click on any dark grey menu item, you will receive a message encouraging you to email the author with a suggestion for another project or an exercise.

Although all chapters in the handbook are of equal importance, not every chapter requires a special project or an exercise. In this *Third Edition*, all major programming subjects are well covered with various programming projects and exercises. In the future editions, more projects may be added, as necessary.

Opening Files

Any file listed on the menu should open when you click on the heading. Typically, **blue** color is used for listing, which will change to **orange**, when the mouse moves over the heading, then it changes to **green** as a confirmation that the click has been accepted.

Acrobat Reader - Version 6+ Required

If you have a problem opening a PDF file, check if you have **Acrobat Reader** installed on your computer. If you do, and still have a problem opening files from the menu, check the **Acrobat Reader** version. If it is below version 6, **you must uninstall the old version**, and install the newest version - v8.1.0 is available from the **Utilities** menu. This version will open *all* PDF files that your old version opened, but also the newest files as well. You may also want to disable automatic update dialogue box that may interfere with a displayed page.

A small selection of files are **MS Excel** files (all under one menu), and can only be opened with *Microsoft Excel* installed on your system. All are compatible with MS Excel 2003 and 2007.

All PDF files can be printed directly from Acrobat Reader - they are all formatted to 8.5 x 11 inches and can be printed 100% size, with sufficient margins for A4 paper users and to punch holes for binders. For best results, **uncheck** 'Shrink oversized pages to paper size' in the printer dialogue box of Adobe Acrobat Reader.

Acrobat Reader Splash Screen

As a default, when Acrobat Reader opens a file, it briefly shows its own splash screen, while opening the selected file. Some users prefer to turn off the splash screen for less clutter on the screen.

Follow this procedure to remove the Acrobat Reader splash screen:

- **Open Acrobat Reader**
- **Select *Edit* from the top menu**
- **Select *Preferences***
- **Scroll down to *Options***
- **From *Options*, select *Startup***
- **Uncheck the box next to *Display Splash Screen***

Suggestions, Questions and Comments

The Author welcomes suggestions, questions and comments from the users. From the **Main Menu**, you can open the **INDUSTRIAL PRESS WEBSITE** or send email directly to the Author by selecting the item titled as **E-MAIL THE AUTHOR**. Internet connection is required for these two features to work. If you find an error either in the **CNC Programming Handbook** or in the CD-ROM files, feel free to inform the Author, so it can be corrected as soon as possible.

Special Requirements

No special computer hardware is required, but the operating system must be Windows 98 or higher. The most important setting is the screen resolution. **The minimum setting is 800x600 pixels**, but higher settings will produce crisper appearance of the files, particularly drawings and other graphics. It is **strongly** recommended that you set your screen resolution at least one setting above the minimum, if possible.

In a summary, these three requirements are important:

- **Windows 98 or higher operating system (98SE, ME, NT/2000, XP, Vista)**
- **Acrobat Reader v6 or higher**
- **Screen resolution *minimum* 800x 600, preferably one or more steps higher**

Thank you for using ***CNC Programming Handbook and CNC Projects CD-ROM***.

Version History:

Changes and Fixes (up to and including v3.0):

- **NCPlot toolpath simulation software added (15-day shareware version)**
- **Updated interface and index**
- **Updated utilities**
- **Chapter 47 added**
- **Multipocket drawing - cross section corrected**
- **30-04 and 30-04 solutions enhanced**
- **34-07 and 34-08 solutions updated**
- **Fixed MS Excel file *Bolt Circle Coordinates.xls* (Y-coordinate other than zero now works)**
- **Replaced correct solution file for Project 01-02**
- **Fixed font related issues during installation**
- **Fixed minor bugs and spelling errors**
- **Version numbering changed to match the one on CD**