

Application Note 51250 (Revision A) Original Instructions

Visual C++ Installation



Read this entire manual and all other publications pertaining to the work to be performed before installing, operating, or servicing this equipment.

Practice all plant and safety instructions and precautions.

Failure to follow instructions can cause personal injury and/or property damage.



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Warnings and Notices

Important Definitions



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

- **DANGER**—Indicates a hazardous situation which, if not avoided, will result in death or serious injury.
- **WARNING**—Indicates a hazardous situation which, if not avoided, could result in death or serious injury.
- **CAUTION**—Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.
- **NOTICE**—Indicates a hazard that could result in property damage only (including damage to the control).
- **IMPORTANT**—Designates an operating tip or maintenance suggestion.

WARNINGOverspeed /
Overtemperature /
OverpressureOverspeed /
OverpressureOverspeed /
overpressureOverspeed /
overpressureDifferenceOverspeed /
overpressureOverpressure</t

WARNING Personal Protective Equipment	 The products described in this publication may present risks that could lead to personal injury, loss of life, or property damage. Always wear the appropriate personal protective equipment (PPE) for the job at hand. Equipment that should be considered includes but is not limited to: Eye Protection Hearing Protection
	Gloves
	Safety Boots
	Respirator
	Always read the proper Material Safety Data Sheet (MSDS) for any working fluid(s) and comply with recommended safety equipment.



WARNING Automotive Applications

NOTICE

To prevent damage to a control system that uses an alternator or battery-charging device, make sure the charging device is turned off before disconnecting the battery from the system.

Battery Charging Device

Electrostatic Discharge Awareness

NOTICE	Electronic controls contain static-sensitive parts. Observe the following precautions to prevent damage to these parts:
Electrostatic Precautions	 Discharge body static before handling the control (with power to the control turned off, contact a grounded surface and maintain contact while handling the control). Avoid all plastic, vinyl, and Styrofoam (except antistatic versions) around printed circuit boards. Do not touch the components or conductors on a printed circuit board with your hands or with conductive devices. To prevent damage to electronic components caused by improper handling, read and observe the precautions in Woodward manual 82715, Guide for Handling and Protection of Electronic Controls, Printed Circuit Boards, and Modules.

Follow these precautions when working with or near the control.

- 1. Avoid the build-up of static electricity on your body by not wearing clothing made of synthetic materials. Wear cotton or cotton-blend materials as much as possible because these do not store static electric charges as much as synthetics.
- 2. Do not remove the printed circuit board (PCB) from the control cabinet unless absolutely necessary. If you must remove the PCB from the control cabinet, follow these precautions:
 - Do not touch any part of the PCB except the edges.
 - Do not touch the electrical conductors, the connectors, or the components with conductive devices or with your hands.
 - When replacing a PCB, keep the new PCB in the plastic antistatic protective bag it comes in until you are ready to install it. Immediately after removing the old PCB from the control cabinet, place it in the antistatic protective bag.

Visual C++ Installation

Introduction

Visual C++ is compiler software that works with Woodward Coder to create executable code. The executable code is used on Woodward controls that use the Windows NT 4.0 operating system with real-time extensions, or on controls created for simulations that run on a PC using NetSim[™].

Only those controls with the NT_CPU GAP block or controls compiled for the NetSim environment require the Microsoft Visual C++ compiler. A simple way to determine this is by checking for the NT_CPU GAP block in the GAP Application software. Examples of these controls include the MicroNet[™] with Pentium NT CPU and AtlasPC[™] with NT CPU.

Since Microsoft no longer sells version 6.0 of Visual C++, Woodward has created the 1796-046 kit to support new installations of Coder or NetSim on customer PCs. The 1796-096 kit includes this manual, a CD ROM (1796-1064) to install Visual C++ version 6.0.

Conditions of Media Transfer

The C++ install disk (1796-1064) includes the files necessary to install Microsoft's Visual C++ 6.0 compiler for use with a product delivered by Woodward. Woodward makes these installation files available to our customer under the following conditions:

- The customer must be licensed appropriately for Microsoft Visual Studio.
 - Visual Studio Professional 2010 is the base level license currently available, and the Visual Studio environment it provides will allow the end user to use the Visual C++ v.6.0 Compiler.
- Your Visual Studio license must include product downgrade rights in order to use this compiler with a newer version of Visual Studio.
 - If you are purchasing a new license for Visual Studio, your license must be purchased under a volume agreement (examples: Open, Select, or Enterprise Agreements) in order to have the downgrade rights needed to run the older compiler.
- You should retain this media and documentation in the event you need to re-install the compiler. Product media is not available for purchase, nor is it available for download through Microsoft or through Woodward.

Conclusion

This media was duplicated by agreement with Microsoft because the Visual C++ c.6.0 compiler product is no longer available for purchase, and is provided to the Woodward customer at no charge. You, the customer, are responsible for ensuring compliance with all Microsoft licensing regulations, and should not use this media for any purpose other than the stated use to support Woodward control software.

The remainder of this manual consists of a procedure describing how to install Microsoft Visual C++ version 6.0 onto a Windows-based PC.

Installation Procedure

Step 1

Enter the C++ install disk (Woodward item number 1796-1064) into the CD drive. Double clicking on the CD drive from explorer or allowing the CD to autorun will bring up the Installation Wizard (shown below). If autorun is disabled, double click on setup.exe in Windows Explorer or use the Start menu to run (Start > Run) d:\setup.exe, where d: is the drive letter of the CD ROM drive. Click Next to continue with the installation.

Installation Wizard for	Visual C++ 6.0 Standard Edition	×
Visual C++ 6.0 S	tandard Edition	
Star 2	The Visual C++ 6.0 Standard Edition Setup program will walk you through installing the applications and components you'll need to accomplish your programming tasks.	
230	Use the Next button to proceed to the next screen. If you want to change something in a previous screen, click the Back button. You may cancel the installation at any time by clicking the Exit button.	
	If you would like to view the Visual C++ 6.0 Standard Edition Readme file, click here.	
	<u>V</u> iew Readme	
	< Back Next > Exit	-

Acknowledge the licensing agreement by clicking on the "I accept the agreement" radio button and click "Next".



Enter the Product ID code; this is also referred to as the CD KEY:

The product ID for Woodward C++ installation disk (item number 1796-1064) is:

374-5573053

Installation Wizard for	Visual C++ 6.0 Standard Edition	
Product Number	and User ID	
	Please enter your product's <u>I</u> D number:	
The ag	374 - 5573053	
	Please enter your name and your company's name	
AND AND	Your name:	
	Joe Coder	
	Your <u>c</u> ompany's name:	
	Control-Mart	
	< <u>B</u> ack <u>N</u> ext > E <u>xit</u>	

Once a valid product ID is entered, the NEXT button is enabled. Enter your name and company, and click "Next >" to move to the next step.

Install into the default directory. Changing this directory will create problems and keep the compiler from working properly with Woodward Coder. The default directory is shown in the illustration below. Select Next to move to the next step. This will start the C++ Install process.

🌌 Installation Wizard for	Visual C++ 6.0 Standard Edition	×
Choose Commo	n Install Folder	
	You can choose the location of the files that are common among Visual Studio 6.0 applications. The common files should be stored in a folder called Common.	
	If you need to change the default shown below, you may click the Browse button to explore your hard drive and choose a new location.	
	Choose a folder for common files:	
	C:\Program Files\Microsoft Visual Studio\Common	
	Browse	
	The minimum space required for the common folder is 50 MB.	
	Drive C: has 30951 MB free.	
	< <u>B</u> ack <u>N</u> ext > Exit	

The install screen will disappear momentarily while information is being read from the install CD.

Step 5 Select Continue.

sual C++ 6	.0 Standard Setup
2	Welcome to the Visual C++ 6.0 Standard installation program.
Setup cai any open	nnot install system files or update shared files if the files are in use. Before continuing, close applications.
WARNING:	This program is protected by copyright law and international treaties.
You may ins additional rig	tall Visual C++ 6.0 Standard on a single computer. Some Microsoft products are provided with ghts, which are stated in the End User License Agreement included with your software.
Please take conditions tl these terms.	a moment to read the End User License Agreement now. It contains all of the terms and hat pertain to this software product. By choosing to continue, you indicate acceptance of

Step 6 The product ID will be generated. This number is specific to each installation of the C++ program.

ual C++ 6.0 Star	hdard Setup + 6 0 Standard Sotup	
Sual C I	• 0.0 Stanuara Setup	
	Visual C++ 6.0 Standard Setup	
	Product ID: 83903-374-5573053-23072	
	This is your Microsoft product identification number. If you want to call Microsoft for technical support, you will be asked for this number.	
	For your records, please write down this number in the designated portion of your registration card. After the software has been installed, you can access the number by clicking the About command on the Help menu.	
	<u>ОК</u>	

Click OK to continue.

Select the "Typical" installation, and do not change the default folder location that is shown. Changing the default folder location will prevent the C++ Compiler from working properly.



Check the box to "Register Environmental Variables".

Woodward Coder software invokes the Visual C++ compiler with the help of the environmental variables, so this is mandatory. Checking this box allows Woodward Coder to find the Visual C++ compiler.

The environmental variables are also stored in a file called VCVARS32.BAT as indicated by the installation dialog box.



Wait while file copying begins.



Continue to wait while installation continues.



Step 9 (cont.)

Continue to wait while installation continues.



Step 10

When the file copying is complete, a dialog box like the one below appears. Click OK to continue. Installation of extra debug symbols is not required for Woodward Coder to function properly, so the dialog box instructions are for information only.

Window	Windows NT Debug Symbols				
(į)	Setup has installed an icon in the Microsoft Visual C++ 6.0 Tools program group, that will allow you to install a subset of the Windows NT system symbols (.DBG) files from your Visual C++ CD-ROM. If the symbols are not installed, the Visual C++ debugger is not always able to determine the context of called functions.				
	For easier application debugging, it is strongly recommended that you install these files.				
	See the Visual C++ Readme for more information.				
	ОК				

When installation is complete, a dialog box indicates that Visual C++ was installed correctly. Click OK to continue.



Uncheck the box to install MSDN. It is not needed to run the Woodward Coder software, and the MSDN disk is not included with the 1796-046 package.



Step 13

A dialog box will alert that the help and documentation will be unavailable. Click "Yes" to continue.

M Installation Wizard for Visual C++ 6.0 Standard Edition	
If you exit the Visual C++ 6.0 Standard Edition Installation Wizard before you install MSDN, the online docum system will be unavailable. Do you want to continue without installing MSDN?	entation and help

A dialog box asking to register over the web appears. *Uncheck* the box and click "Finish" to complete the installation.



The installation process is now complete for a single user PC. Visual C++ is installed and the environmental variables are configured for the currently loggedon user. If the PC is used for NetSim simulation, or if other users will use the PC for compiling GAP applications, the following section (**Managing Environmental Variables**) must also be completed.

Managing Environmental Variables

All NetSim[™] users must move their C++ compiler local user variables to system level variables. The following procedure details how to reconfigure the local environmental variables on a user's PC so they are defined as system variables.

The procedure is also useful for PCs with multiple users. Local environmental variables only apply for the current user. If multiple users log onto a single PC, each user will have to configure Visual C++ environmental variables for the compiler to work properly. Moving the variables to system variables allows the Visual C++ installation to apply to all users, and eliminates the need for additional users to configure their local environmental variables.

Use the start menu to open the Control Panel (shown in Category View below).



Switch to Classic View if necessary to view the control panel as it is shown below.



Double click on the System icon to open the System Properties dialog box.

Step 2 Click on the Advanced tab and then click on the Environment Variables button to open the Environmental Variables dialog box.

System Re	store Auton	matic Updates	Remote
General	Computer Name	Hardware	Advanced
You must be l	onded on as an Administ	rator to make most of	these changes
Destances		ideor to make most of	nose enanges.
Véruel - Marie	the state of the s		
Visual effects	s, processor scheduling,	memory usage, and v	irtual memory
		ſ	Calling
		L	Settings
User Profiles			
Desktop sett	ings related to your logor	1	
		ſ	Settings
Startup and F	Recovery		
System startu	up, system failure, and de	bugging information	
		[Settings
	C	ariables Error	Reporting
	Environment Va		rieporting
	Environment Va		

You will be working with the Environmental Variables dialog box to move values from the User (top) area to the System (bottom) area:

Find the variable named "include" under User Variables (top box) and single click on it to select it. Once it is highlighted, click on the "edit" button immediately below the User Variables box.

Variable	Value
include lib MSDevDir path TEMP	C: \Program Files \Microsoft Visual Studio C: \Documents and Settings \User \Local
	New Edit Delete
ystem variables	New Edit Delete
ystem variables Variable	New Edit Delete Value Number of the second s
ystem variables Variable ComSpec FP. NO. HOST. C	New Edit Delete Value C:\WINDOWS\system32\cmd.exe
vstem variables Variable ComSpec FP_NO_HOST_C NUMBER_OF_P	New Edit Delete Value C:\WINDOWS\system32\cmd.exe NO 1
vstem variables Variable ComSpec FP_NO_HOST_C NUMBER_OF_P OS	New Edit Delete Value C:\WINDOWS\system32\cmd.exe NO 1 Windows_NT

Step 4

If it is not already highlighted, click and drag across the Variable value box to select the entire field. Once it is highlighted as shown below, hit <CTRL-C> on the keyboard to copy the value. Click cancel to close the dialog box.

Edit User Varia	ble 🤶 🔀
Variable <u>n</u> ame:	include
Variable <u>v</u> alue:	Files Wicrosoft Visual Studio \VC98 \indude
	OK Cancel

Under System Variables (bottom box), click "New" to create a new System variable.

C:\Program Files\Microsoft Visual Studio
C: \Program Files \Microsoft Visual Studio
C:\Program Files\Microsoft Visual Studio
C:\Documents and Settings\User\Local
Name Catta Calata
Value
Culturn DOW Clausters 20 and ave
C: (withDOws bystemsz (chid.exe
C: Windows systems 2 (chid.exe
C., WINDOWS (Systems2)(Ind.exe
NO 1 Windows_NT

Step 6

Type "include" in the variable name box.

New System Va	iable 🛛 🛛 🛛 🛛
Variable <u>n</u> ame:	include
Variable <u>v</u> alue:	
	OK Cancel

Click in the Variable value box and hit <CTRL-V> to paste the value. Click "OK" to close the dialog box and create the *include* System variable.

New System Var	riable ?
Variable <u>n</u> ame:	include
Variable <u>v</u> alue:	Files Wicrosoft Visual Studio \VC98 \include
	OK Cancel

Step 8

Click on the *lib* user variable to highlight it (top box), and click edit to open the dialog below. If it is not already highlighted, click and drag the variable value to highlight the entire value. Hit <CTRL-C> to copy the variable.

Variable name:	lib
indere <u>d</u> erriter	
Variable <u>v</u> alue:	gram Files\Microsoft Visual Studio\VC98\lib

Step 9

Under System Variables (bottom box), click "New" to create a new System variable. Type "lib" in the variable name box and paste the value in the Variable value box.

New System Va	riable 🛛 🛛 🔀
Variable <u>n</u> ame:	lib
Variable <u>v</u> alue:	gram Files Microsoft Visual Studio \VC98 \ib
	OK Cancel

Click on the *MSDevDir* user variable (top box) to highlight it, and click edit to open the dialog below. If it is not already highlighted, click and drag the variable value to highlight the entire value. Hit <CTRL-C> to copy the variable.

Edit User Variat	ole 🤶 🔀
Variable <u>n</u> am <mark>e:</mark>	MSDevDir
Variable <u>v</u> alue:	Microsoft Visual Studio/Common/MSDev98
	OK Cancel

Step 11

Under System Variables (bottom box), click "New" to create a new System variable. Type "MSDevDir" in the variable name box and paste the value in the Variable value box.

New System Va	riable 🛛 🛛 🔀
Variable <u>n</u> ame:	MSDevDir
Variable <u>v</u> alue:	
	OK Cancel

Step 12

Click on the *path* user variable (top box) to highlight it and click edit to open the dialog below. If it is not already highlighted, click and drag the variable value to highlight the entire value. Hit <CTRL-C> to copy the variable.

Edit User Variat	ole 🛛 🛛 🛛 🤇
Variable <u>n</u> am <mark>e:</mark>	path
Variable <u>v</u> alue:	gram Files\Microsoft Visual Studio\VC98\bin
	OK Cancel

Under System Variables (bottom box), click on the *Path* System variable. Click edit to open the *Path* system variable.

Variable	Value
include	C:\Program Files\Microsoft Visual Studio
lib	C: \Program Files \Microsoft Visual Studio
MSDevDir	C:\Program Files Microsoft Visual Studio
TEMP	C: Program Files Wilcrosoft Visual Studio
vstem variables	New Edit Delete
ystem variables	New Edit Delete
ystem variables Variable	New Edit Delete Value
ystem variables Variable ComSpec FP NO HOST	New Edit Delete Value Image: C:\WINDOWS\system32\cmd.exe Image: Comd.exe
ystem variables Variable ComSpec FP_NO_HOST_ NUMBER_OF_F	New Edit Delete Value C:\WINDOWS\system32\cmd.exe C NO 1
vstem variables Variable ComSpec FP_NO_HOST_ NUMBER_OF_F OS	New Edit Delete Value C:\WINDOWS\system32\cmd.exe Image: Comparison of the system of th
ystem variables Variable ComSpec FP_NO_HOST_ NUMBER_OF_F OS Path	New Edit Delete Value C:\WINDOWS\system32\cmd.exe C: NO C NO C 1 Windows_NT C:\WINDOWS\system32;C:\WINDOWS;

Step 14

Click in the Variable value box and hit the right arrow key to move to the end of the value.

Edit System Var	iable 🛛 💽 🔀
Variable <u>n</u> ame:	Path
Variable <u>v</u> alue:	m Files \ATI Technologies \ATI Control Panel
	OK Cancel

Type a semi-colon (;) at the end of the value.

Edit System Var	iable 🛛 🛛 🔀
Variable <u>n</u> ame:	Path
Variable <u>v</u> alue:	Files\ATI Technologies\ATI Control Panel;
	OK Cancel

Step 16

Hit <CTRL-V> to paste the User variable into the System variable field. Click OK to close the dialog box and append the *path* variable.

Edit System Var	iable 🛛 🛛 🔀
Variable <u>n</u> am <mark>e:</mark>	Path
Variable <u>v</u> alue:	gram Files\Microsoft Visual Studio\VC98\bin
	OK Cancel

Step 17

Now that the *include, lib, MSDevDir, and Path* variables have been moved to the System area, they may be deleted from the User area.

Click on the *include* User variable in the top box, and click the Delete button.

Repeat for the *lib, MSDevDir, and path* User variables. (leave the System variables intact.

Click the OK button to save the changes.

Variable	Value	^
indude	C:\Program Files\Microsoft Visual Studio	
lib MCD Dia	C: \Program Files \Microsoft Visual Studio	
nath	C:\Program Files\Microsoft Visual Studio	-
TEMP	C: \Documents and Settings \User \Local	Y
	New Edit Delete	
		_
ystem variables		
ystem variables Variable	Value	~
ystem variables Variable include	Value C: \Program Files \Microsoft Visual Studio	
ystem variables Variable include lib	Value C:\Program Files\Microsoft Visual Studio C:\Program Files\Microsoft Visual Studio	
vstem variables Variable include lib MSDevDir	Value C:\Program Files\Microsoft Visual Studio C:\Program Files\Microsoft Visual Studio C:\Program Files\Microsoft Visual Studio	
vstem variables Variable include lib MSDevDir NUMBER_OF_P	Value C: \Program Files \Microsoft Visual Studio C: \Program Files \Microsoft Visual Studio C: \Program Files \Microsoft Visual Studio 1 Windows NT	
vstem variables Variable include lib MSDevDir NUMBER_OF_P OS	Value C: \Program Files \Microsoft Visual Studio C: \Program Files \Microsoft Visual Studio C: \Program Files \Microsoft Visual Studio 1 Windows_NT	~

This completes the Environmental variable move process.



We appreciate your comments about the content of our publications.

Send comments to: icinfo@woodward.com

Please reference publication 51250A.





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