Öhlins
EC Diagnostic Tool

Owner's Manual

ÖHLINS®

ADVANCED SUSPENSION TECHNOLOGY

General Warnings

👁 Note!
The shock absorber/front fork/steering damper is an important part of the vehicle and will affect the stability.

👁 Note!
Read and ensure you understand the information in this manual and other technical documents provided by Öhlins, before using the product.

👁 Note!
Öhlins Racing AB can not be held responsible for any damage to the shock absorber/front fork/steering damper, vehicle, other property or injury to persons, if the instructions for mounting, usage and maintenance are not followed exactly.

⚠ Warning!
After installing the Öhlins product, take a test ride at low speed to ensure your vehicle has maintained stability.

⚠ Warning!
If the suspension makes an abnormal noise, or the function is irregular, or if you notice any leakage from the product, stop the vehicle immediately and return the product to an Öhlins Service Centre.

⚠ Warning!
The product warranty shall only apply if the product has been operated and maintained in accordance with recommendations in this manual. If you have any questions regarding usage, service, inspection and/or maintenance please contact Öhlins.

👁 Note!
When working with the Öhlins product, always read the Vehicle Service Manual.

👁 Note!
This Manual shall be considered a part of the product and shall therefore accompany the product throughout its life cycle.

Safety Symbols

In this manual, mounting instructions and other technical documents, important information concerning safety is distinguished by the following symbols:

⚠
The Safety Alert Symbol means: Warning! Your safety is involved.

⚠ Warning!
The Warning Symbol means: Failure to follow warning instructions can result in severe or fatal injury to anyone working with, inspecting or using the shock absorber, or to bystanders.

✋ Caution!
The Caution Symbol means: Special precautions must be taken to avoid damage to the shock absorber.

👁 Note!
The Note Symbol indicates information that is important regarding procedures.

Product Specific Warnings

⚠ Warning!
Risk of electric shock. Do not open.

⚠ Warning!
To reduce the risk of electric shock, do not remove cover (or back). No user-serviceable parts inside. Refer servicing to qualified service personnel.

⚠ Warning!
To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture, and object filled with liquids, such as vases, should not be placed on this apparatus.

✋ Caution!
To prevent electric shock, match wide blade of plug to wide slot, fully insert.

⚠ Warning!
Unit may become hot. Always provide adequate ventilation to allow for cooling. Do not place near a heat source, or in spaces that can restrict ventilation.

In this manual

1. Connect the following cables to the EC Diagnostic Tool as shown in figure 1:
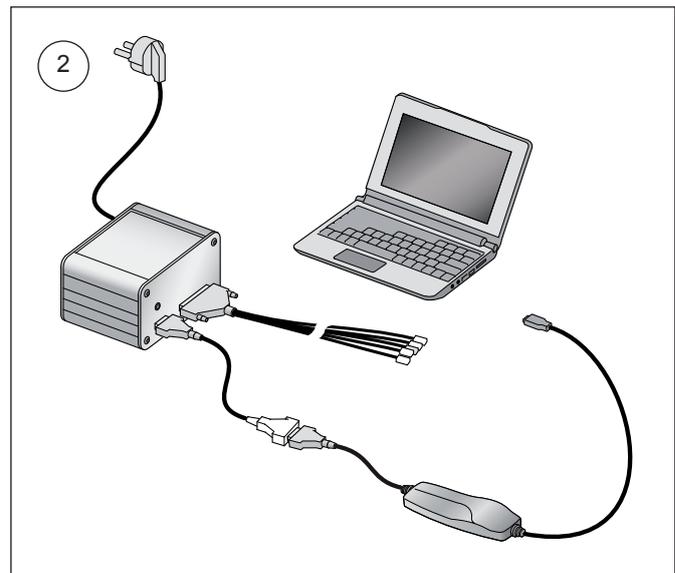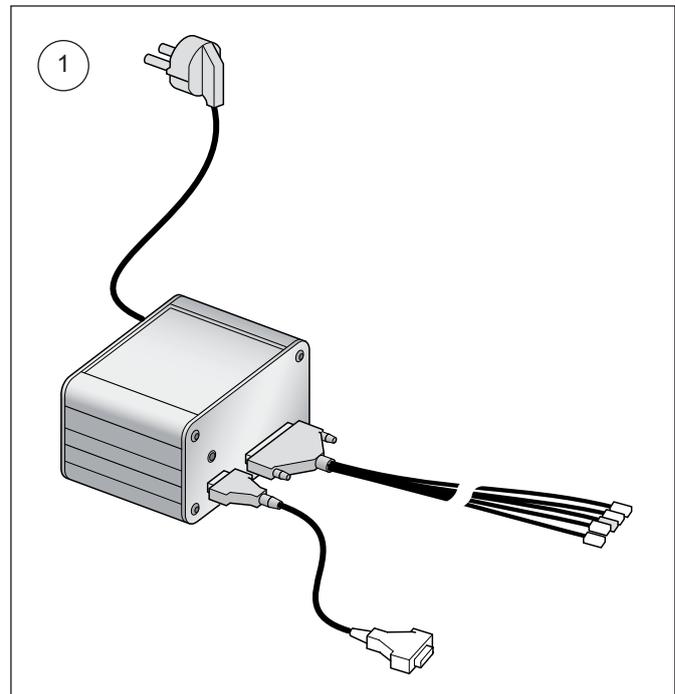   • Power cable
   • D-sub cable
   • Patch cable

2. Connect the CAN/USB adapter to the D-sub cable.

Note!

Do not connect the box to the computer before installing the software. Follow the instructions in the section "Installing the Software" and return to step 3 in this instruction.

The box is made for input voltage range 90 – 264 VAC and equipped with a C14 (according to IEC/EN 60320-1) power entry.
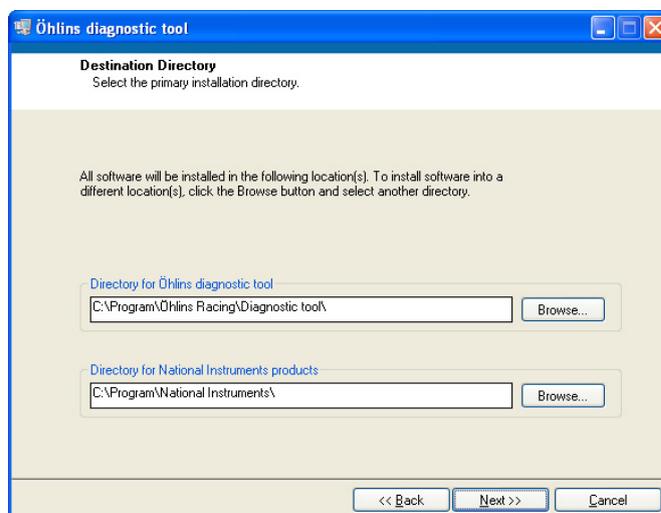
The software to the Öhllins EC Diagnostic Tool is to be downloaded from Öhlins World site (http://world.ohlins.com). Access to the site is restricted to authorized users only. The software bundle includes the Öhlins Diagnostic Tool Program and driver needed for the CAN / USB adapter. To install the software you need administrator privileges on the computer. When the software is downloaded, extract the zip-file and follow the instructions below.
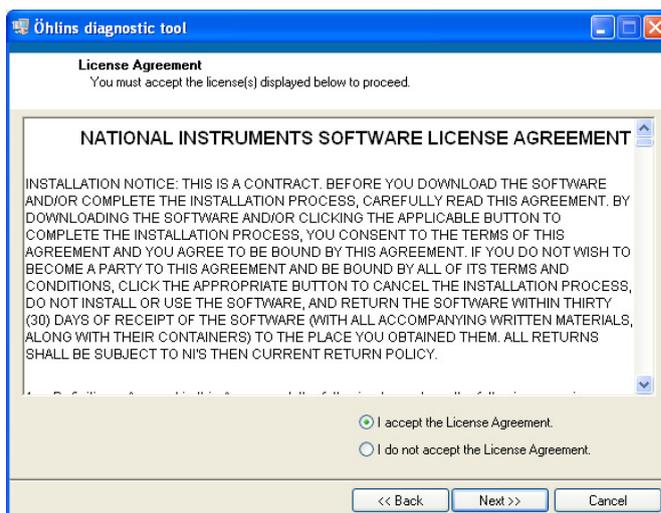
1.   Run the file setup.exe.

Location of installed files

2.   Keep the default settings (recommended).
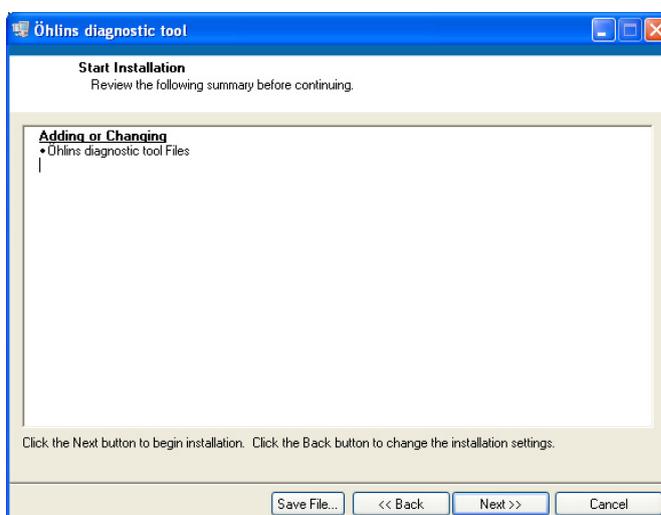   Click "Next" to continue.

License agreement

3.   Check the radio button to accept the National Instruments license agreement.
           Click "Next" to continue.
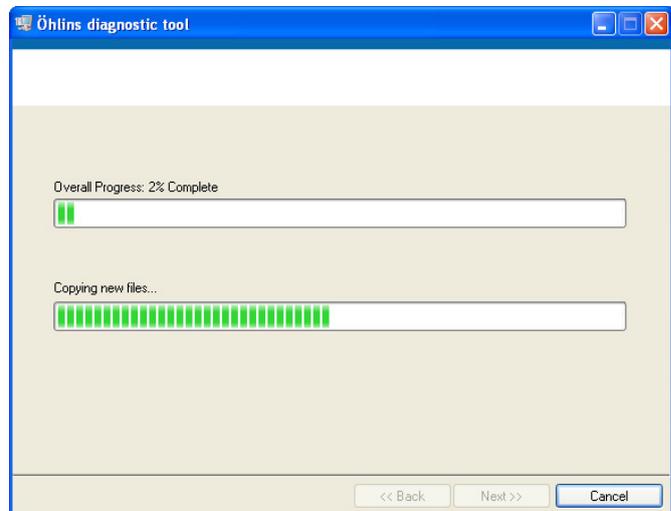
Install Öhlins diagnostic tool

4.   Add Öhlins diagnostic tool to your system
           Click "Next" to continue.
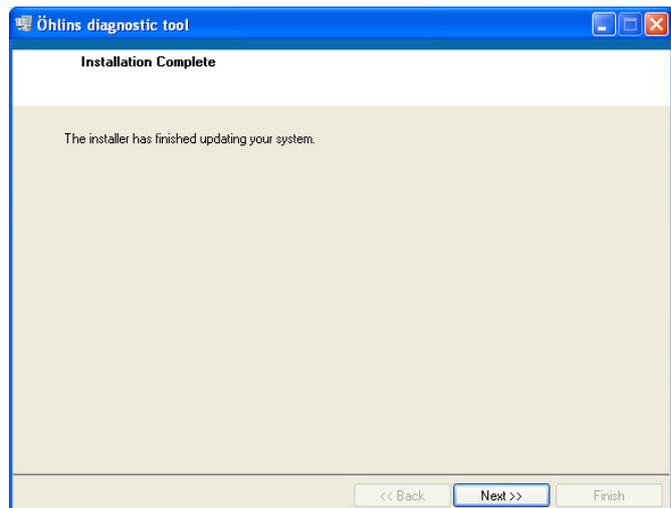
INSTALLING THE SOFTWARE

Installation progress

5. The installation can take up to a few minutes.

Öhlins diagnostic tool installation completed

6. Click "Next" to continue.
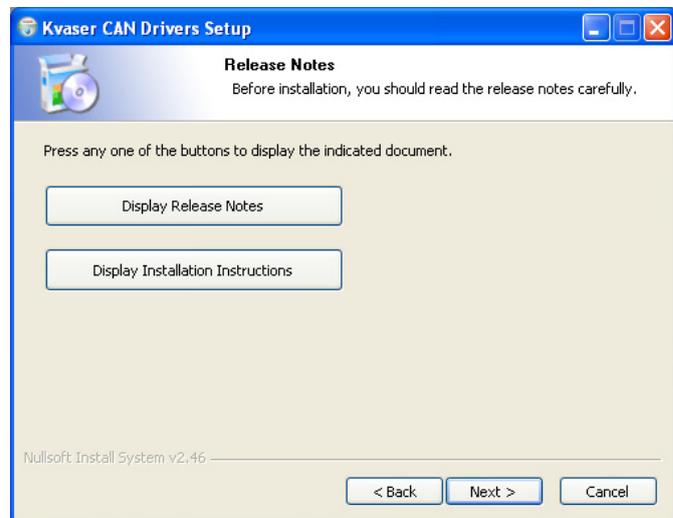
CAN/USB adapter driver installation

7. Start the CAN/USB adapter driver installation.
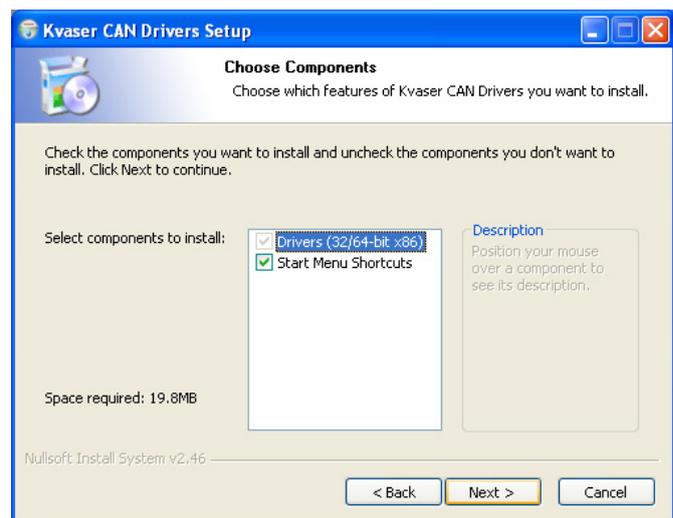   Click "Next" to continue.

Release notes

8.   Read the release notes and/or detailed installation
        instructions for the driver.
        Click "Next" to continue.

Installation option

9.   If you want to create shortcuts in the start menu, select
        "Start Menu Shortcuts".
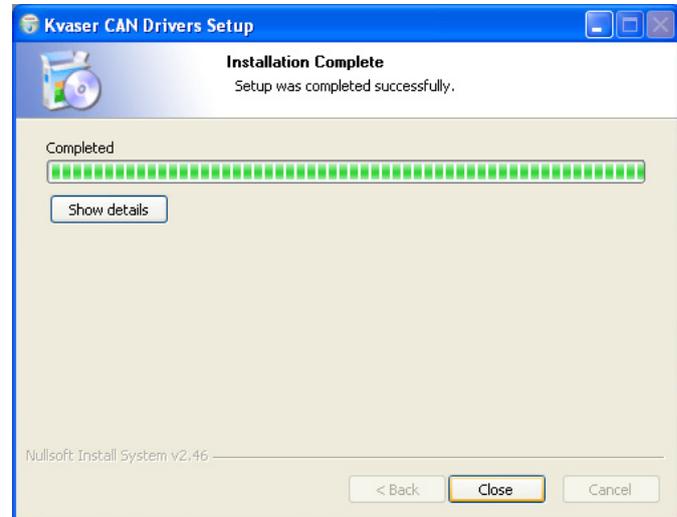   Click "Next" to continue.

Location of installed files

10.   Keep the default setting (recommended).
        Click "Install" to start the installation.

Installation completed

11.   Click "Close".

Restarting computer

12.   Restart the computer.
         Click "Restart" to restart the computer.

👁 **Note!**
Save all work and close all other programs before you restart the computer.

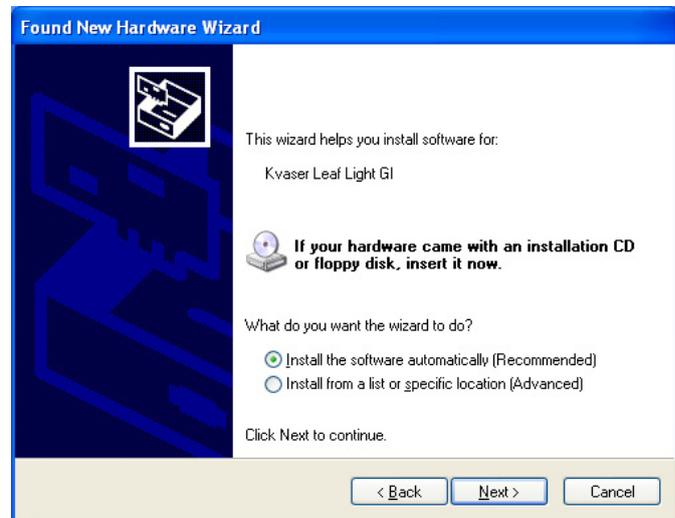13.   Connect the CAN / USB adapter to the computer´s USB port.

14.   Within a few seconds Windows will find the adapter and start a wizard to install the driver. Note that Windows install USB drivers per USB port. So if you at another time connect the adapter to another USB port, you have to go through the wizard again.

15.   Select "No, not this time".
         Click "Next" to continue.

16.   Select "Install the software automatically".
       Click "Next" to continue.

17.   Software installation is now complete.
       Press "Finish".

CONNECTING THE DIAGNOSTIC TOOL

3.1 Connect the diagnostic tool

1. Identify which connectors that should be used for the diagnostic test.
2. Before turning the EC Diagnostic tool on, remove the existing connection between the harness and the shock absorber/front fork/spring preloader and connect the correct connector from the EC Diagnostic Tools harness.

Patch cable markings:

FL - Front Left
FR - Front Right
RL - Rear Left
RR - Rear Right
PL - Spring Preloader

4.1 Compability

The shock absorber connections on the patch cable (RC and RR) are compatible with the stepper motors 21704-XX.

The fork connections on the patch cable (FC and FR) are compatible with stepper motors 21717-XX.

The preload connection on the patch cable (PL) is compatible with preload adjuster motor unit 21762-01.
Other preload adjuster motor units can be diagnosed with this tool but since the hydraulic ratio may differ, the adjustment range will not be correctly displayed.

4.2 Check EC Motors

4.1.1 Perform Diagnostics
1. Adjust the spring preload to the lowest level before disconnecting the motor from the vehicles wire harness.

2. Connect the patch cable to the product. See chapter "Connecting the diagnostic tool".

3. Start the Diagnostic Program on your computer. See chapter "Diagnose a system".

4. Turn on the power on the EC Diagnostic Tool.

4.1.2 Evaluation
Expected results if no errors on the motors:
• No error messages in the message box. See chapter 5.
• Stepper motors react to adjustments. See chapter 5.
• Preload adjuster reacts when applying more and less preload.
  See chapter 5.

If you get an error code or no/incorrect reaction on adjustments replace the faulty component and redo the diagnosis.

4.3 After Diagnostics

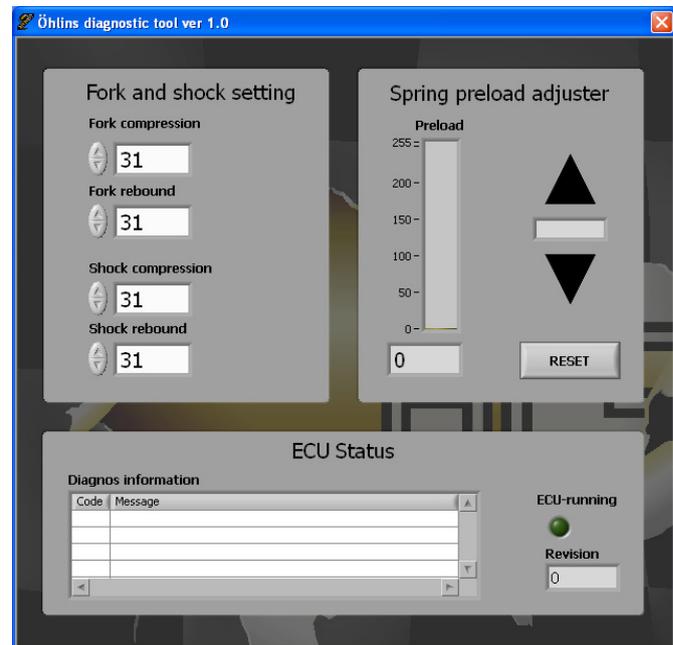Adjust the spring preload to the lowest level and connect then the motors to the vehicle´s wire harness.

The stepper motors are calibrated automaticly by the ECU. The preload adjuster has to be manually checked and calibrated if needed. If the preload is incorrect, adjust the preload to highest and then lowest level using the vehicle´s controls.
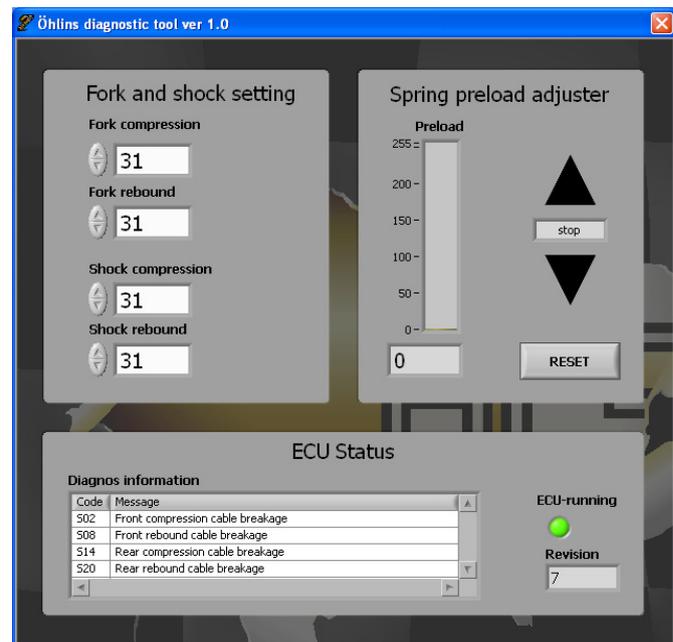
DIAGNOSE A SYSTEM

5.1 Software Instructions

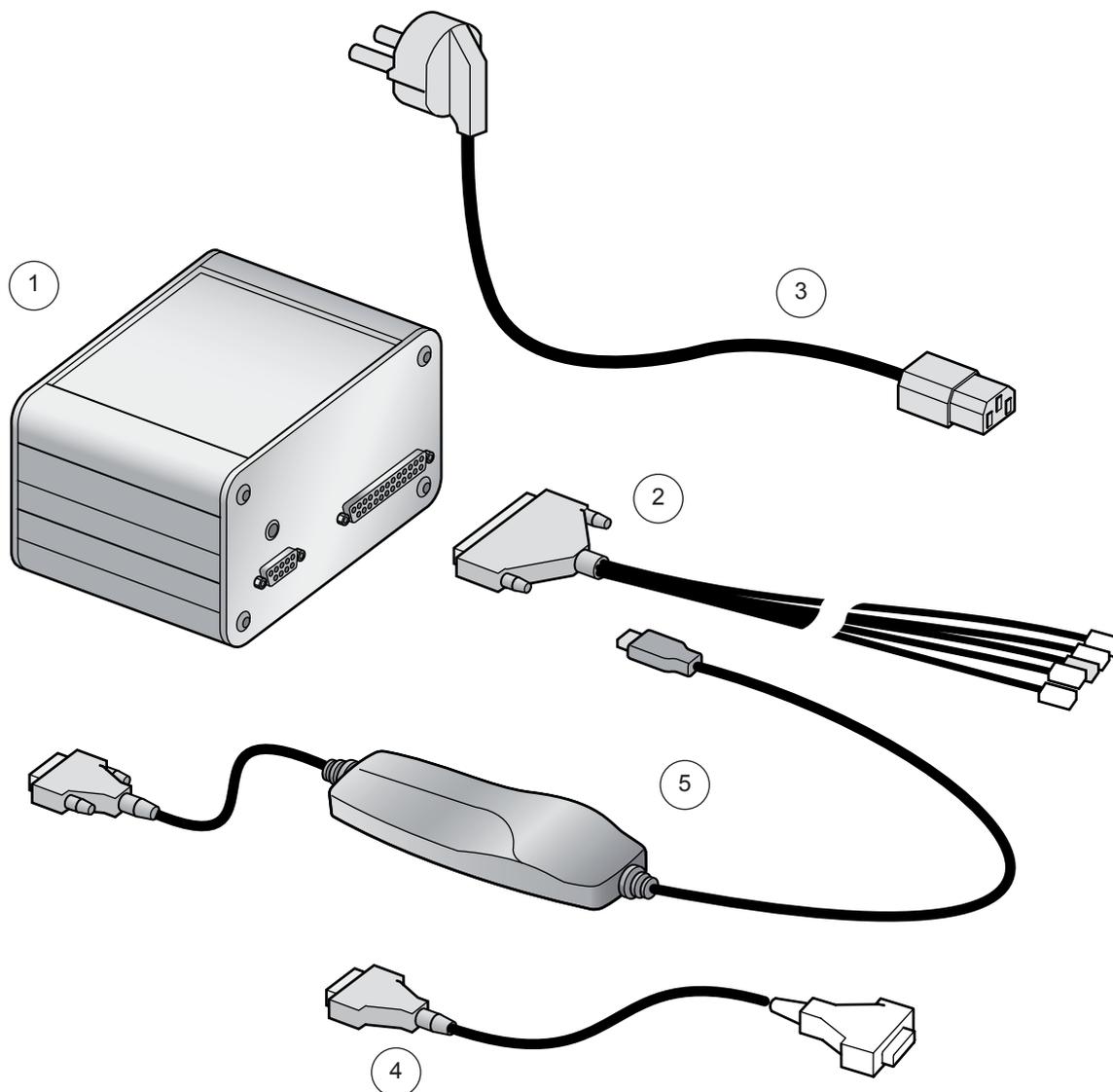Here we describe how to use the software and the capabilites of it.

1. Start the Diagnostic tool by Start-menu -> Öhlins diagnostic tool -> Diagnostic tool.

2. Turn on the power on the diagnose box.
   The program connects to the box, "ECU-running" lamp turns on. When the box has made the diagnose you get the information in the "Diagnose information" text box.

3. Use the arrows to adjust the settings and preload.

4. Turn off the power to the diagnose box and then quit the program.

6.1 Part List

No	Article Number	Article Description	Unit	Quantity/assembly
1	35001-01	Öhlins EC Diagnostic Tool	PCS	1
2	35002-01	Patch Cable	PCS	1
3	35003-01	Power Cord 2m	PCS	1
4	35003-02	D-sub cable 0.5m	PCS	1
5	35003-03	Adapter CAN/USB	PCS	1
	35006-01	Rubber Foot 6.4/1.9	PCS	4
	07222-01	Owners manual Öhlins EC Diagnostic Tool	PCS	1

Your Öhlins retailer:

CERTIFIERAT
ISO 9001
SEMKO CERTIFICATION

CERTIFIERAT
ISO 14001
SEMKO CERTIFICATION

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