

# Table Of Contents

General Information	2-3
Required Components	4
1. Installation Instructions	5-8
2. Starting and Using Perkins Diagnostic Software	8-11
2.1 Connecting the Hardware	8
2.2 Starting the Software Program	8-10
2.3 Menu Bar	10
2.4 Save As	11
3. Data List	11-14
3.1 View Engine Data	12
3.2 View Engine Info	12
3.3 Custom Data Lists	13
3.4 Change Font Style and size	13
3.5 Print or Preview Data Lists	14
3.6 Save Data List	14
4. Diagnostic Codes	15-17
4.1 Active Codes	15
4.2 Inactive Codes	15
4.3 Print or Preview Diagnostic Codes	16
4.4 Save Diagnostic Codes	16
4.5 Clear Codes	17
5. Programmable Parameters	17-20
5.1 Print or Preview Programmable Parameters	18-19
5.2 Save (Export) Programmable Parameters	19
5.3 Reprogram Parameters	19-20
6. Diagnostic Tests	21-23
6.1 Engine Off Tests	22-23
6.2 Engine Running Tests	23
7. Data Recording	23-28
7.1 Setup Recording	24-25
7.2 Recording Mode	26
7.3 Playback Mode	27
7.4 Changing File Directories (Browse)	27
7.5 Deleting a Recording File	28
7.6 Printing or Previewing a Recording File Frame	28
7.7 Exporting a Recording File	28
8. Loss of ECM Communication	29
9. Exit Diagnostic Software	30
10. Emergency Shut Down	30
11. Working Offline	31
11.1 Playback of Data Recordings offline	32
11.2 Exit Offline Session	32
12. Uninstall Perkins Diagnostic Software	33
Method 1	33
Method 2	34
Glossary	35-37

# Introduction

## General Information

This manual has been written specifically for release 2.0 of the diagnostic tool software for the Peregrine EDi and 1300 Series EDi family of engines. This manual gives a brief explanation of the diagnostic tool and its functions. It was written for the user who has a working knowledge of the Windows® 95 and/or Windows® 98 operating system, its conventions, how to use a mouse, standard menus, commands and how to Open, Save and Close files.

Screen illustrations are used throughout this manual, taken from Windows® 98, to help clarify use and functions. For help with any of these techniques please refer to your Windows® help documentation and Perkins Help.

Please take the time to study this manual and become familiar with the features and functions Release 2.0 of the Perkins Peregrine EDi/1300 Series EDi Engine Diagnostic Software. In order to use this tool correctly, this handbook, the appropriate engine User's Handbook, the Workshop Manual and the Diagnostic Manual should be used together.

### User's Handbook:

Perkins Peregrine EDi, models WK to WS, publication number TPD 1360E

Perkins 1300 Series EDi, models WK to WS, publication number TPD 1352E

### Workshop Manual:

Perkins Peregrine EDi and 1300 Series EDi, models WK to WN, publication number TPD 1353E (to be updated for models WR & WS. Refer to the Perkins Publicity Distribution Centre at the address below.)

### Diagnostic Manual:

Perkins 1300 Series EDi Gen Set (preliminary), models WK to WS, publication number PPE02.

Read and remember the "Safety Precautions" in the User's Handbook, and the Workshop and Diagnostic Manuals. They are given for your protection and must be used at all times.

Danger is indicated by two methods:

**Warning!** This indicates that there is a possible danger to the person.

**Caution:** This indicates that there is a possible danger to the engine.

### The tool is available from:

Perkins Powerpart Distribution Centre

Northbank Industrial Park

Irlam

Manchester

M44 5PP

England

Telephone: +44 (0) 161 776 5000

Fax: + 44 (0) 161 776 5200

### The publications are available from:

Perkins Publicity Distribution Centre

Factory 3

Perkins Engines Company Limited

Peterborough

PE1 5NA

England

Telephone: +44 (0) 1733 58 2208

Fax: +44 (0) 1733 58 2240

# Introduction

## General Information (continued)

The Perkins Diagnostic Tool for the Peregrine EDi and 1300 Series EDi offers the following functionality:

- View Data Lists
- Create Custom Data Lists
- View and Clear Diagnostic Codes
- View Programmable Parameters
- Reset Customer Programmable Parameters
- Perform Diagnostic Tests
- Record Engine Data Over a Specific Time

This Manual has been written for Release 2.0 of the Diagnostic software, which offers the following new features over Release 1.0:

- Run application in Offline mode for training and demonstration.
- Display the codes in the Diagnostic Test screens.
- Display number new inactive codes in the Diagnostic Test screens.
- Enhanced Data Recording features including trigger on occurrence of a diagnostic code.
- Enhanced recording control bar, providing better ease of review.
- Offline playback of previous data recordings.
- Save Data Lists, diagnostic codes and programmable parameters to file for later analysis.
- Preview and print facilities.

It is necessary to go through the full authorization and installation process when you install Release 2.0, even if you have Version 1.0 already installed. Please follow the installation instructions in the manual. Note that you must uninstall Version 1.0 before you attempt to install Version 2.0. Refer to Section 12 of this manual.

The Perkins Peregrine EDi/1300 Series EDi is a family of turbocharged engines that have an electronic management system. The Peregrine EDi engines are designed for automotive applications and the 1300 Series EDi engines are designed for industrial and agricultural applications. The Peregrine EDi and the 1300 Series EDi engines are from Perkins Engines Company Limited, a world leader in the design and manufacture of high-performance diesel engines.

# Required Components

## Connection to a Laptop PC or Desktop PC

### Serial Data Module Kit P/N 27610150

Includes: Serial Cable, Data Cable, Serial Data Module and 6-pin Deutsch Connector

Serial Cable

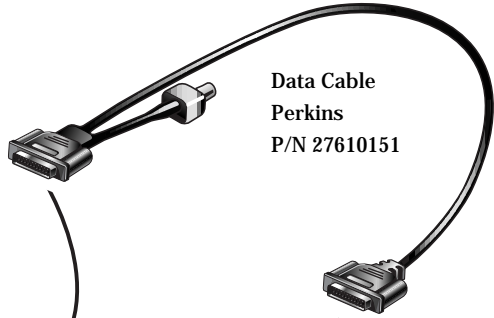
Perkins P/N 27610155



Data Cable

Perkins

P/N 27610151



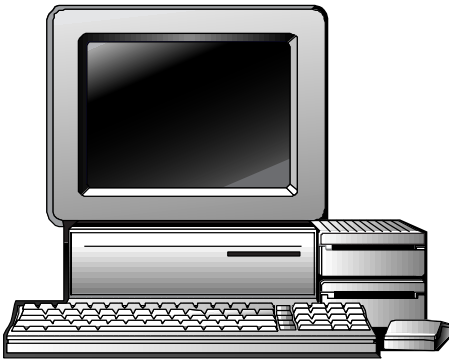
Serial Data Module

Perkins P/N 27610149

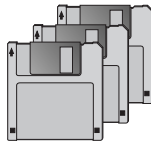


6-pin Deutsch Connector

Perkins P/N 27610137



Personal Computer  
or Laptop



Software  
Ref DIAG1300



### 1. Installation Instructions

This program is for Windows® 95 and Windows® 98 only. Do not try to install it on Windows® 3.x.

Before beginning installation of your Perkins PC Software it is strongly recommended that you exit all Windows programs.

If you have a previous version of this diagnostic software installed you must uninstall it as described in Section 12 of this manual before commencing authorization and installation of Version 2.0.

- 1) Insert Disk 1 into the Floppy drive.
- 2) Click on the Windows® 95/98 Start Button and select “Run”.
- 3) Type A:\Setup and click OK.

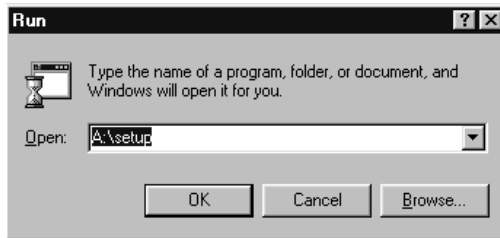


Figure 1.1

- 4) Windows displays a startup screen.
- 5) Click Next to continue installation. Follow the on-screen instructions. You must contact the Perkins Help Desk to acquire an Authorization Code, in order to proceed with the installation.



Figure 1.2

### Installation Instructions

Starting / Using Software

Data List

View Engine Data

View Engine Info

Custom Data Lists

Change Font Style / Size

Print / Preview Data Lists

Save Data List

Diagnostic Codes

Active Codes

Inactive Codes

Print or Preview Codes

Save Diagnostic Codes

Clear Codes

Programmable Parameters

Print / Preview Parameters

Save (Export) Parameters

Reprogram Parameters

Diagnostic Tests

Engine Off Tests

Engine Running Tests

Data Recording

Setup Recording

Recording Mode

Playback Mode

Changing File Directories

Deleting a Recording File

Printing / Previewing

Exporting a Recording File

Loss of ECM Communication

Exit Diagnostic Software

Emergency Shut Down

Working Offline

Playback

Exit Offline Session

Uninstall Software

**Installation Instructions**

Starting / Using Software

Data List

- View Engine Data
- View Engine Info
- Custom Data Lists
- Change Font Style / Size
- Print / Preview Data Lists
- Save Data List

Diagnostic Codes

- Active Codes
- Inactive Codes
- Print or Preview Codes
- Save Diagnostic Codes
- Clear Codes

Programmable Parameters

- Print / Preview Parameters
- Save (Export) Parameters
- Reprogram Parameters

Diagnostic Tests

- Engine Off Tests
- Engine Running Tests

Data Recording

- Setup Recording
- Recording Mode
- Playback Mode
- Changing File Directories
- Deleting a Recording File
- Printing / Previewing
- Exporting a Recording File

Loss of ECM Communication

Exit Diagnostic Software

Emergency Shut Down

Working Offline

- Playback
- Exit Offline Session

Uninstall Software

- 6) Tell the Help Desk personnel the Product ID number that appears on your screen.

**Important!** Give the number in the three groups as it appears on the screen. Do not cancel from this screen unless you wish to restart the install and authorization process. Each time you start the software installation the Product ID number will change.

- 7) Follow directions given by the Help Desk personnel. They will instruct you to click on the “Next” button.
- 8) Enter the Authorization Code in the spaces provided. Use the Tab key to move between the boxes.



Figure 1.3

- 9) Press the “Next” button when instructed by the Help Desk personnel.
- 10) Verify the expiration date on your screen with the Help Desk personnel. If it is correct, Click on the “Done” button.



Figure 1.4

Authorization is now complete, and the Perkins application installation process will begin.

# Perkins Diagnostic Software

## Perkins Diagnostic Software

**11)** Follow the on-screen instructions. You will be asked to make several choices, and default settings will be offered. Accept all the defaults offered, with the possible exceptions of:

- a)** English/Imperial or Metric units
- b)** Select PDM or SDM.

The PDM or SDM option refers to whether you are using A Parallel Port Data Module (PDM) or a Serial Port Data Module (SDM). The default offered is SDM. If you are using the Perkins Serial Port Data Module (Kit number 27610150 - See page 4 of this manual) accept the default.

You should only set the option to PDM if you are using one. If you are unsure whether your hardware is suitable please refer to the Help Desk (Tel. +44 (0)161 776 5151)

**Important!** The software will not work with the wrong type of data module. For instance if you selected SDM during the install process, you would have to re-install if you wished to run the software with a PDM.

### 1.1 Serial Port Data Module Installation

If you have selected SDM, the installation will complete with no further connections to make. The Diagnostic Tool will work as soon as it is connected to a live ECM.

### Installation Instructions

- Starting / Using Software
  - Data List
    - View Engine Data
    - View Engine Info
    - Custom Data Lists
    - Change Font Style / Size
    - Print / Preview Data Lists
    - Save Data List
  - Diagnostic Codes
    - Active Codes
    - Inactive Codes
    - Print or Preview Codes
    - Save Diagnostic Codes
    - Clear Codes
  - Programmable Parameters
    - Print / Preview Parameters
    - Save (Export) Parameters
    - Reprogram Parameters
  - Diagnostic Tests
    - Engine Off Tests
    - Engine Running Tests
  - Data Recording
    - Setup Recording
    - Recording Mode
    - Playback Mode
    - Changing File Directories
    - Deleting a Recording File
    - Printing / Previewing
    - Exporting a Recording File
  - Loss of ECM Communication
  - Exit Diagnostic Software
  - Emergency Shut Down
  - Working Offline
    - Playback
    - Exit Offline Session
  - Uninstall Software

Installation Instructions

Starting / Using Software

Data List

- View Engine Data
- View Engine Info
- Custom Data Lists
- Change Font Style / Size
- Print / Preview Data Lists
- Save Data List

Diagnostic Codes

- Active Codes
- Inactive Codes
- Print or Preview Codes
- Save Diagnostic Codes
- Clear Codes

Programmable Parameters

- Print / Preview Parameters
- Save (Export) Parameters
- Reprogram Parameters

Diagnostic Tests

- Engine Off Tests
- Engine Running Tests

Data Recording

- Setup Recording
- Recording Mode
- Playback Mode
- Changing File Directories
- Deleting a Recording File
- Printing / Previewing
- Exporting a Recording File

Loss of ECM Communication

Exit Diagnostic Software

Emergency Shut Down

Working Offline

- Playback
- Exit Offline Session

Uninstall Software

## 1.2 Parallel Port Data Module (PDM) Installation

If you have selected PDM you will be offered the option to restart (reboot) the PC now or later. This must be done with the PDM connected to the PC and to a powered ECM. The power light on the PDM must be on.



Figure 1.5

**Important!** If you are using a PDM the diagnostic tool will not work until you have rebooted the PC with the PDM powered and connected.

## 2. Starting and Using Perkins Diagnostic Software

### 2.1 Connecting the Hardware

If the software is to be run in Offline mode (not connected to an engine) omit Section 2.1 and start at Section 2.2.

Connect the SDM or PDM to the diagnostic port of the engine and to the computer as indicated on Page 4. Turn the engine key on and check that the Power light on the Data Module is on.

### 2.2 Starting the Software Program

Start the computer. Select Start/Programs/Perkins Systems/Engine Diagnostics/1300 EDi and Peregrine EDi, alternatively double-click the "1300 EDi & Peregrine EDi" shortcut icon on the desktop to launch Perkins Application.

# Perkins Diagnostic Software

## Perkins Diagnostic Software

Installation Instructions

### Starting / Using Software

#### Data List

- View Engine Data
- View Engine Info
- Custom Data Lists
- Change Font Style / Size
- Print / Preview Data Lists
- Save Data List

#### Diagnostic Codes

- Active Codes
- Inactive Codes
- Print or Preview Codes
- Save Diagnostic Codes
- Clear Codes

#### Programmable Parameters

- Print / Preview Parameters
- Save (Export) Parameters
- Reprogram Parameters

#### Diagnostic Tests

- Engine Off Tests
- Engine Running Tests

#### Data Recording

- Setup Recording
- Recording Mode
- Playback Mode
- Changing File Directories
- Deleting a Recording File
- Printing / Previewing
- Exporting a Recording File

#### Loss of ECM Communication

Exit Diagnostic Software

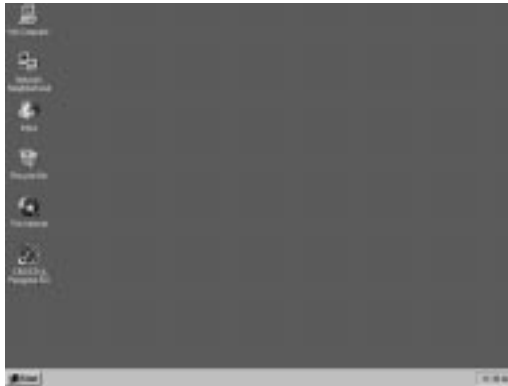
Emergency Shut Down

Working Offline

- Playback
- Exit Offline Session

Uninstall Software

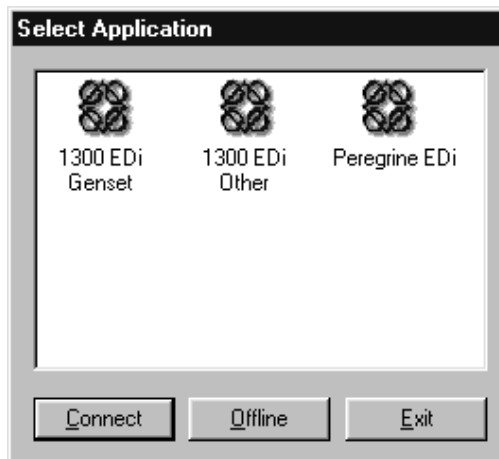
Figure 2.1



The screen displays an Engine Application Selection dialog box. You can Connect or run Offline.

To connect you can choose to either double-click the application icon or click once on the icon and click Connect. See Section 11 for running Offline.

Figure 2.2



Select from the following options by clicking on a toolbar button or click on "Actions" in the menu bar to display a drop list of available procedures:

- Data Lists
- Diagnostic Codes
- Programmable Parameters
- Diagnostic Tests
- Data Recording

## Perkins Diagnostic Software

Installation Instructions

### Starting / Using Software

#### Data List

- View Engine Data
- View Engine Info
- Custom Data Lists
- Change Font Style / Size
- Print / Preview Data Lists
- Save Data List

#### Diagnostic Codes

- Active Codes
- Inactive Codes
- Print or Preview Codes
- Save Diagnostic Codes
- Clear Codes

#### Programmable Parameters

- Print / Preview Parameters
- Save (Export) Parameters
- Reprogram Parameters

#### Diagnostic Tests

- Engine Off Tests
- Engine Running Tests

#### Data Recording

- Setup Recording
- Recording Mode
- Playback Mode
- Changing File Directories
- Deleting a Recording File
- Printing / Previewing
- Exporting a Recording File

#### Loss of ECM Communication

#### Exit Diagnostic Software

#### Emergency Shut Down

#### Working Offline

- Playback
- Exit Offline Session

#### Uninstall Software

# Perkins Diagnostic Software



Figure 2.3

## 2.3 Menu Bar

Menu bar options allow you to perform the following tasks while working with the Perkins Diagnostic Software.

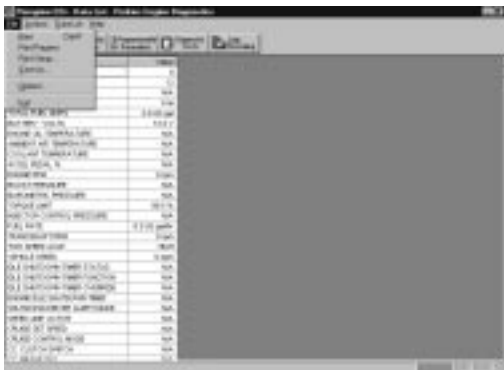


Figure 2.4

**File** - allows you to perform the above functions. Use "options" to select English or Metric units.

**Actions** - displays and launches application menu options

**Help** - explains Perkins Diagnostic Software

# Perkins Diagnostic Software

## Perkins Diagnostic Software

### 2.4 Save As

The File menu option Save As gives the ability to save (or export) Data Lists, Diagnostic Codes, Programmable parameters and Data Recordings to a .csv (comma-separated variable) file. This can be opened in a Spreadsheet application such as MS Excel or Lotus 1-2-3 for analysis at a later time.

Files will be saved in Directory C:\VDS\Data using the following default filenames.

Datalist Export file	dMMDD_hhmmss.csv
Diagnostic Code Export file	cMMDD_hhmmss.csv
Programmable Parameters Export file	pMMDD_hhmmss.csv
Data Recording Export file	rMMDD_hhmmss.csv

The first letter of the filename denotes the type of data saved, MMDD is the month and day, and hhmmss the time in hours, minutes and seconds that the file was created (except in the case of Data Recording when it is the time of the trigger point).

The file layouts are described later in this manual under the relevant Sections.

## 3. Data List

A data list is a list of fixed or variable data items that the ECM monitors.

There are two standard data lists:

- Engine Data - Contains all variable parameters that can change while the engine is running, e.g. engine speed.
- Engine Info - Contains all fixed parameters, e.g. rated engine power.

To launch Data Lists click on the button located on the toolbar or select Actions/Data List. The following screen will display the available Data lists and Data Lists preview.

Installation Instructions

Starting / Using Software

Data List

View Engine Data  
View Engine Info  
Custom Data Lists  
Change Font Style / Size  
Print / Preview Data Lists  
Save Data List

Diagnostic Codes  
Active Codes  
Inactive Codes  
Print or Preview Codes  
Save Diagnostic Codes  
Clear Codes

Programmable Parameters  
Print / Preview Parameters  
Save (Export) Parameters  
Reprogram Parameters

Diagnostic Tests  
Engine Off Tests  
Engine Running Tests

Data Recording  
Setup Recording  
Recording Mode  
Playback Mode  
Changing File Directories  
Deleting a Recording File  
Printing / Previewing  
Exporting a Recording File

Loss of ECM Communication

Exit Diagnostic Software

Emergency Shut Down

Working Offline  
Playback  
Exit Offline Session

Uninstall Software

## Perkins Diagnostic Software

Installation Instructions

Starting / Using Software

### Data List

[View Engine Data](#)

[View Engine Info](#)

Custom Data Lists

Change Font Style / Size

Print / Preview Data Lists

Save Data List

Diagnostic Codes

Active Codes

Inactive Codes

Print or Preview Codes

Save Diagnostic Codes

Clear Codes

Programmable Parameters

Print / Preview Parameters

Save (Export) Parameters

Reprogram Parameters

Diagnostic Tests

Engine Off Tests

Engine Running Tests

Data Recording

Setup Recording

Recording Mode

Playback Mode

Changing File Directories

Deleting a Recording File

Printing / Previewing

Exporting a Recording File

Loss of ECM Communication

Exit Diagnostic Software

Emergency Shut Down

Working Offline

Playback

Exit Offline Session

Uninstall Software

# Perkins Diagnostic Software



Figure 3.1

## 3.1 View Engine Data

Select Engine Data from the available data list and click OK to view the variable engine parameters and current value status. See the following screen.

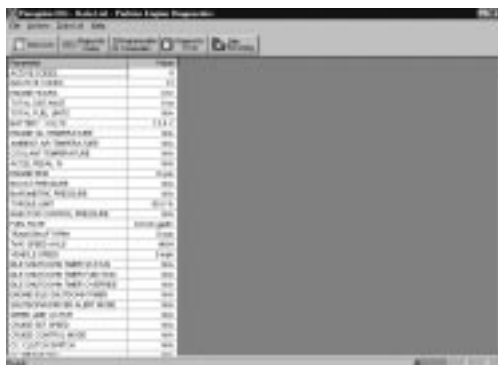


Figure 3.2

To select a different Data List from that on the screen, click Data List/Select Data List on the Menu Bar.

## 3.2 View Engine Info

Select Engine Info from the available Data lists and click OK to view fixed Engine Parameter Information.

# Perkins Diagnostic Software

## Perkins Diagnostic Software

### 3.3 Custom Data Lists

These allow you to select a limited number of parameters to view for a specific test. Custom lists are saved when the software is shut down. They may be deleted, but not edited.

To create a Custom list:

- Select Data list from the toolbar, then select Create custom.
- Double-click on the required parameters.
- Assign a name to the list (if you do not, a default name is automatically assigned).
- Click OK. Custom list is displayed.
- You will find your new custom list in the Data list menu any time you use this application.

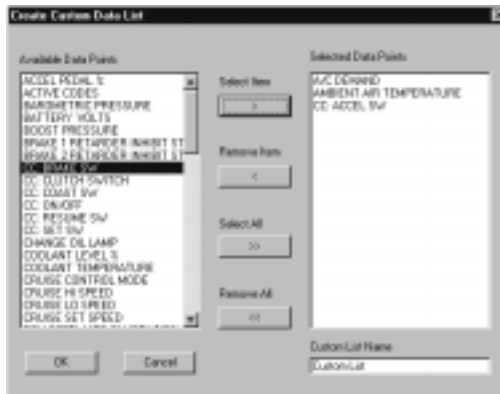


Figure 3.3

### 3.4 Change Font Style and size

To change the font style and size, select Data List on the menu bar, then select Set Font. It is useful to enlarge the font so that a data value may be easily read from a distance.

Installation Instructions

Starting / Using Software

#### Data List

View Engine Data

View Engine Info

**Custom Data Lists**

Change Font Style / Size

Print / Preview Data Lists

Save Data List

Diagnostic Codes

Active Codes

Inactive Codes

Print or Preview Codes

Save Diagnostic Codes

Clear Codes

Programmable Parameters

Print / Preview Parameters

Save (Export) Parameters

Reprogram Parameters

Diagnostic Tests

Engine Off Tests

Engine Running Tests

Data Recording

Setup Recording

Recording Mode

Playback Mode

Changing File Directories

Deleting a Recording File

Printing / Previewing

Exporting a Recording File

Loss of ECM Communication

Exit Diagnostic Software

Emergency Shut Down

Working Offline

Playback

Exit Offline Session

Uninstall Software

## Perkins Diagnostic Software

Installation Instructions

Starting / Using Software

### Data List

View Engine Data

View Engine Info

Custom Data Lists

Change Font Style / Size

Print / Preview Data Lists

Save Data List

Diagnostic Codes

Active Codes

Inactive Codes

Print or Preview Codes

Save Diagnostic Codes

Clear Codes

Programmable Parameters

Print / Preview Parameters

Save (Export) Parameters

Reprogram Parameters

Diagnostic Tests

Engine Off Tests

Engine Running Tests

Data Recording

Setup Recording

Recording Mode

Playback Mode

Changing File Directories

Deleting a Recording File

Printing / Previewing

Exporting a Recording File

Loss of ECM Communication

Exit Diagnostic Software

Emergency Shut Down

Working Offline

Playback

Exit Offline Session

Uninstall Software

# Perkins Diagnostic Software

## 3.5 Print or Preview Data Lists

To print or preview data or custom lists at a single point in time, select File from the menu bar, then Print (or Print Preview). Print Preview allows you to preview the printout on screen before printing.



Figure 3.4

Select Print Set Up to open the normal Windows® dialogue box, where you can select page orientation or modify the printer properties. If you are not connected to a printer you will only be able to print to file. As the process to transfer this later to a printer is difficult, you may prefer to use the Save option below to create a .csv file.

## 3.6 Save Data List

The Data List may be saved to a .csv file for later analysis. Select File/Save As to bring up the standard Windows® file save dialogue box. It is recommended that you accept the default directory and filename. See Section 2.4.

**Note:** The data saved will represent only a single point in time.

Sample file format:

Headings:    Parameter, Value/Units  
              Active Codes, 3  
              Inactive Codes, 3  
              Engine Hours, 55 Hr

# Perkins Diagnostic Software

## Perkins Diagnostic Software

### 4. Diagnostic Codes

This option allows you to view all trouble codes and clear the inactive codes.

#### 4.1 Active Codes

Trouble codes that are currently present on the engine. They will usually cause the engine warning light to illuminate. Some trouble codes remain in the active list until the engine key is turned off even though the faults that created them are no longer present.

#### 4.2 Inactive Codes

Logged trouble codes that have been active in the past. All active codes will transfer to the list of inactive codes when the engine is switched off. Also, active codes will transfer to the inactive list while the engine key is on when the cause of the fault is removed. Intermittent faults may cause the same code to appear as both active and inactive.

To launch Diagnostic Codes click on the button located on the toolbar. The screen displays diagnostic codes with their descriptions.



Figure 4.1

If desired, you may view the more detailed J1587 data which includes PID/SID and FMI. To access these select Diagnostic Codes/J1587 Data/ On from the menu bar.

Footnote:   PID   =   Parameter Identification Number  
              SID   =   System Identification Number  
              FMI   =   Failure Mode Indicator Number

Installation Instructions

Starting / Using Software

Data List

View Engine Data

View Engine Info

Custom Data Lists

Change Font Style / Size

Print / Preview Data Lists

Save Data List

Diagnostic Codes

Active Codes

Inactive Codes

Print or Preview Codes

Save Diagnostic Codes

Clear Codes

Programmable Parameters

Print / Preview Parameters

Save (Export) Parameters

Reprogram Parameters

Diagnostic Tests

Engine Off Tests

Engine Running Tests

Data Recording

Setup Recording

Recording Mode

Playback Mode

Changing File Directories

Deleting a Recording File

Printing / Previewing

Exporting a Recording File

Loss of ECM Communication

Exit Diagnostic Software

Emergency Shut Down

Working Offline

Playback

Exit Offline Session

Uninstall Software

## Perkins Diagnostic Software

Installation Instructions

Starting / Using Software

Data List

View Engine Data

View Engine Info

Custom Data Lists

Change Font Style / Size

Print / Preview Data Lists

Save Data List

### Diagnostic Codes

Active Codes

Inactive Codes

Print or Preview Codes

Save Diagnostic Codes

Clear Codes

Programmable Parameters

Print / Preview Parameters

Save (Export) Parameters

Reprogram Parameters

Diagnostic Tests

Engine Off Tests

Engine Running Tests

Data Recording

Setup Recording

Recording Mode

Playback Mode

Changing File Directories

Deleting a Recording File

Printing / Previewing

Exporting a Recording File

Loss of ECM Communication

Exit Diagnostic Software

Emergency Shut Down

Working Offline

Playback

Exit Offline Session

Uninstall Software

# Perkins Diagnostic Software

## 4.3 Print or Preview Diagnostic Codes

To print or preview diagnostic codes, select File from the menu bar, then Print (or Print Preview). Print Preview allows you to preview the printout on screen before printing.



Figure 4.2

Select Print Set Up to open the normal Windows® dialogue box, where you can select page orientation or modify the printer properties. If you are not connected to a printer use the Save As option below to create a .csv file.

## 4.4 Save Diagnostic Codes

The Diagnostic Codes may be saved to a .csv file for later analysis. Select File/Save As to bring up the standard Windows® file save dialogue box. It is recommended that you accept the default directory and filename. See Section 2.4.

Sample file format:

**Active Trouble Codes**

**Code, PID/SID, FMI, Description**

115, 110 (pid), 3, Engine Coolant Temperature Signal Out of Range HIGH

122, 102 (pid) 4, Intake Manifold Abs. Press. Signal Out of Range LOW

**Inactive Trouble Codes**

**Code, PID/SID, FMI, Description**

115, 110 (pid), 3, Engine Coolant Temperature Signal Out of Range HIGH

122, 102 (pid) 4, Intake Manifold Abs. Press. Signal Out of Range LOW

The PID/SID and FMI data will not be saved if this option is not selected to view. It is not usually necessary to select J1587 Data.

# Perkins Diagnostic Software

## 4.5 Clear Codes

Diagnostic codes stored in the ECM's memory can be cleared. This is done to clear the inactive codes. You will need to do this in order to turn off the engine warning light when no active codes are present and to be able to detect when new codes occur again. Remember to note or Save all codes that are present (both active and inactive) before you clear them.

To clear the codes click "Clear Codes" located on the right hand side of the screen.

The application will prompt you that your request to clear codes has been sent. Click OK to continue. **Note:** If the fault is still present on the engine, this function will not clear the code.



Figure 4.3

## 5. Programmable Parameters

There are a number of parameters that control the way the engine operates, e.g. engine warning system preset values. They are different from the Data list parameters. You may change the values for some parameters to customize the engine's operation; changes to these are password protected. Other Parameters, called "Read Only" cannot be reprogrammed with this tool and may only be viewed.

**Warning!** The values of Programmable Parameters should not be changed without the prior written agreement of an Application Engineer who has been trained by Perkins on this specific engine type. Perkins will not be held liable if adjustments are made without such agreement. Changes that are not approved could result in injury to the user or damage to the engine. A warranty claim will not be acceptable if any person not approved by Perkins has made a change.

Some parameters can be changed in one direction only. To change them back you will have to go to a Perkins Authorized reprogrammer to reflash the ECM.

## Perkins Diagnostic Software

Installation Instructions

Starting / Using Software

Data List

View Engine Data

View Engine Info

Custom Data Lists

Change Font Style / Size

Print / Preview Data Lists

Save Data List

### Diagnostic Codes

Active Codes

Inactive Codes

Print or Preview Codes

Save Diagnostic Codes

Clear Codes

### Programmable Parameters

Print / Preview Parameters

Save (Export) Parameters

Reprogram Parameters

### Diagnostic Tests

Engine Off Tests

Engine Running Tests

### Data Recording

Setup Recording

Recording Mode

Playback Mode

Changing File Directories

Deleting a Recording File

Printing / Previewing

Exporting a Recording File

### Loss of ECM Communication

Exit Diagnostic Software

Emergency Shut Down

Working Offline

Playback

Exit Offline Session

Uninstall Software

## Perkins Diagnostic Software

Installation Instructions

Starting / Using Software

Data List

View Engine Data

View Engine Info

Custom Data Lists

Change Font Style / Size

Print / Preview Data Lists

Save Data List

Diagnostic Codes

Active Codes

Inactive Codes

Print or Preview Codes

Save Diagnostic Codes

Clear Codes

### Programmable Parameters

#### Print / Preview Parameters

Save (Export) Parameters

Reprogram Parameters

Diagnostic Tests

Engine Off Tests

Engine Running Tests

Data Recording

Setup Recording

Recording Mode

Playback Mode

Changing File Directories

Deleting a Recording File

Printing / Previewing

Exporting a Recording File

Loss of ECM Communication

Exit Diagnostic Software

Emergency Shut Down

Working Offline

Playback

Exit Offline Session

Uninstall Software

# Perkins Diagnostic Software

**DO NOT CHANGE ANY PARAMETERS UNLESS YOU HAVE BEEN PROPERLY TRAINED.**

To launch Programmable Parameters click on the button located on the toolbar.



Figure 5.1

Programmable Parameters are grouped by category. To view the parameters under a given category, click once on the plus sign (+) to the left of the category name. The parameter names will appear under the category name. Click on the parameter name to view its current value, and where applicable, the upper and lower limits, and the number of times the parameter has been modified.

### 5.1 Print or Preview Programmable Parameters

This function offers the best way to view all the programmable parameters at the same time.

To print or preview programmable parameters, select File from the menu bar, then Print (or Print Preview). Print Preview allows you to preview the printout on screen before printing.



## Perkins Diagnostic Software

Installation Instructions

Starting / Using Software

Data List

View Engine Data

View Engine Info

Custom Data Lists

Change Font Style / Size

Print / Preview Data Lists

Save Data List

Diagnostic Codes

Active Codes

Inactive Codes

Print or Preview Codes

Save Diagnostic Codes

Clear Codes

## Programmable Parameters

Print / Preview Parameters

Save (Export) Parameters

**Reprogram Parameters**

Diagnostic Tests

Engine Off Tests

Engine Running Tests

Data Recording

Setup Recording

Recording Mode

Playback Mode

Changing File Directories

Deleting a Recording File

Printing / Previewing

Exporting a Recording File

Loss of ECM Communication

Exit Diagnostic Software

Emergency Shut Down

Working Offline

Playback

Exit Offline Session

Uninstall Software

# Perkins Diagnostic Software



Figure 5.3

To change a value:

- Enter the new value
- Click Reprogram Parameter

Enter the password (an 8-digit number specific to the engine in use) and click OK to continue. Generally you will only have to enter the password the first time in a diagnostic session that you try to change a parameter value.

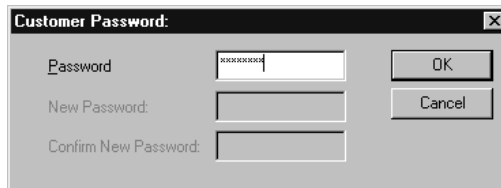


Figure 5.4

You may change the password, if desired. Remember to record the new password and keep it in a secure location. If you have forgotten the password you will have to go to a Perkins authorized reprogrammer to reset the password by reflashing the ECM. The Help Desk can advise you of your nearest reprogrammer.

# Perkins Diagnostic Software

## 6. Diagnostic Tests

Diagnostic tests are used to test the continuity of electrical circuits and certain functions in the ECM. They give more information about faults than can be obtained from the data lists and diagnostic codes alone.

There are two types of tests:

**Engine Off Tests** (run with the key on but the engine not operating)

**Engine Running Tests**

The tests are explained in more detail on the following pages. Please refer to the Diagnostic Manual for information about when these tests should be used and what to do if the results are not satisfactory.

Before launching Diagnostic tests you should select Diagnostic Codes from the Toolbar, note or save any active and inactive codes, then clear the codes (see Diagnostic Codes section of this Manual).

To launch Diagnostic Tests click on the menu button located on the toolbar.



Figure 6.1

Under Available Tests click on the down arrow to select from the following Diagnostic Tests menu options.

- Key On Engine Off - Standard Test
- Key On Engine Off - Injector Test
- Key On Engine Off - Output Test (High/Low)
- Key On Engine Off - Wiggle Test
- Key On Engine Running - Standard Test
- Key On Engine Running - Injector Test
- Key On Engine Running - Wiggle Test

## Perkins Diagnostic Software

Installation Instructions

Starting / Using Software

Data List

View Engine Data

View Engine Info

Custom Data Lists

Change Font Style / Size

Print / Preview Data Lists

Save Data List

Diagnostic Codes

Active Codes

Inactive Codes

Print or Preview Codes

Save Diagnostic Codes

Clear Codes

Programmable Parameters

Print / Preview Parameters

Save (Export) Parameters

Reprogram Parameters

## Diagnostic Tests

Engine Off Tests

Engine Running Tests

Data Recording

Setup Recording

Recording Mode

Playback Mode

Changing File Directories

Deleting a Recording File

Printing / Previewing

Exporting a Recording File

Loss of ECM Communication

Exit Diagnostic Software

Emergency Shut Down

Working Offline

Playback

Exit Offline Session

Uninstall Software

## Perkins Diagnostic Software

Installation Instructions

Starting / Using Software

Data List

View Engine Data

View Engine Info

Custom Data Lists

Change Font Style / Size

Print / Preview Data Lists

Save Data List

Diagnostic Codes

Active Codes

Inactive Codes

Print or Preview Codes

Save Diagnostic Codes

Clear Codes

Programmable Parameters

Print / Preview Parameters

Save (Export) Parameters

Reprogram Parameters

### Diagnostic Tests

#### Engine Off Tests

Engine Running Tests

Data Recording

Setup Recording

Recording Mode

Playback Mode

Changing File Directories

Deleting a Recording File

Printing / Previewing

Exporting a Recording File

Loss of ECM Communication

Exit Diagnostic Software

Emergency Shut Down

Working Offline

Playback

Exit Offline Session

Uninstall Software

# Perkins Diagnostic Software

Note that the Key On Engine Off Standard Test must always be performed before any other Engine Off tests may be run and the Key On Engine Running Standard Test must be run before other engine running tests. If you do not do this you will be prevented from running other tests and prompted to run the Standard test first.

To start the selected Diagnostic Test click the start button. The test will begin. View test status box for results.

## 6.1 Engine Off Tests

### **Standard Test (Engine Off)**

Checks for electrical continuity when actuators and relays are activated. The status box will display the results, and diagnostic codes may appear.

### **Injector Test (Engine Off)**

This test audibly operates the injector solenoids in sequence. Listen for each in turn to check if they are working. The status box will display the results, and diagnostic codes may appear.

### **Output Test (High/Low) (Engine Off)**

The purpose of this test is to diagnose the operation of the output signals and actuators. To run this test, select the Output Test from the Diagnostic Test Menu. The test consists of two modes of operation:

1. Toggling outputs from high to low.
2. Toggling outputs from low to high.

When in the “Outputs Are Low” mode the ECM will pull down the output voltage to their low state. This will actuate the output components that are controlled by the ECM grounding the circuits. During this test “Outputs Are Low” will be displayed on the screen.

When in the “Outputs Are High” mode the ECM will pull up the output voltage to their high state. This will actuate the output components that are controlled by the ECM energizing the control circuits. During this test “Outputs Are High” will be displayed on the screen.

During this test, the output of the circuit in question can be monitored with a Digital Voltmeter (DVM). The DVM will measure a “High or Low” voltage state condition as the outputs are toggled. The actual voltage will vary with the circuit tested.

# Perkins Diagnostic Software

## Wiggle Test (Engine Off)

Checks for intermittent conditions that cause faults to be detected in the wiring or connections. While the test is running move “wiggle” any connections you find on the engine to allow the program to detect any intermittent ones. The status box will display the results, and diagnostic codes may appear, but then disappear as the connection is remade. They will be visible in the Inactive Codes list.

## 6.2 Engine Running Tests

### Standard Test (Engine Operating)

This checks the health of the high pressure oil system by requesting step changes in Actuation pressure, and monitoring the speed of change and the actual pressures achieved. The status box will display the results, and diagnostic codes may appear.

### Injector Test (Engine Operating)

This tests the contribution from each cylinder. It increases fuel on one cylinder and reduces the fuel on the other five cylinders to maintain engine speed constant. It then repeats for each cylinder in turn. The status box will display the results, and diagnostic codes may appear.

### Wiggle Test (Engine Operating)

The operation of this test is the same as the Engine Off Wiggle Test; the added conditions of vibration and high temperature on the running engine may cause additional diagnostic codes to be discovered.

## 7. Data Recording

The Data Recording facility allows you to capture data from the Engine Data List over a specified time period, and save the recorded data to a file. The recording file can then be played back normally, or reviewed frame by frame. A trigger event is associated with each recording. Because the Software is continuously recording all the data transmitted by the ECM throughout a diagnostic session you can specify the position of the trigger within the recorded time period, allowing you to view data both before and after the trigger point. You can manually trigger the recording while viewing the Engine Data List “live” on the screen, or you can choose to trigger on the occurrence of a diagnostic code.

## Perkins Diagnostic Software

Installation Instructions

Starting / Using Software

Data List

View Engine Data

View Engine Info

Custom Data Lists

Change Font Style / Size

Print / Preview Data Lists

Save Data List

Diagnostic Codes

Active Codes

Inactive Codes

Print or Preview Codes

Save Diagnostic Codes

Clear Codes

Programmable Parameters

Print / Preview Parameters

Save (Export) Parameters

Reprogram Parameters

### Diagnostic Tests

Engine Off Tests

Engine Running Tests

### Data Recording

Setup Recording

Recording Mode

Playback Mode

Changing File Directories

Deleting a Recording File

Printing / Previewing

Exporting a Recording File

Loss of ECM Communication

Exit Diagnostic Software

Emergency Shut Down

Working Offline

Playback

Exit Offline Session

Uninstall Software

## Perkins Diagnostic Software

Installation Instructions

Starting / Using Software

Data List

View Engine Data

View Engine Info

Custom Data Lists

Change Font Style / Size

Print / Preview Data Lists

Save Data List

Diagnostic Codes

Active Codes

Inactive Codes

Print or Preview Codes

Save Diagnostic Codes

Clear Codes

Programmable Parameters

Print / Preview Parameters

Save (Export) Parameters

Reprogram Parameters

Diagnostic Tests

Engine Off Tests

Engine Running Tests

**Data Recording**

**Setup Recording**

Recording Mode

Playback Mode

Changing File Directories

Deleting a Recording File

Printing / Previewing

Exporting a Recording File

Loss of ECM Communication

Exit Diagnostic Software

Emergency Shut Down

Working Offline

Playback

Exit Offline Session

Uninstall Software

# Perkins Diagnostic Software

Click the Data Recording button on the toolbar to open this feature.



Figure 7.1

## 7.1 Setup Recording

The Data Recording Setup dialog allows you to specify the length of the recording, the time interval between the recording frames (Display Interval), the Trigger Position within the recording, and the Trigger Mode (Manual, Any Fault Code, or Specific Fault Code). If you choose to trigger the recording on a specific fault code, you can select the appropriate code from a drop-down list.

Click the Setup button to bring up the Data Recording Setup dialogue box.

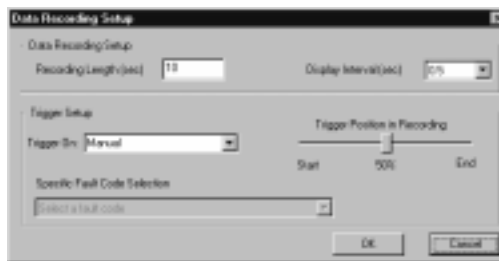


Figure 7.2

To set up the specific recording conditions required:

- Click on the “Recording Length” box.
- Enter the desired length in seconds.
- Click the down arrow in the “Display Interval” box and select the desired interval between recording frames.
- Click the down arrow in the “Trigger Mode” box and select the desired mode.

# Perkins Diagnostic Software

## Perkins Diagnostic Software

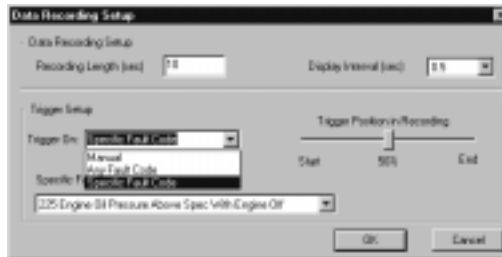


Figure 7.3

- If you selected “Specific Fault Code” as Trigger Mode, click the down arrow in the “Specific Fault Code Selection” box and select the desired code.

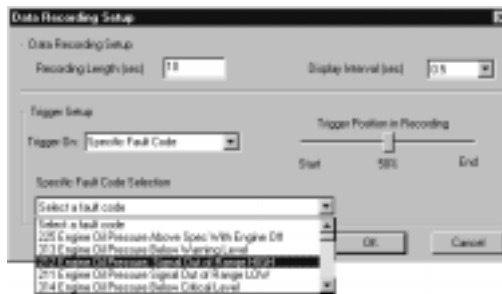


Figure 7.4

- Click and hold the “Trigger Position” slider bar and drag it to the desired position. The percentage of recording time before the trigger is displayed below the slider bar.
- Click OK to begin monitoring “live” data and waiting for the trigger event, or click Cancel to cancel the new recording and close the Data Recording Setup dialog.

If in the Data Recording Setup dialog you selected “Any Fault Code” or “Specific Fault Code” as the Trigger Mode;

- Wait for the fault condition to occur. Note the data recording will proceed automatically.

If the fault condition does not occur as expected;

- Click Trigger to proceed with data recording anyway, or Click Cancel to abort and discard the recording.

Installation Instructions

Starting / Using Software

Data List

- View Engine Data
- View Engine Info
- Custom Data Lists
- Change Font Style / Size
- Print / Preview Data Lists
- Save Data List

Diagnostic Codes

- Active Codes
- Inactive Codes
- Print or Preview Codes
- Save Diagnostic Codes
- Clear Codes

Programmable Parameters

- Print / Preview Parameters
- Save (Export) Parameters
- Reprogram Parameters

Diagnostic Tests

- Engine Off Tests
- Engine Running Tests

Data Recording

**Setup Recording**

- Recording Mode
- Playback Mode
- Changing File Directories
- Deleting a Recording File
- Printing / Previewing
- Exporting a Recording File

Loss of ECM Communication

Exit Diagnostic Software

Emergency Shut Down

Working Offline

- Playback
- Exit Offline Session

Uninstall Software

## Perkins Diagnostic Software

Installation Instructions

Starting / Using Software

Data List

View Engine Data

View Engine Info

Custom Data Lists

Change Font Style / Size

Print / Preview Data Lists

Save Data List

Diagnostic Codes

Active Codes

Inactive Codes

Print or Preview Codes

Save Diagnostic Codes

Clear Codes

Programmable Parameters

Print / Preview Parameters

Save (Export) Parameters

Reprogram Parameters

Diagnostic Tests

Engine Off Tests

Engine Running Tests

**Data Recording**

Setup Recording

**Recording Mode**

Playback Mode

Changing File Directories

Deleting a Recording File

Printing / Previewing

Exporting a Recording File

Loss of ECM Communication

Exit Diagnostic Software

Emergency Shut Down

Working Offline

Playback

Exit Offline Session

Uninstall Software

# Perkins Diagnostic Software

## 7.2 Recording Mode

While recording data or waiting for the trigger, the data list background turns green, signifying that you are viewing real-time data, as opposed to recorded data. “Live Data” is displayed on the status bar at the bottom of the screen. The file list and all buttons except Trigger and Cancel are disabled. While waiting for the trigger, a flashing indicator and an appropriate Waiting-for-Trigger message are displayed above the data list.

If in the Data Recording Setup dialog you selected Manual Trigger Mode,

- Click Trigger to trigger the Data Recording, or Click Cancel to abort and discard the recording.



Figure 7.5

Once the trigger event occurs, a progress indicator appears below the data list, moving left to right as the recording is completed. At the end of the specified recording period, the data is saved to a file, whose name is assigned automatically to indicate the date and time of the trigger event. The filename is added to the Data Recording File list, and the file is opened in Playback Mode. There will be a delay while the recorded data is being saved to file, a progress indicator will show on the screen while this is happening.

The file is assigned a name in the format: RMMDD\_hhmmss.rec where “R” signifies a Data Recording and the numbers are the date and time of the trigger point.

If you click Cancel before the trigger, the recording is aborted and the data list background turns gray, signifying that no data has been recorded. You can then select an existing file for Playback, or Click Setup to start a new recording. If you click Cancel after the trigger, you will be given a choice to save the data collected so far, or to abandon it.

# Perkins Diagnostic Software

## Perkins Diagnostic Software

### 7.3 Playback Mode

To playback a previous Data Recording, select the desired recording from the file list on the Data Recording Screen.

The data list at the trigger point is displayed. The playback controls appear at the bottom of the screen, and a timestamp appears at the top of the data list. This is the time in hours, minutes seconds and hundredths of a second relative to the trigger point. (Negative value before the trigger, and positive value after it.)

In Playback Mode, the data list background is blue, signifying that you are viewing recorded data. The recording file name appears on the status bar. The Trigger and Cancel buttons are disabled. The position of the slider denotes the relative position of the currently displayed frame within the recording. The control buttons are used to move to the start or end of the recording, to go forward or back one frame at a time, or to Play the recording at normal speed. While playing, the Play button changes to Stop. The “T” above the slider bar shows the position of the trigger within the recording. You can jump to the trigger position by clicking on the “T”.

- Click [ ] to jump to the first frame of the recording.
- Click [ ] to go back one frame.
- Click [ ] to jump to the trigger frame.
- Click [ ] to go forward one frame.
- Click [ ] to jump to the last frame of the recording.
- Click [ ] to play the recording at normal speed.
- Click [ ] to stop the playback.

### 7.4 Changing File Directories (Browse)

When the Perkins Engine Diagnostics program is started, the Recording File directory is initialized to its default location. The name of the current directory is displayed above the Data Recording Files list. Only files stored in the current directory are displayed on the list.

- Click Browse to open a Select Directory dialog.
- Click on the desired directory (folder).
- Click OK to change to the new directory and display any Recording Files.

The Default Directory is C:\VDS\Data.

Installation Instructions

Starting / Using Software

Data List

View Engine Data

View Engine Info

Custom Data Lists

Change Font Style / Size

Print / Preview Data Lists

Save Data List

Diagnostic Codes

Active Codes

Inactive Codes

Print or Preview Codes

Save Diagnostic Codes

Clear Codes

Programmable Parameters

Print / Preview Parameters

Save (Export) Parameters

Reprogram Parameters

Diagnostic Tests

Engine Off Tests

Engine Running Tests

**Data Recording**

Setup Recording

Recording Mode

Playback Mode

Changing File Directories

Deleting a Recording File

Printing / Previewing

Exporting a Recording File

Loss of ECM Communication

Exit Diagnostic Software

Emergency Shut Down

Working Offline

Playback

Exit Offline Session

Uninstall Software

## Perkins Diagnostic Software

Installation Instructions

Starting / Using Software

Data List

View Engine Data

View Engine Info

Custom Data Lists

Change Font Style / Size

Print / Preview Data Lists

Save Data List

Diagnostic Codes

Active Codes

Inactive Codes

Print or Preview Codes

Save Diagnostic Codes

Clear Codes

Programmable Parameters

Print / Preview Parameters

Save (Export) Parameters

Reprogram Parameters

Diagnostic Tests

Engine Off Tests

Engine Running Tests

### Data Recording

Setup Recording

Recording Mode

Playback Mode

Changing File Directories

Deleting a Recording File

Printing / Previewing

Exporting a Recording File

Loss of ECM Communication

Exit Diagnostic Software

Emergency Shut Down

Working Offline

Playback

Exit Offline Session

Uninstall Software

## 7.5 Deleting a Recording File

To delete a Recording File, while in Playback mode:

- Click on the name of the file you wish to delete from the Data Recording Files List.
- Click the Delete button. A confirmation dialog will appear.
- Click YES to confirm deletion, or NO to cancel.

## 7.6 Printing or Previewing a Recording File Frame

To print the currently-displayed frame of a Recording File.

Select File/Print (or Print Preview) from the menu to print or Preview the current frame.

## 7.7 Exporting a Recording File

Data Recordings can be exported in a comma-delimited (.csv) format for use with other software packages (i.e. Microsoft Excel).

- Select File/Save As from the menu to export the currently displayed Recording File.

The default name assigned to the Export File is the same name as the Recording File, with the file extension changed from .REC to .CSV. The first record (row) of the file contains the parameter names. The second record contains the parameter units. Each successive record contains the timestamp and associated parameter values for a recording frame.

Sample file format:

```
Rel. Time, Active Codes, Inactive Codes, Engine Hours, ...  
[HH:MM:SS.ss] ,, [hr] , ...  
-00:00:01.00, 0, 3, 5500, ...  
+00:00:00.00, 0, 3, 5500, ...  
+00:00:01.00, 0, 3, 5500, ...
```

## 8. Loss of ECM Communication

Occasionally communication with the ECM can be lost. This would be caused if the ECM was keyed off, or if the connection to the ECM was broken. First check the connections.

Use the mouse to click your selection in the dialog box.

- Click “Retry” - attempts to reestablish communications with the controller
- Click “Exit” - closes the application

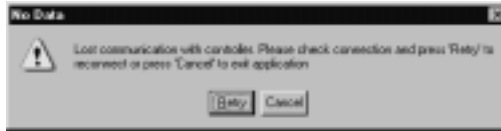


Figure 8.1

If the “Bus Active” and “Receive” lights on the Data Module are illuminated or are flashing, the loss of communication was only temporary. Click OK to clear the dialogue box and allow continued operation of the software.

If the Data Module lights are not flashing and the dialogue box returns almost immediately, check that the ECM still has power and that the key is on. Check the connections between the ECM and the computer, and the cables for wear and damage. Damaged cables or connectors must be replaced.

## Perkins Diagnostic Software

Installation Instructions

Starting / Using Software

Data List

View Engine Data

View Engine Info

Custom Data Lists

Change Font Style / Size

Print / Preview Data Lists

Save Data List

Diagnostic Codes

Active Codes

Inactive Codes

Print or Preview Codes

Save Diagnostic Codes

Clear Codes

Programmable Parameters

Print / Preview Parameters

Save (Export) Parameters

Reprogram Parameters

Diagnostic Tests

Engine Off Tests

Engine Running Tests

Data Recording

Setup Recording

Recording Mode

Playback Mode

Changing File Directories

Deleting a Recording File

Printing / Previewing

Exporting a Recording File

## Loss of ECM Communication

Exit Diagnostic Software

Emergency Shut Down

Working Offline

Playback

Exit Offline Session

Uninstall Software

## Perkins Diagnostic Software

Installation Instructions

Starting / Using Software

Data List

View Engine Data

View Engine Info

Custom Data Lists

Change Font Style / Size

Print / Preview Data Lists

Save Data List

Diagnostic Codes

Active Codes

Inactive Codes

Print or Preview Codes

Save Diagnostic Codes

Clear Codes

Programmable Parameters

Print / Preview Parameters

Save (Export) Parameters

Reprogram Parameters

Diagnostic Tests

Engine Off Tests

Engine Running Tests

Data Recording

Setup Recording

Recording Mode

Playback Mode

Changing File Directories

Deleting a Recording File

Printing / Previewing

Exporting a Recording File

Loss of ECM Communication

▶ Exit Diagnostic Software

▶ Emergency Shut Down

Working Offline

Playback

Exit Offline Session

Uninstall Software

## 9. Exit Diagnostic Software

It is better to close down the software (Exit) before you Key the engine off and disconnect from the engine.

To exit the Diagnostic Software select File/Exit, or double-click on the Perkins logo in the left corner of the dialog box.



Figure 9.1

If Communication has been lost with the ECM and you wish to exit the software, click Exit on the No Data dialogue box (Section 8).

## 10. Emergency Shut Down

The system normally cleanses itself when the Perkins application is terminated correctly. But there is a possibility that the application may terminate abnormally or even lock up. To force the application to terminate, press CTRL\_ALT\_DEL to bring up the task manager, select "Perkins Engine Diagnostics", then click "End Task" to terminate the application. Once the user terminates the application press CTRL\_ALT\_DEL again, looking for "DMserver", highlight it and click "End Task" to terminate the server.

# Perkins Diagnostic Software

## Perkins Diagnostic Software

### 11. Working Offline

This feature allows the software to be operated when there is no powered ECM available in order to allow you to replay Data Recordings and for training purposes. You do not need to connect a Data Module.

Start the diagnostic software in the normal manner, highlight the required engine application icon then select Offline from the following screen.

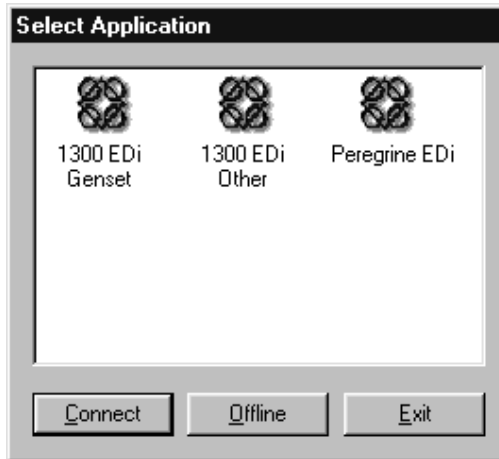


Figure 11.1

When Offline mode is selected a file Open dialog is displayed.

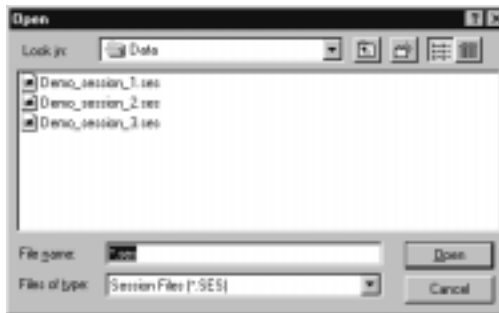


Figure 11.2

Installation Instructions

Starting / Using Software

Data List

View Engine Data

View Engine Info

Custom Data Lists

Change Font Style / Size

Print / Preview Data Lists

Save Data List

Diagnostic Codes

Active Codes

Inactive Codes

Print or Preview Codes

Save Diagnostic Codes

Clear Codes

Programmable Parameters

Print / Preview Parameters

Save (Export) Parameters

Reprogram Parameters

Diagnostic Tests

Engine Off Tests

Engine Running Tests

Data Recording

Setup Recording

Recording Mode

Playback Mode

Changing File Directories

Deleting a Recording File

Printing / Previewing

Exporting a Recording File

Loss of ECM Communication

Exit Diagnostic Software

Emergency Shut Down

**Working Offline**

Playback

Exit Offline Session

Uninstall Software

## Perkins Diagnostic Software

Installation Instructions

Starting / Using Software

Data List

View Engine Data

View Engine Info

Custom Data Lists

Change Font Style / Size

Print / Preview Data Lists

Save Data List

Diagnostic Codes

Active Codes

Inactive Codes

Print or Preview Codes

Save Diagnostic Codes

Clear Codes

Programmable Parameters

Print / Preview Parameters

Save (Export) Parameters

Reprogram Parameters

Diagnostic Tests

Engine Off Tests

Engine Running Tests

Data Recording

Setup Recording

Recording Mode

Playback Mode

Changing File Directories

Deleting a Recording File

Printing / Previewing

Exporting a Recording File

Loss of ECM Communication

Exit Diagnostic Software

Emergency Shut Down

Working Offline

Playback

Exit Offline Session

Uninstall Software

# Perkins Diagnostic Software

There are three demonstration files:

**Demo\_session\_1.ses** is a recording of engine start and run-up.

**Demo\_session\_2.ses** is of a running engine with a fault introduced, removed and then cleared.

**Demo\_session\_3.ses** is an engine not running. This is intended for use as the background for replaying Data Recordings offline.

In the first two files you can view Data Lists, view Diagnostic codes, Programmable Parameters and diagnostic tests. You can create and playback a Data Recording, and perform the all Print, Preview and Save functions.

As you select each diagnostic feature during the demonstration run, the software will find the point in the recorded session where that feature was invoked, and replay that part continuously. However because some of the diagnostic features require two-way communication with the ECM, they will not perform exactly as in a live diagnostic session.

In particular, you cannot

- Reprogram parameters
- Clear diagnostic codes
- Run diagnostic tests

To open a recorded offline session, select the file to be run offline and click “open”.

## 11.1 Playback of Data Recordings offline

Start the offline session as described above but select file **Demo\_session\_3.ses** as this has no engine running data to distract you.

Select Data Recording from the toolbar, then select the file you wish to playback as described in Section 7.3

## 11.2 Exit Offline Session

Select File/Exit on the menu bar or click the “X” in the top right corner of the screen.

# Perkins Diagnostic Software

## 12. Uninstall Perkins Diagnostic Software

There are two methods to uninstall this software:

### Method 1

- Select Start/Programs/Perkins Systems/Engine Diagnostics/ Uninstall.  
The following will appear.



Figure 12.1

- Select Automatic
- Click Next
- Follow the on screen instructions to complete the uninstall process.

## Perkins Diagnostic Software

Installation Instructions

Starting / Using Software

Data List

- View Engine Data
- View Engine Info
- Custom Data Lists
- Change Font Style / Size
- Print / Preview Data Lists
- Save Data List

Diagnostic Codes

- Active Codes
- Inactive Codes
- Print or Preview Codes
- Save Diagnostic Codes
- Clear Codes

Programmable Parameters

- Print / Preview Parameters
- Save (Export) Parameters
- Reprogram Parameters

Diagnostic Tests

- Engine Off Tests
- Engine Running Tests

Data Recording

- Setup Recording
- Recording Mode
- Playback Mode
- Changing File Directories
- Deleting a Recording File
- Printing / Previewing
- Exporting a Recording File

Loss of ECM Communication

Exit Diagnostic Software

Emergency Shut Down

Working Offline

- Playback
- Exit Offline Session

Uninstall Software

## Perkins Diagnostic Software

Installation Instructions

Starting / Using Software

Data List

View Engine Data

View Engine Info

Custom Data Lists

Change Font Style / Size

Print / Preview Data Lists

Save Data List

Diagnostic Codes

Active Codes

Inactive Codes

Print or Preview Codes

Save Diagnostic Codes

Clear Codes

Programmable Parameters

Print / Preview Parameters

Save (Export) Parameters

Reprogram Parameters

Diagnostic Tests

Engine Off Tests

Engine Running Tests

Data Recording

Setup Recording

Recording Mode

Playback Mode

Changing File Directories

Deleting a Recording File

Printing / Previewing

Exporting a Recording File

Loss of ECM Communication

Exit Diagnostic Software

Emergency Shut Down

Working Offline

Playback

Exit Offline Session

Uninstall Software

# Perkins Diagnostic Software

## Method 2

- Click Start/Settings/Control Panel.
- Double-click on Add/Remove Programs.
- Find and click on “Perkins Engine Diagnostics” and then click Add/Remove button.

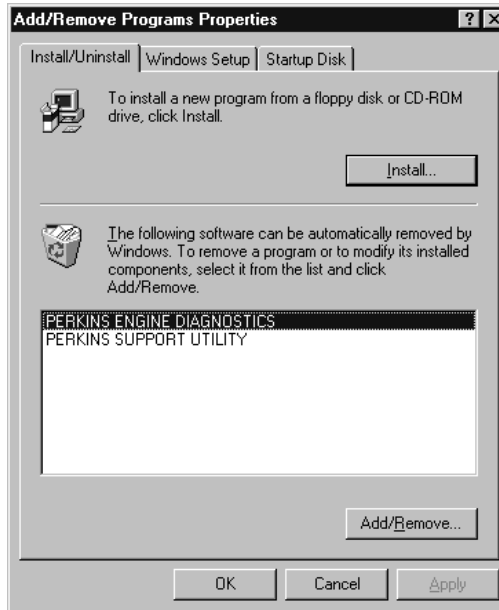


Figure 12.2

- Select Automatic on the Uninstall Wizard screen.



Figure 12.3

- Click Next
- Continue to follow the on-screen instruction to complete the uninstall process.

# Glossary

## 13. Glossary of Terms

<b>AIT</b>	Intake Air Temperature
<b>ATA</b>	American Truck Association
<b>B+ or Battery+</b>	Battery positive
<b>BAP</b>	Barometric Absolute Pressure
<b>Bus Active (light)</b>	A light on the Data Module that shows that the ECM is sending data out
<b>CC</b>	Cruise Control
<b>CPS</b>	Camshaft Position Sensor
<b>CPU</b>	Central Processor Unit
<b>CTC</b>	Coolant Temperature Compensation
<b>Data Module</b>	Communication device to enable the ECM to communicate with the PC. It requires power from the ECM to operate it. (See SDM and PDM)
<b>Data Recording</b>	A recording of the data transmitted from the ECM that is taken during a session and triggered manually or by a trouble code
<b>Data Recording File</b>	A file of a Data recording that can be played back offline or during a live session
<b>Diagnostic Code</b>	A number that indicates an abnormal condition has been detected. The Number defines the system affected and the failure mode. Also referred to as Trouble Code and Fault Code
<b>ECM (Engine Control Module)</b>	The electronic unit that controls all the engine functions
<b>ECT</b>	Engine Coolant Temperature
<b>EOP</b>	Engine Oil Pressure
<b>Export (file)</b>	To save data to a file that can be opened in another software application (e.g. a spreadsheet)
<b>FMI</b>	Failure Mode Indicator
<b>Fault Code</b>	See Diagnostic Code
<b>J1587 Data</b>	Data in the SAE J1587 standard format
<b>H/W</b>	Hardware
<b>HPG</b>	Hydraulic Pressure Governor
<b>ICP</b>	Injection Control Pressure

# Glossary

**ID** Identification Number (or code)

**IPR** Injection Pressure regulator

**IST** Idle Shutdown Timer

**N** Engine Speed

**N/A** Not Applicable

**OCC** Output Circuit Continuity

**Offline** When the PC is running using recorded session data

**Online** When the PC is reading data directly from a live ECM through a powered Data Module

**Parallel Port** The 25-pin female connection on the back of a PC

**PC (Personal Computer)** IBM compatible personal computer

**PDM (Parallel Data Module)** A Data Module that plugs into the PC Parallel port

**PID** Parameter Identification Number

**PTO** Power Take Off

**RAM** Random Access Memory (as in a computer)

**Real Time playback** Playback of a recording at the same speed as it was made

**Real Time** The current date and time according to the clock in the PC. If registered on a recording the real time will be the time that the recording was made

**Receive (light)** A light on the Data Module that shows that the PC is receiving data

**SDM (Serial Data Module)** A Data Module that plugs into the Serial port of the PC

**Serial Port** The 9-pin male connection on the back of a PC

**Session file** A file of a complete session that can be replayed offline

**Session** The time from when the Diagnostic software is started until it is closed down

**SID** System Identification Number

**SIL** Service Interval Lamp

**S/W** Software

**Tattletale** Count of an event occurring or the number of times an item has been programmed

# Glossary

<b>Timestamp</b>	A record of the date and time or of the time relative to the trigger point
<b>TLT</b>	Torque Level Tailoring
<b>Transmit (light)</b>	A light on the Data Module that shows that data transmitted by the PC is being received by the ECM
<b>Trouble Code</b>	See Diagnostic Code
<b>VS</b>	Vehicle Speed
<b>VSS</b>	Vehicle Speed Sensor
<b>WW</b>	Way Warning (as in 2-Way Warning)