

# PointX

## Electronic Measuring System

### Instruction Manual



(45929, rev 6) 2019-03 EN

**CAR-O-LINER®**

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# Foreword

The PointX Electronic Measuring System allows you to electronically measure vehicles. The PointX Electronic Measuring System comprises the *PointX measuring arm*, which is the measuring hardware, *Vision2 PointX*, which is the measuring software and *Car-O-Data*, which is a database containing Car-O-Liner DataSheets (with photos) and indexes for most vehicles. Car-O-Data is available through an online subscription.

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**NOTE:** Before installation of Vision2 PointX and Car-O-Data DVD, be sure to read the Licence Agreements. By installing the software, you agree to the terms of the Agreement.

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## **Notice**

Dimensions and information contained on Car-O-Liner DataSheets are compiled from information prepared by measuring vehicles and from information provided by the car manufacturers. The methods used in the measurement of vehicles are normally considered reliable as regards to the accuracy required.

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We reserve the right to make changes without prior notice.

## **License Agreement**

By installing the software, you agree to the terms of this Agreement. To the extent that other terms have been agreed to in writing with Car-O-Liner Group AB, such other terms shall prevail. If you do not agree with the terms, promptly return the software box with accompanying items for a refund.

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## **Vision2 software functions**

All information regarding the software in this manual is intended for Vision2 PointX.

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# 1 Introduction

## 1.1 General

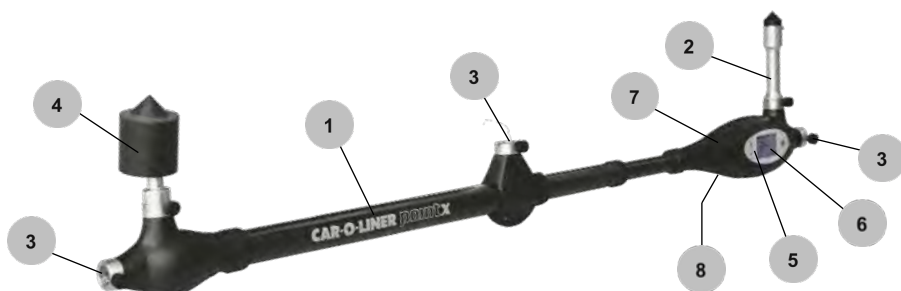
PointX is a quick and accurate electronic measuring system.  
The PointX measuring system consists of:

- A lightweight hand held measuring arm
- Measuring tubes, magnetic attachment device and adapters
- *Vision2 PointX* software with access to *Car-O-Data*,  
the worlds largest vehicle database

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A lightweight telescopic electronic measuring arm [1] made of composite materials forms the main component of the system. The PointX measuring arm has built in inclinometer for automatic level adjustment and built in laser for measuring distance between measuring points.

The measuring tubes [2] are easily fitted into the sockets in both ends of the telescopic measuring arm. The measuring tubes can be fitted in various combinations [3] to cover all measuring situations. A self-centring magnetic attachment [4] can easily be fitted to the measuring arm. The measuring control buttons [5] and the display [6] are located on the side of the measuring head [7] and the battery compartment [8] for the two AA batteries is located on the back of the measuring head.



*Figure 1.1      The PointX measuring arm.*

The PointX Electronic Measuring System is delivered in a durable lightweight case which contains the measuring arm, measuring tubes, magnetic attachment, adapters, extension device and batteries. The case also contains Quick Guide, Software CD, Car-O-Data DVD and Bluetooth adapter.



Figure 1.2 The PointX case with complete measuring kit.

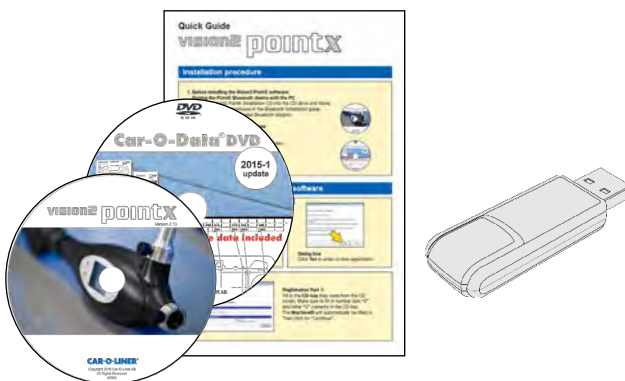


Figure 1.3 Vision2 PointX CD, Car-O-Data DVD, Quick guide and Bluetooth adapter for the PC.

## 1.2 Marking

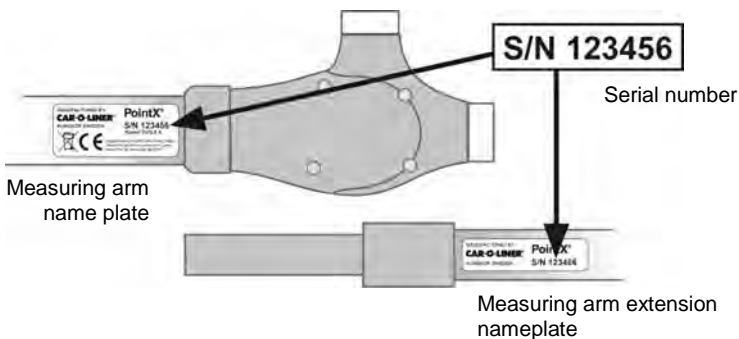
The name plate is placed according to the picture below.



Figure 1.4 The PointX name plate

### 1.2.1 Matching serial numbers on measuring arm and measuring arm extension name plates

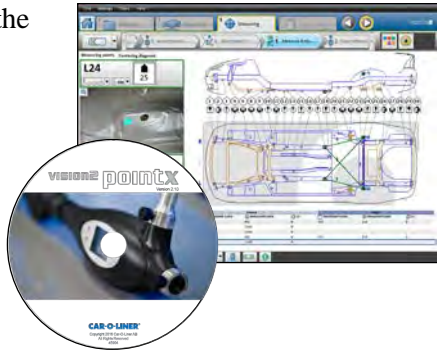
To achieve correct measuring results, the measuring arm and measuring arm extension are factory calibrated together, therefore their serial numbers must match. If not, there is a risk of incorrect measuring results.



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## 1.3 Vision2 PointX measuring software

Vision2 PointX contains the original version of the measuring software. Vision2 PointX automatically checks for updates every week if you are a registered Car-O-Data internet user. As a Car-O-Data internet user you can also manually update Vision2 PointX. Vision2 PointX must be installed on the hard drive.



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## 1.4 Car-O-Data vehicle database via Internet

Car-O-Data is the worlds largest vehicle database containing Car-O-Liner index with DataSheets for more than 8 000 vehicle models available for PointX measuring system.

To use the Car-O-Data database you need to be a Car-O-Data subscriber.

Car-O-Data Internet is an online subscription which enables you to update desired models in your vehicle database via internet.

**As a Car-O-Data Internet subscriber you will have instant access to the latest DataSheets with new releases every week!**

Dimensions and information on Car-O-Liner DataSheets are compiled from information prepared by measuring vehicles, and from information provided by the car manufacturers. The methods used in the measurement of vehicles are normally considered reliable regarding the accuracy required.

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## 2 Safety

### 2.1 General

The PointX Electronic Measuring System has been designed and tested to meet strict safety requirements. Please read the following instructions carefully before operating the PointX Electronic Measuring System, and refer to the instructions as needed to ensure the continued safe operation of the PointX Electronic Measuring System.

Information provided in this manual describes the suggested best working practices and should in no way take precedence over individual responsibilities or local regulations.

Great effort has been placed on the design and manufacture of the PointX Electronic Measuring System so that it will comply with all applicable safety aspects for this type of equipment. During operation and other work, it is always each individual's responsibility to consider:

- Their own and other's personal safety.
- The safety of the PointX Electronic Measuring System through correct use of the equipment in accordance with the descriptions and instructions provided in this manual.

By observing and following the safety precautions, users of the PointX Electronic Measuring System will ensure safer working conditions for themselves and their fellow workers.

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## 2.2 Warnings and important notices

The following types of safety signs are used on the equipment and in Car-O-Liner's instruction manuals:



**PROHIBITED** – Prohibits behaviour that can cause injury.



**COMMAND** – Prescribes a specific responsibility or action.



**WARNING** – Warns of risks for personal injuries and or damages to equipment.

The following warnings and important notices are used in the instruction manual:



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### **WARNING**

**Warning** (in bold type) is used in this manual to indicate a possible danger that could lead to personal injury. An instruction is normally given, followed by a short explanation plus the possible effect if the instruction is not followed.

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### **IMPORTANT**

**Important** (in bold type) is used to indicate a possible danger that could lead to damage to the equipment and/or cause environmental damage.

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**NOTE:** (in bold type) is used to accentuate supplementary information that is required for problem-free use or optimal use of the equipment.

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The following warnings and important notices appear in this instruction manual:



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**WARNING:** Laser radiation when open. Do not stare into beam. Class 1 laser product\*.

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**IMPORTANT:** Do not open the PointX measuring arm. All service must be carried out by authorized Car-O-Liner service personnel.

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**IMPORTANT:** It is the responsibility of the owner (user) to ensure that the equipment has been installed as specified in the instructions provided. It is also the owner's responsibility to ensure that the equipment is inspected in accordance with applicable regulations before it is used.

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**IMPORTANT:** Keep the measuring tubes, the measuring adapters and the measuring tube attachments clean. These are precision parts that contribute to accurate measurement results.

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**IMPORTANT:** Calibration must be carried out by authorized Car-O-Liner service personnel. Car-O-Liner recommends that the PointX is calibrated once a year. Contact your Car-O-Liner distributor.

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**IMPORTANT:** Dust, paint and other chemicals should be kept away from the measuring arm.

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**IMPORTANT:** No solvents, oils, lubricants, detergents or liquid should be exposed to the PointX measuring arm.

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*\*FDA requirements: Complies with 21 CFR 1040.10 except for deviations pursuant to Laser Notice No. 50, dated June 24, 2007*



**IMPORTANT:** For the sake of the environment, it is important that the equipment is dismantled in an environmentally friendly way.

---



**IMPORTANT:** Batteries must be installed according to the diagram printed to the inside of the battery compartment to ensure correct terminal polarity. Use only AA/LR6 batteries. Other batteries may cause equipment to malfunction or damage the electronic circuit.

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**IMPORTANT:** The PointX measuring arm should be kept away from moisture and fluids.

---



**IMPORTANT:** Lock the measuring tubes and the measuring adapters with the proper locking devices. Accuracy will suffer if these items are not properly secured.

---



**IMPORTANT:** The PointX measuring arm should be kept clean to allow smooth operation of the measuring arm.

---



**IMPORTANT:** The PointX measuring arm should be kept away from all welding sparks and slag.

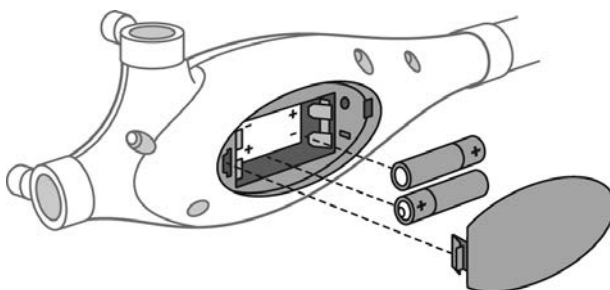
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## 3 Installation

### 3.1 PointX measuring arm

Insert 2 AA batteries in the battery compartment on the back of the measuring head, see picture below. Car-O-Liner recommends rechargeable batteries. Battery cover latch is released by hand. The PointX measuring arm is now ready to use.



*Figure 3.1      Insert the batteries.*



---

**IMPORTANT:** Batteries must be installed according to the diagram printed to the inside of the battery compartment to ensure correct terminal polarity. Use only AA/LR6 batteries. Other batteries may cause equipment to malfunction or damage the electronic circuit.

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## 3.2 Installing Vision2 PointX software

Place the Vision2 PointX installation CD into the CD-drive and click on the *Install Vision2 PointX*. Then follow the on screen instructions.



For registration, see Vision2 PointX Quick Guide.



**NOTE:** Your computer needs internet access!

## 3.3 Pairing of Bluetooth

The PointX measuring arm communicates with the PC via Bluetooth. Before installing the Vision2 PointX you must pair the PointX Bluetooth device with the PC. For instructions, see Bluetooth installation guide on the *Vision2 PointX installation CD*.

## 3.4 Selection of Bluetooth COM-port

After pairing the PointX Bluetooth device with the PC, the correct COM-port must be selected in the Vision2 PointX software (under "Settings"). For instructions, see Bluetooth installation guide on the *Vision2 PointX installation CD*. This must be carried out before you start measuring.

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## 4 Operation

### 4.1 PointX measuring arm

Before you begin using PointX measuring arm and Vision2 PointX, be sure to read the instructions in this Instruction Manual and that you understand them. The equipment is inspected and checked prior to leaving the factory to guarantee consistent quality and maximum reliability.



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**IMPORTANT:** It is the responsibility of the owner (user) to ensure that the equipment has been installed as specified in the instructions provided. It is also the owner's responsibility to ensure that the equipment is inspected in accordance with applicable regulations before it is used.

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**IMPORTANT!** Keep the measuring tubes, the measuring adapters and the measuring tube attachments clean. These are precision parts which contribute to accurate measurement results.

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---

**IMPORTANT!** Lock the measuring tubes and the measuring adapters with the proper locking devices. Accuracy will suffer if these items are not properly secured.

---



**IMPORTANT:** The PointX measuring arm should be kept away from moisture and fluids.

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**IMPORTANT:** Dust, paint and other chemicals should be kept away from the PointX measuring arm.

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**IMPORTANT:** The PointX measuring arm should be kept clean to allow smooth operation of the measuring arm.

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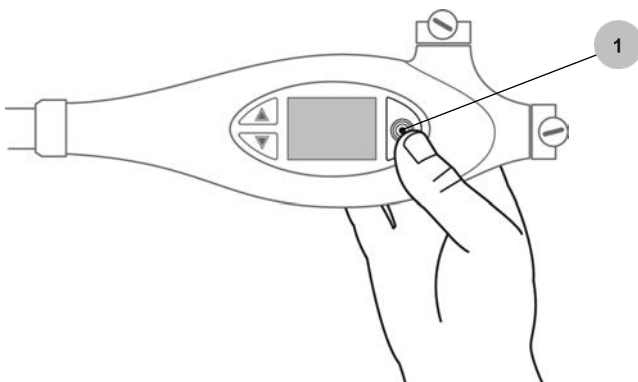
**IMPORTANT:** The PointX measuring arm should be kept away from all welding sparks and slag.

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#### 4.1.1 Turning on/off the PointX

1. Turn on the PointX by pressing the "Target button".
2. Turn off by pressing and holding the "Target button" for about 4 seconds, when in Start menu. A "Shutting down" message appears and the PointX will be completely turned off after a few seconds.

 **NOTE:** The PointX will power off automatically after 10 minutes of inactivity to increase battery life time.



The PointX measuring arm is easy to operate. The basic principles for operating the measuring arm is described below. For more extensive information regarding how to perform measuring, *see section 4.4-4.5 Measuring methods*.

1. Place the magnetic attachment (or measuring adapter) on a symmetrical, undamaged reference point.
2. Pull out the telescopic measuring arm until the measuring adapter is located on the point to be measured.
3. Hold the measuring head with your right hand.
4. Confirm the digital length measurement on the measuring head display by pressing the target button, *see section 4.1.2*.

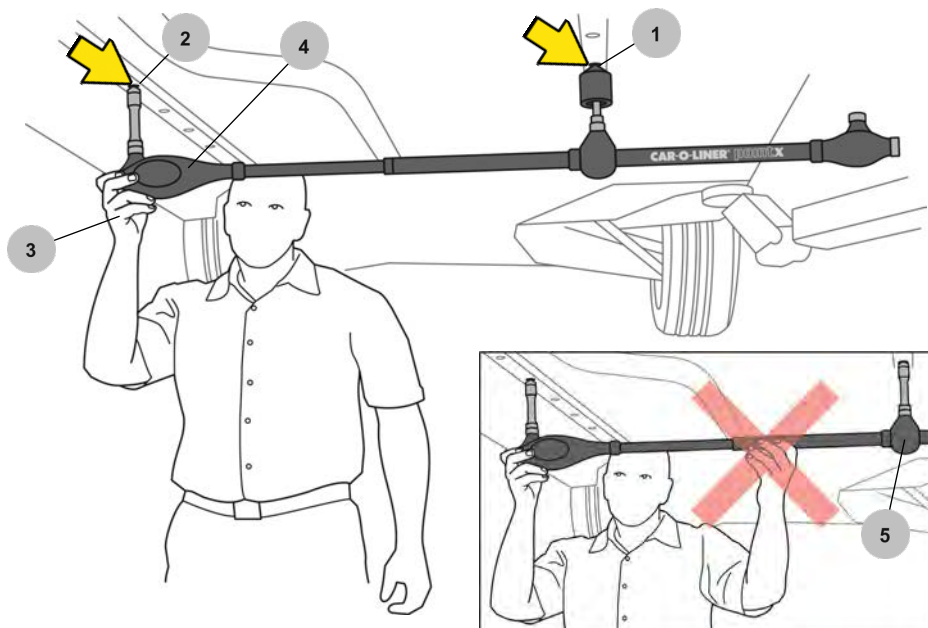


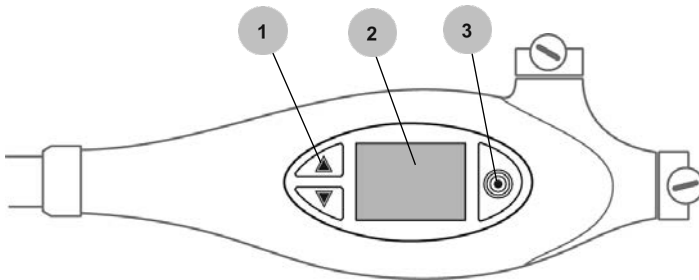
Figure 4.1 PointX measuring arm operation.

**NOTE:** For correct result, hold the measuring arm with your right hand only when using the magnetic attachment. Hold below reference point [5] with your left hand when not using the magnetic attachment.


### 4.1.2 Display functions for measuring

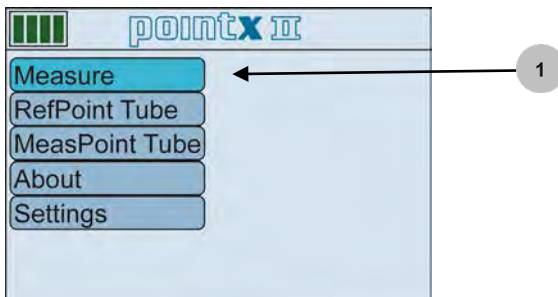
There are three buttons and a digital display located on the front panel of the electronic control unit.




1. Up/down buttons for toggling in menus.
2. Display showing menus and measuring information.
3. "Target button" for registration of measuring value and on/off function.

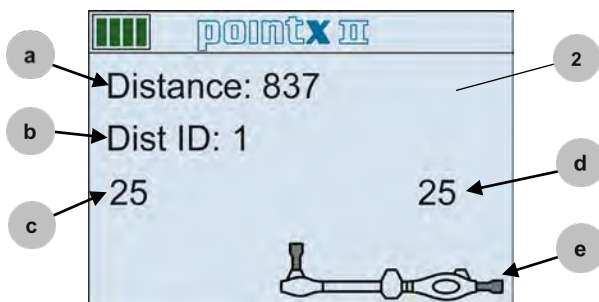



### Normal measuring

1. Start the PointX by pressing the "Target button" . The Start menu appears. Measure mode is default.




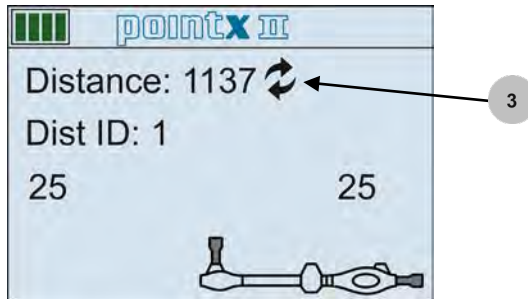
2. Start measuring by pressing the "Target button" .
- The measuring view below appears.
- Here you will get information about:
- a) Measured distance in mm.
  - b) Identification of current distance (1-5 in a measuring situation).
  - c) Recommended measuring tube for reference point.
  - d) Recommended measuring tube for measuring point.
  - e) Recommended configuration of measuring arm.
- To change measuring arm configuration, toggle with  button between all the possible configurations. For example, you might need to extend the measuring arm if the point to be measured is out of reach for the recommended configuration
- To measure a distance, press .







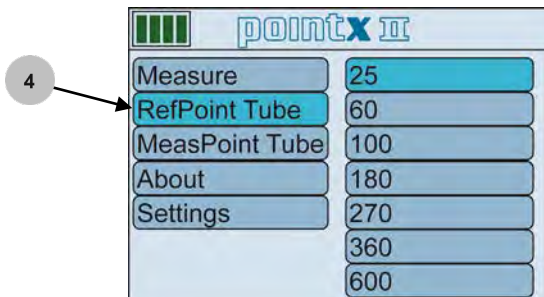
3. To activate "Continuous measuring" press and hold  for about 2 seconds.

In this mode the measuring value changes "live" when the measuring arm length is altered.

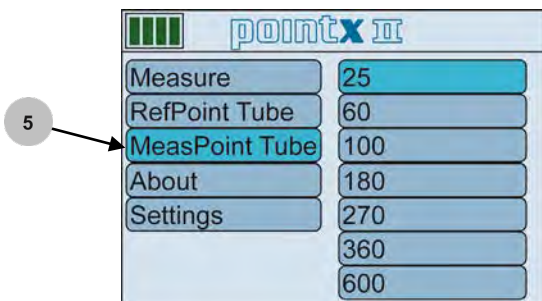
To register measured value, press . "Continuous measuring" is now automatically deactivated.



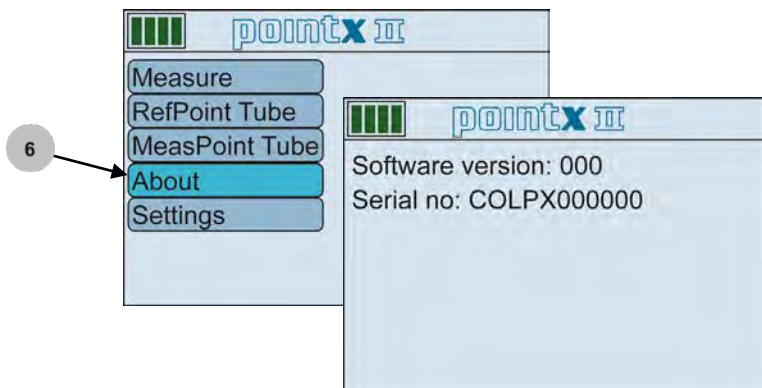
4. Return to Start menu by pressing  button. For changing of Reference point measuring tube, toggle to "RefPoint Tube" with  button. Select desired measuring tube with  button. Press  to activate measuring mode.






5. Return to Start menu by pressing ▲ button. For changing of Measuring point measuring tube, toggle to "MeasPoint Tube" with ▼ button. Select desired measuring tube with ▼ button. Press ● to activate measuring mode.

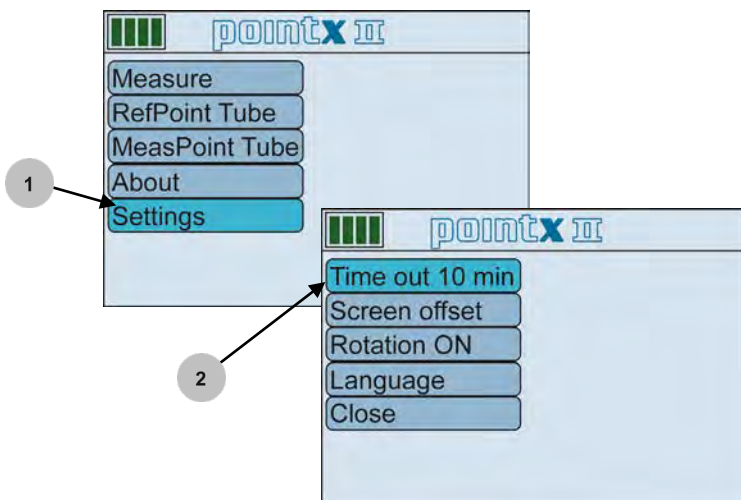


6. For information about the software version and serial number, toggle with button ▼ to "About", activate with ● and the view below appears:

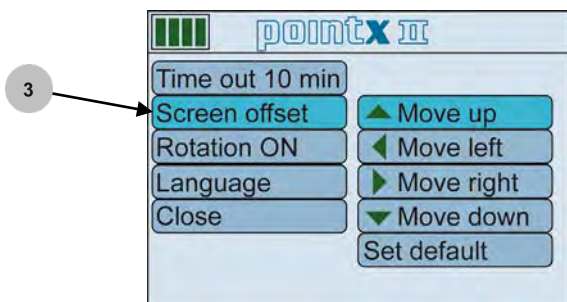


## Settings menu

1. Return to Start menu by pressing  button, toggle with button  to "Settings", activate with  and choose between:
2. "Time out", to set automatic PointX turn off time.



3. "Screen offset", to adjust the display interface position.



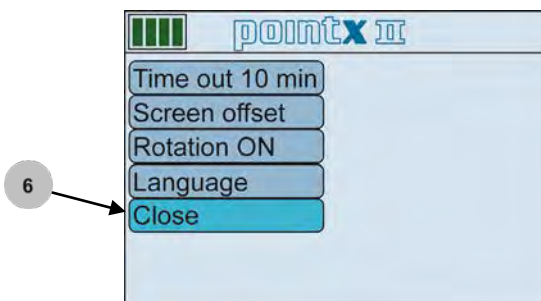
- 
4. “Rotation ON/OFF”, choose “ON” and the display can be rotated 180° which enables you to measure upside down.



5. “Language”, to choose language.

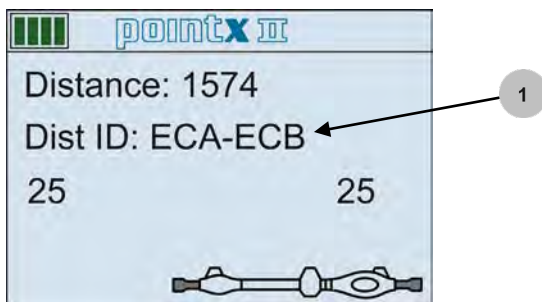


6. “Close”, to close Settings menu and return to Start menu.



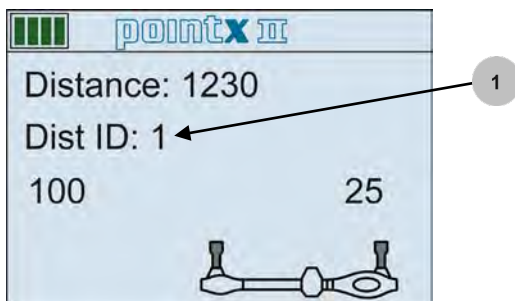
## Point-To-Point (P2P) Standard measuring

1. The only information in Point-To-Point Standard body measuring that differs from the one in Normal measuring is the Distance ID. Point-To-Point uses a combination of measuring view and point name. In the example below the measured distance is point A to B in the Engine compartment (EC). Also shown in the example is a typical Point-To-Point measuring arm configuration.



## Point-To-Point (P2P) Advanced measuring

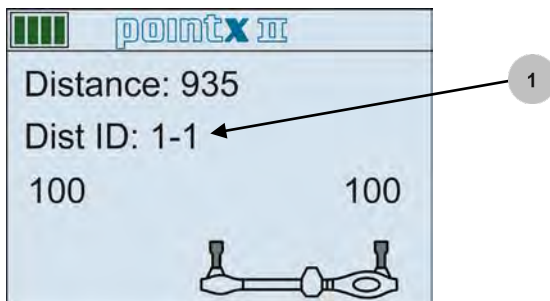
1. For Point-To-Point Advanced the display shows the same type of information as for Normal measuring. Information in the status bar at the top of the display may vary. The example below identifies the current distance to measure (1 to 6 in a measuring situation).



---

## Absolute measuring

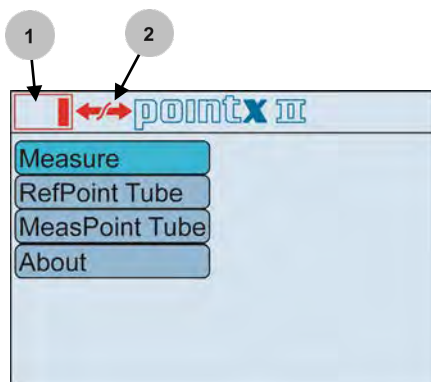
1. In Absolute measuring you measure parallel distances or cross measurements, so the distances come in pairs.  
The example below identifies the current distance to measure, 1-1, the first distance of a pair (1-1 and 1-2).



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## Display status bar

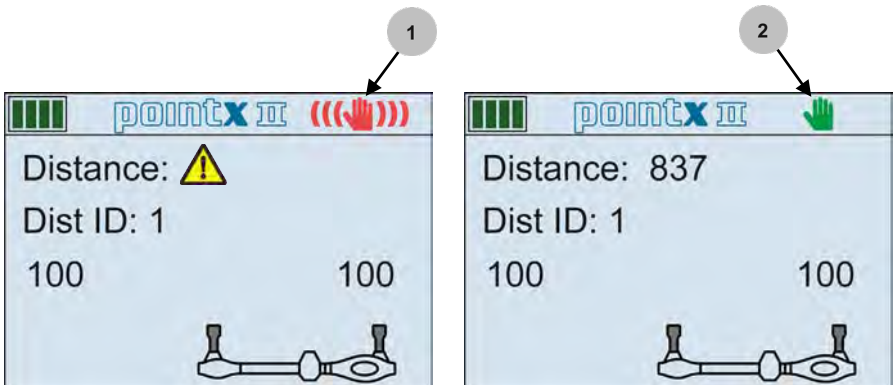
1. Battery status low.
2. No communication between measuring arm and PC.



## Shake warning\*

The shake warning icon can appear during Centering and Normal measuring in certain steps of the measuring situation if the measuring arm is not held stable enough to register a measurement.

1. Measuring arm not held stable before pressing the trigger button or while pressing the trigger button.  
Shake warning icon indicates increasing or decreasing instability.
2. Shake warning icon turns green when measuring arm is held sufficiently stable for measuring.



**NOTE:** Should any display error code appear (for example “E002”), contact Support!

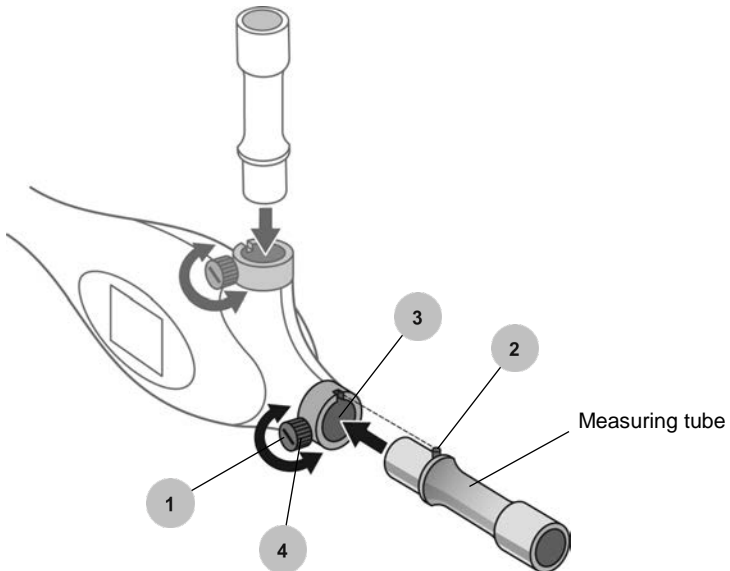
*\*Applies to PointX II measuring arm only.*

---

### 4.1.3 Measuring tubes

The measuring system consists of a wide selection of measuring tubes. The tubes have different lengths to suit all measuring situations. For best results, use shortest tube possible while allowing sufficient working height under the vehicle. The measuring tubes are fitted according to the description below:

1. Turn the knob counter clockwise to open the socket (or to release a measuring tube).
2. Turn the measuring tube so that the pin fits into the slot in the socket.
3. Press the measuring tube into the bottom of the socket.
4. Tighten the knob clockwise to fix the measuring tube.



*Figure 4.2 Fitting of measuring tubes.*

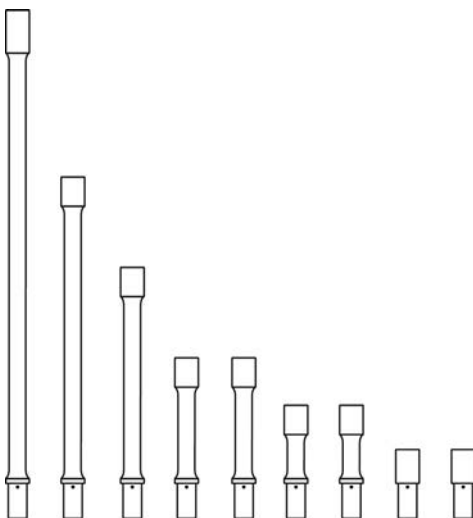

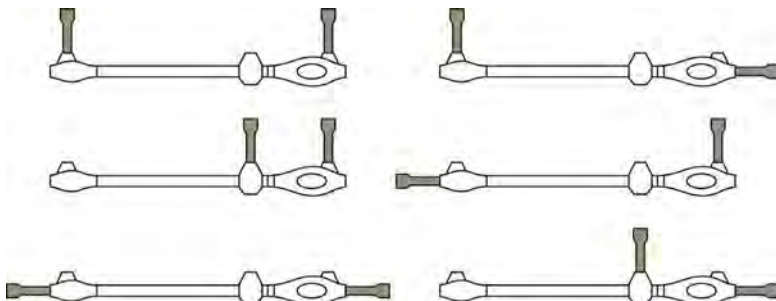


Figure 4.3 PointX measuring tubes.

 **NOTE:** For correct measuring result, make sure that the measuring tube is pressed into the bottom of the socket and that the knob is properly tightened.

#### 4.1.4 Measuring tube fitting configurations

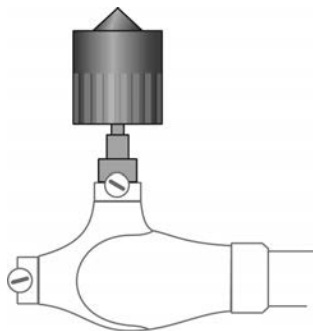
To achieve ultimate conditions in every measuring situation the measuring tubes can be fitted in various configurations. Examples are described below. The suggested configuration for each measuring situation will be displayed in the measuring head display, *see section 4.1.2 Display functions*.



---

### 4.1.5 Magnetic attachment

This attachment is used to facilitate the the fixing of the measuring arm to the reference point, for example when the reference point is out of reach for your left hand, *see figure 4.1*. It is developed to suit most vehicle models on the market. The length of the magnetic attachment corresponds to the length of the 100 mm measuring tube fitted with a 25 or 35 mm tip.



*Figure 4.4 Magnetic attachment device.*

### 4.1.6 Measuring adapters (sockets and tips)

The PointX measuring adapter system includes various sockets and tips. The sockets and tips snap into the top of the measuring tubes. Measurements are printed on each adapter. For complete chart of measuring adapters, *see chapter 15 Spare parts*.

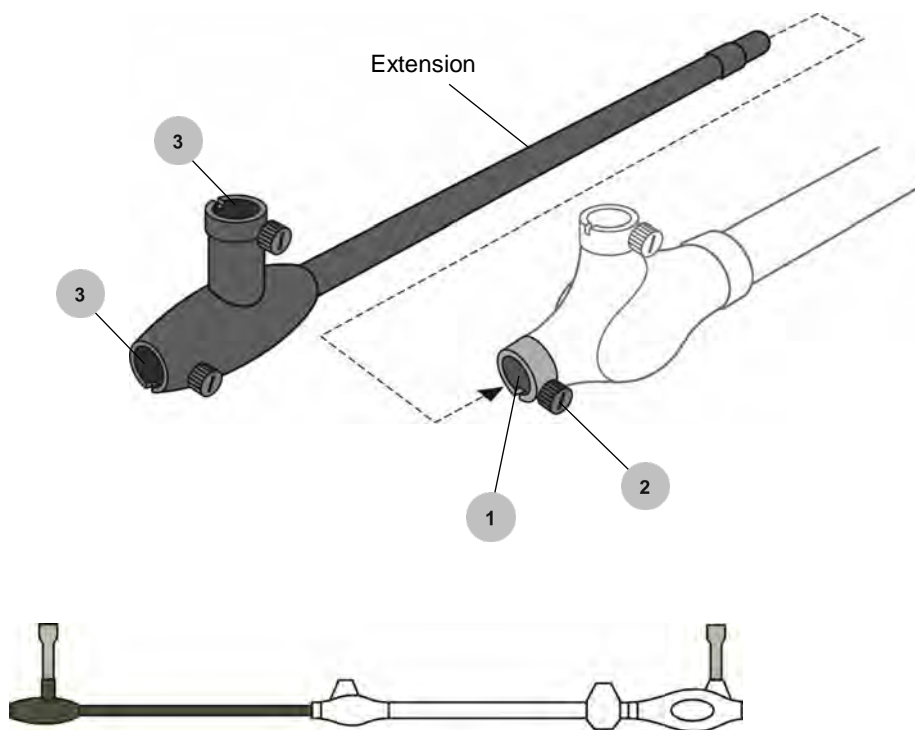


*Figure 4.5 Examples of different measuring adapters.*

### 4.1.7 Measuring arm extension

The PointX measuring arm can be extended in order to reach further if the distance between starting point and measuring point is longer than the fully extended measuring arm.

1. Insert the extension into the socket on the further end from the measuring head.
2. Turn knob clockwise to fixate the extension device.
3. Measuring tube or magnetic attachment can be fitted to the extension.

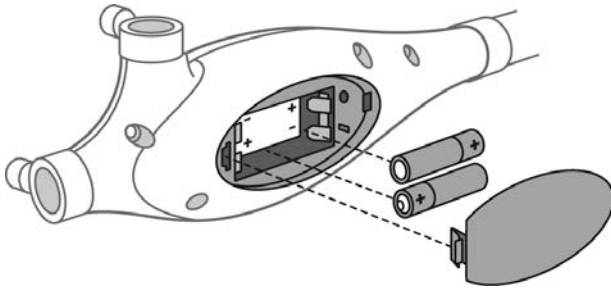


*Figure 4.6 Measuring arm with extension.*

---

#### 4.1.8 Battery change

The electronic circuit of the PointX measuring arm is powered by 2 AA batteries. It is recommended that both batteries should be replaced and that the old batteries should be disposed of in accordance with local hazardous waste disposal regulations. Car-O-Liner recommends rechargeable batteries. Batteries are located in a hidden compartment on the back of the electronic measuring head (see picture below). Battery cover latch is released by hand.



*Figure 4.7 Battery change.*



---

**IMPORTANT:** Batteries must be installed according to the diagram printed to the inside of the battery compartment to ensure correct terminal polarity. Use only AA/LR6 batteries. Other batteries may cause equipment to malfunction or damage the electronic circuit.

---



**NOTE:** For longer duration use rechargeable batteries or alkaline/similar high performance batteries.

---

#### 4.1.9 PointX USB slot

The PointX measuring arm has a USB slot to be used only for upgrading and reprograming of the measuring arm software. Not to be used during normal operation!

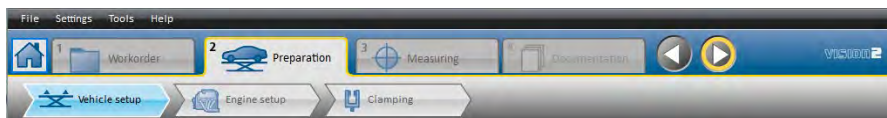


**NOTE:** Upgrading and reprogramming of the measuring arm must be carried out by authorized Car-O-Liner service personnel. Contact your Car-O-Liner distributor.

## 4.2 Open PointX software and start to work

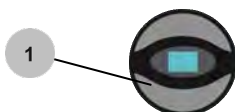
The Vision2 PointX software has an easy-to-learn "workflow" presented in a user friendly and self instructive graphic user interface.

A clear and evident tab system continuously informs you where in the process you are and where to go.




*Self instructive tab system for easy navigation. Each tab is described in section 5.1 The Vision2 PointX Main Tab System.*

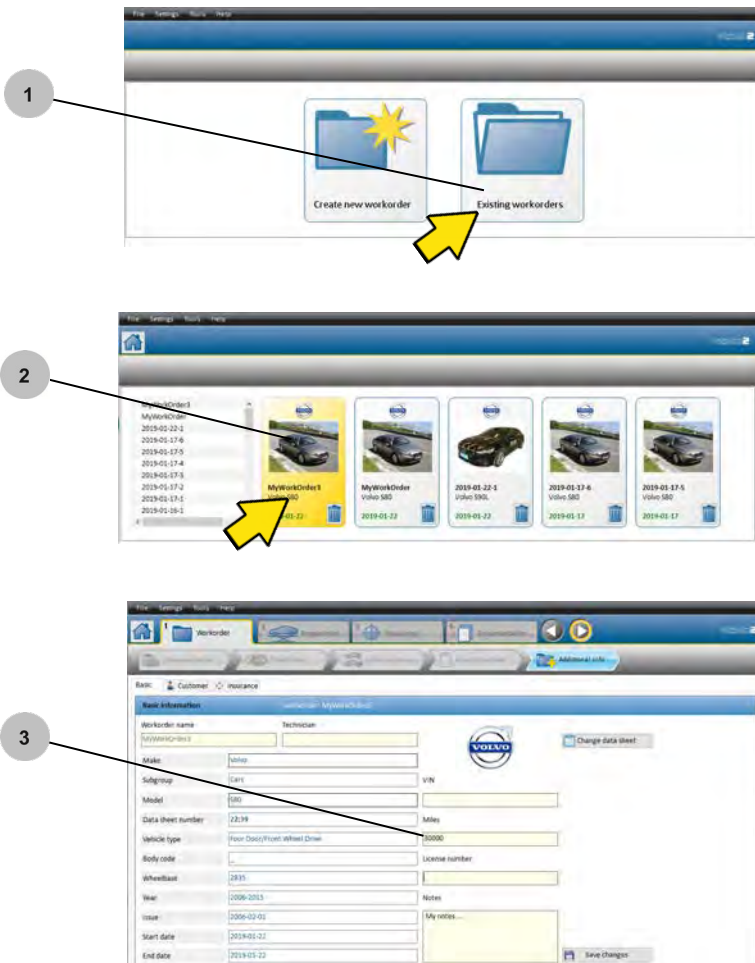
1. Click on the Vision2 PointX icon on the desktop.
2. Vision2 PointX starts up and the Start menu (Home tab) appears.



## 4.2.1 Open an existing Workorder

When continuing to work on an existing Workorder:

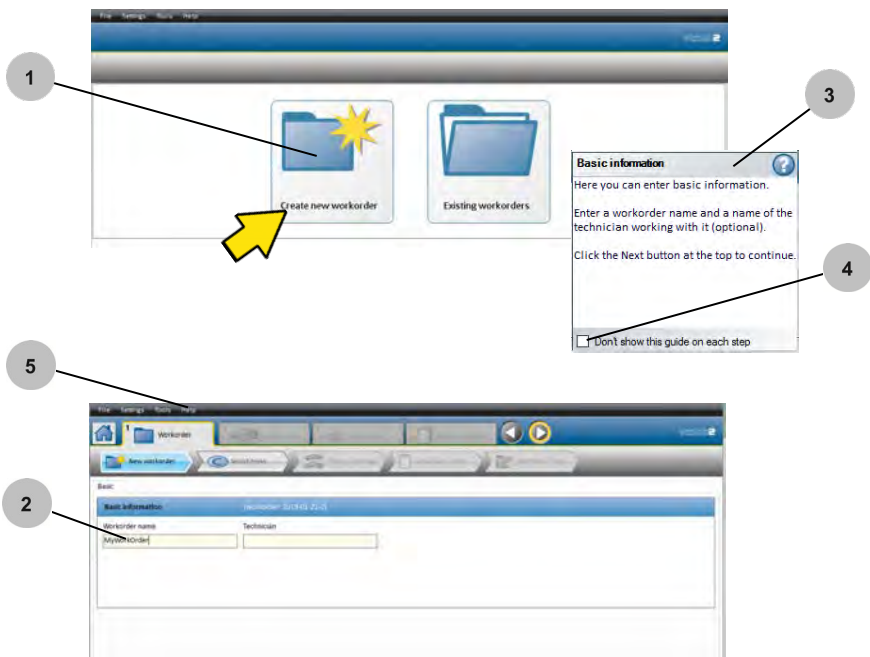
1. Click on the "Existing Workorder" button.
2. Select an ongoing Workorder. Click on  to delete a Workorder.
3. Add info such as license number, mileage, notes etc.



## 4.2.2 Create a new Workorder

Before you start to do repair work on a car you have to create a new Workorder:

1. Click on the "New Workorder" button.
2. Fill in the Workorder name and create a Workorder.
3. The "Workflow Guide" guides you through the work process.  
Deactivate by clicking (4). Activate under "Help functions" (5), *chapter 8*.



For more extensive information regarding how to fill in the Workorder, see *section 5.3 The Workorder tab*.

### 4.2.3 Find and download a DataSheet

1. Double click on the required vehicle make.
2. Select subgroup by double clicking on for example "CARS".
3. Click on the required model and then click on the "Download DataSheet" icon. ● icon (4) indicates downloaded DataSheet.
5. Filter by year.

The screenshots illustrate the steps to find and download a DataSheet:

- Screenshot 1:** Shows the 'Select make' screen with various vehicle logos. A red circle with the number '1' points to the Volvo logo.
- Screenshot 2:** Shows the 'Select subgroup' screen for Volvo. A red circle with the number '2' points to the 'CARS' subgroup.
- Screenshot 3:** Shows a list of vehicle models. A red circle with the number '3' points to the 'Volvo S40' model. A red circle with the number '4' points to the 'Download DataSheet' button (a green circle with a white dot) next to the 'Volvo S40' model. A red circle with the number '5' points to the 'Filter by year' dropdown menu.

Make	Subgroup	Model	Body code	Type	Year	Wheelbase	No.	Issue
Volvo	Cars	S40	...	Four Door/Front Wheel Drive	2011-2015	2778	22.045	201...
Volvo	Cars	S40	...	Chassis No 4...	2005-2009	2720	22.037	200...
Volvo	Cars	S40	...	Four Door/Front Wheel Drive	2005-2009	2720	22.036	200...
Volvo	Cars	S40	...	Four Door/Front Wheel Drive	2002-2004	2720	22.026	200...
Volvo	Cars	S40	...	Four Door/Front Wheel Drive	2001-2004	2720	22.024	200...
Volvo	Cars	S40 Cross Country	...	Four Door/Front Wheel Drive	2011-2015	2776	22.054	201...
Volvo	Cars	S40 Cross Country	...	Four Door/Front Wheel Drive	2011-2015	2776	22.054	201...
Volvo	Cars	S40L (China)	...	Four Door/Front Wheel Drive	2011-2015	2858	22.051	201...
Volvo	Cars	S70	...	Four Door/Front Wheel Drive	1997-2000	2660	22.029	199...
Volvo	Cars	S70	...	Four Door/Front Wheel Drive	1997-2000	2660	22.015	200...
Volvo	Cars	S80	...	Four Door/Front Wheel Drive	2006-2011	2803	22.039	200...
Volvo	Cars	S80	...	Four Door/Front Wheel Drive	2006-2011	2813	22.039	200...
Volvo	Cars	S80	...	Four Door/Front Wheel Drive	1998-2006	2790	22.021	200...
Volvo	Cars	S80	...	Four Door/Front Wheel Drive	1998-2006	2790	22.021	200...
Volvo	Cars	S80	...	Four Door/Front Wheel Drive	2008-2011	2875	22.044	201...

## 4.2.4 Search for a DataSheet

Alternate method of finding a DataSheet.

1. Type, for example, make, model or body code.  
Click on the magnifying glass icon.



**In the Car-O-Liner Index there are four different symbols in front of the model**



A blue @sign indicates that the data sheet is not stored locally on the hard drive. It needs to be downloaded from the Internet.



A green @ sign indicates that the data sheet is stored locally on the hard drive but there is a new version available on the Internet. Therefore, it needs to be updated.



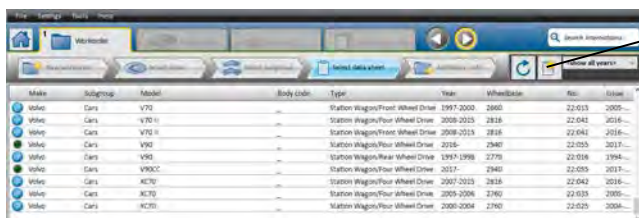
A green dot indicates that the most recent version of the data sheet is stored locally on the hard drive.



A red X sign indicates that that you have no access to the DataSheet or you have no valid Car-O-Data subscription. Please contact your distributor

## 4.2.5 View list of new (recently released) DataSheets

1. Click on "View new DataSheet" icon.
2. Click on the "Download DataSheet" icon to download selected DataSheet from DataSheet index.



Make	Subgroup	Model	Body code	Type	Year	Wheelbase	Box	Image
Volvo	Cars	V70	---	Station Wagon/Front Wheel Drive	1997-2000	2860	22-033	2007...
Volvo	Cars	V70 II	---	Station Wagon/Four Wheel Drive	2000-2003	2818	22-041	2016...
Volvo	Cars	V70 II	---	Station Wagon/Front Wheel Drive	2000-2003	2818	22-041	2016...
Volvo	Cars	V90	---	Station Wagon/Four Wheel Drive	2016-	2940	22-055	2017...
Volvo	Cars	V90	---	Station Wagon/Rear Wheel Drive	1997-1998	2775	22-016	1999...
Volvo	Cars	V90CC	---	Station Wagon/Four Wheel Drive	2017-	2940	22-055	2017...
Volvo	Cars	XC70	---	Station Wagon/Four Wheel Drive	2007-2003	2818	22-042	2016...
Volvo	Cars	XC70	---	Station Wagon/Four Wheel Drive	2005-2006	2760	22-035	2006...
Volvo	Cars	XC70	---	Station Wagon/Four Wheel Drive	2000-2004	2760	22-025	2004...



**New vehicle data from Car-O-Liner [INTERNATIONAL INDEX]**  
Fri, 02 Nov 2018 09:28:15 +0100

2019-01-17 LYNK CO Lynkco R1 PHEV EX31 50T W0 2019 - 2024

Make: LYNK CO  
Model: (Lynkco R1 PHEV)  
Body code: EX31  
Type: RWD  
Year: 2019 - 2024  
Wheelbase: 2840

[Download data sheet](#) [View more photos](#)

2019-01-14 Subaru Forester MK 50T PWD 2019 - 2028

Make: Subaru  
Model: Forester  
Body code: 50  
Type: RWD  
Year: 2019 - 2024  
Wheelbase: 2670

[Download data sheet](#) [View more photos](#)

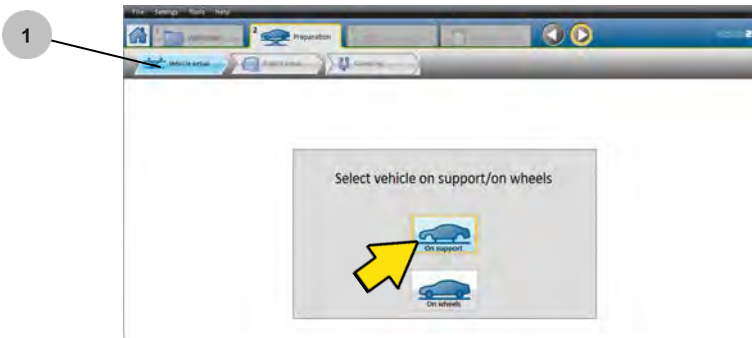
2019-01-10 LYNK CO Lynkco R1 EX31 40T W0 2018 - 2025

Make: LYNK CO  
Model: (Lynkco R1)  
Body code: EX31

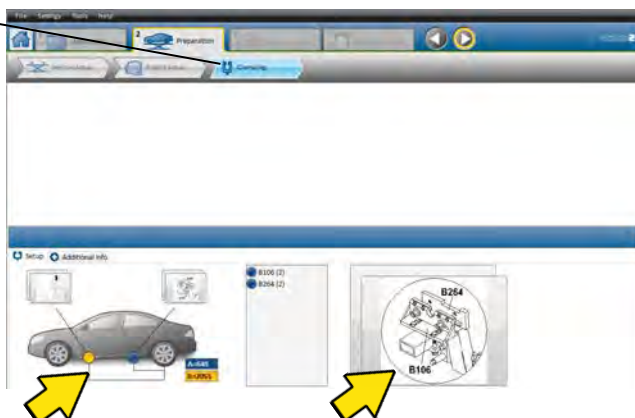
## 4.2.6 Preparation/set up of the vehicle

Under the "Preparation" tab you will find all the necessary information about how to prepare and set up the vehicle for measuring. The information includes what clamps to use and positioning of the clamps.

1. Click on the "Bench set up" icon to select measuring "On support" or "On wheels" depending on how you are planning to work on the car.
2. Click on the "Engine set up" icon to select "Engine in" or "Engine out".
3. Click on the "Clamping" icon for information about which clamps to use and where to attach them.



3



For more extensive information regarding preparation/set up of the vehicle, see section 5.4 *The Preparation tab*.

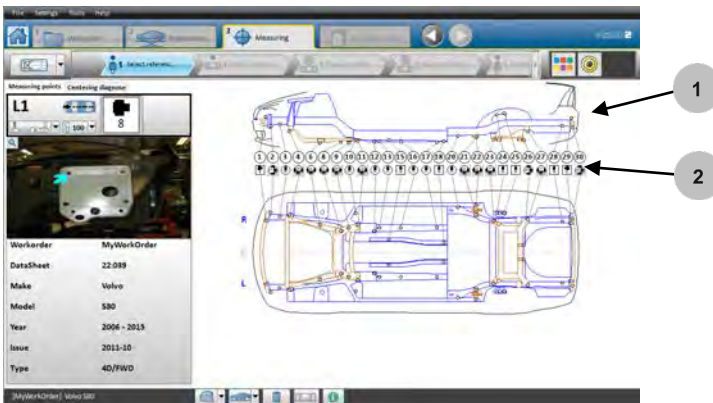
## 4.2.7 Center and measure the vehicle

In sections 4.4 - 4.7 you will find all the necessary information on how to perform Centering and Measuring of the vehicle.


"Centering" is a method to calculate tilting of the vehicle, and is done in an undamaged area of the vehicle. The area under the passenger compartment is recommended.


The measuring method showed in this section is "Normal measuring", for more information regarding "Normal measuring" and other measuring methods, *see sections 4.4 – 4.7. See also section 5.5 The Measuring tab.*


1. DataSheet view. Shows DataSheet, Workorder name and necessary vehicle information.
2. Select "Parts In" or "Parts Out". Some points can be measured with any of these two alternatives. This is indicated by a grey shadow behind the adapter symbol. Click on the adapter symbol to toggle between Parts In/Parts Out.



### Parts In or Parts Out

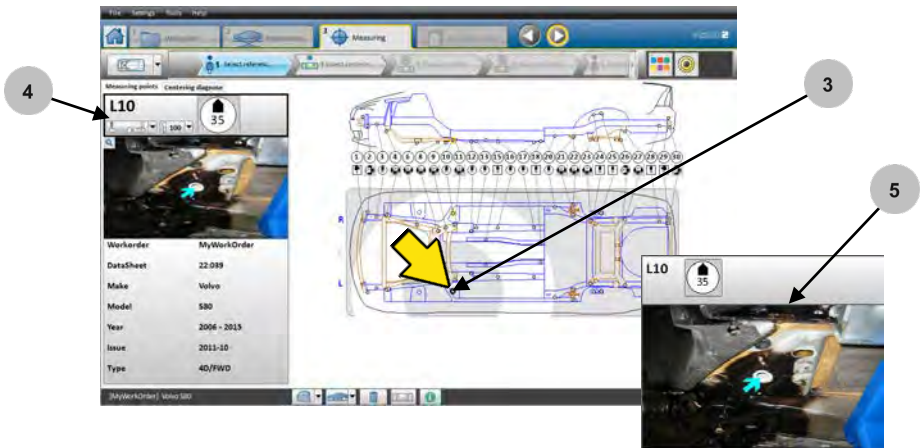
A circle  around the adapter symbol indicates that the point can be measured without removal of parts. (Parts In).

A square  indicates that removal of some parts may be necessary to measure the point (Parts Out).

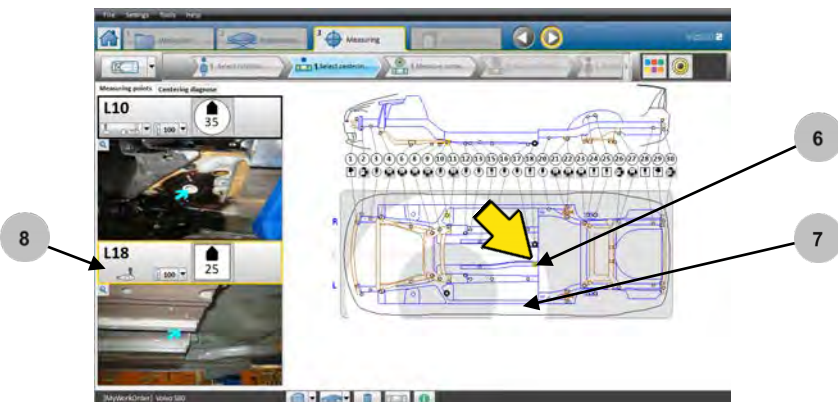
A grey shadow  behind the adapter symbol indicates that the point can be measured either with Parts In or with Parts Out.

When the same adapter dimensions are required in both ends of the measuring arm, use the next larger adapter dimension on the measuring point.

3. Select an undamaged reference point in the data sheet. When selected, the reference point will be marked with a black circle ○. Reference point information in box, marked with black frame [4]. Click "Next" button to continue to next step ▶.
5. See preview of centering or measuring point by placing the marker on a point.



6. Select a centering point in the data sheet. When selected, the centering point will be marked with a yellow circle ○.
7. Highlighted radius indicating if point is within reach with current measuring tube configuration, displayed in the lower information box.
8. Centering point information box is marked with yellow frame.




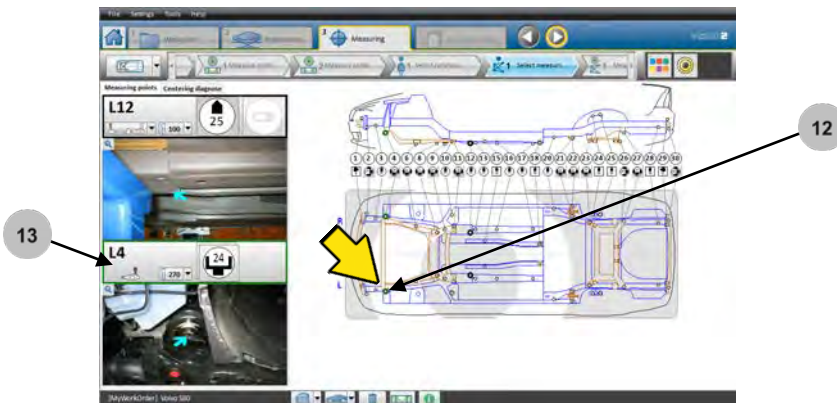
- 

## Measuring values

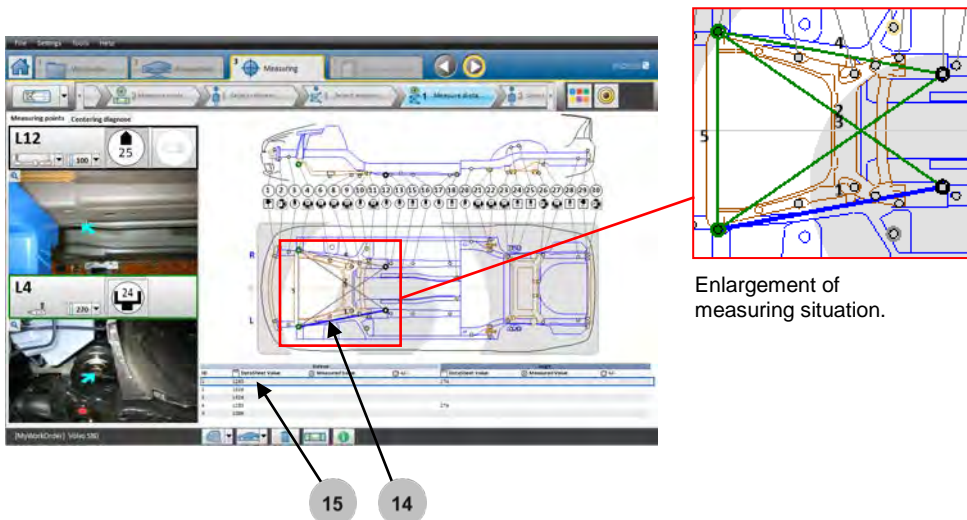
- 
- Settings Help Page
- Workorder Measuring Diagnosis Service
- Measuring points Castering diagnose
- L12 25
- Workorder MyWorkOrder
- |           |             |
|-----------|-------------|
| DataSheet | 22.039      |
| Make      | Volvo       |
| Model     | S90         |
| Year      | 2006 - 2015 |
| Issue     | 2013-10     |
| Type      | 40/FWD      |
- VolvoWorkOrder! Volvo S90

10

12. Select a measuring point in the data sheet. When selected, the measuring point will be marked with a green circle  and a corresponding measuring point will also appear.
13. Measuring point information in box, marked with green frame.



14. Measure distances in the sequence indicated by the numbers in the measuring situation (current distance marked with blue).
  15. Measuring values and DataSheet reference values are displayed below the DataSheet.
- Proceed with measuring situation No. 2, if required, or go to the "Documentation" tab.

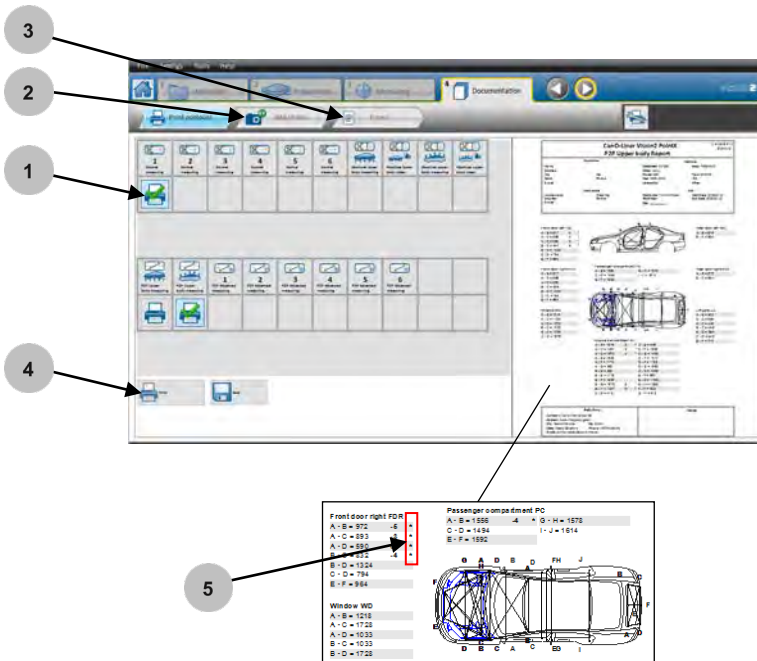


## 4.3 Documentation of the vehicle

Under the "Documentation" tab you will find the "Print protocol" function which enables you to print your requested reports or save to "Workorder folder".

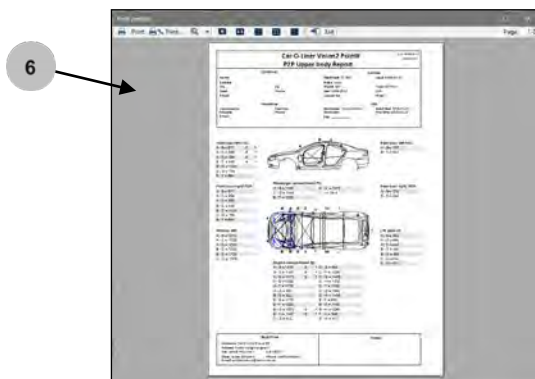
### 4.3.1 Print protocol

1. Click on requested reports.
2. Click on "Add photos"-button to add photos to the report  
(see 5.6.3 Add photos to the report).
3. Click on "E-mail"-button to e-mail the report  
(see 5.6.4 E-mail the report).
4. Click on "Print" or "Save".
5. \* indicates that values have been manually registered.



### 4.3.2 Print preview

6. The "Print preview" function enables you to check the print-outs before printing, select number of reports per print-out, etc.



---

## 4.4 The Centering and Normal measuring method

### 4.4.1 DataSheet information





The "Normal measuring" method is used to measure the **lower body** of the vehicle and compare the recorded values against the recommended values from the DataSheet. The "Normal measuring" method measures length as well as height between points.

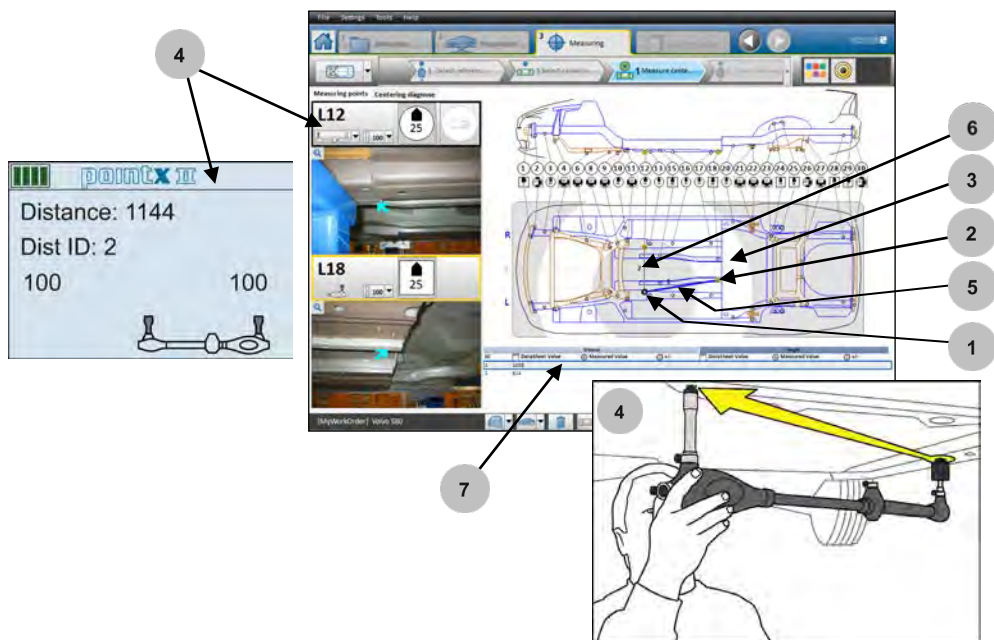
The first view in Measuring mode shows an overall view of the selected DataSheet.

It is very important to use the measuring tubess and adapters shown on the DataSheet and to follow the "Parts In" or "Parts Out" adapter information. It is also very important to measure the points in the same way as shown on the DataSheet, and in the way they are selected in *Vision2 PointX* display.

---

## 4.4.2 The Standard centering method

1. Select an undamaged reference point in the data sheet. When selected, the reference point will be marked with a black circle .  
Click "Next" button to continue to next step .
2. Select a centering point in the data sheet. When selected, the centering point will be marked with a yellow circle .
3. Highlighted radius indicating if point is within reach with current measuring tube configuration, displayed in the lower information box.
4. Recommended measuring tubes and configuration of measuring arm is shown in the information box and in the measuring arm display. Appropriate adapters are only shown in the information box.
5. Measure the first distance (blue line No. 1) by placing the magnetic attachment (or adapter) on the black reference point and then the measuring head adapter on the yellow centering point.  
Press "Target" button to register value .
6. Continue to measure distance 2 as indicated on the DataSheet.  
Register distance by pressing the "Target" button. Click "Next".
7. Compare measured distances with DataSheet reference values.







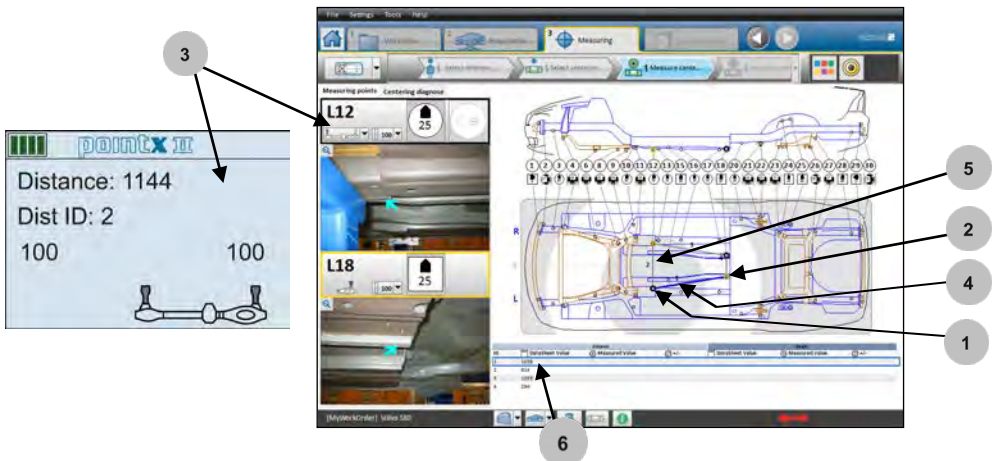
**NOTE:** For best centering accuracy, the width between the reference points and the lengths to the centering points should be between 600 - 1300 mm.

Using points under the center of the vehicle is recommended.

### 4.4.3 The Advanced centering method (default setting)

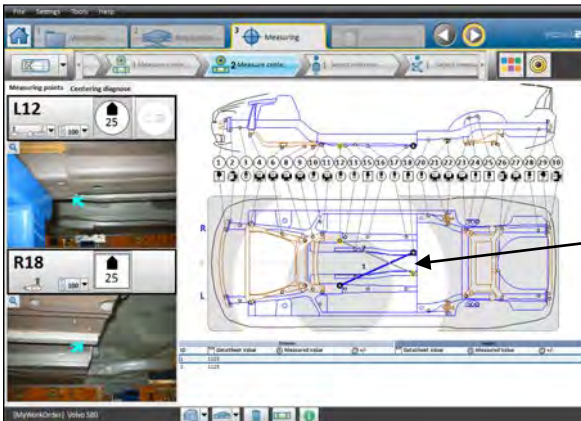
To get a more accurate height calculation, it is recommended that you perform the advanced centering method. This is the default setting.

1. Select an undamaged reference point in the data sheet. When selected, the reference point will be marked with a black circle  and a corresponding yellow centering point  will automatically appear on the opposite side of the vehicle, as points always come in pairs.  
Click "Next" button to continue to next step .
2. Select a centering point in the data sheet. A corresponding reference point in black will also appear.
3. Recommended measuring tubes and configuration of measuring arm is shown in the information box and in the measuring arm display. Appropriate adapters are only shown in the information box.
4. Measure the first distance (blue line No. 1) by placing the magnetic attachment (or adapter) on the black reference point and then the measuring head adapter on the yellow centering point.  
Press "Target" button to register value .
5. Continue to measure distance 2-4 as indicated on the DataSheet. Register distance by pressing the "Target" button. Click "Next".
6. Compare measured distances with DataSheet reference values.



## Cross measuring

1. Cross measuring is an additional control step to make sure the centering points are not damaged. This step is optional, you can move on to measuring by clicking on the “Next” button.



## Centering Diagnose Symbols:

### Green distance [a]:

Measured distance within Centering Stop Limit.

### Red distance [b]:

Measured distance outside Centering Stop Limit.

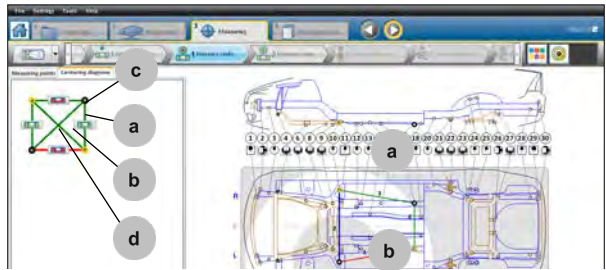
### Green centering symbol [c]:

Angle approved.

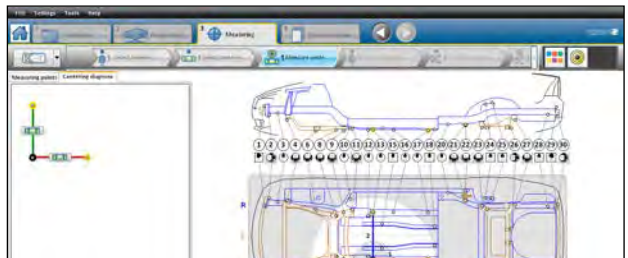
### Red centering symbol [d]:

Angle deviates too much from angle measured in opposite direction.

## Advanced centering:






## Standard centering:

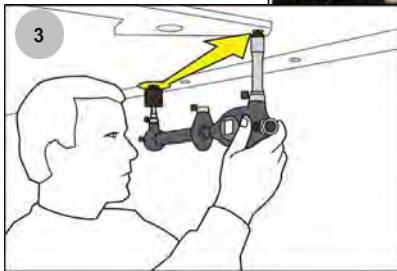


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#### 4.4.4 The Normal measuring method

Always consider vehicle safety features and design when selecting measuring points, making sure that the points can be reached and measured. You can create up to 6 measuring situations.

1. Select a reference point in the data sheet. When selected, the reference point will be marked with a black circle  and a corresponding reference point will automatically appear on the opposite side of the vehicle.
2. Appropriate measuring arm information is shown in the information box and in the measuring arm display.
3. Select a measuring point in the data sheet. When selected, the measuring point will be marked with a green circle  and a corresponding measuring point will also appear.
4. Measure the first distance (blue line No.1) and press the “Target” button to register the value .
5. Continue to measure the remaining four distances in the sequence indicated by numbers 2-5 on the screen. Register each distance by pressing the "Target" button.
6. Compare measured values with DataSheet reference values.




**NOTE:** The length of the magnetic attachment corresponds to the length of the 100 mm measuring tube fitted with a 25 or 35 mm tip.

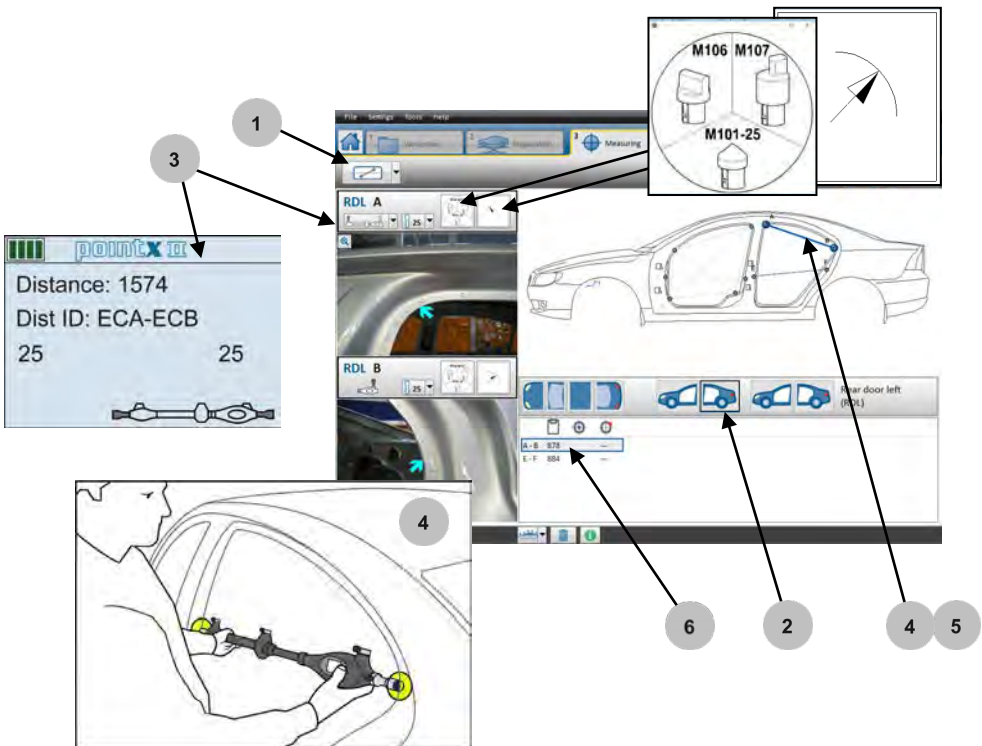
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## **4.5 The Point-To-Point (P2P) Standard measuring method**

The Point-To-Point Standard method is used to measure the distances from one point to a second point of the vehicle and compare the registered values against the recommended values from the DataSheet.

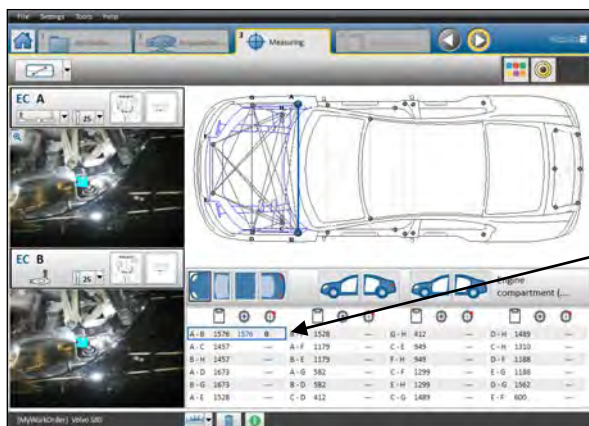
The PointX can be used for measuring without DataSheet. The measuring arm is then used as a tape measure for parallel or cross measuring. The PointX measuring arm features "Continuous measuring" which means that the distance information in the display instantly responds to the change in measuring arm length.

1. Select Point-To-Point (P2P) Standard measuring view from dropdown menu.
2. Click on a Measuring view button to activate a specific view.  
Active view is marked by a black frame.
3. Appropriate measuring arm information is shown in the information box and in the measuring arm display.
4. Measure the distance highlighted in blue (A-B) or select another distance in the table below the data sheet by clicking on that particular distance.  
Register the value by pressing the “Target button” .
5. Continue to measure the remaining distances in the view.  
Register each distance by pressing the "Target" button.
6. Compare measured values to reference values and proceed to the next measuring view, if required.



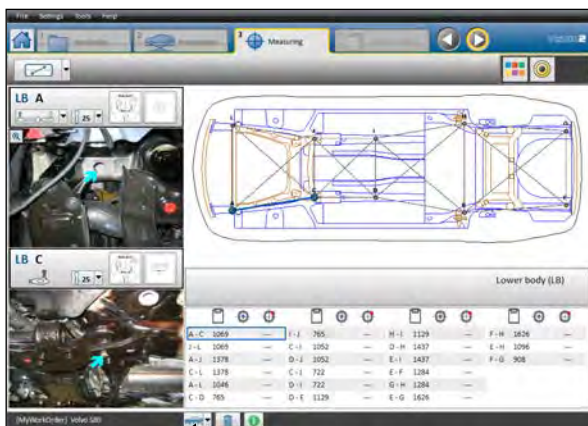
Measuring values can be registered manually (for example with tape measure) if measuring points are out of reach for the PointX measuring arm, if distance between measuring points is below 300 mm or due to obstacles.

1. To register measuring value manually, double click on distance and type in value. \* indicates that value has been manually registered.



Point-To-Point measuring can also be performed on lower body.

1. Select Lower body measuring mode.
2. Perform the same measuring method as on upper body.

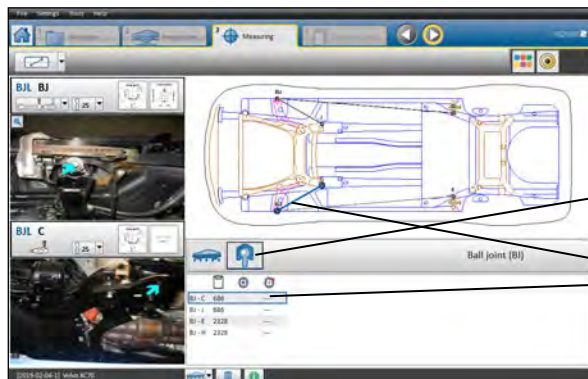


1

## Ball joint measuring

For some vehicles, P2P measuring can be used to measure distances on suspension ball joints.

1. In Lower body mode, click on “Ball joint” button.
2. Same measuring procedure as for P2P Lower body.



1

2

---

### 4.5.1 Point-To-Point Standard measuring adapters

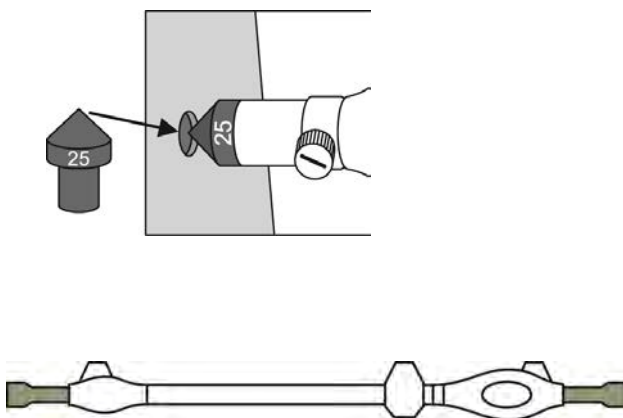


**NOTE:** Depending on the distance to be measured and the geometry of the car body, you must select one of the following measuring adapters when working in P2P mode: **M101-25**, **M106** or **M107**.

**If any other adapter is used, the measured distance may be incorrect.**

#### Adapters M101-25

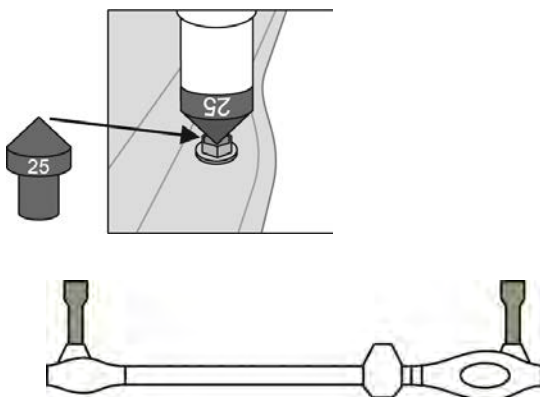
The M101-25 adapters are used when the measuring points are holes. The tips must be placed level with the surface according to the picture below, not pushed into the holes.



*Figure 4.8 Measuring tube configuration for the M101-25 adapters.*

---

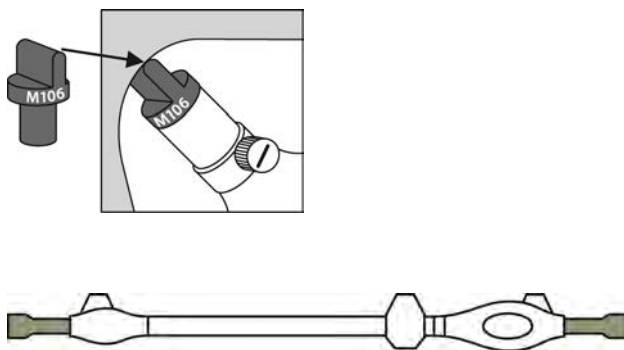
The M101-25 adapters are also used when measuring on screws, for example in the engine compartment, as seen in the picture below.



*Figure 4.9 Measuring tube configuration for the M101-25 adapters.*

## Adapters M106

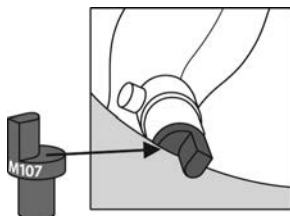
The M106 adapters are used when measuring from edge to edge, for example a door opening. The tips of the M106 adapters must be placed at the edges, according to the picture below.



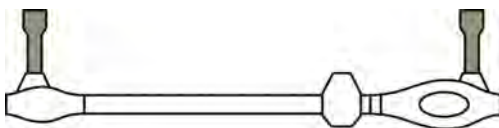
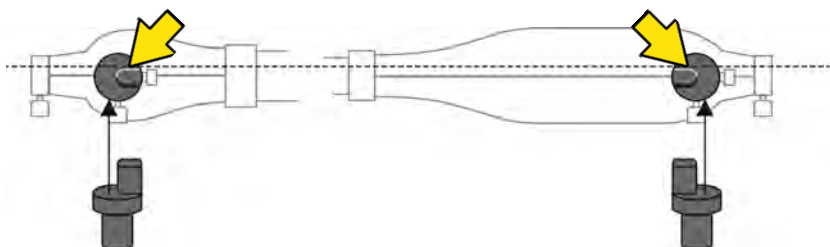
*Figure 4.10 Measuring tube configuration for the M106 adapters.*

## Adapters M107

The M107 adapters are used when there are obstacles in the distance to be measured, or when the distance to be measured is too short to use the M106 adapters/measuring tube configuration. Place the M107 adapters according to the picture below.



**NOTE:** The tips of the M107 adapters must align. Fit the M107 adapters to the measuring arm according to the picture below.



*Figure 4.11 Measuring tube configuration for the M107 adapter.*

## 4.5.2 Point-To-Point measuring point descriptions

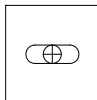
The Point-To-Point measuring point symbols are shown in the DataSheets and in the software information box. In the table below you can see the meaning of the symbols.

Description	Symbol
Hole	
Square hole	
Oval hole	
Head to rail	
Washer to head	
Washer to stud	
Nut to end of stud	
Rail to stud	
Rectangular hole	

Torx screw



Middle of oval hole



Center of arc 45



Center of arc 135



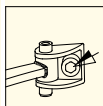
Center of arc 225



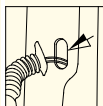
Center of arc 315



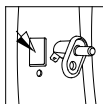
Check Strap hinge mounting bolt



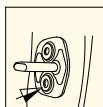
Rear edge of wiring loom hole



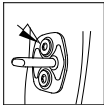
Center of light switch hole



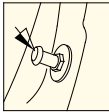
Bottom screw of striker plates



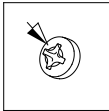
Top screw of striker plate



Center of head of striker pin



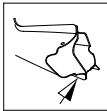
Center W/S screw



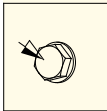
Left screw of striker plate



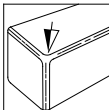
Seam at edge of sill plate



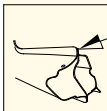
Center post trim bolt



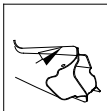
Corner



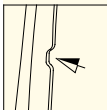
Inner Seam



Outer Seam



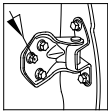
Notch



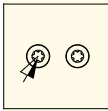
Center of fender bolt



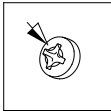
Center hinge bolt



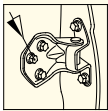
Center of front screw



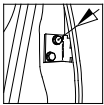
Front W/S Moulding screw



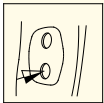
Center rear hinge bolt



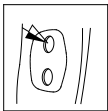
Upper hinge bolt



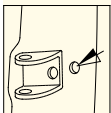
Bottom hole of striker plates



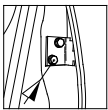
Top hole of striker plate



Check strap hinge mounting hole



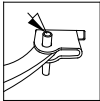
Lower hinge bolt



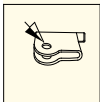
Cross marking, unidentified point object



Center of check Strap hinge pin



Check strap hinge hole



Center bottom hinge bolt



Check Strap hinge upper mounting bolt



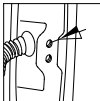
Check Strap hinge lower mounting bolt



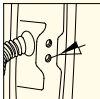
Striker pin hole



Check strap hinge upper hole



Check strap hinge lower hole

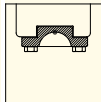


Outer edge of post below door hinge

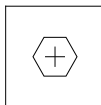


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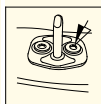
Ball joint



Six sided hole






Right screw of striker plate

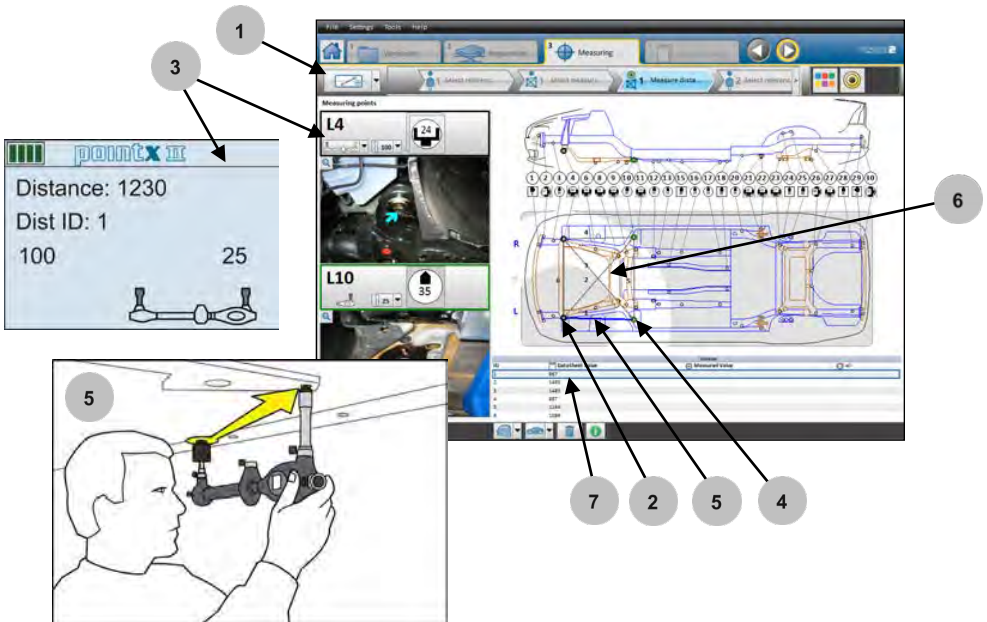


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## **4.6 The Point-To-Point (P2P) Advanced measuring method**

The Point-To-Point Advanced measuring method is a method used to measure lower body distances from one point on the vehicle to another and compare them to reference values in the DataSheet. P2P Advanced is a flexible way of measuring as you are free to choose which distances to measure using existing measuring points, while in P2P Standard the distances are preset and cannot be changed.

1. Select Point-To-Point (P2P) Advanced measuring view.
2. Select a reference point in the data sheet. When selected, the reference point will be marked with a black circle  and a corresponding reference point will automatically appear on the opposite side of the vehicle.
3. Appropriate measuring arm information is shown in the information box and in the measuring arm display.
4. Select a measuring point in the data sheet. When selected, the measuring point will be marked with a green circle  and a corresponding measuring point will also appear.
5. Measure the first distance (blue line No.1) and press the “Target” button to register the value .
6. Continue to measure the remaining five distances in the sequence indicated by numbers 2-6 on the screen. Register each distance by pressing the "Target" button.
7. Compare measured distances with DataSheet reference values.

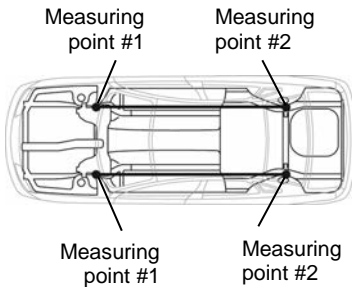


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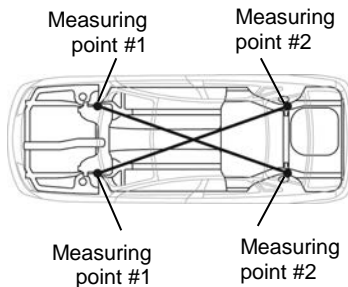
## 4.7 The Absolute measuring method

Absolute measuring is used when no DataSheet is available or if you want to measure a point that is not included on the DataSheet. When using Absolute measuring, you may choose any measuring points. The vehicle can either be measured using Parallel measuring or Cross measuring.



Absolute measuring can be used to measure point to point (Parallel measurement) as using a tape measure. It can compare two identical measurements (Cross measurement of a center section) to compare the measurements for diamond damage.

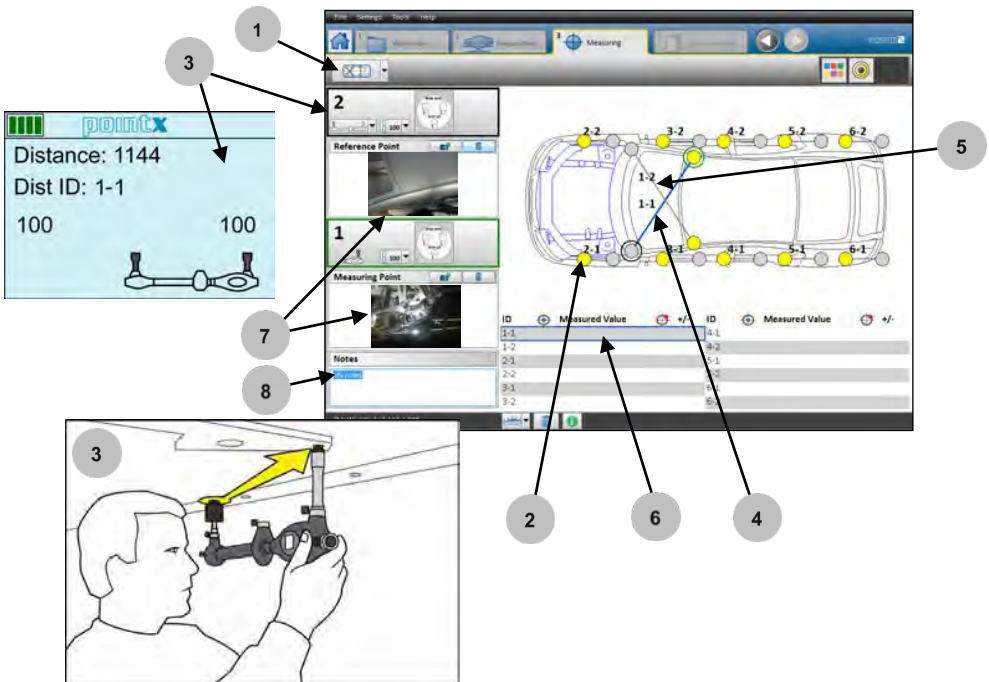


**Parallel measuring**



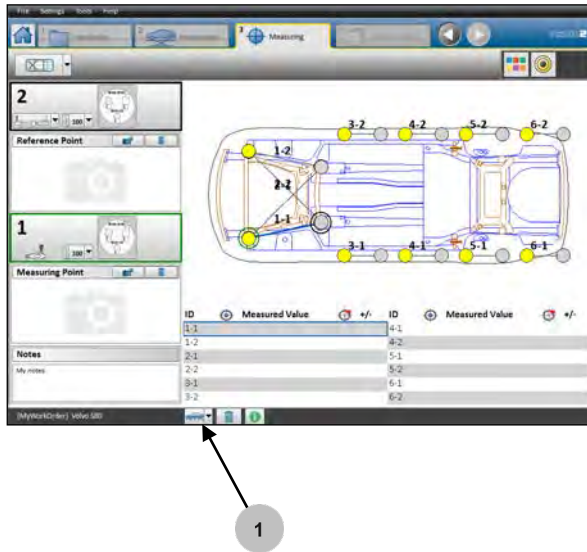
**Cross measuring**

1. Select Absolute measuring mode.
2. Measuring points can be dragged around the screen to register their position.
3. Appropriate measuring arm information is shown in the information box and in the measuring arm display.
4. Measure and register the 1-1 distance by pressing the "Target button" .
5. Measure and register the 1-2 distance by pressing the "Target button" .
6. The difference between the two measured distances is presented in the values field.
7. If necessary, add your own photos.
8. Add your own notes (that will appear together with your added photos in “Absolute upper/lower body notes report”).



Absolute measuring can also be performed on lower body.

1. Select lower body measuring mode.
2. Perform the same measuring method as on upper body.



**NOTE:** Depending of the distance to be measured and the geometry of the car body, you must select one of the following measuring adapters when working in Absolute measuring mode: **M101-25, M106 or M107**. **If any other adapter is used, the measured distance may be incorrect.**

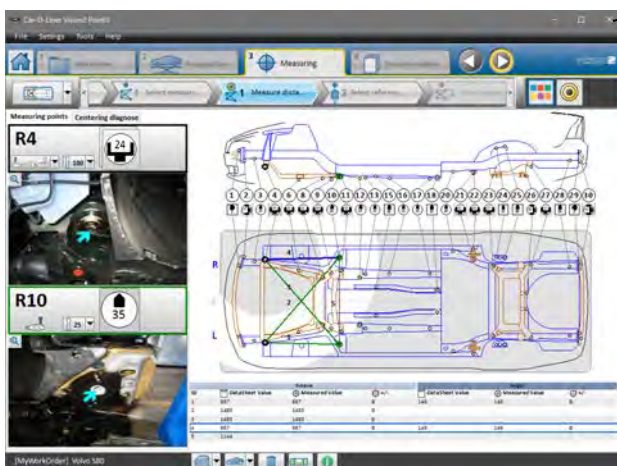
*For more extensive adapter information, see section 4.5.1 P2P Standard measuring adapters.*



**NOTE:** The Absolute upper body measuring mode was added after the Absolute lower body measuring mode. When opening an old work order containing an Absolute lower body measuring, use the Upper body/Lower body toggle button [1] to see your previous measurements.

## 4.8 Close Vision2 PointX

1. Close the Vision2 PointX software by clicking on the X icon in the upper right corner.



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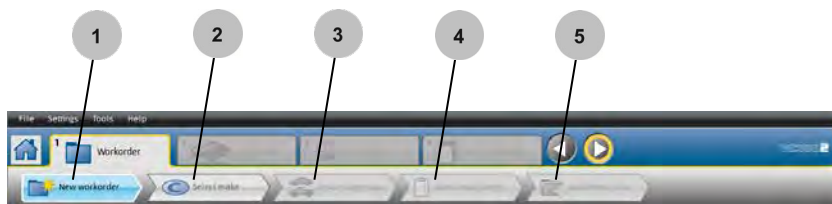
## 5 Key functions

### 5.1 The Vision2 PointX Main Tab System

In the Vision2 PointX Tab System you can navigate through the work process and you can also acquire a wide selection of information. The Main Tab System "workflow" guides you through the work process, but you can easily navigate manually by using the forward/return buttons (6).

The functions under each main tab are described in the following sections.

1. The Home tab, *see section 5.2*
2. The Workorder tab, *see section 5.3*
3. The Preparation tab, *see section 5.4*
4. The Measuring tab, *see section 5.5*
5. The Documentation tab, *see section 5.6*



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## 5.2 The Home tab

Under the Home tab you will find the options "Existing Workorders" or "Create new Workorder".

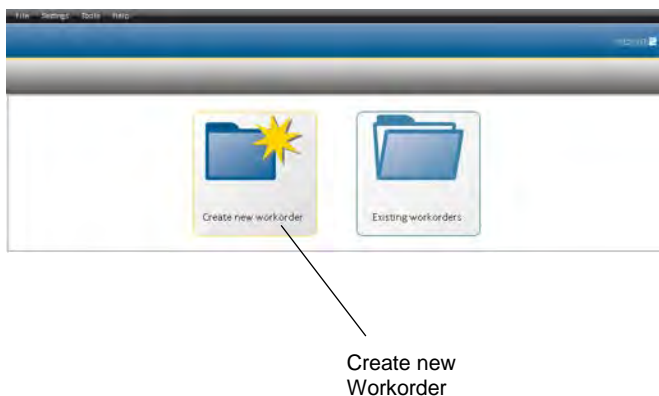
### 5.2.1 Existing Workorder

When continuing to work on an existing Workorder.



### 5.2.2 Create a new Workorder

When starting a new job you must first create a new Workorder.



## 5.3 The Workorder tab

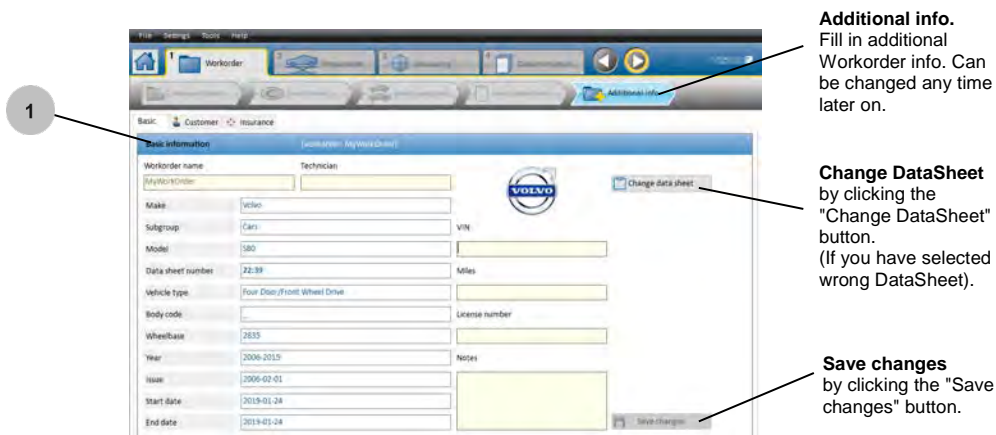
Each Workorder form gives you information about the customer; the Insurance Company involved and allows you to make a specification of the work performed on the vehicle.

### 5.3.1 Workorder list



### 5.3.2 Basic information sub tab

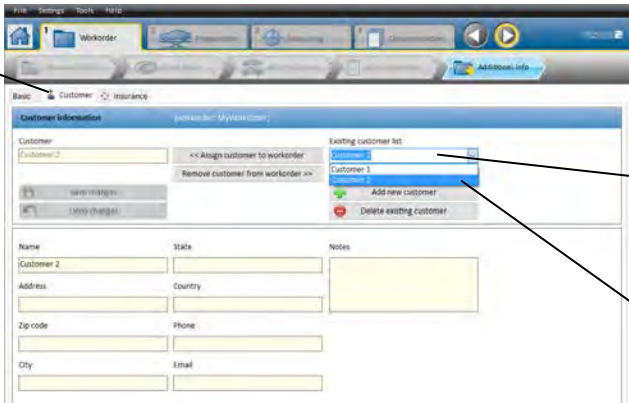
1. Here you can enter basic information about the Workorder such as the Workorder number and the selected vehicle information.



### 5.3.3 Customer information sub tab

2. Here you can enter information about the customer.

2



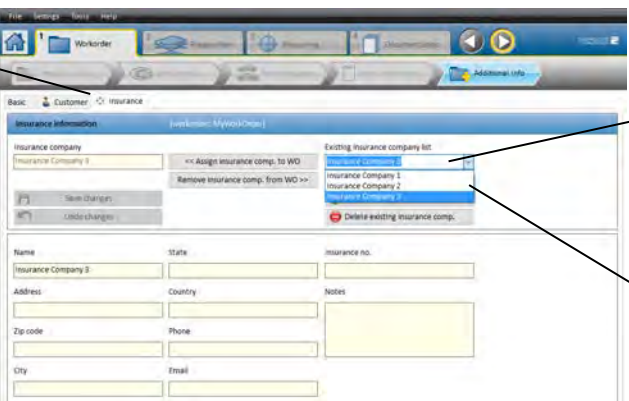
**Customer list**  
Shows all customers saved in the customer data base.

**Add new customer**  
by clicking on "Add new customer" button underneath the customer list.

### 5.3.4 Insurance information sub tab

3. Here you can enter insurance related information about the vehicle.

3



**Save changes**  
by clicking on the "Save changes" button.

**Insurance company list.**  
Shows all insurance companies saved in the insurance company data base.

**Add new insurance company**  
by clicking on "Add new insurance company" button underneath the insurance list.

### 5.3.5 Car-O-Liner Index

The Car-O-Liner Index includes all DataSheets stored in the Car-O-Data database. To select a DataSheet, *see section 4.2.3 "Find and download a DataSheet"*.

**Index list**

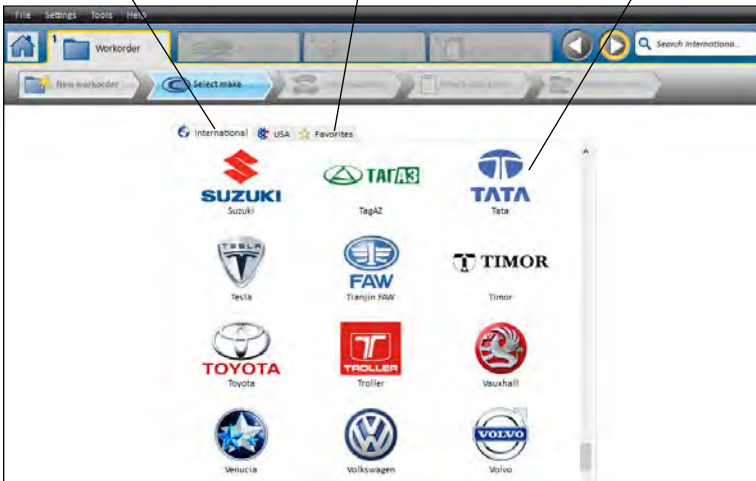
Click on the tabs to switch between American and International Index list.

**Favorites list**

Here you can find the car makes you have added to your "favorites" list.

**Add to favorites list**

By right-clicking on the desired car make you add it to your "favorites" list.



For model translation settings, *see chapter 6 Settings*.

**Subgroup**

Shows the selected type of vehicle e.g. "car" or "SUV".

**Body code**

Shows the body code of the selected vehicle (if available).

**Year**

Shows the manufacturing years of the selected vehicle.

**No**

Shows the DataSheet number of the selected vehicle.

**Make**

Shows the selected make.

**Model**

Shows the available models of the selected make of vehicle.

**Type**

Shows the available types of the selected vehicle, see the Type code explanations on next page.

**Wheelbase**

Displays the distance between the front and rear wheels.

**Issue**

Issue date of the DataSheet.

**Sort by year**

To find all car models made a certain year.

The screenshot shows a software interface with a table of vehicle data and an info center below it. The table has columns for Make, Subgroup, Model, Body code, Type, Year, Wheelbase, No, and Issue. The info center shows a picture of a car, a list of vehicle details (Make, Model, Body code, Type, Year, Data sheet, Wheelbase), and a diagram of a car with clamps attached to it. The diagram is labeled with 'A=040' and 'B=2005'. To the right of the diagram are two circular diagrams labeled 'B106' and 'B264'.

Make	Subgroup	Model	Body code	Type	Year	Wheelbase	No	Issue
Volvo	Cars	S70	---	Four Door/Four Wheel Drive	1997-2000	2660	22-019	1...
Volvo	Cars	S70	---	Four Door/Front Wheel Drive	1997-2000	2660	22-015	2...
Volvo	Cars	S80	---	Four Door/Four Wheel Drive	2006-2015	2835	22-039	2...
Volvo	Cars	S80	---	Four Door/Front Wheel Drive	2006-2015	2835	22-039	2...
Volvo	Cars	S80	---	Four Door/Four Wheel Drive	1998-2006	2790	22-021	2...
Volvo	Cars	S80	---	Four Door/Front Wheel Drive	1998-2006	2790	22-021	2...

Vehicle: Setup Measuring accessories Additional info

Make: Volvo  
Model: S80  
Body code: ---  
Type: Four Door/Front Wheel Drive  
Year: 2006-2015  
Data sheet: ---  
Wheelbase: ---

Info center

Gives you important information such as picture of the vehicle, DataSheet no and wheelbase. Info center gives you information about what clamps to use and where to attach them. Info center also indicates if the selected DataSheet contains P2P-data.

## The manufacturing years are given as follows:

2000–	Manufacturing started in 2000, and the vehicle is still in production.
2000	Vehicle was only manufactured during 2000.
1995–2000	Manufacturing started in 1995 and ended 2000.

## Type Codes for Car-O-Liner Index

<b>2</b>	Two seater	<b>LoB</b>	Long bed
<b>4</b>	Four seater	<b>LS</b>	Leaf springs
<b>2 + 2</b>	Two + two seater	<b>LWB</b>	Long wheelbase
<b>2D</b>	Two door	<b>Man</b>	Manual gear box
<b>3D</b>	Three door	<b>McP</b>	McPherson
<b>4D</b>	Four door	<b>MPV</b>	Multi purpose Vehicle
<b>5D</b>	Five door	<b>MV</b>	Mini Van
<b>3HB</b>	Three door hatchback	<b>MWB</b>	Middle wheelbase
<b>5HB</b>	Five door hatchback	<b>O</b>	Open
<b>2HT</b>	Two door hardtop	<b>P</b>	Petrol
<b>4HT</b>	Four door hardtop	<b>PS</b>	Power steering
<b>4L</b>	4-link suspension	<b>PU</b>	Pick up
<b>5L</b>	5-link suspension	<b>R</b>	Roadster
<b>2WD</b>	Two wheel drive	<b>RC</b>	Regular cab
<b>4WD</b>	Four wheel drive	<b>RHD</b>	Right hand drive
<b>4WS</b>	Four wheel steering	<b>RWD</b>	Rear wheel drive
<b>Aut</b>	Automatic gearbox	<b>S3</b>	3 cylinder straight engine
<b>AWD</b>	All wheel drive	<b>S4</b>	4 cylinder straight engine
<b>B4</b>	4 cylinder Boxer engine	<b>S5</b>	5 cylinder straight engine
<b>B6</b>	6 cylinder Boxer engine	<b>S6</b>	6 cylinder straight engine
<b>B</b>	Bus	<b>S</b>	Sedan
<b>C</b>	Coupe	<b>Sh</b>	Short
<b>CO</b>	Combi	<b>ShB</b>	Short bed
<b>CP</b>	Compact	<b>Sp</b>	Sport
<b>CS</b>	Coil springs	<b>SR</b>	Servo
<b>CV</b>	Convertible/Cab	<b>Std</b>	Standard
<b>CVP</b>	Cab plus	<b>StdC</b>	Standard cab
<b>D</b>	Diesel	<b>StdV</b>	Standard van
<b>E</b>	Extended	<b>SUV</b>	Sport utility vehicle
<b>ExC</b>	Extended cab	<b>SW</b>	Station wagon
<b>ExV</b>	Extended van	<b>SWB</b>	Short wheelbase
<b>EV</b>	Electric vehicle	<b>Ute</b>	Utility vehicle/outback
<b>FWD</b>	Front wheel drive	<b>V</b>	Van
<b>HB</b>	Hatchback	<b>V4</b>	4 cylinder V-engine
<b>HD</b>	Heavy duty	<b>V5</b>	5 cylinder V-engine
<b>HT</b>	Hard top	<b>V6</b>	6 cylinder V-engine
<b>IRS</b>	Independent rear susp.	<b>V8</b>	8 cylinder V-engine
<b>LB</b>	Liftback	<b>V10</b>	10 cylinder V-engine
<b>LC</b>	Light commercial	<b>V12</b>	12 cylinder V-engine
<b>LHD</b>	Left hand drive	<b>W</b>	Wankel engine
<b>Lo</b>	Long	<b>WB</b>	Wheelbase

*Table 5.1 Type codes for Car-O-Liner Index*

### 5.3.6 Download DataSheet

1. To download a DataSheet, click on the required model and then click on the "Download DataSheet" icon. ● icon (2) indicates downloaded DataSheet.

The screenshot shows the Car-O-Liner software interface. A table lists various vehicle models with columns for Make, Subgroup, Model, Body code, Type, Year, and Wheelbase. A 'Download DataSheet' icon (a green circle with a white 'D') is visible in the top right corner. A 'Download all year' button is also present. A 'Download DataSheet' dialog box is open, showing a progress bar and the text 'total progress: 100%' and 'current operation: Downloading data'.

**1** points to the 'Download DataSheet' icon in the top right corner.

**2** points to the 'Download DataSheet' icon in the top right corner.

**Update index list.**  
Click to update index list

**View new DataSheets**  
Click to view newly released DataSheets from Car-O-Liner

**Downloading progress.**  
Displays progress of DataSheet downloading process

### 5.3.7 Search function

The search function is an alternate method of finding a DataSheet in the Car-O-Liner Index. Type in a DataSheet number or "free text" for example car make or model combined with year.

1. Click in the search field and type in requested vehicle information.
2. Click on the magnifying glass icon.
3. The index list is displayed with selected model marked.
4. ● icon indicates downloaded DataSheet.



## 5.4 The Preparation tab

Under the Preparation tab you will find the following functions: "Select vehicle on support/on wheels", "Select Engine In/Out" and "Clamping information".

### 5.4.1 Vehicle on support or on wheels

1. Chose if the vehicle is on support or on clamps.

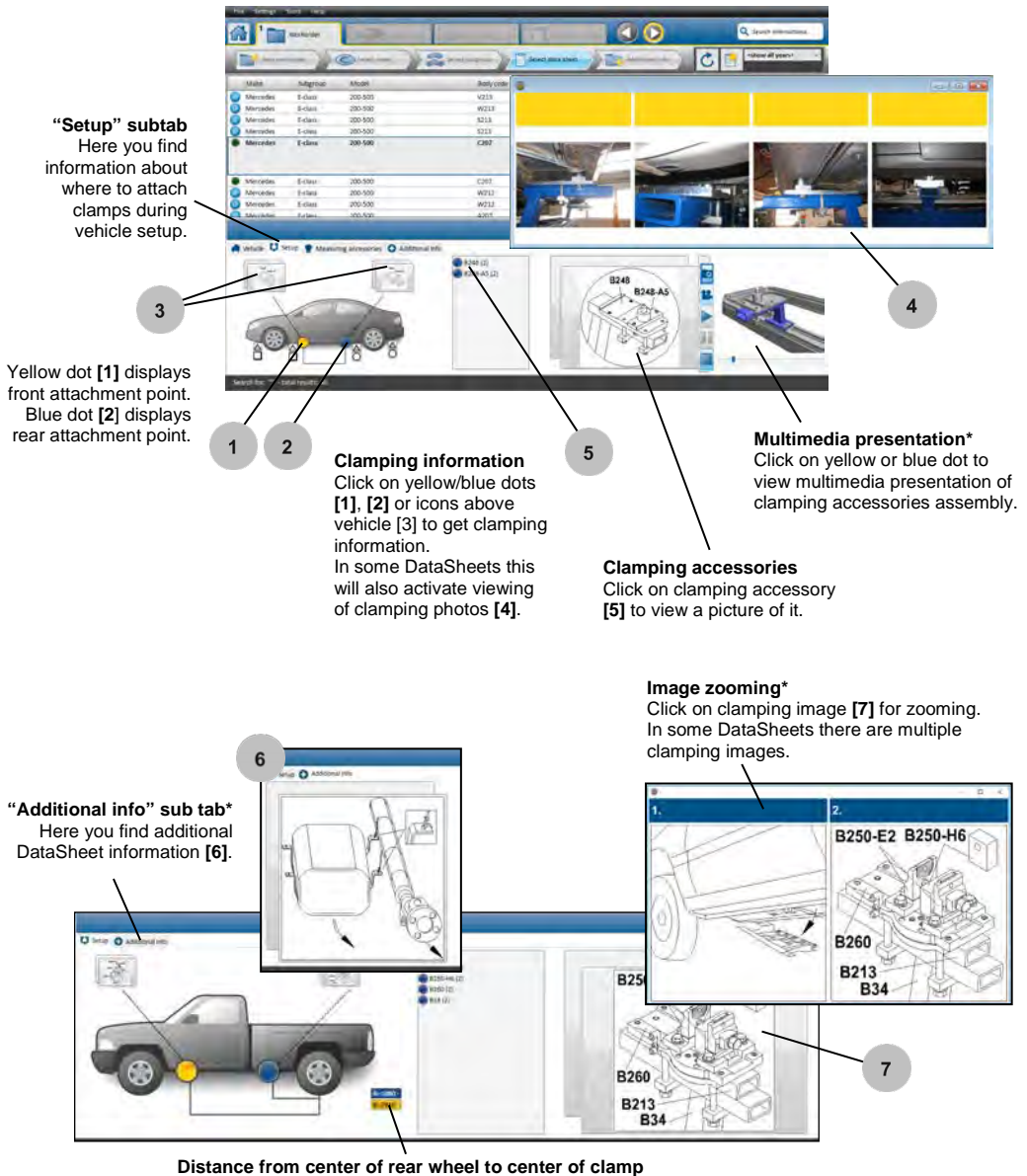


### 5.4.2 Engine In or Out

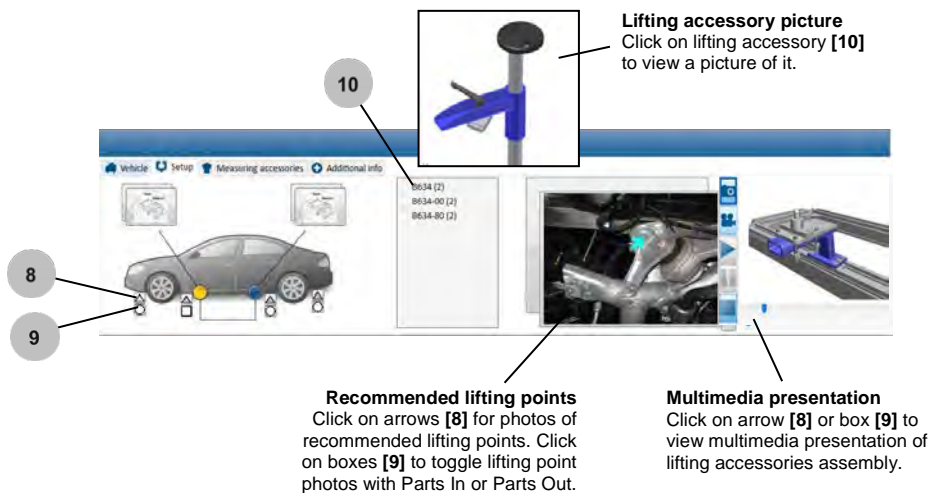
2. Chose if the engine of the vehicle is in or out.



## Clamping mode



## Lifting mode\*



**\* Does not apply to all DataSheets**

## 5.5 The Measuring tab

The measuring methods available in the PointX software are Normal-, Absolute- and Point-To-Point (P2P) measuring.

### 5.5.1 The Normal measuring view

**Normal measuring mode (default mode)**

**Reference point information box** marked with black frame. Displays selected measuring point, tube, adapter and configuration.

**Reference point photo**

**Measuring point information box** displays selected measuring point, tube and adapter. Yellow frame for Centering, green frame for Measuring.

**Measuring point photo**

**Click on icon to zoom explanatory drawing.**

**Centering and measuring workflow information**

**Shortcut to "Tolerance settings"**

**Target button**

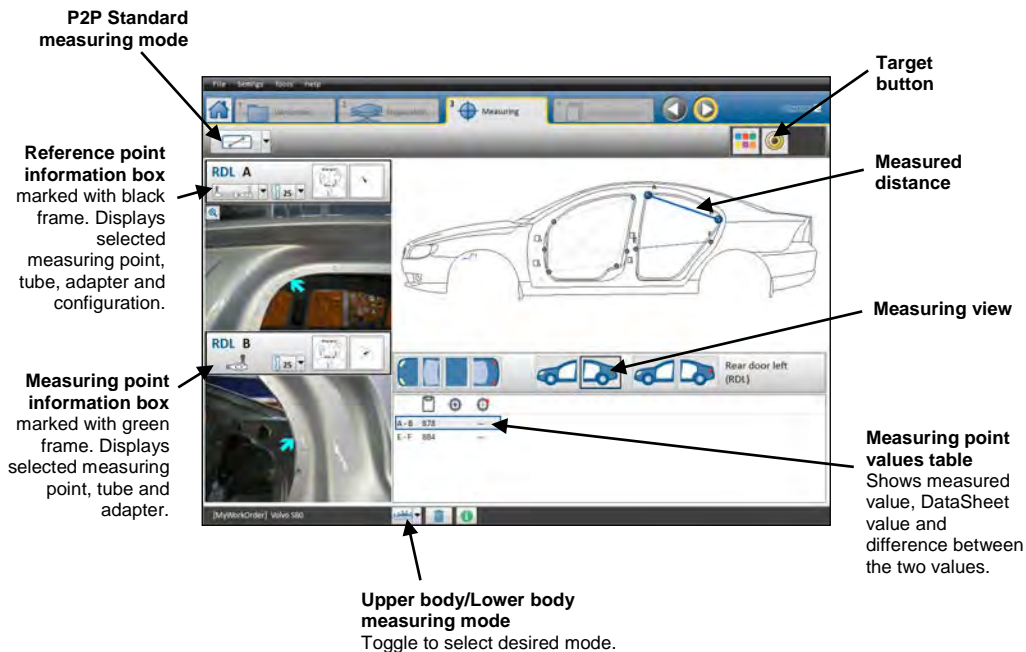
**Reference and measuring points**  
**Black circle:** Reference point  
**Yellow circle:** Centering point  
**Green circle:** Measuring point.

**Measuring point values table**  
Shows measured value, DataSheet value and difference between the two values.

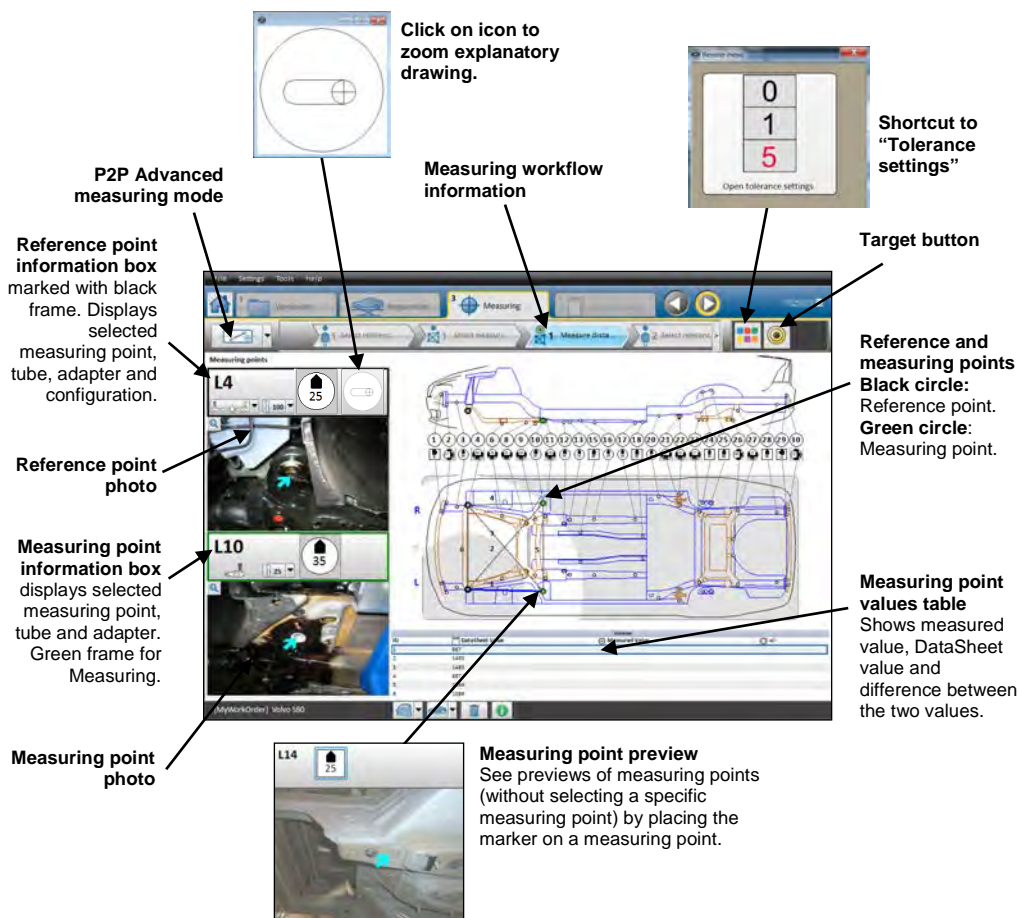
**Measuring point preview**  
See previews of measuring points (without selecting a specific measuring point) by placing the marker on a measuring point.

Pt	Geometric value	Measured value	Δ
1	1.000	1.000	0.000
2	1.000	1.000	0.000
3	1.000	1.000	0.000
4	1.000	1.000	0.000
5	1.000	1.000	0.000
6	1.000	1.000	0.000
7	1.000	1.000	0.000
8	1.000	1.000	0.000
9	1.000	1.000	0.000
10	1.000	1.000	0.000
11	1.000	1.000	0.000
12	1.000	1.000	0.000
13	1.000	1.000	0.000
14	1.000	1.000	0.000
15	1.000	1.000	0.000
16	1.000	1.000	0.000
17	1.000	1.000	0.000
18	1.000	1.000	0.000
19	1.000	1.000	0.000
20	1.000	1.000	0.000
21	1.000	1.000	0.000
22	1.000	1.000	0.000
23	1.000	1.000	0.000
24	1.000	1.000	0.000
25	1.000	1.000	0.000
26	1.000	1.000	0.000
27	1.000	1.000	0.000
28	1.000	1.000	0.000
29	1.000	1.000	0.000
30	1.000	1.000	0.000

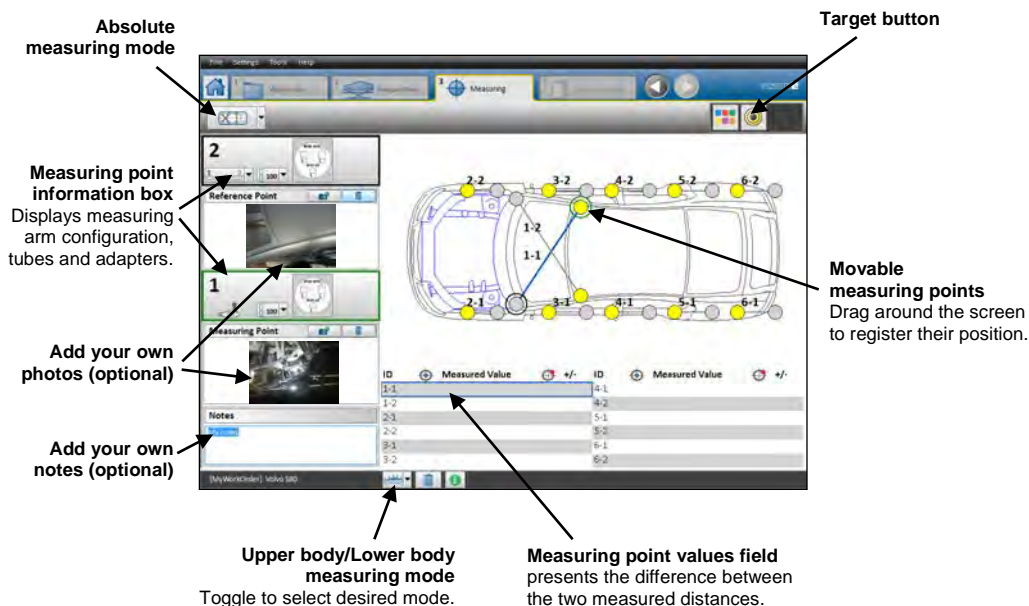
## 5.5.2 The Point-to-point (P2P) Standard measuring view



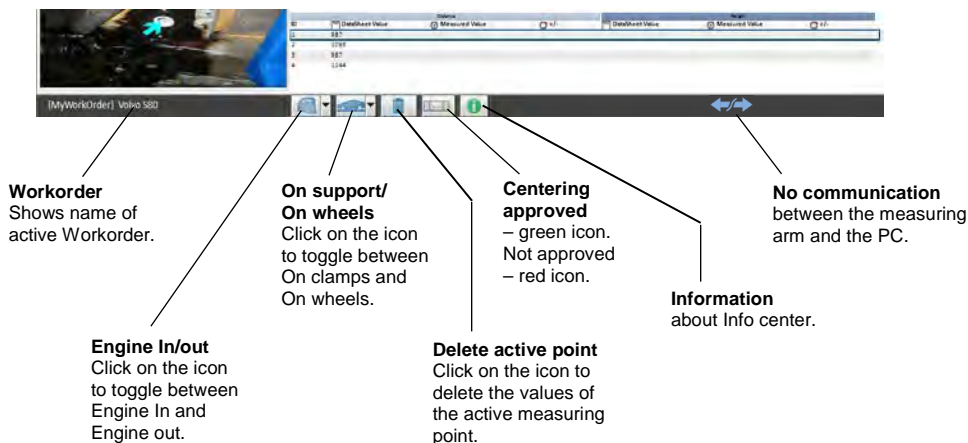
### 5.5.3 The Point-to-point (P2P) Advanced measuring view



## 5.5.4 The Absolute measuring view



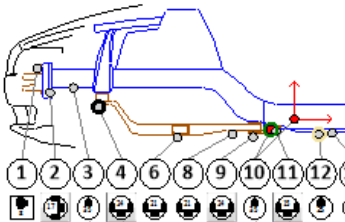
## 5.5.5 Measuring information in lower statusbar



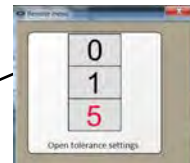
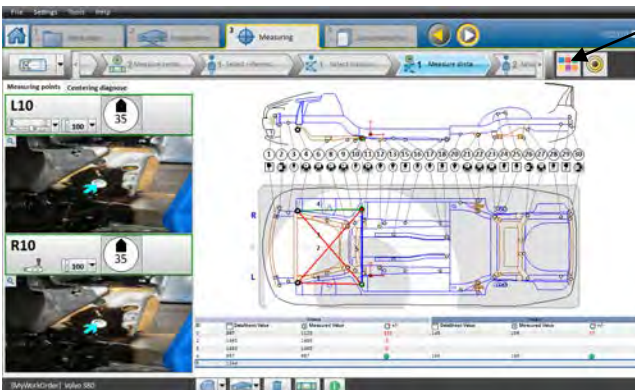
## 5.5.6 Tolerance

For tolerance setup, see section 9.3 *Vision2 PointX Setup - Measuring*. You can also use a shortcut to “Tolerance settings”, see picture at the bottom of this page.

When setting Measuring - Presentation - Graphical presentation is selected (as seen in the picture below), red arrows appear on the Symbolic DataSheet where the measuring values are out of tolerance.



ID	Distance			Height		
	DataSheet Value	Measured Value	+/-	DataSheet Value	Measured Value	+/-
1	987	1120	133	149	206	57
2	1493	1490	-3			
3	1493	1490	-3			
4	987	987		149	149	
5	1144					



Shortcut to  
“Tolerance settings”

## 5.6 The Documentation tab

Under the "Documentation" tab you will find the "Print protocol" function which enables you to print out your requested reports.

Toolbox icon for "Documentation settings", see 5.6.2 Documentation settings.



E-mail the report

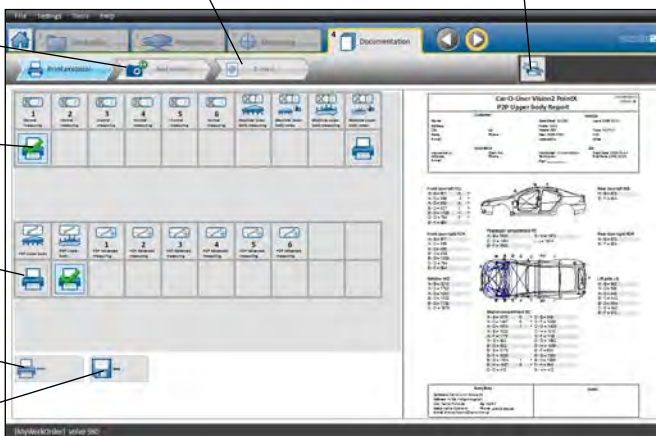
Add photos to the report

Green checkmarks marks selected reports for printing and saving

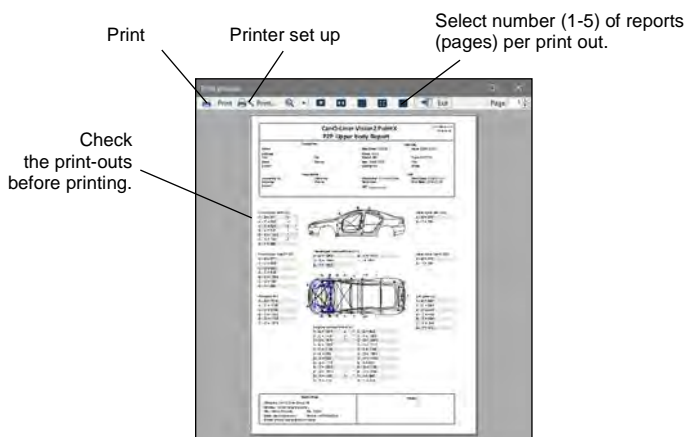
Reports for available measuring situations

Print out reports

Save report (for example to Workorder folder)



## 5.6.1 Print preview



For printer settings, *see chapter 6 Settings*.

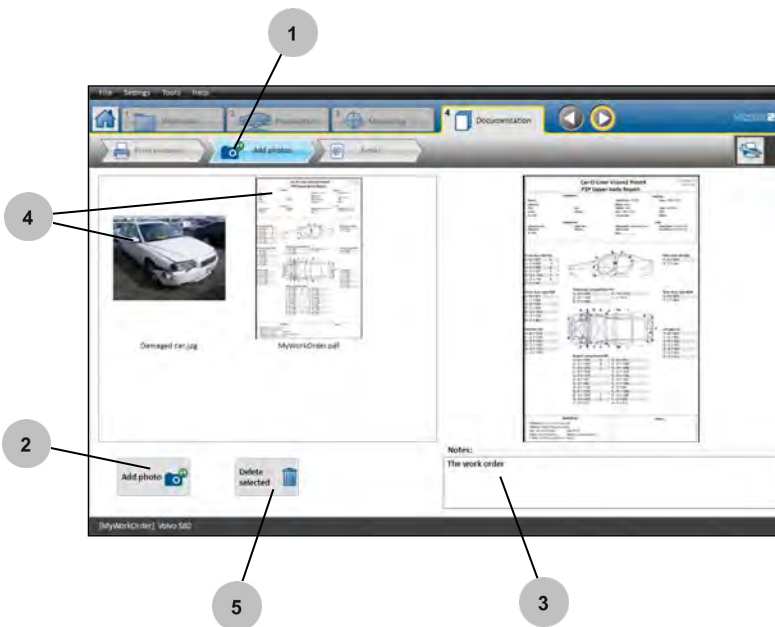
## 5.6.2 Documentation settings

In "Documentation settings" (in the "Toolbox") you can set Tolerance. The settings made in "Documentation settings" do not affect the Tolerance set in the Measuring mode.



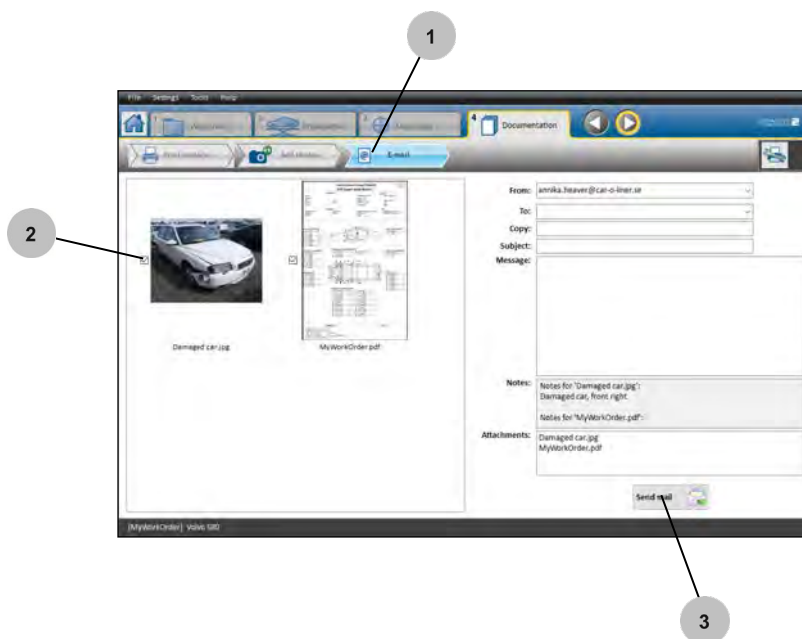
### 5.6.3 Add photos to the report

1. In the “Add photos” step you can add photos to the documentation if required. The photos are saved to the current workorder.
2. Click the “Add photo” button and choose a photo on your computer.
3. You can add a comment to the photo in the “Notes” area.
4. Click to select the photo (or the measuring protocol).
5. Delete the currently selected photo.



## 5.6.4 E-mail the report

1. In the “E-mail” step you can send and e-mail and attach saved reports and photos if required.
2. Click in the checkbox next to each photo to attach it to the e-mail.
3. When your e-mail is complete, send it by clicking the “Send e-mail” button.

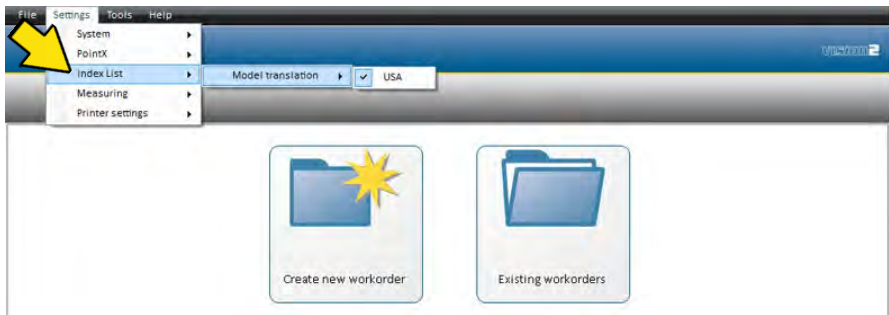


---

## 6 Settings

You will find all the necessary settings for the Vision2 PointX software in the black upper bar. The setting options are available all the time.

In the given example below the settings for model translation in "Index list" is described.



**The available settings for Vision2 PointX software:**

*System* - select language

*PointX* - select COM port for Bluetooth connection with PointX measuring arm

*Index list* - model translation

*Printer settings* - show print preview

*Network* - setting necessary if you are using a Proxy server

# 7 Tools

## 7.1 Backup workorder

To help ensure that you don't lose your files, you should back them up regularly. In Vision2 PointX you can set up automatic backup or manually back up files by following the instructions in this section.

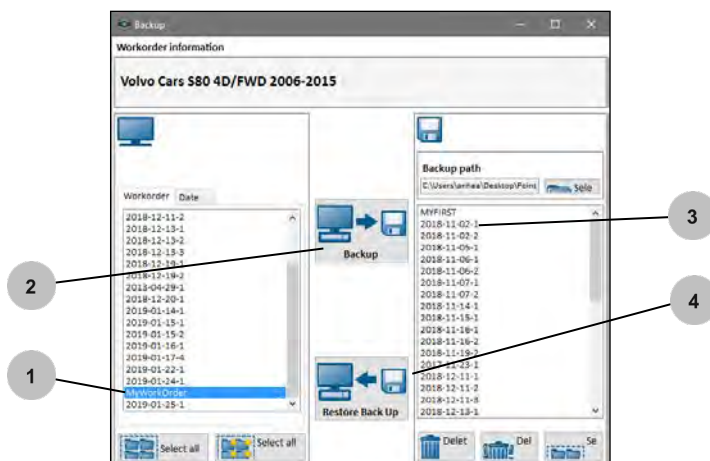
To activate the Backup function, select "Backup" under the Tools tab.



*Select Backup function under Tools tab in software upper bar.*

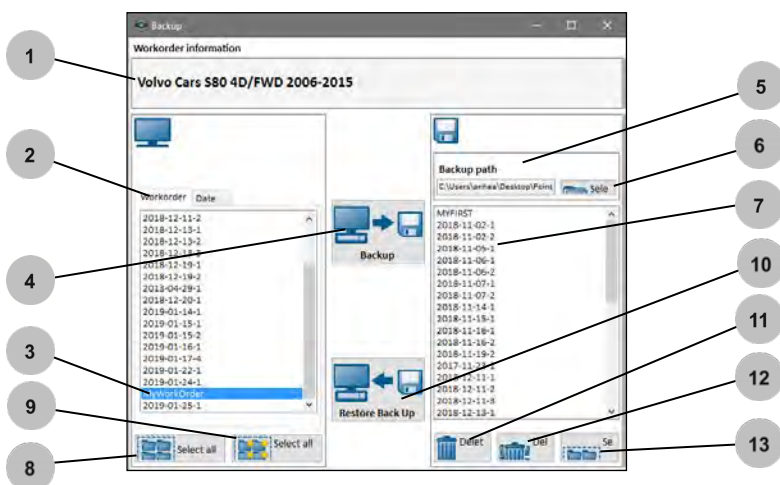
### Backup workorders:

1. Select one or more workorders to be backed up.
2. Click in the "Backup" field.
3. Workorders are now transferred from computer to backup.
4. To restore a lost workorder on your computer, select a backed up file [3] and click in the "Restore back up" field.



## Backup workorder key functions:

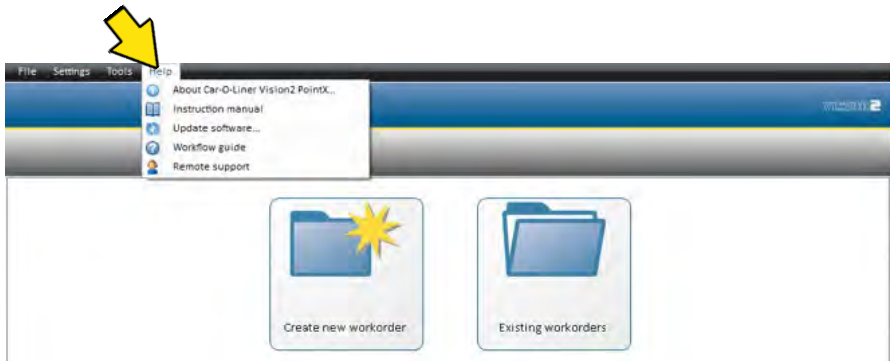
1. Active workorder information.
2. Workorder list on your computer sorted by name or date.
3. Workorders to be backed up.
4. Click in the “Backup” field.  
Workorders are now transferred from computer to backup [5].
5. Site where your backed up workorders are saved.
6. You can also select an optional site for backed up files.
7. Backed up workorders.
8. Select all wokorders on your harddrive.
9. Select all workorders on your harddrive created after last backup.
10. To restore a lost workorder on your computer, select a backed up file [7] and click in the “Restore back up” field.  
Backed up workorders are now transferred to the computer [3].
11. Delete selected backed up workorder.
12. Delete all backed up workorders.
13. Select all backed up workorders.



---

## 8 Help functions

Under “Help“ in the black upper bar you will find all the necessary help functions for the Vision2 PointX software. The Help functions are available all the time.



### The available help functions for Vision2 PointX software:

*About Vision2 PointX* – CD key and Machine ID codes

*Instruction manual* – pdf of instruction manual

*Update software* – text translations, OEM links and index updates

*Workflow guide* – activate workflow guide when inactivated

*Remote support* – help solving problems from Car-O-Liner support office

## 9 Vision2 PointX Setup

In “Vision2 PointX Software Setup“ you can setup index list, number of centering points, language, printer, export, backup, mail and network.

To start Vision2 PointX Software Setup go to:

**For Windows 8 and 10: Start > Vision2 PointX > Vision2 PointX Setup**

**For XP, Vista and Windows 7: Start > All programs > Vision2 PointX > Utilities > Vision2 PointX Setup**



**NOTE:** Before starting Vision2 PointX Software Setup, please exit and close Vision2 PointX Software.

### 9.1 Vision2 PointX Setup > Index list

The “**Index**“ menu is used to edit Favorites Index, Favorites Index region, Model translations and to Translate vehicle type.

**Favorites Index.**  
Use the buttons to add and remove vehicle makes in your Favorites index.  
Only the selected makes will appear.

**Favorites Index region.**  
Select if you want to include all vehicles in your Favorites index or only show vehicles available on the North American market.

**Model translations.**  
If available, local model name of vehicles can be shown in Index. Select your region here, for example USA.

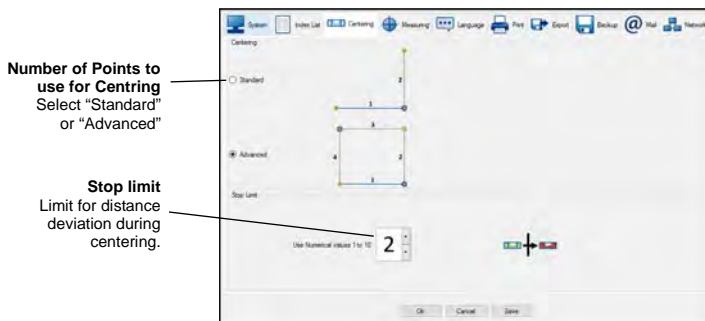
**Translate vehicle type.**  
When selected, the translated vehicle type will be shown directly in the Index List.



**NOTE:** Remember to click on “Save” after change in “Setup”.

## 9.2 Vision2 PointX Setup > Centering

The “**Centering**” menu is used to set Number of Points to use for Centering.



## 9.3 Vision2 PointX Setup > Measuring

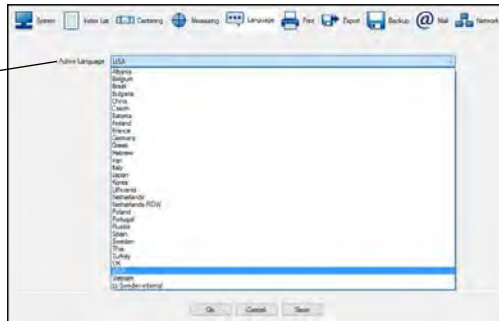
The “**Measuring**” menu is used to set the allowed tolerance for “Normal” and “P2P” measuring.



## 9.4 Vision2 PointX Setup > Language

The “**Language**” menu is used to select which language should be used in Vision2 PointX Software.

**Language**  
For setting language,  
click on the drop down  
menu and select  
language.



## 9.5 Vision2 PointX Setup > Print

The “**Print**” menu is used to change the Car-O-Liner logotype on “Vision2 PointX Software Report” and in the “Print outs”.

**Logotype**  
Used to select a logotype.  
Write the path to the logo or  
click on the search button  
and browse to the logotype.

**Report document format**  
Select jpg or pdf format.



## 9.6 Vision2 PointX Setup > Export

The “**Export**” menu is used to determine where to store exported files.

**Export**  
Write the path to where the files should be exported or click on the search button and browse to the specific folder.



## 9.7 Vision2 PointX Setup > Backup

The “**Backup function**” menu allows the user to transfer the Work orders on to a USB or to the hard drive. You can also set Vision2 PointX Software to prompt for backup at regular intervals.

**Prompt for backup**  
Check the box.

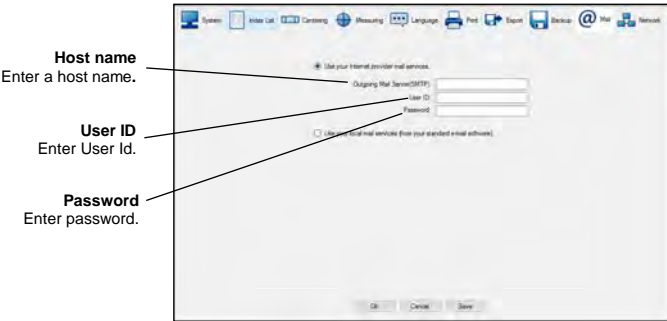
**Select a backup interval**  
How often backup message is shown

**Backup**  
Write the path to where the back up files should be saved or click on the search button and browse to the specific folder.



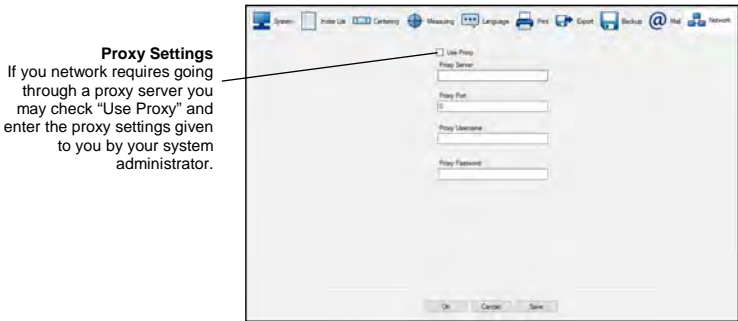
## 9.8 Vision2 PointX Setup > Mail

The “**Mail**” menu is used to setup e-mail account used by Vision2 PointX Software. Request the appropriate information from the company system administrator before you set up the e-mail account.



## 9.9 Vision2 PointX Setup > Network

The “**Network**” menu is used to check Proxy Server settings.



---

# 10 Vision2 PointX Diagnose

The “**Vision2 Diagnose**” menu helps the user to diagnose the PointX measuring arm if something is malfunctioning.



**NOTE:** Before starting Vision2 PointX Diagnose, please exit and close Vision2 PointX Software.

To start Vision2 PointX Diagnose go to:

**For Windows 8 and 10:** Start > Vision2 PointX > Vision2 PointX Diagnose.

**For XP, Vista and Windows 7:** Start > All programs > Vision2 PointX > Utilities > Vision2 PointX Diagnose

## 10.1 Vision2 PointX Measuring System Diagnose > Communication

The “**Communication**” menu tests the communication between the PC and the measuring arm.



---

## 10.2 Vision2 PointX Measuring System

### Diagnose > Version

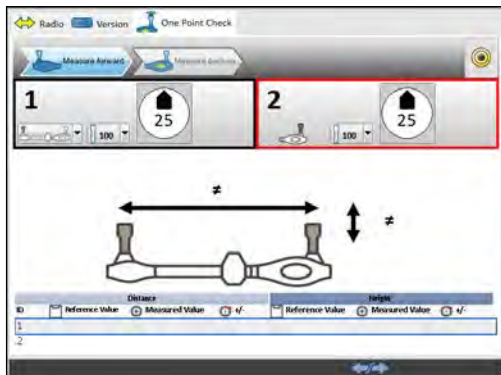
The “**Version**” menu gives information about version numbers and serial numbers, etc.

PointX serial number		
PointX MM version		
Total measurements	8	
Measurements since calibration	0	

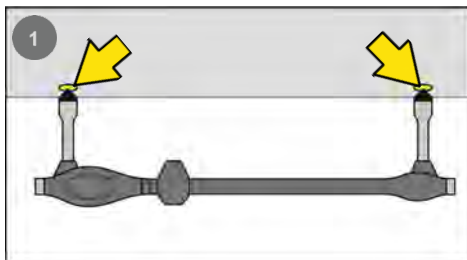
## 10.3 Vision2 PointX Measuring System

### Diagnose > One Point Check

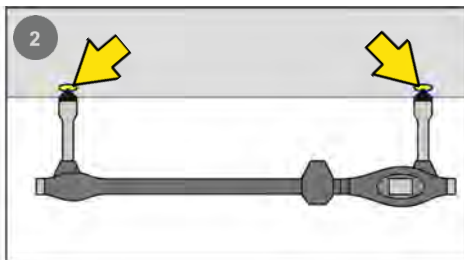
Perform “**One Point Check**” to check if measuring arm is measuring correct. How to perform “One Point Check”, *see bottom of this page*.



#### “One Point Check”:



1. Register two measuring points.



2. Turn measuring arm 180° around, register the same two measuring points and check if measuring value is the same.

---

# 11 Maintenance



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**WARNING:** Laser radiation when open. Do not stare into beam.  
Class 1 laser product.

---



---

**IMPORTANT:** Do not open the PointX measuring arm. All service must be carried out by authorized Car-O-Liner service personnel.

---

## 11.1 Calibration

PointX is a measuring device and should be handled with care. Please contact your Car-O-Liner distributor for questions regarding maintenance and calibration. Car-O-Liner recommends that the PointX is calibrated once a year.



---

**IMPORTANT:** Calibration must be carried out by authorized Car-O-Liner service personnel. Car-O-liner recommends that the PointX is calibrated once a year. Contact your Car-O-Liner distributor.

---

---

## 11.2 Cleaning

PointX is a measuring device and should be handled with care. The PointX should be cleaned with a dry or lightly damped cloth.



---

**IMPORTANT:** No solvents, oils, lubricants, detergents or liquid should be exposed to the PointX measuring arm.

---

Care should also be taken to maintain the PC unit of your system. Make sure both PC and printer stay as clean as possible.

---

## 12 Troubleshooting

The Troubleshooting schematic in this chapter (section 9.2) is a useful tool when tracing problems with **Vision2 PointX** and **Car-O-Data**. The Troubleshooting schematic presents the most common problems and their possible causes.



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**IMPORTANT:** Do not open the PointX measuring arm. All service must be carried out by authorized Car-O-Liner service personnel.

---

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## 12.1 Checklist

If you find the instructions in the checklist below insufficient, please contact your Car-O-Liner distributor.

- 1 What version of *Vision2 PointX* is installed on the computer?

\_\_\_\_\_  
*Version of Car-O-Soft Vision2 PointX*

- 2 What version of *Car-O-Data Update* is installed on the computer?

\_\_\_\_\_  
*Version of Car-O-Data Update*

- 3 What is the DataSheet number, issue date and copyright date of the faulty DataSheet you are using.

\_\_\_\_\_  
*DSheet number*

\_\_\_\_\_  
*Issue date*

\_\_\_\_\_  
*Copyright date*

---

The information in points 4-9 are required only if the problem concerns faulty measuring values.

4 Which measuring points are not correct?

\_\_\_\_\_

*Faulty measuring points*

5 What is the difference in height, length and width between the correct DataSheet measuring points and the faulty points being measured?

\_\_\_\_\_

*Height*

\_\_\_\_\_

*Length*

\_\_\_\_\_

*Width*

6 Which centering points have you used?

\_\_\_\_\_

*Centering points*

7 What is the make of car and what is the model?

\_\_\_\_\_

*Make of car*

\_\_\_\_\_

*Model*

8 In what year was the vehicle manufactured?

\_\_\_\_\_

*Manufacturing year*

9 What is the wheelbase (distance from the center of the front wheel to the center of the rear wheel) of the vehicle?

\_\_\_\_\_

*Wheelbase*

---

## 12.2 Troubleshooting schematic

If any issue is not described below, please consult the corresponding section in this manual. If the suggested actions below still do not solve your issue, please contact you Car-O-Liner distributor.

### Bluetooth Communication Issues

Unable to find/connect to the PointX Bluetooth device	<ol style="list-style-type: none"><li>1. Make sure that PointX is on.</li><li>2. Try to locate PointX using another PC or Device with Bluetooth.<ol style="list-style-type: none"><li>2a If still not visible, contact support.</li><li>2b If visible on another device, consult the Bluetooth Installation Guide on the Vision PointX Installation CD</li></ol></li><li>3. Still no success, try another Bluetooth dongle.</li></ol>
The Vision2 PointX PC software does not connect to the PointX even though the PC software is in measuring mode and I have successfully paired my PointX device with the PC.	<ol style="list-style-type: none"><li>1. Verify your COM Port settings in Vision2 PointX. Consult the Bluetooth Installation Guide on the Vision PointX Installation CD</li><li>2. Turn off PointX. Close Vision2 PointX. Then first turn on the PointX and then launch the Vision2 PointX Software again.</li></ol>
Bluetooth connection is unstable	<p>Make sure to use the high power USB Bluetooth dongle that was included with the PointX, or any other high power “Class 1” USB Bluetooth dongle.</p> <p>Built in Bluetooth radios/devices</p>

	<p>in PCs/Laptops often have a very limited range and is not recommended.</p> <p>Use the included extension cable to ensure a “free line of sight” between the PointX and the USB Bluetooth dongle. Do not have the Bluetooth mounted on the back of a desktop PC.</p>
--	--

## Measuring issues

Measured distance is obviously wrong.	<ol style="list-style-type: none"> <li>1 Check that the measuring tubes are fitted in the correct position as shown on the PointX display and in the Software.</li> <li>2. Check that the tubes have the correct length as shown on the PointX display and in the Software.</li> <li>3. Make sure that you are measuring the distance between the points selected and shown on the Vision2 PointX DataSheet.</li> <li>4. Make sure to use the correct tube/adaptor for each point to be measured.</li> </ol>
Measured height is obviously wrong	<p>Any source of error during the centering process will have an adverse effect on the height calculation during measuring. The longer the measured distance the higher the error will be.</p>

---

	<p>Both during measuring and especially during centering, make sure that:</p> <ol style="list-style-type: none"><li>1. You use the correct tubes and that they are fitted properly in the sockets.</li><li>2. You measure between the correct points.</li><li>3. You measure in the right direction and measure front-to-back instead of back-to-front or left-to-right instead of right-to-left.</li><li>4. The reference points are clean and undamaged.</li><li>5. The measuring adapters are firmly fitted in holes or on bolts.</li><li>6. There is no tension in the measuring arm. Pressure should be applied underneath the tubes and not on the telescopic tube on the measuring arm.</li></ol>
--	--

<b>Battery life time issues</b>	<p>PointX can be used with any AA or LR6 batteries, both standard 1,5V and rechargeable 1,2V. High quality alkaline batteries or high power rechargeable batteries are recommended. Car-O-Liner recommends using high quality/high power rechargeable batteries together with a charger that charge each battery individually to ensure maximum battery life time.</p> <p>Use of the continuous measuring mode requires more power than standard measuring and can reduce battery life time significantly.</p>
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## 13 Dismantling and Salvage

To limit strain on the environment and its natural resources, it is important that the various parts of the equipment are recycled.

Mechanical components, electrical components, plastic, composite materials, steel and aluminium should be sorted for material recycling.

### 13.1 Battery

The battery in the PointX measuring arm must be recycled or disposed of properly.



---

**IMPORTANT:** For the sake of the environment, it is important that the equipment is dismantled in an environmentally friendly way.

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# 14 Technical Specifications

## 14.1 Computer requirements


The Vision2 PointX minimum system requirements are:

- Intel® Pentium® 4 (2.4 GHz processor), Intel Core™ Duo processor or newer, AMD XP2500+ or newer AMD processor
- 1GB RAM (32-bit) or 2GB RAM (64-bit)
- 20GB of available hard-disk space (additional free space required during installation)
- 1024x768 monitor resolution with 32-bit video card
- Microsoft mouse or compatible pointing device
- Speakers
- USB ports
- CD/DVD-ROM drive for software and Car-O-Data installation
- Internet connection (recommended)
- Operating system
  - Microsoft® 32bit Windows XP SP3 Professional
  - Microsoft® 32 and 64bit Windows Vista Premium, Business, Ultimate or Enterprise
  - Microsoft® 32 and 64bit Windows7 Professional or Ultimate
  - Microsoft® 32 and 64bit Windows8, Windows8 Pro or Windows8 Enterprise
  - Microsoft® 32 and 64bit Windows10

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## 14.2 PointX measuring arm

Supply power	2 x AA/LR6 batteries. Rechargeable or standard.		
Display resolution	± 1 mm		
Measurement tolerances	Typical tolerance	Maximum tolerance	
	Length	± 1mm	± 2mm
	Height	± 1mm/meter	± 2mm/meter
Calibration	Individual calibration with full traceability to international/national standards of length. Certificate of calibration is included, see enclosure.		
Measuring range	295 - 2090 mm, P2P 300-3300 mm		
Working time	8 hours of typical use		
Weight measuring arm	0.9 kg including batteries		
Operating temperature	-10°C to 40°C		
Communication between the measuring arm and the PC	Bluetooth, Class 1, 100 mW, range up to 100 m		
Frequencies for communication between the measuring arm and the PC	2.4 GHz		
Hardware features	<ul style="list-style-type: none"><li>- Distance and height measuring in lower body</li><li>- Point to point(P2P) measuring in upper body</li><li>- Wireless transfer to PC of registered measurements</li><li>- Colour display</li></ul>		
Quality certificate, Car-O-Liner Group AB	ISO9001, ISO14001		

 **NOTE!** PointX is an individually calibrated measuring device meant for estimating purposes. Mechanical tolerances as offsets and angular displacements of the device are compensated for in the calibration process by the software.

Measured values may vary with/depend on:

Length and Height:

- Tensions/elastic displacements that may build up when using long measurement adapters
- The small gap-and-play that is present in the telescopic arm
- Temperature Height
- Accuracy of centering will highly affect calculated height values and differences from DataSheet height values.

---

## 14.3 Software Versions

### 14.3.1 Vision2 PointX

The CD **Vision2 PointX** contains the original software.

**Vision2 PointX** and **Car-O-Data** is updated via Internet. Each time the software is updated, the version number of **Vision2 PointX** is increased.

The actual version number of Vision2 PointX can be found in "About Vision2 PointX", *see chapter 8 Help functions*.


### 14.3.2 Car-O-Data

**Car-O-Data** subscribers can download the updated index list and DataSheets via the internet immediately after they are released.




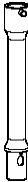

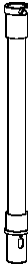

Every time **Car-O-Data** is updated via Internet, the index list date of **Car-O-Data** is changed.

# 15 Spare parts and accessories








The spare parts for the PointX Electronic Measuring System are listed in the tables below.








 **NOTE:** Use only genuine Car-O-Liner spare parts.  
To order, contact your local Car-O-Liner distributor.





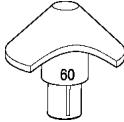

## 15.1 Measuring tubes


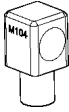


								
Art. No	Object	M701-25 Measuring tube L=25	M701-60 Measuring tube L=60	M701-100 Measuring tube L=100	M701-180 Measuring tube L=180	M701-270 Measuring tube L=270	M701-360 Measuring tube L=360	M701-600 Measuring tube L=600
	Quantity	1	1	1	1	1	1	1
	Art. No	33260	31261	31271	31262	31263	31264	31268

## 15.2 Measuring adapters

							
Object	<b>M100-8</b> Adapter Ø8	<b>M100-10</b> Adapter Ø10	<b>M100-12</b> Adapter Ø12	<b>M100-14</b> Adapter Ø14	<b>M100-15</b> Adapter Ø15	<b>M100-16</b> Adapter Ø16	<b>M100-17</b> Adapter Ø17
Quantity	1	1	1	1	1	1	1
Art. No	30200	30208	30209	30210	30205	30211	30206

							
Object	<b>M100-18</b> Adapter Ø18	<b>M100-19</b> Adapter Ø19	<b>M100-20</b> Adapter Ø20	<b>M100-21</b> Adapter Ø21	<b>M100-22</b> Adapter Ø22	<b>M100-24</b> Adapter Ø24	<b>M100-25</b> Adapter Ø25
Quantity	2	1	1	1	1	1	1
Art. No	30212	30741	30213	30742	30214	30215	30207

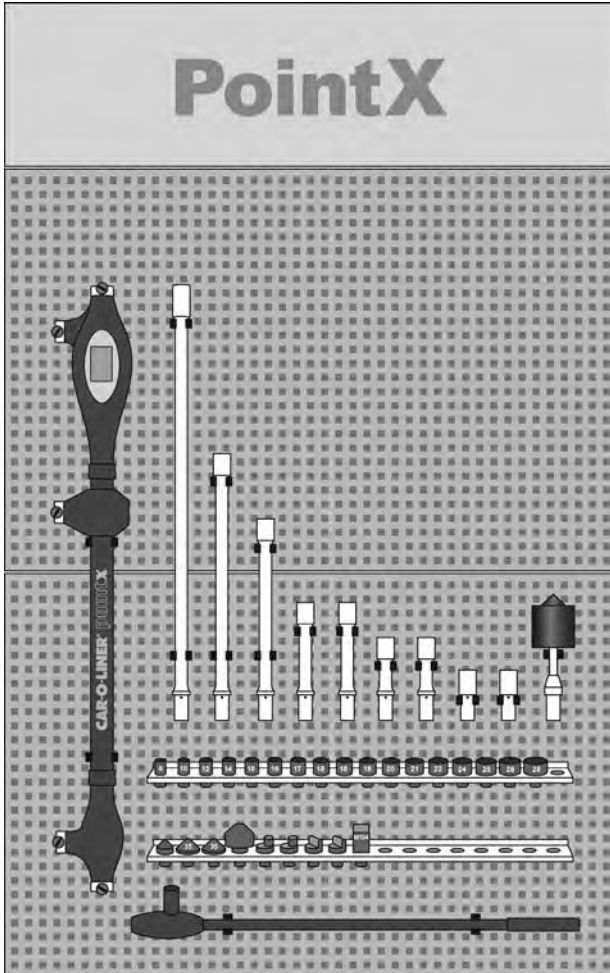
						
Object	<b>M100-26</b> Adapter Ø26	<b>M100-28</b> Adapter Ø28	<b>M101-25</b> Stud Ø25	<b>M101-35</b> Stud Ø35	<b>M101-60</b> Stud Ø60	<b>M106</b> Adapter
Quantity	1	1	1	1	1	1
Art. No	30216	30217	30198	30199	30241	45616

				
Object	<b>M107</b> Adapter	<b>M104</b> Adapter	<b>M105</b> Magnetic attachment device with pin bracket	<b>M213</b> Adapter
Quantity	1	1	1	1
Art. No	45617	30227	45029	48435

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## 15.3 WorkShop Solutions

The PointX measuring arm, measuring tubes and adapters can easily be fitted to the flexible WorkShop Solutions wall section system. To order, contact your local Car-O-Liner distributor.



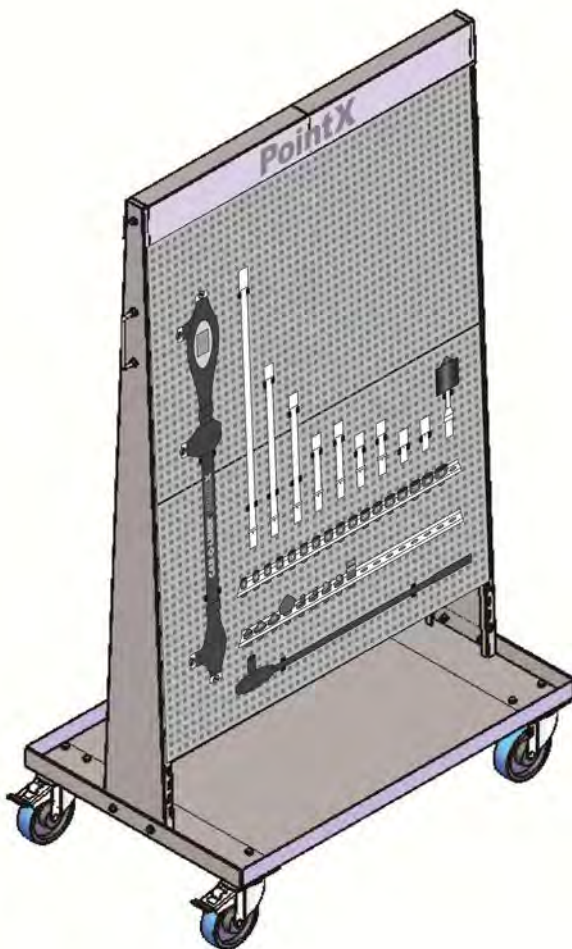
*Figure 12.1 WorkShop Solutions wall section system.*

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## 15.4 WSW90 Tool wagon

The PointX measuring arm, measuring tubes and adapters can easily be fitted to the versatile WSW90 Tool wagon.

To order, contact your local Car-O-Liner distributor.



*Figure 12.2 WSW90 Tool wagon.*

## Tool holder kit **45612**

### - for WorkShop Solution and WSW90 Tool cart

Description	Quantity	Art. No
Tool holder Ø39 mm	2	36825
Tool holder Ø25 mm	15	30470
Clipholder, small Ø15 mm	1	30482
Bracket / Konsol L=610	2	30475
Decal PointX WSS L=396	1	45759
Decal PointX WSW90 L=285	1	45760
Edge Protection Profile L= 730mm	2	45361

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