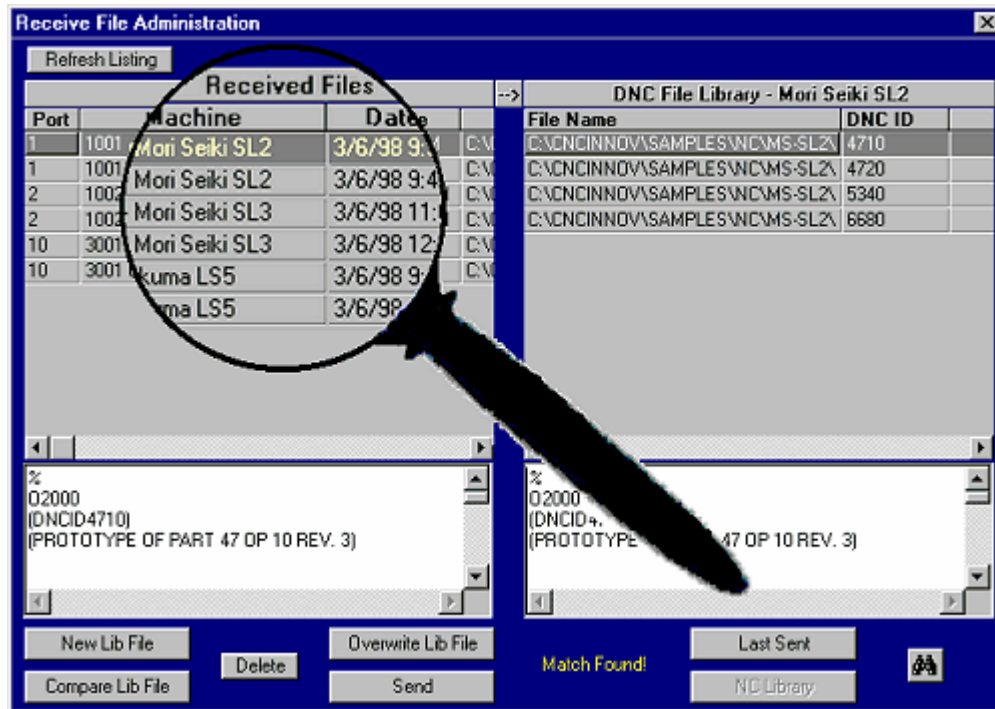


FOCAL*POINT DNC



QUICK START INSTALLATION GUIDE

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CNC Innovations, LLC
P.O. Box 327
Auburn, MA
Visit: www.cncinnov.com

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INTRODUCTION

From its inception, CNC Innovations has focused its energy on developing reliable and efficient software tools for the manufacturing industry. From our basic NC file editors and single point-to-point data communications software to expansive and powerful DNC networking systems, CNC Innovations is sure to have the best and most affordable products to save you time, money and, ultimately, headaches in today's quick-paced manufacturing environment.

This Quick Start guide is intended to give a first time user a preliminary overview of the installation steps that are required for the successful setup and operation of the Focal*Point hardware and software. Keep in mind that a complete installation involves cable wiring, computer set-up and integration, as well as machine control parameter adjustments, hardware placement, and at times, line drivers and isolators. All of which should be left to professional installation teams knowledgeable in DNC systems.

This document is not intended as a definitive guide or training device for the complete installation of a Focal*Point DNC system. It merely serves to outline the preliminary steps required for the initial setup. Detailed descriptions of each program module can be found in Focal*Point's help program.

CNC Innovations and its dealers will always be happy to give product specific telephone assistance for installation problems. However, we cannot possibly provide extensive support for the numerous aspects of an entire DNC installation. Always take the time to review and understand each aspect of the installation before you begin any work.

If your purchase of Focal*Point anticipates an installation involving external add-on communication ports in association with multiple DNC Servers or Management Consoles using an established LAN network, it is highly recommended that you purchase installation service from CNC Innovations or from one of our qualified dealers. To further support your project needs, we also offer premium telephone assistance and a Comprehensive Service Agreement to ensure the quickest and most reliable installation of your DNC network.

PRE-INSTALLATION INFORMATION

BEFORE YOU BEGIN

Before installing the Focal*Point DNC system, it is recommended that you review this Quick Start Guide and any included hardware installation information. Specific program concerns can be resolved by referring to Focal*Point's manual or Help file. First, however, a few simple tasks should be completed. These tasks may seem trivial, but they will prove to be of great benefit over the long run.

CHECK PACKING LIST

Check each item on the invoice to confirm that all of the items ordered are included in the package. If any items are missing or were damaged in transit, please contact CNC Innovations immediately so that we may remedy the situation.

RECORD EXISTING COMMUNICATIONS PARAMETERS

Record all known communication parameters currently in use on your CNC controls, and if applicable, print the parameters from your existing DNC system. This information will be required for the set-up and testing of the Focal*Point DNC program.

SAFETY NOTES

Safety is a prime concern for us at CNC Innovations. The following are several items which should be considered while installing Focal*Point DNC.

CABLING

Installation of data cables through a machine shop involves the risk of contact with high voltage circuits and various mechanical risks. All cabling should be done by **QUALIFIED PERSONNEL ONLY**. Improperly installed cables can cause machine control failure, data transmission errors, and tool crashes. For tips on routing communication cable, refer to CNC Innovations' document entitled Cable Routing Guidelines, which has been included with the Focal*Point help program.

CONFIRM YOUR NC PROGRAM AND COMMUNICATIONS

Focal*Point cannot check to see if the data being sent to the machine control is the proper code. This is the responsibility of the machine programmer and operator. Always dry run unproved programs using sound safety practices.

Although Focal*Point communications have been proven in a wide variety of environments, there are variables which can impact Focal*Point's communications reliability. For example, cable length and routing, ground loops, RFI, disk or electronic component failure, all of which can negatively impact DNC communications. When initially establishing communications with your machine, make sure that data being sent and received are identical. Afterwards, use standard precautions to ensure safety in the event that intermittent transmission errors--such as those caused by ground loops or electrical interference--cause unplanned tool movements.

FOCAL*POINT SYSTEM REQUIREMENTS

Recommended PC Hardware/Software

- Pentium Class Processor
- Minimum system RAM as recommended by operating system
- 1 CD-ROM Drive, 1 Serial Port with disabled FIFO buffers
Common USB to RS232 devices may not provide sufficient flow control response.
- Windows 2000, 2003 or XP.
- 10/100 Ethernet NIC

Installation should be tested with a "clean" operating system. Additional applications may then be loaded and tested accordingly.

Hardware Specific Configurations

CNC Innovations cannot guarantee performance with all manufacturers - call for recommendations.

LAN to Serial Device Servers (Windows 2000 and above)

- 10/100BaseT LAN Network
- Windows 2000 or XP workstation for the Focal*Point host

Wireless Device Servers (Windows 2000 and above)

- Focal Point wireless option required. Please call for device recommendations.
- Security enhanced Enterasys or Cisco Access Point

Add-on or Native COMM ports

- Disabled FIFO buffers – Common single-port USB devices not recommended
- PCMCIA COM ports usually provide superior performance.

Cable Recommendations

CNC Innovations recommends the use of low capacitance, R-F shielded, data-quality cabling. Please use the brands listed below or their equivalents. The use of Ethernet cable for connecting RS232 devices is not recommended. Ethernet cable should only be used for the network connection of LAN to Serial hubs.

Recommended Cabling

RS232 (6 wire)	RS422 (6 pair)
Manhattan M2459 Belden # 9931	Manhattan M3424 Belden # 8106

INSTALLING FOCAL*POINT DNC HARDWARE

RS-232 COMMUNICATIONS HARDWARE

Focal*Point has been designed to work in conjunction with a variety of communication hardware devices, as well as different operating systems. For this reason, if your purchase includes the addition of external port hardware, please follow the manufacturer's installation instructions.

BUFFER OVERFLOW PROBLEMS

Disable COM Port FIFO Buffers

When using a computer's native or add-on serial ports, it is important to adjust the communication port FIFO buffers before attempting file transfers to a machine control. If they are not disabled you may experience a buffer overflow problem on older controls.

Note that these buffer controls are only available on newer computers and may not be available for all serial cards and devices.

To adjust the buffers, follow the instructions below. Note that each version of Windows has slight variations but in general the procedure remains the same.

- Select the Control Panel from the Start menu or My Computer.
- Click on the System icon.
- Select the Hardware Tab and then click the Device Manager.
- Scroll through the listed devices and click on the Ports entry.

In turn, double-click each Com Port to view and configure its properties

- Select the Port Settings tab
- Click the Advanced button
- Move the arrow on **both** the Receive and Transmit Buffer to about 4 characters.
- Select OK then exit to the main screen and reboot the PC .

Remember to reboot the computer after making system level changes.

INSTALLING THE FOCAL*POINT SOFTWARE

To install Focal*Point simply insert the CD or double-click the downloaded installation. This action should automatically launch the Master Setup program. If your computer does not support the Autorun feature when installing from a CD, use the Windows Explorer to select and run the Setup.exe program located in the CD's FocalPointFullInstall folder.

Upon successful installation, the setup program will add a Focal*Point program group to your Windows program menu. Before starting Focal*Point, be sure to restart your computer in order to complete the installation of all necessary software drivers.

OBTAINING A SOFTWARE LICENSE

Focal*Point has been designed to use a software licensing code, which is required in order to function beyond the initial 10-day trial period. To obtain the code, complete the supplied "Password Request Form" (you can also print one from the within the Focal*Point help program) and record the displayed Seed Code for each installed seat of Focal*Point. The completed form should be faxed (508-892-0378) or emailed to CNC Innovations at info@cncinnov.com.

Note that the Seed Code may obtained at any time by running Manage License option displayed on the startup splash screen.

TRANSFERRING AND DELETING A SOFTWARE LICENSE

Please see Focal*Point's Help program for information about transferring and deleting a software license.

System License and Configuration

Focal*Point Configuration Wizard

Welcome to the Focal*Point Configuration

Product and License Configuration

Please specify how Focal*Point will be used on this computer

MULTIPLE PORT DNC Plus ADMINISTRATION Functions
Example: This computer will connect simultaneously to multiple CNC controls through one or more multiple-port serial devices and/or multiple wireless units. DATA COLLECTION may be added as an option.

DATA COLLECTION SERVICES ONLY (NO DNC)
Example: This computer will gather data simultaneously from multiple CNC controls through one or more multiple-port serial devices and/or multiple wireless units but NO DNC OPERATIONS OR ADMINISTRATION FUNCTIONS WILL BE SUPPORTED.

SINGLE PORT DNC Plus ADMINISTRATION Functions
Example: This computer will connect one-at-a-time to one or more CNC controls by being moved to each CNC control and plugged into the COMM port as needed, or will be connected to multiple CNC controls through one COMM port connected to manual switch boxes and cables.

COMM Port to be used for all Single Port DNC:

ADMINISTRATION functions only.

IP Address For This Computer. Use This Address As The Host IP Address In Focal*Point Remote.

 Enable Remote Socket
Socket Port Number

The Remote Socket function requires the use of the optional package Focal*Point Remote.

Use the CMD function "netstat -and" to avoid conflicts when selecting a new Socket Port number. Refer to Focal*Point Help for details

Product Selection and License

After the initial installation, Focal*Point provides three configuration/licensing options. The mode of operation or license (as purchased) must be indicated prior to using and/or requesting a password code.

The four modes of operation are as follows.

Multiple Port DNC plus Administrative Functions (Legacy Mode)

This is the standard operating mode when Focal*Point is used as a DNC host connected to multiple machines using external add-on RS232 hardware devices. Administrative functions are defined as having access to the DNC*Library (NC program database), Parts and Operations, and the Received File Administrator.

Data Collection Services Only

As implied, this mode does not support DNC operations. It is used solely for capturing DPRNT output from a machine control. Although DNC operations are excluded, it is possible to add Data Collection to a DNC configuration.

Single Port DNC plus Administrative Functions

This mode of operation may be popular replacement for CNC's Easytalk DOS software and for situations where multiple machines with different communications parameters must be configured for use with a laptop computer or when a single-port PC will connect to multiple machines using an A/B style switchbox. This mode requires the user select a desired machine prior to performing I/O functions. For larger networks, this mode of operation is ideally suited for use on a laptop that can be used in emergency situations or when a roaming laptop is required.

Administrative Functions Only (Legacy Mode)

This mode is generally used in conjunction with Multiple Port DNC installations as it provides NC programmers and system administrators the ability to maintain the NC program database, received program files and numerous other administrative functions. This mode does not support communications with machines.

As discussed above, it is important to select the appropriate mode of operation prior to generating the 10-Day trial and requesting a permanent password code.

*To generate your 10-Day trial and request a password code, simply click on the Manage License button shown when Focal*Point is starting. Now click the button to generate the 10-Day license, which will generate a unique Seed code. Copy and paste the Seed code into an e-mail message and send it to info@cncinnov.com*

Version Upgrades

Users upgrading from an earlier version of Focal*Point should enable and test new features individually. That is, to ensure the proper understanding and function of a new feature such as the new "Purge if Sending and Inactive", it is best to enable the feature and test machine communications before enabling any additional new features.

Focal*Point License Request Form

To prevent unauthorized use of Focal*Point the software requires a license key in order to function beyond the initial 10-day, free trial period. To obtain the license code (password) it is best to e-mail the unique PC Seed code that is displayed within the Manage License console to info@cncinnov.com. In cases where the end-user does not have access to e-mail, this form may be printed and faxed to CNC Innovations.

Be sure to list the PC Seed code for each seat (workstation) where Focal*Point is installed. The completed form should be faxed to 508-892-0378 or emailed to info@cncinnov.com. CNC Innovations will provide the required License Password(s) and return the form.

Important - After entering a license password do not delete or un-install Focal*Point without first contacting CNC Innovations for important license deletion instructions and validation.

Contact Name _____ Tel. Number _____

Company Name _____ Fax. Number _____

Total Seats Purchased _____ Total DNC Ports Purchased _____

1. Machine Name/Number _____ **Number of DNC Ports** _____

Seed Code* -- -- -- -- --

Password** -- -- -- -- --

2. Machine Name/Number _____ **Number of DNC Ports** _____

Seed Code* -- -- -- -- --

Password** -- -- -- -- --

* The Seed Code is displayed within the Manage License Console.

** The Password Code is supplied by CNC Innovations and entered License Console.

OVERVIEW FOR CONFIGURING THE SOFTWARE

The following information briefly describes the main setup components and concludes with a grid that illustrates which workstations will require each setup procedure. For details regarding a particular function or operation refer to the Focal*Point manual or help screens.

Multi-User Administration/LAN Connectivity (Settings Menu--Optional)

Configuring the software for either single seat (single workstation) or multiple seat (multiple workstations) applications is essentially the same except that multi-user installations will share one common database. This option moves the Focal*Point database to a common LAN drive allowing shared access by multiple users. Keep in mind that this common directory must have complete read and write rights by all workstations involved with DNC administration.

To enable the LAN connectivity, open the Multi-User Administration window that is located in the Settings menu and click the Browse button to locate and select a target folder for the database file. This operation will create a copy of the DNC*Library database, known as fpshare.mdb, in the selected folder. Note – It is not recommended to select the root folder of any drive.

Hint: Single user stations may also enable LAN connectivity. This will make the DNC file database available to established LAN backup strategies.

System Defaults (Settings Menu)

Suggested Settings:

- Configure the “Receive Admin Save As” and the “NC Editor Directory” to open at the location of your stored NC Programs.
- Enable the Archive feature for overwritten NC Programs
- Select a Port Reconnect Rate (time period) for activating wireless or single-port communication devices.
- Select the global time period for machines using the “Send Standby Timeout” and “Send Standby Purge” features located in Settings > Communications Parameters.
- Note – Receive Delay (3) and XOFF Reset (2) should be left at their default settings during the initial setup.

NC Program Categories (Settings Menu--Optional)

Provides a descriptive, program filter for use by the DNC*Library and the machine connection. Categories provide for a quick and filtered file selection process by allowing the NC program library to import and sort programs and reports according to specific machine categories. For example, mill programs are considered a separate group from lathe programs. Note that using NC Program Categories can add an additional security feature that will prevent the remote transfer of NC programs to

incompatible machine controls. Also, be sure to match each machine to its category when setting communication parameters as described below.

Suggested Settings:

- To share DNC*Library files among several machines it is best to use fewer categories and then associate machines accordingly in Settings > Communications Parameters.
- To restrict files to only certain machines use individual machine categories.
- Note – When programs must be shared with multiple machines while still using individual machine categories, it will be necessary to add the NC programs to the DNC*Library for each machine category.

Automatic Library Transfer Directories (Settings/Defaults Menu--Optional)

Assigns a LAN directory that Focal*Point will scan in order to automatically add files to the DNC*Library. This feature allows virtually any programming station to make new files available to the DNC server computer. This option can be enabled at any time and requires a thorough understanding of Focal*Point's DNC*Library.

Setup Communication Parameters (Settings Menu)

Configures the RS232 parameters and a COM port for each machine connection. This step also specifies the format for operator initiated, remote file requests as well as advanced string and compression options. Here you will also assign machines to particular NC Program Categories as discussed above. Keep in mind that Focal*Point's main program screen will not show active communication connections until each connection is assigned a dedicated COM port.

Hint - While synchronizing serial communications parameters from your machine control with Focal*Point's communications section, you may find it helpful to use the Terminal function, which can be used to receive uploaded programs from your control and thus verify proper setup.

Suggested Communications Options:

- Most machines default to the ISO data type using Xon/Xoff handshake. End-of-Block and Stop Bits should match the control settings.
- When using remote file requests, be sure to configure and enable a "File Not Found Message" compatible with each of your machines. It is best to assign a standard, shop-wide program number for machines that extract embedded numbers during the load sequence.
- Recommended Advanced Options are: Enable No-Wait Read, Purge if Sending and Inactive and Strip Trailing End of Blocks. Please Note, if "No-Wait Read" is NOT selected and the optional Receive File Confirmation feature IS enabled, it will be necessary to enable the "Send Standby Purge" feature—its delay time is specified in System Defaults. Furthermore, when not using "No-Wait Read", operators must wait a minimum 15 seconds (for request processing) between punching a remote file request and before initiating the program load sequence.
- Finally, the "Send Standby Timeout" feature is typically used for controls that do not send Xon when initiating a program load.

Import DNC*Library Files (Database Menu)

The DNC*Library will be your database of NC programs available for editing and download at your machine controls. The DNC*Library does not duplicate files that are stored either locally or on a LAN network, it simply acts as a pointer to their physical location. This feature eliminates the need for operators to enter long path and file names when performing remote program requests. It also provides a quick method for locating machine specific programs when browsing the list of NC program files.

Suggested Setup:

- It easiest to build and maintain the library using the Import Directory function located in the File menu. Afterwards, when adding new programs, it is a simple matter of re-running the import function while being careful to use the identical Program Category and DNCID creation options. This method will add the new files without duplicating existing selections.
- Insert the DNCID as a comment into each NC Program. This feature, located in the DNC Library File menu, simply adds a comment that will be used by the Receive File Administrator when matching and comparing uploaded program from machine controls. This feature may be applied to files within specific program categories by first selecting the category on the main screen.

Build a Parts & Operations Database (Database Menu--Optional)

Creates a database for paperless distribution of customer related information. Each part and operation can have links to associated CAD drawings, setup sheets, historic documents and photos, and of course, an NC program file. This section provides machine operators a paperless reference for manufacturing documents. CNC Innovations suggests the use of a PDF or a multi document viewer for use with the Parts and Operations database.

Assign Security Rights (Settings Menu--Optional)

Creates access rights for people using Focal*Point. This feature can be used to restrict certain operations for each user. Generally, it is only necessary to protect access to vital setup configurations such as the communication parameters and default settings.

SETUP GRID

The following grid outlines each step of the Focal*Point Setup and where it is performed.

	DNC HOST SEAT	ADMINISTRATION SEAT
Enable LAN Connectivity*		
Entered Only Once	X	X
Enter NC Program Categories		
Entered Only Once	From Any Seat	From Any Seat
Automatic Transfer Directories	X	X
Setup Communication Parameters	X	
Import DNC*Library Files		
Entered Only Once	From Any Seat	From Any Seat
Parts & Operations Database		
Entered Only Once	From Any Seat	From Any Seat
Assign Security Rights	X	X

* Note that LAN Connectivity can also be used for single seat operations. This field simply specifies that Focal*Point will store its DNC*Library database in a LAN directory. By doing so it allows the database to be part of regular backup operations.

Although many operations are listed as being performed only once, the reference pertains only to the initial setup. Functions such as Parts and Operations as well as DNC*Library maintenance will generally be performed on a regular basis.

COMMUNICATIONS TROUBLESHOOTING HINTS

When establishing a communications link with a machine control, it is generally easier to upload machine programs to the DNC server rather than attempting to load programs into a control. By doing so, you can avoid machine time-outs, alarms and error conditions, all of which make it harder to establish initial communications. Focal*Point provides a convenient terminal emulation screen that is accessed from within the communication parameters section. This will greatly improve your troubleshooting ability by displaying a visual representation of received data. For a detailed discussion of troubleshooting techniques, refer to Focal*Point's help topics.

NOTES