Caterpillar Electronic Technician Getting Started

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Introduction

Caterpillar[®] Electronic Technician (Cat ET) is a service tool designed to run on a personal computer (PC) under Microsoft[®] Windows[™].

All service tool documentation assumes the user has some Microsoft Windows experience. If this does not describe you, please take some time to acquaint yourself with Windows 2000, or XP before installing your service tool.

The data and menus displayed in the illustrations of this manual may be different from those displayed in your service tool. This is because there are many different Electronic Control Modules (ECMs) serviced with Caterpillar Electronic Technician.

What You Need To Run Caterpillar Electronic Technician

To run your service tool, you will need to meet the following PC Requirements, communication hardware, and cables.

Note: The minimum PC Configurations should not be used as a standard when buying new personal computers to run the service tool. If you have existing equipment that meets these minimum requirements, it will run your service tool.

PC Requirements

Recommended Configurations

- IBM[®] PC compatible with Pentium IV 2.4 GHz processor
- 1GB RAM
- 1GB available hard disk drive or higher
- File transfer device
- 15 inch XGA Screen (1280x1024)
- Microsoft® Windows[™] 2000 SP4, or XP SP2 operating system
- RS232 port with 16550AF UART or compatible
- Built in pointing device or mouse
- Microsoft® Internet Explorer 6.0 or later version

Minimum Configurations

- IBM® PC compatible with Pentium IV 1.8 GHZ processor
- 512MB RAM
- 1GB available hard disk drive or higher
- File transfer device
- 14.1 inch XGA screen (800x600)
- Microsoft® Windows™ 2000 SP3, or XP operating system
- RS232 port with 16550AF UART or compatible
- Built in pointing device or mouse
- Microsoft® Internet Explorer 6.0 or later version

Note: If your screen size is 640x480, press the D maximize button to fill the screen.

Communication Hardware

171-4400 Tool Group - Caterpillar Communication Adapter II

Note: For additional requirements, see "Setting up Caterpillar Communication Adapter II," section 2, page 3.

OR--

7X1700 Tool Group - Caterpillar Communication Adapter

Note: For additional requirements, see "Setting up Caterpillar Communication Adapter," section 2, page 6.

OR--

MPSI Pro-Link[®] 9000 (only for On Highway Truck engines and certain commercial applications)

Note: For additional requirements, see "Setting up MPSI Pro-Link 9000," section 2, page 8.

Exceptions

The requirements for Challenger Technician (CT), M300 Technician (M300), and Hydraulic Excavators B-Series (HEX) are the following:

CT:	1U9100 Cable Assembly - Challenger to PC Adapter cable
M300:	126-7877 Cable Assembly - M300 to PC Adapter cable
HEX:	127-9797 Cable Assembly - HEX to PC Adapter cable

Note: For HEX, in the Communications tab of the Preferences dialog box, select the Communication Adapter option from the Communication Interface Device drop-down list. Then press the "Advanced" pushbutton. Select the 19200 baud rate radio button. Press "OK."

Note: Engines that do not have a service connector may also require the 140-9442 ATA\CDL T-Adapter.

Setting up Caterpillar Communication Adapter II

Requirements

171-4400 - Caterpillar Communication Adapter II Group

Included in this group is the following equipment:

Part Number	Description
171-4401	Caterpillar Communication Adapter II
207-6845	Data Link Cable (24 inch)
	This cable must be used for J1939/11 communications.
196-0055	Serial PC Cable (25 foot)
6V-3072	Carrying Case
177-4595	Block/Foam for carrying case
NEHS0758	Communication Adapter II CD-ROM and User's Manual

Optional Cables:

Part Number	Description
7X-1686	In-Cab Adapter Cable for ATA
157-4829	In-Cab Adapter Cable for the J1939/11
160-0142	Serial PC Cable (10 foot)
	This cable can only be used with the Caterpillar Communication Adapter II 171-4401
225-5985	Parallel PC Cable (25 foot)
	IEEE 1284 (male to male connector)
	This cable is for PCs that do not have a serial port. Cat ET version 2002A or later must be installed on the PC in order to have the LPT1 option available in the Communication Preferences dialog box.
	This cable can only be used with the Caterpillar Communication Adapter II 171-4401.
237-7547	USB to Serial Adapter Kit (16 inches)
139-4166	ATA/CDL Unicable from a Caterpillar communication adapter to the service connector
	Note: You may also use the 7X1412 ATA or 7X1570 CDL cable. However, these are no longer available for purchase from Caterpillar Inc.
140-9442	ATA/CDL T-Adapter (not required for all applications)
167-9225	Cable Assembly used to connect your service tool directly to the ECM.
214-0113	Main Harness
214-0114	A3 & A4 E4 stub
224-4899	A4 E1 stub

Instructions

To connect the Communication Adapter II to the PC, perform the following steps:

- Step 1 Align and attach one end of the PC cable to the PC cable connection on the Communication Adapter II.
- Step 2 Connect the other end of the cable to the communication port of your PC.

To connect the Communication Adapter II to the data link, perform the following steps:

- Step 1 After you have connected the Communication Adapter II to your PC, connect one end of the data link cable to the data link connection on the Communication Adapter II.
- Step 2 Connect the other end of the data link cable to the service connector on the product you wish to test. If the data link is powered (machine power is on), the Power light on the Communication Adapter will glow and the diagnostic test will begin. The lights on the front of the Communication Adapter II will sequentially glow from the bottom to the top of the device. You are now ready to start the service tool.

Note: For more information on installation procedures, consult the Caterpillar Communication Adapter II Users Manual.

How to Update the Communication Adapter II Firmware to SIP

NOTE: Use the Comm Adapter II Toolkit version 1.1, 1.93 or greater drivers to update the Comm Adapter II.

NOTE: Only use the serial port to upgrade the Comm Adapter II, do not use the Parallel port.

Instructions

To update the Communication Adapter II Firmware, perform the following steps:

- Step 1 Make sure the Comm Adapter II is connected to the PC and powered light is on.
- Step 2 Go to the Start menu on your computer. Choose Programs -> Caterpillar Comm Adapter II -> Comm Adapter II Toolkit.
- Step 3 The Toolkit application will start up and display the Summary screen.
- Step 4 Choose the Application Firmware Flash icon (middle icon). The Select Firmware Flash File dialog box displays.
- Step 5 You should see these files listed on the left:

ca2v1i0.apf - v1.0 application firmware ca2v1i1.apf - v1.1 application firmware ca2v1i1b1.apf - v1.1-B1 application firmware ca2v2i2.apf - v2.2 application firmware ca2v2i2_26.apf - SIP application firmware

Note: Caterpillar Communication Adapter (7X1701) does not support J1939 data link.

- Step 6 Highlight the ca2v2i2_26.apf file and press the OK button.
- Step 7 Press the Begin Flash button to start the download.

Step 8	A dialog box showing the download progress will appear. The download should take less than 1 minute.
Step 9	The protocol lights on the front of the Comm Adapter II will all flash while flashing the firmware.
Step 10	When the download is complete, a dialog box will appear allowing you to return to the Summary screen, the Flash screen, or Exit.
Step 11	Press the Exit button.
For further	details on the Toolkit application and the Application

For further details on the Toolkit application and the Application Firmware Flash process, please refer to the Communication Adapter II User's Manual.

How to Configure Electronic Technician to use the Communication Adapter II

In order for Electronic Technician to work with the Communication Adapter II, you must change the Settings to select the Communication Adapter II as your Communication Interface Device:

- Step 1 Start Caterpillar Electronic Technician
- Step 2 Press the "Stop Connect" button when it appears
- Step 3 Select the "Settings" menu (or the "Utilities" menu with ET 2001A or later)
- Step 4 Choose "Preferences..."
- Step 5 Select the "Communications" tab
- Step 6 Change the Communication Interface Device to SIP
- Step 7 "COM1" should be selected. This application firmware only supports Serial communications.

Setting up Caterpillar Communication Adapter

Requirements

7X1700 - Caterpillar Communication Adapter Group

Note: You may use the 7X1701 Caterpillar Communication Adapter; however, it is no longer available for purchase from Caterpillar.

Also requires:

Part Number	Description
NEXG4523	Communication Adapter Software SPM (Service Program Module) Version 1.2 or greater
7X-1425	RS232 Serial PC Cable
	This cable can only be used with the Caterpillar Communication Adapter 7X1701
139-4166	ATA/CDL Unicable from a Caterpillar communication adapter to the service connector
	Note: You may also use the 7X1412 ATA or 7X1570 CDL cable. However, these are no longer available for purchase from Caterpillar Inc.
140-9442	ATA/CDL T-Adapter (not required for all applications)
167-9225	Cable Assembly used to connect your service tool directly to the ECM

Instructions

To set up the Communication Adapter, perform the following steps:

- Step 1 Connect the 7X-1425 RS232 cable to an available Serial Port on your PC and to the Service Tool connector on the Communication Adapter.
- Step 2 Connect the 139-4166 Unicable to the Control connector on the Communication Adapter and to the service connector on the product that you are servicing. You are now ready to start your service tool.

Note: Caterpillar Communication Adapter (7X1701) does not support J1939 data link.

Setting up Pro-Link 9000

Requirements

MPSI Pro-Link[®] 9000 (only for On Highway Truck engines and certain commercial applications)

This package also requires the following equipment:

Description	
MPSI PC/Terminal Cable	
MPSI Caterpillar Cartridge (version 1.07 or greater)	

Note: If programming a 3126 HEUI, it is recommended you disconnect the power to the Allison transmission and re-connect with Pro-Link.

Instructions

Perform the following steps to set up the Pro-Link 9000:

- Step 1 Insert the MPSI Caterpillar Cartridge in the Pro-Link[®] 9000.
- Step 2 Connect the Pro-Link 9000 to your PC's serial port using the MPSI PC/Terminal cable.
- Step 3 Connect the Pro-Link 9000 to the product and turn the ignition key of the vehicle on to power the Pro-Link.
- Step 4 Select Pro-Link from the main menu or push the "Func" key to recall data if no engine data is received.
- Step 5 Select the Com Adapter Link function from the Pro-Link menu, and push "Enter" to initiate the Com Adapter Link mode. The Pro-Link will display a screen showing that the Com Adapter Link is active. You are now ready to start the service tool.

Installing Caterpillar Electronic Technician

Purpose

The installation procedure described below is for installing your service tool. The installation program is designed to run under Microsoft Windows 98/NT/2000/ME/XP. The installation requires one Install CD-ROM. This installation process will upgrade your current service tool and preserve files created such as defined Status Groups or service tool report documents.

Note: The service tool will not run from a server over a network.

Instructions

Perform the following steps to install the service tool from the Install CD-ROM:

Step 1 Close any applications you are running. This includes any connections to mainframe computers or networks. Only Windows should be running.

Note: If you are running Windows NT, Windows 2000, or Windows XP, you must have administrative rights on your computer system to install the service tool.

- Step 2 Insert Caterpillar Electronic Technician Install CD-ROM into your computer's CD-ROM drive.
- Step 3 Press the "Start" pushbutton on the Task Bar. From the menu, select "Run." The Run dialog box is displayed (Refer to Illustration 3-1).

_	Type the name of a program, folder, document, or
	Internet resource, and Windows will open it for you.
pen:	z:\setup.exe

Illustration 3-1: Run dialog box

Step 4 In the text box type the following:

z:\setup.exe

If the CD is in a CD-ROM drive other than "**z**," substitute "**z**" with the appropriate drive letter.

Step 5 Press "OK." The "Setup is preparing..." status box is displayed (Refer to Illustration 3-2).

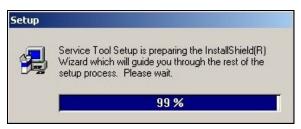


Illustration 3-2: "Setup is preparing..." status box

This status box shows the percentage status of the InstallShield[®] Wizard setup. When it is finished, the Welcome dialog box is displayed (Refer to Illustration 3-3).



Illustration 3-3: Welcome dialog box

Step 6 Read through the welcome message. Press the "Next>" pushbutton to continue the setup. The Software License Agreement dialog box is displayed (Refer to Illustration 3-4). Press "Cancel" to abort the setup process.

oftware License Agreement			×
Please read the following Licen: the rest of the agreement.	se Agreement. Pi	ress the PAGE D	OWN key to see
Caterpillar Inc. Software License Agreeme CAREFULLY READ THE FOLLOWING T PROCEEDING. THE USE OF THE PRO PROVIDED HEREWITH (HEREAFTER I "PROGRAM") INDICATES YOUR ACCE CONDITIONS. IF YOU DO NOT WISH T CONDITIONS, PROMPTLY RETURN TH ENVELOPE AND YOUR MONEY WILL & RESPONSIBILITY FOR THE SELECTIO INTENDED RESULTS, AND FOR THE I OBTAINED FROM THIS PROGRAM. Title: The PROGRAM is proprietary to C4 its subsidiaries [CATERPILLAR], and in s	TERMS AND COL GRAM AND REL COLLECTIVELY 1 PTANCE OF THE TO AGREE TO T HE PACKAGE WI BE REFUNDED. N OF THIS PROT NSTALLATION, ATERPILLAR INC	ATED MATERIA REFERRED TO SE TERMS ANI HESE TERMS A TH THE DISKE YOU ASSUME GRAM TO ACHIE USE, AND RESU	AL AS
If you agree to the License terms, click the "I Decline" button, in which case in:			tagree, click
	< Back	I Agree	I Decline

Illustration 3-4: Software License Agreement dialog box

Step 7 Read through the license agreement. Press the "I Agree" pushbutton to accept the terms and conditions. The Select Components dialog box is displayed (Refer to Illustration 3-5).

Press "<Back" to return to the previous screen. Press "I Decline" to abort the setup process.

Internet Explorer information:

You must have at least Internet Explorer version 5.5 installed on your PC to run the service tool. If you do not have Internet Explorer on your PC, you must install it. If you have an older version of Internet Explorer on your PC, it may not support the service tool, and you need to update your current version of Internet Explorer. Press "Yes" in the Install Internet Explorer dialog box to begin the installation. See "PC Requirements," section 2, page 1.

Note: A message box may display asking you to reboot. **Rebooting** is required before continuing installation.

Upgrade information:

If you are upgrading from a previous version of the service tool, and if your current service tool is licensed, the License dialog box is displayed showing the current license number.

Write down the license number and keep it in a safe place. Press "OK." The Select Components to Install dialog box is displayed.

Service Tool Serial Number_____

NOTICE: To keep your existing license, always install the service tool in the same folder as the previous installation.

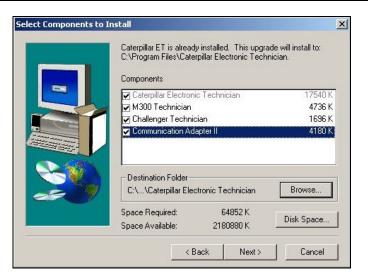


Illustration 3-5: Select Components dialog box

- Step 8 Select the check box corresponding to the components(s) you wish to install.
 - Browse To select a path different from the one shown in the Destination Folder area, press the "Browse…" pushbutton. The Choose Folder dialog box will display. In this dialog box, you can change the directory path by selecting the drive and folder that you want to install to by typing the complete path in the Path text box.
 - **Disk Space** To check available hard disk drive space for all available drives, press the "Disk Space..." pushbutton. The Available Disk Space dialog box will display.

Changing the drives in the Available Disk Space dialog box changes the drive your destination folder is pointing to in the Select Components to Install dialog box.

Press the "Next>" pushbutton to continue the setup. The Select Languages dialog box is displayed (Refer to Illustration 3-6). Press "<Back" to return to the previous screen. Press "Cancel" to abort the setup process.

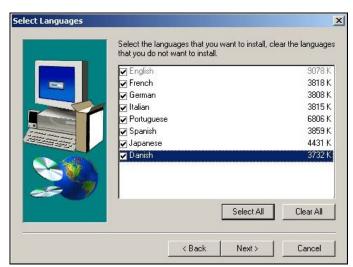


Illustration 3-6: Select Languages dialog box

- Step 9 Select the check box next to the language(s) you wish to install. Press the "Next>" pushbutton to continue the setup. If more than one language is selected, the Select Default Language dialog box is displayed (Refer to Illustration 3-7). Press "<Back" to return to the previous screen. Press "Cancel" to abort the setup process.
 - Select All To select all language check boxes, press the "Select All" pushbutton.
 - **Clear All** Pressing the "Clear All" pushbutton clears all checked languages except English, which is always checked.



Illustration 3-7: Select Default Language dialog box

Step 10 Select the radio button corresponding to the default language you want. You can change the language later in the service tool.

Press the "Next>" pushbutton to continue the setup. The Select Program Folder dialog box is displayed (Refer to Illustration 3-8). Press "<Back" to return to the previous screen. Press "Cancel" to abort the setup process.



Illustration 3-8: Select Program Folder dialog box

Step 11 Caterpillar ET is the default Program Folder name. If you want to change the Program Folder name, select a folder from the Existing Folders text box, or type a folder name in the Program Folders text box.

Press the "Next>" pushbutton to begin copying files. The Setup screen is displayed. Press "<Back" to return to the previous screen. Press "Cancel" to abort the setup process.

Note: A dialog box displays the question, "Would you like this installation to put the service tool icon on your desktop?" Press "Yes" to place the icon on your desktop, or press "No" if you do not want the icon placed on your desktop. Once the service tool icon is placed on your desktop, this dialog will not display.

Step 12 The setup process begins copying files. Press "Cancel" to abort the setup/install procedure.

When the installation process is successfully completed, the Setup Complete dialog box is displayed. The Setup Complete dialog box varies depending upon whether or not the computer must be restarted to complete the installation or if you need to license your service tool.

Communication Adapter II information:

When installing the Communication Adapter II, a message box is displayed with important instructions about the Communication Adapter II. Press "OK."

Warning for service tool user:

If you are installing the service tool on Windows 2000 or XP, a warning box displays suggesting that anyone running Caterpillar Electronic Technician be a member of the "Power User" group (Refer to Illustration 3-9). Press "OK."



Illustration 3-9: Warning box for Power User

Step 13 If the Setup Complete message box displays the following message: "Some files were locked – Must Reboot to Finish Setup" (Refer to Illustration 3-10), then you must restart your computer to complete the setup.



Illustration 3-10: Setup Complete dialog box

Note: If you do not install the Comm Adapter II software, the WARNING message does not display in this dialog box.

Select the "Yes, I want to restart..." radio button to restart your computer now, or select the "No..." radio button to restart your computer later. Press the "Finish" pushbutton to complete the setup. The "<Back" pushbutton is disabled. **Note:** If you elect not to reboot at this time, the service tool will not operate correctly.

OR--

If upgrading from a licensed version, the Setup Complete dialog box is displayed with the following message: "Setup can launch the Read Me file and Caterpillar Electronic Technician." (Refer to Illustration 3-11).

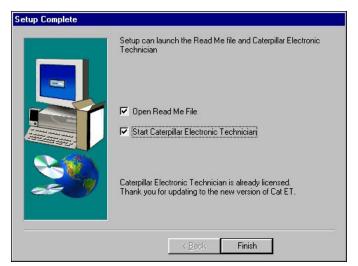


Illustration 3-11: Setup Complete dialog box

Select the appropriate check box depending on whether you want to launch Read Me or start the service tool. Press the "Finish" pushbutton to complete the setup. The "<Back" pushbutton is disabled.

OR--

If the service tool is not already licensed, the Setup Complete dialog box is displayed with the message: "Setup can launch the Read Me file and License Caterpillar Electronic Technician" (Refer to Illustration 3-12).



Illustration 3-12: Setup Complete dialog box

Select the appropriate check box depending on whether you want to launch Read Me or License Caterpillar Electronic Technician. Press the "Finish" pushbutton to complete the setup. The "<Back" pushbutton is disabled.

Note: See "Licensing Caterpillar Electronic Technician," section 4, page 1.

Removing Caterpillar Electronic Technician

Purpose

If you wish to remove the service tool, use the Add/Remove Program utility in the Control Panel program group. This will safely remove the service tool program without invalidating your current license. Deletion of the service tool directory invalidates your license.

Note: If Caterpillar Electronic Technician version 2.x, had been installed on this computer the Remove All icon may display in the Caterpillar Electronic Technician group box. Do not uninstall Caterpillar Electronic Technician using this icon.

Instructions

To Uninstall the service tool software, perform the following steps:

- Step 1 Press the "Start" pushbutton on the Task Bar. From the menu select "Settings" and then "Control Panel."
- Step 2 Double click on Add/Remove Programs. The Add/Remove Programs Properties dialog box is displayed (Refer to Illustration 3-13).

nstall/Un	install Windows Setup Startup Disk
3	To install a new program from a floppy disk or CD-ROM drive, click Install.
	[Install
ð	The following software can be automatically removed by Windows. To remove a program or to modify its installed components, select it from the list and click Add/Remove.
Commu Matrox	lar Electronic Technician nication Adapter II PowerDesk 4,33,045 PowerDesk 4,33,045
Commu Matrox	nication Adapter II
Commu Matrox	nication Adapter II PowerDesk 4.33.045
Commu Matrox	nication Adapter II PowerDesk 4.33.045 Promise Ultra66 (tm) IDE Controller
Commu Matrox	nication Adapter II PowerDesk 4.33.045

Illustration 3-13: Add/Remove Program Properties dialog box

- Step 3 Select the Install/Uninstall tab. Select Caterpillar Electronic Technician in the text box.
- Step 4 Press the "Add/Remove..." pushbutton. The Confirm File Deletion message box displays, asking if you want to completely remove the software (Refer to Illustration 3-14).



Illustration 3-14: Confirm File Deletion message box

Step 5 Press "Yes" to completely remove the service tool and all of its components from your computer. The Remove Programs From Your Computer status box displays (Refer to Illustration 3-15).



Illustration 3-15: Remove Programs From Your Computer status box

The Remove Shared File dialog box **may** display asking if you want to remove all shared components (Refer to Illustration 3-16).

20 DO	
	dicates that the following shared file is no longer used by any ny programs are still using this file and it is removed, those
	not function. Are you sure you want to remove the shared file?
an vina this fil	a will wat have were sucted. If you are wat are what to do it is
	e will not harm your system. If you are not sure what to do, it is t you choose to not remove this shared component.
File name:	BWCCDLL
r no manno.	
File name: Located in:	BWCCIDLL C:\WINNT\System32\
r no manno.	
i no mano.	C:\WINNT\System32\

Illustration 3-16: Remove Shared File dialog box

- Step 6 It is recommended that you press the "No to All " pushbutton. The Remove Programs From Your Computer status box is re-displayed (Refer to Illustration 3-15).
- Step 7 When the uninstall process is complete, press the "OK" pushbutton on the Remove Programs From Your Computer dialog box.
- Step 8 Finally, press the "OK" pushbutton on the Add/Remove Programs Properties dialog box.

Licensing Caterpillar Electronic Technician

Note: The contents of this chapter apply only to Dealer Coordinators. Contact your Dealer Coordinator for information on licensing your service tool.

Licensing X Dealer coordinators should contact the Caterpillar On-Line Licensing website at the hyperlink below in order to obtain or renew a program license. License information can be saved to a text file by choosing the	
Print to File button. To register online, select the hyperlink below.	
https://on-linelicensing.cat.com Hyperlink for License Code: D9BF 4EC2 BF59 849B A2 licensing	r
Product Name: Cat Electronic Technician	
Product Version: 2003B-D1 (09/24/03)	
Serial Number: ET000031	
Subscription: JERD2129 Full Service Dealer ET	
License Key	
Autorize:	
Close Print to File Help	

Illustration 4-1: License dialog box

Accessing

The Licensing dialog box allows you to register your service tool, or change your subscription type.

There are three different opportunities to license your service tool:

- During installation of the service tool
- Running the service tool without an active license
- Selecting "License" from the Utilities drop-down menu in the service tool program

During installation of the service tool:

Step 1: During installation of Caterpillar Electronic Technician, the Setup Complete dialog box is displayed (Refer to Illustration 4-2).

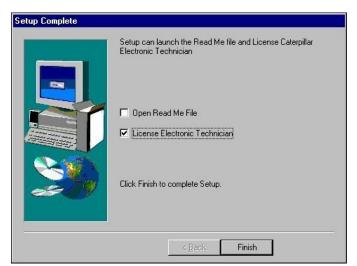


Illustration 4-2: Setup Complete dialog box

Step 2 Select the License Electronic Technician check box. Press "Finish." The Licensing dialog box is displayed (Refer to Illustration 4-1).

Running the service tool without an active license:

Step 1 When you launch Caterpillar Electronic Technician and have not licensed it yet, a message box displays asking if you want to license the program now (Refer to Illustration 4-3).

Electronic Technician 🛛 🕅	
?	This program is not licensed. License the program now?
	<u>Yes</u> <u>N</u> o

Illustration 4-3: Electronic Technician License message box

Step 2 Press the "Yes" pushbutton to license the service tool. The Licensing dialog box is displayed (Refer to Illustration 4-1).

Selecting License Cat ET... from the Utilities drop-down menu:

▶ In the service tool main screen, select "License Cat ET..." from the Utilities menu (Refer to Illustration 4-4).

Uti	lities
	Customer Configuration Upload
	Preferences
0	Comm Adapter II <u>T</u> oolkit
	License Cat ET

Illustration 4-4: Utilities drop-down menu functions

The Licensing dialog box is displayed (Refer to Illustration 4-1).

Notice

Once your service tool is registered, write down the Serial Number and keep it in a safe place. You will need this number to transfer or re-license the service tool.

Service Tool Serial Number_____

Note: If you have a licensed copy of the service tool, you do not need to re-license it.

Caterpillar Media and Product Information Logistics

- Fax: (309) 494-1348 <u>or</u> (309) 494-1345
- Email: media_logistics@cat.com <u>or</u> Media Logistics (Lotus Notes)
- Hours: Monday through Friday 7:30am to 4:30pm (Central Standard Time)

Licensing Caterpillar Electronic Technician

To license Caterpillar Electronic Technician online:

- Step 1 Select the hyperlink in the Licensing dialog box. Your Internet browser displays the Corporate Web Security page.
- Step 2 Enter your CWS Logon ID and Password in the text boxes.

Note: If you do not have a CWS Logon ID, you cannot use this option.

- Step 3 Press the "Login" pushbutton. The Service Systems Software Online Licensing screen displays.
- Step 4 Press the "License" pushbutton in the center of the screen. A series of screens will guide you through the licensing procedure.

Perform these three steps to license Caterpillar Electronic Technician by FAX or email:

- Step 1 In the Licensing dialog box press the "Print to File" pushbutton. The File Save As dialog box is displayed. Select a location to save this license.txt file.
- Step 2 Open the "license.txt" file. The service tool License Request form is displayed. **Fill out this form as directed** and email or FAX the information to Caterpillar Media and Product Information Logistics.

These mailing instructions are also included on the license.txt form. By default, this file is located in the service tool program folder.

- Step 3 Press the "Close" pushbutton in the Licensing dialog box.
- Step 4 When you receive the email or FAX from Caterpillar Media and Product Information Logistics, open the Licensing dialog box from the service tool.
- Step 5 Enter the License Key in the text box exactly as it displays in the email or FAX.
- Step 6 Press the "Authorize!" pushbutton. The "License granted" message box is displayed. Press "OK."

Transferring a License



Illustration 4-5: About Caterpillar Electronic Technician message box

Important

If you are transferring your service tool license from another computer, you must have the **Serial Number** from the original license.

Service Tool Serial Number_____

Instructions

To transfer your license, complete these two steps:

- Step 1 Obtain the Serial Number from the original service tool program. If you do not know this number, select About Electronic Technician from the Help menu (Refer to Illustration 4-5). The Serial Number will display in the message box. Write down the Serial Number.
- Step 2 Install the service tool onto the new computer (the computer you are transferring your license to).

With the Licensing dialog box displayed in front of you, call Caterpillar Media and Product Information Logistics. Refer to "Licensing Caterpillar Electronic Technician," section 4, page 4.

Caterpillar Electronic Technician Documentation

Overview

An electronic copy of <u>Caterpillar Electronic Technician Getting</u> <u>Started</u> is included on the current service tool Install CD-ROM.

To view or print this manual, you must first install Adobe Acrobat Reader version 4.0 or greater. Adobe Acrobat Reader version 4.0 is also included on the Caterpillar Electronic Technician Install CD-ROM.

Instructions

To install Adobe Acrobat Reader:

- Step 1 Insert the Install CD-ROM into your computer's CD-ROM drive.
- Step 2 In Explorer, select your CD-ROM drive.
- Step 3 Select the Adobe Acrobat Reader file folder.
- Step 4 Select the **rs405eng.exe** file. This installs Adobe Acrobat Reader on your PC.

For more information about Adobe Acrobat Reader, view the Reader.pdf file.

Trainer

	? Contents	
	<u>U</u> sing Help	
0 01 11	<u>T</u> rainer	▶ 🥳 <u>E</u> nable
What's New	What's New	<u>,</u> , [●] <u>D</u> isable
the second s	It Electronic Technician	Eroperties

Illustration 6-1: Trainer menu functions

Purpose

Trainer runs the service tool in a training mode. This allows you to become familiar with the service tool without needing to be connected to an Electronic Control Module (ECM) or Communications Adapter. There is no charge for Trainer, and authorization is not required.

Instructions

Using Trainer:

Step 1 Select Caterpillar ET from the Programs menu, and then select Electronic Technician from the submenu. The Connection message box is displayed (Refer to Illustration 6-2).

ET	Program Name: Cat Electronic Technician Version Number: Serial Number: ET000031 Subscription: JERD2129 Full Service Dealer ET
Copyright	t 🗯 Caterpillar Inc. All Rights Reserved.
Initiali	izing communications for Cat Data Link.
	Please wait
	Stop Connect

Illustration 6-2: Connection message box

- Step 2 Press the "Stop Connect" pushbutton. The service tool main screen is displayed.
- Step 3 Select Trainer from the Help menu, and then select Enable from the submenu, or push the Enable Trainer icon on the toolbar (if default is set). The Trainer dialog box is displayed (Refer to Illustration 6-3).

3406E Truck	
3406E Truck Engine	
1593231-01 Jun 98	

Illustration 6-3: Trainer dialog box

- Step 4 Select a product from the Application drop-down list.
- Step 5 Press "OK." The Connection message box is displayed. The ECM Summary screen displays in the trainer mode (Refer to Illustration 6-4). Trainer simulates some of the service tool functions.

Press "Cancel" to exit Trainer. You will return to the service tool main screen.

Cat Electronic Technician - ECM Summary - Trainer Active		_ 🗆 ×
🗕 🖴 M 🗱 🊧 🥪 😼 💥 💈	: 🔪 🛃 🧏 👔	?
Available ECMs: 3406E Truck (6NZ84307) Vehicle ID Engine Serial Number ECM Serial Number Personality Module Part Number Personality Module Release Date Personality Module Code	"Trainer Active" displays on the Title Bar	umber: 131 scription: IERD2129 Full Service Dealer ET
ECM Date/Time	3/1/2002 4:41:07 PM	NZ84307)

Illustration 6-4: Trainer screen

Note: When you are in trainer mode, "Trainer Active" displays on the Title Bar.

To change the product simulated within Trainer:

- Step 1 Select Trainer from the Help menu, and then select Properties from the submenu. The Trainer dialog box is displayed (Refer to Illustration 6-3).
- Step 2 Select a different product from the Application drop-down list.
- Step 3 Press "OK." The Connection message box is displayed. Then the new product is displayed.

To exit Trainer:

▶ Select Trainer from the Help menu, and then select Disable on the submenu, or push the Disable Trainer icon from the toolbar (if default is set).

What's New

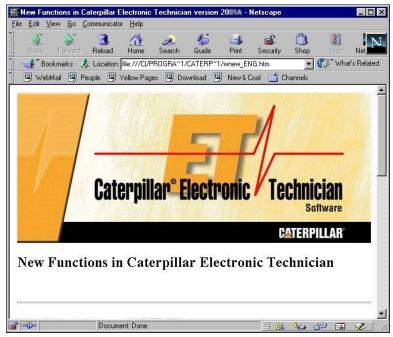


Illustration 7-1: What's New screen using a browser

Purpose

What's New allows you to view a list of new functions and major enhancements available in the installed version of the service tool.

What's New launches your browser when it is selected from the Help drop down. What's New is displayed in the language selected as default in the Select Default Language dialog box during the installation of your service tool.

Instruction

▶ To view the What's New screen, select What's New from the Help menu (Refer to Illustration 7-1).

Troubleshooting Notes/Frequently Asked Questions

Power Management

Turn off Power Management (for example a screen saver or "sleep" mode) when using your service tool. Communication to the ECM might be interrupted if the PC "suspends."

Infrared Communication Problems

If your computer supports infrared communication, you may experience some communication problems with the service tool. It is recommended that you disable the infrared option. If you need help with this procedure, please contact the computer manufacturer.

Disk Defragmentation/Disk Compression

The service tool will remain unaffected by Disk Compression and/or Defragmentation programs as long as the compression/defragmentation programs do not move hidden or system files during the process.

Windows NT, 2000, and XP Installation

Administrative rights are required to install Cat ET for the first time. Most upgrades do not require administrative rights.

Error Code LIC0102

The Windows NT driver appears not to be serving this directory.

The CrypKey License service is not started, or the service is not protecting the Cat ET directory. To determine if the CrypKey License service is started, select Services from the Control Panel (in Windows 2000 or XP, select Administrative Tools from the Control Panel), then select services. CrypKey License should appear in the service list. If the CrypKey License service is not started, then the service needs to be started. If it is not there, then re-install the service tool.

Note: The user must have administrative rights to add a directory.

To start the service:

Run the SETUP_CK.EXE program located in the windows directory (i.e. C:\WINDOWS\). Once the CrypKey License service is started, it automatically starts every time the system starts (Any user can then log in and use the CrypKey License service.).

If the CrypKey License service is running and you still get the LIC0102 error code, then the problem may be that the service tool path is not protected. Run the CKCONFIG.EXE program located in the windows directory (i.e. C:\WINDOWS\). The service tool directory must be listed in the CrypKey NT Server Configure window. If it is not, it must be added.

To add the service tool directory, do the following:

Press the "Add" pushbutton. The Open dialog box is displayed. Choose ETECH.EXE in the service tool directory (i.e. C:\Program Files\Caterpillar Electronic Technician\), and press "OK." Press the "Close" pushbutton. If you get an "Internal Error Open SC Manager" failure when the CrypKey NT Server Configure program was closed, you may not have Administrator privileges. Therefore, the CrypKey License server was not updated.

Installation Errors

When calling for support, report the error code number to the support staff member. This aids in solving the installation problem. The chart below is a list of error codes and the possible solutions to those errors.

Error Code	Error Description	Suggestion
300	Unable to load DLL.	Restart computer and run installation again.
301	License Validation Failed (bad checksum on the file).	A file may be damaged, try reinstalling the Cat ET Software.
302	License Validation Failed (Cat ET Version Check Failed).	A file may be damaged, try reinstalling the Cat ET Software.

Error Code	Error Description	Suggestion
303	License Validation Failed (An old serial number has been detected on this computer and cannot be updated).	Need a new license before upgrading.
304	You must have administrative rights to install Crypkey Service.	Logon as an administrator and run setup again.
305	Crypkey Installation Failed.	Restart computer. Logon as an administrator and run setup again.
307	Unable to use the csutil.dll file.	Contact the PC Software Support Hotline.
400	Cat ET must be installed into a subdirectory.	Select a folder on the "Select Components" screen during setup (i.e. C:\Cat ET).
404	Cat ET cannot be installed onto a network drive. Please try again.	Select a local drive (i.e. c: or d:) on the "Select Components" screen during setup.
405	Cannot find the shared application folder.	Contact the PC Software Support Hotline.
	"The ODBC Setup Library is being used and is locked. Make sure no other program is running. Setup cannot continue."	Close all programs and run setup again. You may need to restart the computer and run setup again. When using Windows NT, 2000, or XP make sure there are no services using ODBC, such as "SQL Server." Make sure Control Panel is not open.

Selecting the Correct Port

Select Preferences... on the Utilities menu. The Preferences dialog box is displayed. Select the Communications tab.

Laptops:

If you use the built-in pointing device on your laptop PC, your first available port is usually COM 1.

Personal Computer (PC):

If your PC has a mouse with a round plug, your first available port is usually COM 1. If your PC has a mouse that DOES NOT have a round plug, your first available port is usually COM 2. If your PC DOES NOT have a mouse, your first available port is usually COM 1.

Communication Errors

Two types of error messages display when communication problems occur. Understanding these messages can help you correct the situation.

"Unable to Communicate with an ECM!"

This is a problem between the communication interface device and the ECM. The PC did detect the communication interface device. Make sure all connections between the communication interface device and the ECM are secure and intact. If the error displays again, verify that you are using the correct cables for your application.

- Check all connections between the communication interface device and the ECM.
- Verify that you are using the correct cables for your application.
- Verify that the ECM has power.

"Unable to Communicate with the Caterpillar Communication Adapter!"

This error refers to a problem between the PC and the Communication Adapter.

- Check all connections between the PC and the ECM.
- Check that the Communication Adapter is receiving external power. The product being serviced must have the key switch on for power, unless it is connected directly to a battery.
- Verify in Preferences, under the Settings menu, that the correct port is selected.

- Verify in Preferences, under the Settings menu, that the correct Communication Interface Device is selected.
- If the error displays again, verify that you are using the correct cables for your application.
- If using a serial port, verify that your PC Comm Port is set up correctly and is not in use by another device (for example Palm Pilot Software). Try using another Comm Port, if it is available.

Caterpillar Communication Adapter II Error Codes:

When calling for software support, report the error code number to the support staff member. This will aid in solving the communication problem. The chart below is a list of error codes and the possible solutions to those errors.

Error Code	Error Description	Suggestion
	No initialization file present.	Install the Caterpillar Communication Adapter II software on the PC and reboot.
	Unable to read Cat Communication Adapter (RP1210) Initialization File.	If the PC has Cat Comm Adapter II software installed, try rebooting the PC first. If this does not cure the problem, re-install the Cat Comm Adapter II software. Make sure you reboot the PC after the installation is complete.
	Unable to load CA2RP32.DLL	If the PC has Cat Comm Adapter II software installed, try rebooting the PC first. If this does not cure the problem, re-install the Cat Comm Adapter II software. Make sure you reboot the PC after the installation is complete.
142*	The interface hardware is not connected.	Check the cables. Make sure the data link cable and serial or parallel communication cables are properly connected.

Error Code	Error Description	Suggestion
		Verify the Cat Comm Adapter II "Power" light is on. Check that Caterpillar Electronic
		Technician is configured for the correct communications port.
202	A Required INI File Was Not Located.	Un-install and then re-install the Cat Comm Adapter II software. Make sure you reboot the PC after the installation is complete.
204	A required INI file section was not found.	Un-install and then re-install the Cat Comm Adapter II software. Make sure you reboot the PC after the installation is complete.
205	A necessary INI file key was not found.	Un-install and re-install the Cat Comm Adapter II software. Make sure you reboot the PC after the installation is complete.
206	A INI file value was invalid.	Un-install and then re-install the Cat Comm Adapter II software. Make sure you reboot the PC after the installation is complete.
230	Port not open	Another program or device is currently using the comm port or the comm port's resources. Identify the source and remove or disable it. Or, use a parallel port instead of a serial port. Palm Pilot software commonly causes this error.
231	Invalid Comm Port	The selected comm port is not set up properly in the PC's BIOS or operating system.
301	Cannot open the configuration file.	Un-install and then re-install the Cat Comm Adapter II software. Make sure you reboot the PC after the installation is complete.

Error Code	Error Description	Suggestion
302	The session identifier was not found in the configuration file.	Un-install and then re-install the Cat Comm Adapter II software. Make sure you reboot the PC after the installation is complete.
303	An error was found in the configuration file format.	Un-install and then re-install the Cat Comm Adapter II software. Make sure you reboot the PC after the installation is complete.
308	A 16-bit client application is trying to use the Comm Adapter II, but the APISRV32.EXE file is missing or not in the default Windows directory. This only applies to Windows 98.	Re-install the Comm Adapter II software. Make sure you reboot the PC after the installation is complete.
405	The PC had a problem while trying to establish the communication baud rate with the Comm Adapter II.	Power cycle the Comm Adapter II and reboot the PC. If the error persists, lower the communication baud rate.
406	The PC tried to establish a connection to the Comm Adapter II, but ran into a problem during the communication initialization phase.	This error code occurs during the communication initialization phase when the specific stage is not identified. Error codes 142, 405, 441, or 453 relate to specific stages in the initialization process.
441	The requested protocol is not compatible with an existing data link.	Cycle the power on the Cat Comm Adapter II and ECM. If this does not correct the problem, reboot the PC, and try again. Do not launch the Comm Adapter II Toolkit while Cat ET is running.

Error Code	Error Description	Suggestion
443*	The drivers software and the communiaction adapter Firmware are not compatible	Install the appropriate Firmware onto the Communications Adapter II.
453*	The Communicaion Adapter has been detected but is not responding	The Serial.vdx file in your Windows/System folder may be corrupt. Reinstall the Serial vdx file provided with Windows.

*For more information on Error Codes 142, 443, and 453, consult the Comm Adapter II Read Me file located in the Caterpillar Comm Adapter II Group Box (select Caterpillar Comm Adapter II from the Programs menu, then select Read Me from the submenu).

DBSi Website

Purpose

The DBSi website is a knowledge network. Many known troubleshooting issues are listed at this website. This site includes, but is not limited to, information about Cat ET, WinFlash, and communication adapters.

Note: If you do not have a CWS Logon ID, you cannot use this website.

Instructions

To access the DBSi website:

- Step 1 Connect to the DBSi website (https://dbsi.cat.com).
- Step 2 Enter your CWS Logon ID and Password in the text boxes.
- Step 3 Select **DCS Knowledge Database**. (This is located on the right side of the screen.)
- Step 4 Select Search All Products.
- Step 5 In the **Enter a description of your problem here:** textbox, enter the error code number or a brief description of the problem.
- Step 6 Select "Submit."

Caterpillar Electronic Technician Start Menu



Illustration 9-1: Caterpillar Electronic Technician Group Box

Overview

The following items are available in the group box:

Electronic Technician - The Caterpillar Electronic Technician program

Challenger Technician - Services the 35/45/55 Challengers

M300 Technician - Services M312, M315, M318, and M320 excavators and also the 5130 mining shovel

Electronic Technician Online Help - Complete online help for Caterpillar Electronic Technician

Read Me - Double click this icon to read additional release information before using your service tool

Cat ET Tutorial - Double click this icon to view an index containing all of the Cat ET topics currently available in the tutorial.

Challenger Technician

Purpose

The Challenger Technician program is used to service Challenger 35, 45, and 55. For more information on Challenger Technician, refer to Challenger Technician Online Help.

Equipment: 1U9100 Cable Assembly - Challenger to PC Adapter cable

Instruction

To connect your PC to the Challenger, do the following:

- Step 1 Connect the 1U9100 cable to the Diagnostic and Maintenance (DAM) connector, located in the cab of the Challenger.
- Step 2 Connect the remaining end of the 1U9100 cable to an available serial communication port on the PC.

Note: If your PC has a 25-pin connector (DB-25), use a 9-pin to 25-pin adapter.

To start Challenger Technician:

▶ Select Caterpillar ET from the Programs menu, and then select Challenger Technician from the submenu. The Challenger Technician screen is displayed.

M300 Technician

Purpose

The M300 Technician program supports the M312, M315, M318, and M320 excavators. For more information on M300 Technician, refer to the M300 Technician Online Help.

Equipment: 126-7877 Cable Assembly - M300 to PC Adapter cable

Instructions

To connect your PC to the M300 series excavator:

- Step 1 Connect the 126-7877 cable to the service connector, located in the cab of the excavator.
- Step 2 Connect the remaining end of the 126-7877 cable to an available serial communication port on the PC.

Note: If your PC has a 25-pin connector (DB-25), use a 9-pin to 25-pin adapter.

To start M300 Technician:

▶ Select Caterpillar ET from the Programs menu, and then select M300 Technician from the submenu. The M300 Technician screen is displayed.

Online Help

Purpose

The Help Contents function allows you to access the online help file for your service tool. This file gives valuable information about each feature and provides step-by-step instructions for all service tool functions.

Instructions

To access the Help contents either:

- Select "Contents" from the Help menu.
- Push the F1 key (content sensitive).
- Press the Help icon on the toolbar, if the default is set.
- Select Caterpillar ET from the Programs menu, and then select Electronic Technician Online Help from the submenu.

Note: The service tool online help is content sensitive. Push the F1 key to display help for the active service tool screen.

Read Me File

Purpose

The **readme.txt** file can be found on the service tool Install CD-ROM. It is also displayed as an icon in the service tool Group Box. This file contains last minute information about your service tool.

Instructions

Select Caterpillar ET from the Programs menu, then select Read Me from the submenu. The readme.txt file is displayed.

Cat ET Tutorial

Instructions

To view the service tool Tutorial:

- Step 1 Insert the service tool Install CD-ROM into your computer's CD-ROM drive.
- Step 2 Select Caterpillar ET from the Programs menu, then select ET Tutorial from the submenu. The service tool Tutorial index screen is displayed (Refer to Illustration 9-2).



Illustration 9-2: Caterpillar Electronic Technician Tutorial index screen

This index contains all of the Cat ET topics currently available in the tutorial.

- Step 3 Select the topic you would like to view.
- Step 4 Use the buttons at the bottom of the screen to navigate through the screens.

Note: If the Cannot Locate Tutorial dialog box displays, insert the service tool Install CD-ROM, and press the "Browse" pushbutton and locate **ET_Index.exe**.

Infocast Website



Illustration 10-1: Caterpillar Electronic Technician Infocast Website

Overview

Caterpillar Electronic Technician is available on the Infocast Website at the following locations:

NACD Infocast:

https://nacd.cat.com/infocast/frames/psfulfill/sfulfill/et/

APDNet:

https://apd.cat.com/cda/layout/0,,m-17410_x-7,00.html

- FlashNet: https://cosa.cat.com/infocast/frames/prod_supp/serv_tech/et/
- Power Net: https://truck.cat.com/cda/layout/0,,m-261_x-7,00.html

At this site you can:

- Learn about Caterpillar Electronic Technician
- Download Caterpillar Electronic Technician, it's Service Packs, and Communication Adapter II software
- Obtain part numbers and media numbers to order Caterpillar Electronic Technician
- Review the PC Requirements to run Caterpillar Electronic Technician
- Obtain the latest support information for Caterpillar Electronic Technician and Communication Adapter II

PC Software Support Hotline

Caterpillar Inc. provides a well trained technical support staff to assist you with any problems. If you need software support for your service tool and wish to contact the DCS Support Center, please completely fill out the information on the service tool Troubleshooting Tracking Form. These questions are necessary for the DCS Support Center to solve your problem.

Also, be prepared to:

- Give a brief explanation of the problem you are having
- Include the **exact wording** of any error or warning messages you have received
- Give the sequence of steps you took before receiving the error or warning message
- Describe any recent changes made to your personal computer (PC), and explain whether or not your service tool was running correctly in the past to help isolate the problem

DCS Support Center

- Voice: (800) 765-0999 <u>or</u> (309) 675-4000
- Fax: (309) 674-4080
- Email: DCS_Support_Center@cat.com or DCS Support Center (Lotus Notes)
- Hours: Monday through Friday 06:00am to 06:00pm (Central Standard Time)

Caterpillar Electronic Technician Troubleshooting Tracking Form

Required Information:

Name:
Dealer:
Caterpillar Electronic Technician Serial Number:
Version of Caterpillar Electronic Technician:
Telephone Number:
Computer Make and Model:
Operating System:
Service Pack Number:
Communication Interface Device:
Exact Error Message:

Information for Installation Problem:

Previous Version of Caterpillar Electronic Technician:_______ Subscription:_______ Selected Components:______ Selected Languages:______ If data move error - please specify the last file attempted to copy and the error number:

Additional Information, if available:

Processor Type and Speed:
RAM Memory:
Selected Comm Port:
Baud Rate Setting:
Communication Cables Being Used:
Available Hard Drive Space:
Product Being Serviced:
ECM Serial Number:
Product/Engine Serial Number:
ECM Type:
Software/Personality Module Part Number & Date: