SMCS - 0599, 0709, 1900, 4800, 7490, 7600

I07013229

Caterpillar Products

All

Introduction

Important Safety Information

Illustration 1   g02139237
Think Safety

European Union Compliant, CE marked, EAC marked
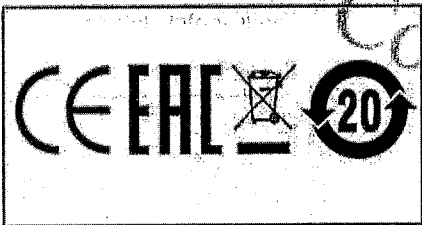

Illustration 2   g06117750

Most accidents that involve product operation, maintenance, and repair are caused by failure to observe basic safety rules or precautions. An accident can often be avoided by recognizing potentially hazardous situations before an accident occurs. A person must be alert to potential hazards. This person must also have the necessary training, skills, and tools to perform these functions properly.

Improper operation, lubrication, maintenance, or repair of this product can be dangerous and could result in injury or death.

Do not operate or perform any lubrication, maintenance, or repair on this product until you have read and understood the operation, lubrication, maintenance, and repair information.

Safety precautions and warnings are provided in this manual and on the product. If these hazard warnings are not heeded, bodily injury or death could occur to you or to other persons.

The hazards are identified by a "Safety Alert Symbol" followed by a "Signal Word" such as "DANGER","WARNING" or "CAUTION". The Safety Alert "WARNING" label is shown below.

A non-exhaustive list of operations that can cause product damage are identified by "NOTICE" labels on the product and in this publication.

Literature Information

Store this manual with the tool group.

This manual contains safety information, operation instructions, and maintenance information and should be stored with the tool group.

Some photographs or illustrations in this publication may show details that can be different from your service tool. Guards and covers might have been removed for illustrative purposes.

Continuing improvement and advancement of product design might have caused changes to your service tool, which are not included in this publication.

Whenever a question arises regarding your service tool or this publication, consult Dealer Service Tools (DST) for the latest available information.

The Safety Section lists basic safety precautions.

Read and understand the basic precautions listed in the Safety Section before operating or performing maintenance and repair on this service tool.

General Information Section

The General Information Section describes tooling functions and features. This section provides useful information on individual parts, extra tooling, and resources.

Operation Section

The Operation Section is a reference for the new operator and a refresher for the experienced operator.

Photographs and illustrations guide the operator through correct procedures for using the tool group.

Operating techniques outlined in this publication are basic. Skill and techniques develop as the operator gains knowledge of the service tool and the tools capabilities.

Service Parts Section

The Service Parts Section describes tooling replacement parts and part number availability.

General Information Section

Introduction

The **538-5051** Communications Adapter 3 Group is used with a dealer supplied laptop PC and related components. The **538-5051** Communications Adapter 3 Group used for transmitting data from a data link connection to the PC for data logging and analysis. The **538-5051** Communications Adapter 3 Group includes the communications adapter, data link cable, PC, USB cable, and hard shell case with foam inserts.

Minimum PC Requirements

A dealer supplied PC (Laptop Computer) is required to download and operate the Communication Adapter 3 (CA3) software.

Minimum PC requirements are:

- IBM® PC compatible with the Pentium IV 2.4 GHz processor
- 512 MB RAM minimum
- 1 GB of available hard disk drive
- 40X speed CD-ROM drive or 8X speed DVDdrive or greater
- 14.1 in XGA screen (800x600) or greater
- Built-in pointing device or mouse
- USB 1.1 or 2.0 port
- Microsoft Internet Explorer 6.0 or greater

Contact Information

For product support questions concerning this tool, contact the Dealer Service Tools hotline at:

USA: 800-542-8665, Option 1

International: 1-309-578-7372

Specifications

538-5051 Communication Adapter Group - Communications Adapter 3 (CA3) Group

538-5051 Communications Adapter 3 (CA3) Group	
Description	Specification
Operating Voltage	9 VDC to 32 VDC
Operating Temperature	-18° C to 65° C (0° F to 149° F)
CA3 Dimensions	184 x 85 x 31 mm (7.25 x 3.35 x 1.22 inch)

CA3 Weight [1]	250 g (8.8 oz)
Case Dimensions	1470 x 378 x 114 mm (18.5 x 14.9 x 4.5 inch)
Group Weight	2.54 kg (5.59 lb)
Supported data links	SAE J1939 (250K/500K) SAE J1708 (ATA) Caterpillar data link (CDL)
Compliance	RP1210A

Table 1

[1] Includes 478-0235 Communications Adapter 3, 457-6114 Cable Assembly, 370-4617 Cable Assembly, and 6V-7145 Case with 317-7513 Foam Insert.

Nomenclature

Note: Throughout this manual the 478-0235 Communications Adapter 3 also be referred to as the CA3.

538-5051 Communications Adapter 3 (CA3) Group
Item	Part Number	Description	QTY
1	478-0235	Communications Adapter 3 (CA3)	1
2	457-6114	CA3/data link Cable Assembly	1
3	370-4617	CA3/PC Cable Assembly	1
4	6V-7145	Case	1
4a	317-7513	Foam Inserts	4
-	NETG5057	Media CD	1
-	NEHS1032	Tool Operating Manual (on CD)	1

Table 2

Illustration 3   g06056653
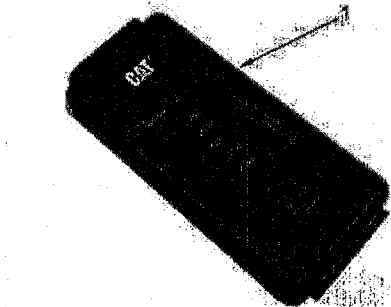
Illustration 4   g06115124
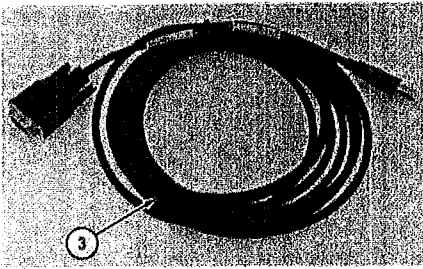
Illustration 5   g02146594
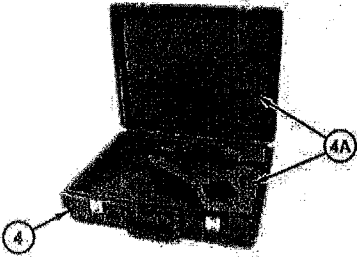
Illustration 6   g02146595

Component Storage

Note: 478-0235 Communications Adapter 3 (1) and related components can be stored in **6V-7145** Case (4) along with cable assemblies. **317-7513** Foam Insert (4A) are designed to accept optional components.
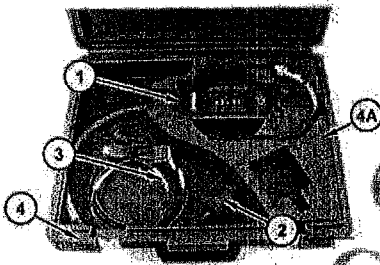

Illustration 7   g02146597
(1) 478-0235 Communication Adapter 3 (CA3)
(2) 457-6114 Cable As
(3) 370-4617 Cable As
(4) 6V-7145 Case
(4A) 317-7513 Foam Insert

Using Cat Electronic Technician With the CA3

To use CAT ET. The CA3 must be connected to a PC loaded with the latest version of CA3 software and to a data link connection on the machine.

1. Connect CA3 (1) to PC (11) using **370-4617** Cable Assembly (3).
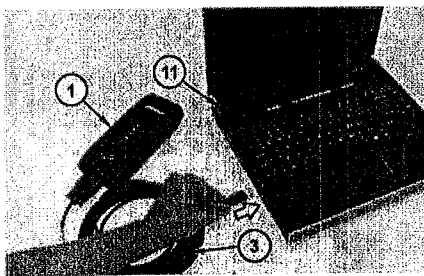
Illustration 8   g02147133
(1) Communications Adapter 3 (CA3)
(3) 370-4617 Cable As
(11) PC (dealer supplied).

2. Connect CA3 (1) to a data link using **457-6114** Cable Assembly (2). The 457-6114 cable assembly provides for connection to both 9-pin and 14-pin diagnostic parts on Cat machines.
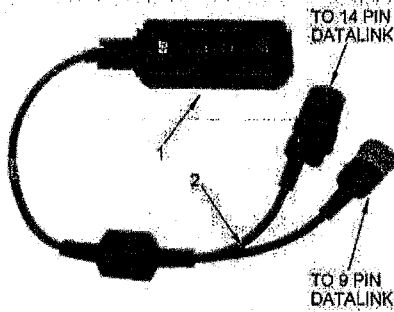

Illustration 9   g06115883
(1) CA3
(2) 457-6114 Cable As

3. Open Cat ET by selecting "Start Menu" >> "All Programs">> "Caterpillar ET" >> "Electronic Technician."
   Note: When opening CAT ET with CA3 for the first time, the connection of CA3 can happen based on old settings.

   If this action occurs, click "Stop Connect."
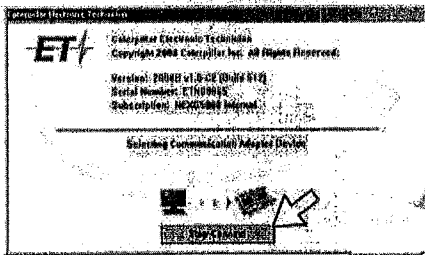
Illustration 10   g02147394

4. Go to "Utilities" >> "Preferences." Then select the "Communications" tab.
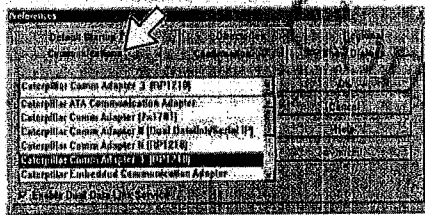
Illustration 11   g02147397

5. Select the appropriate communication adapter.

   a. Select "Caterpillar Comm Adapter 3 (RP1210)" from the list of available adapters.

   b. Select a preference (check the box) for "Enable Dual Data Link Service."
      Click "OK" to save these settings.

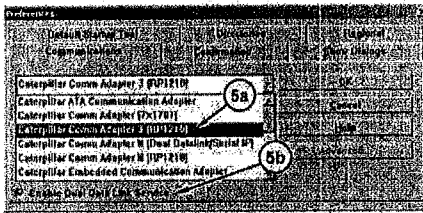Illustration 12   g02147468

6. To connect the PC to the data link through the CA3, click the "Connect" icon button.
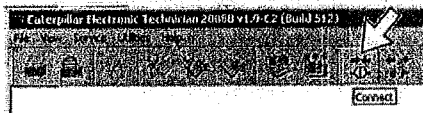

Illustration 13   g02147470
(1B) CA3 Power Lamp

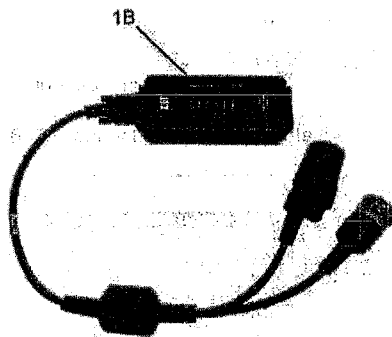7. When the CA3 is first connected, power lamp (1B) is YELLOW. In approximately one second, the light turns RED.

Illustration 14   g06117190
(1B) CA3 Power Lamp
Note: While the CA3 is connected, the light for each data link will illuminate "J1939 - RED, CDL - YELLOW, and J1708 - GREEN."

Operation Section

Installation of Communications Adapter 3 (CA3) Software

(Not required for users of Cat-ET)

1. Insert NETG5057 Media CD in laptop PC (dealer supplied) to install software and run "Caterpillar Comm Adapter 3.exe."

2. The following screen now displayed:
   "Welcome to the Caterpillar Comm Adapter 3 Setup Wizard. This wizard will guide you through the installation of Caterpillar Comm Adapter 3. Close all other applications before starting Setup."

   a. Click "Next" to continue.
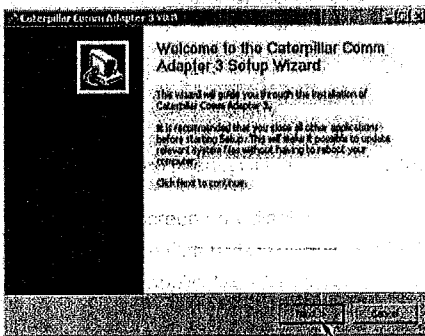
Illustration 15   g02146653

3. The Caterpillar Comm Adapter 3 "Choose Install Location" window will display:
"Choose Install Location"

"Setup will install Caterpillar Comm Adapter 3 in the following folder. To install in a different folder, click Browse and select another folder. Click Install to start the installation."

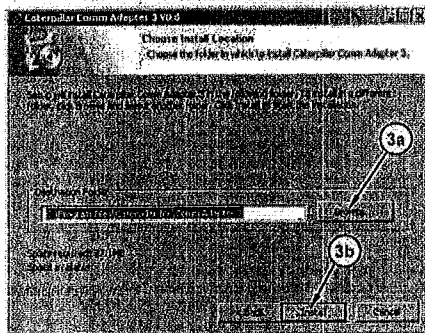   a. Select a destination folder location (default is recommended unless there is a need for a different location).

    b. Click "Install."

Illustration 16   g02146655

4. The following message can appear on the Software Installation screen:
"The software you are installing has not passed Windows Logo testing to verify its compatibility with Windows XP. (Tell me why this testing is important.)"

"Continuing your installation of this software may impair or destabilize the correct operation of your system either immediately or in the future. Microsoft strongly recommends that you stop this installation now and contact the software vendor for software that has passed Windows Logo testing."

    a. Click "Continue Anyway."
    Note: Anytime this "Software Installation" message appears during the installation process, click "Continue Anyway." This message is a default message that appears when a program has not been approved by Microsoft. However, Caterpillar has taken extensive measures to ensure that this software will operate correctly on your PC.
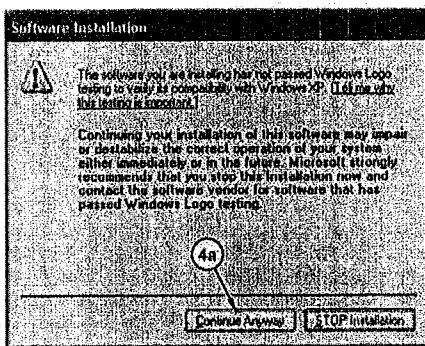
Illustration 17   g02146714

Note: For Windows Vista 7, Windows, or Windows 8 users, Steps 6-11 in this section are not necessarily to be completed, if the hardware installs automatically.

5. When the following message appears, the installation is complete:

Installation Complete

Setup was completed successfully.

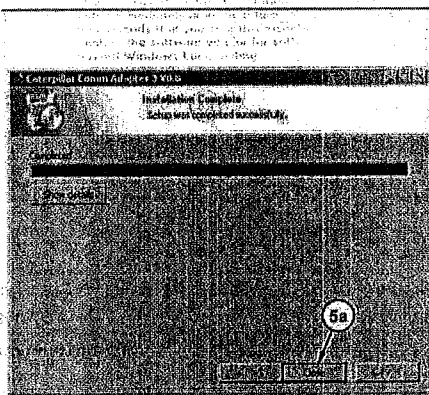   a. Click "Close" to proceed to the next step.

Illustration 18   g02146715

6. Use **370-4617** Cable Assembly (3) to connect Communications Adapter 3 (1) to PC (11) USB port.

   a. Connect the cable to CA3 (1).
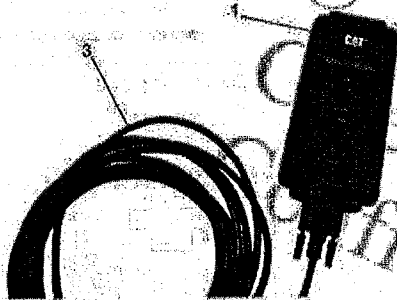
Illustration 19   g06117498
(1) Communications Adapter 3 (CA3)
(3) 370-4617 Cable As

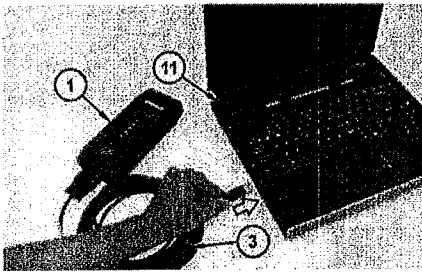   b. Connect cable (3) to USB port on PC (11) .

Illustration 20   g02147133
(1) Communications Adapter 3 (CA3)
(3) 370-4617 Cable As
(11) PC (dealer supplied).

7. Connect CA3 (1) to a data link using **457-6114** Cable Assembly (2). The 457-6114 cable assembly provides for connection to both 9-pin and 14-pin diagnostic parts on Cat machines.
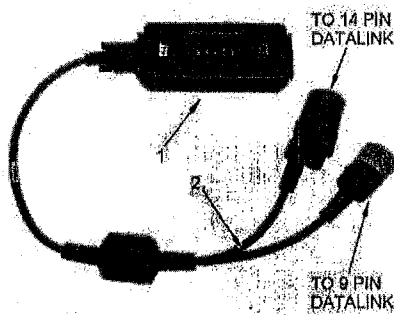

Illustration 21   g06115883
(1) CA3
(2) 457-6114 Cable As

8. "Found New Hardware Wizard" window will display, prompting the installation of new hardware for the CAT CA3 with this message:
If your hardware came with an installation CD or Floppy disk, insert the CD or Floppy disk now.

    a. Select "Install from a list or specific location (Advanced)."

    b. Click "Next."
    Note: The 478-0235 no longer has an internal power supply, and must be powered via the DataLink cable from either a machine or battery source.
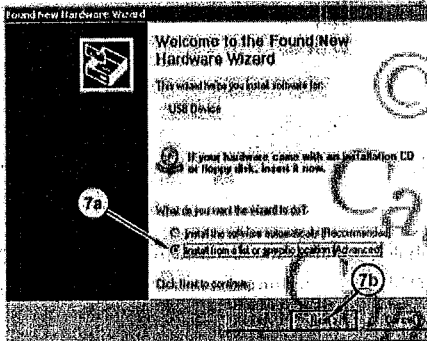

Illustration 22   g02147134

9. The second "Found New Hardware Wizard" window will display with this message:
Choose your search and installation options.

a. Select "Search for the best driver in these locations."

b. Select "Include this location in the search:"

c. Click "Browse" and select:
   "C:\Program Files\Caterpillar Inc\Comm Adapter 3\Driver"

d. Click "Next."

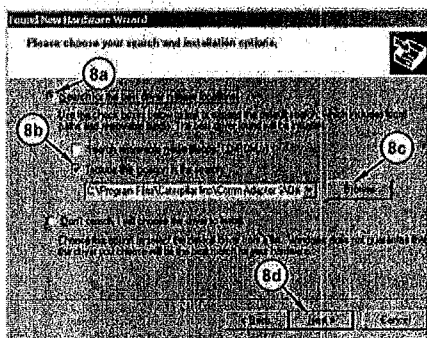Illustration 23   g02147153

10. The following message can appear on the "Hardware Installation" screen.
    The software you are installing for this hardware:

    "CAT Comm Adapter 3"

    "Has not passed Windows Logo testing to verify its compatibility with Windows XP. (Tell me why this testing is important.)"

    "Continuing your installation of this software may impair or destabilize the correct operation of your system either immediately or in the future. Microsoft strongly recommends that you stop this installation now and contact the software vendor for software that has passed Windows Logo testing."
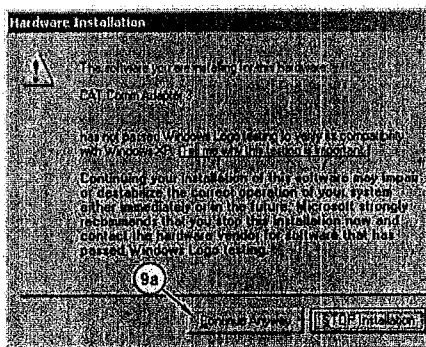
    a. Click "Continue Anyway."

Illustration 24   g02147154

11. When the software drivers are installed, the following message will appear.
    "Completing the Found New Hardware Wizard"

    The wizard has finished installing the software for:

    "CAT CA3"

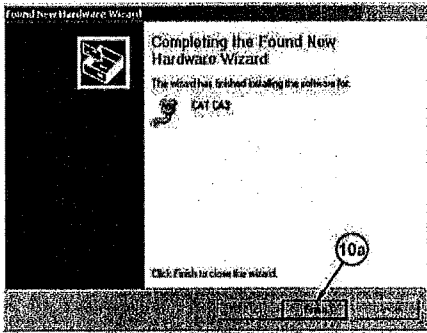   a. Click "Finish" to close the wizard.

Illustration 25   g02147155

12. To view basic information about the Communications Adapter 3, perform the following:

    a. Navigate through "All Programs" from the "Start Menu."

    b. Select "Caterpillar Comm Adapter 3" from "All Programs."

    c. Select "Comm Adapter 3 Toolkit" from the "Caterpillar Comm Adapter 3" to open the "CAT Communication Adapter 3 Toolkit." Refer to Illustration 26.
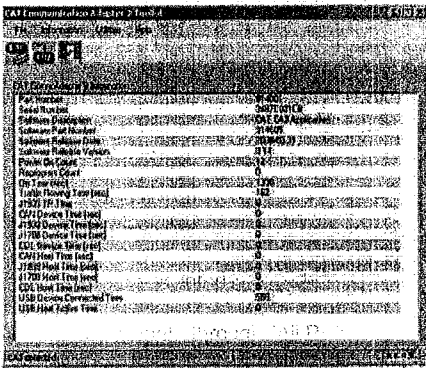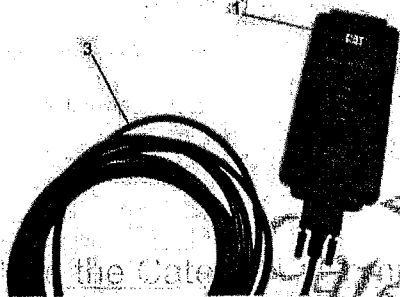

Illustration 26   g02147156

How to Use the Caterpillar Communications Adapter 3

Using the CA3 Toolkit

1. Before using the Toolkit software to upgrade firmware, connect 317-7485 Communications Adapter 3 (1) to dealer supplied PC (11) using 370-4617 Cable Assembly (3). When using the Toolkit, the CA3 does not need to be connected to a data link connection.

    a. Connect cable (3) to CA3 (1).

Illustration 27
(1) Communications Adapter 3 (CA3)
(3) 370-4617 Cable As

b. Connect cable (3) to USB port on PC (11).
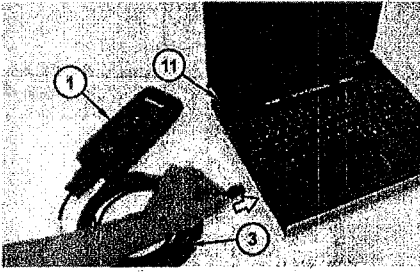

Illustration 28   g02147133
(1) Communications Adapter 3 (CA3)
(3) 370-4617 Cable As
(11) PC (dealer supplied).

2. Connect CA3 (1) to a data link using 457-6114 Cable Assembly (2). The 457-6114 cable assembly provides for connection to both 9-pin and 14-pin diagnostic parts on Cat machines.
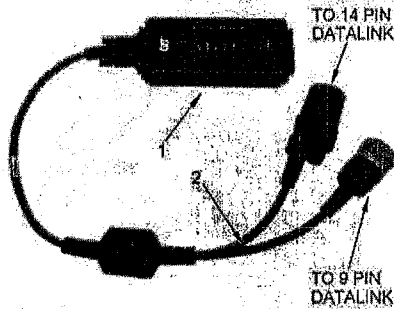

Illustration 29   g06115883

3. To open the Communication Adapter 3 Toolkit window, go to "Start Menu" >> "All Programs">>"Caterpillar Comm Adapter 3" >> "Comm Adapter 3 Toolkit." If a CA3 is connected, the Summary Screen will display a few seconds after start-up.
Note: The 478-0235 no longer has an internal power supply and must be powered via the DataLink cable from either a machine or battery source.
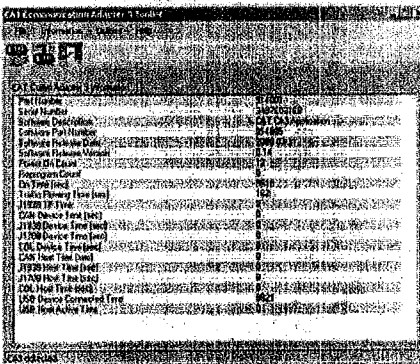

Illustration 30   g02147175

Note: If no CA3 is connected or not being correctly detected, a "No devices detected" message will display at the bottom left of the screen. Make sure the CA3/PC USB cable is properly connected.

Illustration 31   g02147213

4. Three icon buttons are displayed at the top of the screen. Click the Summary icon button at the far left to display the Summary Screen. The other two icons shown are described in Steps 5 and 8.

Illustration 32   g02147214

5. To update the firmware, select the middle Application Firmware Flash icon button which displays the options for firmware upgrades.

Illustration 33   g02147316

   a. Select a file to flash by clicking "Select File," browse to and select the file. Click "Open."

   b. Click "Begin Flash" to send the file. Files of the type ".tar" for example, "R35 9-MAY-08.tar."
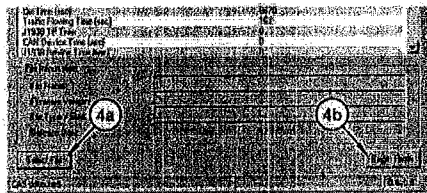

Illustration 34   g02147328

   c. Once flashing begins, the status bar indicates the progress of the file transfer from the computer to the CA3.

Illustration 35   g02147330

6. The file transfer takes approximately 2 minutes, at which point the following dialog box with the following message will display: "The file transfer was successful. Please wait while the CA3 is reprogrammed and then resets."

a. Click "OK."

Illustration 36   g02147333

7. The CA3 display flashes indicator lights (1A) in sequence while the new firmware is installed. When the installation is complete, the lights stop flashing. The entire transfer and installation process takes less than 4 minutes.
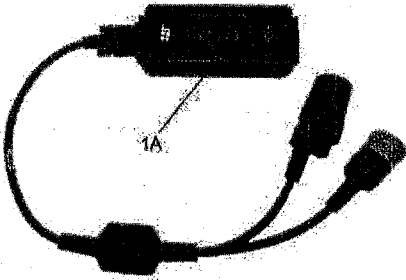

Illustration 37   g06117675
(1A) CA3 Display Indicator Lights.

8. Click the Exit icon button on the right to exit the Toolkit.

Illustration 38   g02147373

Service Parts Section

538-5051 CA3 Group

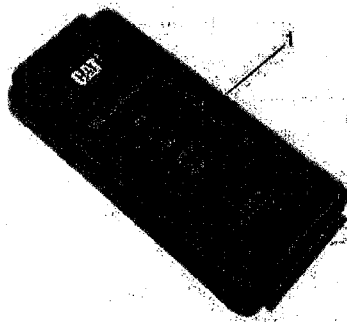| 538-5051 Communications Adapter 3 (CA3) Group			
Item	Part Number	Description	QTY
1	478-0235	Communications Adapter 3 (CA3)	1
2	457-6114	CA3/data link Cable Assembly	1
3	370-4617	CA3/PC Cable Assembly	1
4	6V-7145	Case	1
4a	317-7513	Foam Inserts	1
-	NETG5057	Media CD	1
-	NEHS1032	Tool Operating Manual	1

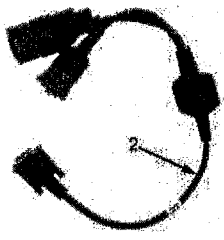Table 3

Illustration 39   g06117705
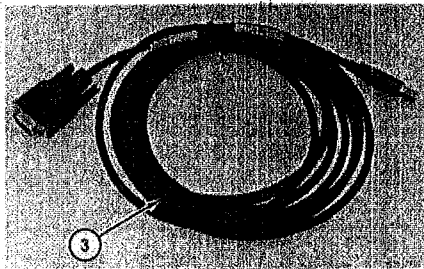

Illustration 40   g06010330
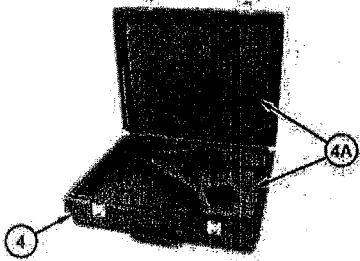

Illustration 41   g02146594

Illustration 42   g02146595

Note: At the end of the operational life of the tool, dispose of the components. Recycle electrical equipment according to all Federal, state, and local guidelines.

Notes

Table 4

For information on service tools or shop supplies, contact Cat Dealer Service Tools at:

Dealer Service Tools
501 S. W. Jefferson
Peoria, IL U.S.A. 61630-2125

USA: 800-542-8665, Option 1

International: 1-309-578-7372

Global Regulatory Information

Date of Manufacture

The Date of Manufacture is encoded in the product serial number. The first 4 digits are encoded as follows; DDDY, where DDD is the day of the year and Y is the ending year of manufacture.

Name of Manufacture

Caterpillar Inc. (100 NE Adams St., Peoria, IL 61629, USA)

Country of Origin

Canada

Restrictions of Use

This technical device has no restrictions on the use (or limited use) in residential, commercial, or industrial areas.
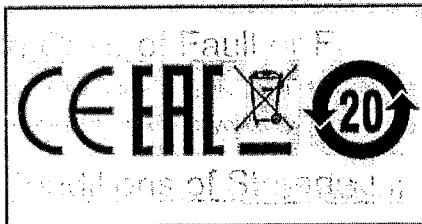
In Case of Fault or Failure

Check the reliability of the electrical connections, integrity of the electrical cables, and the correct operation of the software. If the issue is not resolved, then contact your local dealer to arrange for service.

Conditions of Storage and Transportation

The product is packaged in consumer packaging by the manufacturer. The product should be stored in the packaging intended for its storage under usual climatic conditions. All warnings on device and accompanying literature must be followed. Do not expose device to excessive bumps or shocks during use or transportation. There are no restrictions to transport by land or air is in sealed compartments.

Encryption

This device does not encrypt, decrypt, or use any encrypted data.

Certifications and Declarations

Illustration 43   g06117750