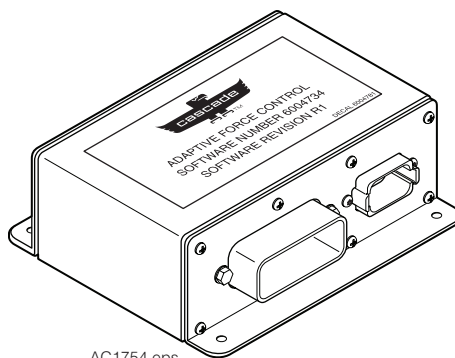


U ***SER MANUAL***



***For Controllers
6035666 & 6073993***



AC1754.eps

Manual Number 6075865-R4

cascade[®]
corporation

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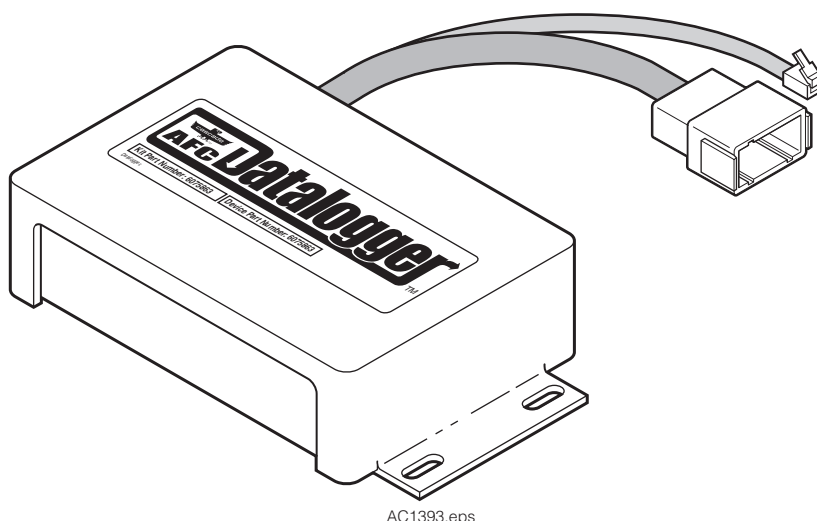
1.1 Introduction

This manual is for the Cascade AFC Datalogger. Contents include Installation, Using AFC Datalogger Hardware, Using AFC Datalogger Software, Troubleshooting and Parts.

When the AFC Clamp Ready light is on and the clamp opens, data is collected and logged by the AFC Datalogger.

IMPORTANT: Proper operation must be verified after installation and setup by recording and reporting test clamp force data.

NOTE: If SD (Secure Digital) Card is replaced, limit size to 1 gigabyte. Make sure card is SD media and **not** SD HD media.



1.2 Special Definitions

The statements shown appear throughout this Manual where special emphasis is required. Read all WARNINGS and CAUTIONS before proceeding with any work. Statements labeled IMPORTANT and NOTE are provided as additional information of special significance or to make your job easier.



WARNING - A statement preceded by WARNING is information that should be acted upon to prevent **bodily injury**. A **WARNING** is always inside a ruled box.

CAUTION - A statement preceded by CAUTION is information that should be acted upon to prevent machine damage.

IMPORTANT - A statement preceded by IMPORTANT is information that possesses special significance.

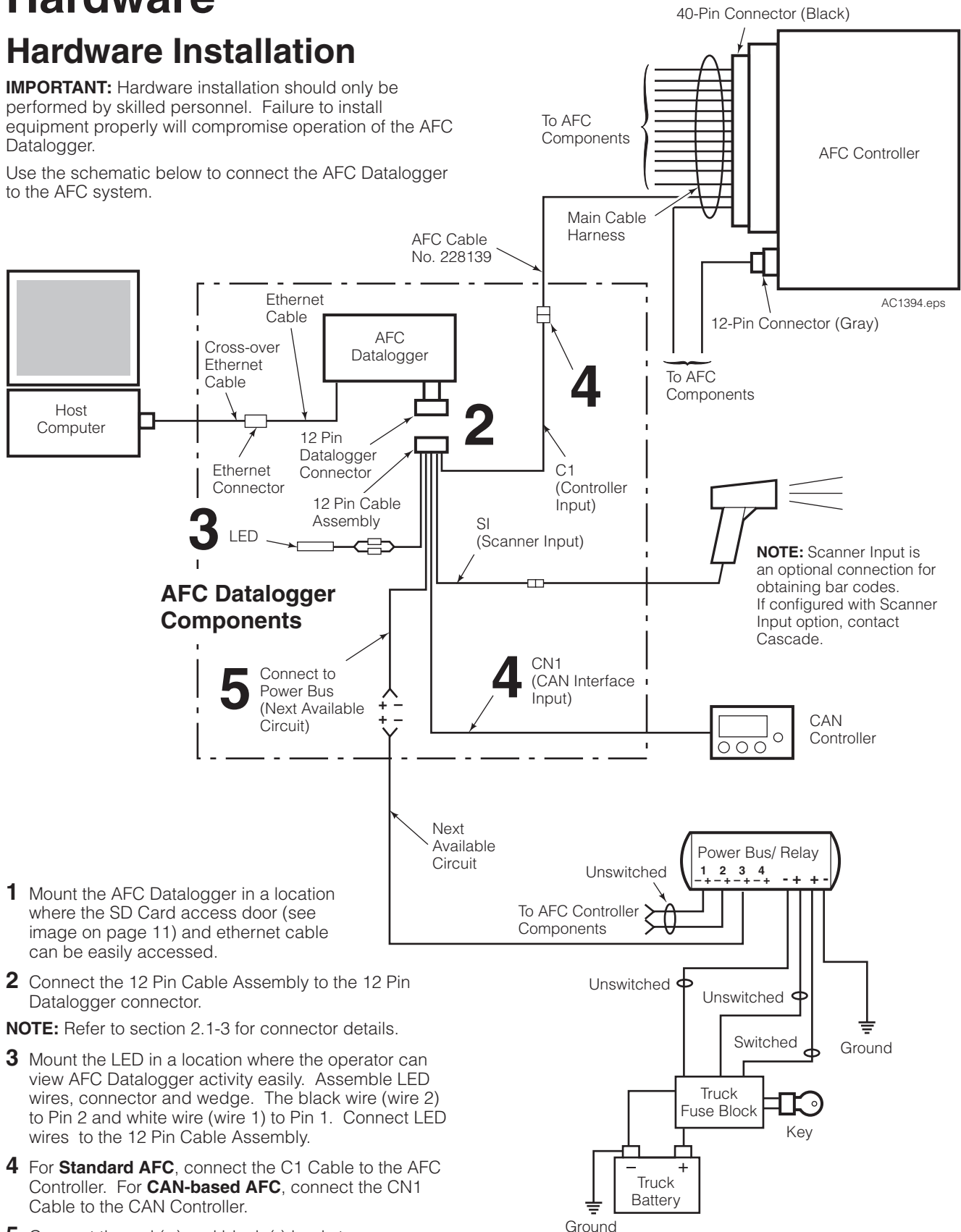
NOTE - A statement preceded by NOTE is information that is handy to know and may make your job easier.

2.1 Hardware

2.1-1 Hardware Installation

IMPORTANT: Hardware installation should only be performed by skilled personnel. Failure to install equipment properly will compromise operation of the AFC Datalogger.

Use the schematic below to connect the AFC Datalogger to the AFC system.

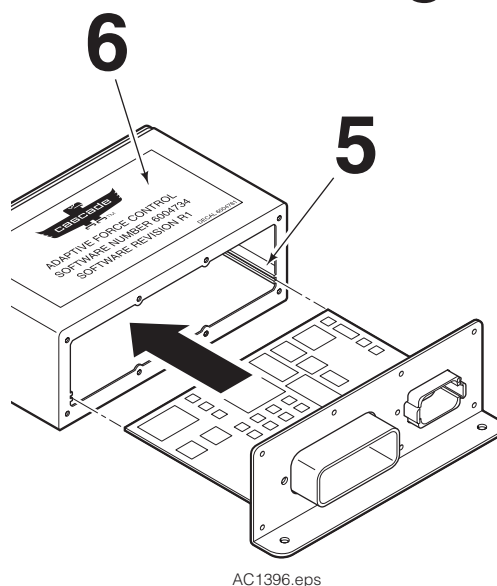
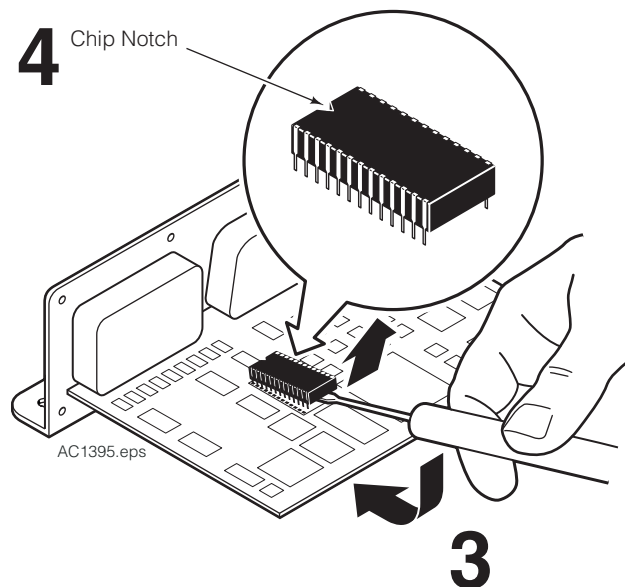


- 1 Mount the AFC Datalogger in a location where the SD Card access door (see image on page 11) and ethernet cable can be easily accessed.
 - 2 Connect the 12 Pin Cable Assembly to the 12 Pin Datalogger connector.
- NOTE:** Refer to section 2.1-3 for connector details.
- 3 Mount the LED in a location where the operator can view AFC Datalogger activity easily. Assemble LED wires, connector and wedge. The black wire (wire 2) to Pin 2 and white wire (wire 1) to Pin 1. Connect LED wires to the 12 Pin Cable Assembly.
 - 4 For **Standard AFC**, connect the C1 Cable to the AFC Controller. For **CAN-based AFC**, connect the CN1 Cable to the CAN Controller.
 - 5 Connect the red (+) and black (-) leads to an open circuit on the Power Bus/ Relay. If necessary, make a cable for more length.

2.1-2 AFC Retrofit Installation

IMPORTANT: Chip installation should only be performed by skilled personnel. Failure to install properly will compromise operation of the AFC controller.

- 1 Disconnect all connections from the AFC Controller.
 - 2 Remove the eight capscrews from the controller box, connector side. Remove the circuit board.
 - 3 Use a flat blade screw driver to gently pry chip free.
 - 4 Replace the chip with updated chip. Carefully align all pins and firmly press the chip into sockets.
- CAUTION:** Align the notch on the chip with the notch on the circuit board.
- 5 Insert the circuit board in the controller box u-shaped guides. Install the eight capscrews.
 - 6 Install new chip sticker onto the controller box for proper identification.
 - 7 Install the AFC Datalogger as described in Section 2.1-1.

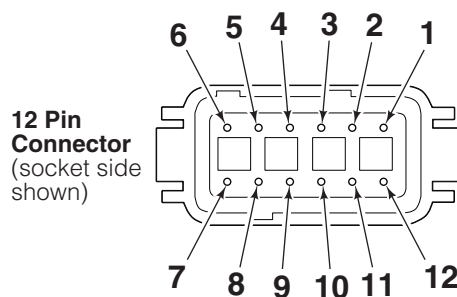
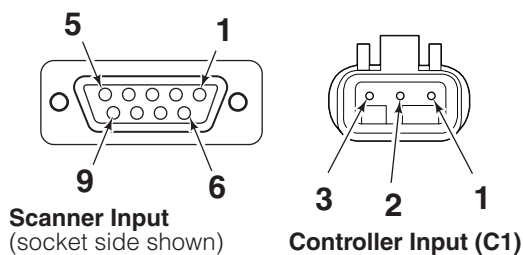


2.1-3 Wiring Connections

Refer to the following diagram for proper connections.

12 Pin Cable Assembly				
Connector Wires	12 Pin Connector		Input	Input Pin No.
	Pin No.	Pin Name		
Red ■	1	+ Vin	Power Bus	+
Black ■	2	- Vin		-
Pink	3	Tx1 - Out	Controller Input (C1) ●	2
Grey	4	Rx1 - In		1
Dark Brown	5	Com1		3
Orange	6	Tx2 - Out	Scanner Input (S1) ▲	3
White	7	Rx2 - In		2
Light Brown	8	Com2		5
Green	9	CanH	CAN Interface (CN1) ◆	Black
Violet	10	CanL		White
Yellow ❖	11	+ LED	LED	Anode
Blue ❖	12	- LED		Cathode

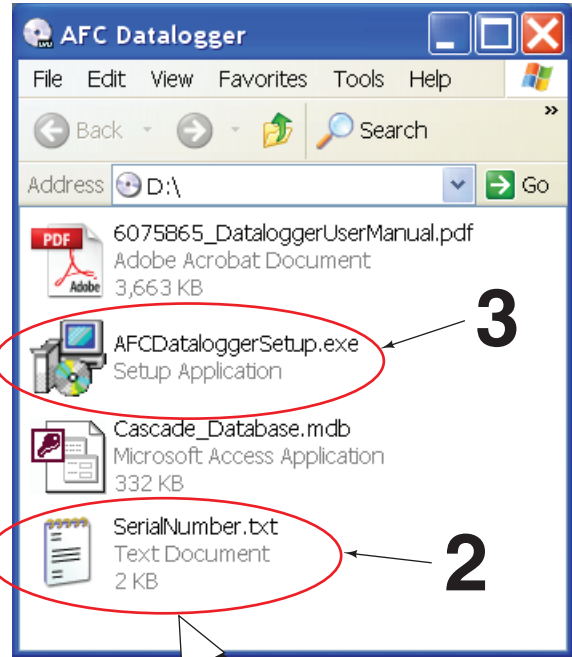
- Connect to a Nominal +12 to +24 VDC observing proper polarity.
- ▲ Connect to a 9600 baud serial scanner.
- Connect to AFC Controller.
- ◆ Connect to CAN-based Cascade AFC Controller.
- ❖ Panel mounted 12V LED.



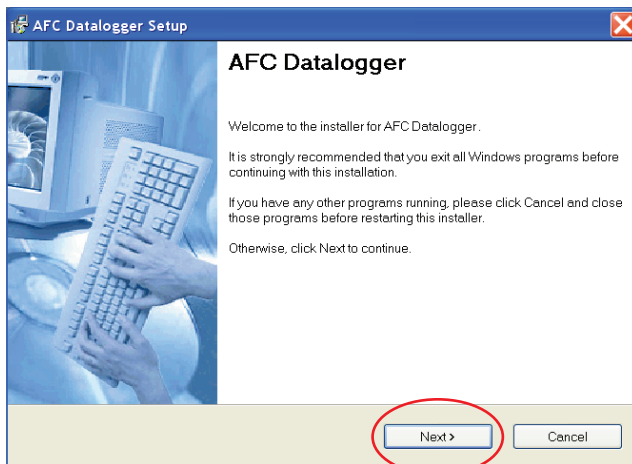
2.2 Software

2.2-1 Software Installation

- 1 Insert Cascade AFC Datalogger CD into the host computer's CD-ROM. From the Start menu, go to 'My Computer' and double left click on the CD-ROM icon. AFC Datalogger CD content screen will appear.
- 2 Open the 'SerialNumber.txt' text file. Highlight the serial number. Copy the serial number by going to the 'Edit' menu and selecting 'Copy'.
- 3 In the AFC Datalogger CD content screen, open 'AFCDataloggerSetup.exe' executable file. A setup screen will appear. Left click the 'Next' button to continue with the installation.
- 4 Read the license agreement and select the radio button 'I agree to the terms of this license agreement'. Left click the 'Next' button to continue.

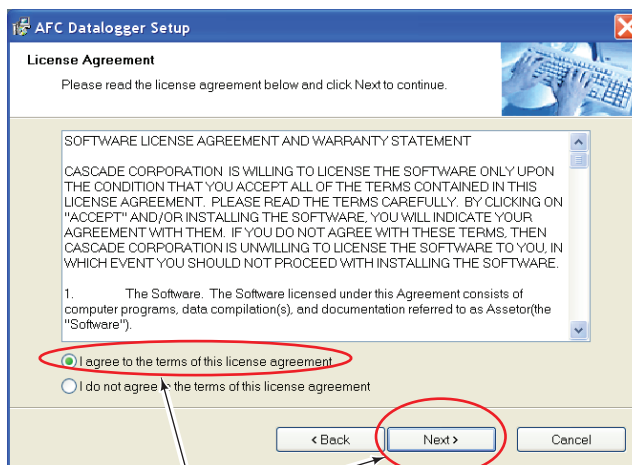


AC1397.eps



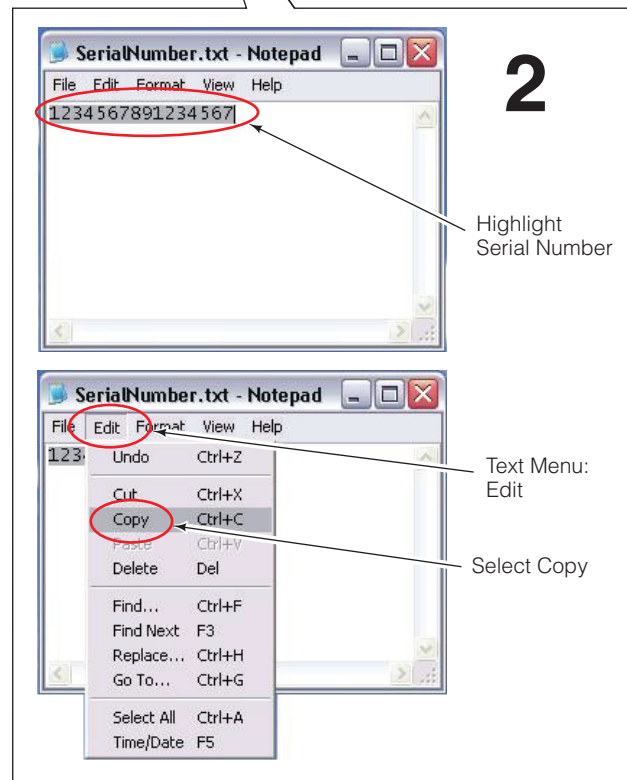
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3



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4



2

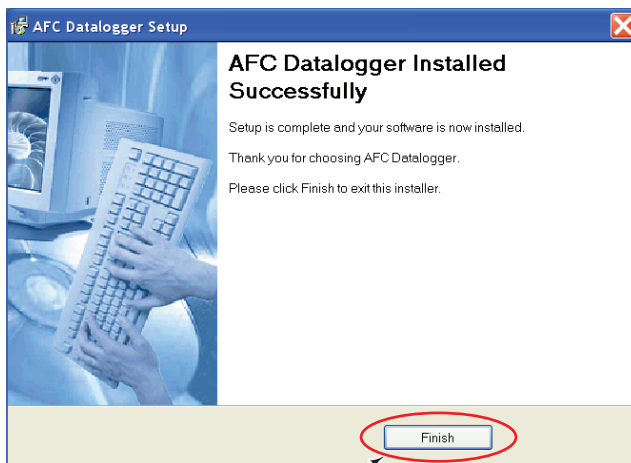
Highlight
Serial Number

Text Menu:
Edit

Select Copy

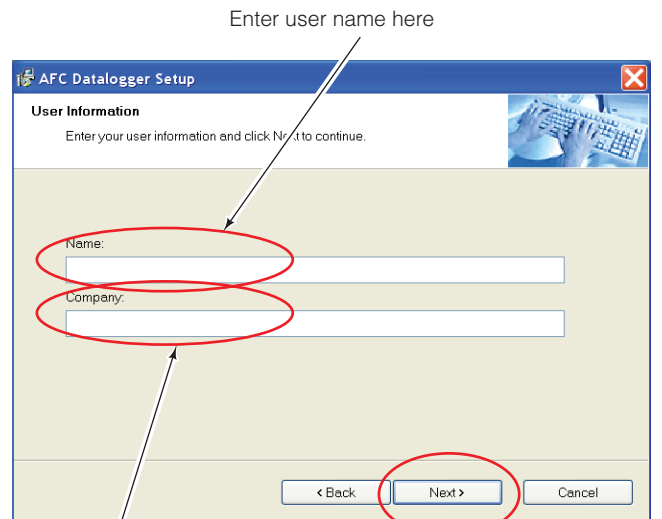
INSTALLATION

- 5 Enter the Name and Company into the appropriate text boxes. Left click the 'Next' button.
- 6 Left click the Serial Number text box. Paste the serial number by holding the control (CTRL) key and pressing the 'V' button (or right click in the text box and select 'paste'). Left click the 'Next' button.
- 7 The setup screen will provide information on where the software will install. Left click the 'Next' to proceed with the installation.
- 8 Another installer, Java 2 Platform, will appear.
 - If the host computer **does not** have Java 2 installed, a license agreement will appear. Accept the license agreement and left click the 'Next' button.
 - If the host computer has Java 2 installed, an introduction screen will appear. Left click on the 'Next' button.
- 9 Java 2 will prompt for a type of installation. Choose 'Typical' for a new installation or 'Modify' to update.
- 10 Left click the 'Next' button and wait for the software installs. When a screen appears asking to restart the host computer, left click the 'No' button.
- 11 The AFC Datalogger Setup screen will appear. Left click the 'Finish' button.
- 12 A desktop icon should have been created automatically. If the icon does not appear, create a desktop shortcut with the 'AFC Datalogger.cmd' file found in the 'AFC Datalogger' program folder.
- 13 Restart the host computer before opening the AFC Datalogger software.



11

AC1403.eps

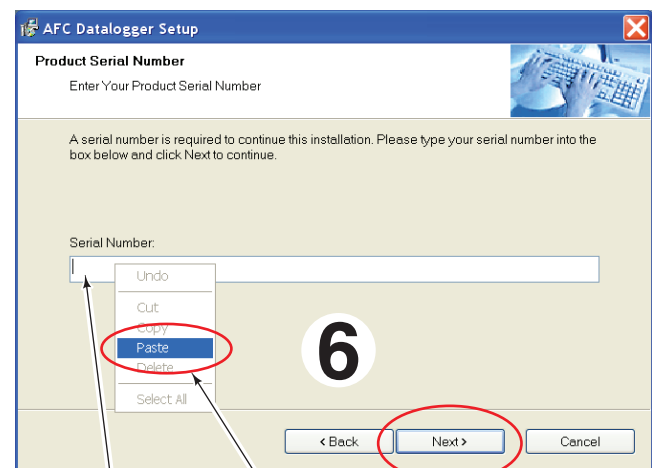


Enter company name here

Enter user name here

5

AC1400.eps

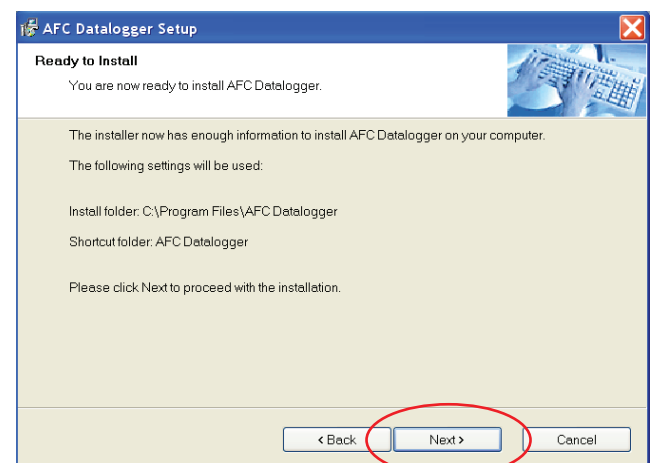


Left click in text box to paste serial number

Right click and select paste

6

AC1401.eps



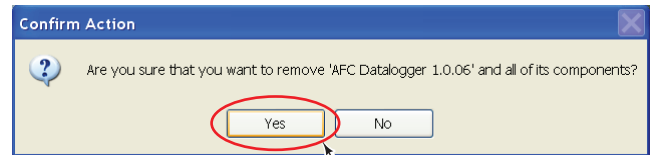
7

AC1402.eps

2.2-2 Uninstalling Software

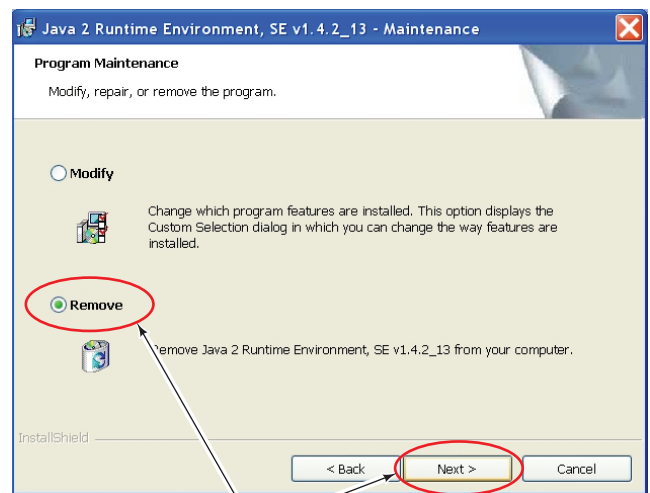
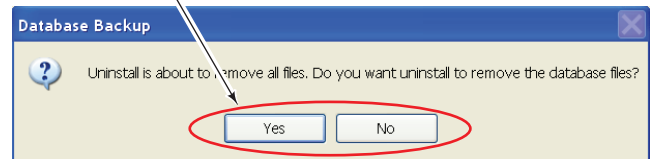
IMPORTANT: Uninstalling AFC Datalogger software will result in deleting the database. Refer to section 4.6 to create a backup.

- 1 From the window's 'Start' menu, select 'Programs' → 'AFC Datalogger' → 'Uninstall AFC Datalogger'.
- 2 Left click the 'Yes' button to confirm uninstalling AFC Datalogger software and all of its components.
- 3 Another prompt will appear asking to keep or remove database files. Left click one of the following buttons:
 - 'Yes' button to **remove** the database file.
 - 'No' button to **keep** the database file.
- 4 Java 2 maintenance screen will appear, left click one of the following buttons:
 - 'Next' button to continue with uninstalling Java 2
 - "Cancel" button to keep Java 2 on the host computer. Another prompt will appear asking to confirm cancel. Left click the 'Yes' button. The Java 2 maintenance screen will appear. Left click the 'Finish' button. Go to Step 9.
- 5 Select the 'Remove' radio button and left click on the 'Next' button.
- 6 When the confirmation screen appears, left click on the 'Remove' button.
- 7 The software will uninstall. A screen will appear indicating software is uninstalled. Left click the 'Finish' button.
- 8 The Java 2 software will ask to restart the computer. Left click on the 'No' button.
- 9 AFC Datalogger Software will automatically uninstall. When the message 'Uninstall complete' appears above the progress bar, left click the 'Close' button.
- 10 Restart the computer.



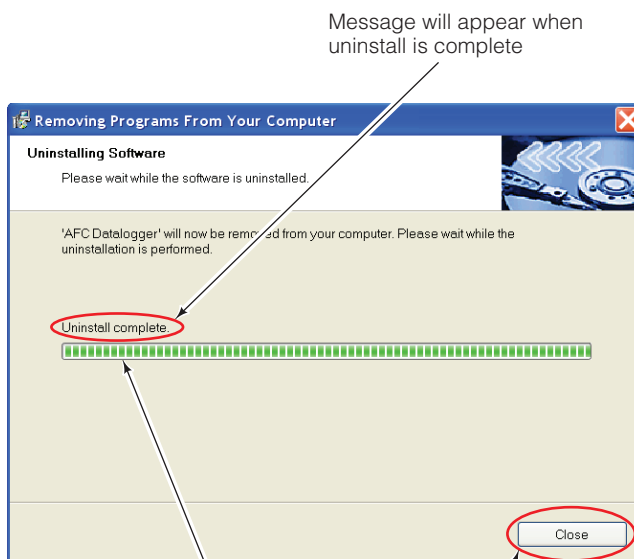
3 2

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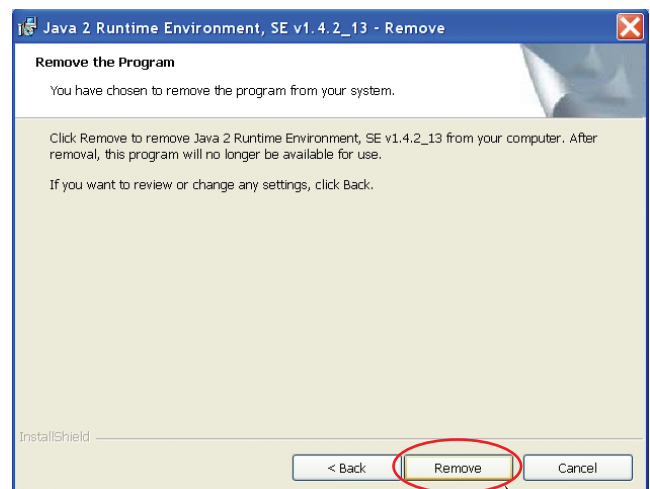
5



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Progress Bar

9



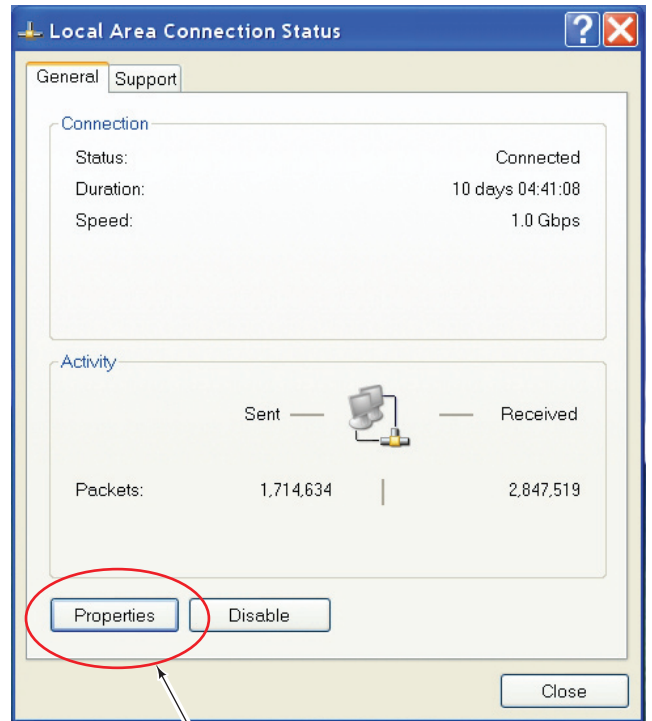
AC1406.eps

6

2.2-3 Network Settings

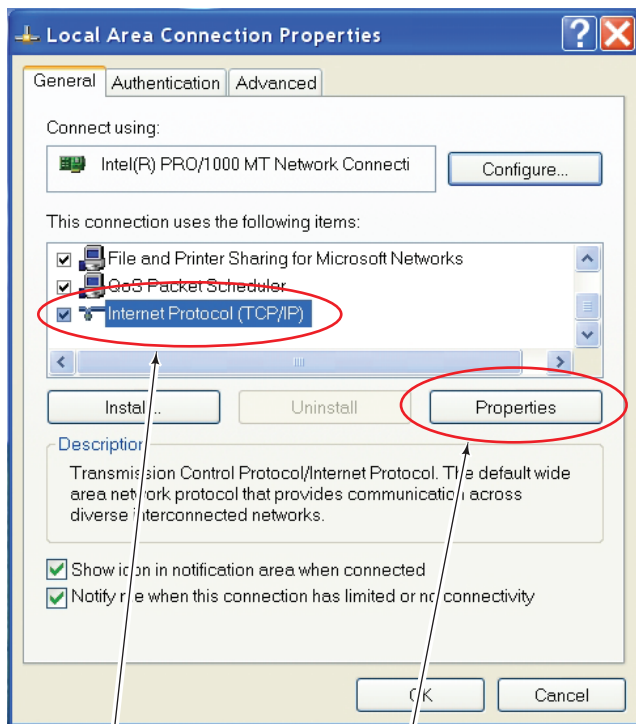
This setup is important for downloading data through an ethernet connection.

- 1 From the window's 'Start' menu, select 'Settings' → 'Network Connection' → 'Local Area Connection'.
- 2 Left click the 'Properties' button.
- 3 In the list box, select 'Internet Protocol (TCP/IP)' by left clicking on the text **once**.
- 4 Left click the 'Properties' button.
- 5 Select the radio button 'Use the following IP Address' and enter in the following information:
IP Address: 192.168.1.101
Subnet Mask: 225.225.225.0
NOTE: The Subnet Mask may appear automatically.
- 6 Left click the 'OK' button on each screen pertaining to the network settings.



AC1408.eps

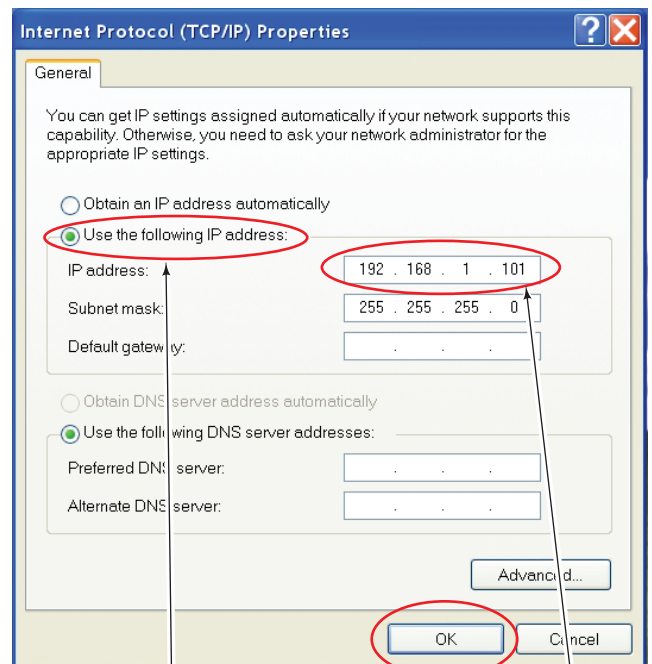
2



AC1409.eps

3 Left click once

4



AC1410.eps

5

6

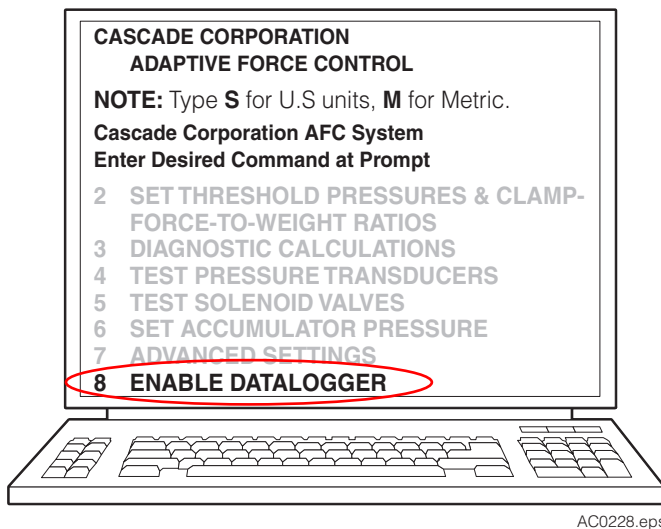
5

IP address

2.2-4 AFC Controller Setup- Enable AFC Datalogger Function

The AFC controller needs to be configured to collect clamp force data. Open the *Hyperterminal* file named 'AFC' (See AFC Manual). The screen will show a blinking cursor. The words 'arm movement' may appear on screen. Press **ENTER** to bring up AFC main menu. Press **ENTER** again and follow the on-screen prompts.

NOTE: Refer to the AFC manual for complete instructions on configuring AFC settings.



8.1 ENABLE DATALOGGER. ENTER Y OR N PRESS **ENTER**

Type 'Y'

8.3 ENTER THE CLAMP FORCE CAPTURE TIME (250 to 6000 milliseconds, or type D for default) PRESS **ENTER**

Cascade recommends '2500'

8.2 ENTER TRUCK ID # (1-9999, or type D for default) PRESS **ENTER**

Type in a unique number that is different for each truck. This ID number will show up in the AFC Datalogger software.

8.4 ENTER THE HOIST PRESSURE TRIGGER FACTOR (1 - 50, or type D for default) PRESS **ENTER**

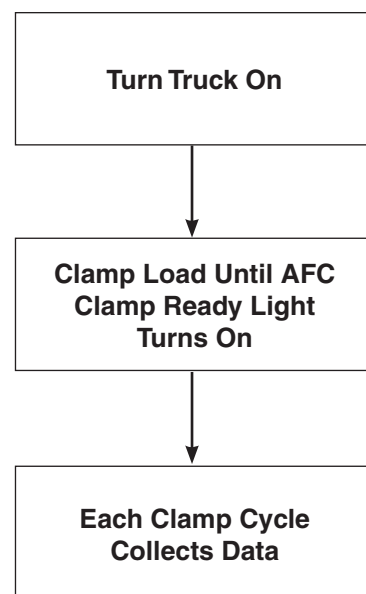
Value is always **35** (default) unless changed by Cascade.

3.1 Collecting Clamp Force Data

IMPORTANT: If a load is not lifted off the ground, the clamp force and load weight field will read zero.

- 1** Turn truck on. Within ten seconds, the AFC Datalogger LED should change from constantly lit to two rapid flashes.
- 2** Verify proper function by clamping a load or closing arms until the Clamp Ready (AFC) light turns on. Open arm(s). The LED should flash three times and then stay off until the next clamp cycle.
- 3** Operate the clamp normally. Each time the AFC Controller Clamp Ready light goes from lit to off, the AFC Datalogger LED will flash three times to indicate data has been collected.

NOTE: The weight reported by the AFC Datalogger is an **approximation** only and does not represent the actual legal load weight.



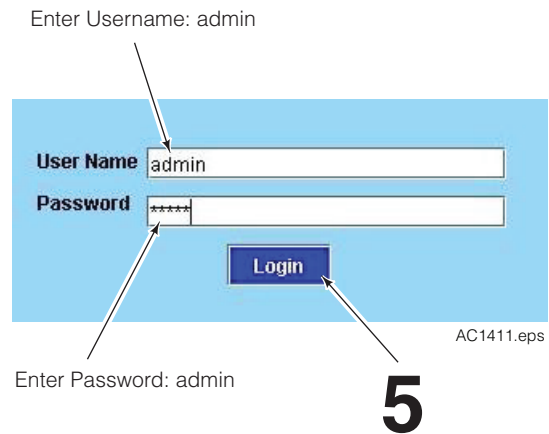
3.2 AFC Datalogger LED

The AFC Datalogger has a LED light that indicates status to the operator. Use the following chart to determine if the AFC Datalogger controller is functioning properly.

LED	INDICATES	RESULT
Constantly Lit	Occurs when the truck is initially started. At any other point, indicates the SD Card is not mounted.	LED should go out in approximately 10 seconds.
Not Lit	Normal operation, in use.	Not applicable.
2 Rapid Flashes	Ready and waiting to receive first data.	Flashing stops once data is received.
3 Rapid Flashes	Data is being received.	Flashing stops when no data is transmitted.
4 Rapid Flashes	No Communication (Previous 5 minutes).	Sending new data will clear 4 rapid flashes. If 4 rapid flashes continues after normal clamping cycle, see Troubleshooting Section (5.1-2).

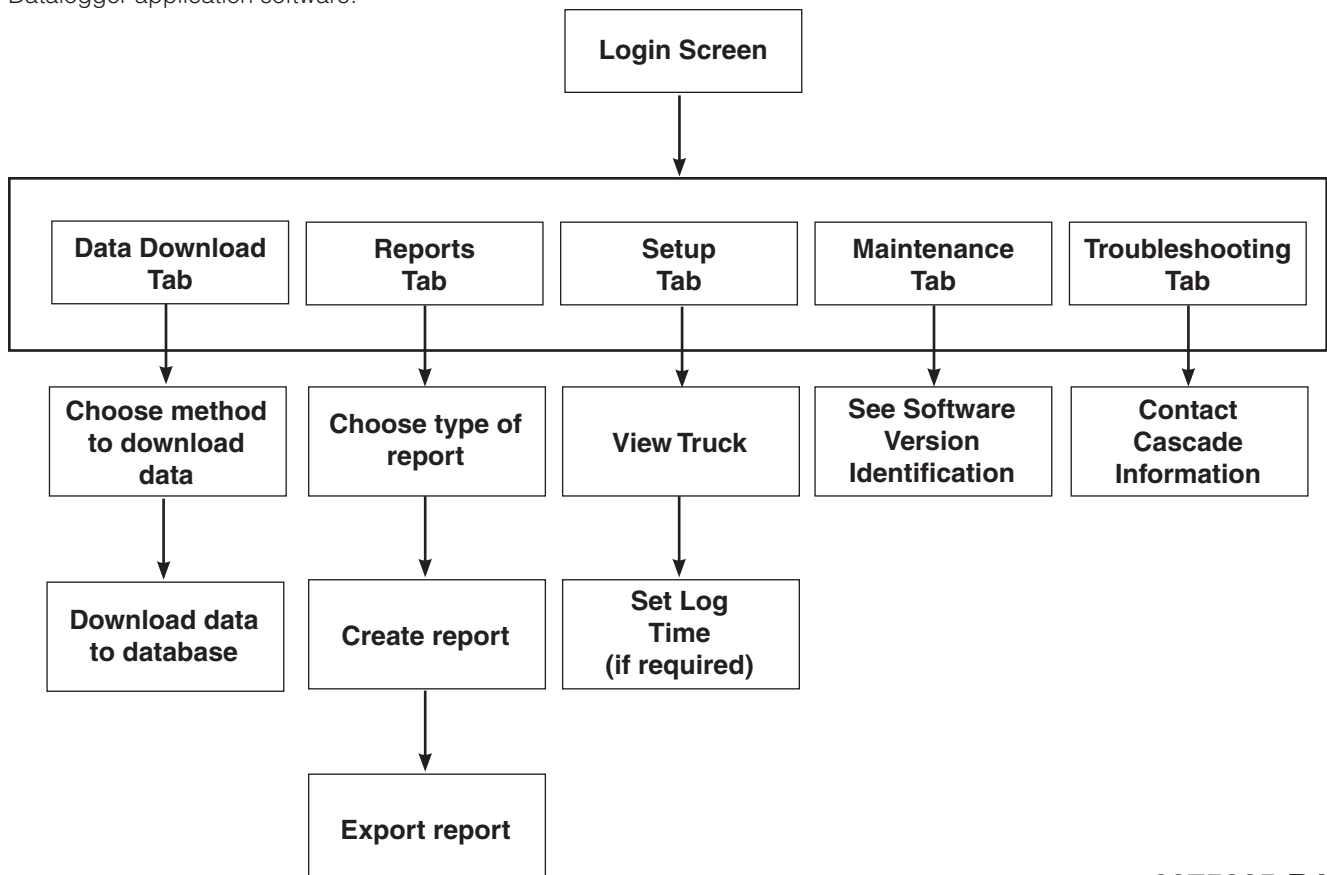
4.1 Opening AFC Datalogger Software

- 1 From the window's 'Start' menu, select 'Program Files' → 'AFC Datalogger' → 'AFC Datalogger' or select the 'AFC Datalogger' shortcut on the desktop.
- 2 A command prompt will appear. Wait for a login screen to appear.
- 3 Enter username: admin.
- 4 Enter password: admin.
- 5 Left click on the 'Login' button.
- 6 Left click on a tab to perform a task. The 'Download' tab will automatically open upon login.



4.2 Navigating Through The Software

The following chart shows the navigation of the Datalogger application software.



4.3 Downloading Data

Retrieving data from the AFC Datalogger can be done **two ways**:

- A** Download data directly from the SD Card by using a card reader,
- OR**
- B** Download data with an ethernet cable that connects the AFC Datalogger to the host computer.

The SD Card has a LED light behind the access cover to indicate its current status. Use the following chart to determine if the SD Card is functioning properly.

LED	Indicates	Action
Constantly Lit	SD Card is mounted	To Unmount, press Mount/Unmount button
Not Lit	SD Card is unmounted	OK to insert SD Card into slot
Flashing	SD Card error	Replace SD Card

IMPORTANT: Downloading data from the card reader is quicker than from the ethernet cable.

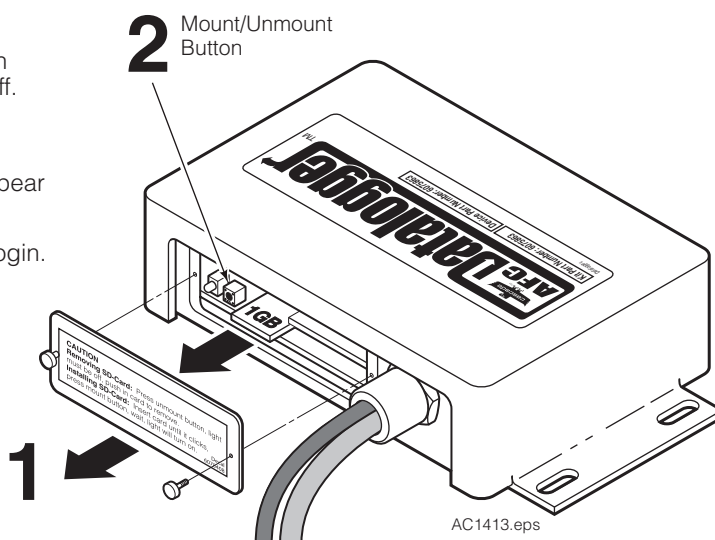
4.3-1 Card Reader Method

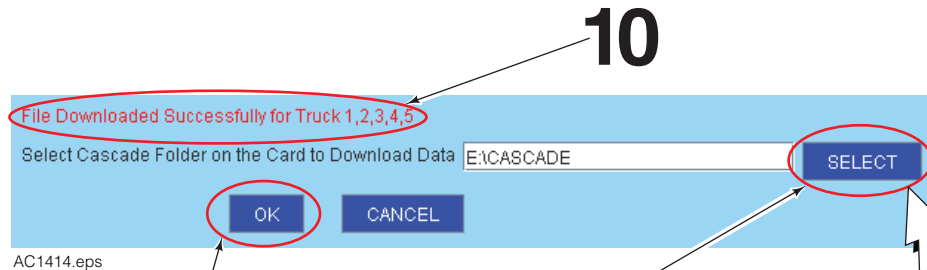
- 1** Loosen thumbscrews and remove access cover from the AFC Datalogger.



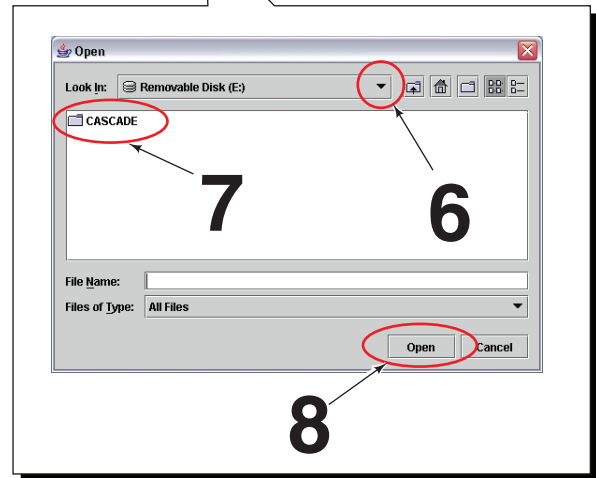
WARNING: Removing the SD Card before the LED is 'off' can cause data to corrupt. Press the Mount/Unmount button first and wait for the LED light to turn off or turn truck off.

- 2** Turn the truck off or push the Mount/Unmount button next to the SD Card. Wait for the LED light to turn off. Remove the SD Card from the AFC Datalogger.
- 3** Insert the SD Card into a card reader. Plug the card reader into the host computer. The SD Card will appear in 'My Computer' as a separate disk drive.
- 4** Run the AFC Datalogger application software and login. See Section 4.1 for details.





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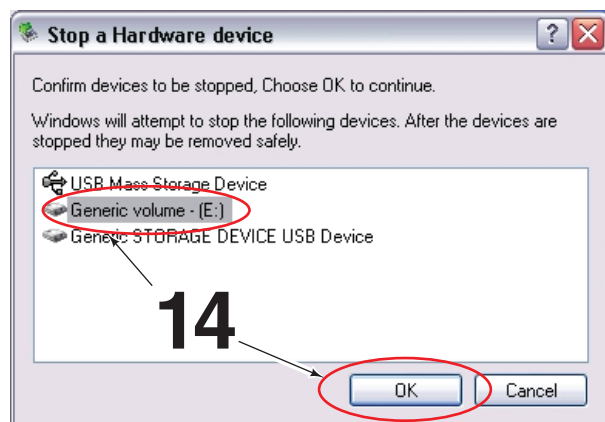
- 5 In the 'Download' tab, left click on the 'Select' button.
- 6 If needed, use the file selection dialog to change the location to access SD Card. The SD Card may be named 'Removable Disk' with an assigned drive letter. For example 'Removable Disk (E:)'.
 - 7 Left click **once** on the 'Cascade' folder
 - 8 Left click on the 'Open' button.
 - 9 Left click the 'OK' button.
- 10 Once the display message, 'File Downloaded Successfully for Trucks...', the file(s) are deleted from the SD Card.

NOTE: Clicking the 'Cancel' button will clear the selection from the text box.

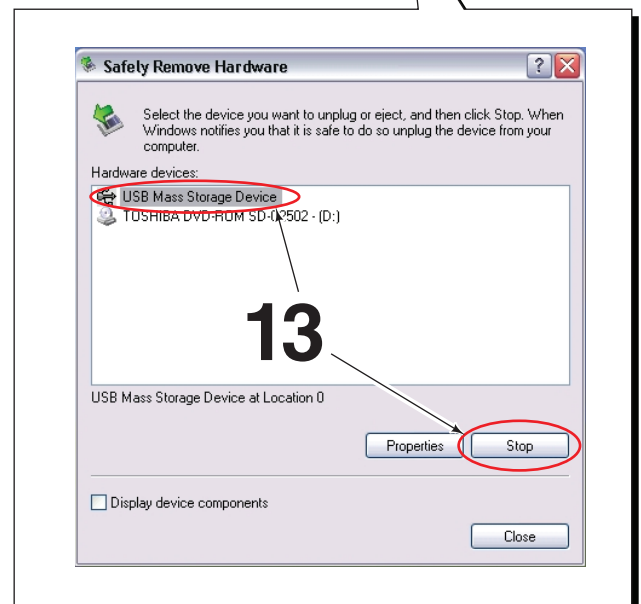
- 11 In the System Tray (typically located in the lower right hand corner of the window's desktop screen), left click on the Safely Remove Hardware icon.
- 12 Left click on 'Safely Remove Hardware'.
- 13 Once a new screen appears, choose the drive (example USB Mass Storage Device) and left click the 'Stop' button.
- 14 Left click on 'Generic Volume - (E:)' ('E' may be different) and left click on the 'OK' button.
- 15 Remove the SD Card from card reader and return it to the AFC Datalogger card slot. Install the access cover.
- 16 Turn the truck on. If the truck is already on, press the Mount/Unmount button once and wait (about 5 sec) for LED to turn on.



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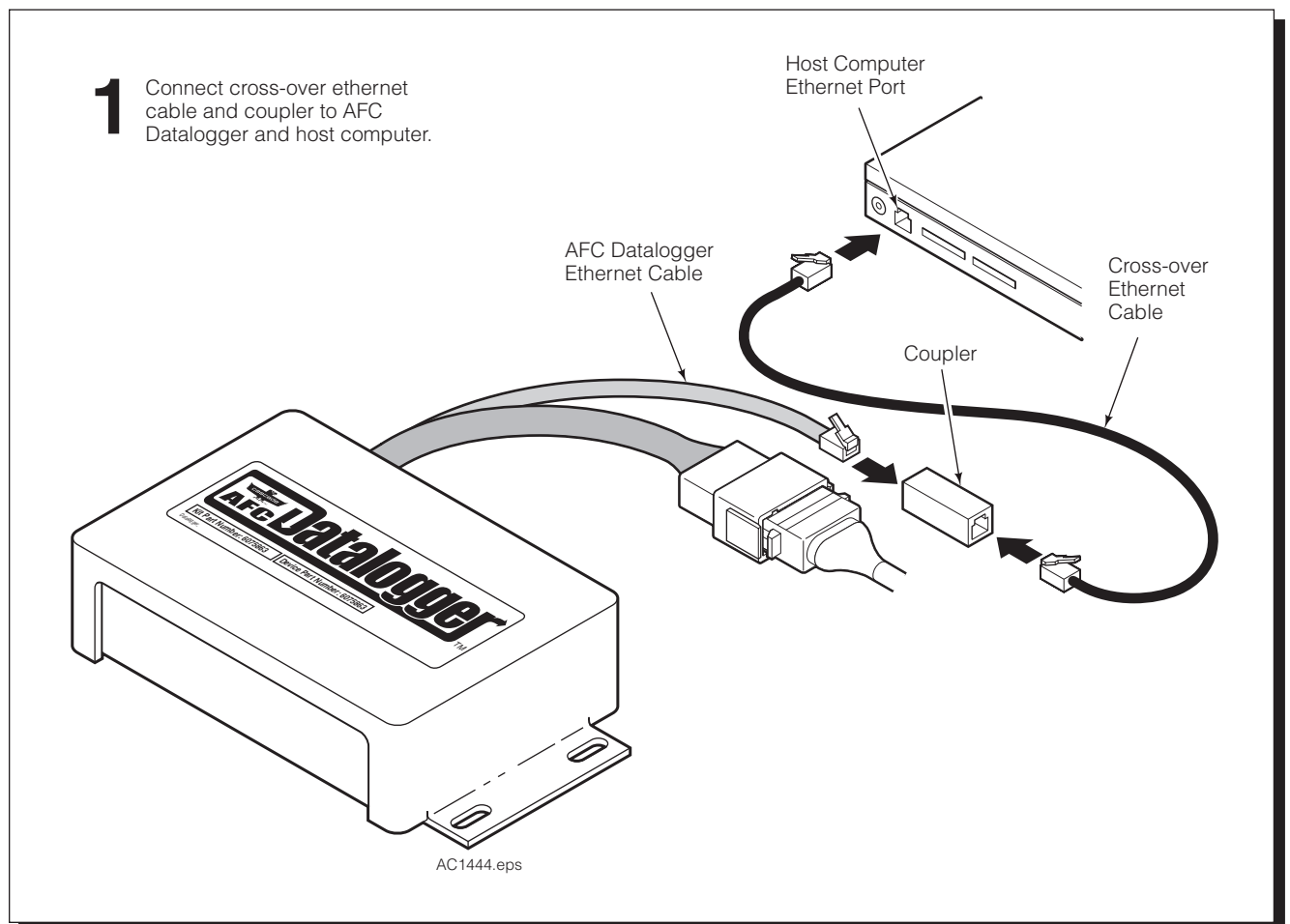
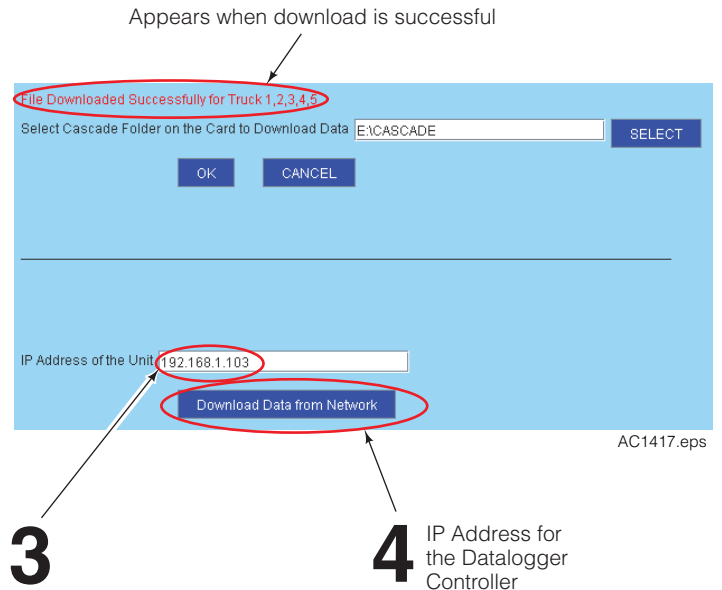
AC1416.eps



4.3-2 Ethernet Method

The network connection must be setup on the host computer to download data (see Section 2.2-4 to setup).

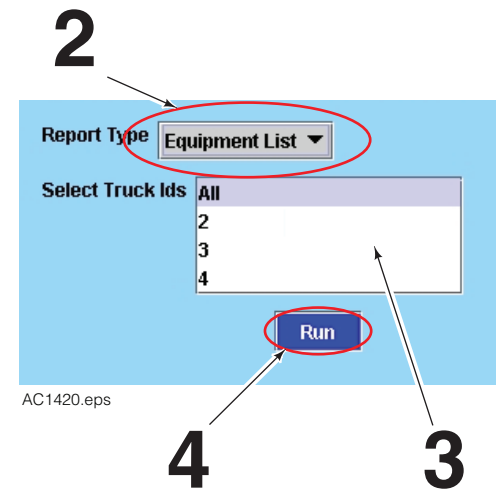
- 1 Connect the provided coupler and cross-over ethernet cable to the AFC Datalogger and host computer. A longer cross-over ethernet cable may be used, if needed.
- 2 Run AFC Datalogger software and login as described in the section 4.1.
- 3 Left click on the 'Download' tab.
- 4 In the 'IP Address of the Unit' text box, verify that the IP address is 192.168.1.103
- 5 Click 'Download Data from Network' button. Various messages will appear to indicate the download progress. When the download is complete, the file(s) on the SD Card will be deleted.



4.4-2 Equipment List

Equipment Lists are created to show trucks with their unit IDs and additional unit information. To add additional information about the unit, refer to Section 4.5-1.

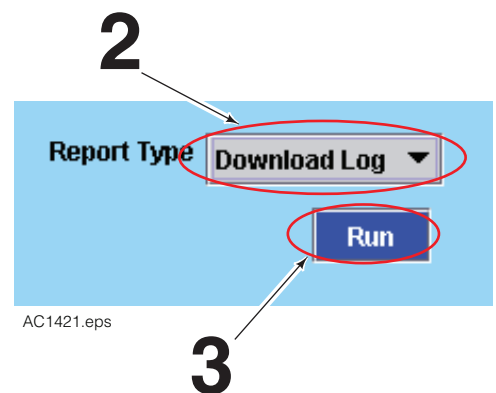
- 1 Open the AFC Datalogger software as described in section 4.1.
- 2 In the 'Download' tab, choose 'Equipment List' in the drop down box.
- 3 Select the trucks to generate the report on. 'All' is selected by default.
NOTE: To select more than one detail, hold the control (CTRL) key and click on the details desired.
- 4 Click 'Run' to create the report.
- 5 Refer to Section 4.4-4 to export reports to Excel. Left click the 'Back' button to go back to the main reports screen to create another report.



4.4-3 Download Log

Download Logs are created to list times and dates of when data from a truck was downloaded.

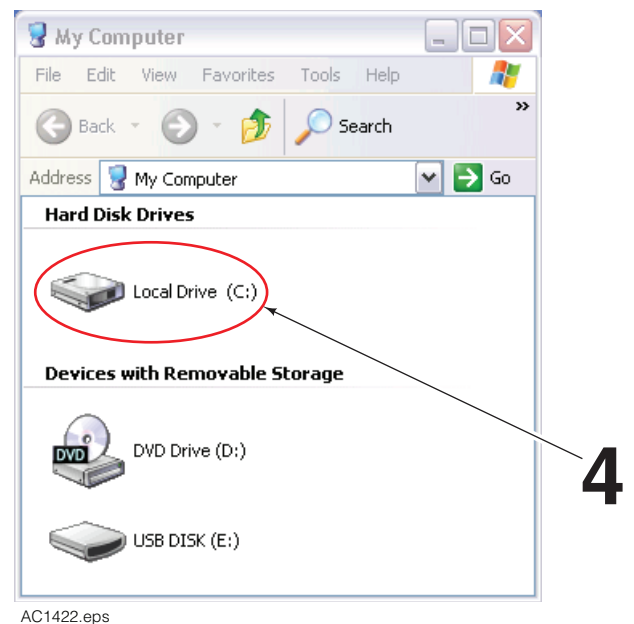
- 1 Open the AFC Datalogger Software as described in section 4.1.
- 2 In the 'Download' tab, choose "Download Log" in the drop down box.
- 3 Click 'Run' to create the report.
- 4 Refer to Section 4.4-4 to export reports to Excel. Left click the 'Back' button to go back to the main reports screen to create another report.



4.4-4 Export Reports to Excel

IMPORTANT: Reports that are exported will overwrite the previous report. Always save a report in a new directory or rename.

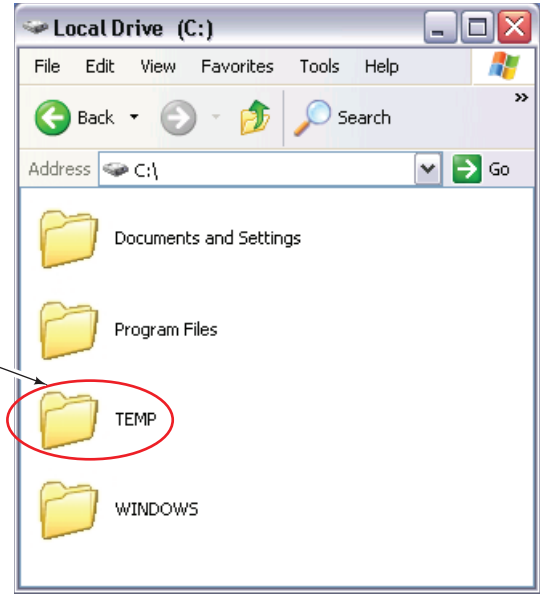
- 1 Create a report as described in the Sections 4.4-1, 4.4-2 or 4.4-3.
- 2 Click on 'Export to Excel' button.
 - If an Excel file appears on the screen, go to Step 7 to save the file to a new location or new name.
 - If an Excel file **does not** appear, continue to Step 3.
- 3 Should the Excel file not appear, go to 'My Computer', located on the desktop (located in the 'Start' menu).
- 4 Double left click on 'Local Drive (C:)' icon.



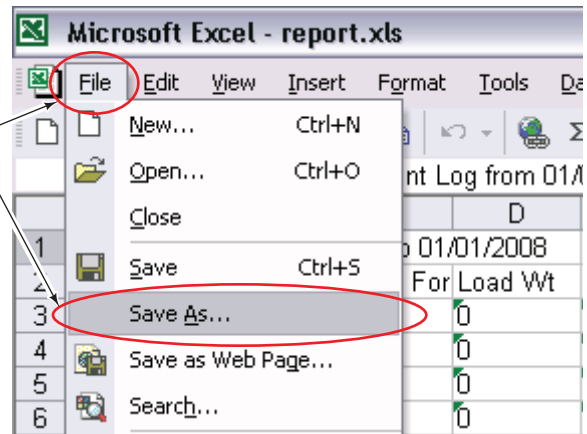
- 5 Double left click on the 'TEMP' folder icon.
- 6 Double left click on the 'report.xls' icon. This will open the exported Excel file.
- 7 Go to the File Menu and select "Save As".
- 8 Select a location to save the file to and/or assign a name. Save the file.



5



7



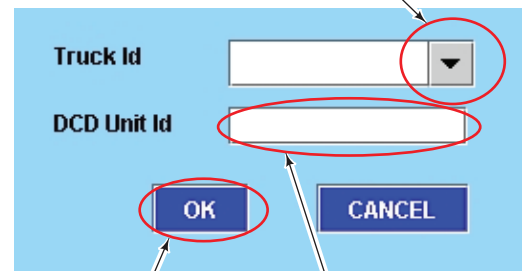
4.5 Setup Tab

The 'Vehicle Setup' tab shows assigned Truck IDs that have been added to the software when data is downloaded to the database. Truck IDs can be added manually to the software; however, Cascade does not recommend Truck IDs be added manually. To assign a Truck an ID for distinguishing data, refer to the AFC Manual (Setup section for Menu 8) or Section 2.2-4.

4.5-1 Add A Truck Description

- 1 Open the AFC Datalogger Software as described in section 4.1.
- 2 In the 'Setup' tab, choose a Truck ID.
- 3 In the 'DCD Unit ID' text box, type the desired description. For example, Truck 2 is located in shipping. The user can assign a DCD Unit ID of 'Shipping' to Truck 2.
- 4 Click "OK" button to save the assigned DCD Unit ID.

Click on drop down box arrow to view Truck IDs currently stored in the software.



Saves entered description.

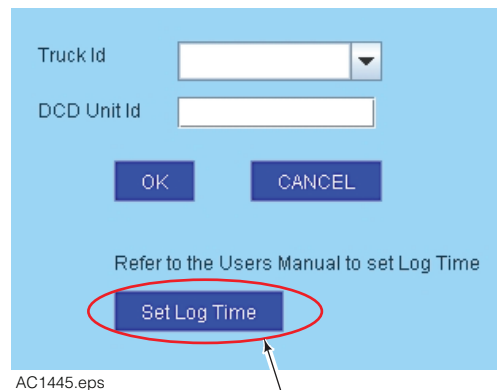
Type description in text box.

4.5-2 Set Log Time

The following steps update the AFC Datalogger to the host computer's current date and time.

IMPORTANT: The host computer must be connected to the AFC Datalogger with an ethernet cable. See Section 2.2-3 for network setup. This allows the host computer and AFC Datalogger to communicate.

- 1 Verify the correct day and time on the host computer clock.
- 2 Connect the AFC Datalogger to the host computer using the coupler and cross-over cable.
- 3 Open the AFC Datalogger Software as described in section 4.1.
- 4 In the 'Setup' tab, click on the 'Set Log Time' button.
- 5 When the message 'Success' appears, disconnect the cables.
- 6 Verify that the date and time are correct by clamping a load and downloading data.



4

4.6 Maintenance Tab

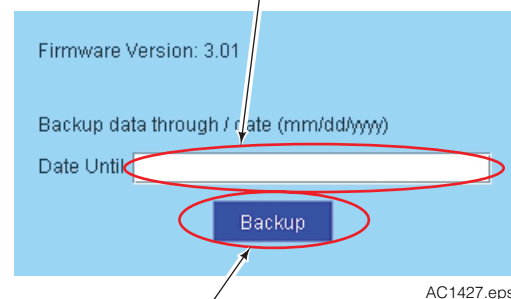
4.6-1 Data Backup

Data that is downloaded is saved to a database file. It is important to backup this database to another drive to prevent lost information.

IMPORTANT: The 'Backup' button in the 'Maintenance' Tab **will not protect data**. The database must be stored on a separate drive as described below.

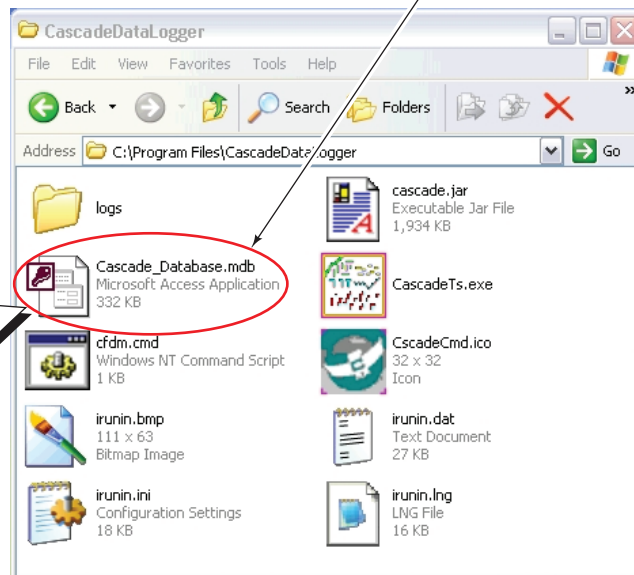
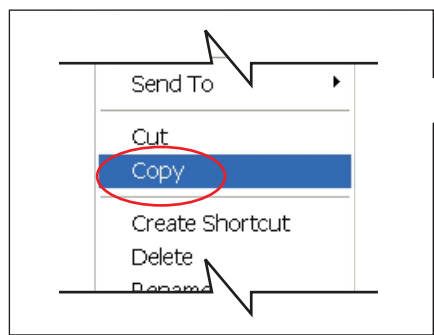
- 1 Enter today's date to backup file in mm/dd/yyyy format.
- 2 Click the 'Backup' button. The system will create a new data set with a new name.
- 3 Open 'My Computer' from the desktop or from the 'Start' menu.
- 4 Double left click on 'Local Drive (C:)' icon.
- 5 Double left click on 'Program Files' icon.
- 6 Double left click on 'AFC Datalogger' folder.
- 7 Right click on the 'Cascade_Database.mdb' icon and choose 'Copy'.

IMPORTANT: Do not 'Cut' the database file. Removing the file will cause new data to not be stored and the software to error.

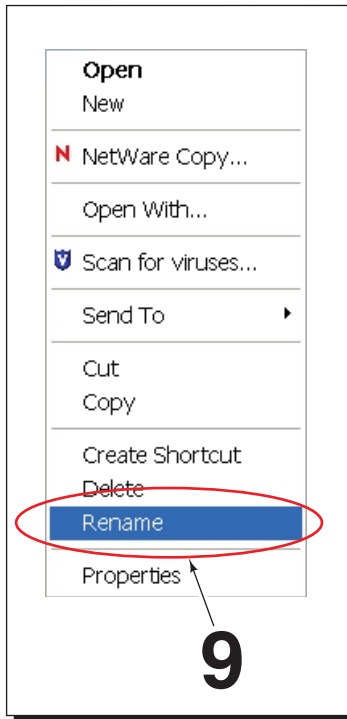


2

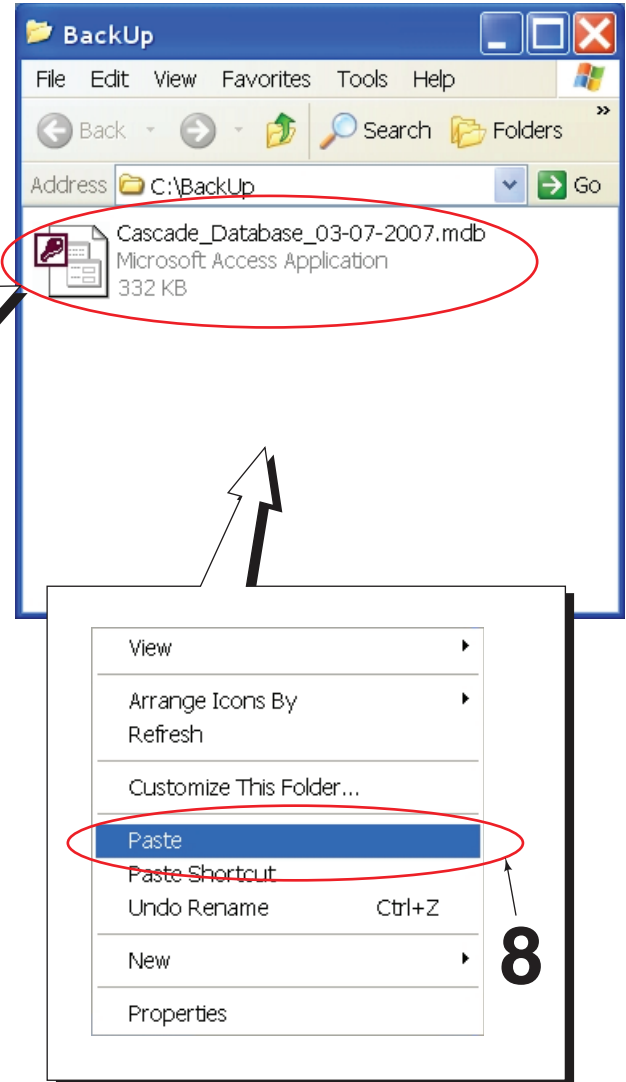
7



- 8 In another storage drive or an allocated folder on the 'C' drive, right click within the folder's window. When a menu appears, select 'Paste'.
- 9 Rename the file with the backup date. For example, rename the file, 'Cascade_Database_04-07-2007.mdb'.
IMPORTANT: The file extension, ".mdb", must remain on the end of the file name.



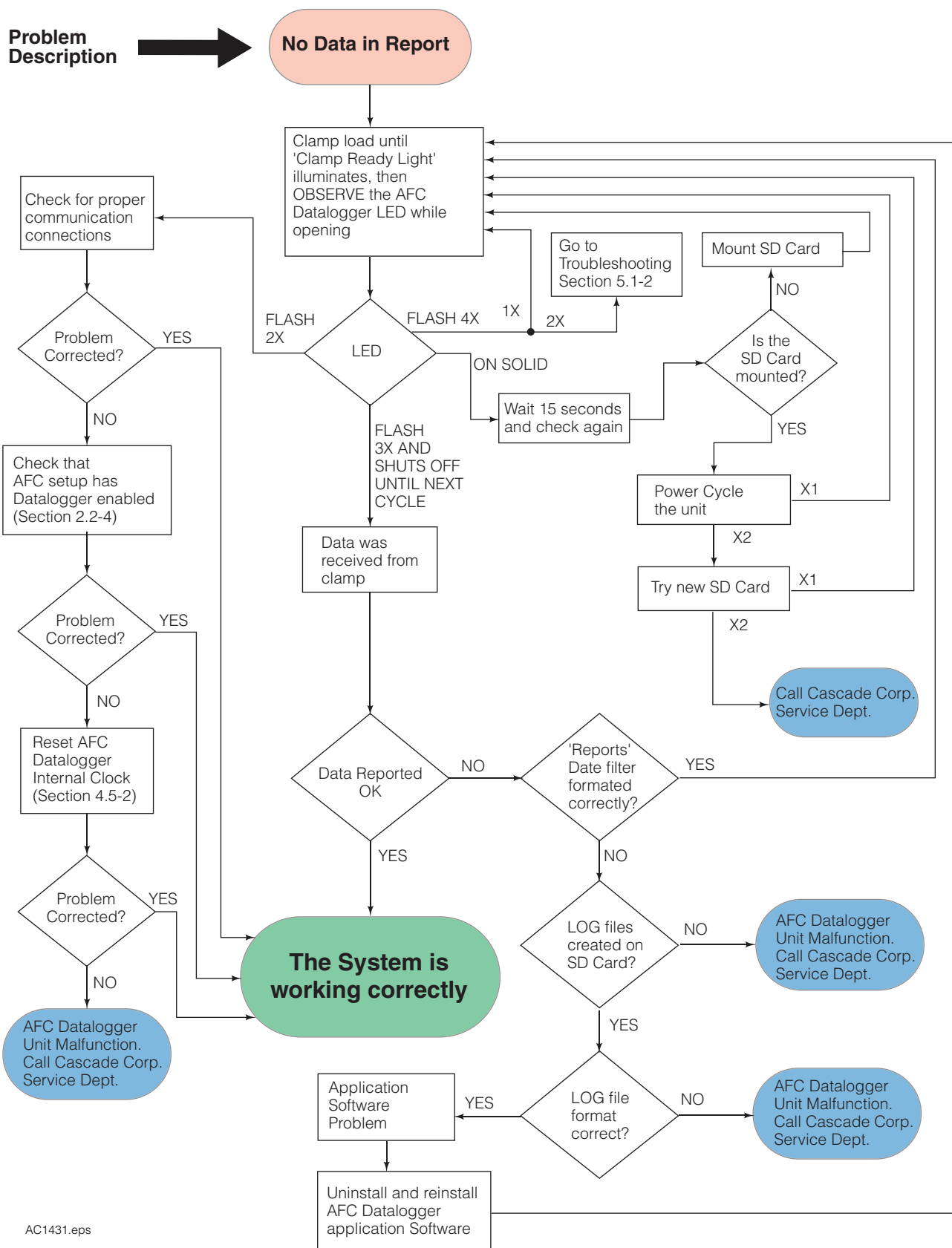
AC1429.eps



NOTE: In the event that a backup file is to be retrieved, copy the backup file and paste in the 'AFC Datalogger' folder (located in the 'Program Files' folder).

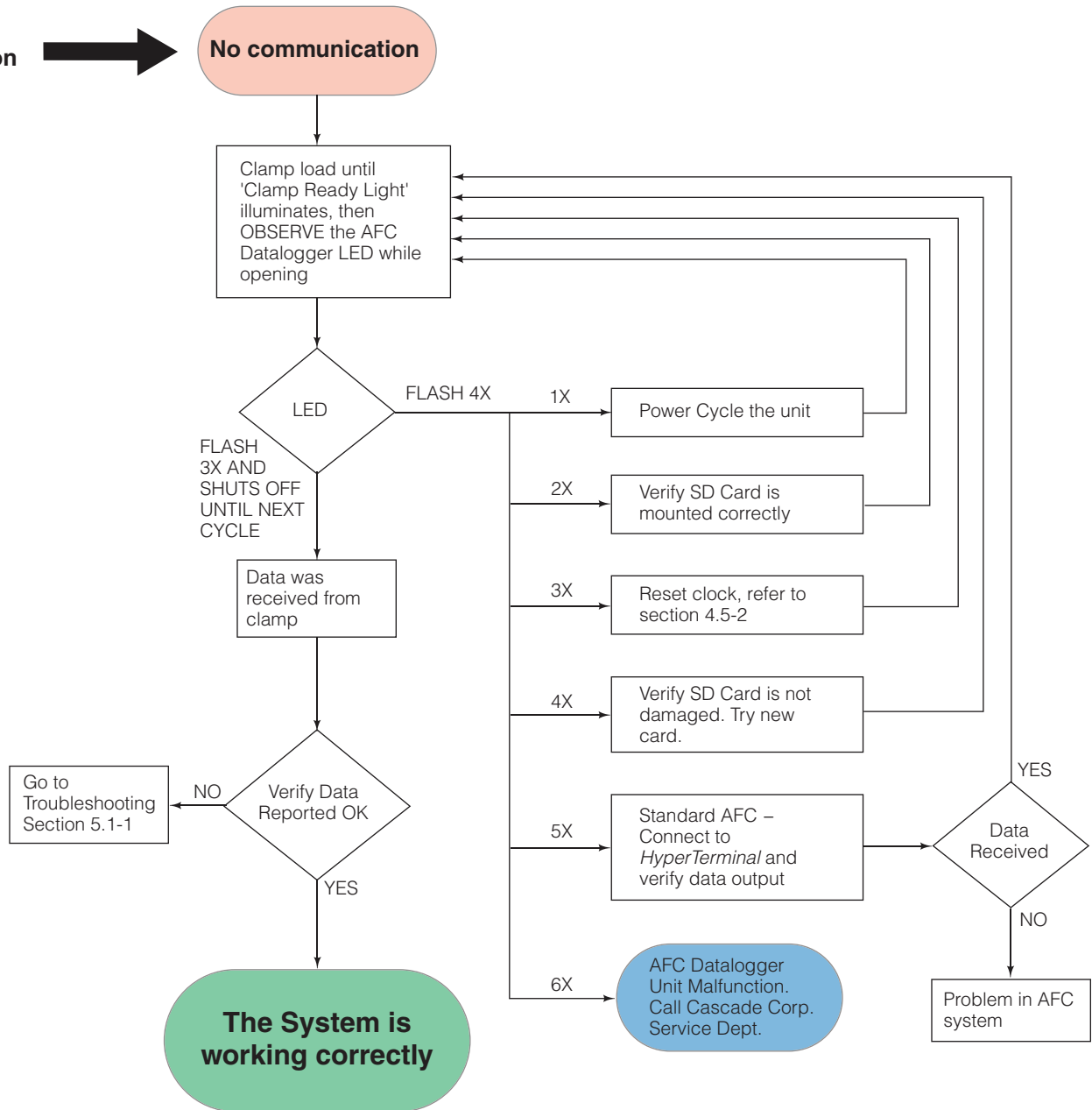
5.1 Troubleshooting

5.1-1 No Data in Report



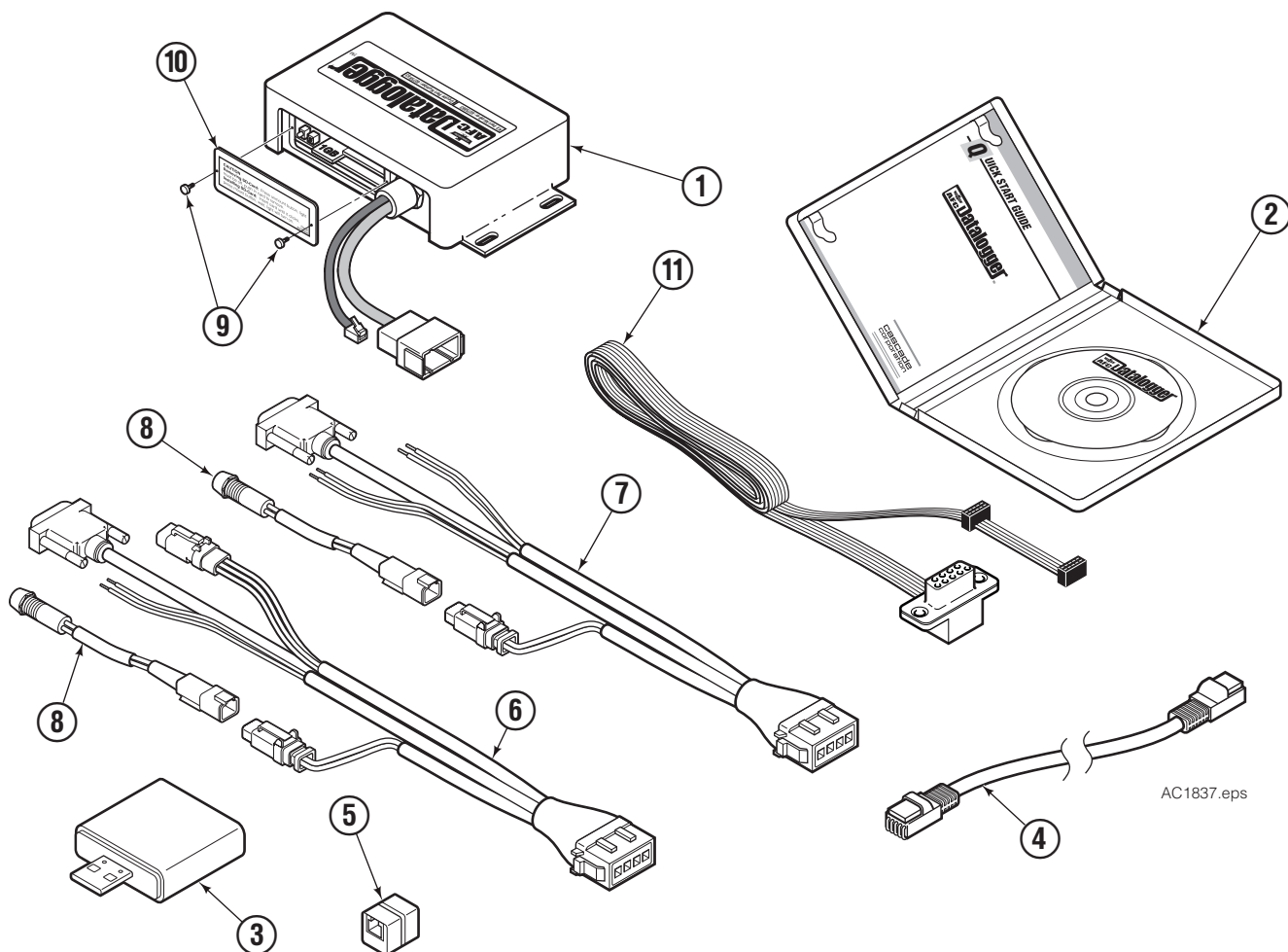
5.1-2 To Clear 4 Rapid Flashes

Problem
Description



AC1493.eps

AFC Datalogger with Scanner Input



REF	QTY	PART NO.	PART NO.	DESCRIPTION
		6078996	—	AFC Datalogger Kit with Scanner Input Option
		—	6078998	AFC Datalogger Kit with CAN Controller and Scanner Input Option
		6079646	6079641	Quick Start Kit ●
1	1	6075863	6075863	AFC Datalogger
2	1	6078430	6078430	CD and Case
3	1	6078823	6078823	SD Card Reader
4	1	6075872	6075872	Ethernet Cable, Cross-over
5	1	6078435	6078435	Ethernet Connector, F-F
6	1	6079647	—	Communication Cable
7	1	—	6079642 ▲	Communication Cable with Scanner Input Option
8	1	6079587	6079587	LED light ✓
9	2	6081781	6081781	Thumbscrew ★
10	1	6081782	6081782	Access Cover ★
11	1	6081614	6081614	Firmware Upgrade Cable ■

● Includes items 2-5 and 6 or 7.

▲ CAN based.

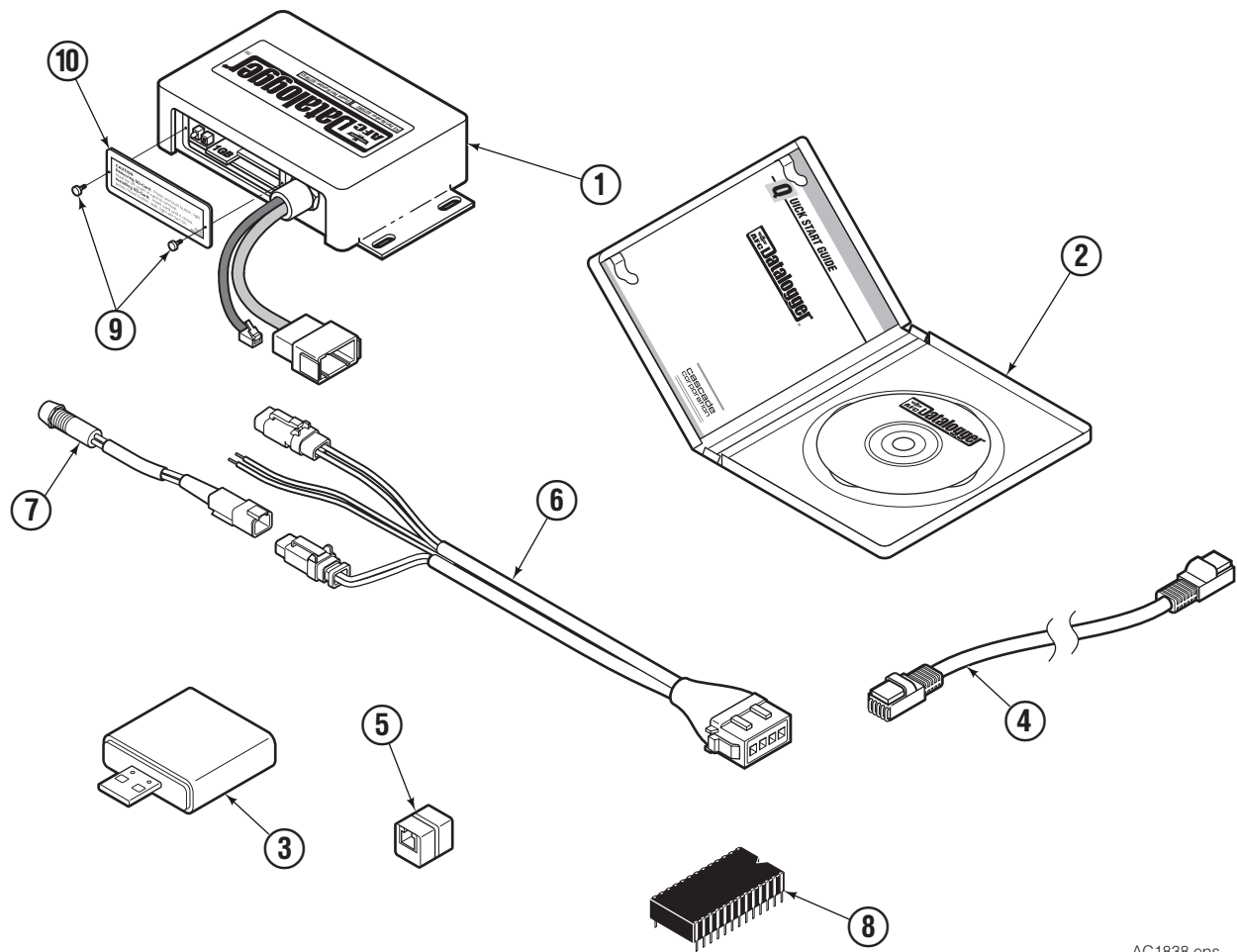
✓ Included with Communication Cable.

★ Included in Access Door Assembly 6082512.

■ Not included in AFC Datalogger Kits.

Reference: 6079645, 6079640 (Sub Component Kits)

AFC Datalogger Retrofit Kit Parts



AC1838.eps

REF	QTY	PART NO.	DESCRIPTION
		6078434	AFC Datalogger Retrofit Kit
1	1	6075863	AFC Datalogger
2	1	6078430	CD and Case
3	1	6078823	SD Card Reader
4	1	6075872	Ethernet Cable, Cross-over
5	1	6078435	Ethernet Connector, F-F
6	1	6079444	Communication Cable
7	1	6079587	LED Light
8	1	6073997	E Prom – AFC Controller
9	2	6081781	Thumbscrews
10	1	6081782	Access Cover

Do you have questions you need answered right now?

Call your nearest Cascade Service Department.

Visit us online at www.cascorp.com

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