

Greco Systems

WinDNC

Operation Manual

OM-3032



Greco Systems

A division of e-DNC Inc.

Contents

CONTENTS	II
SAFETY	III
DOCUMENTATION POLICY	IV
DISCLAIMER.....	IV
COPYRIGHT.....	IV
ACKNOWLEDGMENTS.....	IV
INTRODUCTION	1
OVERVIEW	1
COMPATIBILITY	1
DEPENDABILITY.....	2
SECURITY.....	2
IMPORTANT SPECIFIERS	2
INSTALLATION PROCEDURES	2
<i>Installing the Communications Hardware.....</i>	3
<i>Installing the WinDNC Software.....</i>	3
<i>Installing the Hardware Key and System Password.....</i>	3
CONFIGURATION	6
<i>Defining and Configuring Machines.....</i>	6
<i>Creating a New Device Configuration.....</i>	6
STARTING WINDNC	7
WINDNC STARTUP SCREEN	7
<i>Keyboard Screen.....</i>	8
<i>Status Bar.....</i>	9
STANDARD BUTTONS	9
SYSTEM FOLDER	10
MACHINE STATUS FIELD.....	10
SYSTEM FUNCTION BUTTONS	10
LOG IN/OUT DIALOG	11
<i>Purpose</i>	11
<i>Access</i>	11
<i>Description</i>	11
STOP SERVER DIALOG	11
<i>Purpose</i>	11
<i>Access</i>	12
<i>Description</i>	12
WINDNC CONFIGURATION WINDOW	12
<i>Purpose</i>	12
<i>Access</i>	12
<i>Description</i>	13
WINDNC NODECOMMAND CONFIGURATION WINDOW	15
<i>Purpose</i>	15
<i>Access</i>	15
<i>Description</i>	15
GNSERVER SYSTEM CONFIGURATION WINDOW	16
<i>Purpose</i>	16
<i>Access</i>	16
<i>Description</i>	17
<i>Server, Log File, DumpFile</i>	17
<i>GrecoNet Module Configuration Dialog</i>	19
NETWORK MACHINE DEFAULT CONFIGURATION WINDOW	20
<i>Purpose</i>	20
<i>Access</i>	20

NETWORK MACHINE CONFIGURATION WINDOW	21
<i>Purpose</i>	21
<i>Access</i>	21
<i>Description</i>	21
NETWORK FUNCTION DEFAULT OPTIONS WINDOW	23
<i>Purpose</i>	23
<i>Access</i>	23
<i>Description</i>	23
MTIC CONFIGURATION WINDOW	24
<i>Purpose</i>	25
<i>Access</i>	25
<i>Description</i>	25
DIRECT CONNECT PROTOCOL CONFIGURATION WINDOW	27
<i>Purpose</i>	27
<i>Access</i>	27
<i>Description</i>	28
<i>Remote Calldown Configuration Dialog</i>	30
GRECO NET CONFIGURATION WINDOW	33
<i>Purpose</i>	33
<i>Access</i>	33
<i>Description</i>	33
COMMUNICATIONS INTERFACE DIALOGS	36
<i>Purpose</i>	36
<i>Access</i>	36
<i>Descriptions</i>	36
EDIT USER ACCESS WINDOW	37
PURPOSE	37
<i>Access</i>	37
<i>Description</i>	38
<i>Procedures</i>	38
DNC FOLDER.....	40
DNC FUNCTION BUTTONS	42
DNC: SEND FUNCTION	42
<i>Purpose</i>	43
<i>Access</i>	43
<i>Description</i>	43
<i>Procedures</i>	44
SEND OPTIONS WINDOW	45
<i>Purpose</i>	45
<i>Access</i>	45
<i>Description</i>	45
SET FILE START POSITION WINDOW	46
<i>Purpose</i>	46
<i>Access</i>	47
<i>Description</i>	47
SHOW FILE WINDOW	48
<i>Purpose</i>	48
<i>Access</i>	48
<i>Description</i>	48
DNC: RECEIVE FUNCTION	49
<i>Purpose</i>	49
<i>Access</i>	49
<i>Description</i>	49
<i>Procedure</i>	49
DNC: SELECT FILE FUNCTION	50
<i>Purpose</i>	50
<i>Access</i>	50
<i>Description</i>	50
<i>Set File Start Position Window</i>	51

<i>Purpose</i>	52
<i>Access</i>	52
<i>Description</i>	52
<i>Procedure</i>	52
DNC: DEFINE FILE FUNCTION	53
<i>Purpose</i>	53
<i>Access</i>	53
<i>Description</i>	53
<i>Procedure</i>	53
DNC: CLOSE COMM FUNCTION	54
<i>Purpose</i>	54
<i>Access</i>	54
<i>Description</i>	54
<i>Procedure</i>	54
DNC: DELETE FUNCTION	55
<i>Purpose</i>	55
<i>Access</i>	55
<i>Procedure</i>	55
DNC: SEND MESSAGE FUNCTION	56
<i>Purpose</i>	56
<i>Access</i>	56
<i>Description</i>	56
<i>Procedure</i>	56
DNC: PUT ONLINE AND TAKE OFFLINE FUNCTIONS	57
<i>Purpose</i>	57
<i>Access</i>	57
<i>Description</i>	57
<i>Procedure</i>	57
DNC: EDIT FUNCTION	58
<i>Purpose</i>	58
<i>Access</i>	58
<i>Description</i>	58
<i>Procedure</i>	58
DNC: VIEW DRAWING FUNCTION	59
<i>Purpose</i>	59
<i>Access</i>	59
<i>Description</i>	59
<i>Procedure</i>	59
DNC: FORMAT DISKETTE FUNCTION	60
<i>Purpose</i>	60
<i>Access</i>	60
<i>Procedure</i>	60
DNC: DELETE ALL FUNCTION	61
<i>Purpose</i>	61
<i>Access</i>	61
<i>Procedure</i>	61
FILES FOLDER	62
FILES FUNCTION BUTTONS	62
SELECT SOURCE FILE AND SELECT FILE PANELS	63
<i>Source Buttons</i>	63
<i>Path and Mask Fields</i>	63
<i>Selecting a File</i>	64
<i>Displaying a Subdirectory</i>	64
FILES: COPY FUNCTION	65
<i>Purpose</i>	65
<i>Access</i>	65
<i>Description</i>	65
FILES: RENAME FUNCTION	67
<i>Purpose</i>	67

<i>Access</i>	67
<i>Description</i>	67
FILES: DELETE FUNCTION	67
<i>Purpose</i>	68
<i>Access</i>	68
<i>Description</i>	68
FILES: EDIT FUNCTION	68
<i>Purpose</i>	68
<i>Access</i>	68
<i>Description</i>	68
FILES: VIEW DRAWING FUNCTION	69
<i>Purpose</i>	69
<i>Access</i>	69
<i>Description</i>	69
FILES: PRINT FUNCTION	70
<i>Purpose</i>	70
<i>Access</i>	70
<i>Procedure</i>	70
FILES: USER DEFINED FUNCTION BUTTONS	70
SAMPLE PROCEDURES	71
STARTING WINDNC	71
SENDING A FILE TO A GRECO DEVICE	71
RECEIVING A FILE FROM A GRECO DEVICE	71
SENDING A FILE FROM A GRECO DEVICE TO A MACHINE	72
SENDING A FILE FROM A MACHINE TO A GRECO DEVICE	72
SENDING A FILE "PASSTHRU" THROUGH A DEVICE TO A MACHINE	72
RECEIVING FILE "PASSTHRU" THROUGH A DEVICE FROM A MACHINE	73
SENDING A FILE TO A DIRECT CONNECT MACHINE	73
RECEIVING A FILE FROM A DIRECT CONNECT MACHINE	74
SENDING A FILE TO A FANUC CONTROL	74
REMOTE CALLDOWN PROCEDURE	74
APPENDIX I: GRECO NET ERROR CODES	75
APPENDIX II: GRECO NET ERROR CODES	76
APPENDIX III: GRECO NET ERROR CODES	78
APPENDIX IV: SYSTEM FILES	80
APPENDIX V: PROTOCOLS	81

SAFETY

Protect yourself! Follow these precautions:

- Never bypass a power cord ground lead by breaking off the ground pin, or by using inappropriate extension cords or adapters.
- Never plug a power cord into the AC power source until you have made sure that all installation, cabling, and power levels, are proper, and that the applicable procedures in this manual have been followed.
- Do not attempt to have equipment repaired by under qualified personnel. Especially, personnel should be trained in working with hazardous voltages.
- Heed the **WARNING** statements. These statements point out situations that could cause injury or death.
- Heed the **CAUTION** statements. These statements point out the situations that could cause damage to the equipment.
- Some instruments may contain a **LITHIUM BATTERY** for timekeeping. Small quantities of these batteries may be disposed of as regular waste.
HOWEVER: DISPOSAL BY FIRE, OR INCINERATION, SHOULD ALWAYS BE AVOIDED.
Prior to disposal: It is recommended that the leads of the battery be cut off and exposed metal poles be completely isolated with tape. Completely discharged or mechanically damaged cells should be wrapped in strong packing material.

Documentation Policy

Disclaimer

This manual is based upon the data available at the time of publication. While sincere effort has been made to make the manual accurate, the information contained herein does not purport to cover all the details or variation in hardware, software, or firmware; nor to provide for every possible contingency in connection with the installation, operation, maintenance, repair or replacement. Also, features may be described herein which are not present in all hardware, software, or firmware configurations.

GRECO SYSTEMS' policy is one of continuous improvement. Thus, the information in this manual is subject to change without notice and should not be construed as a commitment by GRECO SYSTEMS. GRECO SYSTEMS also assumes no obligation to notify manual holder of subsequent revisions.

GRECO SYSTEMS makes no representation of warranty, expressed or implied, nor assumes responsibility for the accuracy, completeness, sufficiency, or usefulness of this manual, nor of any problems that may arise from the use of the information contained herein.

Copyright

Greco Systems WinDNC Software™ Operator's Manual, Copyright © 2003 by Greco Systems. All rights reserved.

The content of this manual is the property of Greco Systems, El Cajon, California, USA. Any reproduction of this information without express written permission from Greco Systems is prohibited.

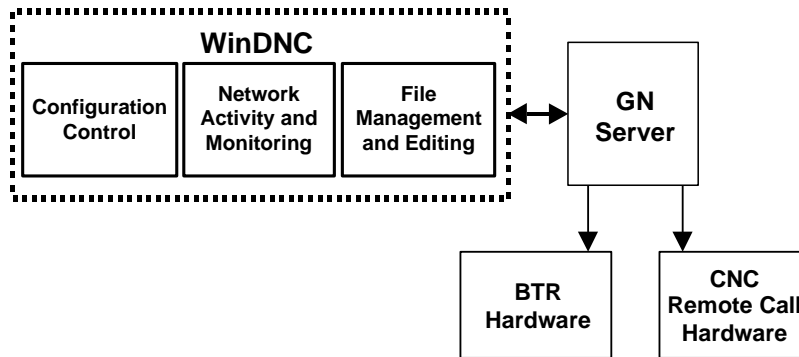
Acknowledgments

The names of the companies, their hardware and software, may be trademarks or registered trademarks of their respective owners.

Introduction

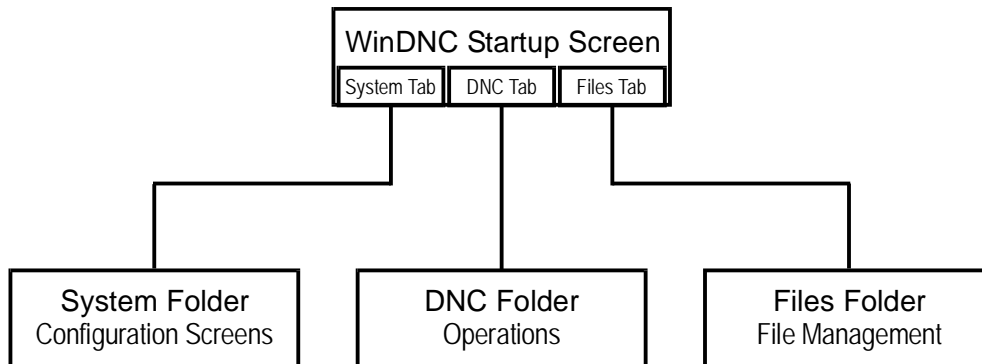
Overview

WinDNC consists of two executable programs WinDNC and GNServer as illustrated in the diagram below.



GNSERVER quietly provides all of the networking functions, while WinDNC contributes (1) storage, transfer and editing of program, graphics and instruction files, (2) configuration control of machine interfaces, (3) network activity monitoring.

The illustration below shows the hierarchy of screens within the WinDNC application.



This hierarchy is reflected in the organization of screen descriptions in this manual. The corresponding chapters of the manual are:

WinDNC Startup Screen

System Folder

DNC Folder

Files Folder

Compatibility

WinDNC provides a full 32-bit Direct Numerical Control software application, which communicates with networkable machine tools while continuing to support, and enhance, older machine tools. Installation is flexible enough to be implemented in any shop, regardless of the size of the shop or the age of the equipment.

- Greco Systems products support almost any readily available hardware in common use by industry today, and WinDNC has one of the most extensive sets of built-in protocols and communications interfaces in the industry.

During Network Machine Configuration there is a Device Protocol procedure where the desired protocol is selected from a list. Only those modules that will actually be used are loaded into memory, making efficient use of available RAM.

Dependability

WinDNC can make a local copy of a part program file before sending it to the machine. By running from the local copy, the machine can complete the job, even if the network should fail. The Greco Systems GNSERVER networking software, operating in the background, enhances the flow of data between machines, operators, and supervision, and allows simultaneous access to data, including part programs. WinDNC can also be run on a PC by itself without being connected to a network server.

Security

WinDNC can be set up for password security. Specific individuals or groups can be given complete access, limited access, or sole access to specific screens, simplifying the task of securing your data. Installation

WinDNC installation is automated to make sure it as complete and intuitive as possible. You start the program and answer the questions the program asks you. Nevertheless, these procedures should be performed by **qualified personnel only**, preferably by a Greco Systems representative (by arrangement) or your facility's Systems Administrator. If this software is installed by Greco Systems, then it should require no further attention, except perhaps some simple setup options such as password security.

This software can be installed on a network or on a single stand-alone PC.

Important Specifiers

The following specifiers are used to reference the ACTUAL directories. In all cases, the ACTUAL paths (appropriate to your system) are to be entered in place of the specifiers.

{WINDIR}	This specifier indicates the main Windows directory in the target system. For example, C:\WINDOWS for Win95, C:\WIN98 for Win98, or C:\WINNT for NT.
{WINROOT}	This specifier indicates the drive letter of the disk containing the Windows directory. For example, C:.
[OPTIONAL]	Anything enclosed within square brackets [] is optional.

When this manual asks you to enter/type in values, the values may be delineated by quotation marks, enter the values **without** the quotation marks.

Installation Procedures

The specific steps for installing WinDNC will depend on the interface hardware you use for communications. Currently available options will be covered here as thoroughly as possible. Detailed discussions on the use of all of the WinDNC setup and configuration screens appear in *Administration Screen Functional Descriptions* and *Configuration Screens Functional Descriptions* later in this manual. For a typical installation, you will:

1. Install the communications hardware.
2. Install the software.
3. Install a hardware key and/or system password.
4. Configure the software.

Installing the Communications Hardware

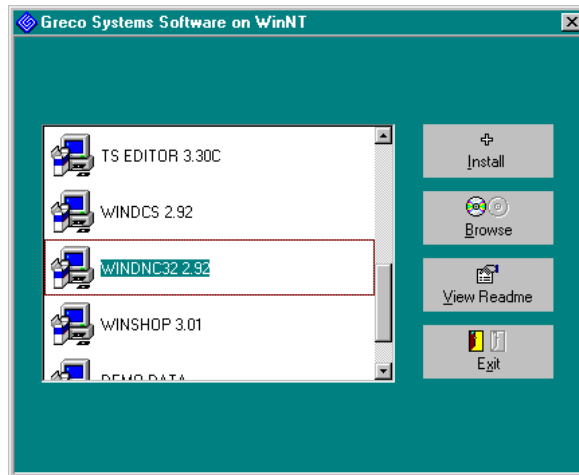
Follow the installation instructions that come with the communications hardware you are using. Some hardware may require installation inside your PC, while others may be connected to it externally. All communications hardware shipped by Greco Systems is accompanied by complete installation instructions.

Greco Systems products support almost any readily available hardware in common use by industry today.

Installing the WinDNC Software

As part of the following installation, the setup program creates a Greco Systems folder (**Start | Programs | Greco Systems**) where it installs the icons you use to start the Greco applications.

1. Insert the setup disk in your CD ROM drive.



2. Scroll to the WinDNC setup icon, and double-click it.
3. Answer the “Installing WinDNC...?” dialog by clicking the OK button.
4. Read the “Readme” file. It may contain additional instructions as a result of last minute upgrades. It may also contain a notice of any new features and changes that may not yet have made their way into this manual. Then click the next button.
5. Follow the instructions in each succeeding screen. We recommend you choose the default selections when presented.
6. Restart your computer when prompted.

Installing the Hardware Key and System Password

The “system” password is separate from the security passwords that you assign to your users. It is a one-time password that is tied to a hardware key. Together, the hardware key and system password allow the GrecoNet GNSERVER software to talk to your machines.

Before your system is paid for, you will receive a temporary system password. The temporary password has an automatic expiration date. Once you have paid for your system, you will receive a hardware key, and you will receive a permanent system password that is tied to the serial number of your hardware key. This new password does not have the date limitation imposed by the demo password. The hardware key is housed in a feed through adapter that attaches to the LPT1 printer port on your PC.

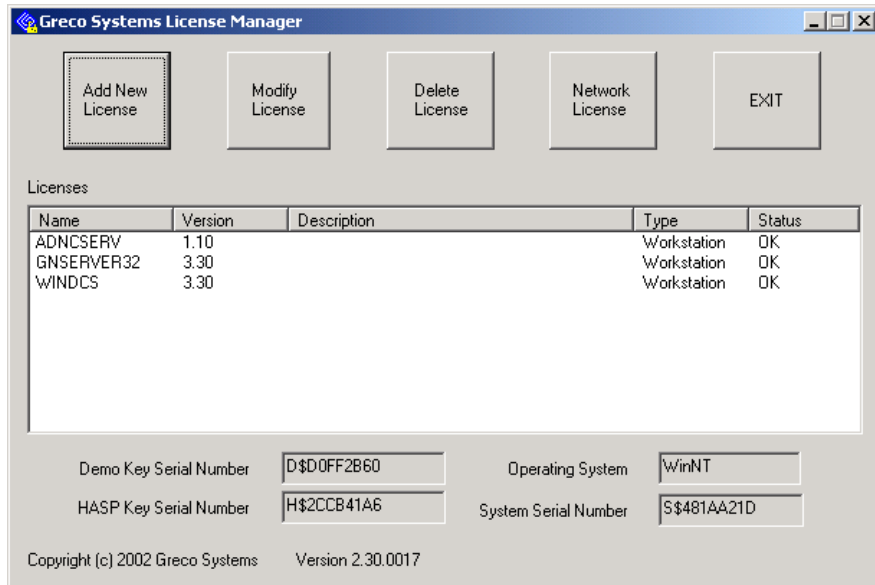
Installing the Hardware Key

1. If a printer is connected to the LPT1 port, unplug the printer cable from the port.
2. Plug the hardware key into the printer port.
3. If you have unplugged a printer to install the key, you can connect it again by plugging the printer cable into the installed hardware key.

The hardware key will not interfere with the printer in any way.

Installing the System Password Using License Manager

License Manager is a software module that needs to be installed along with Greco Systems WinDNC software. To access this module, click **Start | Programs | Greco Systems | License Manager**, and from there click License Manager. Its screen is shown in the figure below.



None of the fields on this screen can be changed by typing directly into the field. Follow the instructions within the definitions of the screen elements listed below. See the separate *License Manager Installation Manual* for a complete description of all License Manager screens and procedures.

Note: *The key type, key serial number, license type and expiration date, can be found packed with the software. When a permanent password is received, you can edit the entry in the window. If you are not renewing the license, it can be deleted.*

Licenses field	<p>Shows a list of all current Greco Systems licenses on your system. This field is the only one on this screen that can be changed, and it can only be changed by using the add, modify and delete buttons on the top of the screen. See button descriptions below.</p> <p>Name column: License name of software that license applies to.</p> <p>Version column: Version of software that license applies to.</p> <p>Description column: Description of software that license applies to.</p> <p>Type: Type of License, Network or Workstation.</p> <p>Status: Current status of license:</p> <p>OK Permanent license.</p> <p>Expired Expired temporary license.</p> <p>Bad Password doesn't match license information.</p> <p><u>N</u> Days n = number of days left on temporary license.</p> <p>L Today is the last day of the temporary license.</p>
Network License button	<p>To add, delete or modify a NETWORK license to the License list, click this button. The Greco Systems <i>Network License Manager</i> window appears. (See description later in this manual.) Type your changes into the appropriate <i>License Editor</i> fields. (See Modify License button.) When you are done editing, click on the EXIT button in the Network License window.</p>
Delete License button	<p>If you are not renewing a license, click on its name in the Name column. Then click this button to delete it.</p>
Modify License button	<p>When you receive your permanent password you can modify the associated entry by clicking on its name in the Name column and clicking this button. A Greco Systems License Editor dialog box appears. Type your changes in the appropriate dialog box fields. When you are done editing, click the OK button in the License Editor dialog.</p>
Add New License button	<p>To add a new license to the License list, click this button. A Greco Systems License Editor dialog box will appear. Type your entries into the appropriate dialog box fields. When you are done editing, click on the OK button in the License Editor screen.</p>
Operating System field	<p>Automatically filled in to match the operating system you are using on your computer.</p>
Demo Serial Number field	<p>Automatically filled in if a demo serial number is current for your system.</p>
Key Serial Number field	<p>Automatically filled out if a Hardware key is installed in your system (on the parallel printer port of your computer).</p>
System Key Serial Number field	<p>Automatically filled out based upon the hardware I.D. on the PC.</p>
OK button	<p>Click to save changes and exit the License Manager.</p>

Configuration

Defining and Configuring Machines

Once the hardware and software are installed, the PC communication port must be defined and configured to the network for the server to function properly. **This section is a summary** of the configuration process. **Refer to the *System Folder* chapter** of this manual for detailed descriptions of the windows mentioned in this configuration summary.

The configuration information for connecting a machine to the network is contained in several windows. First, items that apply to the machine regardless of the specific protocol or communications interface are configured. Configuration items that are specific to a protocol are included on the Network Machine Configuration window for the selected protocol. Configuration items that are specific to the communications interface are included in the Comm Port Configuration windows. You must configure the port for a new machine which selects the channel to use for the machine. Additional items are included in the Network Default window, and the MTIC Configuration Window.

If you are going to be creating several machines with similar settings, you may want to configure the DEFAULT machine with those settings first. There is no physical device called DEFAULT, but you can set all configurable items for it as if it were a real machine. These values are used to initialize any new machine created. You can then change those values as needed for each real machine (especially the port number). You can view or change the DEFAULT settings by opening the GNSERVER System Configuration Window, and then click on the Defaults button.

Creating a New Device Configuration

1. Open the GNSERVER System Configuration Window and click on the CREATE button.
2. Enter a name for the new machine, then click on CREATE again. This invokes the Machine Configuration Window.
3. Change the values as desired for this machine. Refer to the Machine Configuration Window in the Screen Reference section for more details.
4. Select the desired protocol, then click on the CONFIG button next to it. Depending on which protocol you selected, one of two configurations will be displayed:
 - a) GrecoNet protocol displays the Greco Net Configuration Screen.
 - b) Direct connect protocols displays the Direct Connect Protocol Configuration screen.
5. Change the protocol parameters as desired for this machine. Then click on the SAVE button to save the settings and return to the Machine Configuration Window.
6. Select the desired communications interface and click on the Config button. Depending on the communications interface you selected, one of three screens will appear.
 - a) PC Comm Port(s) and PC Comm Port(gpe) displays the Comm Port Configuration screen.
 - b) FTP Control|GPE) displays the FTP Control Configuration screen.
7. Change the port configuration parameters as desired for this machine or Greco device. In particular, you must specify which port of a multiport-port interface to use for this device. This value must match the hardware port that the device is physically connected to. Then click on the SAVE button to save these settings and return to the Machine Configuration Window.
8. If this is an MTIC device, click on the MTIC Config button to bring up the MTIC Configuration Window for the MTIC and change the MTIC settings as desired. If the MTIC is already powered-up, connected to the network, and GNSERVER is running, click on the Program MTIC button to program the settings into the MTIC. Otherwise, just SAVE the settings on the server for now, and return at a later time to program the MTIC device. *NOTE: Simply clicking the SAVE button only saves the settings on the server. The MTIC will not operate correctly until the settings have also been programmed into the MTIC device.* Click on the SAVE button to save the settings in the server and return to the Machine Configuration Window.

9. Click on the Network Defaults button to bring up the Network Function Default Options Window for this device. These defaults have nothing to do with the DEFAULT settings. Whenever an upload or download function is requested for this device, these are the options that will be used. Click on the SAVE button to save these settings and return to the Machine Configuration Window.
10. Click on the SAVE button to save the remaining machine settings and close the Machine Configuration Window.

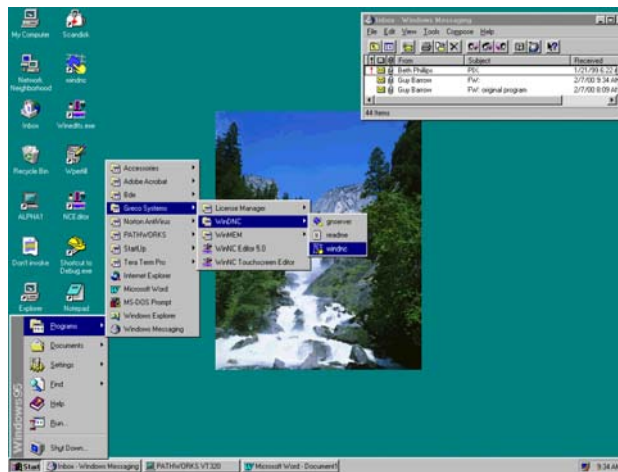
WinDNC Startup

When you start WinDNC the WinDNC startup screen appears. All WinDNC operations are launched from the startup window. This section talks about starting WinDNC and describes the controls available on the WinDNC startup screen.

Starting WinDNC

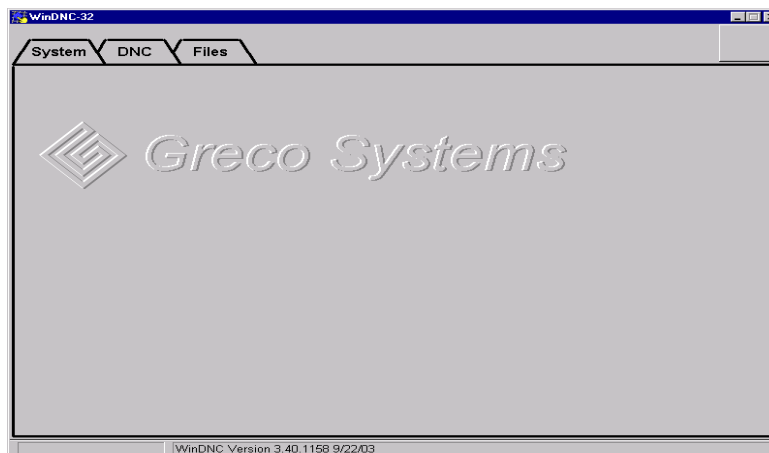
In a typical installation, WinDNC is configured to start automatically, along with GNSERVER, when your computer boots. This is done by placing first GNSERVER then WinDNC in the Startup folder.

To start WinDNC manually: From the Task Bar, click **Start | Programs | Greco Systems WinDNC**. From there, click **WinDNC**. See illustration below.



WinDNC Startup Screen

When you start WinDNC the startup window, illustrated below, appears. All WinDNC operations are launched from this window. The window has three tabs. Each tab, when clicked, opens a separate folder, and each folder has its own unique screen (or screens). Each screen has its own set of controls. The **System**, **DNC** and **Files** folders are described individually in their own sections. Click near, but not on, any tab to return to this screen.



In addition to the tabs, this initial screen shows a large blank button in the upper right corner. When you select a field on the screen where you can enter data by typing, this button is activated. When it is activated, the button has a keyboard icon on it. Selecting the button opens the keyboard screen, which is also described in this section.

Note that this window fills the entire screen as long as it is active. (The middle button of the three buttons in the upper right corner of the window is grayed out.) You can close the window—which will also exit the WinDNC program—or minimize it—which will cause it to disappear into the Windows taskbar, but keep running in the background. Once the window is minimized, activating it again depends on the type of workstation you have.

For TSS-12 Touch Station:

Touch the lower left corner of the screen to bring up the taskbar. Any windows that are open, but minimized will show up as icons on the bar. Touch an icon to open the window.

For standard PC or Touch Station with mouse:

Drag the mouse cursor to the bottom of the screen to bring up the taskbar. Any windows that are open, but minimized will show up as icons on the bar. Click an icon to open the window.

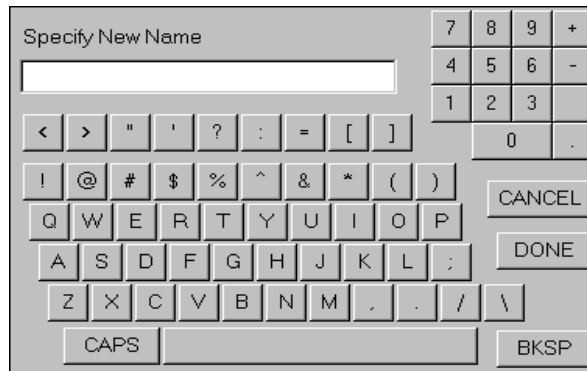
For standard PC or Touch Station with keyboard:

Hold down the **Alt** key and strike the **Tab** key to bring up the Exploring dialog. Continue holding down the **Alt** key and striking the **Tab** key until the icon for the WinDNC window is highlighted. Then release the **Alt** key.

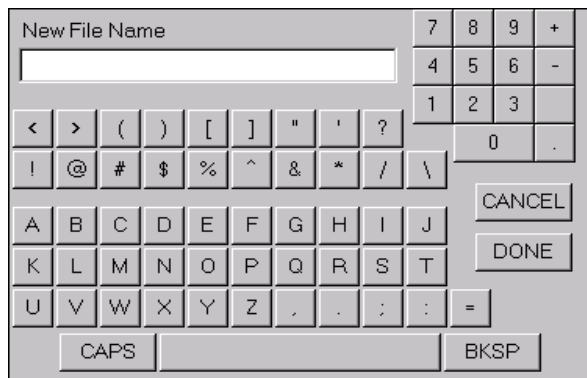
Keyboard Screen

The keyboard screen is used when a hardware keyboard is unavailable or inconvenient, such as when the station is a touch screen computer in a shop environment. It allows the operator to enter and edit data in applications windows by touching the image keys (on a touch screen computer) or by clicking the image keys with a mouse.

The QWERTY style is selected:



The ABCDE style is selected:



Access

Click the **Keyboard** button from any screen on which the button shows the icon. Each screen that requires the keyboard function includes the Keyboard icon on the button.

Description

Type/Edit field	The name of the field you are typing into in the application screen appears above this field on the keyboard screen. What you type on the image keys is readable in this field. When you are done, you click or touch the OK button. Then, what is typed into this field enters the field on the application screen where you left your cursor before calling up the keyboard.
Number and Symbol keys	These keys are unaffected by the Upper/Lower Case button. They always type the character just as they are labeled.
Alphabetical keys	These keys will type upper case or lower case alphabetical characters. Default is upper case. When the CAPS button is clicked, the typed characters are lower case. When the CAPS button is clicked again, the typed characters are upper case. The layout of these keys can be changed via the WinDNC Configuration window (described later).
CAPS key	The CAPS button changes the case of any alphabetical characters you type, as described above in Alphabetical Keys .
Space bar	When typed between two characters, this button places a space between the characters that is equal to the spacing between words.
Cancel key	Closes the keyboard screen without entering any of the data typed.
DONE key	When you click or touch the DONE button, what you typed into the Keyboard Type/Edit field enters the field on the application screen where you left your cursor before calling up the keyboard.
BKSP key	Each time it is clicked, the BKSP (backspace) key deletes the character just behind the cursor in the Type/Edit field.

Status Bar

The status bar occupies a narrow strip at the bottom of the window. When WinDNC is first started, this bar displays the name and version number of this copy of the program, and also the date. Once you have opened a folder and selected a machine, this bar displays the machine name and status of the machine you have selected.

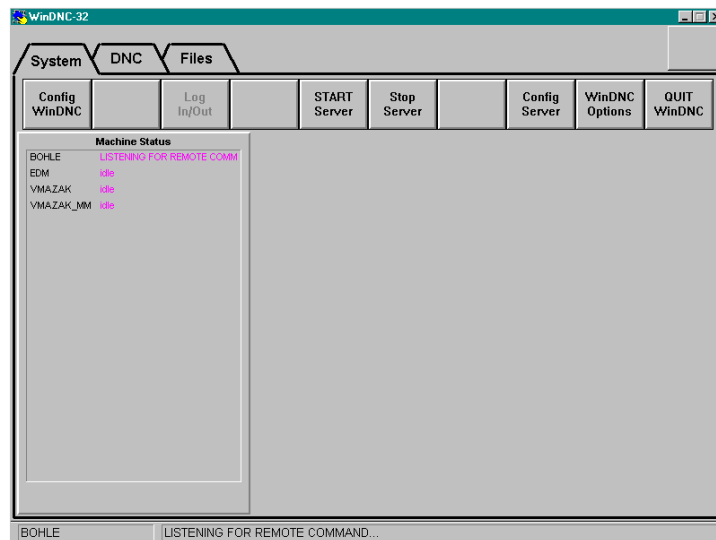
Standard Buttons

The following buttons are standard windows controls, and they appear in many of the applications screens in this book. To avoid constant repetition these buttons are described just once, here.

OK	Closes the message or dialog box. If this is an editable window, it saves any changes you have made, and then closes the window.
Save	Saves any changes you may have made, and closes the window or dialog box.
Cancel	Closes the window or dialog box without saving any changes you may have made.
Help	Not implemented at time of this writing.

System Folder

The System tab opens the System Folder, which contains controls related to GNSERVER and WinDNC system functions. Among the operations you can perform from this window, are: (1) see the status of all machine tools connected to your system, (2) start and stop the GNSERVER, and (3) invoke system-level configuration screens.



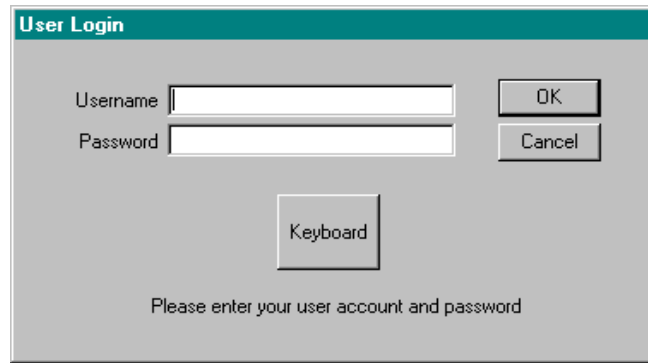
Machine Status Field

This field displays the name and status of each machine currently connected to your system. It is a read-only field.

System Function Buttons

Config WinDNC	Opens the WinDNC Configuration window (described later). Allows you to define your monitor screen resolution, keyboard screen layout, file editor, graphics viewer, user defined buttons, new send and receive button names, and password security enforcement.
Log In/Out	Active only if system security is enforced. (See <i>WinDNC Configuration Screens</i> , below.) If active, click to open the Login dialog, or to Logout.
Start Server	Click the Start Server button to start GNSERVER, which will run invisibly in the background.
Stop Server	Click the Stop Server button to invoke the GNSERVER shutdown window (described later), which gives you three different options for shutting down the server. You can choose Cancel to back out.
Config Server	Opens the GNSERVER System Configuration window. From this window all other machine, module, and device configuration windows are accessed. See the configuration windows functional descriptions, below.
WinDNC Options	Opens the WinDNC Node Command Configuration window. From this window you determine how edited files are handled.
QUIT WinDNC	Displays the Quit dialog, which asks if you want to quit. Note that quitting WinDNC does not stop GNServer if it is running.

Log In/Out Dialog



Purpose

Use this dialog to gain access to the system at your authorized level. When security is enforced, all users must log in. You will have access only to those user functions assigned to you by the System Administrator. To gain access to System Administration functions, security is always enforced, and user must log in as System Administrator.

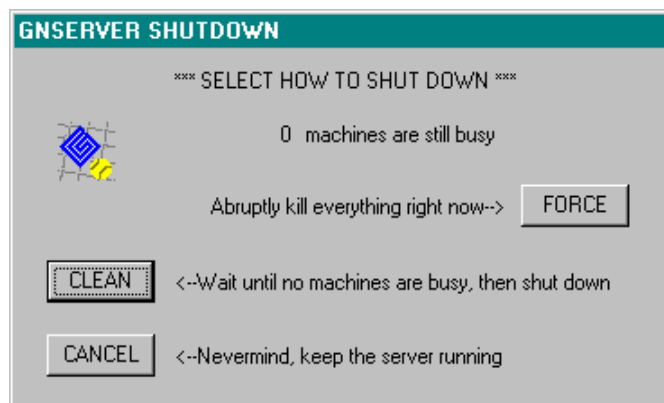
Access

To gain access when security is enforced, click the **Log In/Out** function button in the System folder screen. If security is not being enforced, this button will be grayed out.

Description

Username	Enter the unique name assigned to you, by which the computer security program will recognize you as an authorized user.
Password	Enter the unique password assigned to your username, by which the computer security program can assume that you are truly the user whose username you gave. The password will not print out on your screen, but instead, each of its characters will appear as asterisks.

Stop Server Dialog



Purpose

This dialog reports Server status and provides shutdown options.

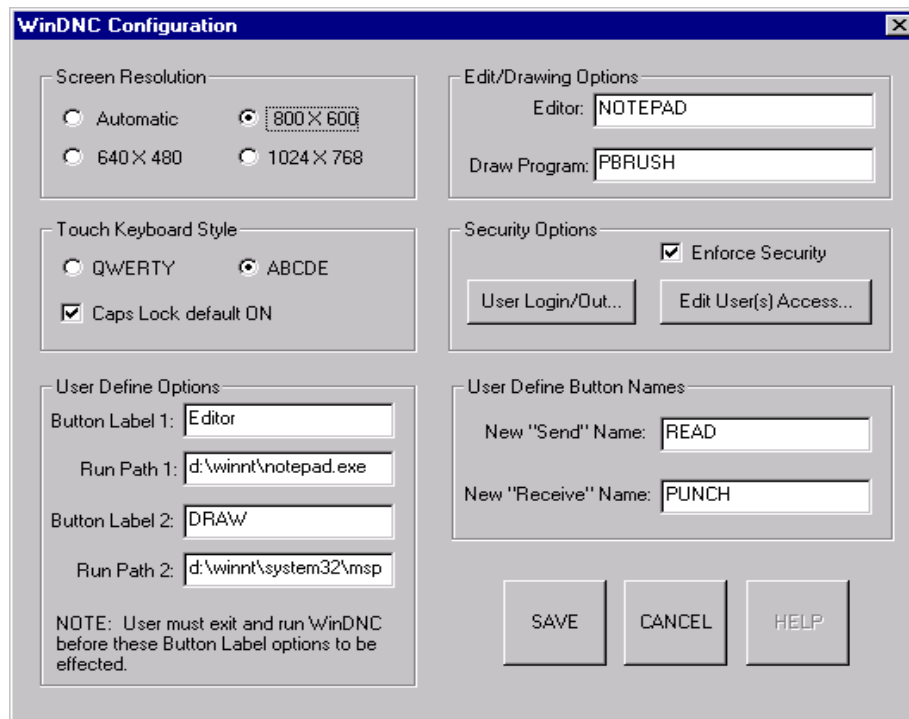
Access

On the System folder screen, when the **Stop Server** button is pressed, the appropriate dialog appears.

Description

SHUTDOWN	Force	For emergency use only, if you can't quit clean or cancel.
	Clean	Click to quit WinDNC normally and safely.
	Cancel	Click to change your mind and go back to WinDNC.

WinDNC Configuration Window



Purpose

Customize your WinDNC for (1) your screen resolution, (2) touch screen keyboard layout, (3) text editor and graphics viewer programs, (4) external program launchers, (5) security features, and send and receive button names.

Access

1. From the WinDNC Startup screen, click the System tab to open the System folder.
2. From the System folder screen, click the **Config WinDNC** button.

Description

Screen Resolution Panel

This panel provides options, if needed, to make WinDNC compatible with the monitor screen of your computer. The default and recommended setting is **Automatic**. If automatic does not work, then select the resolution that is compatible with your hardware.

Touch Keyboard Style Panel

These options affect **only the alphabetical keys** on the keyboard screen. The Layout choices, **QWERTY** or **ABCDE**, affect the arrangement of the keys. QWERTY arranges the keys in the same pattern as a standard computer or typewriter keyboard. ABCDE arranges the keys alphabetically.

If you click the **Caps Lock default ON** checkbox to leave a check in it, the keyboard will type ALL CAPS unless you first click the CAPS key. If you leave this box unchecked, it will type all lower case, unless you first click the CAPS key.

Edit/Drawing Options Panel

The Edit/Drawing Options panel allows you to choose your default Text Editor and Graphics Viewer software. Enter the full path name of the .exe file for your editor software in the **Editor** field. Enter the full path name of the .exe file for your viewer software in the **Draw Program** field.

Security Options Panel

These options allow you to select your security options.

Enforce Security checkbox: Check to force users to log on in order to use WinDNC. This will activate the **Log In/Out** button on the System folder screen.

User Login/Out button: Click to open the User Login dialog box. You must log in here as the System Administrator to activate the **Edit User Access** button.

Edit User Access button: Click to open WinDNC Edit User Access window. Initially, you should configure WinDNC for the machines your network is going to use, before you use the Edit User Access window to configure your security. Therefore, the user access window is described at the end of this chapter.

User Defined Options Panel

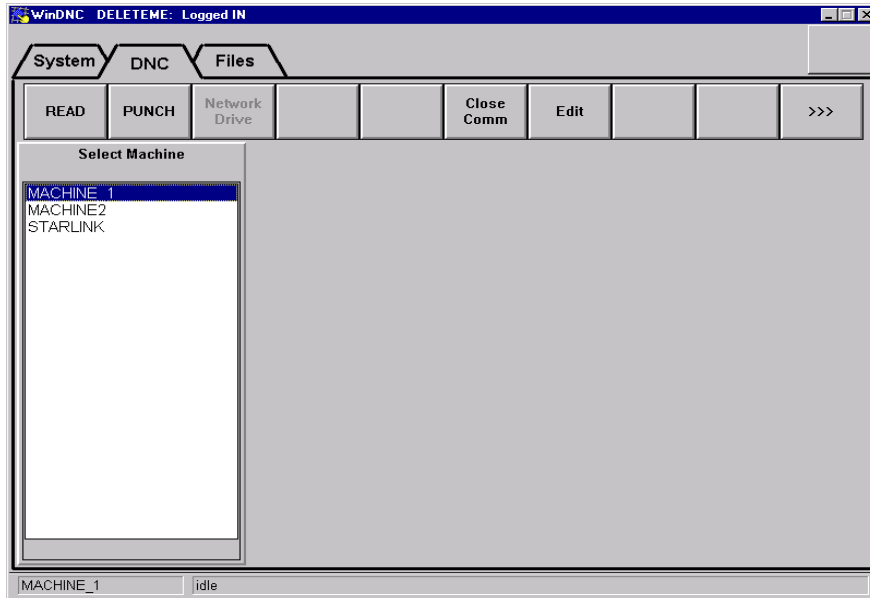
Use this panel to create, define, and label the Utilities buttons, which will then appear among the Files folder function buttons. These two buttons can be made to launch any two programs your computer can access. They can be any applications needed on the production floor.

Enter a name for the button in the **Button Label _** field. It can be any name of up to two words, **eight** characters each. Enter the full path and file name of the .exe file for the application in the **Run Path _** field.

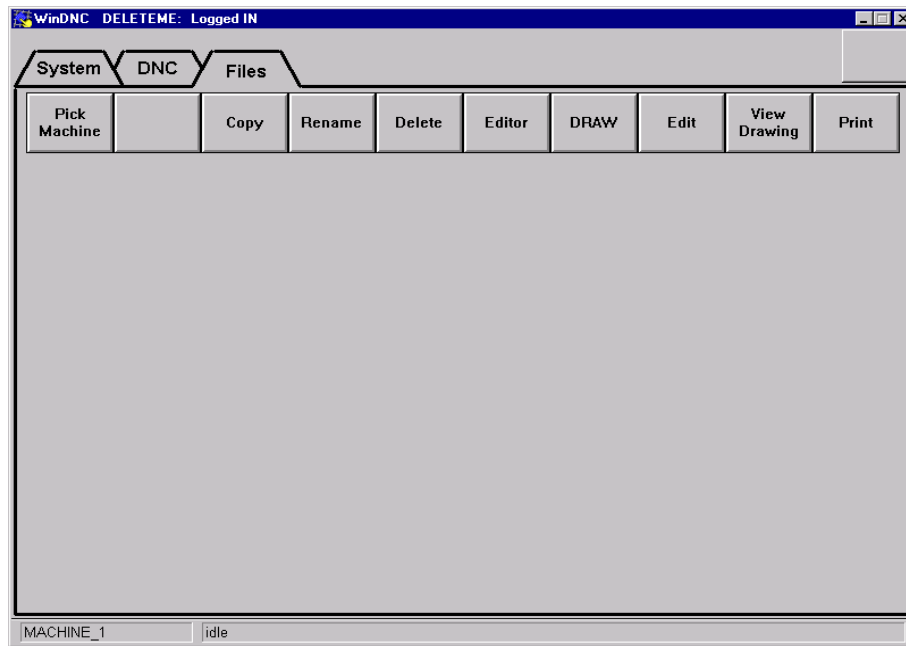
User Define Button Names

Use this panel to rename the DNC folder Send and Receive buttons. Enter a new **name** in the **New “Send”** or **“Receive”** fields. Each can accept a one word name of up to eight characters.

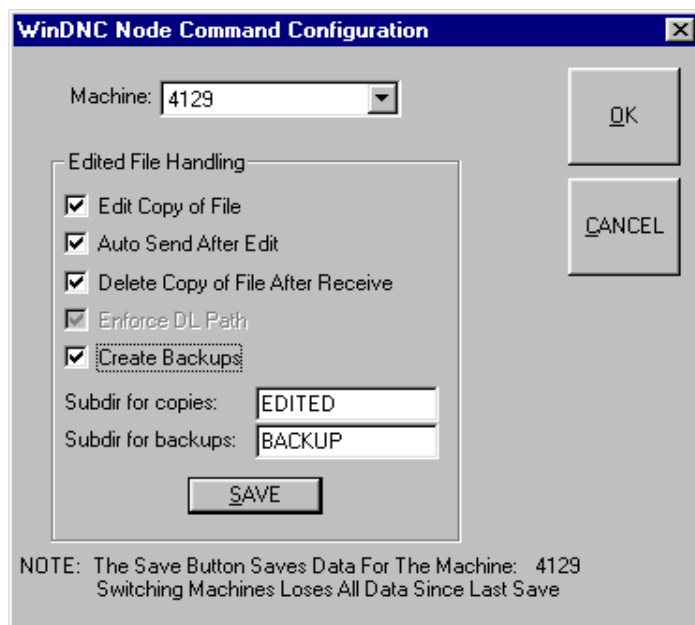
SEND and REIVE buttons have been changed to EAD and PUNCH buttons in the DNC folder.



Editor and DRAW buttons have been created in the Files folder.



WinDNC NodeCommand Configuration Window



Purpose

This screen is where you determine how edited files will be handled. This window must be filled in separately for each machine you are using.

Access

From the System folder screen, click the **WinDNC Options** button. The WinDNC Node Command Configuration window will open.

Description

Machine field	Click down arrow for a list of machines. From the list, click the machine you are about to configure. You fill out this same window for each machine you are using with WinDNC. Each configuration will be saved separately.
Edit Copy of File checkbox	When checked, this option allows the machine operator to edit a file any number of times, without changing the original, and always automatically forwarding the edited changes to the machine. See <i>Edit Copy of File Sequence</i> , below.
Auto Send After Edit checkbox	When checked, edited file is automatically sent to the machine when you exit the editor.
Delete Copy of File After Receive checkbox	When checked, if WinDNC receives a file with the same name as an edited file, WinDNC deletes the copy of the file that is in the edit subdirectory.
Enforce DL Path checkbox	Not editable in the standard software. Download path—defined in the Network Machine Configuration Window—is always enforced.
Create Backups checkbox	Click Create Backups button to activate the backup option. A backup of each edited file will be made with incremental extensions.

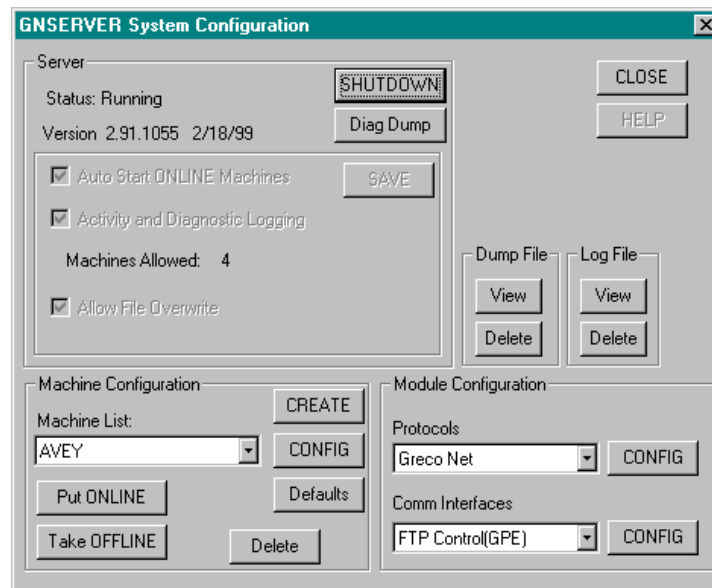
Subdir for copies: field	Enter the name of the subdirectory where you want WinDNC to automatically save copies of edited files.
Subdir for backups: field	Enter the name of the subdirectory where you want WinDNC to automatically save copies of the unedited versions of modified part programs. If you name a subdirectory that does not exist, it will be created when you click the Save button.
Save button	Click to save the changes you have made in this window for each machine. Does not close window.

Edit Copy of File Sequence:

When the **Edit Copy of File** checkbox in the WinDNC Node Command Configuration Window is checked, the following sequence of events occurs when you edit a file:

1. The first time the file is edited, it is copied from the Send directory of the selected machine.
2. The edited copy of the file is saved in the “Subdir for copies:” directory named in this configuration window. The original, unedited file stays in the Send directory.
3. Every time this file is sent to the machine again, the edited copy from the “Subdir for copies:” is sent.
4. If you edit the file again before sending it, you will be given the choice of editing the previously edited version or overwriting it first with the original file.

GNSERVER System Configuration Window



Purpose

This is the initial machine and module configuration window. All other machine and module configuration screens are accessed through this Window.

Access

1. From the main **WinDNC** window, click on the Configuration Server button.

Description

Server, Log File, DumpFile

Server panel	Status field	This field displays the status of the GNSERVER software (OFF or RUNNING). Depending on the Status some screen items are grayed out, because they are not functional during that time.
	Start/Shutdown button	Button is labeled Start when the Status field is OFF. Choose Start to save checkbox settings and start GNSERVER. Button is labeled Shutdown when the status field is RUNNING. Choose Shutdown to bring up the GNSERVER Shutdown window, described later.
	Auto Start ONLINE Machines check box	Check to automatically place all Auto Start machines on line when system is started.
	Diagnostic Logging check box	Check to command GNSERVER to keep a continuous log of diagnostic data. Do this when troubleshooting to gather diagnostic data. See Diag Dump button, just below. Not used during normal operation.
	Diag Dump button (Active when Server Status is RUNNING.)	Commands GNSERVER to create a file containing diagnostics data for software debugging. See Diagnostic Logging , just above.
	Allow File Overwrite	When checked, received files of identical names are replaced. When not checked, incremental extensions are added.
	Save button	Click (with Status OFF) to save the current settings in this panel. Settings will remain until the authorized user changes them again.
Dump File panel	View button	Brings up the last Dump File created, if not deleted.
	Delete button	Deletes the Dump File.
Log File panel	View button	Brings up the last Log File created. If old Log File is not deleted new log is appended to the old.
	Delete button	Deletes the existing diagnostics Log File.

Machine Configuration

Machine Configuration panel	Machine List field	Displays the name of the machine to be configured. Click on arrowhead to show machine list. On list, click machine to be configured.
	Put ONLINE button	Puts machine displayed in Machine List on line.
	Take OFFLINE button	Takes machine displayed in Machine List off line.
	CREATE button	Opens a simple Create Network Machine dialog box. Allows you to name a new machine to add to the network. Name will be added to Machine List.
	CONFIG button	Opens Network Machine Configuration window, described later. Allows you to reconfigure an existing networked machine.
	Defaults button	Opens Network Machine Configuration window, for imaginary machine called DEFAULT. This screen allows you to specify the starting (default) configuration values for any newly added machine. New machine is configured by changing the starting (default) values.
	Delete button	Click to delete the machine displayed in the Machine List field from the network. Opens a simple delete verification dialog, as a precaution.

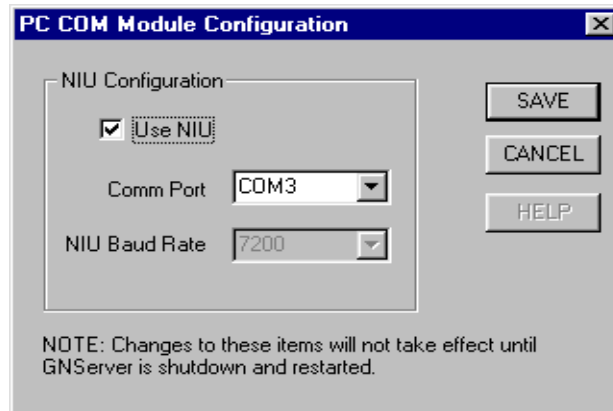
Module Configuration

Module Configuration panel	Protocols field and CONFIG button	<p>This field displays the protocol to be configured. Click arrowhead to show all protocols available. Click CONFIG button to open Module Configuration dialog box for selected protocol.</p> <p>If no configuration of type selected is required for this device, then when CONFIG is clicked, a message saying that there is nothing to configure is displayed.</p> <p>This panel provides limited access. Detailed configuration is done at Network Machine level. Description to follow.</p> <p>When Greco Net is selected, GrecoNet Module Configuration dialog, shown below, is opened.</p>
	Comm Interfaces field and CONFIG button	<p>This field displays the communications interface to be configured. Click the arrowhead to show all interfaces available. Click the CONFIG button to open the Module Configuration dialog box for the selected interface. Each type of interface has its own version of this dialog.</p> <p>If an interface is selected that is inappropriate for Configuration, a message saying that there is nothing to configure is displayed.</p> <p>This panel provides limited access. Detailed configuration is done at Network Machine level. Description to follow.</p>

GrecoNet Module Configuration Dialog

In the GNSERVER System Configuration window, Module Configuration panel, When **Greco Net** Protocol is selected, the GrecoNet Module Configuration dialog, shown below, is opened. The parameters in this dialog are timeout delays that apply to all Greco devices using the GrecoNet protocol. Timeouts speed up operations by allowing the system to go on with other actions if a device addressed does not respond in a reasonable time. The reasonable amount of time depends on the type of data transmitted and the type of device accessed. These parameters specify those reasonable delays.

Defaults button	Click this button to automatically enter predetermined default values into all of the Comm Timeouts fields.
Fast packets	Special category attached to transmissions that require almost no wait time, regardless of the type of device, such as those that do not require disk access.
Disk activity	The delay allowed when the transmission requires a single read or write to a disk.
File activity	The delay allowed when a disk might have to be accessed several times. For example: opening, closing, and deleting files.
Disk format	Time allowed for disk format and disk init commands (formatting and initializing disks). These typically take the longest.



PC COM Module Configuration

In the GNSERVER System Configuration window, Module Configuration panel, when PC Comm Port(s) is selected, the PC COM Module Configuration dialog is opened. This dialog box allows you to setup GNServer for use with a Network Interface Unit (NIU).

Use NIU Select Box

A check mark in this box allows GNServer to communicate using an NIU. Without a check mark, settings for NIUs will be unavailable in the Network Machine Configuration.

Comm Port

After the NIU controller card has been added to the operating system as a com port, use the drop down arrow and select it here.

NIU Baud Rate

At this time, always at 7200 Baud. Area reserved for future use.

Network Machine Default Configuration Window

The screenshot shows the 'Network Machine Configuration' dialog box. At the top, it says 'Machine: DEFAULT'. Below that, 'Device Type' is set to 'MACHINE (direct)' and 'Media Type' has the 'Diskless' checkbox checked. There are 'SAVE' and 'CANCEL' buttons on the right. A 'MTIC Config' button is located below the media type section. The 'Part Program Directories' section includes a 'Default Mask' field with ' *.*', 'Send Dir' with 'D:\DOWNDIR', 'Receive Dir' with 'D:\UPDIR', and 'Local Dir' with 'D:\TRANSHARE'. It also has three checked checkboxes: 'Search SubDirectories For Files', 'Allow Local Copy', and 'Delete After Send'. Below this is a 'Device Protocol' dropdown set to 'Xon/Xoff' with a 'CONFIG' button. The 'Comm Interface' dropdown is set to 'PC Comm Port(s)' with another 'CONFIG' button. On the right side, there is a 'Network Defaults' button and an 'Other Options' section with 'AutoStart' checked and 'Comm Trace' unchecked.

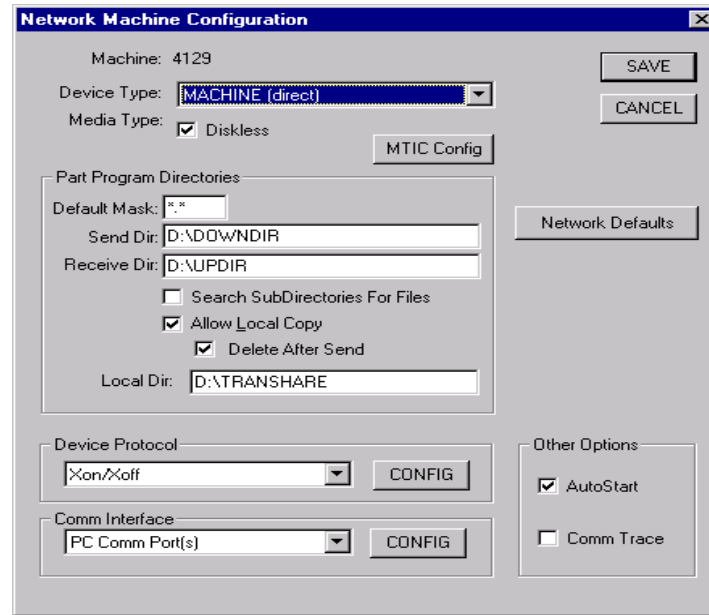
Purpose

The Network Machine Default Configuration window allows you to configure a template machine. After this configuration was saved, this Machine Default Configuration will help user to create a real machine configuration faster. These configurations will be displayed when user clicks “CREATE” button to create a new machine.

Access

1. From the main WinDNC Window, click the **Config Server** button.
2. *The GNSERVER System Configuration window appears.*
3. From GNSERVER System Configuration window, click **Defaults** button.
4. Perform Device Protocol configuration by clicking CONFIG button.
5. Perform Comm Interface configuration by clicking CONFIG button.
6. Perform Network Defaults configuration by clicking Network Defaults button.
7. Save Network Machine Default Configuration by clicking SAVE button.

Network Machine Configuration Window



Purpose

The Network Machine Configuration window allows you to reconfigure an existing networked machine, or configure one you just added to your GrecoNet network. If you are configuring a new machine you just created, then the initial values in this window will match the DEFAULT device settings established in the GNSERVER System Configuration window.

Access

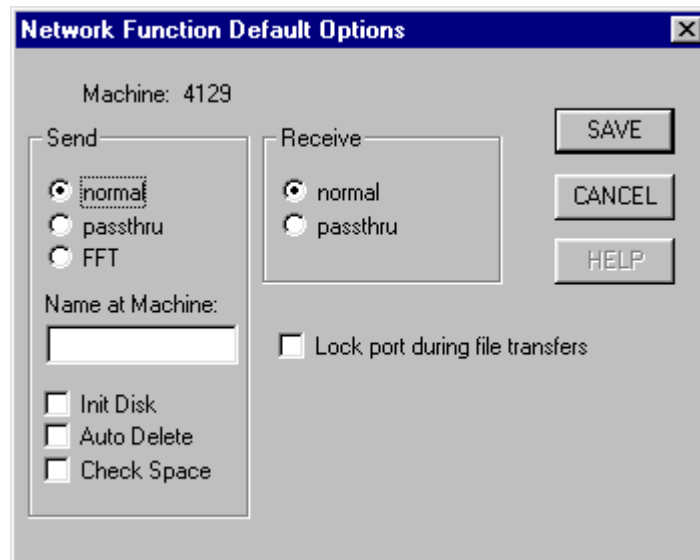
1. From the main WinDNC Window, click the Configuration Server button.
2. The GNSERVER System Configuration window appears. In its Machine Configuration panel, click the CONFIG button.

Description

Machine panel	Machine field	Displays the name of the machine being configured, as it is selected in the GNSERVER System Configuration window.
	Device Type field	Names the category to the device you are configuring belongs.
	Media Type check box	Check here if this device does not have a data storage disk drive (direct type).
	Network Defaults button	Click to open Network Function Default Options window. Used to configure network send and receive parameters.
	MTIC Config button	If this is a machine tool interface (MTIC) device, click this button. The current configuration is saved, and the MTIC Configuration window opens. Use the MTIC window to complete the configuration.
Part Program Directories panel	Default Mask	Filters the file listings to allow through only those files with the extension you designate. *.* means display all (no mask). *.ptp means list only programs with the .ptp extension. Most helpful when you use a unique extension for each type of machine.

	Send Dir	DOS path to the Send directory.
	Receive Dir	DOS path to the Receive directory.
	Search subdirectories for files check box	Click to command system to continue a file search through existing subdirectories (if any) if file not found in directory where started.
	Allow Local Copy check box	Allows the system to create a temporary file copy, in the local copy file directory, of the send file. Used for protection in the event of LAN failures.
	Delete After Send check box	Allows WinDNC to delete each file from the copy directory once the file is sent. This protects against sending obsolete files. Unchecked, all files remain in the copy directory after they are sent. If a send is initiated and the LAN has gone down, WinDNC will allow you to switch to the local directory.
	Local Dir field	Copy folder name on the local work station computer.
Device Protocol panel	Device Protocol field and CONFIG button	Displays the selected device protocol. Click arrowhead to show a list. Click a protocol to select it. Click CONFIG to bring up the appropriate configuration screen for selected protocol.
Comm Interface panel	Comm Interface field and CONFIG button	Displays the selected communications interface. Click arrowhead to show a list. Click an interface to select it. Click CONFIG to bring up the appropriate configuration screen for selected interface.
Other Options panel	AutoStart check box	When checked, GNSERVER automatically puts this device on line, when Auto Start is selected. When not checked, this device remains off line.
	Comm Trace check box	When checked, and if GNSERVER Diagnostic Logging is enabled, information on device/server communications is written to the log file and saved. If Diagnostic Logging is not enabled, Comm Trace is ignored.

Network Function Default Options Window



Purpose

These network-related settings are separately programmed, through this window, for each Greco device connected to the GrecoNet.

Access

1. From the main WinDNC Window, click the Configuration Server button.
2. *The GNSERVER System Configuration window appears.* In its Machine Configuration panel, click the **CONFIG** button.
3. *The Network Machine Configuration screen appears.* There, click the **Network Defaults** button to open the Network Function Default Options window.

Description

Send Panel

Note: For *diskless* Greco devices, use *passthru* mode, and leave all *Send* check boxes unchecked.

normal button	Files are copied from the server computer directly to the diskette or RAM disk on a “Greco” device.
passthru button	Files are copied from the server computer, <i>via</i> a “Greco” device, bypassing storage device, directly to the machine tool control.
FFT button	Files are copied from the server computer directly to the diskette or RAM disk on a “Greco” device. Then, immediately commands the device to begin sending the file to the machine control.
Name at Machine field	To rename the <i>copy</i> of the file sent, type the new name here. Leave blank to use original file name for file copy.
Init Disk check box	When checked, deletes all files on diskette or RAM disk on “Greco” device before sending it a file. Has no effect when passthru mode is used.

Auto Delete check box	If checked, and “Name at Machine” field is blank: Any file on diskette or RAM disk on “Greco” device that has the same name as the sent file is deleted. If not checked, and “Name at Machine” field is blank: File send fails if there is already a file on the device that has the same name.
Check Space check box	When checked, checks whether diskette or RAM disk has enough space <i>before</i> sending it a file.

Receive Panel

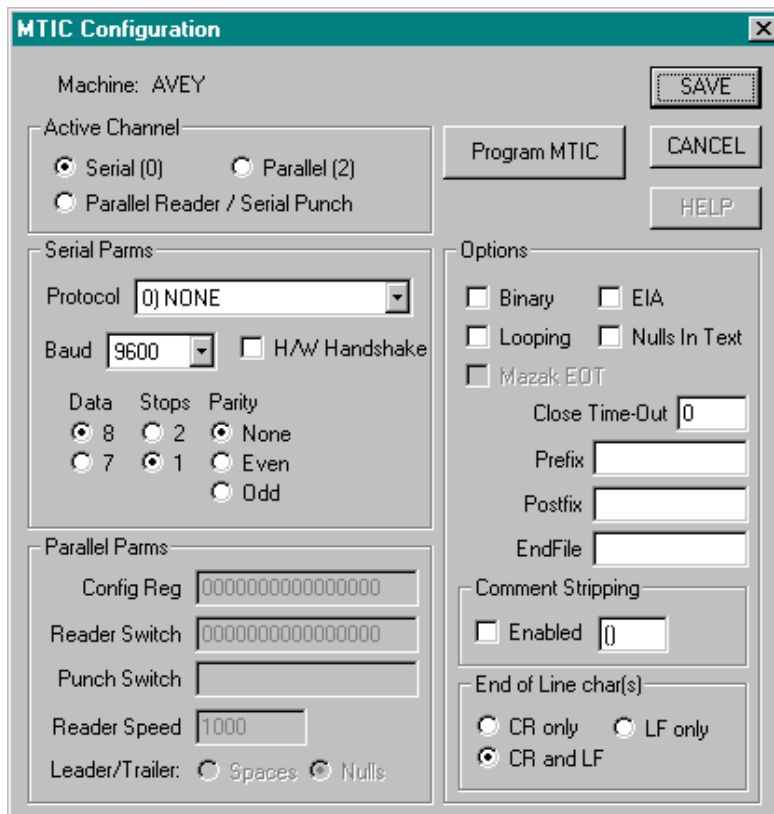
Note: For *diskless Greco devices*, use *passthru mode for Receive*.

normal button	Copies files from the Greco device diskette or RAM disk to server disk.
passthru button	Copies file from the machine tool control, directly to the server, bypassing the Greco device diskette or RAM disk.

Main Panel

Machine field	Shows the name of the machine being configured.
Lock port during file transfers check box	Prevents contention for access through the communications port while files are being transferred.

MTIC Configuration Window



Purpose

If the machine being configured is a machine tool interface control (MTIC) device, then this window is needed to program certain parameters into the MTIC device itself. Some later model CNC Stations and Minifiles, having updated firmware, can also be programmed using this window. See the Applications Note that came with your hardware.

These parameters are programmed directly into the device itself. Therefore, if the MTIC device is replaced with another, or its memory has been compromised, this window must be used again to reprogram the device.

Access

1. From the main WinDNC Window, click the Configuration Server button.
2. *The GNSERVER System Configuration window appears.* In its Machine Configuration panel, click the **CONFIG** button.
3. *The Network Machine Configuration screen appears.* There, click the **MTIC Config** button to open the MTIC Configuration window.

Description

Main Panel

These are the controls not grouped inside separate panels	Machine field	Shows the name of the machine being configured.
	Program MTIC button	Once all the settings on this window are correct for the machine being configured, click here to program these settings into the MTIC device. <u>CAUTION:</u> GNSERVER automatically puts the MTIC machine back on line. Therefore, the MTIC must be fully functional, powered up, and connected to the network when you program it. <i>Note: The Save button will not program MTIC. Saving only saves the settings within this window.</i>

Serial/Parallel Parameters

Active Channel panel	Serial (0), Parallel (2), Parallel Reader / Serial Punch.	Choose the appropriate port(s) on the MTIC you are programming. Must match actual hardware installation and interconnection.
Serial Params panel (Parameters that apply only to Serial Ports.)	Protocol field	Click arrowhead to show list of available parameters. In the list, click the appropriate parameter. <i>Changing protocol automatically changes data bits, stop bits, parity, binary and EIA modes, and EOL characters to default values for that protocol. These are the most common settings.</i> If your machine requires other settings, change the protocol first. Then change other settings.

	Data bits, Stop Bits, and Parity	These are standard serial port parameters that have default values for the different protocols. If you have to change these to fit your machine, select the protocol first. Note also that if you must change parity to none , then data bits will automatically be set to 8.
	Baud field	This is the rate of data transfer between devices. Click arrowhead to show list of baud rates.
	H/W Handshake check box	When checked, the serial lines RTS and CTS are used for flow control.
Parallel Params panel (Parameters that apply only to Parallel Ports.)	Config Reg field	16 binary digits of the parallel configuration register. (See Application Note for your specific hardware.)
	Reader Switch field	16 binary digits of the parallel read switch register. (See Application Note for your specific hardware.)
	Punch Switch field	16 binary digits of the parallel punch switch register. (See Application Note for your specific hardware.) <i>Note that some very early firmware used the reader switch for both reading and punching. If you have this firmware, make sure this field is absolutely empty. Even nonprinting characters may cause trouble. (Highlight the entire field, and press the Delete key.)</i>
	Reader Speed field	Speed of your reader in characters-per-second. Can be any number between 15 and 1000.
	Leader/Trailer buttons	Identify whether the MTIC will send spaces or nulls for leader/trailer characters.

Options

Parameters that apply to both your serial and your parallel communications	Binary check box	When checked, MTIC-MTC communications can only be in straight binary. When not checked, enables certain text mode translations where applicable. See hardware applications notes.
	EIA check box	When checked, files are sent to machine control in EIA format and received from control in ASCII. EIA/ASCII conversions are automatic.
	Looping check box	When checked, files are sent to machine control repeatedly, until manually halted. (applies to MTIC's with RAM drive).
	Nulls In Text check box	Checked when files contain null characters that must be recorded in text mode.
	Close Time-Out field	Nonzero value in seconds. If timeout is reached before a response is received, transmission is ended anyway and file is closed.
	Prefix field	Any text entered in this field will be sent immediately ahead of the NC program. (applies to MTIC's with RAM drive).
	Postfix field	Any text entered in this field will be sent immediately after the NC program. (applies to MTIC's with RAM drive).
	Endfile field	Enter the characters that are to be recognized as the end of a file. (applies to MTIC's with RAM drive).

Comment Stripping panel	Enabled check box	When checked, comments (as delineated by comment characters) will be stripped from program before it is sent. (applies to MTIC's with RAM drive).
	Comment characters	These two characters delineate a comment. First character marks beginning of comment. Second character marks end of comment.
End of Line char(s) panel	CR only button	Carriage return is the end-of-line character.
	LF only button	Line feed is the end-of-line character.
	CR and LF button	Carriage return, followed by line feed, are the end-of-line characters.

Direct Connect Protocol Configuration Window

Purpose

This window is used to configure machine controls that are connected directly to the PC server via serial communications ports.

Access

1. From the main WinDNC Window, click the Config Server button.
2. In the GNSERVER System Configuration window, go to the Machine Configuration panel, and click the **CONFIG** button.
3. *The Network Machine Configuration screen appears.* There, click the **Device Protocol CONFIG** button to open the Direct connect Protocol Configuration window.

Description

Machine field	Displays the assigned name of machine being configured.	
Protocol field	Displays the serial direct connect protocol as defined for this machine in the Network Machine Configuration window.	
File Info panel	File Type: Text button	Indicates the file will contain text type data, as defined in the Text File Parameters panel, below.
	File Type: Binary button	Indicates that files will contain straight binary data.
	Send Leader/Trailer check box	When checked, instructs GNServer to send leader and trailer characters. Spaces: Select if leaders and trailers will be represented by spaces. Nulls: Select if leaders and trailers will be represented by nulls.
	Don't send duplicate files in queue check box	If checked, duplicate file will not be queued, protecting against accidental double-clicking on the start send button.
	Use Prefix/Postfix Files	If checked, GNServer will send a file called Prefix.txt (if it exists in the send directory) before each file and a file called Postfix.txt (if it exists in the send directory) after each file. Note that the Allow Local Copy feature must be enabled.
Text File Parameters panel	EIA	When checked, files are sent to machine control in EIA format and received from control in ASCII. Data is stored in ASCII on server, and EIA/ASCII conversions are automatic.
	EOL Char(s)	CR only: Carriage return recognized as end-of-line. LF only: Line feed recognized as end-of-line. CR and LF: CR, followed by LF, recognized as end-of-line.
	Begin File fields	String: Enter the character or characters (string) to be recognized as the beginning-of-file marker. Sends will begin there. After: Enter the number of times the string must be repeated to be recognized as Beginfile.
	End File fields	String: Enter the character or characters (string) that will be recognized as the end-of-file marker. Files will close after string is sent. After: Enter the number of times the string must be repeated to be recognized as Endfile.
	Upload: Store Nulls in Text check box	When checked, all null characters in any text file being received by the GrecoNet Server will be retained by the server in the stored copy.

	Begin/End Comment 1 fields	Begin: Enter character to be recognized as the start of a comment. End: Enter character to be recognized as the end of a comment. End of line assumed if left blank.
	Begin/End Comment 2 fields	Begin: Enter character to be recognized as the start of a second category of comment. End: Enter character to be recognized as the end of a second category of comment. End of line assumed if left blank.
	Print Option panel	If Print Before Send is checked, and a valid printer name is entered in the Printer Name field, WinDNC will automatically print a copy of any file sent, before comments are stripped and prefix/postfix added.
Time Out Parameters panel (The time in seconds to wait before timing out, under the four different conditions described here.)	First Data	Time to wait after a send or receive file request . (Must allow plenty of time for operator to start the control.)
	File Transfer	Time to wait, after data has stopped flowing, before closing a file transfer. (Allows time for system to legitimately hesitate during a transfer, but allows equipment to stop waiting after reasonable time, in case of intentional or unintentional abort.)
	EOF Detect	Time to wait, after data has stopped flowing near the end of the file, before assuming a file transfer is over.
	Cmd Response	Time to wait for the control to respond to a command byte, before assuming a miscommunication.
Remote Calldown panel	Allow Remote Calldown check box	When checked, allows configuration of Remote Calldown feature. WinDNC then listens and waits for remote commands, <i>initiated by the machine operator, directly from the machine control</i> . When GNSERVER starts, machine status , at bottom of screen, reads “Listening for remote command...”
	Config button	Opens Remote Calldown Configuration window (described below).

Remote Calldown Configuration Dialog

To open this dialog: From the Direct Connect Protocol Configuration window, click the Remote Calldown: **Config** button.

Note: To implement this feature, the machine control must have the following capability:

- a. A serial I/O protocol supported by WinDNC, such as XON/XOFF.
- b. Ability to store more than one file in ASCII format
- c. File editing capability
- d. A way to initiate file transfer from the machine control.

Remote Calldown Configuration

Remote Commands*

SEND

SEND (Copy Dir)

RECEIVE

DIR of send files

DIR of send (Copy) Files

Dir of receive files

Abort Transfer

Msg File Begin String

Msg File End String

Opening Comment Char

Closing Comment Char

Time Delay

SAVE

CANCEL

NOTE:
All times are
in WHOLE
Seconds

Caution: It is important to understand: (a) the format of the control's ASCII programs, (b) the control's editing capabilities.

Rules

Before attempting to configure the Remote Calldown Configuration window become familiar with these rules.

Command Format

The format of the command is as follows; (command path\filename), where:

- () are optional start and end comment characters.
- Command is the command you entered in one of the fields in the Remote Commands box. **For example:** SEND = R because you're on the receiving end of the program.
- Path is an optional subdirectory within the send directory.
- Filename is the name of the file—on the PC—which you are requesting or creating.

Operating Sequence

1. Operator “pulls up” remote command program at the Control.
2. Original file name is changed if desired.
3. Operator “punches” the command program to WinDNC.
4. WinDNC responds by sending the desired file.
5. Operator reads desired program.

Notes

- It is best, at first, to punch a file to WinDNC manually. Then check the received file. This exercise will check communications between WinDNC and the control.
- Space characters between the command and file name and end of line are ignored.
- If comment characters are used, the command must immediately follow (no space).
- Spaces are not required between the command, path and filename. Because of this, you cannot have a command name that is part of another command.
For example: If SEND = “DL” and SEND (Copy Dir) = “DLC” and the operator inadvertently punched a program that contained DLC, WinDNC would assume the operator wanted to send a program named C from the send directory.
- Wait 1 or 2 seconds between commands when sending more than one. It takes about that long for WinDNC to return to its listening mode.
- When using directory commands, DOS wildcard characters (* and ?) are valid.

Returned Messages

For all directory commands and error messages (file not found, invalid command, unable to create file), a message file is sent to the control using the comment characters and begin and end strings you defined.

Remote Commands Panel

The Remote Commands are the ASCII characters (strings) that the machine uses to communicate commands. Entering these strings in the appropriate fields in this dialog box teaches WinDNC to interpret these codes correctly.

SEND	The command you want the system to interpret as a send or receive request. For example, an S could be used for Send and R for Receive. When sent from the machine control with this string, GNSERVER extracts the file name and sends this file to the machine control. Operator then sets the control into read mode, then either reads the file into memory or runs in drip feed mode. Comment characters used for the Opening Comment Char and Closing Comment Char boxes must be in keeping with the part program instructions.
SEND (Copy Dir)	Same function as Send , but the file is sent from the subdirectory that you defined using the Node Command tab of the Administration Window. (See <i>Administration Screen Functional Descriptions</i> .) This command cannot be the same command that you entered in the SEND box. GNSERVER will send the program located in the subdirectory that was defined in the Node Command screen.
RECEIVE	This command has the same rules as the SEND command, except that the GNSERVER opens a file on the server with the file name that follows the command. GNSERVER then waits for the actual program to be sent. The part program sent from the machine control is saved in the receive directory that was defined for the machine.
DIR of send files	This string is interpreted as a directory listing request. GNSERVER, upon receipt of this command, will send the machine control a listing of the machine’s send directory. In most cases comment characters enclose each directory line. See CAUTION below.
DIR of send (Copy) files	Enter the name of the directory where copies of the SEND files will be stored when the backup function is active.

DIR of receive files	This string is interpreted as a directory listing request. GNSERVER, upon receipt of this command, will send the machine control a listing of the machine's receive directory. In most cases the comment characters enclose each directory line. See CAUTION below.
Abort Transfer	Enter the character that will be recognized as the abort command to halt the file transfer.
CAUTION: (1) The listing sent might not be in a format your machine can read. (2) This is usually a large file. Your machine might not have enough memory.	

Delineators Panel

Delineators are the ASCII characters that some machines use to differentiate between elements of the program having different functions. Entering these strings in the appropriate fields in this dialog box teaches WinDNC to interpret these codes correctly.

Msg File Begin String	Delineates a message from WinDNC concerning the disposition or status of the operation. Any ASCII symbol desired, as long as it matches part program format requirements. For example, a % sign may be required for the machine control to recognize this as a program.
Msg File End String	
Opening Comment String	Define the machine's starting and ending comment characters. Used with any of the DIR, Send and Receive commands. When sending to the machine control, these characters are at the start and end of every line in the directory listing that is sent to the machine control. When a transfer is requested from the machine control, the character preceding the closing comment character will be the end of the file name.
Closing Comment Chr	
Time Delay	Enter the time, in seconds, that the system will wait before executing a command to send data.

Greco Net Configuration Window

Purpose

Use this window to configure any machine or device that uses the GecoNet protocol.

Access

1. From the GNSERVER System Configuration Window, in the Machine Configuration panel, click the CONFIG button. *The Network Machine Configuration window appears.*
2. In the Network Machine Configuration window, in the Device Protocol panel, select GrecoNet and click CONFIG. *The Greco Net Configuration window appears.*

Description

File Transfers

Poll Delay field	Time to wait before sending a poll after it is queued. Since other factors can delay the poll, this becomes a minimum wait. If set to zero, polls are sent as often as possible.
CMB Delay field	Time to wait between CMB packets. Usually kept relatively short.
Max Restart Delay field	Time to wait after device has timed out before trying to re-establish contact. After this delay, the server tries to establish contact until its own timeout for trying to connect is reached.
Poll check box	When checked, poll packets are periodically sent to a Greco device.
Auto Set Date & Time check box	When checked, server automatically sets the date and time on any Greco device that supports this feature.

UNIX to DOS check box	When checked, a carriage return character is added before each line feed character in the file.
Use Prefix/Postfix Files	If checked, GNServer will send a file called Prefix.txt (if it exists in the send directory) before each file and a file called Postfix.txt (if it exists in the send directory) after each file. Note that the Allow Local Copy feature must be enabled.
Begin File: String field	Enter one or more characters to be recognized as the Begin File string delimiter. Sends will begin here.
Begin File: After field	Enter the number of times the Begin File string must be repeated to be recognized as the beginfile delimiter.
End File: String field	Enter one or more characters to be recognized as the End File string delimiter. Files close here.
End File: After field	Enter the number of times the End File string must be repeated to be recognized as the endfile delimiter.
Begin/End Comment 1 fields	Begin: Enter character to be recognized as the start of a comment. End: Enter character to be recognized as the end of a comment. Left blank, the end of line is assumed.
Begin/End Comment 2 fields	Begin: Enter character to be recognized as the start of a second category of comment. End: Enter character to be recognized as the end of a second category of comment. Left blank, the end of line is assumed.
Current/Older Greco Device buttons	Note instructions on screen: Only select “Older” if you are using a Minifile AND “+LS” does NOT appear on the startup screen.
Show Greco File	Enables Show File, on the WinDNC main window, to show files being transferred from a Greco device to the control. See main window section in this manual. When Show Greco File is enable, then then CMX package is used, otherwise CMB package is used. The CMX package contains number of bytes count sent from GrecoNet device. Note: Old version software in GrecoNet device does not have show file feature.
Print Option panel	If Print Before Send is checked, and a valid printer name is entered in the Printer Name field, WinDNC will automatically print a copy of any file sent, before comments are stripped and prefix/postfix are added.

Machine Monitoring*

Machine Monitoring check box	Activates the Event Monitoring software component of MTMS, if the necessary software and hardware are installed on your system.
Mask field	Each of these 7 bits corresponds to one of the 7 monitored points. A “1” indicates that the point is being monitored. A “0” indicates that the channel for that point is not active.
Normal field	Each of these 7 bits corresponds to one of the 7 monitored points. A “1” indicates that point should be inverted (“normalized”). A “0” indicates that point should not be normalized.
Debounce: Bit 1	The amount of change that can be sensed at a monitored point

through Bit 7	before that point is acknowledged to have changed significantly.
Keep History check box	Stores a record of detected events in a log file for this machine.

* **Not used with current systems.**

Communications Interface Dialogs

Each type of communications interface has its own version of the Configuration Interface dialog box, as the illustration below demonstrates. The currently available types are described in this section.

Purpose

The settings on these windows concern certain aspects of the actual interface hardware. This is where GNSERVER is configured to talk to the communications ports on various devices.

Access

1. From the GNSERVER System Configuration window, in the Module Configuration panel, click on the arrowhead in the **Comm Interfaces** field.
2. From the communications interfaces list, click the interface to be configured.
3. Click the Comm Interfaces: **CONFIG** button.

Descriptions

COM Port and COM Port (gpe) Configuration Dialog

Note that you cannot set the IRQ or I/O Addresses from this dialog. To set the IRQ and I/O Addresses for these standard comm ports:

1. Open the Windows Control Panel (**Start | Settings | Control panel**).
2. From the Control Panel, open the item for Ports. From this item, select the port you want to configure and set the IRQ and I/O Addresses appropriately.

Notes: *All other parameters, such as baud rate, character size, and parity are ignored by GNSERVER. These parameters are set to match the configuration specified in the PC Comm Port Configuration window for any device using a comm port whenever the port is in use by GNSERVER.*

If you are using a multiport serial card, configuration might be different. Refer to the documentation that came with your multiport card for details.

If you change any values, a message will appear when you save, to remind you that you must exit and restart windows for these changes to take effect.

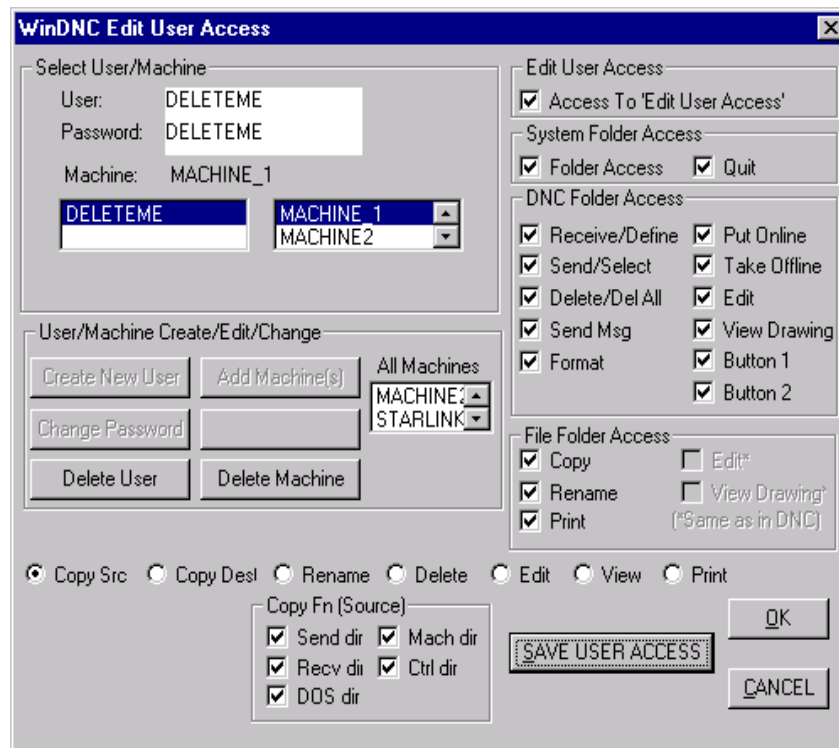
Machine field	Displays the name of the machine control or Greco device being configured.
Channel Select panel	Select the communications port being used.
Communications Parameters panel	Must be specified. These parameters will override anything set by Windows in the ports configuration.

FTP Control Configuration Dialog

Machine field	Displays the name of the machine being configured.
Network Address field	Enter the network address of the machine being configured. This must be a valid FTP Server.
Login Name field	Username of the user authorized to log onto the FTP Server.

Login Password field	Password associated with username above.
Default Filename field	The name the file to be “put” to the FTP Server, if desired. Left blank, the resultant file will have the same name as the original.

Edit User Access Window Purpose



Use this window to authorize a new user, to change a user’s password or username, and/or to authorize user for a new machine. The System administrator must first use this window to create a System Administrator account for himself. Then he can open accounts for other users with various degrees of access, tied to their username and password. See *Creating a System Administrator Account* in the *Sample Procedures* section, below.

Access

The System Administrator would normally reserve access to this window to himself alone. The user would therefore have to log in as System Administrator to access this window.

1. From the WinDNC Startup screen, click the **System** folder tab.
2. On the System folder screen, click the **Config WinDNC** button.
3. On the WinDNC Configuration screen that appears:
 - a) If Edit User Access button is grayed out, click the **User Login/Out** button and log in. (If this the very first login, use DELETEME for both **User** and **Password**.) Then, on the WinDNC Configuration screen, click the **Edit User Access** button.
 - b) If the **Edit User Access** button is not grayed out, click it now.

Description

Select User/Machine Panel

User field	Enter the username.
Password field	Enter the password.
Machine field	Not editable. Shows currently selected machine.
user-machine fields (Below Machine field.)	Not directly editable. These fields show the names of the user and which machines are being assigned to them. Right field lists all machines authorized to the user highlighted in the left field. To assign which machine functions to allow the currently entered user, see User/Machine Create/Edit/Change Panel below.

User/Machine Create/Edit/Change Panel

Create New User button	Click to add currently entered user information to database of users.
Change Password button	Click to change to the new password for the currently entered user.
Delete User button	Click to remove currently entered user from database of users.
Add Machine button	In the All Machine Names field, highlight the machine to be authorized for the selected user. Then click Add Machine button.
Delete Machine button	In the Selected Machines field, highlight a machine, then click the Remove Machine button. The machine name will be removed from the Selected Machines field for the selected user.
All Machines field	List of all machines available for assignment. To authorize a machine for the currently entered user, see Add Machine button, above.

WinDNC User Access Panels

The balance of the panels are mainly check boxes where you assign the new user access rights to WinDNC functions. These rights must be individually assigned for each machine the user has rights to.

Highlight a machine name and a user name in the Select User/Machine panel. Then assign access rights by checking the appropriate boxes. All rights assigned will accrue to the selected user for the selected machine.

With respect to the Edit User Access panel: The System Administrator would normally reserve access to this function to himself alone.

Procedures

These procedures should be performed only by a qualified System Administrator or Information Systems Manager.

Creating a System Administrator Account

1. In the Select User/Machine panel, **User** field, enter the System Administrator name.
2. In the Select User/Machine panel, **Password** field, enter the System Administrator's unique password.
3. In the User/Machine Create/Edit/Change panel, click the **Create New User** button.

4. The above step will cause the newly entered user name to appear in the users list in the Select User/Machine panel. Now highlight the new name in that field.
5. In the User/Machine Create/Edit/Change panel, in the **All Machines** field, highlight the names of the machines you want System Administrator rights to. For System Administrator rights you will probably want to select all of the machines. You can select them one machine at a time or all at once.
6. With the machine(s) highlighted, click the **Add Machine(s)** button. The machine(s) selected will appear in the Select User /Machine panel, machines list field.
7. In the Select User/Machine panel, machines list field, click the machine you are going to configure. This will cause the items in the WinDNC User Access panels (right side and bottom of screen) to become active (no longer grayed out).
8. Check all of the items you need access to. (As System Administrator you'll want them all.)
9. Click on the **Save User Access** button.

WinDNC will save your configuration. After logging in as System Administrator, you will want to delete the DELETEME account, so that only the System Administrator account has full access.

1. In the WinDNC Configuration window, click the **Edit User Access** button.
2. In the Edit User Access window, in the user names list field, click the name DELETEME.
3. Click the **Delete User** button, then click the **Save User Access** button.

To complete the security setup:

1. In the Win/DNC Configuration window, Security Options panel, click the **Enforce Security** check box to place a check mark in it. This ensures that all subsequent users only have the access that is assigned to them.
2. Click the **Save** button. To save the Enforce Security check mark and return to the System folder screen.

Assigning Operator Access Rights

The System Administrator will be responsible for assigning access rights to other personnel. Each operator in the facility can be assigned individual access rights tied to a unique username and password. Access rights are usually based on such things as the individual's training, experience, job description and/or job requirements.

You will probably NOT want to give anyone else rights to the **Edit User Access** function, or rights to access the **System Folder**. Access to other sensitive folders, and rights to delete files are examples of functions that should be assigned prudently.

The procedure for assigning operator access rights is almost the same as for creating the System Administrator account. The exceptions are that the DELETEME account no longer exists (the System Administrator's own account is used), and the access rights assigned are more restrictive.

Recovery

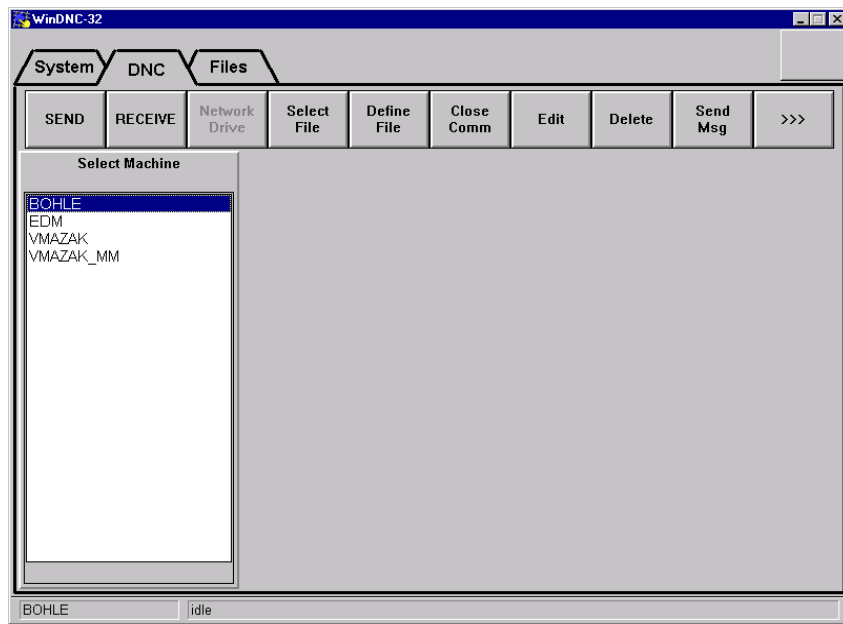
If you mistakenly delete the DELETEME account before you have a proper System Administrator account, or if you forget the System Administrator account password, you have to delete the **users.dat** file where all of the accounts information is installed. This is an encrypted file, and there is no way to edit it directly.

Once **users.dat** is deleted, the default DELETEME account is automatically recreated. Now you have to recreate the entire user database, including the System Administrator account, and reassign all user passwords and access rights.

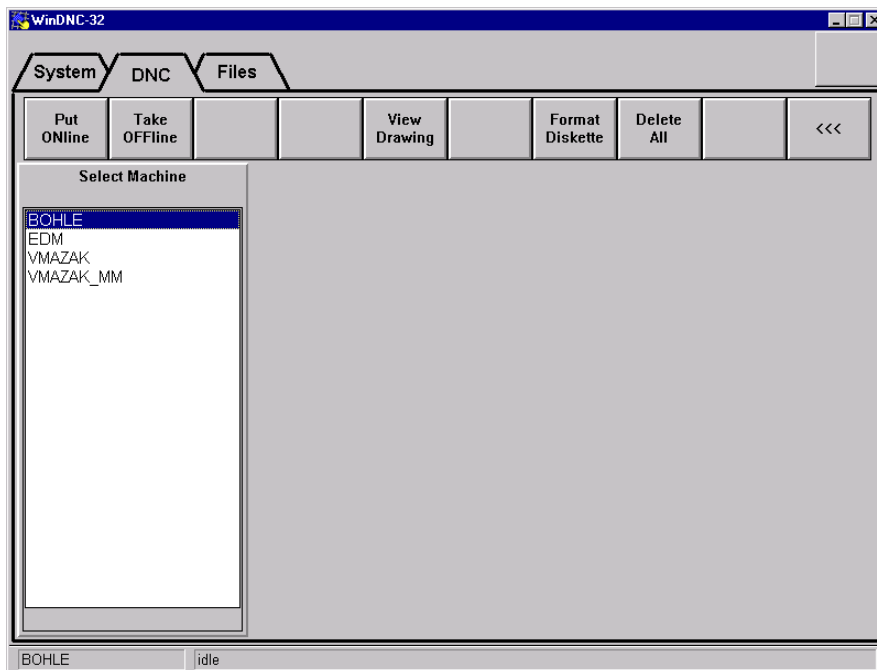
DNC Folder

The DNC tab opens the DNC Folder. The DNC folder has many faces—the screen varies depending on the function button pressed. There are two rows of function buttons, and only one row shows at a time. The first row contains controls related to transferring part programs with machine tools, editing files and deleting files. From the second row you can do limited network and file management. (Most is done from the System and Files folders.) Note: For Windows 2000, you may need to add a folder called “TEMP” in your root directory.

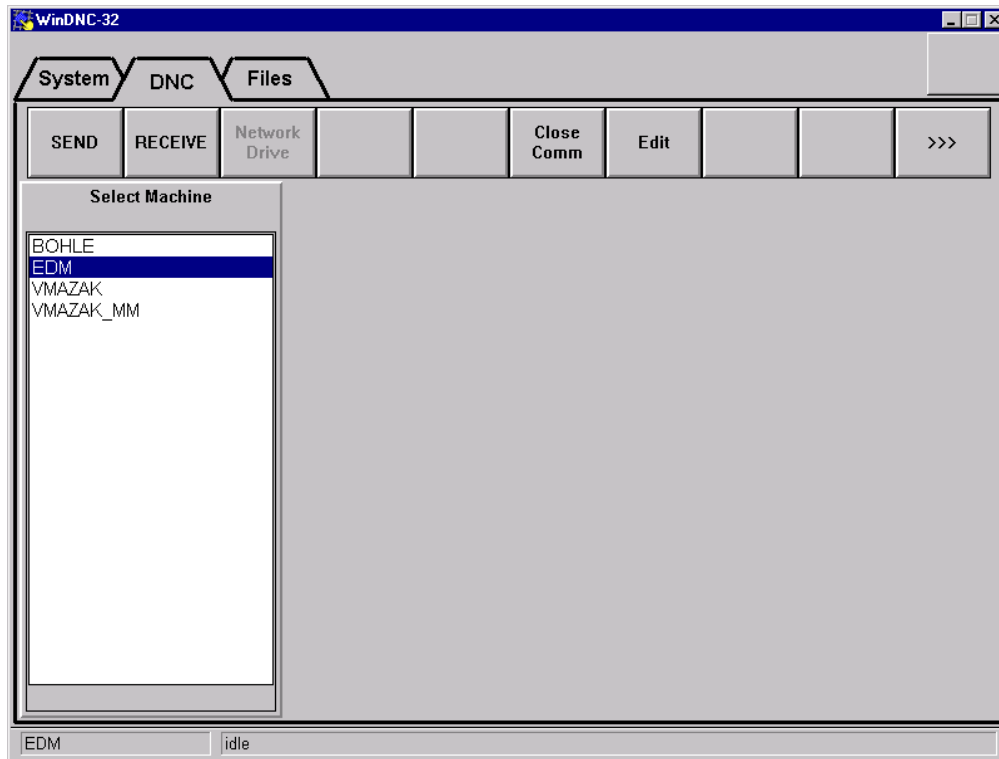
Basic DNC folder showing first function bar (GrecoNet device).



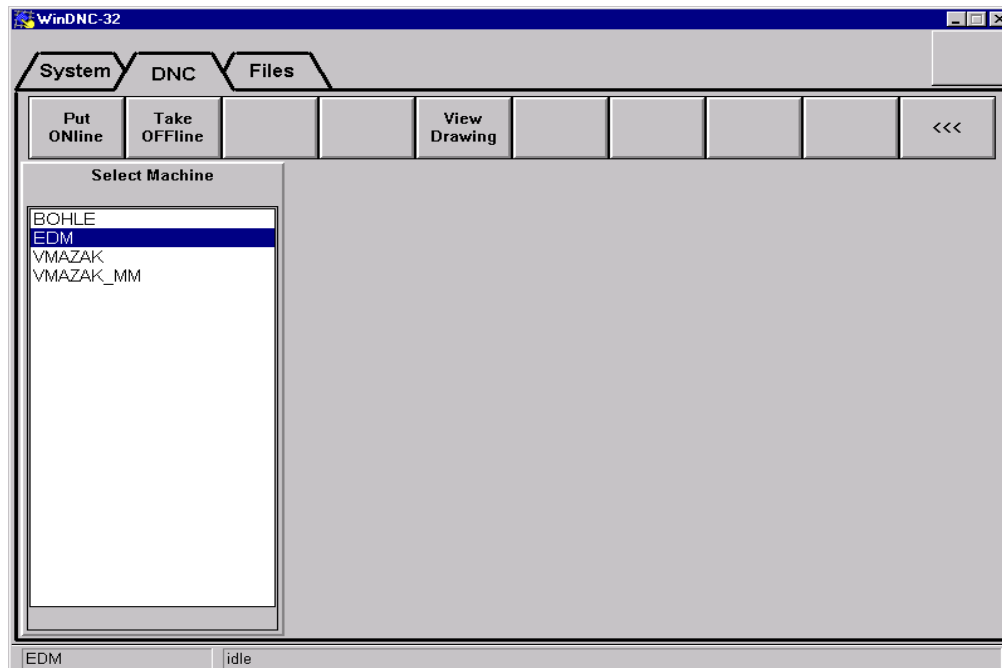
Click “>>>>” from the first folder bar to display Top of DNC folder showing second function bar (GrecoNet device)



Basic DNC folder showing first function bar (Xon/Xoff protocol).



Click ">>>>" from the first folder bar to display Top of DNC folder showing second function bar (Xon/Xoff protocol)

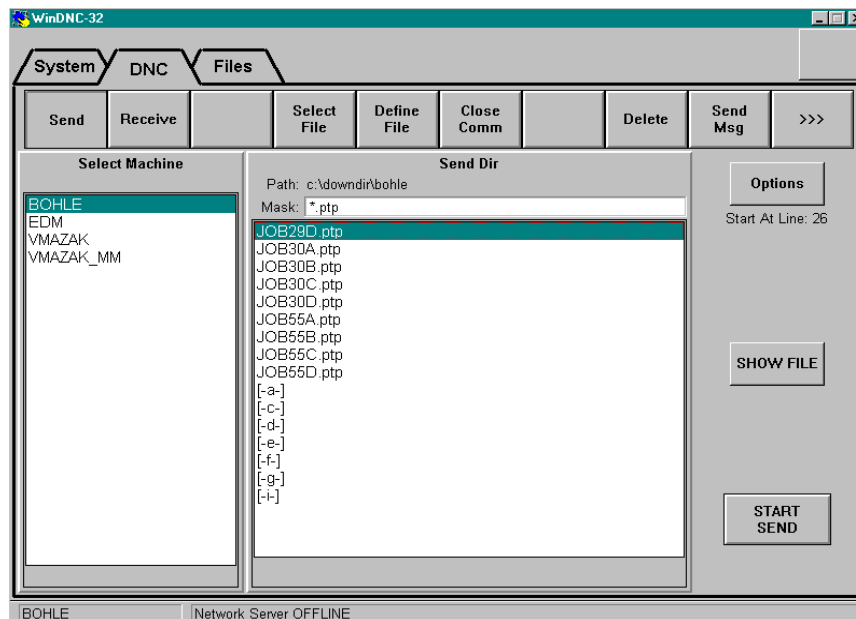


DNC Function Buttons

These brief descriptions are followed by more detailed procedures.

Send	Send a file to a Greco device or machine control.
Receive	Receive a file from a Greco device or machine control.
Network Drive	Allows for a return to network drive after a switch to local copy drive was made.
Select File	Initiates procedure to send a file from a Greco device disk to a machine control.
Define File	Initiates procedure to send a file from a machine control to a Greco device.
Close Comm	Stops communication between WinDNC and the selected Greco device or machine control.
Edit	Opens the editor for selected file.
View Drawing	Opens the graphics viewer for selected file.
Delete	Deletes the selected file.
Send Msg	Allows user to type message that then appears in the operator display of a Greco device, if the device has a display.
>>>	Click to switch to second set of DNC function buttons.
Put ONLINE	Requests GNSERVER to connect the selected machine to the network.
Take OFFline	Requests GNSERVER to disconnect the selected machine from the network.
Format Diskette	Formats the diskette, or RAM disk, in the selected Greco device. Caution: Reformatting erases all previously recorded material.
Delete All	Deletes all files on the selected Greco device diskette or RAM disk.
<<<	Click to switch to first set of DNC function buttons.

DNC: Send Function



Purpose

Use this function to send a part program file to a machine tool control or to a Greco device. If the destination is a machine tool control, the part program is sent directly to the control. If the destination is a Greco device, and the device has a drive, the file is sent to the device drive.

Access

1. From the DNC folder, display the first set of function buttons. (Click the <<< button if necessary.)
2. Click the **Send** function button.

Description

Path: Field

The full path name of the directory of the files currently being displayed in the large Send Dir files list field.

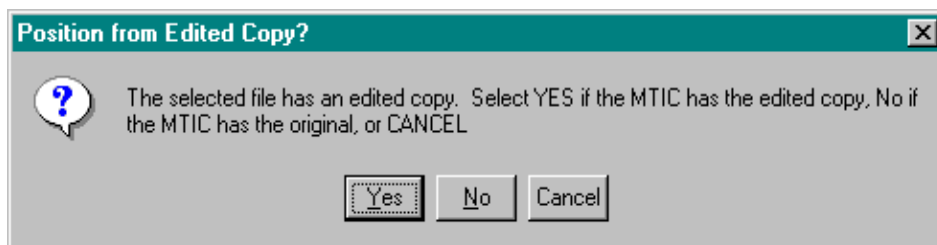
Mask: Field

By what you enter here, you can restrict the displayed files to just those that match your criteria. These are the basic rules:

Rule	Examples
A question mark (?) substitutes for any single character in the file names.	24???.ptp will display only file names that start with 24 followed by three characters and ending with extension .ptp or .PTP, such as: 24TLT.PTP, 246TL.PTP, or 24856.ptp
An asterisk (*) substitutes for any number of sequential characters in the file name.	*.ptp will display only filenames with the .ptp extension, such as: JOB24-S2.ptp, JobTLbore.ptp, or GEAR9-1a.PTP 24*.* will display only filenames that begin with 24, such as: 2486.PTP, 24drill80.txt, or 246-flge.bmp

Options Button

Selecting options before you click START SEND opens the Send Options window, which is described later. You may get a question from WinDNC first, regarding the disposition of your file—something like the following dialog.



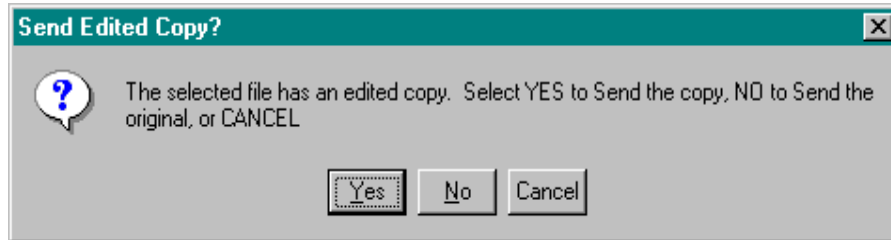
This dialog can vary depending on the destination machine. When you have answered the dialog, the Send Options window appears. The "Start at Line:" number under this button is determined in the Set File Start Position window, described later.

Show File Button

Click the Show File button (after clicking the Start Send button) to open the Show File window, described later. This window displays the part program in two fields, in real time. The top field shows the program line-for-line as the lines exit the port or Greco Systems device. The bottom field shows line-for-line as they are about to exit the port or Greco Device.

Start Send Button

When all is ready, click the START SEND button to send the file. You may get a dialog box, such as the following one, before the file is sent. Click **Yes** or **No** to send the file.



Procedures

Selecting a File

Once you have selected your machine tool from the Select Machine field, the contents of the Send directory for that machine will be displayed in the Send Dir panel, file list field, as illustrated in the screen representation above. If you have not specified a mask in the **Mask:** field, all files and subdirectories in the chosen directory will be displayed. The names of subdirectories are displayed inside of [] brackets. For example: [test], or [backup].

If the list is too long for the field, a scroll bar is automatically provided at the right of the field, which can be used in the prescribed windows manner, to scroll through the entire list.

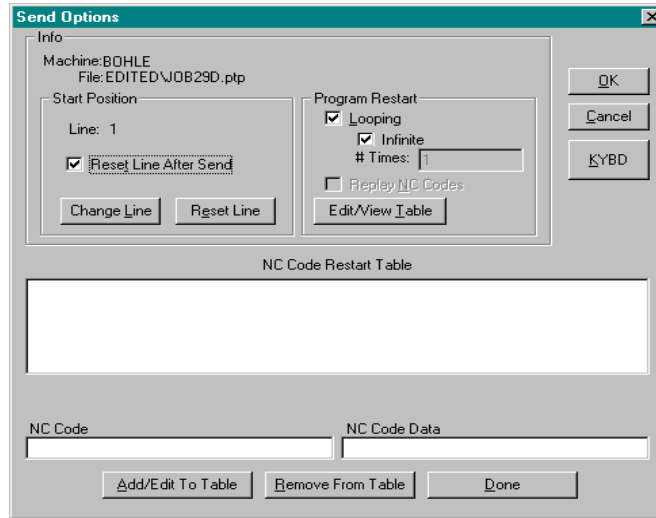
To select a file, click the file name in the list to highlight it. Once it is highlighted, you can send it.

Displaying a Subdirectory

To display the contents of a subdirectory in the file list field, double click on the subdirectory name. A file can then be selected from the subdirectory.

Note that the directory named [..] is the parent directory. Selecting this directory takes you back up one level to the parent directory.

Send Options Window



Purpose

With this window you can choose to:

- Start a program at some point other than the beginning.
- Repeat the send automatically a specified number of times.
- Edit the NC code restart table.

The illustration shows the window after the **Edit/View Table** button has been pressed.

Access

From the DNC folder, Send function screen, click the Options button.

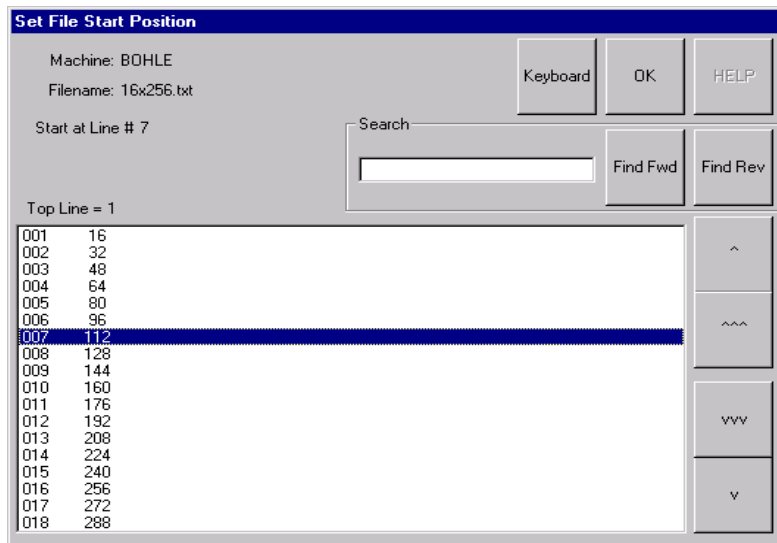
Description

Info panel Header identifying the machine and the program file being used.	Machine field	Displays the name of the selected machine.
	File field	Displays the name of the selected file to be sent.
Start Position panel Set parameters associated with starting programs on a line other than the first. See CAUTION at end of this table.	Line # field	Displays the number of the line in the program where the program will begin executing. See Change Line button.
	Reset Line After Send	If start line number is not one, you can check here to automatically reset the start line to one in the original file once the send is completed.
	Change Line button	Click to open Set File Start Position window. Used to set program start line.
	Reset Line button	Click to manually reset the start line to one.
Program Restart panel Set parameters associated with automatically repeated	Looping check box	Check to allow multiple sends.
	Infinite check box	Check to allow infinite repetitions. (Until manually stopped. See DNC Functions buttons in main window.)

file sends.	# Times field	Number of repeated sends (if Infinite is not checked).
	Replay NC Codes	Check if machine requires that NC codes be sent before a changed line start.
	Edit/View Table button	This is a toggle control. It either enlarges the window to include the NC Code Restart Table editing area, or it shrinks the window to exclude the NC Code Restart Table editing area.
NC Code Restart Table area	NC Code Restart Table field	Displays the NC sequence line number and NC code data.
	NC Code field	Displays the NC sequence line number.
	NC Code Data field	NC data.
	Add/Edit To Table button	Click after entering data in NC Code and NC Code Data fields to add that data to the NC Code Restart Table .
	Remove From Table button	Click to delete the line you highlighted in the NC Code Restart Table field.
	Done button	Click to save the data in the NC Code Restart Table .

CAUTION: Ensure that the machine is properly prepared before starting in mid-program. NC Code field must contain sequence numbers less than the restart line and NC Code Data field must contain all the preparatory functions required for a safe and proper start. These lines will be automatically sent by GNServer before the chosen start point.

Set File Start Position Window



Purpose

Choose the precise line in the program where the program will start sending.

Access

From the Select Options window, in the Start Position panel, click the **Change Line** button.

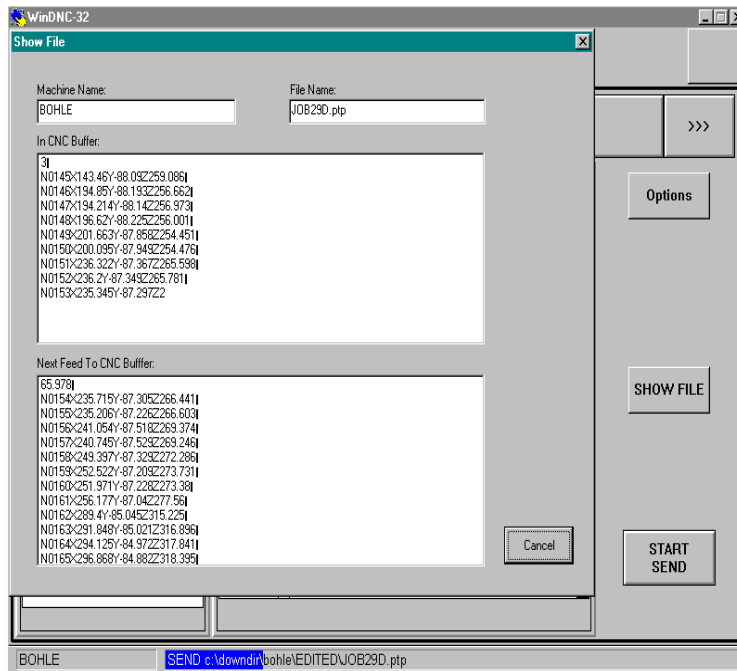
Description

You can find the line several ways:

1. Scroll up or down the lines of code one line at a time.
2. Scroll up or down the lines of code one page at a time.
3. Type some of the line of code into the Search window, and click the Find button.

Machine field	Displays the name of the selected machine.
Filename field	Displays the name of the file being searched.
Start at field	Displays the line number of the currently selected line.
Top Line = field	Displays the number of the actual first line in the display.
Program display field	Displays the contents of the program file. In this field you can scroll through the program and highlight the line you want to start on. When you have found the line, then you must click on it to highlight (select) it.
Search field	Type the first part of the line you want to start on, Then click a Find button.
Find Fwd button	Type the first part of the line you want to start on, then click this button to search down through the code for a matching line.
Find Rev button	Type the first part of the line you want to start on, then click this button to search up through the code for a matching line.
^ button	Click to scroll up one line of code.
v button	Click to scroll down one line of code.
^^^ button	Click to scroll up one page of code.
vvv button	Click to scroll down one page of code.
OK button	Click to save line choice and exit this window.

Show File Window



Purpose

Monitor the progress of the Send function. Displays the part program in the show-file fields. Displays line-for-line, in real time.

Access

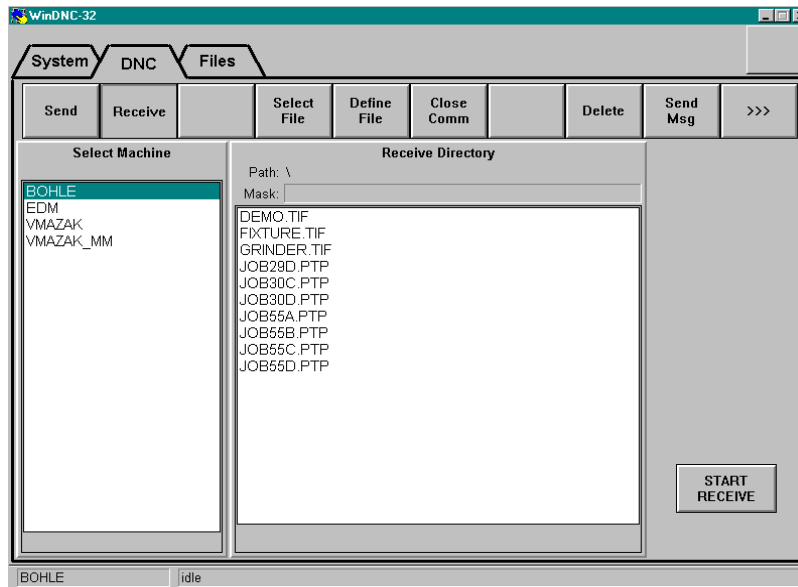
From the DNC folder, Send function screen, click the SHOW FILE button.

Description

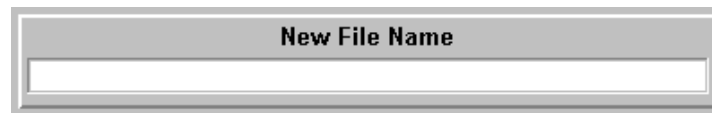
When the Show File button is clicked, this panel displays the part program in two Show-File fields, in real time. The top field shows the program line-for-line as they exit the port or Greco Systems device. The bottom field shows line-for-line as they are about to exit the port or Greco Device.

Machine Name Field	Displays the name of the machine to which the file is being sent.
File Name field	Displays the name of the file that is being viewed. (This is the file selected from the Send Dir Panel in the Send screen.)
In CNC Buffer field	Displays each line of the part program as it enters the CNC device buffer.
Next Feed To CNC Buffer field	Displays remaining lines of the part program, with each line being deleted as it enters the CNC buffer field.

DNC: Receive Function



Receive Function Screen When Device Has a Diskette or RAM Disk



This Replaces Receive Directory When Device Has No Diskette or RAM Disk

Purpose

This screen is used to receive a file from a machine control or Greco device. If the selected device is a direct connect machine control, an NC program will be sent from the machine control into the filename you create for it. If the selected machine is a Greco device with disk (such as a CNC Station or MTIC), The file you select from the device's diskette will be received.

Access

1. From the DNC folder, display the first set of function buttons. (Click the <<<< button if necessary.)
2. Click the **Receive** function button.

Description

There are two variations of this screen. One is seen when receiving a file from a **Greco device with a diskette** or RAM, and one is seen when receiving a file from a **direct connect machine**, a **Greco device without a diskette**, or a **Greco device in passthru** mode. The basic difference is that a device with a diskette has a list of files that can be displayed. The other configurations cannot provide a list for display.

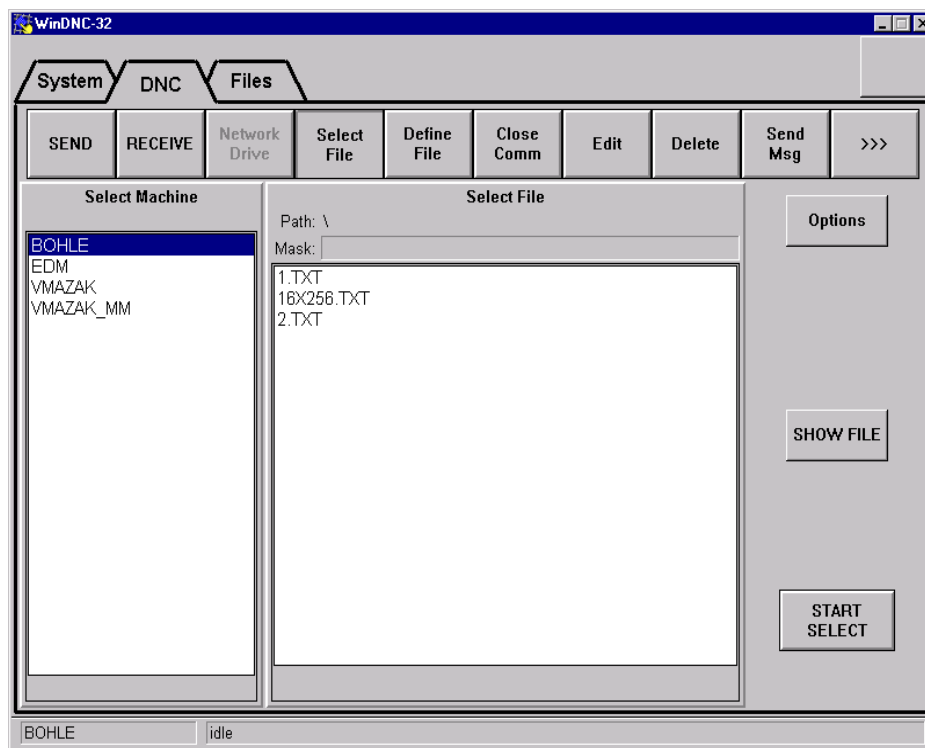
Procedure

1. If WinDNC and GNSERVER are not running, start them.
2. Select the DNC Folder.
3. Click the **Receive** function button.
4. In the Select Machine panel, select the machine you want to receive the NC program from (scroll the list if necessary to click on the name). If this device has a diskette or RAM disk, the contents of the selected

devices diskette directory will appear in the Receive Directory panel. Otherwise, the New File Name panel will appear instead of Receive Directory.

5. Select the file:
 - a) In the Receive Directory panel, select the file you want to receive (scroll the list if necessary to click on the name), or...
 - b) In the New File Name panel, type in a name for the file in which the NC program will be saved.
6. Click the START RECEIVE button. A "Receive Queued" message will appear. This means that the receive request has been queued to the server. If the device is not already doing something else, the function begins immediately (no additional message will appear). The device status shown in the status bar at the bottom of the screen changes to RECEIVE file_ _ _ . If the Greco device is diskless, the Receive will take place in the "Passthru" mode.
7. Click the OK button in the message box.
- 8.

DNC: Select File Function



Purpose

With this function, you use your PC workstation to send a file from a Greco device to a machine control.

Access

1. From the DNC folder, display the first set of function buttons. (Click the <<< button if necessary.)
2. Click the **Select File** function button .

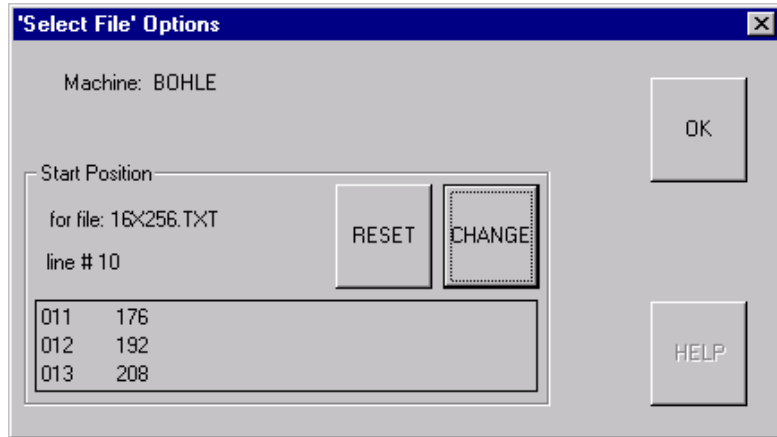
Description

Select File Panel

The select file panel has Path, Mask, and file list fields. These fields serve the same functions that they do in the Send Dir and Receive Directory panels in the DNC Send and DNC Receive windows.

Options Button

Clicking the **Option** button opens Select File Options dialog box. This dialog displays the name of the selected machine, the name of the selected file, and the line number the program will start on.



RESET button: Click to reset the line number that the program will start on. It will then start at the beginning of the file.

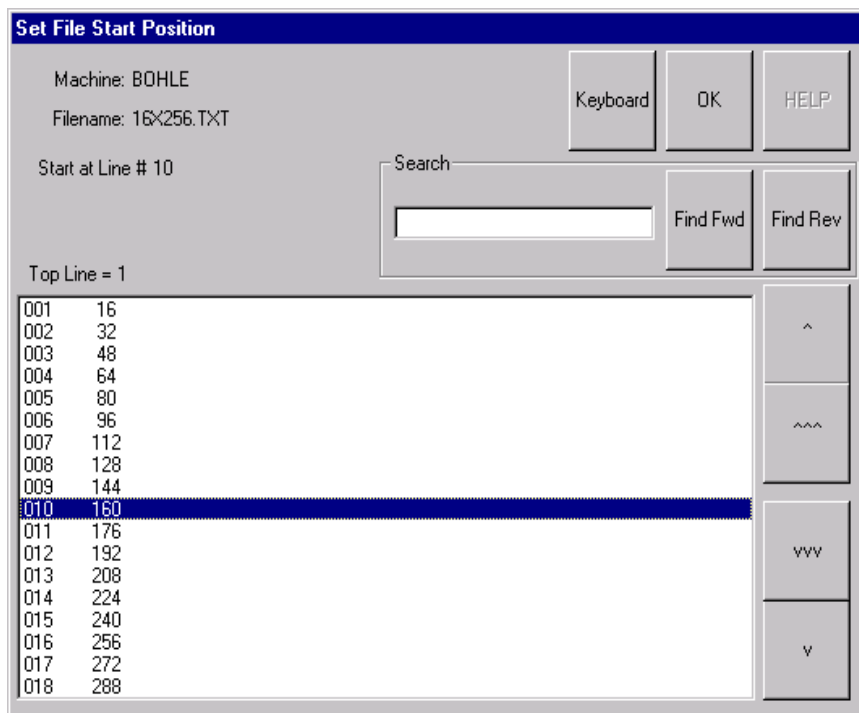
CHANGE button: Click to change the line number the program will start on. This opens the Set file start position window (described next).

OK button: Click to save line choice and exit this window.

START SELECT button

Click to issue the request to GNSERVER to send the file from the Greco device drive to the machine control.

Set File Start Position Window



Purpose

Choose the precise line in the program where the program will start sending. This option is used when a program is interrupted and must be restarted from the point where it stopped.

Access

From the Select File Options window, in the Start Position panel, click the **CHANGE** button.

Description

You can find the line several ways:

1. Scroll up or down the lines of code one line at a time.
2. Scroll up or down the lines of code one page at a time.
3. Type some of the line of code into the Search window, and click a Find button.

Machine field	Displays the name of the machine being programmed.
Filename field	Displays the name of the program file being searched.
Start at field	Displays the line number of the currently selected line.
Top Line = field	Displays the number of the actual first line shown in the screen.
Program display field	Displays the contents of the program file. In this field you can scroll through the program and highlight the line you want to start on. When you have found the line, then you must click on it to highlight (select) it.
Search field	Type the first part of the line you want to start on, Then click a Find button.
Find Fwd button	Type the first part of the line you want to start on, then click this button to search down through the code for a matching line.
Find Rev button	Type the first part of the line you want to start on, then click this button to search up through the code for a matching line.
^ button	Click to scroll up one line of code.
v button	Click to scroll down one line of code.
^^^ button	Click to scroll up one page of code.
vvv button	Click to scroll down one page of code.
OK button	Click to save line choice and exit this window.

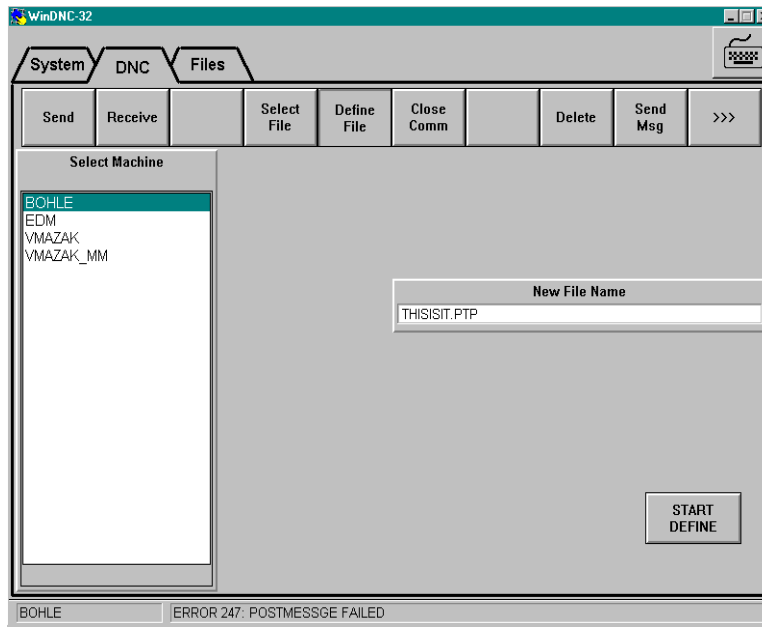
Procedure

1. From the Select File function screen, in the Select Machine panel, select the Greco device from which you will send the file.
2. In the Select File panel, select the File which you will send to the machine control.
3. If you want the program to start running on a specific line, click the options button, and use the Select File Options and Set File Start Position windows, described above, to select the starting line. Use the OK button to return to the Select File screen.

If you are not changing the starting line, skip the above step and continue with the next.

4. Click the START SELECT button. No message appears when the send is complete. You must verify successful completion by checking the readout on the Greco device.
5. When the operation is completed, click the **Close Comm DNC** function button to close the file.

DNC: Define File Function



Purpose

Send a file from a machine control to a Greco device with disk. If the Greco device is diskless, this function is disabled.

Access

1. From the DNC folder, display the first set of function buttons. (Click the <<< button if necessary.)
2. Click the **Define File** function button.

Description

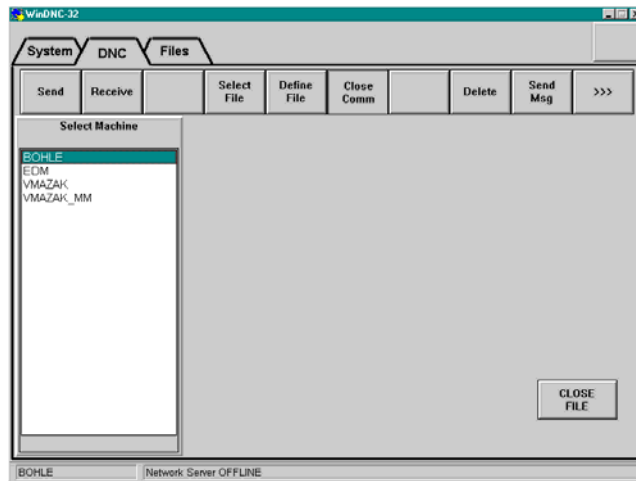
New File Name field: The part program in the machine control is not associated with a file name. In order to send it to the Greco device it must have a filename in the Greco device to associate with. Enter a file name for the program here.

Start Define button: When everything is ready for the transfer, press this button to start the transfer.

Procedure

1. From the Select Machine panel, select the greco device that will be receiving the file.
2. In the New File Name panel, enter the name for the new file.
3. Press the START DEFINE button. No message appears when the send is complete. You must verify successful completion by checking the readout on the Greco device.
4. When the operation is completed, click the **Close Comm** DNC function button to close the file on the Greco device drive.
5. If desired, the file can now be sent to the PC workstation from the Greco device by using the Receive function.

DNC: Close Comm Function



Purpose

Close an opened file. This can be a file opened on a Greco device in order to receive a program from a machine control, or a file sent or received through a Greco device in passthru mode. Close Comm will also close a direct connect file transfer.

Access

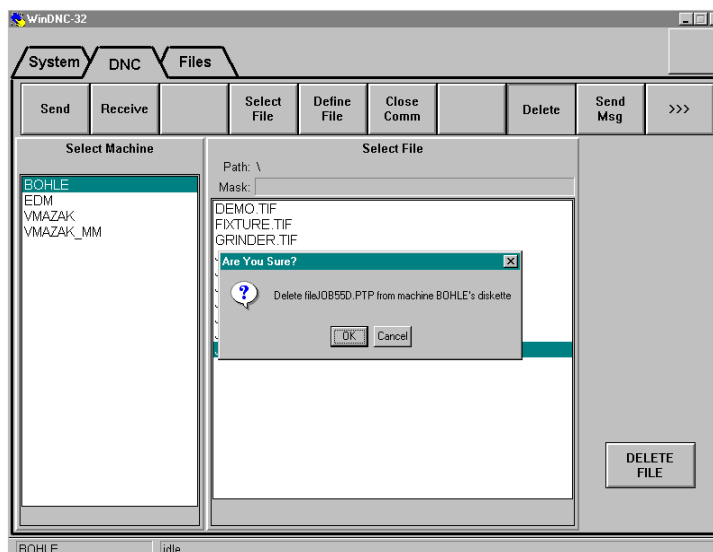
1. From the DNC folder, display the first set of function buttons. (Click the <<< button if necessary.)
2. Click the **Close Comm** function button.

Description

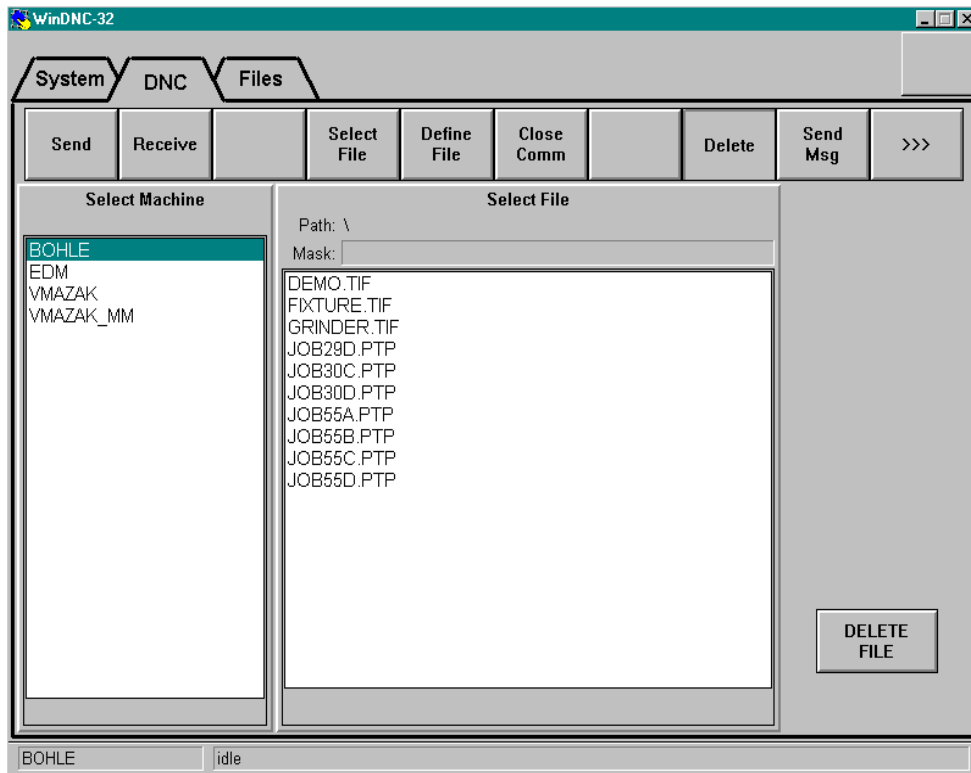
CLOSE FILE button: Once machine or device is selected, click this button to close the file.

Procedure

1. From the Select Machine panel, select the machine control or Greco device you want to close.
2. Click the CIOSE COMM button.
3. Click the CIOSE FILE button. When the file is closed, a completion message will appear.



DNC: Delete Function



Purpose

Delete a file from the drive on a Greco device. Not accessible if device is diskless.

Access

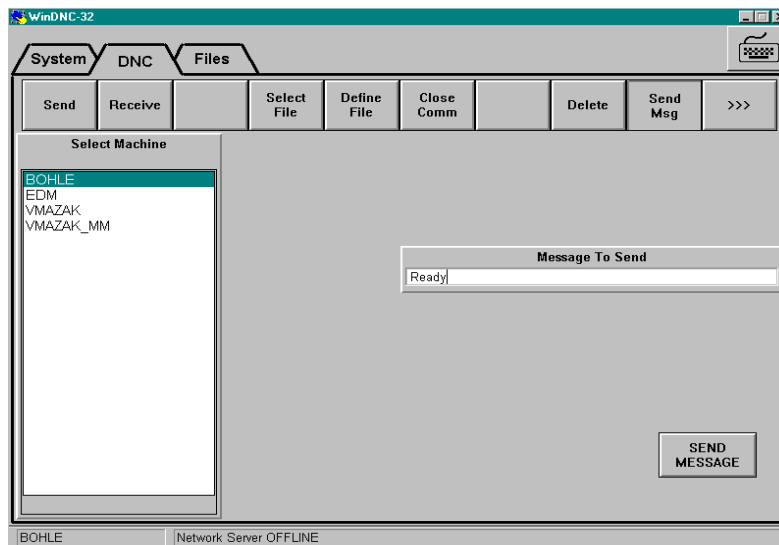
1. From the DNC folder, display the first set of function buttons. (Click the <<< button if necessary.)
2. Click the **Delete** function button.

Procedure

1. From the Select Machine panel, select the Greco device with the file that is to be deleted.
2. Click the DELETE button.
3. From the Select File panel, select the file you want to delete.
3. Press the DELETE FILE button.

Once the command is processed, a message appears, and the filename disappears from the Select File list.

DNC: Send Message Function



Purpose

Send a message to any Greco device that has an operator display. Takes advantage of the fact that the target device has a writable alphanumeric display that can be used to send a message to be read by an operator at the device.

If the device you are connected to does not have any type of operator display, or if the protocol you are using does not support sending operator messages, then this function will be disabled and the function button will be grayed out.

Access

1. From the DNC folder, display the first set of function buttons. (Click the <<< button if necessary.)
2. Click the **Send Msg** function button.

Description

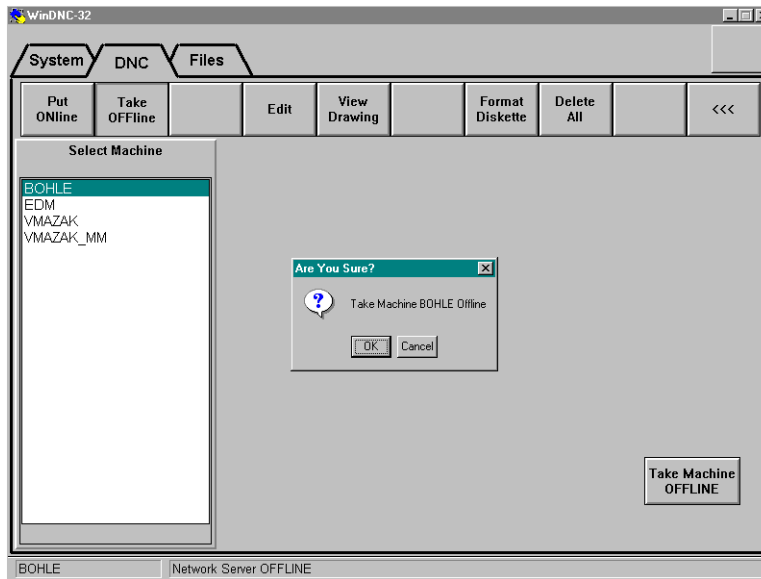
Message to Send field: This field appears when the Send Msg function button is pressed. You type your message into this field. Only 40 characters will be sent, so plan your message with this limit in mind.

SEND MESSAGE button: Click this button to send your message after you have entered it into the Message to Send field.

Procedure

1. From the Select Machine panel, select the device you want to send a message to.
2. Click the SEND MESSAGE button.
3. In the Message to Send field, enter a 40-character or less message.
4. Press the SEND MESSAGE button.

DNC: Put ONLINE and Take OFFline Functions



Purpose

These buttons cause the selected machine or device to be put on line or to be taken off line at the operator's discretion. Being on line means that communication with the GNSERVER is enabled. Being off line means that communication with GNSERVER is not possible until restored by putting it back on line.

Example: If a device fails, taking it off line saves the time GNSERVER could spend trying to communicate with the device before the timeout time is reached.

Access

1. From the DNC folder, display the second set of function buttons. (Click the >>> button if necessary.)
2. Click the **Put ONLINE** or **Take OFFline** function button, as appropriate.

Description

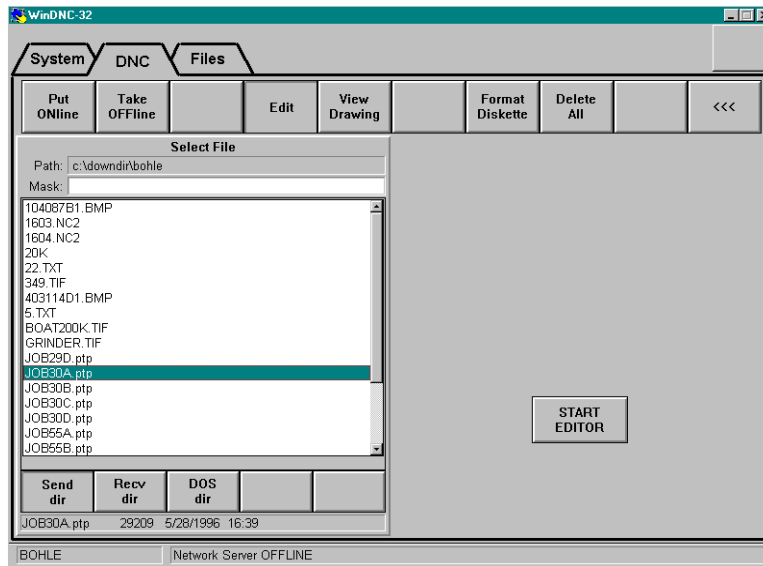
When the **Put ONLINE** function is selected, the **Put Machine ONLINE** action button appears in the lower right corner of the screen.

When the **Take OFFline** function is selected, the **Take Machine OFFLINE** action button appears in the lower right corner of the screen.

Procedure

1. Select the machine to be switched.
2. Select the appropriate function button (ONline or OFFline).
3. Press the action button in the lower left corner of the screen.
4. WinDNC will ask you to verify your command. Click **OK** or **Cancel**.

DNC: Edit Function



Purpose

This function button opens the text editor application that you specified during configuration. This was done using the **System: Config WinDNC** function, which brings up the WinDNC Configuration Window. (See the *System Folder* chapter, *WinDNC Configuration Window* section, if you need configuration information.)

With this function, you can edit any editable file in the Send, Receive, or DOS directories. However, if user access security measures are enforced on your system, you must have editing privileges via your user access password in order to edit a file.

Access

1. From the DNC folder, display the second set of function buttons. (Click the >>> button if necessary.)
2. Click the **Edit** function button.

Description

Select File panel: This panel lists the files in the directory from which you will select a file for editing. It is described in detail in the *Files Folder* chapter under *Select Source File and Select File Panels*. Under the Edit function, you will be able to select from the machines Send, Receive or DOS directories.

START EDITOR button: Once the file is selected, this button is used to open the file within the editor application, so that you can begin editing.

Procedure

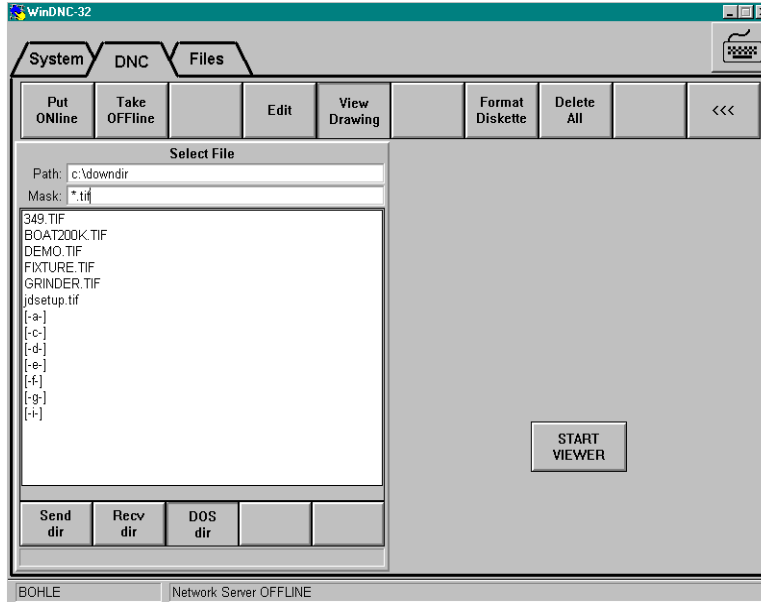
Caution: *BEFORE clicking the **Edit** function button, select the machine from whose directory you are going to edit a file. You can select the machine from the Select Machine panel in any of the DNC folder screens.*

1. Select the machine from whose directories you will be selecting the file.
2. From the Select File panel, select the file you are going to edit.
3. Click the START EDITOR button.
A dialog box appears where you can verify or reconsider.
4. In the dialog box, click **Yes** to open the file within the editor.

Note: If you are using Notepad as your default editor, and the file is too large for Notepad to open, you are given the option to substitute WordPad as the editor. Just click **Yes** to invoke WordPad and continue.

Note: For operational details on the editor, refer to the manual that came with your chosen application.

DNC: View Drawing Function



Purpose

This function button opens the graphics viewer application that you specified during configuration. This was done using the **System: Config WinDNC** function, which brings up the WinDNC Configuration Window. (See the *System Folder* chapter, *WinDNC Configuration Window* section, if you need configuration information.)

With this function, you can view any compatible file in the Send, Receive, or DOS directories.

Access

1. From the DNC folder, display the second set of function buttons. (Click the >>> button if necessary.)
2. Click the **View Drawing** function button.

Description

Select File panel: This panel lists the files in the directory from which you will select a file for viewing. It is described in detail in the *Files Folder* chapter under *Select Source File and Select File Panels*. Under the View Drawing function, you will be able to select from the machines Send or Receive directories, or from the DOS directory.

START VIEWER button: Once the file is selected, this button is used to open the file within the viewer application.

Procedure

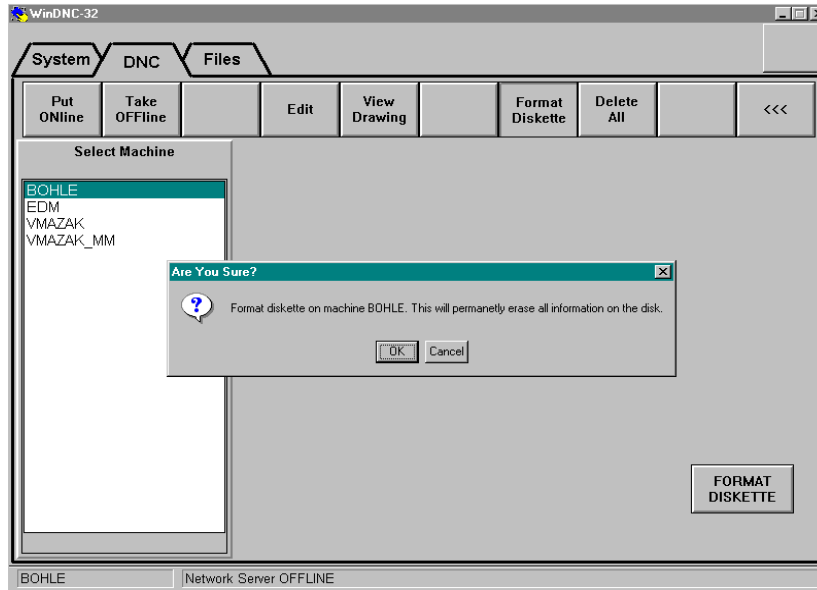
Caution: *BEFORE clicking the View Drawing function button, select the machine from whose directory you are going to view a file. You can select the machine from the Select Machine panel in any of the DNC folder screens.*

1. Select the machine from whose directories you will be selecting the file.

2. From the Select File panel, select the file containing the graphic you want to view.
3. Click the START VIEWER button.
A dialog box appears where you can verify or reconsider.
4. In the dialog box, click **Yes** to open the file within the viewer.

Note: For operational details on the viewer, refer to the manual that came with your chosen application.

DNC: Format Diskette Function



Purpose

Use the disk drive on a Greco device to format a new diskette or reformat an obsolete diskette. On a Greco device with the RAM disk option, this function formats the RAM disk.

Access

1. From the DNC folder, display the second set of function buttons. (Click the >>> button if necessary.)
2. Click the **Format Diskette** function button.

Procedure

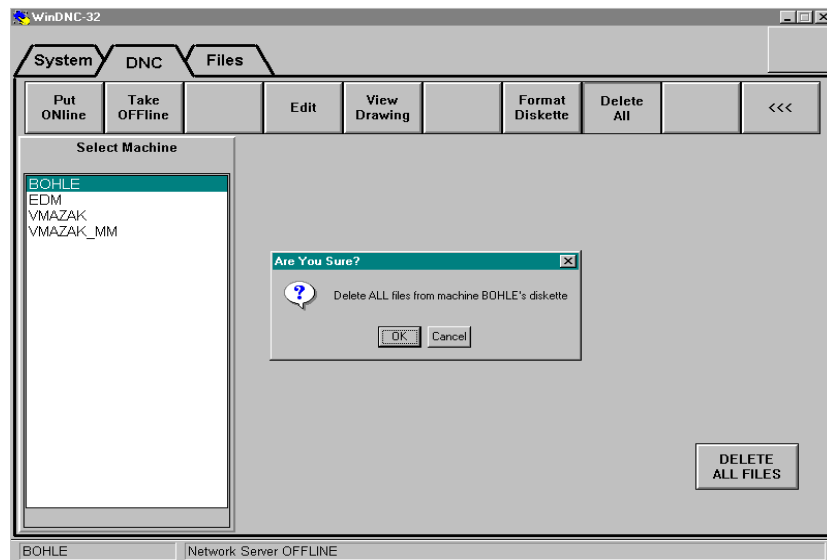
1. From the Select Machine panel, select the target Greco device.
2. Click the FORMAT DISKETTE FUNCTION button.
3. Press the FORMAT DISKETTE action button.

A verification dialog box appears.

Caution: *Reformatting a used diskette or RAM disk will permanently erase all previously recorded data.*

4. In the dialog box, click **OK** to continue or **Cancel** to reconsider.

DNC: Delete All Function



Purpose

Delete all files from a diskette or RAM disk on a Greco device.

Access

1. From the DNC folder, display the second set of function buttons. (Click the >>> button if necessary.)
2. Click the **Delete All** function button.

Procedure

1. From the Select Machine panel, select the target Greco device.
2. Press the **DELETE ALL FILES** action button.

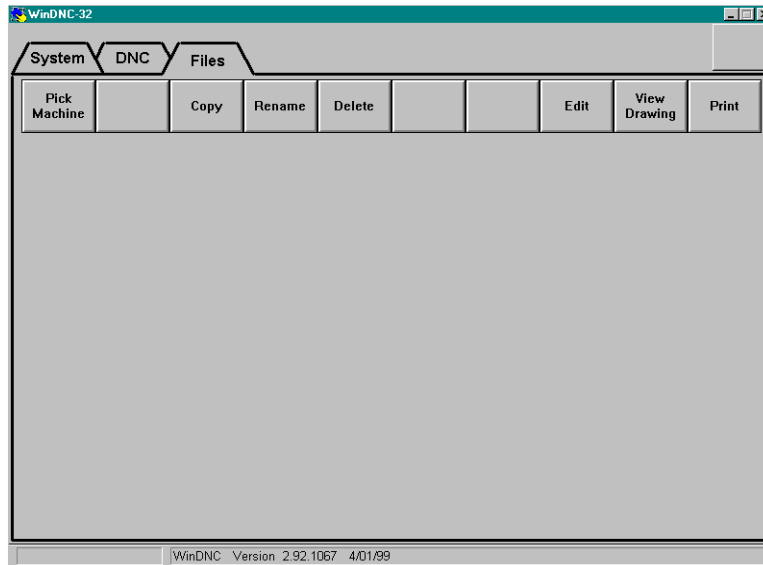
A verification dialog box appears.

Caution: *Deleting all files from a diskette or RAM disk will erase all previously recorded files.*

3. In the dialog box, click **OK** to continue, or **Cancel** to reconsider.

Files Folder

The Files folder contains controls for file management. You can copy, rename delete, edit, view, and print files from any directory in the network. The illustration below shows the basic screen. If you select **Files** when WinDNC is first started up, and before selecting a particular machine, only the function buttons will show, as illustrated.

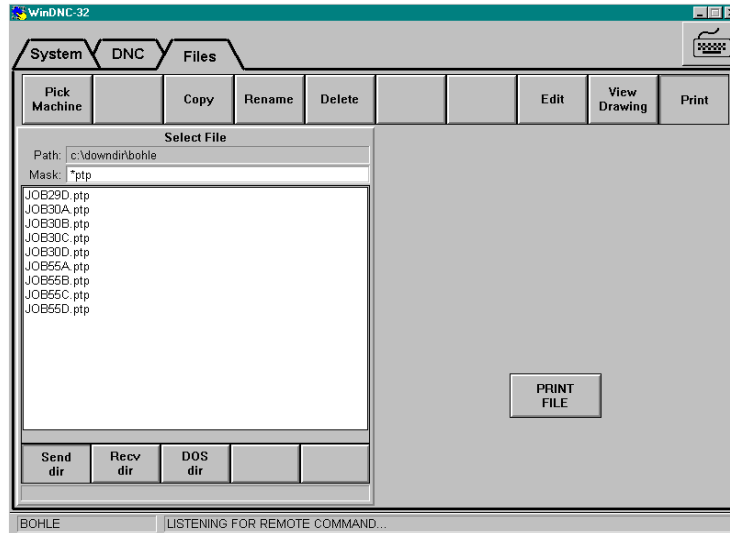


Files Function Buttons

Pick Machine	Invokes the Select Machine panel (described later), where you can select the machine control or Greco device you are going to do file management for.
Copy	Opens the Select Destination panel (described later), where you can specify the name and destination for the copy of the file.
Rename	Invokes the Specify New Name panel, where you enter the new name for the selected file.
Delete	Activates the Delete File button, used to delete the selected file.
Edit	Activates the Start Editor button. Click button to edit the text of the file.
View Drawing	Activates the Start Viewer button. Click button to view a drawing, bitmap, or other compatible graphics file.
Print	Opens Print Options dialogs, allowing you to choose options, and send the selected file to the printer.

Select Source File and Select File Panels

This panel appears on every File folder screen except Pick Machine. It is called Select Source File on some screens and Select File on others. This panel allows you to select a file from one of several directories—and on some screens, a machine tool control, or a Greco device.



Source Buttons

The five buttons near the bottom of the panel are used to select the source directory or disk.

Send dir	Selects the specific send directory that is configured for the currently selected machine.
Recv dir	Selects the specific receive directory that is configured for the currently selected machine.
DOS dir	Selects any server directory. It is selected by editing the Path: field at top of panel. The default path is C:\.
Machine dir	These three buttons are only present on specific screens. They are each described later under their appropriate screen descriptions.
Control	
BOTH (FFT)	

Path and Mask Fields

These fields are sometimes editable and sometimes not, depending on the source button selected. These are the criteria:

Send dir	Path: Not Editable Mask: Editable
Recv dir	Path: Not Editable Mask: Editable
DOS dir	Path: Editable Mask: Editable
Machine dir	Path: Not Editable Mask: Not Editable
Control	Path: Not Editable Mask: Not Editable

Path: Field

The full path name of the directory of the files currently being displayed in the Select File / Select Source File field.

Mask: Field

By what you enter here, you can restrict the displayed files to just those that match your criteria. These are the basic rules:

Rule	Examples
A question mark (?) substitutes for any single character in the file names.	24???.ptp will display only files that start with 24 followed by three characters and ending with extension .ptp or .PTP, such as: 24TLT.PTP, 246TL.PTP, or 24856.ptp
An asterisk (*) substitutes for any number of sequential characters in the file name.	*.ptp will display only files with the .ptp extension, such as: JOB24-S2.ptp, JobTLbore.ptp, or GEAR9-1a.PTP 24*.* will display only files that begin with 24, such as: 24863.PTP, 24drill80.txt, or 246-flge.bmp

Selecting a File

Once you have selected your directory, its contents will be displayed in the file list field, as illustrated above. If you have not specified a mask in the **Mask:** field, all files and subdirectories in the chosen directory will be displayed. The names of subdirectories are displayed inside of [] brackets. For example: [test], or [backup].

If the list is too long for the field, a scroll bar is automatically provided at the right of the field, which can be used in the prescribed windows manner, to scroll through the entire list.

To select a file, click the file name in the list to highlight it. Once it is highlighted, information on the file can be read from the field just below the Source buttons. The information is displayed in the following order:

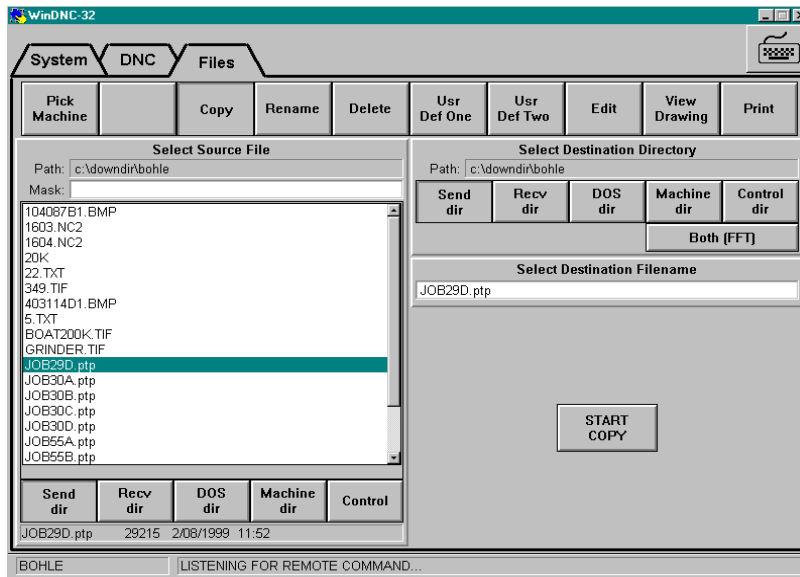
filename, size (bytes), date last saved, time last saved.

Displaying a Subdirectory

To display the contents of a subdirectory in the file list field, double click on the subdirectory name. A file can then be selected from the subdirectory.

The directory named [..] is not a subdirectory. It is the parent of the current directory and actually takes you back up one level.

Files: Copy Function



Purpose

This function allows you to create copies of existing files. There are many uses for file copies, such as:

1. Store a parts program in more than one location on the system.
2. Store the same part program under different names.
3. Edit a parts program while keeping a copy of the original version.
4. Keep an extra backup copy.
5. Initiate transfers between machines, Greco devices, and WinDNC.

Access

1. From the WinDNC Startup screen, click the **Files** folder tab.
2. From the Files folder screen, click the **Copy** function button.

Description

Select Source File Panel

When a file is selected, the filename is automatically entered into the Select Destination Filename panel, filename field. If the copied file requires a different name, then after you have selected the file from the Select Source File panel, go to the Select Destination Filename panel to change the name. Except for the Machine dir and Control buttons—described here—the Select Source File panel is described in detail under the *Select Source File / Select File Panel* heading, above.

Machine dir button	If current machine is a Greco device with a diskette, this button selects the diskette as source. If the device has no diskette, this button will be disabled.
Control dir button	This button selects the machine tool control as the source.

Select Destination Directory Panel

This panel is used to select the destination directory or destination device to which the file copy will be sent.

Path: field	Displays the full path name of the destination directory that is selected by the dir buttons below the pathname: field. This field can only be edited when the DOS directory is selected.
Send dir button	Selects the specific send directory that is configured for the currently selected machine.
Recv dir button	Selects the specific receive directory that is configured for the currently selected machine.
DOS dir button	Selects any valid server directory. It is selected by editing the Path: field at top of panel. The default path is C:\.
Machine dir button	If current machine is a Greco device with a diskette, this button selects the diskette as destination. If the device has no diskette, this button will be disabled.
Control dir	This button selects the machine tool control as the destination.
BOTH (FFT)	If current machine and Greco device are FFT connected, this button will send the file to the Greco device diskette, and then on to the machine control.

Select Destination Filename Panel

This panel allows you to edit the filename that will be given to the copy. When the file to be copied is selected from the Select Source file panel, its filename is automatically entered in the editable field in this panel. If it is not necessary or desirable to change the filename, the copy, in the destination directory, will have the same name as the original file remaining in the source directory.

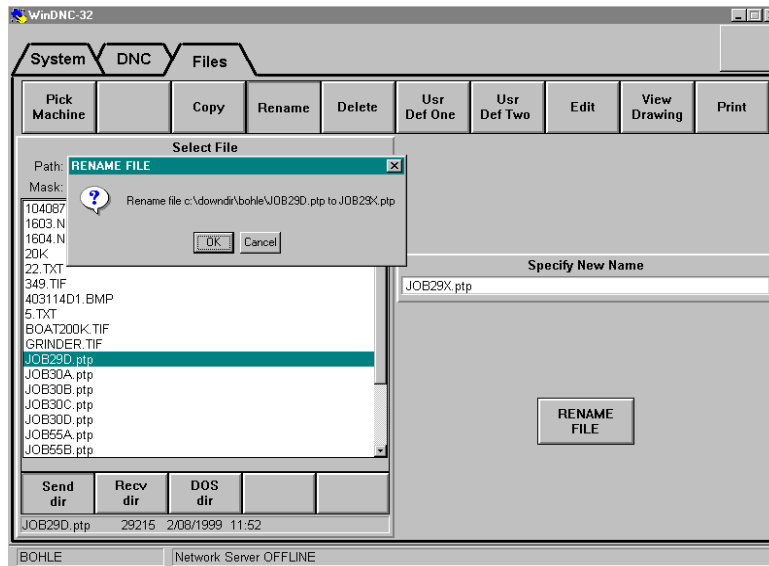
Start Copy Button

The Start Copy button issues the command to copy the file. It is used after all other copy screen functions are set so that the copy can take place correctly.

Procedure

1. From the Select Source File Panel, choose a source device or directory.
2. If the source is NOT the machine control, then, from the directory files list, select the file to be copied.
3. From the Destination Directory Panel, select the destination device or directory.
- 4a. If the source is the control, there will be no filename automatically entered in the Select Destination Filename panel. You must enter a name for it in the filename field.
- 4b. If the source is a directory or diskette, the source file name will be copied into the Select Destination Filename field. You may edit the name, or not, as desired.
5. Press the **Start Copy** button. Depending on the combination of source and destination, WinDNC will either issue a network function request to GNSERVER or copy the file immediately. A bar will appear at the bottom of the screen to notify you of the progress of the copy activity.

Files: Rename Function



Purpose

Use this function to rename a file that is resident on the server.

Access

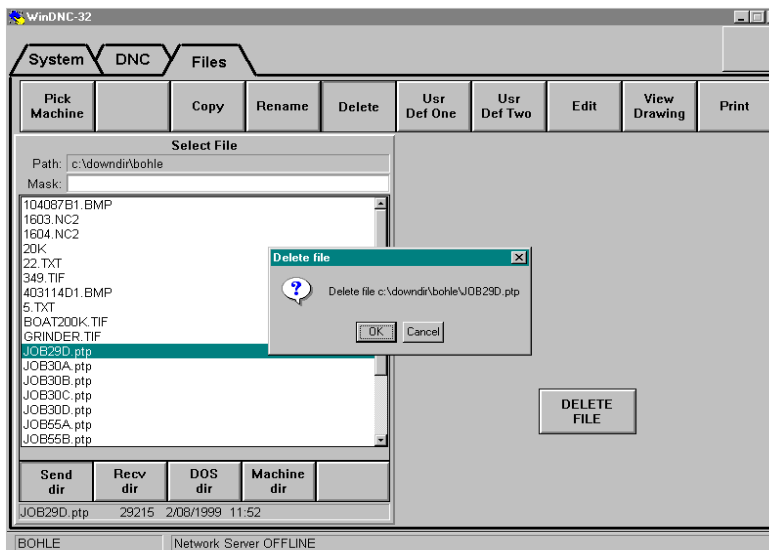
From the Files folder, click the **Rename** button. The Specify New Name field appears.

Description

Specify New Name field Highlight the old filename in the Select File panel. The old filename appears in this field. Click in this field to edit the name.

RENAME FILE button Click this button to save the file under its new name. A dialog box appears. Click **OK** in the dialog box to verify.

Files: Delete Function



Purpose

Use this function to delete a file from a server directory or a Greco disk.

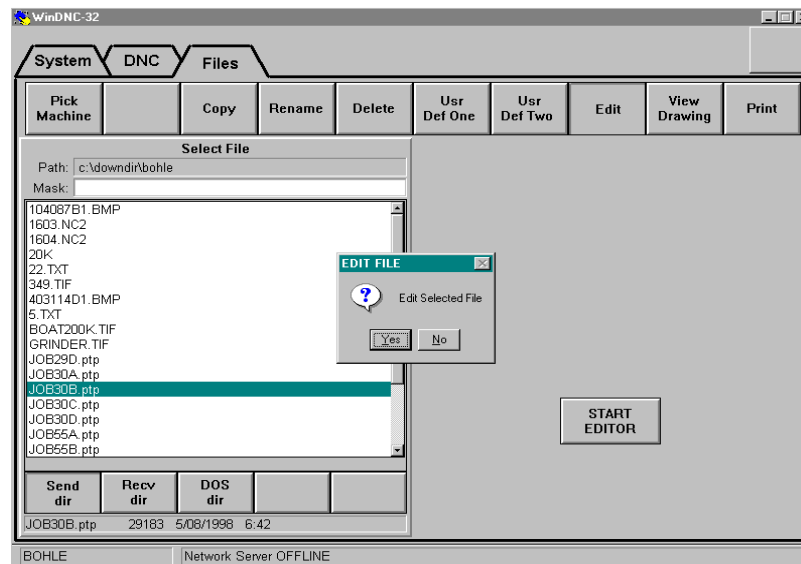
Access

From the Files folder, click the **Delete** function button.

Description

DELETE FILE button After selecting the file from the Select File panel, click the DELETE FILE button to delete the file. A dialog box appears. Click OK in the dialog box to verify the delete command. The filename is removed from the directory listing.

Files: Edit Function



Purpose

This function calls up the editor program specified in the WinDNC Configuration window. Use the editor to change the text in a file. Refer to the documentation that came with the editor you are using.

Caution: *Unless you have created an automatic backup directory for the selected device, saving a changed file without changing its name and/or path overwrites the original file.*

The best way to protect your files is to create a backup directory. This will automatically save both files. See: Admin Screen | Node Command | Edited File Handling.

Access

From the Files folder screen, click the **Edit** function button.

Description

START EDITOR button: After you have selected the file to be edited, by highlighting it in the Select File panel, click this button to open the file within the editor program. A dialog box will appear asking you to verify or reconsider your command.

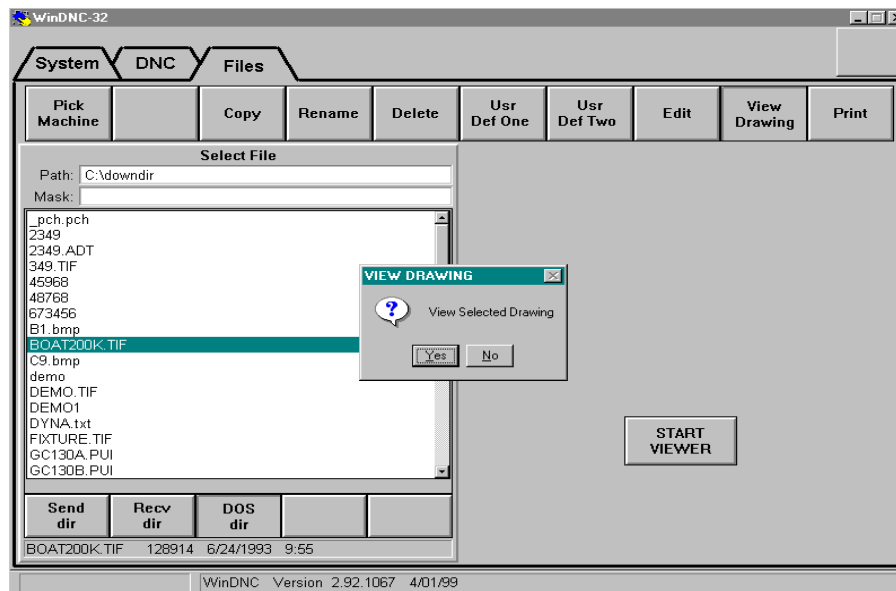
- The best option is to create an automatic backup directory for each machine. See *System Folder Functional Descriptions*.
- With no automatic backup, simply clicking **Save** will overwrite the original file.

- Saving it with a new name will save both the new and the original file in the original directory.
- Saving it with a new path will place the changed file in a different directory and leave the original file in the original directory.

Caution: *Be sure to save the edited file such that it can be used as intended.*

The editor will appear within its own window. After editing, use the editor's functions to save the file and close the editor. **For operational details, see the documentation that came with the editor.**

Files: View Drawing Function



Purpose

This function calls up the graphics viewer program specified in the WinDNC Configuration window. Use the viewer to see drawings and any other graphics files that are compatible with your chosen graphics program.

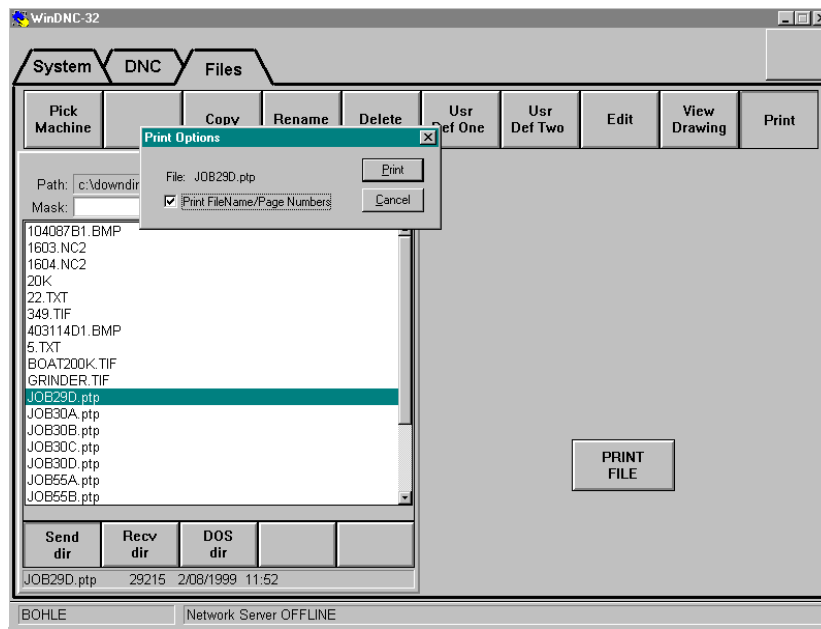
Access

From the Files folder screen, click the **View Drawing** function button.

Description

START VIEWER button: After you have selected the file to be viewed, by highlighting it in the Select File panel, click this button to open the file within the viewer program. A dialog box will appear asking you to verify or reconsider your command.

Files: Print Function



Purpose

Use this function to send a text file to the Windows configured printer.

Access

From the Files folder, click the **Print** function button.

Procedure

1. On the **Select File** panel, highlight the file you want printed.
2. Click the **PRINT FILE** button.
3. A Print Options dialog box appears. This dialog gives you the choice of printing or not printing the file name and page numbers on each page of the printout. After choosing, click the **Print** button in the dialog box.
4. The Printer Driver screen for the printer you are using on your system will appear next. Windows Help features will be available on-screen. If you need more help, see the documentation supplied with your printer.

Files: User Defined Function Buttons

These two buttons are defined and labeled by the installer during configuration using the WinDNC Configuration window, described in the *System Folder Chapter, WinDNC Configuration Window* section. The names given these buttons in the illustrations above, for reference only, are Usr Def One and Usr Def Two.

These two buttons can be made to launch any two programs your computer can access. The programs can be accessories such as Notepad and Calculator, or associated applications such as the WinShop Production Ticket.

Sample Procedures

These are basic procedures. Most of them have several options that can be used. For complete descriptions of all the WinDNC functions, see the *DNC Folder* and the *System Folder* chapters of this manual.

For instructions on the machine tools' manufacturer-supplied controls, see the manufacturers' documentation.

Starting WinDNC

In a typical installation, WinDNC is configured to start automatically, along with GNSERVER, when your computer boots. This is done by placing first GNSERVER then WinDNC in the Startup folder.

To start WinDNC manually: From the Task Bar, click **Start | Programs | Greco Systems | WinDNC**. See illustration in *WinDNC Startup* chapter.

Then, to start the Server: Click the **System** tab to go in to the System folder. In the system folder, click the START Server button.

Sending a File to a Greco Device

If the selected target device is a Greco device, such as a Minifile, CNC Station, or MTIC, then the file is sent to the device's diskette, SRAM or RAM, depending on the type of Greco device. If your Greco device has a diskette, then:

- (a) The **Diskless** checkbox on the WinDNC Network Machine Configuration screen must not be checked.
- (b) In the Network Function Default Options window, **Send** and **Receive** should be set to **normal**.

Procedure:

1. Start WinDNC and GNSERVER, if they are not already started.
2. Click on the DNC tab to open the DNC folder.
3. From the Select Machine panel, click the name of the machine to which you are sending the file.
4. Click the **Send** function button.
5. In the files list field of the Send Dir panel highlight the file you want to send. You may have to scroll the list, or open a subdirectory within the list, to find the file you want.
6. Click the **START SEND** button.

A Send Queued or Completed Successfully message box appears if everything is all right. If there is a problem, other diagnostic messages may appear, such as "Unable to setup/open port."

Receiving a File from a Greco Device

If the target device is a "Greco device," such as a Minifile, CNC Station, or MTIC, then the file is received from the device's diskette, SRAM or RAM, depending on the type of Greco device. If your Greco device has a diskette, then:

- (a) The **Diskless** checkbox on the WinDNC Network Machine Configuration screen must not be checked.
- (b) In the Network Function Default Options window, **Send** and **Receive** should be set to **normal**.

Procedure:

1. Start GNSERVER and WinDNC, if they are not already started.
2. Click on the DNC tab to open the DNC folder.
4. From the Select Machine panel, click the name of the machine from which you are going to receive a file.
5. Click the **Receive** function button.
5. In the files list field of the Receive Directory panel highlight the file you want to receive.
6. Click the **START RECEIVE** button.

You will receive a message when the receive is completed successfully.

Sending a File from a Greco Device to a Machine

1. Start GNSERVER and WinDNC, if they are not already started.
2. From the DNC folder, in the Select machine panel, highlight the machine to which you want to send a file.
3. Click the **Select File** function button.
4. In the Select File panel, highlight the name of the file you want to send to the machine control.
5. If you want the program to start running on a specific line, click the options button, and use the Select File Options and Set File Start Position windows, described above, to select the starting line. Use the OK button to return to the Select File screen. If you are not changing the starting line, skip the above step and continue with the next.
6. Press the START SELECT button.
Note: *No message appears when the send is complete. You must verify successful completion by checking the readout on the Greco device.*
7. When the operation is completed, click the **Close Comm** function button to close the file.

Sending a File from a Machine to a Greco Device

Note: *If the Greco device is diskless, this function is disabled.*

1. Start GNSERVER and WinDNC, if they are not already started.
2. From the DNC folder, in the Select Machine panel, highlight the machine which you want to receive a file.
3. Press the **Define File** button.
4. In the New File Name panel that appears, enter the name for the new file.
Note: *The part program in the machine control is not associated with a file name. In order to send it to the Greco device it must be given a file name for the Greco device.*
5. Press the START DEFINE button.
Note: *No message appears when the transfer is complete. You must verify successful completion by checking the indicators on the machine and the Greco device.*
6. When the operation is completed, click the **Close Comm** DNC function button to close the file on the Greco device diskette or RAM.
6. The file can now be sent to the PC workstation from the Greco device by using the Receive function.

Sending a File “Passthru” Through a Device to a Machine

If you are connected to your machine through a Greco Device containing a disk, and you want to send a file directly to the machine, then:

- (a) The **Diskless** checkbox on the WinDNC Network Machine Configuration screen must be checked.
- (b) In the Network Function Default Options window, **Send** and **Receive** should be set to **Passthru**.

CAUTION: *If you change the above settings to do the passthru, don't forget to set them back to the original configuration, if you are going back to normal operation afterwards.*

Procedure:

1. Click on the DNC tab to open the DNC folder.
2. From the Select Machine panel, click the name of the machine to which you are sending the file.
3. Click the **Send** function button.
4. In the files list field of the Send Dir panel highlight the file you want to send. You may have to scroll the list, or open a subdirectory within the list, to find the file you want.

4. Click the **START SEND** button. A message box appears to indicate successful completion. If there is a problem, other diagnostic messages may appear, such as “Unable to setup/open port.”

Receiving File “Passthru” Through a Device From a Machine

If you are connected to your machine through a Greco Device containing a disk, and you want to send a file from your PC to the machine, then:

- (a) In the System folder, the **Diskless** checkbox on the WinDNC Network Machine Configuration screen must be checked.
- (b) In the System folder, in the Network Function Default Options window, **Send** and **Receive** should be set to **Passthru**.

CAUTION: *If you changed the above settings to do the passthru, don't forget to set them back to the original configuration, if you are going back to normal operation afterwards.*

Procedure:

1. Click on the DNC tab to open the DNC folder.
2. In the Select Machine panel, highlight the name of the machine from which you are going to receive a file.
3. Click the **Receive** function button. The New File Name Panel appears.
4. In the New File Name panel, enter a name for the file.
Note: *The part program in the machine control is not associated with a readable file name. In order to receive it at the PC workstation it must be given a filename for the Greco device.*
5. Press the **START RECEIVE** button.
6. From the machine: Send the file according to the machine manufacturer's instructions.
7. When the transfer is complete, press the **Close Comm** Functions button.

Sending a File to a Direct Connect Machine

If the selected target device is a direct connect machine control, then the file is sent directly to the machine control.

Note: *Greco Systems provides an applications note for your specific control to supplement the information in this manual. Check the applications note and also check the instructions supplied by the manufacturer of your machine.*

1. Start WinDNC and GNSERVER, if they are not already started.
2. Click on the DNC tab to open the DNC folder.
3. From the Select Machine panel, click the name of the machine to which you are sending the file.
4. Click the **Send** function button.
5. In the files list field of the Send Dir panel highlight the file you want to send. You may have to scroll the list, or open a subdirectory within the list, to find the file you want.
6. Click the **START SEND** button.

A Send Queued or Completed Successfully message box appears if everything is all right. If there is a problem, other messages may appear, such as “Unable to setup/open port.”

Receiving a File from a Direct Connect Machine

If the selected source device is a direct connect machine control, then the file is copied directly from the machine control.

Note: *Greco Systems provides an applications note for your specific control to supplement the information in this manual. Check the applications note and also check the instructions supplied by the manufacturer of your machine.*

1. Start WinDNC and GNSERVER, if they are not already started.
2. Click the DNC tab to open the DNC Folder.
3. In the Select Machine panel, select the machine you want to receive the NC program from (scroll the list if necessary, click on the name).
4. In the DNC folder Click the **Receive** function button. The New File Name Panel will appear.
5. In the New File Name panel that appears, enter the name for the new file.

Note: *The part program in the machine control is not associated with a readable filename. In order to store it on a workstation it must be given a file name.*

6. Click the START RECEIVE button.
7. From the machine: send the file according to the manufacturer's instructions.

Sending a File to a Fanuc Control

1. Start WinDNC and GNSERVER, if they are not already started.
2. Click on the DNC tab to open the DNC folder.
3. From the Select Machine panel, click the name of the Fanuc control machine to which you are sending the file.
4. Click the **Send** function button.
5. In the files list field of the Send Dir panel highlight the file you want to send. You can scroll the list and open subdirectories within the list to find a file.
6. Click the **START SEND** button.
7. On the Fanuc Control: Select the **Edit** mode.
8. Using the Fanuc keys: Press the letter O and key in the program number.
9. Press the Fanuc Control **READ** key.
10. On the PC, when WinDNC indicates that the send is done, click the OK button.

Remote Calldown Procedure

In Remote Calldown mode, WinDNC listens and waits for remote commands, *initiated by the machine operator, directly from the machine control. Machine status*, at bottom of screen, reads "Listening for remote command..." The precise procedure for this operation is highly dependent on the specific machine tool being used. See *Remote Calldown Configuration Dialog* under *Direct Connect Protocol Configuration* for important information.

1. "Pull up" remote command program at the Control.
2. Change original file name if desired.
3. "Punch" the command program to the WinDNC station.
WinDNC responds by sending the desired file.
Operator receives desired program at the machine control.
4. Execute program according to procedures for the specific machine tool.

Appendix I: Greco Net Error Codes

Use these as a guideline as the first source of troubleshooting your problems.

- Problem:* One or more devices are not polling, but can redirect to them from another device or from the user interface program.
- Solution:* Verify that the POLL option is checked in the Greco Net Port Configuration Window for the device.
- Problem:* A lot of files with names like ~DNC143A.TMP are in some directory (usually C:\WINDOWS, C:\DOS, or whatever environment variable TEMP says).
- Solution:* Files beginning with “~DNC” and ending with “.TMP” are temporary files created by GNSERVER. Normally, they are automatically deleted when no longer needed, but under certain circumstances (such as using the FORCE option on GNSERVER Shutdown), they are left behind. As long as GNSERVER and the user interface program are not running, these files can be deleted. Do NOT delete them while either program is running because they may be in use.
- Problem:* Polling stops momentarily while another Windows program is starting up, updating the screen, or performing disk access.
- Reason:* This is a result of the type of task switching used in Windows. Any program may take control of the computer for a given amount of time, however, eventually, all programs run synchronously. Certain functions require more time to complete, thus preventing other programs from performing executions promptly, such as polling. Under Windows version 3.1, this problem cannot be prevented, but WindowsNT and later versions of Windows are supposed to solve this problem.
- Problem:* The network communications slow down remarkably when running a DOS window full screen.
- Reason:* This is normal operation for Windows. Any DOS session run in the foreground with a full screen receives almost all of the CPU time available, allowing Windows programs very little processing time. Either don't use the DOS program while GNSERVER is running, or try running the DOS session in a window (you can still make the window almost full screen).
- Problem:* I encounter difficulty programming MTIC, however, other communications to same MTIC work. Early MTIC's cannot accept the Punch Switch value specified.
- Reason:* Some older versions of the MTIC cannot accept the Punch Switch parameter, however, newer versions can. Either get newer firmware from Greco Systems, or program the MTIC without the Punch Switch (double-click on the punch switch value, press the DEL key, then click the Program MTIC button).
- Problem:* After programming MTIC without Punch Switch value, punch doesn't work correctly.
- Reason:* If the MTIC has firmware that requires a Punch Switch value, you must provide it when you program the MTIC. If you don't, you will not receive an error message while programming MTIC, however, it will not function.
- Problem:* Cannot transfer a file between CNC Terminal and WinDNC, if the transfer was initiated from WinDNC.
- Reason:* The CNC Terminal (not to be confused with the CNC Station) is not capable of accepting commands from the server, other than an operator message. You must request the download or upload function directly from CNC Terminal itself. You can request redirected functions from a CNC Terminal for other devices but not for other CNC Terminals.
- Problem:* Cannot initiate server print functions from CNC Terminal.
- Reason:* These functions are not currently supported by WinDNC or GNSERVER.
- Problem:* Close function has no effect on upload or download to Greco device. Not using passthru mode (direct to diskette or RAM disk).
- Reason:* This is normal. WinDNC cannot abort a file transfer to diskette, but it will finish eventually.

Appendix II: Greco Net Error Codes

This table shows the more popular network error codes and messages that you may see on a Minifile or CNC Station connected to the Greco Net Server.

DOWNLOAD ERROR: FILE NOT ON SERVER

Attempting downloading a file that is not on the server. Check the spelling of the filename, and ensure the file is located in the download directory for this device.

FILE NOT ON DISK

You tried to upload a file that does not exist on the device's disk. Verify the default network drive. Check spelling.

CONSULT MANUAL: ERROR CODE: 019

You attempting writing to a diskette that was write protected.

CONSULT MANUAL: ERROR CODE: 039

The diskette on the device is not ready (DISK TIMEOUT). Verify diskette is loaded. If RAM drive, verify it is formatted. Verify the network default drive.

CONSULT MANUAL: ERROR CODE: 041

The H/W Key is not installed, or is not working.

CONSULT MANUAL: ERROR CODE: 090

You attempted to download a file that already exists on the device. Either delete the file from the device, or set the Auto Delete option for downloads to this device.

CONSULT MANUAL: ERROR CODE: 093

You attempted to donload a file that won't fit on the diskette. Either delete some files from the diskette for available space, or use passthru mode.

CONSULT MANUAL: ERROR CODE: 127

This message appears when something went wrong that doesn't fit in other categories. To determine the exact problem, turn on Diagnostic Logging (be sure that Comm Trace is OFF on all online devices), then do the function that causes the error. After that, turn Diagnostic Logging off and examine the Log File. There should be a line with "NPGRECO: CCtoERR: unknown CC=xxx". Report this to Greco Systems (preferably a fax of the part of the log file).

REDIRECTION ERR: FILE NOT ON DISK

You tried to upload a file that does not exist on the remote device's disk. Check spelling.

REDIRECTION ERR: FILE ON DISK

You attempted to download a file that already exists on the remote device's diskette. Either delete the file from the device, or set the Auto Delete option for downloads to that device.

REDIRECTION ERR: NO SUCH DEVICE

You tried to redirect a function to a machine name that does not exist or is offline. Check spelling. Verify the device is online.

REDIRECTION ERR: ERROR CODE: 002

The file you tried to download to another device is not in that device's download directory. Check spelling. Verify that the file is in the correct directory.

REDIRECTION ERR: ERROR CODE: 019

The diskette in the remote device is write protected.

REDIRECTION ERR: ERROR CODE: 039

The diskette in the remote device is not ready (DISK TIMEOUT). Verify a diskette is loaded. If RAM drive, verify it is formatted. Verify that network default drive.

REDIRECTION ERR: ERROR CODE: 040

The remote device was busy and cannot perform the requested operation at this time. Try again later.

REDIRECTION ERR: ERROR CODE: 051

The device you tried to redirect to is not responding (TIMED OUT). Verify that it is connected to the network and turned on.

REDIRECTION ERR: ERROR CODE: 093

You attempted to download a file that is too large for the disk. Either delete some files from the diskette, or use passthru mode for this file.

REDIRECTION ERR: ERROR CODE: 127

The redirected device caused unexpected error. This sometimes occurs during a diskette overflow during download.

REDIRECTION COMPLETED a redirected function was completed successfully.

Appendix III: Greco Net Error Codes

The more commonly displayed error messages are the following: If one appears that is not listed, contact Greco Systems Customer Support for assistance.

ABORTED BY USER REQUEST	any network function closed by user command will terminate with this message. For direct connect uploads, any data received is save.
PATH NOT FOUND	the directory specified for a function does not exist (check for typos).
MACHINE NOT FOUND	The specified machine does not exist, or is offline.
MACHINE ONLINE	The machine is already online.
MACHINE OFFLINE	The machine is already offline.
MACHINE COMM ERROR	An uncorrectable communications error was detected. If the network cannot communicate with this device at all, check network parity and other comm settings on the server and the machine (they should be the same). If it happens infrequently, but the network runs, check for electrical noise sources near the cables, or in the electrical power system.
Device is busy. Try again later.	Certain functions, most notably reading a machine's diskette directory, cannot be executed, if the machine is performing a function that takes a considerable amount of time, e.g. downloading.
Network command not know by machine.	Device does not recognize request.
Function aborted by machine.	A file transfer was canceled by an operator action at the device. This happens mostly with passthru mode file transfers through Greco devices.
Protocol Not Supported By Interface	The selected communications interface does not support the selected protocol.
Unable to setup/open port	Could not open the PC comm port for this machine. This can happen if another program is using the port, or if it is configured improperly.
Timeout – no data	From serial direct connect protocols: no data was received during an upload attempt.
Timeout – remote not ready	From serial direct connect protocols: the control did not send a required ready signal or character at the beginning of a file transfer.
Timeout – remote not done	The control did not provide the expected I'm done signal or character at the end of a file transfer.
Timeout – remote didn't start	The control did not start the transfer, in the allotted amount of time.
NO MEMORY	WinDNC or GNSERVER was unable to allocate enough memory to perform the function. Check your computer for sufficient RAM, and check the Windows virtual memory configuration settings. It also helps to close out other windows that were running simultaneously.
H/W Key is Missing, or bad password	<ol style="list-style-type: none">1. GNSERVER could not locate the hardware key. Verify that the correct key is installed (must be Greco's) and that the key is securely and completely plugged into the LPT1 port. Check the configuration for communication with the GNSERVER to search for the correct port.2. You entered your permanent password incorrectly. Double-check and correct. If you have more than one license (and more than key), verify that you have matched the correct password with the correct key by examining the key's serial number (shown in the Server Config window above the password box)3. If a printer is connected to the key, be sure to turn on.

Sentinel Key Missing, or your DEMO

Password has expired.

1. GNSERVER could not locate the hardware key (see previous error for more details).
2. DEMO passwords expire after a certain date.

To get an extension, contact Greco Systems.

Exceeded license limit on the machines

Your license is for a limited number of machines. WinDNC will allow you to define as many machines as you want, but only the first N listed in the configuration file can be put online and used. Note that this is NOT in alphabetical order, so if you define more machines than you are licensed, it will not be obvious which can be used and which cannot.

A required Protocol Module not found

A required DLL file could not be found. This can be caused by a corrupt GNSERVER.INI file, or by deleting a required file.

A required Interface module not found

A required DLL file could not be found. This can be caused by a corrupt GNSERVER.INI file, or by deleting a required file.

A DLL failed to load properly

A required DLL could not load properly. Usually this is due to insufficient memory, or the inability to find the file. Run again with the Logging turned on. The log will then contain additional information useful to Greco Systems.

BAD xxxxxx.DLL

One or more required DLL files are not at the same revision level as the rest. Re-install WinDNC.

These messages may appear each time you start GNSERVER if you are using a demo version.

Hardware Key Is Missing. Will
Run In Demo Mode if Passwork OK

This indicates that the hardware key was not found. If you are using a demo package, this is correct, so just click on the OK button. If you have a key plugged in, something isn't set up correctly. See the appendix on installation of the hardware key.

Running in DEMO mode.

This indicates that you have a valid demo password. 1 day means this is the last day. Click on the OK button to continue.

You have XX days left.

Invalid system password.

The password provided is invalid, expired, typed-in incorrectly, or doesn't match the hardware key. The system will run in restricted mode. Click on the OK button to continue.

Appendix IV: System Files

The following files are installed on your system during the WinDNC installation. If the default directory is used, they will be located in the C:\WINDNC directory.

WINDNC.EXE	The WinDNC program. This program uses many of the DLL files listed below.
GNSERVER.EXE	The communications server program. This program uses many of the DLL files listed below.
NODECTL.DLL	support libraries for WinDNC and GNSERVER.
TIMING.DLL	
GRECOINI.DLL	
NETREQ.DLL	
NPFILEX.DLL	protocol module for all serial direct connect protocols
MAMMY.CFG	protocol configuration parameters. Do NOT manually edit this file unless instructed to by Greco Systems.
NPGRECO.DLL	protocol module for Greco Net.
CIPCCOMM.DLL	communications interface module for standard PC Comm Ports. This uses the comm port drivers built in to Windows.
NPGPE.DLL	protocol mode for GPE protocol
CIGPE.DLL	comm mode for GPE protocol
README.TXT	contains information on the application

The following files contain configuration information.

GNSERVER.INI	Machine configuration items. Do NOT manually edit this file unless instructed by Greco Systems. This file is created when you create your first machine. All changes should be made by using the appropriate configuration window(s).
WINDNC.INI	User options for the WinDNC program.

The following files contain other information, and may or may not be present.

GNSERVER.DMP	Output file generated by the GNSERVER Diag Dump command.
GNSERVER.LOG	Output file generated by the Comm Trace and Logging options.
~DNCxxxx.TMP	These are temporary files that are automatically removed when no longer needed. Any of these that still exist after exiting WinDNC and GNSERVER can be deleted. Do NOT delete them while either program is running.

Appendix V: Protocols

The following protocols are included with WinDNC:

AppleStrip	Strip characters surrounding program name and inserts nulls before sending. Pauses with DC3 and resumes with DC1 when sending.
AutoShape	Proprietary protocol for communicating with a Cincinnati, Inc. AutoShape.
Camstore 2	Protocol for communicating with a Rybett Camstore (not supported in this release).
EZ Link	Proprietary protocol for communicating with Bridgeport controls.
Fanuc	Records after receiving a DC2, ends recording after receiving a DC4. Sends after receiving a DC1, pauses with a DC3, resumes with a DC1.
Fanuc Cassette	Protocol for emulating Fanuc Floppy Cassette, PS-100.
Fapt	Proprietary protocol for sending/receiving Fapt family graphics programs with Fanuc controls.
GE Level 2	Proprietary protocol for communicating with GE 2000 controls using IPP protocol. Supports Terminal mode transfer initiations at the control and forced background loads of programs into the control from the PC.
Greco Net	Proprietary protocol for communicating with Greco Systems hardware devices.
Hecc 80	Records all data received. Sends ten nulls then waits for a DC1. Upon receiving a DC1, sends the file name, ten nulls, then waits for a DC1. Upon receiving a DC1, sends a CR, an LF, then the file. It pauses with a DC3, resumes with a DC1 and sends ten nulls when done.
Heidenhain	Records when data are received, ends recording after receiving an ETX. Sends after receiving a DC1, pauses with a DC3, resumes with a DC1 and sends an ETX when done.
Heidenhain FE	Proprietary protocol for communicating with Heidenhain controls in FE mode. Supports control-initiated directories, transfers and the drip-feeding of machine programs.
Kermit	Subset of standard Kermit protocol. Designed for use with Cincinnati, Inc. Autoforms but also works with other devices that utilize Kermit protocol.
LVD-Kermit	Subset of standard Kermit protocol with minor changes to be compatible with LVD Press Brake machines.
Master Starlink	Protocol for recording program files from a Str_Link III cassette recorder.
Mazak Conversational	Proprietary protocol for sending/receiving conversational programs with Mazak controls. This protocol contains 3 or 4 bytes for each request message from Mazak control.
Mazak Two Conversational	Proprietary protocol for sending/receiving conversational programs with Mazak controls. This protocol contains 2 or 3 bytes for each requested message from Mazak control.

No Protocol	No handshaking.
Punch/Reader	Records after receiving a DC2, pauses recording after receiving a DC4 and resumes recording with a DC2. Sends after receiving a DC1, pauses with a DC3 and resumes with a DC1.
Punch/Reader II	Records when data are received. Sends after receiving a DC1, pauses with a DC3 and resumes with a DC1.
Punch/Reader Master	Sends a DC1 then records data received. Sends DC3 when done receiving. Sends a DC2 then file data when sending, pauses with DC3, resumes with DC1, sends DC4 when done sending.
Rollway	Proprietary protocol (specifications unavailable).
RS491 Level 1	Hardware handshaking (RTS/CTS).
RS491 Level 2 Master	Sends a DC1 then records data received. Sends DC2 then waits for a DC1 before sending. Pauses with a DC3, resumes with a DC1. Sends an EOT and a DC4 when done sending.
RS491 Level 2 Slave	Sends a DC1 after receipt of a DC2 then records data received. Ends recording after receiving an EOT and a DC4, then sends a DC3. Sends after receiving a DC1, pauses with a DC3 and resumes with a DC1. Sends an EOT when done.
StarLink	Protocol for emulating a Str_Link III cassette recorder.
Starlink-Echo	Echos each character sent when recording. Uses RTS/CTS when sending.
Tiger	Pauses after sending each line (not supported in this release).
Wiedemann3	Proprietary protocol for communicating with Wiedemann CNC W3 controls with the Data Link option.
Xon/Xoff	Records all data received. Sends data immediately yet pauses with a DC3 and resumes with a DC1.
Xon/Xoff II	Records all data received. Immediately sends a DC1 then file data. Will pause with a DC3 and resume with a DC1.
Yasnac	Proprietary protocol for replacing FC1 units on Yasnac ERC robot controllers.
Yasnac RX	Pauses after sending each character (not supported in this release).
Custom 1 and 2	Used by trained personnel for creating custom protocols.

Index

- backup
 - copies, remote calldown, 31
 - edited files, automatically, 15
- Backup
 - CAUTION, 68
- Cancel. *See* Windows® standard buttons
- Defaults
 - file type mask, 21
 - filename (FTP), 37
 - GrecoNet Timeouts, 19
 - network options, 23
 - new machine parameters, 18
 - serial comm bits, 25
- Drawings
 - viewing, 69
- Edit
 - Greco Systems license, 5
 - NC code restart table, 46
 - program, caution, 68
 - user access, 38
- FTP, 36
- GrecoNet Module Configuration, 19
- Hardware Key
 - defined, 3
 - installing, 3
 - serial number, 5
- HASP Key. *See* Hardware Key
- Help. *See* Windows® standard buttons
- Keyboard button, keyboard screen, 8
- License Manager
 - installing password using, 4
- Machine Monitoring, 34
- OK. *See* Windows® standard buttons
- Parallel ports, 26
- Password, security. *See* Security
- Password, system
 - demo/temporary/permanent, 3, 75
 - using License Manager, 4
- Queue, 28
- Remote Calldown, 29, 30
- RS-232, RS-422, serial comm, 26, 27, 30
- Save. *See also* Windows® standard buttons
- Security
 - enforce**, 39
 - log in, log out, 10
 - log-in dialog, 11
- Serial comm, 26, 27, 30
- Start
 - character, command, 32
 - on-line machines automatically, 17, 22
 - program, on which line, 45
 - string, message file, 30
 - WinDNC, 7
- Touch Station, touch screen, 8
- User Access
 - window1, 37
 - window2, 38
- View
 - drawings, 69
 - dump file, 17
 - log file, 17
 - NC code restart table, 46
- Windows® standard buttons, 9