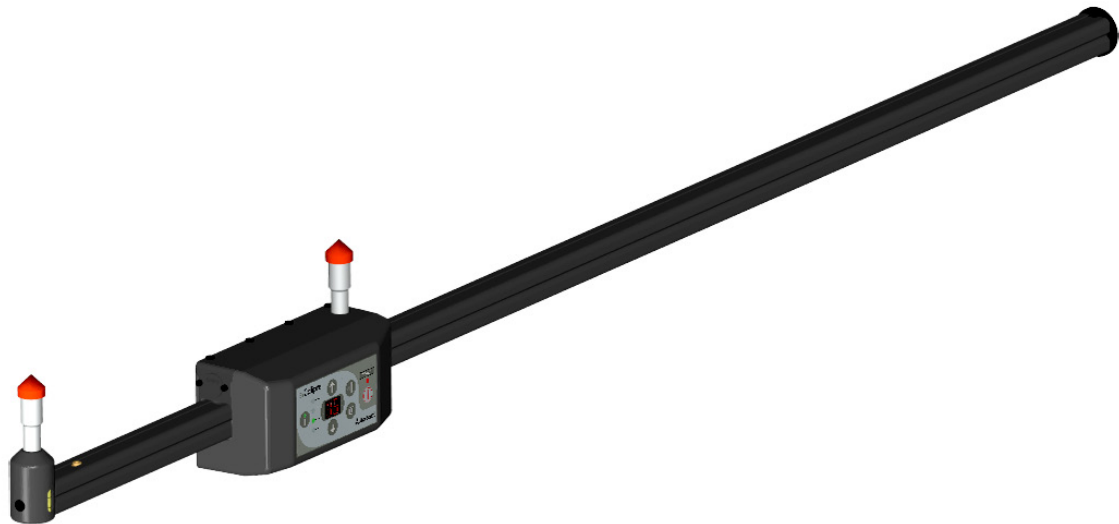


TRAM GAUGE

INSTRUCTION MANUAL



XDimension

750EL+

Tram Gauge

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Autorobot Datasheet System

Measurements

In order to keep the vehicle datasheets updated, Autorobot Finland Oy continually measures new vehicle makes all around the world. In addition to Finland, we measure the vehicles for example in Australia, Russia, Poland and India frequently. In addition to the specifications provided by the vehicle manufacturers, at least three similar vehicles are measured by Autorobot to produce a datasheet. Because of our comprehensive sources we often are able to deliver the datasheet to the customers before a new vehicle is available outside the manufacturing country.

Tolerances

Many people think that vehicles have been produced precisely by millimetre. But this isn't always true. The vehicle manufacturers rarely publish tolerance tables for the vehicles, and the manufacturer charts contain in some cases figures that originate from the planning phase. Many times these differ from the actual vehicle measures because of the long production processes. During long production series there appears some abrasion in the manufacturing tools, and this may cause tolerances between the first made and the later produced vehicles. To reach the best accuracy in these circumstances, Autorobot uses average measuring values mostly taken from three new vehicles of different production series. Our experience has shown that the chassis measures normally vary between a tolerance of ± 3 mm and the upperbody measure tolerance is ± 5 mm. With full frame vehicles (e.g. sport utility vehicles and multi purpose vehicles) the differences may be even bigger and go up to ± 10 mm. Measuring tolerance in Autorobot measuring systems is ± 1 mm.

In the tram gauge measuring 2 measuring points from Autorobot datasheets are used, and therefore the overall tolerance (between 2 points) is a bit larger than when measuring only one single vehicle point. For this reason a 5mm tolerance has been set as default for tram gauge measuring in the Autorobot Datasheet Suite software, instead of the 3mm standard which is in use with the full size Autorobot measuring systems.

Datasheet Service

Autorobot 3D measuring datasheets can be purchased as a single CD-ROM or as an annual subscription. The customers who order one CD-ROM, get Autorobot's latest datasheet CD-ROM mailed to them. Annual subscription customers get two updates per year on CD-ROM plus personal passwords to Autorobot Extranet for free and unlimited use of datasheets via internet.

Autorobot CD-ROMs contain new vehicle specifications and update sheets in case new information regarding measuring points has come up in the earlier published datasheets. For continuous subscription customers all these are also available as downloads from Autorobot Extranet.

Extranet Datasheet Service

Autorobot Finland Oy's Extranet Datasheet Service offers all Autorobot datasheets in electronic format to customers who have acquired extranet access. The website www.autorobot.com contains both existing and newly issued datasheets. The great benefit of the web service is that it makes new and updated datasheets available to the users immediately without having to wait for the next CD-ROM release to arrive. Datasheets can be downloaded in PDF format for viewing/printing or in ADF (Autorobot Data File) format for use in the Autorobot Datasheet Suite measuring software. The 'Internet update' function downloads the datasheets directly to Datasheet Suite program.

The passwords for Datasheet Service in Autorobot Extranet are given to annual subscription customers for one year at a time. If you have any questions or comments on our new datasheets or Extranet passwords, please contact your nearest Chief distributor.

Abbreviations Appearing in the Datasheets

4x2	Two-Wheel Drive
2WD	Two-Wheel Drive
2WS	Two-Wheel Steering
4x4	Four-Wheel Drive
4WD	Four-Wheel Drive
4WS	Four-Wheel Steering
AWD	All-Wheel Drive
FWD	Front Wheel Drive
L.W.B.	Long Wheel Base
L.H.D.	Left Hand Drive
R.H.D.	Right Hand Drive
RWD	Rear Wheel Drive
STW	Station Wagon
S.W.B.	Short Wheel Base
W.B.	Wheel Base
N.W.B.	Normal Wheel Base

General

More accuracy and quality is required from the vehicle body repair shops of today. The Autorobot Measuring System is designed for the body shops to increase their speed and accuracy in obtaining high quality repair results. The Measuring System contains parts which may get broken by careless or negligent use. The Measuring System won't bear dropping, twisting, banging etc. It must be protected from spatter and splash during welding, painting or similar jobs. The Measuring System must be kept in a place where it cannot fall and get damaged.

System Requirements

To install Autorobot Datasheet Suite Software, we recommend:

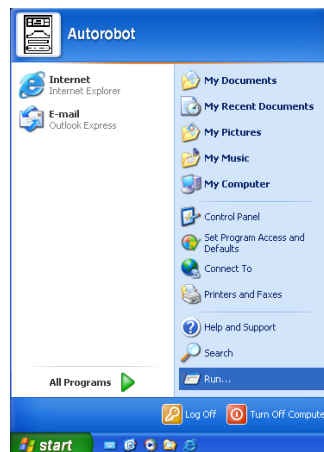
- PC with a 2 Ghz processor minimum
- Microsoft Windows XP, Vista, 7 or 8
- SVGA and graphics card
(recommended 1024x768, 800x600 minimum)
- 512 MB RAM (256 MB RAM minimum)
- 1,5 GB of available hard-disk space (800 MB minimum)
- CD-ROM or DVD-ROM drive
- Printer: ink jet or laser
(Color printer for printing measuring photos)
- Mouse or other pointing device
- 1x Free RJ45 Ethernet port or WLAN-adapter
(for wireless connection to Access Point)

Installation Instructions of the Software

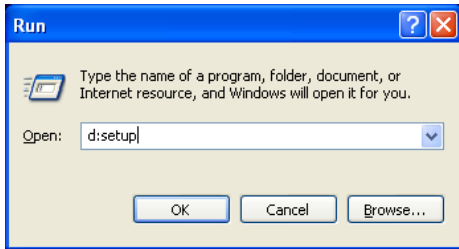
NOTE! You need to have Administrator rights to install Autorobot Datasheet Suite. Assign rights for the user account, which is going to be used for measuring (at least temporarily and then remove rights after installation).

Setup should start automatically after CD is inserted to computer. In this case skip sections 1 and 2.

1. Choose **Start > Run** or press **Windows + R** buttons from keyboard.

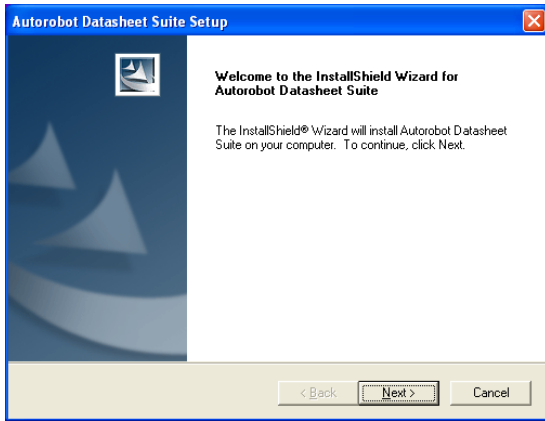


2. Type D:\setup on the command line and click 'OK'.

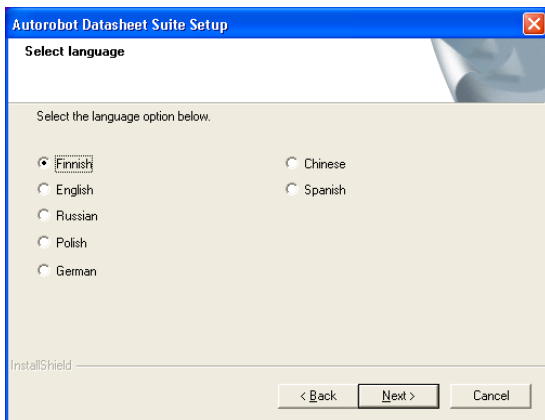


D: indicates your CD-drive (varies depending on the equipment, usually D or E).

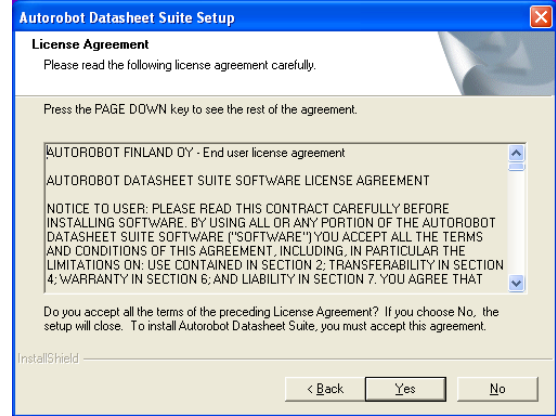
3. Choose 'Next >' from the 'Welcome' window (or Cancel to exit setup).



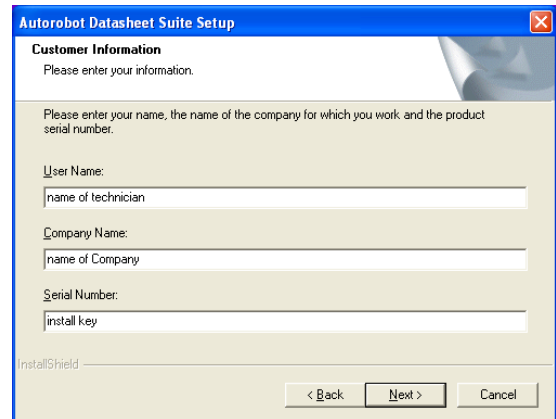
4. Choose language and click 'Next >'. If you want to go back to previous page click '< Back' or if you want to cancel click 'Cancel' at any time of the setup process.



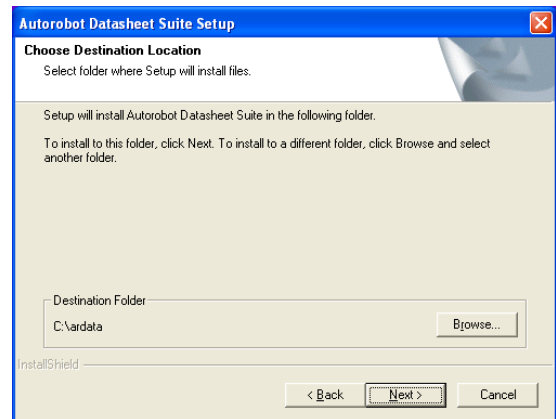
5. Read through the License Agreement and if you accept the terms click 'Yes'.



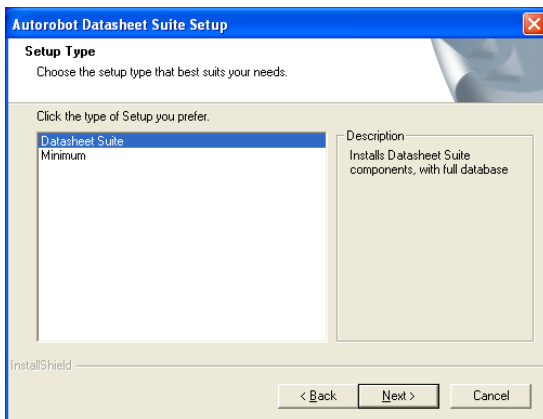
6. Fill in the user information (User Name and Company Name). Enter your Install Key to 'Serial Number' field. Click 'Next >' to continue.



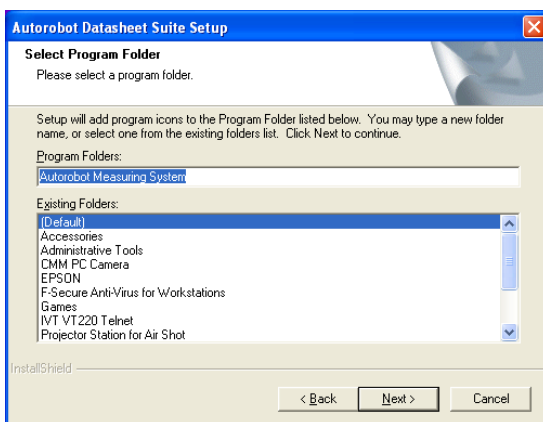
7. Setup will install all files under the c:\ardata path by default. If you want to change the destination folder click 'Browse'. When appropriate folder has been selected click 'Next >'.



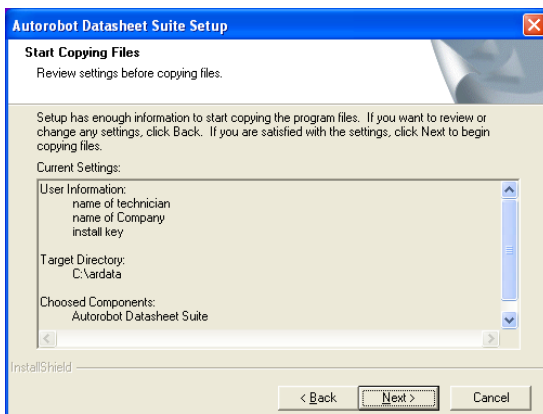
8. Choose **'Datasheet Suite'** to install measuring software with datasheets and measuring point photos. Choose **'Minimum'** to install Datasheet Suite with empty database (without datasheets and measuring point photos). Click **'Next >'**.



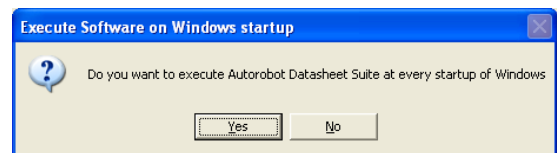
9. **'Select Program Folder'** -window confirms the Start menu folder to which the Aurorobot software shortcuts will be installed is confirmed. Click **'Next >'**.



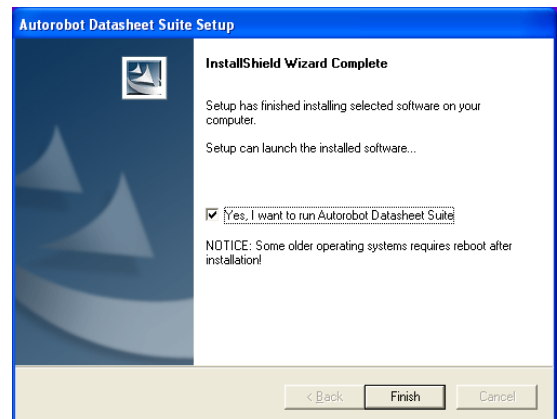
10. **'Start Copying Files'** displays the type of setup that you have chosen. Choose **'Next >'** if you do not want to change anything. Choose **'< Back'** if you want to change the options.



11. The software is installed to the hard disk (takes about 2-10 minutes). After copying of files to hard disk you can choose to start the software whenever Windows is started. Choose **'Yes'** if you want the Datasheet Suite to start automatically or otherwise choose **'No'**.



12. In the end of the installation you can choose in **'Setup Complete'** window to start the Aurorobot Datasheet Suite automatically after the installation (recommended). Click **'Finish'**.



13. After setup has finished installing software there should be software shortcuts (icons) for Aurorobot Datasheet Suite on your desktop and in Start menu in the **'Aurorobot Measuring System'** folder.



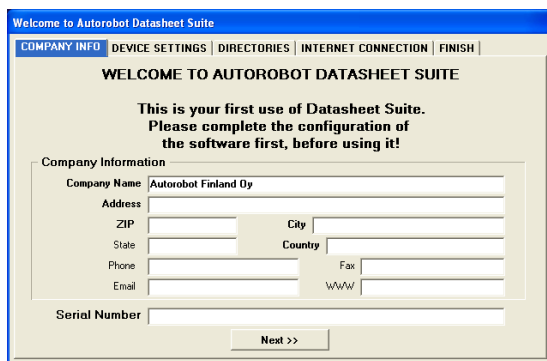
- NOTE:** If you chose to start the software automatically whenever Windows is started and want to remove this option, locate Startup folder in Start menu and remove Aurorobot Datasheet Suite shortcut from that folder by clicking with right mouse button on that file and selecting **'Delete'** from Dropdown menu .

Set up

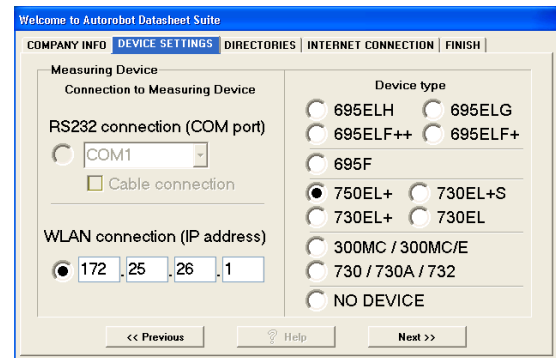
Starting the Autorobot Datasheet Suite for the first time after Installation

When the Datasheet Suite is run for the first time after installation it is necessary to fill in information about user/company, measuring device, directory locations and Internet account information (if Internet update function will be used).

1. Enter information about company. Fill in at least the fields that are highlighted and click 'Next >>'.

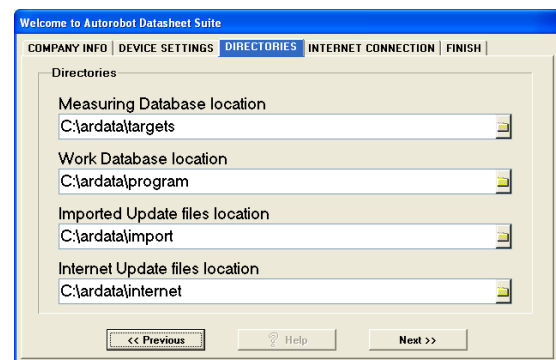


2. Select measuring device model to be used with the software. If you do not know the model you can check it from the type plate of the device. With models 750EL+/730EL+S/730EL+ the software uses WLAN connection. To use WLAN connection you need to enter your device's IP address. IP Address in XDimension measuring devices is written as 172.25.xxx.yyy where the numbers 172.25 are fixed and xxx.yyy corresponds to the serial number of your measuring device (check from type plate). For example if type plate says Serie 1/5 IP address is 172.25.1.5.



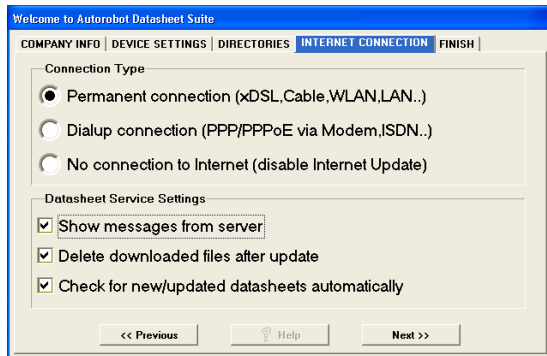
Click 'Next >>' when device is properly configured.

3. Next check the 'Directories' settings. If software was installed to default location (c:\ardata) you can skip to next page. The user must have right to write data to all of the mentioned folders. Click 'Next >>' when directories are properly configured.



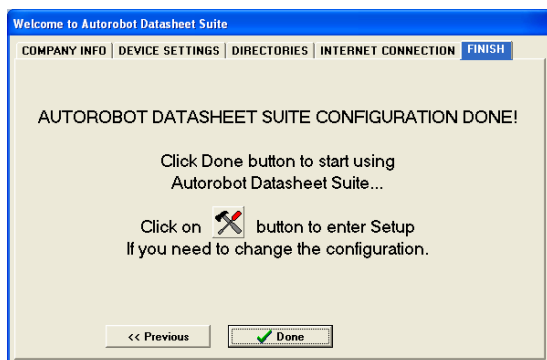
4. If the computer is connected to Internet please select 'Connection Type'. If you establish Internet connection through phone lines or with a 3G modem select 'Dialup connection'. If you are connected to LAN (local area network) which has connection to Internet or you use cable modem or ADSL (or other DSL type connection) select 'Permanent connection'.

If your computer does not have connection to Internet or you don't want to use Internet update functions select 'No connection to Internet'.

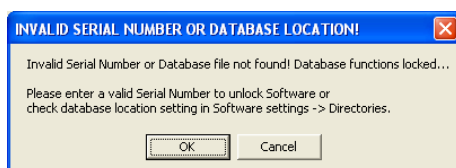


Click '**Next >>**' when Internet connection settings are properly configured.

5. Finish configuration by clicking '**Done**' button. If you want to change the configuration later you can change the settings by clicking '**Settings**' button (tools button).

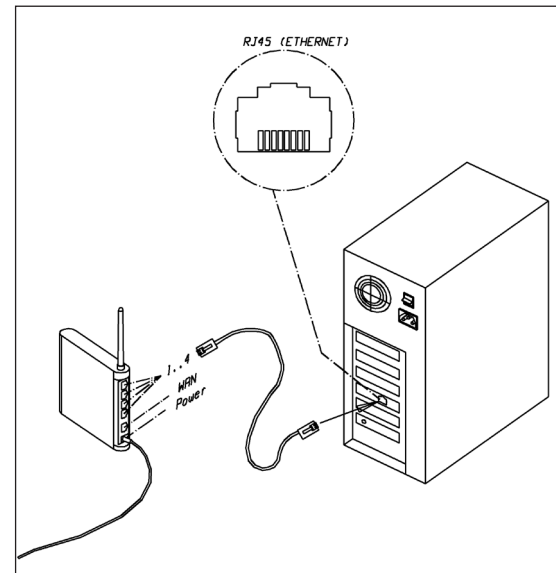


If you have typed the company information (company name) or the Install Key wrong, the software is not able to open the datasheets file and the following notice will appear on the screen.



By clicking on '**OK**' you get back to '**ENTER SERIAL NUMBER**' window and can type the Install Key there again. If the software still gives the same warning, please go to software settings and check that the company name appears there exactly the same way as in the document which you received with your CD, and which contained the Install Key. If the problem does not get solved or solving requires to make a change in the company name registered in the system, please contact your local Chief support persons.

Connecting cables



Connect Ethernet cable between computer and WLAN router. Ethernet cable has RJ45 connectors in both ends. You need to have free Ethernet connector (RJ45) in your computer to use this option.

Please use the WLAN router connector RJ45 No. 1, 2, 3 or 4. The port marked "WAN" in the WLAN access point is meant for connecting the access point in public networks for example with ADSL, for example to enable the Update From Internet function for Autorobot measuring software.

PLEASE NOTE! If you connect the Ethernet cable coming from PC to the WAN connector, connection to measuring device will not work!

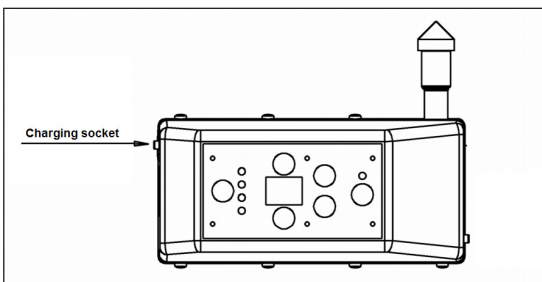
Alternatively you can connect the PC to the WLAN router wirelessly: in this case please seek for an access point whose identifier (SSID) starts with the word EzCalipre. The router uses WEP encryption and password is supplied with the unit.

Because DHCP server has been enabled in the WLAN access point, the computer receives automatically an IP address compatible with the measuring system. You can enable the DHCP client in the Operating System Network Settings (TCP/IP properties: Obtain an IP address automatically).

NOTICE: Always connect PC/cabin into a socket outlet that has protective earth contact. if you are using an extension cord, make sure that it is 3-wire grounded type.

Charging Chief XDimension batteries

Chief XDimension uses Li-Ion battery. Use the Li-Ion battery charger that was supplied with the XDimension to charge device. To charge the battery connect the plug from the charger to charging socket of the XDimension. When battery charger is in charging mode the led indicator of the charger is red and when battery is fully charged the indicator will turn to green.



After battery is fully charged, you can set on power to the device with the **'Power'** button. After pressing the **'Power'** button, the button's indicator light blinks for about 20 seconds and after this the measuring device will locate the WLAN Access Point.



If computer can communicate with measuring device you should see battery level in lower left corner of the software window.

If battery level stays on 0% check device settings in software or check cable connection between computer and WLAN Access Point (if Access Point is connected to computer with cables). See more information about wireless connection problems in the **"Troubleshooting"** section of this manual.

Starting the Autorobot Datasheet Suite

To start using the Measuring software you need to switch on the computer (if not already switched on). If PC cabinet is used, first turn on the main switch, which is usually on the back wall of the cabinet. Then switch on the computer from power button. If necessary also switch on monitor and printer. Wait until the computer loads operating system. If Autorobot Datasheet Suite was set to start automatically it is loaded right after logging in.



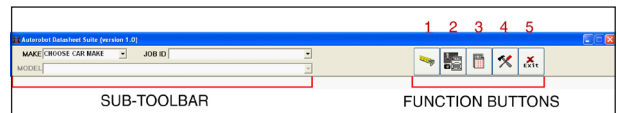
If Datasheet Suite did not start, you can start the software manually by double clicking 'Autorobot Datasheet Suite' icon on desktop (or select it from Start menu).

When software is started it first shows a welcome splash window (for few seconds) and then enters to Main menu. The Main menu consist of 4 large icons, which also function as entering buttons. The four main functions of the software are **Measuring by measuring arch (1)**, **Measuring by Tram gauge (2)**, **Datasheets and Pictures (3)** and **Project Management (4)**. To select a function in Main menu you can use either large icons or small function buttons (located in the upper part of the window).

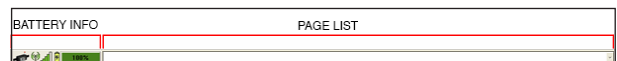


In the upper part of the window there is a toolbar with sub-toolbar on the left and 5 function buttons on the right. The 5 buttons are visible in all functions of the software and the left half of the toolbar shows functions related to selected main function.

The functions of the buttons are **Measuring (1)**, **Datasheets and Pictures (2)**, **Project Management (3)**, **Settings (4)** and **Exit software (5)**. You can use these buttons for navigating from one function to another. In some sub-functions of the software function buttons may be disabled until sub-function is ended. In the Main menu view the sub-toolbar contains vehicle selection and project selection. To start the measuring process, you must first choose vehicle or existing project (where vehicle is already selected).



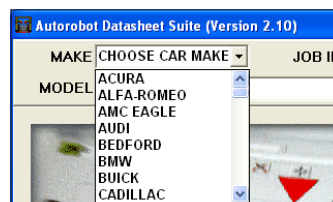
Bottom of the window shows status of battery and page list of open datasheets, pictures and reports. With XDimension battery status of 0% indicates no connection to device or battery low. The page list can be used to quickly jump to a page in the list (for example during measuring you can quickly go to datasheet view from the list and then return to measuring view by clicking a measuring icon).



Vehicle / Project Selection

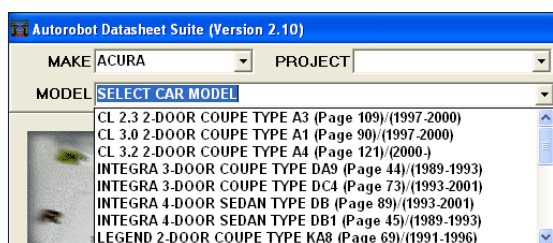
To be able to start the measuring you need to select the make and model (with correct manufacturing year and type) of the vehicle you are working on. Another way to is to select a previously saved project where car make and model are already selected.

You can select the make and model from Main menu or by first selecting a datasheet for the vehicle (later in this manual in section "Datasheet Selection"). To select make in Main menu, use the mouse to point to the down arrow in the top right corner of 'Make' field. This will now expand your view to display available vehicle make.



If the car make you require is not visible then you can scroll the list by clicking with mouse on the down arrow in the bottom right corner of the list – for each time you click the list of makes will scroll up – do this until you find the car make you need. Clicking on the arrow pointing up will allow you to scroll in other direction (scroll down). To select car make point to it and click on it – your selection will be highlighted and entered into the **'Make'** field.

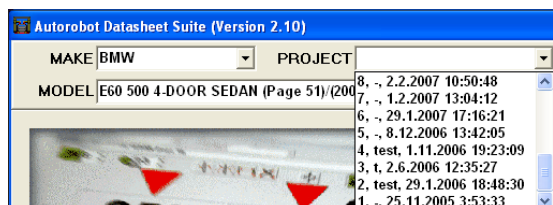
To select model in Main menu use the mouse to point to the down arrow in the top right corner of **'Model'** field (the same way that the car make was selected). This will now expand your view to display available models of selected make.



If the car model you require is not visible then you can scroll the list with mouse by pointing arrow down in the bottom right corner of the list and click on it – for each time you click the list of models will scroll up – do this until you find the car model you need. Clicking on the arrow pointing up will allow you to scroll in other direction (scroll down). To select car model point to it and click on it – your selection will be highlighted and entered into the **'Model'** field.

If you want to continue working with previously started measuring project you can load the project by selecting it from project or Job ID list. Project list is shown when resolution of the screen is high enough. The list shows on each row project number (Job ID), project name and project started information. If resolution is low, then projects are browsed by Job ID list, where only Job ID number is shown.

To select previously started project in Main menu use the mouse to point to the down arrow in the top right corner of **'Project/Job ID'** field (the same way that the car make and model was selected). This will now expand your view to display saved projects available.



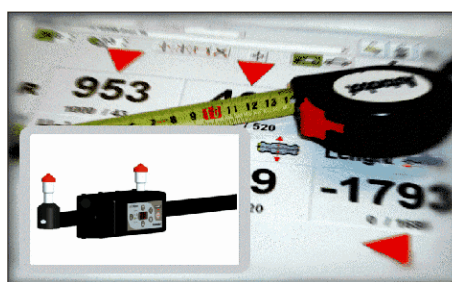
If the project you are looking for is not visible and there is a scroll bar on right side of the selection list, you can scroll the list with mouse by pointing arrow down in the bottom right corner of the list and click on it – for each time you click the list of projects will scroll up – do this until you find the project you want. Clicking on the up arrow will allow you to scroll in other direction (scroll down). To select project, point and click on it – your selection will be highlighted and entered into the **'Project/Job ID'** field.

When project is selected, there is no need to select make and model again, because those are saved to project database previously and will be read from there.

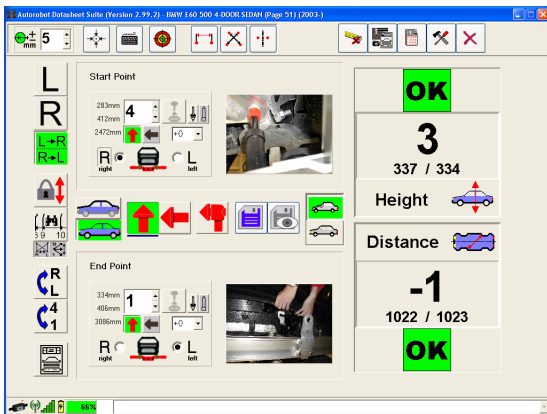
NOTE: You can also perform a partial search in the make, model and project fields by typing in the first few letters. The software suggests one or more alternatives matching with the typed letters. You can define your search by typing in more letters until you find the right alternative.

Measuring Function

After the make and model or previously saved project is selected you can start the measuring process. To start measuring from Main menu click on large **'Tram Bar Measuring'** button or small measuring button in the toolbar. If the **'Measuring'** button is clicked and no car make and model or project is selected, measuring is started without reference measures.



After measuring function is selected the **'Measuring'** window will appear. In the right side of the **'Measuring'** window you can see the actual measures, reference measures and their differences. It also shows selected measuring mode, start point and end point selection panels and also other options for measuring.



NOTICE: Measuring view depends on screen resolution. With small resolution (800x600) some of the functions are hidden because of size limitation. Therefore it is recommended to use min. 1024x768 resolution to get all the functions visible all the time.

Sub-toolbar in measuring function contains 6 buttons and tolerance selector. To change tolerance (unit: mm) **click arrow up or down next to tolerance value (1)**. Calibration function can be manually launched from **'Calibration'** button (2). Measures can be entered manually by clicking **'Keyboard'** button (3). Target Finder (4) function can be used to check deviation of the target visually.

Three buttons on the right are distance measuring (5), cross measuring (6) and symmetry measuring (7). See **'Special functions'** chapter for more information about these 3 functions.

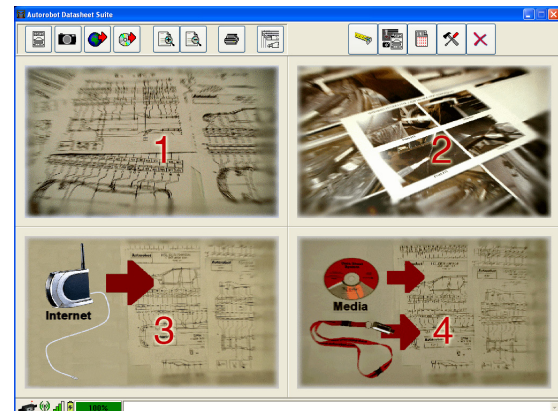


Datasheets and Pictures Menu

Click on **'Datasheets and pictures'** button to move from Main menu to datasheet management menu.



Functions related to datasheets and measuring point pictures can be found under Datasheets and Pictures (datasheet management) menu. The four main functions of Datasheet and Pictures are **Datasheet selection (1)**, **Measure picture selection (2)**, **Update from Internet (3)** and **Import from media (4)**.



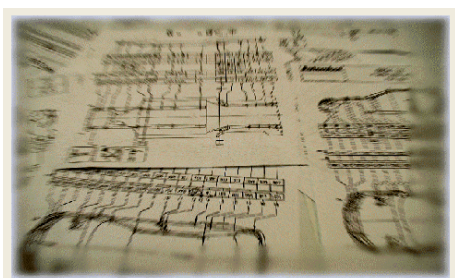
Sub-toolbar in Datasheets and Pictures function contains 8 buttons. First four of the buttons have same function as the large buttons: **Datasheet selection (1)**, **Measure picture selection (2)**, **Update from Internet (3)** and **Import from media (4)**. The next two buttons are used for **Zoom in (5)** and **Zoom out (6)** -functions. Use **'Printer'** button (7) to print out a datasheet or a picture/pictures sheet. **'Cascade'** button (8) is used for arranging opened sheets and pictures.



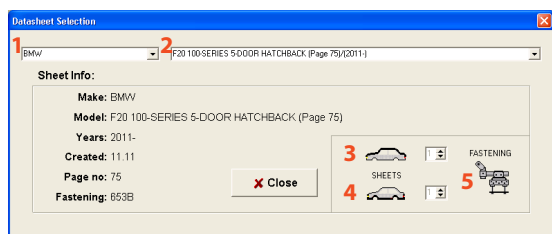
NOTICE: Large buttons in Datasheets and Pictures menu are visible only if no datasheets and/or pictures have been opened. If large buttons are not available, use the corresponding small buttons in sub-toolbar.

Datasheet Selection

Datasheet selection function is used to browse through available datasheets and to select datasheets for viewing and/or printing. Start Datasheet selection function by clicking on **'Large datasheet'** button or by **'Small datasheet'** button on sub-toolbar.



Selection is made by first choosing the **car make (1)**, after which the software shows available **models (2)** for the selected car make. If vehicle was selected earlier, then the selected vehicle will be shown in the **'Make'** and **'Model'** fields. After vehicle is chosen, the software will show details for the selected vehicle.



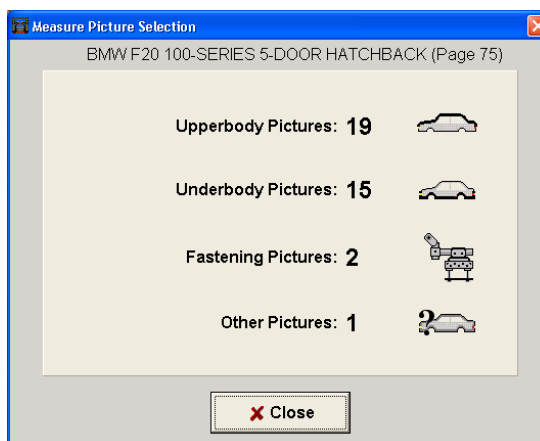
When vehicle has been chosen, the datasheets can be viewed by clicking on **Upperbody (3)**, **Underbody (4)** and **Fastening (5)** buttons if they are highlighted (the mentioned icons are in bottom right corner of the **'Datasheet Selection'** window. When datasheets are opened for viewing you can close the selection window by clicking **'Close'** button. If measuring was already started before Datasheet Selection function, the selected vehicle will remain selected for reference measures even if other datasheets were opened for viewing. After measuring is started it is possible to view various different car models at the same time, but if measuring is not started then it is possible to view datasheets for one vehicle only.

Measure Picture Selection

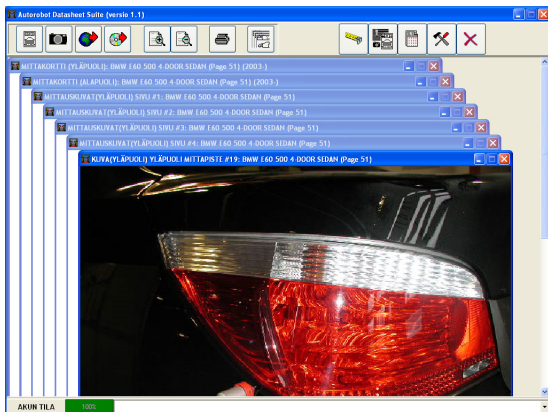
'Measure Picture Selection' function is used to open measuring point pictures (photos). Vehicle must be selected (in Main menu or in 'Datasheet Selection' window) before this function can be used. Start picture selection function by clicking on **'Large pictures'** button or by small **'Camera'** button on sub-toolbar.



The upper part of the window shows the chosen vehicle and under it 4 rows showing the status of currently available pictures. Numbers on each row show how many pictures of that type are available. Clicking on the icon on a row that has pictures will open new windows containing pictures of the selected type (4 pictures on each window).



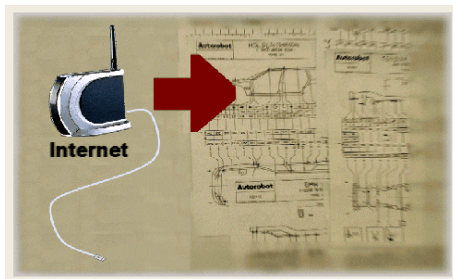
For example if upperbody icon is clicked, then 4 new windows will open showing all 14 pictures of upperbody points and the last window will have 2 pictures and all other have 4.



Above is a view of Datasheet Suite with different kinds of windows opened (datasheets, pictures and one separate picture). Use '**Cascade**' function to arrange the sheet and picture/pictures windows.

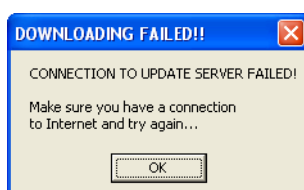
Update from Internet

Update from Internet function is used for checking available new or updated datasheets in the Internet. Start '**Internet update**' function by clicking on large '**Internet**' button or by small button on sub-toolbar.



When the '**Update from Internet**' function is activated and "check for new/updated datasheets automatically" option has been selected (in 'Settings' window) the software will automatically download and update all new/updated datasheets.

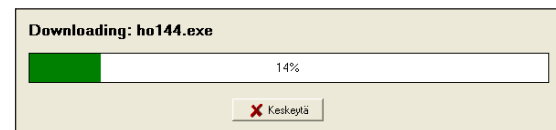
If there is no connection to Internet or the update server is unreachable for some other reason, the download will fail and update function cannot continue.



NOTICE: In some cases you need to establish an Internet connection manually before downloading. If necessary ask your computer dealer or your Internet Service Provider how to establish Internet connection.

After you have managed to login to Datasheet Service, software will show the list of "New or Updated Datasheets".

When software is downloading either database file or datasheets, it will bring up the '**Downloading..**' panel.

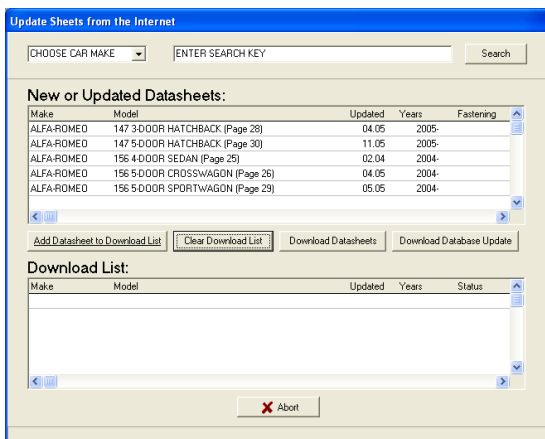


The '**Downloading..**' panel shows the status of update process.

If the download is not proceeding or you wish to abort it for some reason you can click on '**Abort**' button. Otherwise the download window will disappear automatically after downloading is completed successfully.

In '**Update Sheets from the Internet**' window you can see which car models are available in the Autorobot Datasheet Service. You can browse vehicles by either selecting the car make or by entering the search key and clicking on '**Search**' button. If you wish to abort the update process for some reason you can click on the '**Abort**' button at any time. After the updated process has finished successfully the '**Abort**' button is replaced with '**OK**' button. Both buttons cause closing of the '**Updated Sheets..**' window.

NOTICE: When you want to use a search key you must either select one of the car makes or select the blank row to search through all car makes (blank row is above ACURA line).



'Update Sheets from the Internet' window offers the following functions:

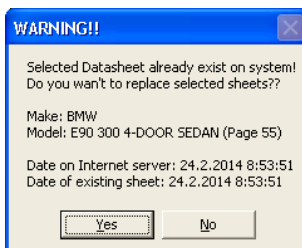
- Add Datasheet to List
- Add All Datasheets to List
- Download Datasheets
- Clear Download List

Adding Datasheets to Download List

Under the 'New or Updated Datasheets' you can see the list of the car models matching either the selected car make or the search key or both of them. Under the 'Download List' you can see the list of the selected car models to be downloaded (or which already have been updated).

When you find the datasheet you are looking for you can add it to download list by clicking 'Add Datasheet to List' button.

If the selected datasheet is the same version than the one on the datasheet suite database, the software will ask if you still want to update it again.



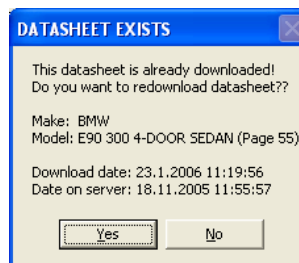
NOTE: Update datasheet with same version only if the datasheet installed to system cannot be opened for viewing.

Download Datasheets

To download the selected datasheets click on 'Download Datasheets' button, which will activate the update process.

In the update process software will first download all the datasheets which are marked as 'Not updated' in Download List.

While downloading datasheets the software will automatically check if the current datasheet is already downloaded to system. If the datasheet is downloaded and has not been changed on the server after last download, the software will ask do you want to re-download the datasheet.



Usually there is no need to re-download datasheets, unless there has been some error in the previous download process. When the software asks about re-downloading you can check the download date (last time datasheet was downloaded) and compare that date to date on server (when the datasheet was put on the Datasheet Service server). If you think there is something wrong with datasheet in your system, you can re-download the sheet by clicking 'Yes'. Click 'No' to skip to next file.

If, for some reason, the selected datasheet does not exist on Datasheet Service, the status will be changed to 'Not found' and the datasheet will not be updated. For downloaded datasheets the status will change to 'Downloaded'. After downloading the software will automatically unpack the downloaded files and change the status to 'Unpacked'.

After all the downloaded datasheets are unpacked, the software begins to transfer downloaded measuring data to existing database. If the downloaded datasheet is an update to older release of the datasheet the software will only update the changed measurement values.

After update process has finished the status of the downloaded datasheets should change to 'Updated', which means that the update process succeeded.

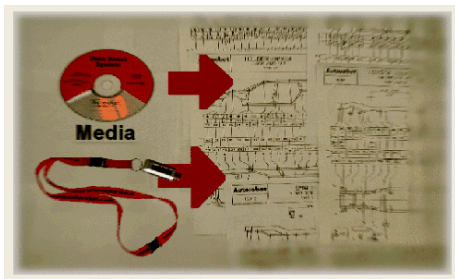
Clear Download List

After downloading new or updated datasheets the datasheet will remain in the Download List. The Status column in Download List shows the current status of the each datasheet in the list. The status can be **“Not updated”**, **“Updated”**, **“Downloaded”**, **“Unpacked”** or **“Not Found”**. If you want to clear the Download List click on **‘Clear Download List’**. The software will confirm if you really want clear the list. After confirming the list will be erased and you can continue with a clean list.

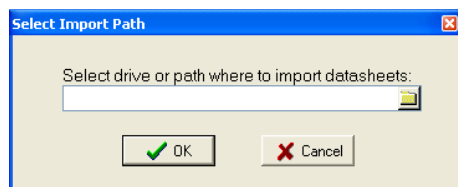
NOTE: Clearing the list won't delete downloaded datasheets from the system!

Import from Media

‘Import from media’ function is used to add old, new or updated datasheets to system. Launch import function by clicking on large **‘Media’** button or by small button on sub-toolbar.



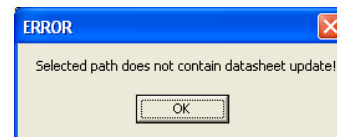
With this function it is possible to import data that was downloaded on another computer (for example saved to floppy disk or to USB memory stick). The import process begins by choosing the import path (see below).



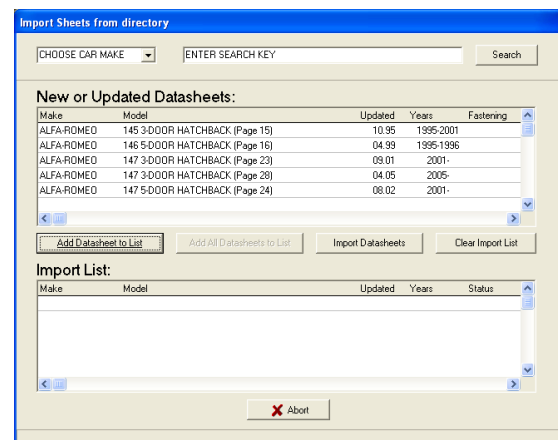
‘Import path’ field must point to location where you want to import data from. For example if you want to import data which was downloaded to USB memory stick, please check the drive letter pointing to the memory stick and enter it to the **‘Import path’** field.

Datasheets can be imported also from some older Autorobot Datasheet suite CD's. The selected import location must contain either ADF (Autorobot Data File) or datasheet and database files. Datasheet and database files must be in same folder or in sheets and/or in targets folder. When the path points to wanted location click **‘OK’** and after that the software will check if that location contains any data to import.

If there is no data to import the software shows error **“Selected path does not contain datasheet update!”**. Then you must choose another path for importing or Cancel the function with **‘Cancel’** button.



If the selected path contains data to import software opens **‘Import’** window. The **‘Import’** window is similar to window in Internet Update function.



‘Import Sheets from directory’ window offers the following functions:

- Add Datasheet to List
- Add All Datasheets to List
- Import Datasheets
- Clear Download List

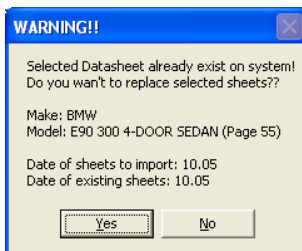
NOTE: **“CHOOSE CAR MAKE”** and **“ENTER SEARCH KEY”** selections are not available while importing ADF type files.

Adding Datasheets to Import List

Under the **'New or Updated Datasheets'** you can see the list of the car models matching either the selected car make or the search key or both of them. Under the **'Import List'** you can see the list of the selected car models to be imported (or which already have been imported).

When you find the datasheet you are looking for you can add it to import list by clicking **'Add Datasheet to List'** button. You can add all datasheets to the import list by clicking **'Add All Datasheets to List'**.

If the selected datasheet is the same version than the one on the datasheet suite database, the software will ask if you still want to import the datasheet.



Re-import the datasheet only if the datasheet installed to system cannot be opened for viewing or if the datasheet to import is newer than the existing datasheet (check the dates of sheets in the warning window).

Import Datasheets

To import the selected datasheets click **'Import Datasheets'** button, which will activate the update process. In the update process software will import all the datasheets, which are marked as **'Not imported'** in Import List.

After all datasheets are imported, software begins to transfer imported measuring data to existing database.

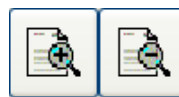
If the imported datasheet is an update to older release of the datasheet the software will only update the changed measurement values. After the update process is finished the status of the imported datasheets should be **'Imported'**, which means that the update process succeeded.

Clear Download List

After importing datasheets the datasheet will remain in the Import List. The Status column in Import List shows the current status of the each datasheet in the list. The status can be **'Not imported'** or **'Imported'**. If you want to clear the List click **'Clear Import List'**. The software will confirm if you really want clear the list. After confirmation the list will be erased and you can continue with a clean list.

NOTICE: Clearing the list won't delete imported datasheets from system!

Zoom In & Out



'Zoom' buttons for datasheet and picture(s) are located at sub-toolbar. Use these functions to Zoom In and

Zoom Out the datasheet or measuring picture(s).

To use zooming functions there must be at least one active datasheet or picture(s) window selected. **'Zoom In'** function can be used by clicking **'Zoom+'** button and **'Zoom Out'** function can be used by clicking **'Zoom-'** button.

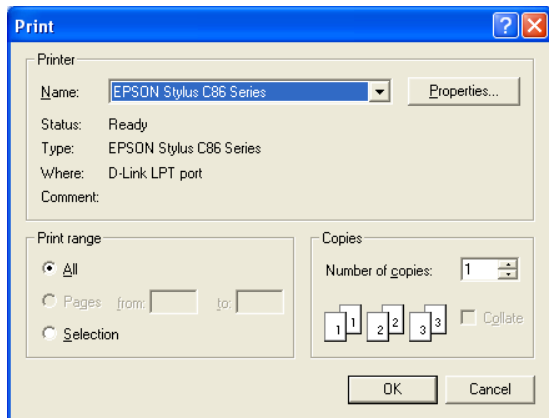
Printing Datasheet or Pictures



Printing function is started by clicking on **'Print'** button. You can print only when there are datasheet or picture/pictures window opened.

Printing is managed by operating system so therefore it is presented in the same language than the Operating System.

In **'Print'** window it is possible to select either **'All'** or **'Selection'** to Print range selection. All pages will print all datasheet and picture(s) windows that are open and selection will only print the datasheet that is currently active.

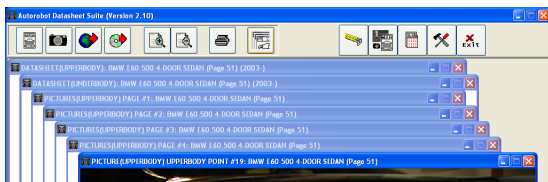


If you have several printers installed to your system, select correct printer from the list and if necessary change properties for that printer. Finally click 'OK' to start printing.

Cascade Windows

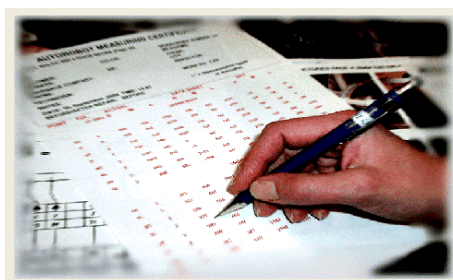


You can arrange all opened datasheet and picture(s) windows into a nice scene by clicking 'Cascade' button on sub-toolbar.

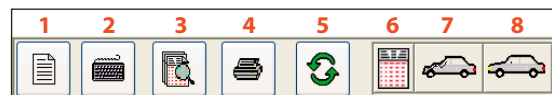


Project Management Functions

With project management functions you can manage saved projects, edit current project and open measuring reports (certificates) for viewing and printing. Click on large 'Project management' button or on small button on toolbar to start 'Project Managing' function.



Sub-toolbar in Project Management function contains 7 buttons. To view information of currently active project click 'Info sheet' button (1). To edit details of current project click 'Save project' button (2). To browse/manage existing projects click 'Browse projects' button (3). To print reports (measuring certificates) of current project click 'Print' button (4). To refresh report pages click 'Refresh' button (5). Three last buttons on the right side of the sub-toolbar are for opening 'Before' and 'After' reports. Buttons are enabled only if measuring points are saved before and/or after repairing process. When both Before and After buttons are down (green background) also 'Before & After' reports are shown. Report type can be selected with 'Show Vehicle in Report' button (6). To open 'Before' reports click on 'Before' button (7) and to open 'After' reports click on 'After' button (8).



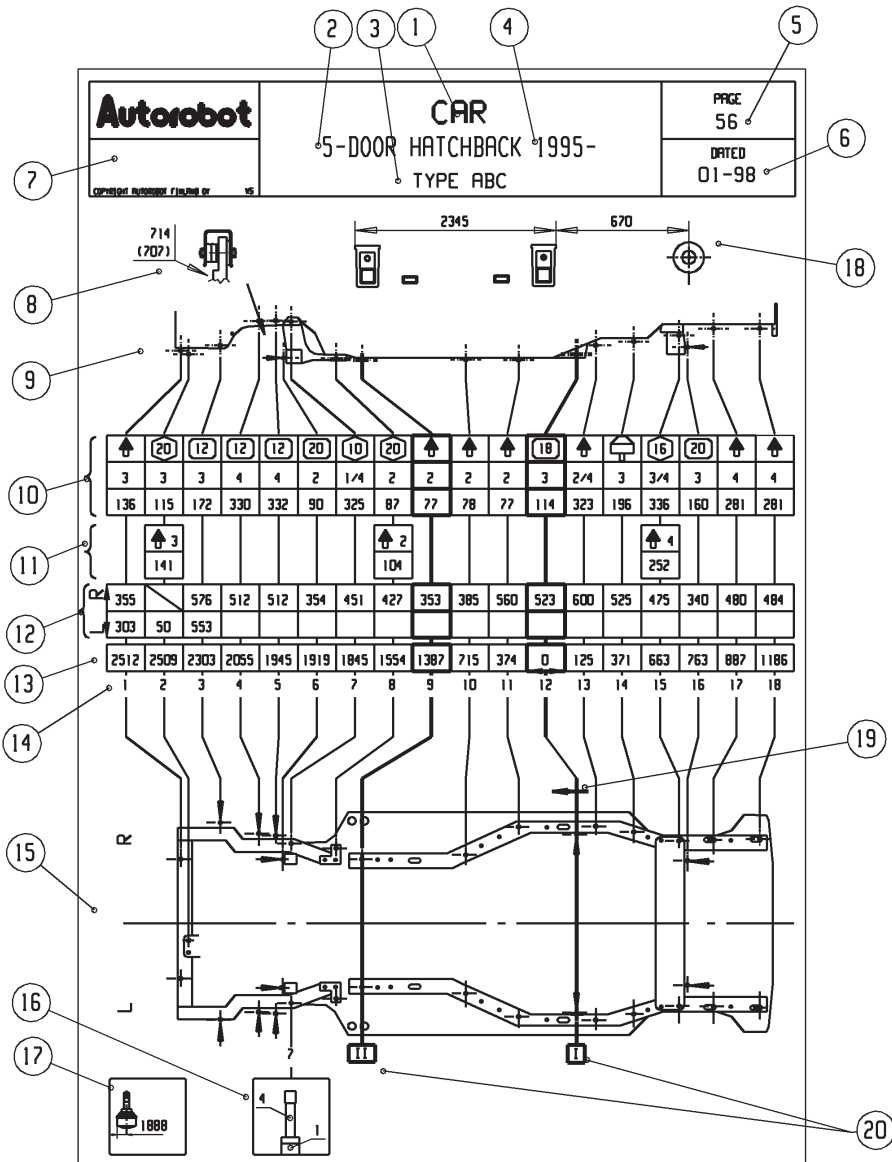
More details and instructions about project managing and report handling can be found under "Project Management" section.

Settings



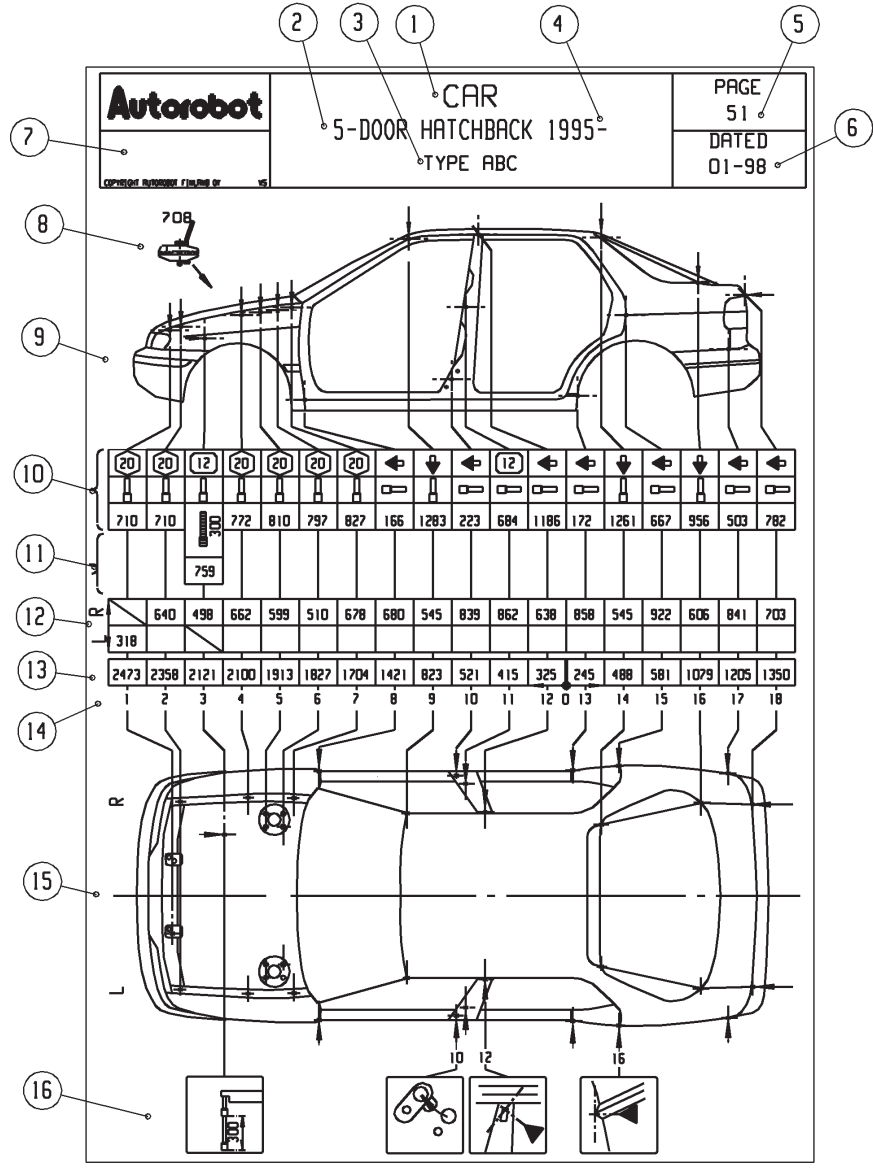
To change software settings, which were made at first run of the Datasheet Suite, click on settings button in toolbar. More details about changing settings and about other configuration functions can be found under "Maintenance - Device settings".

Introduction to Datasheets



Underbody Datasheet

- | | | |
|---|--|---|
| 1. Vehicle name | 10. Height measurements | 16. Details drawing |
| 2. Body type | 11. Height measurements for disassembled body | 17. Length measurement of the ball joint |
| 3. Vehicle type | 12. Width measurements (L=left side, R=right side) | 18. Fastening |
| 4. Production year | 13. Length measurements | 19. Direction of the Measuring Bridge 1 at the zero point |
| 5. Datasheet number | 14. Measuring point numbers | 20. Locations of the measuring bridges I and II |
| 6. Datasheet date (month, year) | 15. Chassis drawing for lateral references (L=left, R=right) | |
| 7. Additional information | | |
| 8. Special repair tool | | |
| 9. Chassis side profile for side references | | |



Upperbody Datasheet

- | | | |
|---------------------------------|--|--|
| 1. Vehicle name | 7. Additional information | 12. Width measurements |
| 2. Body type | 8. Special repair tool | 13. Length measurements |
| 3. Vehicle type | 9. Body drawing for side references | 14. Measuring point numbers |
| 4. Production year | 10. Height measurements | 15. Body drawing for upper references
(L=left, R=right) |
| 5. Datasheet number | 11. Height measurements
for disassembled body | 16. Details drawings |
| 6. Datasheet date (month, year) | | |

Autobot

Mittakorttien symbolit
Databladens symboler
The data sheets' symbols
Die Symbole der Datenblätter

Alapuolinen mittalaite
Mätanordning
Underbody measuring device
Meßsystem Bodengruppe

Symboli Symbol	Mittaväline Spets Instrument Messinstrument	Esimerkki Exempel Example Beispiel	Selitys Förklaring Explanation Erklärung
			Pieni kartio pystysuoraan Liten mätkon lodrätt Small apex vertical Kleine Messspitze senkrecht
			Iso kartio pystysuoraan Stor mätkon lodrätt Big apex vertical Grosse Messspitze senkrecht
			Pieni kartio vaakasuoraan kulmakappaleella Liten mätkon vågrätt med vinkel Small apex horizontal with an 90° support Kleine Messspitze waagrecht mit Winkelstück
			Iso kartio vaakasuoraan kulmakappaleella Stor mätkon vågrätt med vinkel Big apex horizontal with an 90° support Grosse Messspitze waagrecht mit Winkelstück
			Mittahylsy pystysuoraan Mäthylsa lodrätt Measuring cup vertical Messhülse senkrecht
			Mittahylsy vaakasuoraan kulmakappaleella Mäthylsa vågrätt med vinkel Measuring cup horizontal with an 90° support Messhülse waagrecht mit Winkelstück
			Mittasauvan pää ilman kärkeä Mätstavens ände utan spets Measuring rod used without instrument Messtab ohne Messspitze
	347 		L-kärki pystysuoraan L-formad spets lodrätt L-pointer vertical L-geformte Spitze senkrecht



Mittakorttien symbolit
Databladens symboler
The data sheets' symbols
Die Symbole der Datenblätter


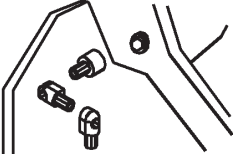
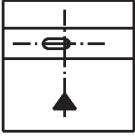

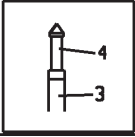
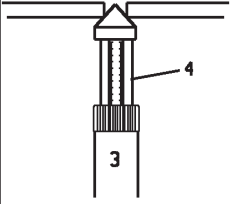
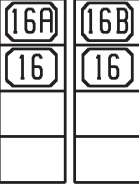
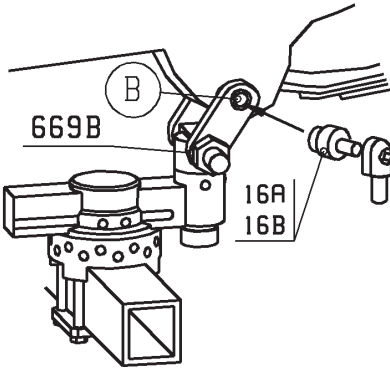
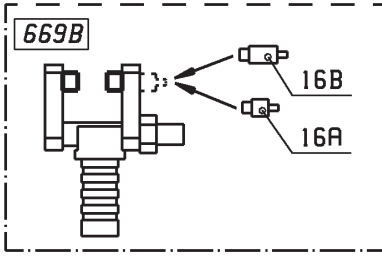
Alapuolinen mittalaite
Mätanordning
Underbody measuring device
Meßsystem Bodengruppe

Symboli Symbol	Mittaväline Spets Instrument Messinstrument	Esimerkki Exempel Example Beispiel	Selitys Förklaring Explanation Erklärung
			<p>Mittasauva no. 0, 1, 2, 3, 4 tai 5 Mätstav nr 0, 1, 2, 3, 4 eller 5 Measuring rod No. 0, 1, 2, 3, 4 or 5 Messtab Nr. 0, 1, 2, 3, 4 oder 5</p>
			<p>Mittasauvan korkeuslukema Höjdmättens avläsningsnivå The height measurement must be read at the upper edge of the bottom housing Höhenmaß bei dieser Ebene lesen</p>
			<p>Huomautus, että mitta esiintyy vain tietyissä malleissa Anmärkning, att mätten bara finns på vissa typer eller årsmodeller Observe that the measurement concerns only certain types or year models Bemerkung, daß dieses Mass nur bei gewissen Fahrzeug-Typen oder Modelljahren erscheint</p>
			<p>Mittaus ennen kohteen purkamista Mätning med delarna monterade Messung mit eingebauten Aggregaten</p> <p>Mittaus mittakohde purettuna Mätning med delarna demonterade Messung mit ausgebauten Aggregaten</p> <p>Mittauskohteen selvennys Förklaring av mätpunkten Detail of the measuring point Erklärung des Messpunktes</p>



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Symboli Symbol	Mittaväline Spets Instrument Messinstrument	Esimerkki Exempel Example Beispiel	Selitys Förklaring Explanation Erklärung
			<p>Mittaus kahdella kulmakappaleella Mätning med två vinklar Utilization of two 90° support Vermessung mit zwei Winkelstücken</p>
			<p>Mittaus soikeaan reikään Mätning i ett avlångt hål Measuring into an oblong hole Vermessung im Langloch</p>
			<p>Mittasauvassa käytetään toisen sauvan sisäputkea. Innerrör av en annan stav användes. Utilization of the inner tube of another measuring rod. Das innere Rohr eines anderen Stabes verwenden.</p>
		 	<p>Mitta-adaptoreiden 16A ja 16B käyttäminen Användning av mätadapter 16A och 16B Use of measuring adapter 16A and 16B Verwendung des messadapters 16A und 16B</p>



Mittakorttien symbolit
Databladens symboler
The datasheets' symbols
Die Symbole der Datenblätter

Yläpuolinen mittalaite
Karossmätäm
Overbody measuring device
Obenliegendes Messgerät

Symboli Symbol	Mittaväline Spets Instrument Messinstrument	Esimerkki Exempel Example Beispiel	Selitys Förklaring Explanation Erklärung
			Pieni kartio pystysuoraan alas Liten mätkon lodrätt nedåt Small apex vertical Kleine Messpitze senkrecht
	373 		Mittapuikko pystysuoraan alas Mätpinne lodrätt nedåt Measuring pin vertical Meßdorn senkrecht
			Iso kartio pystysuoraan alas Stor mätkon lodrätt nedåt Big apex vertical Grosse Messpitze senkrecht
			Pieni kartio vaakasuoraan Liten mätkon vågrätt Small apex horizontal Kleine Messpitze waagrecht
	373 		Mittapuikko vaakasuoraan Mätpinne vågrätt Measuring pin horizontal Meßdorn waagrecht
			Iso kartio vaakasuoraan Stor mätkon vågrätt Big apex horizontal Grosse Messpitze waagrecht
			Mittahylsy pystysuoraan alas Mäthylsa lodrätt nedåt Measuring cup vertical Messhülse senkrecht
			Mittahylsy vaakasuoraan Mäthylsa vågrätt Measuring cup horizontal Messhülse waagrecht



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Karossmätram
Overbody measuring device
Obenliegendes Messgerät

Symboli Symbol	Mittaväline Spets Instrument Messinstrument	Esimerkki Exempel Example Beispiel	Selitys Förklaring Explanation Erklärung
	347		L-kärki pystysuoraan alas L-formad spets lodrätt nedåt L-pointer vertical L-geformte Spitze senkrecht
	347		L-kärki vaakasuoraan L-formad spets vågrätt L-pointer horizontal L-geformte Spitze waagrecht
	347		L-kärki vaakasuoraan L-formad spets vågrätt L-pointer horizontal L-geformte Spitze waagrecht
			Mittakärjen vakiopidin vaakasuoraan Mätspets hållare vågrätt Support for instruments horizontal Messspitzehalter waagrecht
			Mittakärjen vakiopidin pystysuoraan Mätspets hållare lodrätt Support for instruments vertical Messspitzehalter senkrecht
			Mittakärjen pidin ja 100 mm jatke pystysuoraan alas Mätspets hållare och 100 mm förlängning lodrätt nedåt Support for instruments with a 100 mm extension vertical Messspitzehalter mit einer 100 mm Verlängerungstange senkrecht
			Mittakärjen pidin ja 200 mm jatke pystysuoraan alas Mätspets hållare och 200 mm förlängning lodrätt nedåt Support for instruments with a 200 mm extension vertical Messspitzehalter mit einer 200 mm Verlängerungstange senkrecht



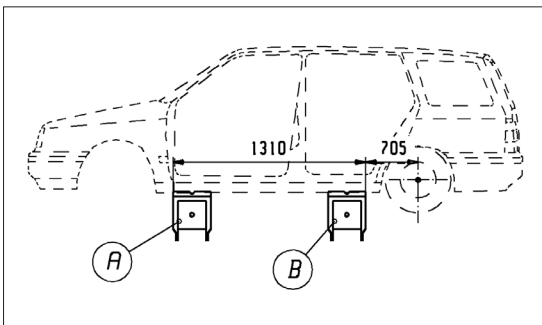
Mittakorttien symbolit
Databladens symboler
The datasheets' symbols
Die Symbole der Datenblätter

Yläpuolinen mittalaite
Karossmätram
Overbody measuring device
Oberliegendes Messgerät

Symboli Symbol	Mittaväline Spets Instrument Messinstrument	Esimerkki Exempel Example Beispiel	Selitys Förklaring Explanation Erklärung
			Mittakärjen vakiopidin, 100 ja 200 mm jatke pystysuoraan alas Mätspetshållare, 100 och 200 m förlängning lodrätt nedåt Support for instrument vertical with extension of 100 and 200 mm Messspitzehalter mit 100 und 200 mm Verlängerungstangen senkrecht
		Mittakohteen korkeusmitta luettuna pystyjohteelta Höjdmätten, läst på höjdbalken The height measurement must be read on height beam's tape Höhenmass	
			400 = leveys, 1850 = pituus, 791 = korkeus 400 = bredd, 1850 = längd, 791 = höjd 400 = width, 1850 = length, 791 = height 400 = Breite, 1850 = Länge, 791 = Höhe
			Tällaisissa tapauksissa on käytetty kulma-kappaletta, jotta saataisiin kärjelle haluttu suunta I sådana fall, måste vinkel användas, för att få den önskade riktningen för spetsen Utilization of the 90° support to reach the desired point Das Winkelstück verwenden um die gewünschte Richtung der Meßpitze zu erreichen

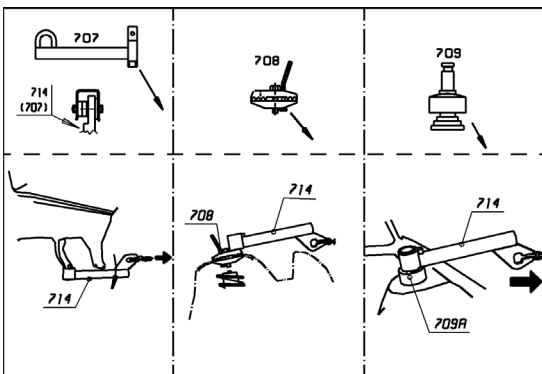
Vehicle Mounting

The datasheet gives the best mounting distance for the vehicle. The recommended measures for a sill clamp mounting are shown in the figure. When necessary, there is also an additional instruction sheet in the datasheet book for vehicle fastening. The accessory section of these instructions gives further information about the use of the special mounting equipment.



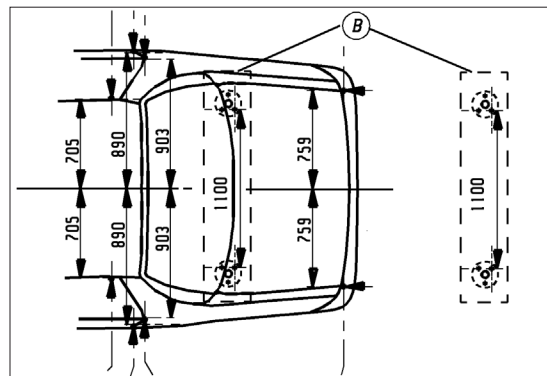
Special Tools

In order to make the repairs easier and quicker, there are indicators showing special tools for the straightening of the lower control arm and the McPherson strut tower in the datasheets. You can find more practical examples of the use of these pulling tools in the accessory part after the instructions.



Rear McPherson Struts

The measuring data for the rear suspension tower can be found in the upperbody datasheet. An ordinary tape measure will be the most suitable measuring tool in many cases because of the difficult location of the McPherson struts (see 'B' in the figure).



Circled measuring points

In the newer Autorobot datasheets there can appear some circled numbers in the width, height or length measures. The circle shows the dimension which should be first set firm in the measuring system (helps to identify the point). When the circled measure has been fixed first, the rest of the point dimensions can be measured after that. For example, if the length measure was circled, please first set the measuring system length to the value given in the datasheet, and take the width and height measures after that.

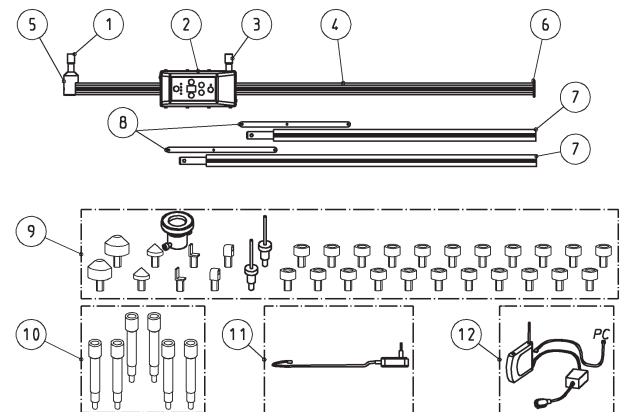
←	←	←	←	↓
714	714	714	714	714
375	730	1253	170	1306
925	910	670	913	508
739	730	570	123	295
9	10	11	12	13
				14

Chief XDimension – Electronic Measuring Device

The Chief XDimension tram bar is designed for measuring vehicle points and targets and comparing the received results with reference values in Autorobot datasheets. XDimension can measure distance between measuring points (length distance between start and end points) and actual height of measuring point compared with reference value. Measuring can take place while the vehicle is standing on floor/ground, on vehicle lift or is fastened on a straightening bench.

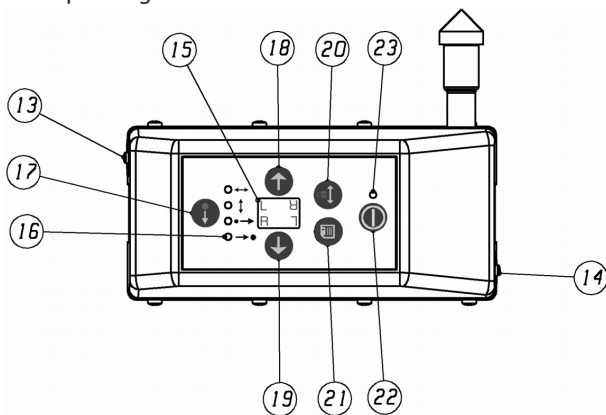
Tram bar consists of a **base length profile (4)**, with a **stationary/fixed measuring head (1)** in straight angle at the other end. The stationary measuring head is equipped by default with 50mm height rod and it can be equipped with additional **100mm extensions (10)** when necessary. The length profile has a **Central Processing Unit CPU (2)**, a box that slides along the length of the profile. CPU contains operating panel with a display and buttons. On the CPU there is a **movable measuring head (3)**, which is also equipped with 50mm height rod by default and which can be heightened with **100mm extensions (10)** as well. Measuring is conducted by attaching a **measuring instrument (9)** in the **fixed measuring head (1)** and in the **moving measuring head (3)** as indicated in Autorobot datasheets. When points to be measured are far from each other, length profile can be extended with **length profile extensions (7)**. If points can be measured without using the extensions, extra extensions must be removed to ensure measuring accuracy. **Stationary measuring head (1)** is called **“Start Point”** and the moving measuring head (3) is called **“End Point”**.

XDimension - Part list



1. Fixed measuring head - Start Point
2. Central processing unit (CPU) with operating panel
3. Movable measuring head - End Point
4. First length profile (1140mm, 1600mm or 1700mm)
5. Spirit level for horizontal measuring (730EL+,730EL+S models)
6. End cap for length profile
7. Length profile extension(s)
8. Lock plate for length profile extension
9. Measuring instruments
10. Height extension tubes (100mm)
11. Li-Ion battery charger
12. WLAN router

Operating panel of CPU has 6 buttons and 5 indicator lights. CPU is equipped with internal Li-Ion battery. **Charging socket for battery (13)** is located at the left side and **confirmation beeper (14)** at the right side of the CPU. The first button on the left is for **selecting display mode (17)** and **indicator lights (16)** next to the button indicate the selected display mode (distance, height, start point, end point). Reading that corresponds to the selected function shows in a **2-letter LED display (15)**. Measuring point can be selected by **scrolling UP (18)** and **DOWN (19)** buttons. Vehicle right or left side is selected with the **Change side (20)** button. **Save / Enter (21)** button is used for saving measurements or for completing a function. **Power (22)** button is used to turn device on/off and **Power indicator (23)** shows if the power is on. Blinking power indicator means that the device's battery is low. All buttons, signal lights and display can have different meaning with different functions, and these have detailed explanations in the corresponding sections of this manual.



- 13. Charging socket
- 14. Beeper for confirmation/action
- 15. LED display
- 16. Mode indicators
- 17. Select mode button
- 18. Scroll button (UP/DOWN)
- 19. Scroll button (DOWN/UP)
- 20. Change side / Unlock / Lock
- 21. Save measurements / Enter
- 22. Power on/off button
- 23. Power indicator (on/ battery low/off)

Explanations of buttons

When doing normal vehicle body measuring, the buttons work as follows:

DISPLAY MODE (17). Selects next/previous display mode. Press shortly to go to next mode, or press longer or twice to go to previous display mode.

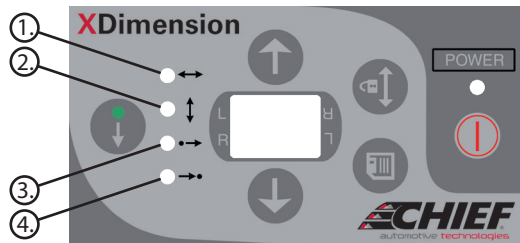
SCROLL UP/DOWN (18) and **SCROLL DOWN/UP (19)** buttons change to next available (up) or previous available (down) measuring point. The use of these buttons will change the measuring point in **'End Point'** unless **'Start Point'** mode is selected before changing the point. Pressing both of these buttons simultaneously will toggle **'Auto find end point'** function on/off (see further information about this function under **"Special functions in measuring"** section).

CHANGE VEHICLE SIDE/UNLOCK (20) button. When the display is in **'Start Point'** or **'End Point'** mode short push of this button will activate edit mode (side indicator is blinking) after which next short push of this button will change the side (left/right) for the chosen measuring point. Long push of this button will activate setup menu for the selected mode (Start Point or End Point). See further information under **'START POINT (3) / END POINT (4)'** display mode. When the display is in **'Distance'** or **'Height'** mode long push of this button will enable/disable 'Height lock function' and when function is enabled short push of this button will release the height lock. See further information under 'Height lock function'.

SAVE MEASURING RESULTS / ENTER (21) button. Short press saves the present measurement to computer. Long press deletes the saved measurements from the currently selected Start Point and End Point.

POWER ON/OFF (22) button. Press shortly to switch the device on. When the display is in **'Start Point'** or **'End Point'** mode, a short press on Power On/Off button shows or hides the photograph of the measuring point on the PC screen. When the display is in **'Distance'** or **'Height'** mode, a short press on this button brings on the display the battery charge status in percentage (0-99%). A long press in this mode activates **'Scroll functions'** command, and then the display will show one function for 4 seconds at a time, one function after the other. You can end **'Scroll functions'** by pushing **'Display mode' (17)** button. When Power On/Off button is pressed for 4 seconds, the device is turned off.

Explanations of CPU display



After device has been properly calibrated, the numbers show always in the right direction, i.e. they won't be upside down when the bar is turned for example from upperbody measuring into chassis measuring. At the same time the tram bar functions change automatically from upperbody to chassis measuring.

When doing normal vehicle measuring, the display can show

DISTANCE (1) / HEIGHT (2)

Shows the difference in millimeters between measured vehicle points and the readings of the datasheet. In 'Height' mode the shown reading is from movable measuring head (End Point). If the number in the display is blinking, the difference is more than 99mm, and the display is showing the result in centimeters. If number in display is not blinking the result is in millimeters. Because the display allows only 2 figures, the minus sign shows only with negative results smaller than -10mm (from -1 to -9). If reading is not available (for example if height is disabled) the display shows hyphen (-) symbol. With 750EL+ model 'Height' mode has 2 different alternative modes: if tram bar is in correct position compared to horizontal or vertical level, it will show the height difference. Otherwise it will show the reading and direction (with arrow) pointing out how to correct the position to get accurate height reading.

START POINT (3) / END POINT (4)

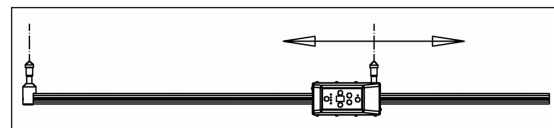
Identifies the chosen Start/End Point, i.e. the measuring point number and the vehicle side for Start/End Point where to place the fixed/movable measuring head. Side of the vehicle is indicated with a small vertical indicator light in the display next to the letter 'L' (left side) or 'R' (right side). If Point Setup menu is entered (with long press of button no. 20) user can change the height extension setting and disassembled (on/off) setting. In point setup menu the display will first show the selected height extension for Start/End Point. If height extension is set to +0mm the display will show 'H0' otherwise it will show the amount of height extension in centimeters (-5 = -50mm, 05 = +50mm,

10 = +100mm etc.). Change side (20) button is used to move forward in point setup menu to show disassembled status of the selected Start/End Point. Disassembled status is indicated in the display with following symbols: d0 = disassembled measurements off (normal measuring), d1 = disassembled measurements on (vehicle disassembled). The amount of height extension or disassembled on/off mode can be changed with UP/DOWN (18) and DOWN/UP (19) buttons. Finally short push of the Change side (20) button exits the Point Setup menu after which the display returns to show measuring point number and the vehicle side.

When the results of the chosen measuring points have been saved, the Display Mode (17) signal light is blinking (not dependant on the selected mode). When 'Auto find end point' function is active the signal light of the Start Point is blinking. If display mode is in Start Point and at the same time 'Auto find end point' function is active and measuring results have been saved, the Start Point mode indicator blinks with double speed (to indicate that point is saved and that the 'Auto find end point' function is active).

Length measuring

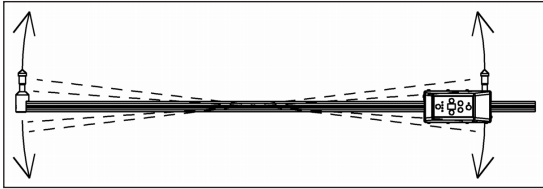
XDimension Tram Bar measures the distance between the fixed measuring head (Start Point) and the moving measuring head (End Point). Sliding the CPU box creates electronic pulses which are registered in the CPU. The Central Processing Unit sends the pulses to Autorobot measuring software.



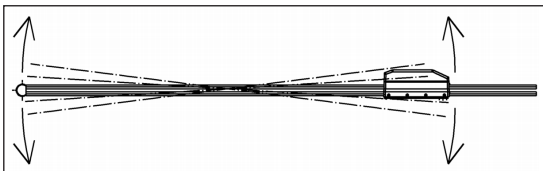
Height measuring

Measuring of the height happens with the help of a tilt sensor (inclinometer). The measuring software gets amount of tilting of the tram bar from the CPU. Based on the tilt and length readings provided by the CPU, the measuring software calculates the actual height of the moving measuring head (End Point) compared with the stationary measuring head (Start Point). The tilt sensor used in the Chief XDimension reads inclination in two axis (730EL+/730EL+S) or in three axis (750EL+).

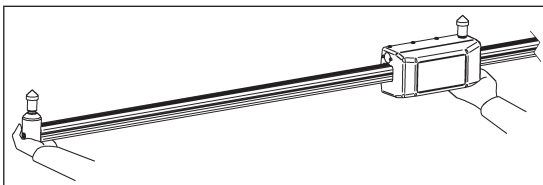
The first axis reads inclination in vertical direction. This tilt axis is used when measuring the chassis or vertical points in upperbody.



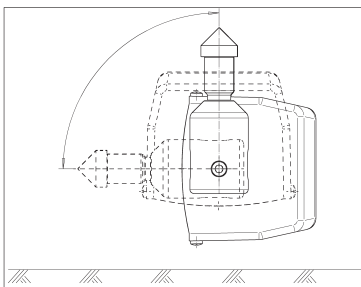
Second axis of the tilt sensor measures sideways inclination, the tram profile turned sideways. The inclination of this axis is used for calculating height when the car is measured at the side, from front to back or from back to front.



Third axis of the tilt sensor is used only in 750EL+ model and it measures the vertical/horizontal position of the tram bar. Third axis replaces the manual spirit levels, which are used in 730EL+ and 730EL+S models to ensure accuracy in height measuring.



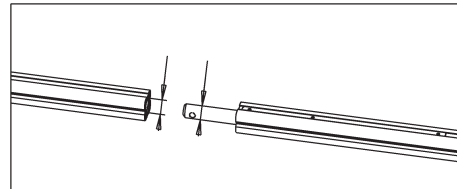
Height measuring is accurate only if measuring device is supported correctly. Device must be supported under the measuring heads. **If device is supported from the profile, height reading is not accurate!**



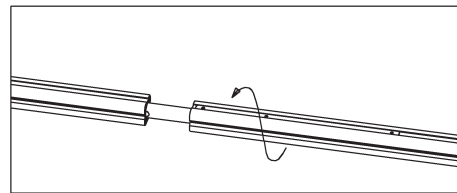
NOTICE: Inclinometer is designed to give best accuracy when measuring heads of the tram bar are in straight angle (either vertical or horizontal). With 750EL+ the software measures the tilt level of the tram bar to ensure accuracy. With older models manual spirit level may be used.

Using length extensions

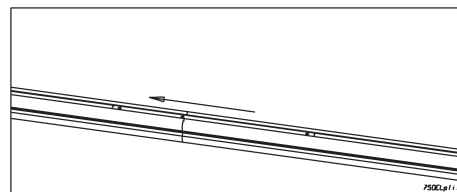
Length extension is installed in the XDimension tram bar in the following way:



1. If you have a 3-part profile make sure you have the correct length extension, which is compatible with the length profile (first and second extension profile has different diameter in joint tube). If you choose the wrong extension the joint will not fit or it will be loose. The first extension has joint in both ends and second extension has only one joint.



2. Set the tip of the extension profile inside the joint and push the profiles towards each other. If necessary rotate the extension profile to help the balls to slide in to the joint. After profiles are joined rotate the profiles and see that both profile parts have the same direction (tooth belts are at the same side).



3. Glide the lock plate from the extension profile so that it will prevent the rotation of profiles (to make sure that the profiles will stay in same direction).

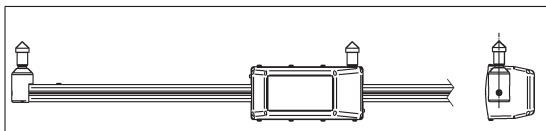
NOTICE: If points can be measured without using the length extensions, extra extensions must be removed to ensure measuring accuracy.

Selecting operating mode with XDimension

By default correct operating mode (upperbody, side or underbody measuring) is selected automatically by the software based on the direction of the XDimension measuring heads. If measuring heads are pointing up, the software will select underbody measuring and if measuring heads are pointing down the software will select upperbody measuring. If measuring heads are in horizontal direction the software will select side measuring mode. In some cases the software cannot detect the correct function. In that case selection can be made manually by clicking on the correct mode button in computer. After manually selecting measuring mode the selection will remain until start or end point is changed.

With 730EL+ and 730EL+S you may change from one mode to another without any limitations (turn the device in any direction to get the correct mode). 750EL+ operates differently and there are more functions (5 modes instead of 3) that can be selected by changing the direction of the measuring heads. With 750EL+ user can disable height measuring function (for example if height calibration to vehicle is not accurate) after which the software will save only the distance measurements to the measuring report.

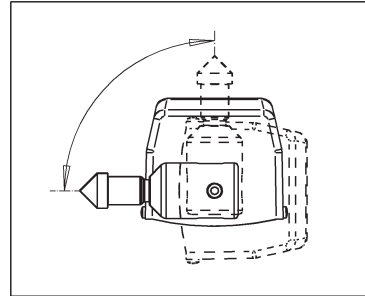
1. Underbody measuring (zero position of 750EL+)



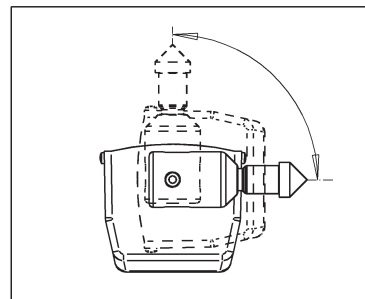
Zero position of 750EL+ - Underbody measuring

Zero position of 750EL+ model is selected by turning tram bar to vertical direction measuring heads pointing up. This direction is used to select the underbody measuring mode, but it is also used as a starting position to select any other mode.

2. Side measuring (with height or without height)



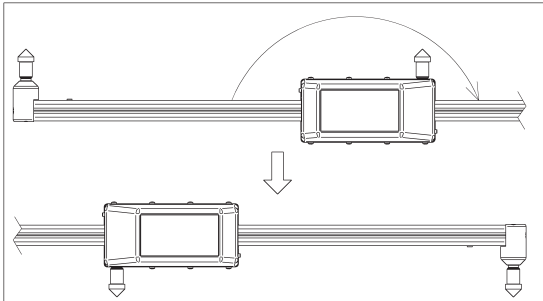
Side measuring with height



Side measuring without height

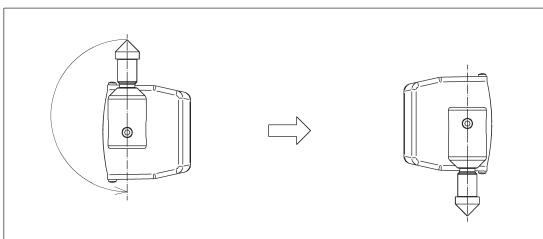
Side measuring mode is selected by turning measuring device 90 degrees from zero position after which measuring heads are in horizontal direction. If the tram bar is turned to horizontal direction with operating panel up, the height measuring function is used (unless disabled earlier). If the tram bar is turned to horizontal direction with operating panel down (towards the floor) height measuring function is temporarily disabled.

3. Upperbody measuring (with height or without height)



Upperbody measuring with height

Upperbody measuring mode is selected by turning device 180 degrees from zero position after which measuring heads are in vertical direction pointing down. Height measuring is enabled only if the tram bar is turned from zero position to upperbody measuring mode along lateral axis while longitudinal axis keeps the same angle (see picture above).



Upperbody measuring without height

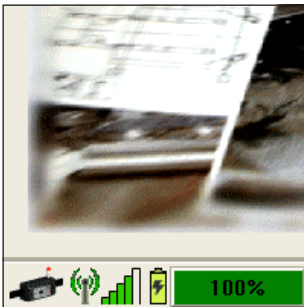
If upperbody measuring mode is selected by turning device 180 degrees from zero position in direction of the longitudinal axis (see picture above), the height measuring will be disabled and display will show hyphen (-) symbol. In this mode height can be locked to be disabled by pushing the **Change side / Unlock / Lock (20)** button. When height is locked to disabled mode the display will show double hyphen (--) symbol and this setting is applied to other modes as well (height will remain disabled). Lock can be removed by returning back to this measuring mode and by pushing the **Change side / Unlock / Lock (20)** button after which the display will show single hyphen (-).

Starting the Measuring

To start using the measuring software you need to switch on the computer (if not already switched on). If Autorobot Datasheet Suite was set to start automatically it is loaded right after logging on. If the software does not start automatically, please start it manually. Select vehicle from Main menu or from **'Datasheet Selection'** window and if necessary see datasheets and fastening instructions. Alternatively you can choose existing project, if you want to continue a previously started measuring project. You may want to print datasheets to paper before starting the measuring.

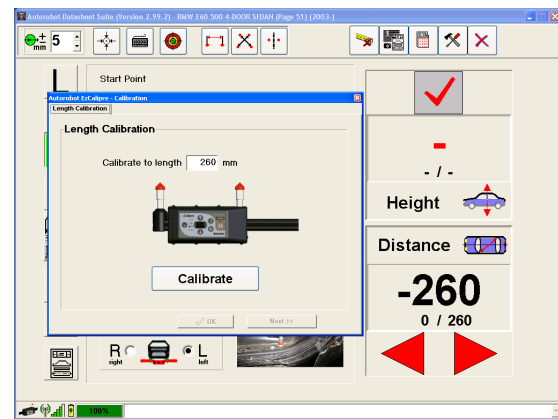
NOTE: If necessary see section **"Starting the Autorobot Datasheet Suite"** in this manual to learn how to select vehicle and open/print datasheets and pictures.

Switch on the XDimension and wait for the connection to computer (XDimension has 20 second startup delay after power is turned on). When computer connects successfully with measuring device you should see battery level in lower left corner of software window (see below).



If battery level stays on 0%, charge the batteries of the device and/or check cable connection between computer and WLAN Access Point (or WLAN connection between computer and access point). If you still cannot connect after charging the device see section **"Changing configuration of the software"** or **"Troubleshooting"** section for resolution of the problem.

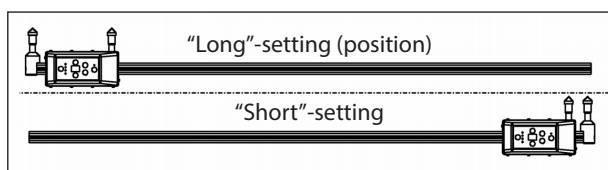
After you have established connection from computer to measuring device you can proceed to measuring. Now click on **'Measuring'** button to open the **'Measuring'** window.



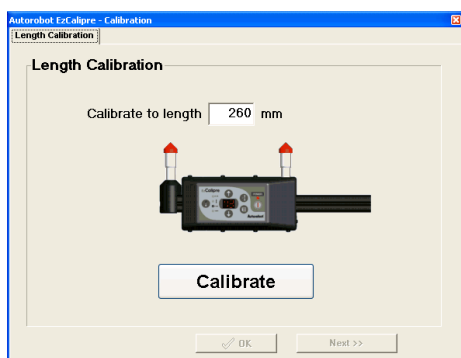
Upon starting the measuring the **'Calibration'** window will pop up automatically and the **'Measuring'** window will remain in the background. In the calibration mode (and in some other special functions) the functions of the **'Measuring'** window will be disabled and it is enabled again after calibration (or other special function) is finished.

Calibrating XDimension to the vehicle on site

Before the tram bar can be used for measuring, it must be calibrated. Calibration will set the zero position of the length and measure the inclination of the vehicle in widthwise and lengthwise directions. First stage of the calibration is the length calibration. With 730EL+/730EL+S models the CPU can be inserted onto length profile in two ways: the moving measuring head at a longer distance from the fixed measuring head (Long position 260mm) or the box turned around so that the movable measuring head comes closer to the fixed measuring head (Short position 87mm).



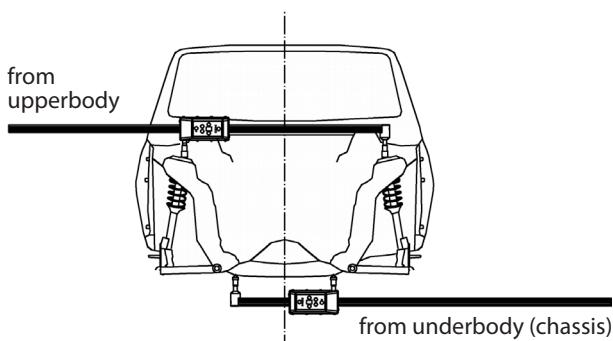
If you are using 730EL+/730EL+S model please choose "Long" or "Short" position in the measuring program according to how you have the CPU box placed on the tram profile. With 750EL+ model this selection is not available, because it supports only the Long position.



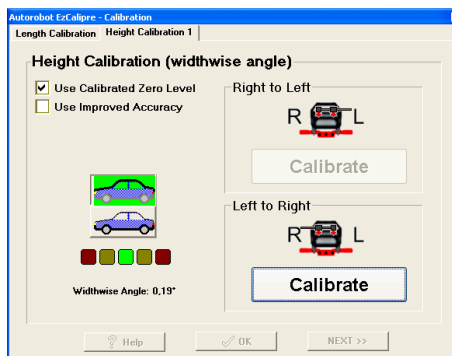
NOTICE: Height measuring is most accurate when Long position is used.

Length calibration is performed by bringing the CPU carefully as close to the fixed measuring head as it goes, and by pressing 'Enter' (21) button in the CPU operating panel after which the software will automatically move to the next stage. Alternatively you can click 'Calibrate' button in your computer to perform the length calibration after which you need to click 'Next >>' button to go to next stage. If you want to measure distance between measuring points without height or if you want to use previous calibration for height, you may end calibration now by clicking 'OK' (answer next questions according to your preference).

Next stage after length calibration is the calibration of the widthwise angle in which the tilt level of the vehicle in width direction is measured. Measuring heads must be positioned in symmetrical measuring points/targets at opposite sides in undamaged part of the vehicle. The safest way to select symmetrical points is to use Autorobot datasheet points and specifically those where length, width and height measures are identical at both sides of the car.



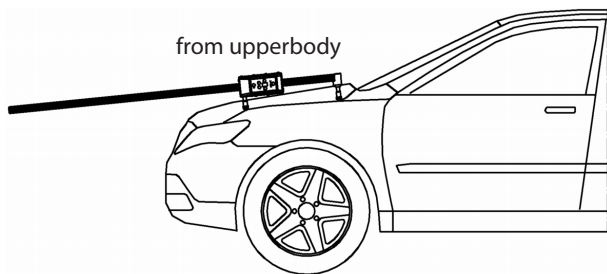
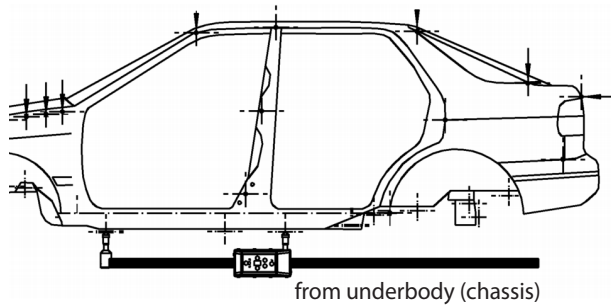
The software automatically chooses Upperbody/Underbody selection according to position of the XDimension (**NOTICE:** with 750EL+ upperbody mode must be selected with height as instructed earlier). In the upperbody position software suggests to use "Left to Right" direction and in the chassis position "Right to Left" direction. You can change direction setting by pressing 'Change side' (20) button.



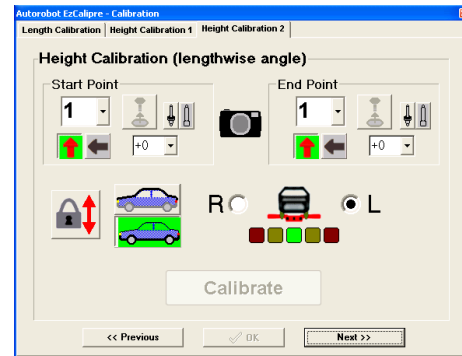
Place the measuring heads to the selected points according to selected direction (for example with "Left to Right" direction place fixed measuring head to left side and movable measuring head to right side of the vehicle) and hold the tram bar in place. Save the widthwise angle by pressing 'Save' (21) button in the CPU operating panel after which the software will check the level and when the level is stable the tram bar saves the inclination and stops beeping (hold the unit in place until beeping stops). With 750EL+ model the unit will show in the display if tram bar is not in correct angle while calibrating (tilt reading with arrow pointing the correct direction). The inclination will not be calibrated before tram bar is tilted to correct angle. After inclination of the vehicle is measured the software will automatically move to the next stage.

NOTICE: With 730EL+/730EL+S you can ensure accuracy in tilt calibration by using additional spirit level to make sure that measuring heads are in straight angle (vertical).

Next stage is the calibration of the lengthwise angle in which the tilt level of the vehicle in length direction is measured. Calibration is performed by choosing two measuring points in the Autorobot datasheet, which are situated at the same side of the vehicle (left or right side). Please choose the points in undamaged part of the vehicle (preferably points with similar width reading). After you have selected the points you want to use to register lengthwise tilt angle, please enter the point numbers to **“Start Point”** and **“End Point”** fields in calibration window. Select also the side of the vehicle where calibration is performed. The point selection includes the same selections than in normal measuring, which is explained later in **“Measuring window”** section.



Height calibration for lengthwise angle is performed by placing fixed measuring head in the Start point you chose in the measuring software and the movable measuring head in the End point. Use datasheet and point photos to locate correct points. Save the lengthwise angle by pressing **‘Save’ (21)** button in the CPU operating panel after which the software will check the level and when the level is stable the tram bar saves the inclination and stops beeping (hold the unit in place until beeping stops). With 750EL+ model the unit will show in the display if tram bar is not in correct angle while calibrating (tilting status will be shown after ‘Save’ button has been pressed). The inclination will not be calibrated before tram bar is tilted to correct angle.

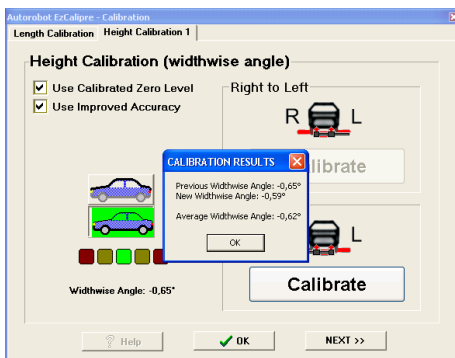


After lengthwise angle of the vehicle has been measured the calibration to vehicle is finished and the calibration window will close automatically.

NOTE: You can save widthwise and lengthwise angles to computer with **‘Calibrate’** button also for example for testing/demonstration purpose and finish calibration with **‘OK’** button.

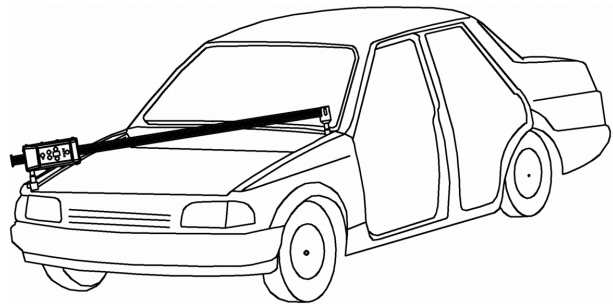
Calibration to the vehicle with Improved Accuracy function

In case where accuracy of the chosen calibration points is 100% certain **“Use Improved Accuracy”** selection may be ticked. With this option the calibration is performed like normally except after saving the angle the software will not continue to next step of the calibration. After the first angle has been saved it is possible to save more angles for widthwise calibration and starting from the second angle the software shows the results of the calibration (up to 4 angles can be saved).



Click **“OK”** to acknowledge the results. Finally to continue calibration from widthwise angle to lengthwise angle press **“NEXT >>”** button. Lengthwise angle is calibrated in same manner and up to 4 angles can be saved. The software will calculate the average of saved angle measurements and this way the inclination of the vehicle either in widthwise and/or lengthwise direction is calibrated more accurately. Finally click **“OK”** to end calibration function.

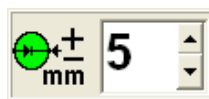
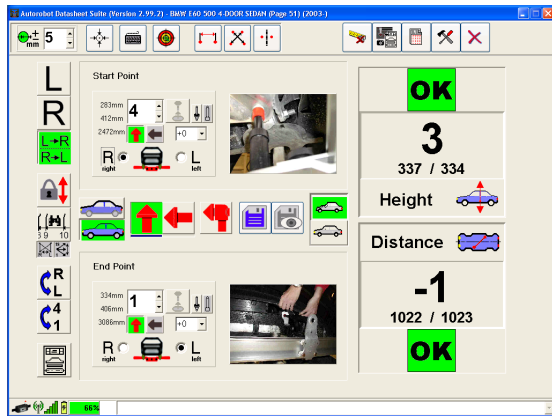
Measuring vehicle points



Measuring a vehicle point happens like this:

- First please choose Start Point in the Autorobot datasheet. The Start Point should be located in the undamaged part of the vehicle, since it will serve as a base for calculating the End Point.
- Choose the point you want to measure as End Point from the Autorobot datasheet.
- Install measuring instruments (cup, point etc.) to fixed and moving measuring heads as shown in the datasheet.
- Place the fixed measuring head to the Start Point you chose from datasheet.
- Place the moving measuring head to the vehicle point you want to measure (End Point).
- Read End Point measured deviation either on the PC screen or in the EzCalipe operation panel.
- Save End Point value either by pressing ‘Save’ button in the XDimension operation panel or in the PC graphical user interface (GUI).

Measuring Window



Tolerance can be selected in the measuring sub-toolbar. Default setting for tolerance is set to ± 5 mm.

This means that the measuring head can be at most 5 mm away from the reference value to show 'OK' status in report and on screen.



At the left side of the PC user interface there are available some quick selection buttons for choosing measuring functions. When you are going to measure only left side vehicle points, you can click on 'L' button and if working only at the right side of the vehicle you can click on 'R'. If measuring from left to right, or from right to left you should click on 'L->R/R->L' buttons and indicate the respective vehicle sides in the Start Point and End Point panels.



In the middle part of the left side there are buttons for Height lock and Auto find End Point functions. Height lock functions is used for example when measuring difficult measuring targets where both hands are occupied and you are not able to press the save button. Auto find End Point function is used to automatically switch between End Points. See more information about these functions under "Special functions in measuring" section.



When measuring from one side to the other (left to right or from right to left) you can change sides for both the Start Point and End Point (cross measuring) by clicking on 'Change sides' button. The 'Change sides' button is not in use when the Start Point and End Point are situated at the same side of the vehicle.



Start Point number can be exchanged with End Point number by clicking on 'Switch Start/End Numbers' button. If you have the same point number at both left and right, the 'Change Numbers' function is not in use.



To open a datasheet of the vehicle click on 'Datasheet' button in the bottom left corner of the 'Measuring' window. When upperbody measuring is selected the upperbody datasheet is shown and when underbody measuring is selected the underbody datasheet is shown.

Upperbody and underbody buttons can be used to select upperbody or underbody measuring. When XDimension is used, the software selects upperbody/underbody settings automatically.



When you want to change this setting manually, click 'Underbody' button to change to underbody measuring. The background of the



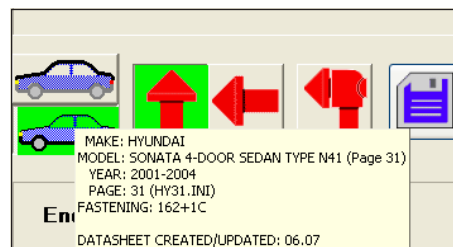
Underbody button will change green. To change to upperbody measuring click



'Upperbody' button and the background of the Upperbody button will change green. Few vehicles do not have an upperbody datasheet and in that case the upperbody button will be disabled.

If selection is made manually by clicking on upperbody or underbody button the selection will remain until start or end point number is changed.

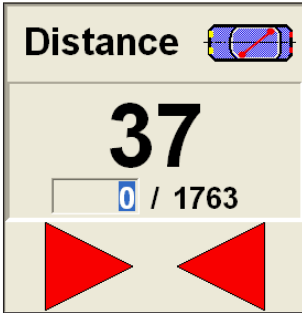
When measuring the vehicle you can check which vehicle is selected by placing the mouse pointer on upperbody or underbody icon. After a while information on the selected datasheet will popup. After placing the pointer on icon do not move the mouse or the info screen will not come up.



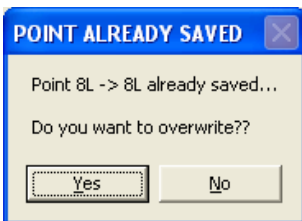
Measurements can be saved to computer by pressing 'Save' button in the XDimension operating panel or by clicking on "Save" in the measuring software user interface.



If you are using a mechanical tram gauge (730, 730A, 732 or similar), the measured values can be saved with **'Manual Save'** button. After you have clicked that, a text field opens in **"Length"** panel, where you can write the measured value. Confirm by clicking on **'Enter'**.



If the point was already saved when **'Save'** button is clicked, the software will confirm overwriting the point. To re-save a point from multifunction panel of the device, press the **'Save point'** button until the mode indicator LED will first stop blinking and then starts to blink again.



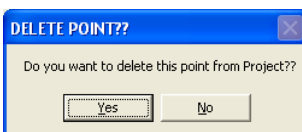
When the End Point measures have been saved in the database, the **'View'** button turns active.



'View' button brings the saved measures on the screen (Height and Length panels). When in **'View saved measures'** mode, **'Delete point'** and **'Continue measuring'** commands replace the **'Save'** and **'View'** buttons.



When software is showing saved measuring point you can delete the point by clicking on **'Delete point'**. The software will confirm deleting of the point.



To delete a point from operation panel of XDimension, press the **'Save point'** button until function indicator led stops blinking.

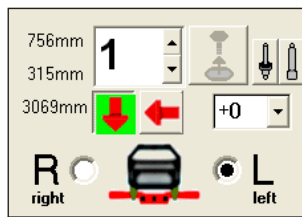


Use **'Before'** and **'After'** functions, if you want to save measuring results into Before and After reports. Software uses the **'Before'** setting as default when measuring is started. To



save the measuring results into a Before report, select the **'Before'** function by clicking on damaged vehicle icon. To save the measuring results into an After report, select the **'After'** function by clicking on intact vehicle icon. The selected function shows with green background.

Selecting Start Point and End Point plus further selections regarding these points are done in the panels reserved for Start Point and End Point. These panels allow to choose the measuring point number, use/not use disassembled measures, use measuring pin, height extensions in datasheets/tram gauge, select left/right vehicle side, and select vertical/lateral direction for measuring head.



The measuring point can be chosen in the XDimension operation panel or in the PC graphical user interface. By clicking the arrow up the number gets bigger and by clicking arrow down the number gets smaller. Maximum amount of measuring points is 19. The software does not allow you to change point number higher than the highest number in the datasheet.



Vehicle left or right side can be specified in the lower part of the

Measuring Point panel (L and R selections). Please choose here the side where you are going to place the measuring heads. Selected vehicle side shows with a black dot.



When the current measuring point contain also disassembled measurements the **'Disassembled measurements'** button is highlighted (otherwise it is disabled).

To select the disassembled measurements click on the icon and the background of the icon turns green. To return to non-disassembled measurements relick the icon.

NOTICE: When point is changed to a point which has no disassembled measurements, the software will automatically deselect disassembled measurements function. Also if point is changed to a point that has only disassembled values, the software will automatically select disassembled measurements.



When measuring pin has been specified in the datasheet as measuring instrument, it is necessary to select this in the measuring software by clicking on measuring pin icon.

When measuring vehicle points that do not require to use the pin, it is necessary to undo the pin selection by clicking again on the measuring pin icon.



If there is marked a 100mm, 200mm or 300mm extension in the datasheet for the point you want to measure (please see "Introduction of datasheets" part of this manual to see how the symbols for the extensions exactly look like) you must choose a corresponding extension in the measuring software. You can do this by clicking on the **'Choose height extension'** button. Each

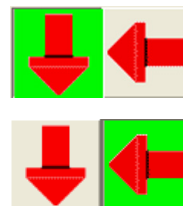
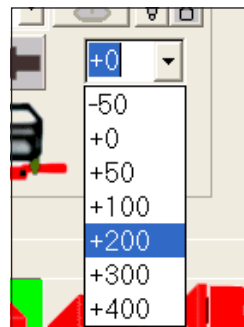


click on this button moves the selection to next longer extension. When you have reached the 300mm extension, next click removes the selection (alternatives go from "not selected" to 100mm – 200mm -300mm –"not selected"). The length of the selected height extension shows above the button. For example, if there is a 200mm height extension in the datasheet, you should click twice on the **'Choose height extension'** button. If the measuring point number changes, the height extension selection gets automatically eliminated.

PLEASE NOTE: The height extension must be chosen in the measuring software according to the datasheet, but you are not supposed to install the extensions physically in the tram gauge!

Only in case that either end of the tram gauge does not reach the target, i.e. the vehicle construction prevents either end from reaching the measuring point, you can add one or more 100mm extension pieces to one or both measuring heads. If you are using extensions of same length at both tram gauge ends, you do not have to specify the extensions in the measuring software. But if the total length of height extensions differ between Start Point and in End Point, you should tell their difference to the measuring software.

For example, if Start Point carries +100mm extension and End Point carries +300mm extension, you must select +200mm in End Point settings of the software to compensate the difference. Extension can be selected in the drop-down menu so that you click on the small arrow at the right side margin of the height extension field, to see the list on extensions to choose from. Default setting for extensions both at Start Point and End Point is +0. The +50 alternative is chosen when the standard +50mm extension is removed and replaced with a +100mm extension.

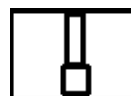


The direction of measuring head can be selected with buttons under the point number selection. The head can point up or down (arrow up or down) or it can be sideways. The background turns green in the button you selected.

Normally the correct measuring head position appears automatically on the screen according to the measuring point in question and you do not have to change this selection. In some exceptions you need to set the point position manually according to how it is shown in the Autorobot datasheet. When measuring the vehicle chassis, the measuring heads are always pointing up. In vehicle upper structures the heads can point down (under hood measures etc.) or sideways.



Points to be measured sideways are described with a laterally pointing symbol in the datasheet.



Points to be measured in vertical direction are described with a vertically pointing symbol in the datasheet.

Normally upperbody measuring is performed by choosing vertical to vertical direction or sideways to sideways direction, so make sure you select both Start Point and End Point with the same direction symbol in the datasheet.

After you have checked the direction turn the tram bar to correct position to select the correct measuring mode or use the buttons in computer screen to select the correspondig measuring mode (Vertical or Side measuring).

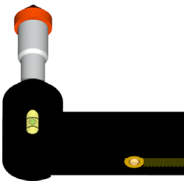
NOTICE: The selected measuring mode (Vertical or Side measuring) is highlighted with green background also when measuring mode is changed from the tram bar.



Vertical measuring mode is selected with '**Vertical Measuring**' button (pointer down).



Sideways measuring mode is selected with '**Side Measuring**' button (pointer left).



When measuring in sideways measuring mode with 730EL+/730EL+S model, you must use the spirit level in the fixed measuring head to make sure that the tram bar is in correct tilt angle.

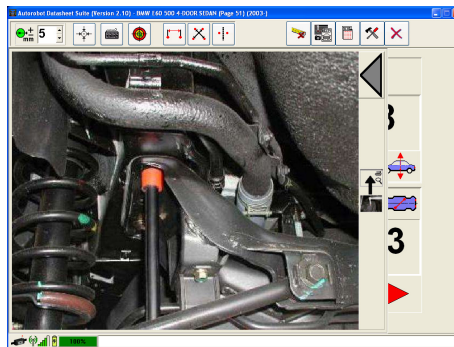
With 750EL+ the tilt angle is verified by the software.

NOTICE: Height reading is accurate only when the tram bar is in correct tilt angle. Read/Save the measurements of height with 730EL+/730EL+S models when the indicator (water bubble) is between the two lines. When using 750EL+ model, the software guides how to reach the correct tilt angle.



Next to the '**Side Measuring**' button there is the '**Width Measuring**' button on the right. This button is used to toggle width measuring function on/off. When the background of the button is highlighted in green, the function is on, otherwise function is off. Width measuring function works only in upperbody measuring mode (Upperbody mode is selected automatically upon activating this function). See more information about this function under "**Special functions in measuring**" section.

If the selected measuring point was saved to database with a photograph, this shows at the right side of the measuring point panel. You can zoom in by double-clicking on the photo in the software interface.



When the measuring point picture viewing is active, the picture for the current point is shown. By going to another measuring point, the picture will change too. If selected point has no measuring pictures available, the picture area goes blank and **X** showed.



If you want to move the current measuring point picture into a separate window click '**Move to window**' button. You can use zoom and print functions for pictures in separate windows. After moving to separate window, return to measuring by clicking on the '**Measure**' button.



To close the picture click on left arrow in upper right corner of the image panel.

In the '**Measuring**' window there is a vertical bar at the right side of the window, which gives the height measures in the upper part and distance measures in the lower part.



The biggest and topmost reading inside height and length blocks shows the difference between measured and reference value. Below that there is the measured value on the left and reference value on the right (two small numbers separated by a slash). The boxes on the top and in the bottom of the panels visualize the status of the measuring point with the help of the symbols shown underneath.

NOTICE: The height reading is shown in red in case the height value is not 100% accurate (for example if the tram bar is tilted too much while using 750EL+ model). If height is not available or height measuring is disabled the height reading will show hyphen (-) symbol.



The status of a block is **'OK'** when measured value is within accepted tolerance compared to reference value (=datasheet value). The goal of the body repair with a measuring system is to get all points to show **'OK'**.



The status shows **'failed'**, when there is no reference values for current measuring point. When the point has values for other side only, the side with no reference values shows this symbol. For example in upperbody measuring the zeropoint shows this symbol.

If the status of a block is something else than **'OK'** or **'Fail'** the measuring head is beyond the tolerance. It will be easier to understand in which direction to move the measuring head, if you look at the same time at the small car picture in the middle of the panels.



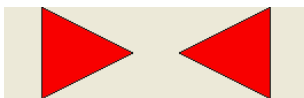
When arrow up is shown in height panel the movable measuring head should be moved up to gain the **'OK'** status.



When arrow down is shown in height panel the movable measuring head should be moved down to gain the **'OK'** status.



In distance panel outward arrows means that the distance is too small and the target point should be pulled away from the reference point to gain the **'OK'** status.

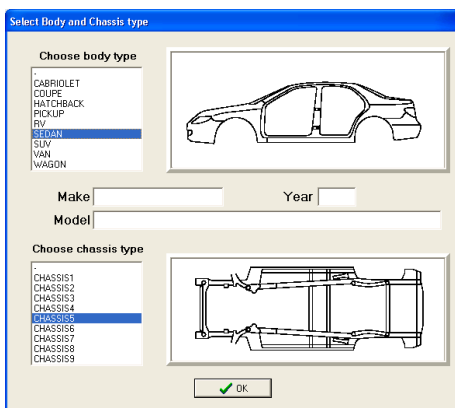


Inward arrows in the distance panel means that the distance between points is too large and the target point should be moved towards to reference point to gain the **'OK'** status.

Special functions in measuring

Measuring with generic datasheet / without datasheet

If datasheet for the vehicle is not available in Autorobot measuring database it is possible to select a generic datasheet to which you can mark measuring targets and save measuring results on. Start generic datasheet measuring by leaving the **“Make”**, **“Model”** and **“Project”** fields blank and click on start measuring button. The software will now show **“Select Body and Chassis type”** window.



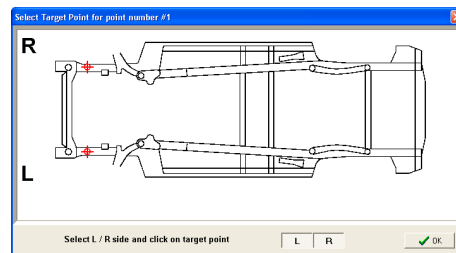
Select the body type from the list that is corresponding with the vehicle body and then select the chassis type from the list that is similar to the vehicles chassis. Then enter the make, model and year of the vehicle. Click **“OK”** to save selections and continue to measuring.

NOTICE: If no body or chassis type is selected the software will not allow to save any measurements later.

Perform the calibration to Vehicle as instructed earlier in this manual (see Calibration section under Chief XDimension if necessary). The calibration of the lengthwise angle is not needed with generic datasheet measuring and therefore that step is skipped.

After calibration the software switches automatically to **“After repairing”** mode. This mode must be selected when you are measuring reference measures from the intact part of the vehicle. Point number selection (Start Point and End

Point) is 0 after calibration. When selection is changed to point number that is not marked to datasheet the software opens **“Select Target Point”** window.



In **“Select Target Point”** window mark the target for selected point number. The target selection is shown with red marks. By default the software suggests L (left) and R (right) selections. If necessary add/remove L / R selections by clicking on corresponding buttons in lower part of the window. After selecting location of the selected point number click **“OK”**. If location was not marked the software changes point number back to previous point number.

When point is marked to datasheet you can measure point and save measures to project as usual. After all the needed points are measured you can switch to **“Before repairing”** mode and measure the marked points on damaged part of the vehicle. Now the software uses measures that were saved in **“After repairing”** mode as reference measures and this way it is possible to compare measures from damaged side to intact side of the vehicle. After measuring is completed it is possible to print measuring reports as usual. Datasheets that show the selected target points with corresponding point numbers can also be shown/printed with same functions that are used in normal measuring. To change location of selected target point double click on start or end point number selection. Then the software shows **“Select Target Point”** window and you may select a new location for the selected point. If necessary measure the changed points again to update measures on the report. To change reference measures switch back to **“After repairing”** mode and re-measure the points from undamaged side.

It is also possible to change the selected body or chassis type. Change point number to 0 (either start or end point)

and double click on point number selection and then the software will show **“Select Body and Chassis type”** window, where you can change body and/or chassis type.

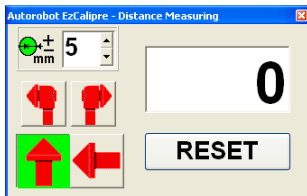
Distance Measuring



Distance measuring function can be used to measure the length between two chosen points (e.g. the wheel base). Click on the **‘Distance measuring’** button to start this function.

In **‘Distance Measuring’** window you can select tolerance, 90° angle for start and/or end point and vertical/side measuring. You can click on **‘RESET’** button at any time to erase typed and/or measured values. There are two ways to measure distance(s): enter the target distance before starting measuring or start measuring without setting target distance.

Hint: You can erase typed and/or measured values also by pushing **‘Save’** button in the function panel of the XDimension until saved measures are erased.



If you have a reference distance for two points that you want to measure, you can type in the reference distance to distance field in **‘Distance Measuring’** window (press Enter to finish editing). After that place start point and end point of the XDimension to selected targets and press on **‘Save’** button. The difference between reference and measured distance is shown in main measuring window and below that you can see the measured distance on the left and the entered reference on the right.

If you do not have a reference distance for two points, you can just place start point and end point of the XDimension to selected targets and press on **‘Save’** button. The measured distance is shown in **‘Distance Measuring’** window. If you want to continue measuring and use this first measured value as a reference measure (for example when comparing distances between left and right side of the vehicle), you can continue to other side of the vehicle and place start point and end point of the XDimension

to selected targets. After pressing on **‘Save’** button the difference between two measured distances is shown in main measuring window and below that you can see the last measured distance on the left and the first measured distance on the right.

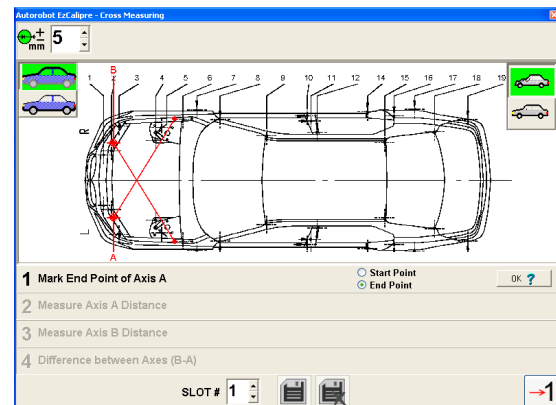
After reference measure is saved the display of the XDimension shows the current difference in mm compared to distance of reference value. Close the window to return to normal measuring.

Cross Measuring



Cross measuring function can be used to check the cross measurements between four selected points. Click on the **‘Cross measuring’** button to start the function.

Start cross measuring function by selecting first the tolerance, upperbody/underbody and before/after selections in the upper part of the **‘Cross Measuring’** window. The upperbody/underbody selection can be made from the screen or by selecting the corresponding position with the tram bar.



1. Mark the Start Point and End Point of the first axis to be measured (this is called Axis A later). Point is marked by clicking on desired area on the vehicle image after which the software will make a mark for either start or end point target depending on the selection in position 1 (below the vehicle image). After both start and end point targets have been selected the software will automatically mirror those points to other side of the vehicle's center line. The mirrored points represents the second axis to be measured (this is called Axis B later). After you have marked correct positions for both Start Point and End Point click **“OK”** button to continue.

HINT: You can quickly change between 'Start Point' and 'End Point' selection by pressing the right mouse button.

NOTICE: If the chosen vehicle model does not have picture of the vehicle, position 1 of this function (marking the start and end point locations) will be skipped.

- Place the measuring heads (fixed and movable) to the selected measuring targets and click '**Save**' button in the operating panel. Distance between points of the Axis A is shown on the screen in position 2.
- Place the measuring heads (fixed and movable) to opposite sides of the vehicle and click '**Save**' button in the operating panel. Distance between points of the Axis B is shown on the screen in position 3.
- After saving measurements for Axis A and Axis B the difference is shown in position 4.



If you want to save the measurements to a report press '**Save**' button in the lower part of the window. Save button is enabled only when the selected slot is empty. If necessary change the slot number to find an empty slot before saving.



If all the slots are full you may delete a report from selected slot by pressing '**Delete**' button. Delete button is enabled only when the selected slot is occupied.

Finally end the cross measuring function by closing the window or restart the function by clicking the '**Return to position 1**' button in the lower right corner of the window.

Symmetry Measuring



Symmetry measuring function is used to compare the distance and height of two points in either underbody or upperbody of the vehicle. Selected points should be located symmetrically at same positions on different sides of the vehicle. Click on the '**Symmetry Measuring**' button to start this function.

Symmetry measuring function is divided to vertical symmetry and to side symmetry modes. When you start the symmetry measuring function you must first select the measuring mode, tolerance, upperbody/underbody and

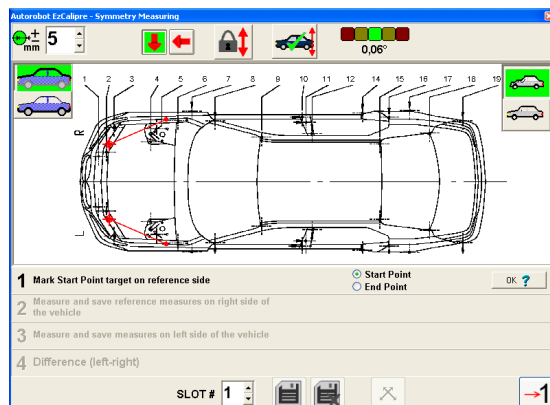
before/after selections in the upper part of the '**Symmetry Measuring**' window. The upperbody/underbody selection can be made from the screen or by selecting the corresponding position with the tram bar. When side symmetry mode is selected software will automatically choose upperbody measuring mode (side measuring can be performed only in upperbody structures).

Vertical Symmetry Measuring



'Vertical Symmetry Measuring' mode is selected by pressing vertical measuring button (arrow up or down, highlighted with green in the picture).

In the vertical symmetry measuring the software automatically selects underbody/upperbody selection, but it can be selected manually also by clicking on either upperbody or underbody button. To ensure accuracy in vertical height measuring the software checks if the calibrated widthwise angle is good enough for symmetry measuring in vertical direction. If angle is over 0.2°, the software shows a warning while starting the symmetry measuring function. In that case you have 3 choices: disable height measuring, recalibrate the tram bar to the vehicle and correct the inclination in widthwise direction or if you are using additional Tracker device you can adjust the widthwise angle and see the current inclination level (real-time) in upper part of the 'Symmetry Measuring' window.



- Mark the Start Point and End Point of the targets to be measured on reference side (intact side of the vehicle). Point is marked by clicking on desired area on the vehicle image after which the software will make a mark for either start or end point target depending on the

selection in position 1 (below the vehicle image). After both start and end point targets have been selected the software will automatically mirror those points to other side of the vehicle's center line. After you have marked correct positions for both Start Point and End Point click "OK" button to continue.

- Place the measuring heads (fixed and movable) to the selected measuring targets and click 'Save' button in the operating panel. Distance and Height (unless disabled) between target points is shown on the screen in position 2.
- Place the measuring heads (fixed and movable) to opposite sides of the vehicle and click 'Save' button in the operating panel. Distance and Height (unless disabled) between target points is shown on the screen in position 3.
- After saving measurements for target points on the reference side and on the opposite side the difference is shown in position 4.

See "Common functions for Vertical and Side Symmetry Measuring" section for further options in Vertical Symmetry Measuring function.

Side Symmetry Measuring

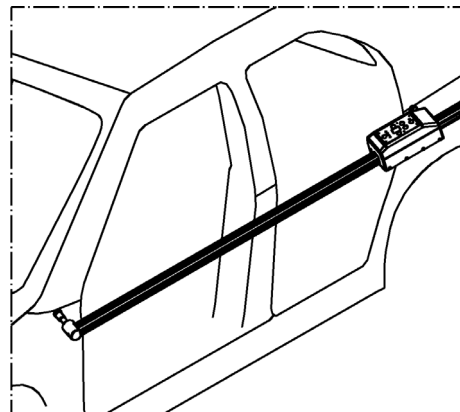


'Side Symmetry Measuring' mode is selected by pressing side measuring button (arrow left, highlighted with green in the picture).

In the side symmetry measuring there are two modes: Distance/Height measuring and Distance/Width measuring.



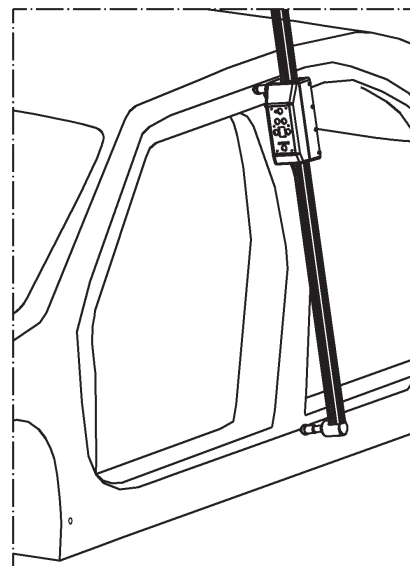
Distance/Height measuring mode is selected by pressing height button (highlighted with green in the picture) in the upper part of the 'Symmetry Measuring' window.



Side Symmetry measuring - Distance/Height

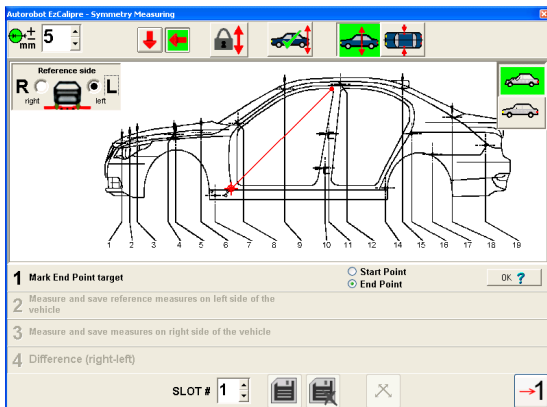


Distance/Width measuring mode is selected by pressing width button (highlighted with green in the picture) in the upper part of the 'Symmetry Measuring' window. Distance/Width measuring is performed by holding the length profile in 90° angle from the ground in length direction (either start point on top or end point on top). Width is measured from the tilt angle of the length profile in width direction.



Side Symmetry measuring - Distance/Width

Side symmetry measuring follows the same pattern with vertical symmetry measuring. Only difference is that user must choose the side for reference measures in the top right corner of the vehicle image.



1. Choose the reference side (intact side of the vehicle) and mark the Start Point and End Point targets to be measured. Point is marked by clicking on desired area on the vehicle image after which the software will make a mark for either start or end point target depending on the selection in position 1 (below the vehicle image). After you have selected the reference side and marked correct positions for both Start Point and End Point click **“OK”** button to continue.
2. Place the measuring heads (fixed and movable) to the selected measuring targets and click **‘Save’** button in the operating panel. Distance and Height (unless disabled) or Distance and Width is shown on the screen in position 2.
3. Place the measuring heads (fixed and movable) to opposite sides of the vehicle and click **‘Save’** button in the operating panel. Distance and Height (unless disabled) or Distance and Width is shown on the screen in position 3.
4. After saving measurements for target points on the reference side and on the opposite side the difference is shown in position 4.

NOTICE: The width measuring can be performed only when the length profile is in 90° angle from the ground. With 750EL+ model the software will guide how to reach the correct angle when display is in height mode. With 730EL+/730EL+S models you need to use additional spirit level to make sure that the length profile is in 90° angle. Older type spirit level must be placed to fixed or moving measuring head and then spirit level is turned so that the water bubble is center when length profile is in 90° angle from the ground (put the long side of the spirit level parallel

to the side of the length profile). Newer type spirit level is simply clipped to the length profile to show the correct angle of the length profile.

Common functions for Vertical and Side Symmetry Measuring

After measurements in the reference side have been saved the differences between reference and actual measures are also displayed in XDimension display. You can change the display mode (distance/height or distance/width) with ‘Display mode’ button.



When measuring difficult targets (for example in underbody) you can use ‘Height lock’ function for locking the height/width. Height lock button is located in the upper part of the window. See ‘Height lock function’ under special functions section for further information.



Height measuring can be disabled/enabled by clicking on height button. When height is enabled the button shows green sign and when it is disabled it shows red “denied” symbol.



To save the measurements into a report press **‘Save’** button in the lower part of the window. Save button is enabled only when the selected slot is empty. If necessary change the slot number to find an empty slot before saving.



If all the slots are full you may delete a report from selected slot by pressing **‘Delete’** button. Delete button is enabled only when the selected slot is occupied.

To restart the symmetry measuring function click on the **‘Return to position 1’** button in the lower right corner of the window. After restart you can change the mode of the symmetry measuring. Symmetry measuring function is ended by closing the window.

HINT: After saving measurements to a report in Vertical Symmetry Measuring, you can add cross measurements to same report by clicking on the Cross Measuring button next to Save and Delete buttons. Cross Measuring button is enabled after symmetry measurements have been saved to a report. See instructions for Cross Measuring function earlier in this manual.

Width measuring

With Width Measuring function you can measure the width distance between 2 symmetrical points situated at opposite sides of the vehicle. These points must be marked as side measuring points in the Autorobot datasheet. Activate Width Measuring function in the measuring program user interface.

Width measuring button has 3 stages:



width measuring function deactivated



width measuring function activated

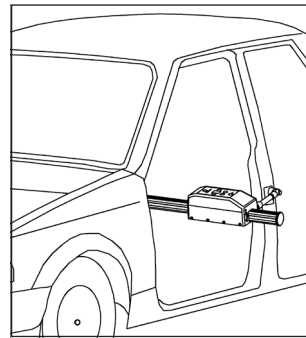


width measuring function activated with double angle

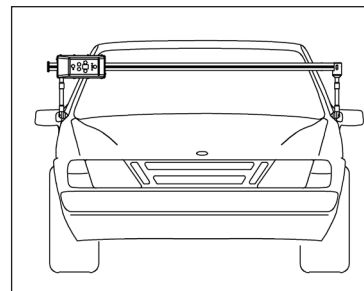


If datasheet shows that the vehicle point you have chosen must be measured with the help of 2 angles you should accordingly select “**Width measuring with double angle**” function in the measuring program. Please notice that only one angle must be used with this function.

Choose in the datasheet the points the distance of which you want to measure (point numbers must be the same at both sides of the vehicle), and select them as Start and End Points in the measuring program. Width measuring can be accomplished either as side measuring or as up-down measuring (measuring head points down). Select the corresponding measuring function in measuring program (side measuring or up-down measuring).



Side measuring



Up-down measuring

Install angles in the fixed and moving measuring heads and the instruments shown in the datasheet. If width is measured by using up-down measuring function, you must select sideways measuring for both measuring heads (change setting in the Start Point and End Point selection panels). When necessary, apply 100mm extensions at both ends. You do not have to register the extension pieces in the measuring software if you are using the same extensions at both ends of the tram bar. Focus the measuring heads into the measuring targets that you chose. View deviations in the measures either in the XDimension operation panel or in the measuring software user interface.

NOTICE: Height measuring is accurate when measuring heads of the tram bar are in straight angle (either vertical or horizontal). With 750EL+ the software measures the tilt level of the tram bar to ensure accuracy. With older models manual spirit level may be used.

Height lock function

When you are measuring hard to reach points with XDimension and can't see the computer monitor nor the XDimension display while holding the tram bar (for example measuring points under the vehicle), you can use the height lock function. Having the height lock on, the measured value stays on the PC screen or in the XDimension display and you can read it after you accomplished the measuring.



You can activate the height lock function by pressing on **'Height lock'** button. When the function is active, the background of the button shows green on the PC screen. Height lock function can be disabled by pressing again the **'Height lock'** button.

When the height lock function is active, the measuring heads of XDimension are focused normally in the measuring points. After that the device is held still for around 4 seconds. If the device was kept still, the tram bar will make a long beep after which the device will freeze the height measuring and the device will stay showing the same value even if the tram bar is taken out. The measured value can be saved normally even if the height lock function is on either in the measuring program user interface or in the XDimension operation panel. The locked value stays as it is until the height lock function is disabled or until you move the measuring head of XDimension again in length direction (by more than 5 mm which is the usual tolerance).

End Point finder (auto find end point)

End Point finder function helps to find end point targets. When this function is active the software will look for target points which matches with actual distance and height readings. If software finds a target point within the scope of 2x of the selected tolerance reading, software will automatically change to that point number. For example if tolerance is set to 5mm both distance and height reading must be within 10mm of the target and if either of the readings is more than 10mm point will not be changed.



You toggle End Point finder function on/off by pressing on **'End Point finder'** button. When the function is active, the background of the button shows green on the PC screen.

Below the 'End Point finder' button there are 2 smaller buttons for selecting the area for finding target points.



By default End Point finder will look for target points on both sides of the vehicle. If you want to keep the end point on currently selected side you can disable side change by clicking on widthwise scope (R<->L) button after which the green light will turn off from the button. To expand scope back to both sides click widthwise scope button again after which the background of the button will change to green.



By default End Point finder will look for target points on both ends of the vehicle. If you want to keep the tram bar in same direction (limit finder not to go beyond the start point number) you can narrow the scope of the End Point finder by clicking on lengthwise scope (19 to 1) button after which the green light will turn off from the button. To enable finder to go beyond the start point number click lengthwise scope button again after which the background of the button will change to green.

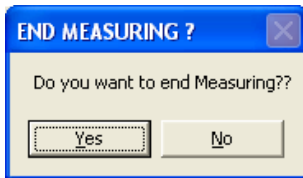
Ending Measuring



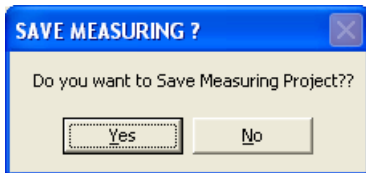
When you have done the measuring (measured all the points necessary) you can end the measuring session by clicking on **'Measure'**

button. You can end the measuring session also by clicking on **'Exit'** button or by closing the main software window.

NOTE: Clicking on **'Measure'** button ends measuring session only when the **'Measuring'** window is open. In all other modes the **'Measure'** button is used for opening the **'Measuring'** window.

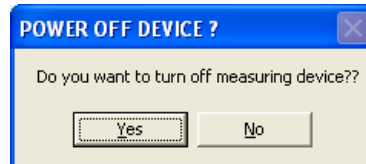


Before ending the measuring session the software will confirm the finishing. If you want to get back to measuring click **'No'**.



After you have confirmed finishing measuring session the software asks **"Do you want to Save Measuring Project??"**. To save the project click **'Yes'** and to discard project click **'No'**.

NOTE: See **"Project Management"** section for more information about saving project.



If the software has a connection to measuring device while ending the measuring process, the software asks **"Do you want to turn off measuring device??"**. If you are not going to continue measuring now click **'Yes'**, otherwise click **'No'**.

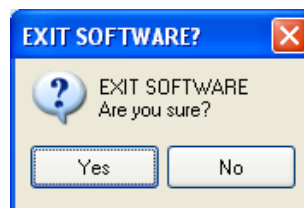
NOTICE: In case Tracker device is used and software is set to turn off the measuring device, it will also try to turn off the Tracker device.

Exit from the Measuring Software



To exit from the software close the main window (click **'X'** in top right corner of the window) or click on the **'Exit'** button.

If there exists an unfinished measuring session, the software will first confirm finishing it as explained above. After appropriate confirmations the software will continue shutting down.



Before exiting the software will confirm if you really want to exit the software.

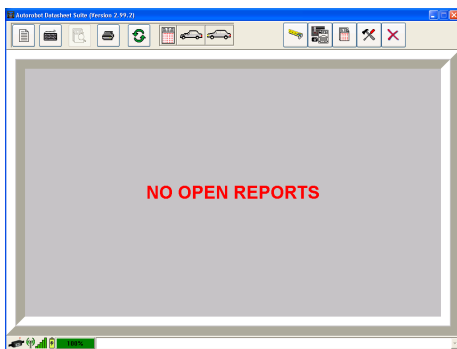
Project Management

When measuring is started the software automatically creates a measuring project where information of the current measuring session will be saved. The software will save the calibration information (after calibration is done) and all the saved measuring info into currently open project, which is either an earlier saved project opened by user, or a new project created automatically when measuring was started. In Project Management menu you can for example browse for projects, edit a project and print reports of the projects. In **'Project browsing'** window you can also delete projects if necessary.



Click the **'Project Management'** button to go to Project Management menu at any time (except during special measuring functions or when **'Settings'** window is visible).

Main view of the Project Management shows reports for currently active project. If the current project does not have any reports or no Before/After selection is made, the software will show **"No Open Reports"**.



Saving Project

If you have started a measuring process before entering to project management, the software will automatically start **'Save Project'** function. In the Save Project function you need to enter information about current project, so that the project can be identified later (for example when browsing projects).



To manually start the **'Save Project'** function click the keyboard icon in the sub-toolbar of the Project Management function.

The **'Save Measuring Project'** window consists of a general info part (in top part of the window) and sub-page part (below general info). You can enter a name for the project in the general information. Also the vehicle make, model and job number are shown in this part. Please choose a name that describes the current project so that it can be found easily later from project list.

NOTICE: It is recommended to leave values in vehicle **'Make'** and **'Model'** fields as they are. The job number field gets automatically updated and it cannot be changed manually.

First sub-page in **'Save Project'** function is **'Project Information'** page. In that page you can enter the name of the technician who completed the measuring work for this project, the **'Project Started'** and **'Project Ended'** information, working hours and additional information (up to 255 characters).

Project Started information is automatically filled in with the date and time when the project was initially started. Also

Project Ended information is automatically filled in with the date and time when the Save Project function was started. Working hours get automatically calculated based on the start and end times. All of the previous information can be modified manually. When the project is charged from the customer, you can check mark the **'Charged'** option. The Charged status is shown in project browsing and in reports of the project.

If you want to enter more details to project fill in the fields in other sub-pages as well. You can give there more details concerning the vehicle, client and client's insurance company. In the end click **'Save Project'** button.

In **'Vehicle Information'** sub-page you can enter the following: Vehicle Identification Number (VIN), Color, Year, License and km/miles of the vehicle. **'Datasheet'** field shows the reference datasheet information. Changing of this field is not recommended.

If you click on the **'Datasheet'** field for editing, you need to confirm that you really want to change the reference datasheet. If you accidentally clicked on the **'Datasheet'** field click **'No'** to cancel editing.

In **'Client Information'** sub-page you can enter the contact information of the client/owner of the vehicle. If there is an existing project with the same client in the database, the previously saved information can be selected by performing a partial search in the **'Client'** field. This is done by typing in

the first few letters to **'Client'** field. The software suggests clients matching with the typed letters. You can define your search by typing in more letters until you find the right alternative. Rest of the fields get automatically filled when an earlier saved client is selected.

In **'Insurance Company'** sub-page you can enter detail about the Insurance Company to the vehicle. The partial search function can also be used to select a previously saved insurance company. Type the first few letters in **'Company Name'** field and the software will suggest insurance companies matching with the typed letters. You can define your search by typing in more letters until you find the right alternative. After an insurance company is selected, other fields will be filled with the saved information.

NOTE: You can also start the measuring process in this order: Select Vehicle in Main Menu, Go to Project Management menu and select Save Project function, fill in the information for the project and click Save Project and then go to measuring by clicking on the **'Measure'** button. This way the Measuring Project is saved before the actual measuring is done and all the information concerning the client and insurance company can be saved in the beginning.

Project Information Sheet



Click **'Project Information'** button in the Project Management sub-page to view the details of current measuring project. If no projects are currently active, the button is disabled.

'Measuring Project Information' window shows all the information of the project including detailed information about vehicle, client, insurance company and the project itself. All E-Mail addresses and Internet addresses in this window (blue underlined text) function as links. To follow the link just click on it to open the email client or Internet browser (default programs for link types are configured in OS).

Measuring Project Information

Project Information
 Project group: Inspection measuring 1123 Project number: 10
 Project name: Technician: John Smith
 Project Started: 8.2.2006 7:40:04 Hours: 15.00
 Project Ended: 8.2.2006 16:40:04 Charged: NO

Vehicle Information
 Make: BMW Datasheet: BM51
 Model: E60 500 4-DOOR SEDAN (Page 51)
 VIN: 66462980897095
 Color: Metal Green Year: 2004
 License: IGC-760 km/miles: 15500

Client Information
 Client: Michael Gammond Phone # 042-882 992
 Contact: Mobile # 042-812 972
 Address: Graymondst. 332
 ZIP: 00435 City: Bowville
 State:
 Country: Ireland
 E-Mail: michael.gammond@privmail.com

Insurance Company
 Company: International Insurances Ltd. Phone # 041-873 439
 Inspector: Gerald Malloy Mobile # 041-773 224
 Address: Reelst. 35
 ZIP: 00412 City: Gaymond
 State:
 Country: Ireland
 E-Mail: gerald.malloy@internationalinsurances.ie
 Internet: www.internationalinsurances.ie

Project Manager



To browse/manage existing projects, click **'Browse Projects'** button. This function can be used to move projects to groups, or to search or delete projects. After measuring process is started this function is disabled until the measuring is ended.

The **'Project Manager'** window contains 3 sub-pages. When the function is initiated only 2 of the sub-pages are visible: **'Project Browser'** and **'Search Projects'**. The third sub-page **'Search Results'** gets opened when search for projects is effected.

In top part of the **'Projects Browser'** page you can select a group of projects to be shown in a list below. The currently selected project group is shown in top right corner of the page. If there are no groups the list of Project Groups is empty. When a project is created it will automatically belong to **'root'** group. The **'root'** group is a group with no name, so all the projects that are not assigned to a specific group belong to **'root'**.

Datasheet Suite - Project Manager

PROJECT GROUP: [Dropdown] CURRENT GROUP:

ID	Project Name	Make	Model
5	Project #1	BMW	E60 500 4-DOOR SEDAN (Page 51)

Selected Project: [Dropdown]
 Move to group: [Text Field] Apply Load Project

The Projects that belong to currently selected group are shown in the list below the group selector. When the Project Manager function is started it will show all the projects in the list. All the projects get listed also if the blank row in project group selector is selected.

To keep the root level project list short it is recommended to move projects to groups. Groups can be formed for example by the name of the technician or by the month/year when the project was in process. To move a project to a group select the project to be moved from the list, enter the name of the group to **'Move to group'** field and click **'Apply'**. If the typed group name does not exist, a new group is made. A previously saved group can be selected by performing a

partial search of the groups in the **'Move to group'** field. This is done by typing in the first few letters to **'Move to group'** field. The software suggests a group matching with the typed letters. You can define your search by typing in more letters until you find the right alternative. The search is case sensitive.

If you want to load a project for example to print a report, select the project from the list and click **'Load Project'**. You can also load a project by double clicking it in the list. After project is loaded the **'Project Manager'** window will close and you can for example continue measuring the loaded project, see project details or view project reports.

After many projects have been saved to system it might be difficult to find some specific project later on. The Project Manager of the Datasheet Suite has a search function for finding one or more projects. The search function can be found in the second sub-page of the **'Project Manager'** window.

The upper part of the window is the same as in **'Project Browser'** window. By selecting a Project Group you will narrow your search to that group only. If the **'Project Group'** field is left blank, then all the groups (including root) are searched. Below the **'Group selection'** field you can select which search fields to use. Possible fields for searching are: Project Name, Technician, Make, Model, Project Started, Project Ended, Hours, Charged, Client Name and Insurance Company.

In the middle part of the window you can select one or more fields to be searched with a search key. First enable **'Search by Key'** function by clicking on the checkbox. Then choose a field for searching and then enter a search key in same row to **'Key #'** field. You can use 4 keys at a time. The field type list contains the same fields that you chose in the **'Search Fields'** panel above. Do not use the following field types

for searching with a key: Project Started, Project Ended, Hours, Charged. These field types are meant to be used with **'Search by Time/Date'** and **'Calculate Hours for Report'** functions below. If you don't want to use search keys disable the function by clicking on the checkbox.

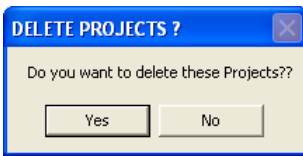
To search projects by project start or finishing times you need to select the **'Project Started'** and/or **'Project Ended'** fields in **'Search Fields'** selection panel and then enable the **'Search by Time/Date'** function by clicking on the checkbox. If you chose the **'Project Started'** in the **'Search Fields'** panel and you select a starting date in the **'Starting from'** field, your search result list will show all projects started on or after the given date. If you chose **'Project Ended'** in the **'Search Fields'** panel and you select a date in the **'Ending to'** field below, your search result list will show all projects finished on or before the given date. If you want to disable the Starting from or Ending to search just click on the checkbox to remove the checkmark.

To calculate working hours of the projects that match with the search keys, you need to select the **'Hours'** field in **'Search Fields'** selection panel and then enable the **'Calculate Hours for Report'** function by clicking on the checkbox. After that you can enable **'Calculate Charged Hours'** and **'Calculate Not Charged Hours'** functions if you chose the **'Charged'** field in **'Search Fields'** selection panel.

To see the results of the search click on one of the buttons in lower part of the page. **'Show Matching Projects'** shows the projects that match with the search key(s) in **'Search Results'** sub-page.

ID	Project Name	Make	Model
5	Projects #1	BMW	E60 500 4DOOR SEDAN (Page 51)

'Delete Matching Projects' opens the **'Search Results'** sub-page with the projects that match with the search key(s) and then confirms if you want to delete all the projects shown in **'Search Results'** sub-page.



To Delete all matching projects shown in the list click **'Yes'**, otherwise click **'No'** and go back to **'Search Projects'** page and specify your search.

To be able to print the search results click **'Generate Report'**. The software will then generate report sheet(s) of the matching projects to **'Project Management'** window. To print the report(s) close the **'Project Manager'** window and print the report like measuring certificates are printed.

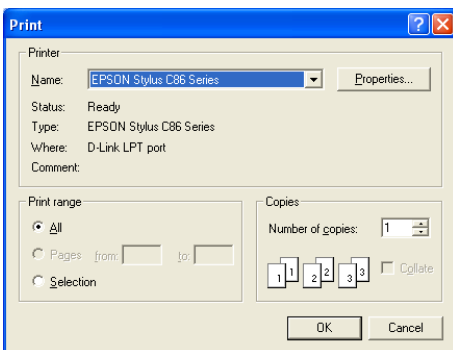
Printing Reports/Certificates



Printing function is started by clicking on **'Print'** button. You can use the print function in Datasheet Management menu only when there are measuring certificates or reports opened.

Printing is managed by operating system so therefore it is presented in the same language than the Operating System.

In **'Print'** window it is possible to select either **'All'** or **'Selection'** to print range selection. **'All'** option will print all the measuring certificates and reports that are open and **'Selection'** option will only print the report/certificate that is currently active.



If you have several printers installed to your system, select correct printer from the list and if necessary change properties for that printer. Finally click **'OK'** to start printing.

Refresh Report Pages



If you have opened measuring reports/certificates at some point of the measuring process and you have made changes (for example saved more measuring points) to project after that, you need to refresh the reports/certificates to be able to see the changes. Click on **'Refresh Reports'** button to recreate the reports/certificates.

NOTICE: The **'Refresh Report Pages'** function does not regenerate any report pages that have been done with the help of **'Generate Report'** function in Project Manager, so using this function will destroy all the report pages containing project search results.

Selecting Before and After Reports

Measuring projects can contain measurements done before and after the repairing. The measurements done before repairing are showed in **'Before'** report and the measurements done after repairing are showed in **'After'** report.



In Project Management sub-menu you can select which kind of reports you want to view. If there are **'Before'** reports available the **'Before'** icon is highlighted and if there are **'After'** reports available the **'After'** icon is highlighted. If the icon is disabled, then there are no reports of that kind.



On the left side of **'Before'** and **'After'** buttons there is a **'Report type'** button, which is used to toggle between report with or without vehicle image. This function may be disabled with some older datasheets (when vehicle image is not available).

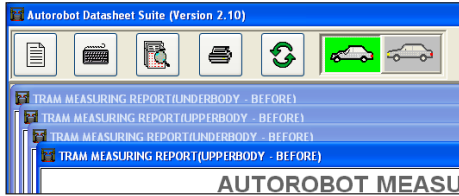


To open **'Before'** reports click on damaged vehicle icon and the background of the icon will change to green. To hide **'Before'** reports click on damaged vehicle icon again.



To open **'After'** reports click on intact vehicle icon and the background of the icon will change to green. To hide **'After'** reports click on intact vehicle icon again.

If there are plenty of measuring points in a report, the report might be divided to several pages.



Each report/certificate page has details of the project in the upper part of the report sheet. Below the details there is a title row of the report, which indicates the report type (for example Upperbody – Before). Under the title there are the column headers and under the headers are rows containing the measuring information of the points.

The screenshot shows a report page titled 'AUTOROBOT MEASURING CERTIFICATE'. It contains project details and a table of measuring points.

Project name: Harppi 03
 Vehicle: HYUNDAI SONATA 4-DOOR SEDAN TYPE N41 (Page 31)
 VIN:
 Color: Year: License: km/miles:
 Client: Phone #
 Address: ZIP: City:
 Insurance Company:
 Phone #
 Bodyshop: Autorobot Finland Oy Phone #
 Address: Yrityskatu 23 ZIP: 70150
 Technician: Hours: 0.15 City: Kuopio
 Project Started: 27.11.2007 10:57:27 Project Ended: 27.11.2007 11:12:44

UPPERBODY - BEFORE									
START POINT #	END POINT #	TOLERANCE +/- mm	ACTUAL H	ACTUAL L	DATASHEET H	DATASHEET L	DIFFERENCE H	DIFFERENCE L	NOTES
2L	3R	5	764	1206	761	1208	OK	OK	
2R	4L	5	795	1220	793	1223	OK	OK	
2L	4R	5	795	1220	793	1223	OK	OK	
2R	5L	5	837	1297	835	1299	OK	OK	

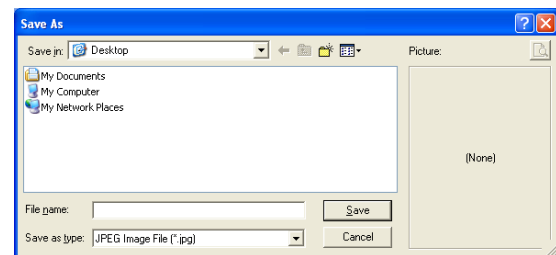
Each row shows the measurements from start point to end point. The columns of a row are (from left): Point numbers, tolerance (mm), actual measured height (H) and length (L), reference height (H) and length (L) in datasheet, the difference between actual and reference values in height (H) and length (L). The rightmost column shows the notes for the point (if any).

In the bottom of the report there are explanations for the notes column. When there is a 'H' letter in a row, it means that the measurements of that row are hand written (measured without electronic measuring device). The 'D' letter means that the measurements of that row are done with disassembled measures and the 'X' letter means that the reference values of that row are from some other vehicle (the identification of the vehicle is inside the parenthesis).

Red color in actual and in difference columns means that the measured value is not within point tolerance (compared to reference) and accordingly, green color indicates that the measured value is within the range of tolerance.

Saving the report as a picture file

Measuring report can be saved in picture form, so that it can be sent for example as an email attachment. Saving happens so that mouse pointer is placed over the measuring report, and the mouse's secondary button is clicked while on the report (usually the right side mouse button). After this the software opens a 'Save as' window.



First choose the location where the picture file will be saved and then write the project name in the field "File name:". You can save the picture file either in JPEG (jpg) compressed format or in an uncompressed bit map format (bmp). JPEG format suits better for email attachments for example, because the picture size is much smaller as compressed than as uncompressed. When the location, file name and save format has been chosen, the picture can be saved by clicking on 'Save' button.

Maintenance

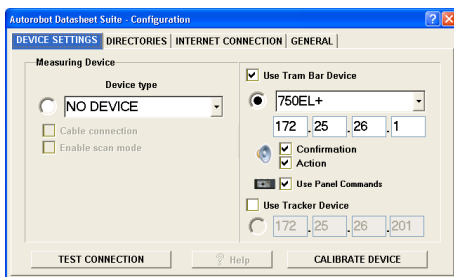
Changing Configuration of the Software



If you want to change the configuration of the software click the **'Settings'** button (tools button) to open the **'Configuration'** window of the Datasheet Suite.

Device Settings

The first sub-page of the configuration is **'Device Settings'**. On this page you can select the model of the measuring device which you are going to use with the software.



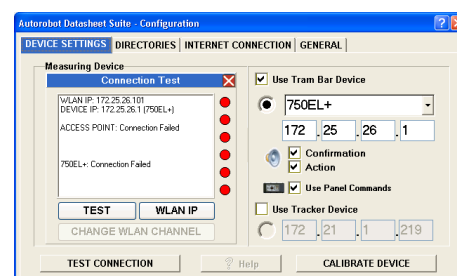
In order to use tram bar functions, you must first enable **"Use Tram Bar Device"** option on the right side (left side of the window is used to select 3D measuring device). After that please choose the tram bar model in the drop down menu. You can check the correct model from the type plate of the device. Chief XDimension communicates by using WLAN connection. To establish connection from computer to the tram bar software needs to know the IP address of the device. In Chief XDimension measuring devices the IP address is represented as 172.25.xxx.yyy, where the first numbers 172.25 are usually unchanged and the rest xxx.yyy are determined based on the serial and device numbers of the device ("xxx" is the production series and "yyy" is the device serial number). For example, if the type plate of the tram bar (type plate is behind the CPU) says "Series 1/5", then the IP address will be 172.25.1.5.

With XDimension it is possible to use audible beep for confirming save/erase/select functions and/or button pressings. Please tick **'Confirmation'** when you want to hear double beep after selected function is confirmed by the software. If confirmation is failed the software will play a long beep for error/missing selection. If you want to hear confirmation for every button press of the XDimension, please tick **'Action'**. Each push of a button is confirmed with a one short beep.

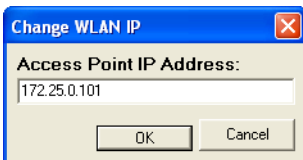
Below the audible beep selections there is a selection to toggle panel commands on/off. This option is used to select if buttons in the operating panel are enabled/disabled. If this selection is ticked all the buttons are enabled and if this selection is not ticked only the 'change mode' and 'save' buttons are enabled. Typically all of the buttons can be enabled, but in case there is interference in the wireless connection (which can cause false commands) all other buttons except 'change mode' and 'save' buttons can be disabled to prevent false commands from the tram bar.

When XDimension is selected (selection next to the tram bar model is ticked), you can use **'Test Connection'** function to see how the connection between computer and device is working. This function can also be used for troubleshooting malfunctions in the connection. To use this function, first please check that you have switched on the measuring device and that the WLAN router/access point is powered. Also make sure that the cables are properly connected or wireless connection to router has been established (see **"Connecting cables"** section). If necessary plug in the charger to the device to make sure that the device will stay on during testing. To start the testing click on 'Test Connection' button.

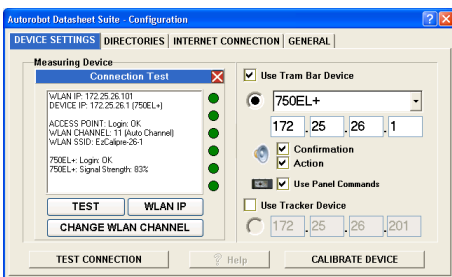
A **'Connection Test'** panel will appear and the software tries to reach first the WLAN Access Point (AP) and then the tram bar device. The IP addresses of the AP and device are shown in top part of the window. The IP Address of the Access Point is determined by the address of the measuring device. The status of the test is showed in 6 status balls on the right side of the window. The 3 topmost balls indicate the connection status to WLAN Access Point in this order: initial connection, login to system and configuration check. The next three balloons indicate the connection status to the tram bar in this order: initial connection, login to system and WLAN signal level check. If any of the 3 topmost balls goes red it means that there are some problems related to WLAN Access Points. If all of the 3 topmost balls are red it means that WLAN Access Point was not found.



If you have customized the settings of the Access Point (especially the factory set IP address), you can change the Access Point IP address to the software by clicking **'WLAN IP'** button. Type in the new Access Point IP address and click **'OK'**.



After changing/checking the IP Address of the Access Point the connection test is run again. Now if all the balls go green the connection to device is working 100%.

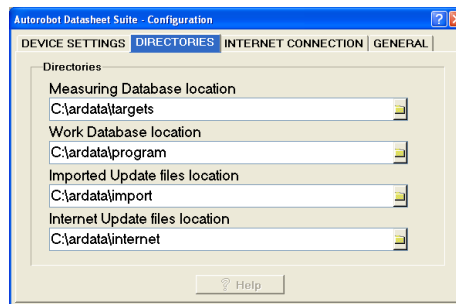


If some of the balls still goes red, the connection is not working 100% and there might occur problems in the actual measuring. If necessary you can repeat the connection test by clicking on **'TEST'** button. In some cases you need to change the channel of the WLAN Access Point manually to find a channel that works best. Channel can be changed with **'CHANGE WLAN CHANNEL'** button. Before changing the channel write down the current channel (to prevent choosing the same channel again). If the current channel is for example 11 try to choose channel 1 and vice versa. If channel is 6 choose either 1 or 11. You can also try to bring the WLAN Access Point out from the PC Cabin (or use external antenna and place it on the cabin) and/or bring the PC Cabin as close to measuring device as possible.

If you are using the standard WLAN Access Point which was supplied with the Chief XDimension device and you have not customized any of the Access Point Settings and you get a full row of red balls (all 6) you should first try to get the connection working between the computer and WLAN Access Point. Please see **"Troubleshooting"** section for more information.

Directories Setting

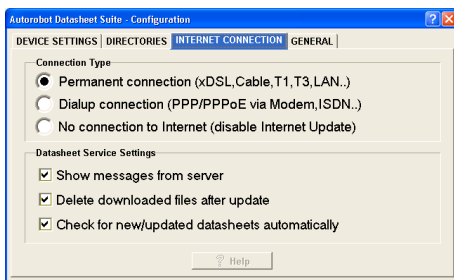
The second sub-page shows the **'Directories'** settings. If you installed the Datasheet Suite software in the default folder suggested by the installation (c:\ardata), the "Measuring Database location" must point to the folder where the measuring database file (arimag.adb) is saved. "Work Database location" must refer to the folder with the project database file (arwork.mdb). "Imported Update files location" and "Internet Update files location" should point to folders where you are entitled write and which have free space available.



NOTICE: There should be no need to change these settings after software is properly installed to the system, so please do not touch these settings unless you are fully aware of what you are doing.

Internet Connection Settings

If you establish Internet connection through phone lines or with a 3G modem select **'Dialup connection'**. If you are connected to LAN (local area network) which has connection to Internet or you use cable modem or ADSL (or other DSL type connection) select **'Permanent connection'**. If your computer does not have connection to Internet or you don't want to use Internet update functions select **'No connection to Internet'**.



After choosing the right connection type, please select **'Datasheet Service Settings'** options according to your preference. If **'Show messages from server'** option is selected the software will inform for example about the software updates when Internet update function is used. If **'Delete downloaded files after update'** options is selected the software will save space from hard drive by deleting unnecessary files after update process. If **'Check for new/updated datasheets automatically'** option is selected the software will automatically download and install all the new/updated datasheets when Internet update function is initiated.

NOTICE: Some of the 'Datasheet Service Settings' options are not available on all connection types.

General Settings

In general settings sub-page you can change your company information and the language of the software. The company information provided here appears for example in the measuring certificates, so make sure you update these settings if some of the information in these fields changes.

PLEASE NOTE! Company name must be entered carefully the same way as you see it written in the Install Key Document supplied to you together with the Autorobot Datasheet Suite CD. If you have some different letters in the company name, the software will not be able to open the datasheet file. The software is not sensitive to spaces or some special characters (like , . - /).



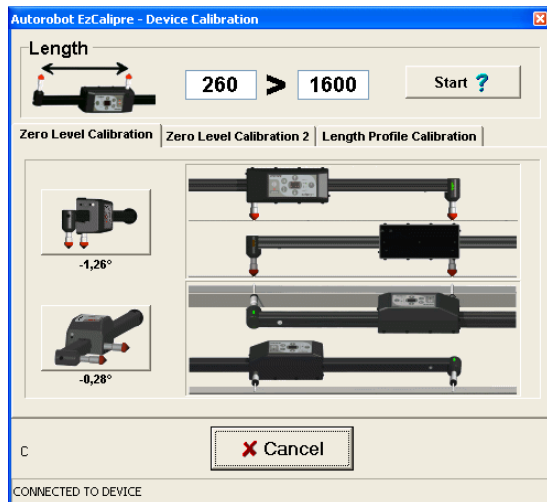
Finish configuration by closing the 'Configuration' window. After you exit the configuration and the computer can communicate with measuring device you should see the battery level in lower left corner of the software window.

Device Calibration

If your measuring device does not seem to be accurate, you can perform a device calibration. With XDimension you may calibrate length reading, vertical and horizontal zero levels and bending of the length profile. Length profile calibration is not covered within this manual, because it requires special equipment.

To be able to perform the device calibration you need to have a connection between the computer and measuring device. The status of the connection is shown in lower left corner of the window (battery status). After you have established a connection between computer and XDimension, start the measuring function. The software is now asking for calibration to vehicle. Calibrate the length only and click **OK** (no need to continue to widthwise angle

calibration). You can either disable the height measuring or use previous calibration for height when asked by the software. Then open software settings and on “**Device Settings**” sub-page click on “**Calibrate Device**” button. Software should now open “**Device Calibration**” window. If window does not appear make sure you still have a connection to XDimension.



Length Calibration

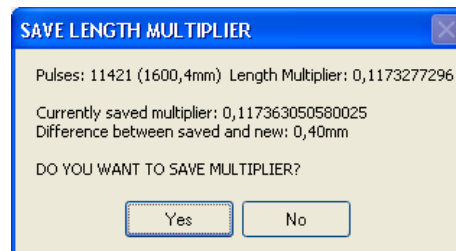
Length calibration function will measure amount of pulses between selected start and end points and calculate multiplier, which is used to calculate distance based on measured pulses. Usually the default multiplier should give accurate results, but in some cases calibration might improve length reading accuracy.

Start length calibration by selecting the start point and end point values. It is recommended to set the points as far as possible without using the length extension. The default settings are suitable for most cases (start length 260 and end length 1600).



After you have set the start and end point values click on ‘Start’. The software then tells you to set the device to start length (move the CPU and confirm length with measuring tape) and click ‘**OK**’ when ready.

After you have started the calibration the software shows the status of calibration in the bottom of the window. If the status tells you ‘wrong direction’ you should move the CPU to other direction or you can abort the calibration by clicking ‘**Abort**’ button. If you are moving the CPU to the right direction the status shows the calculated multiplier and the ‘Abort’ button changes to ‘**Ready**’ button. Move the CPU to selected end length (set length with measuring tape) click ‘**Ready**’.



The software shows the result of the calibration and asks if you want to save the new multiplier. In the results you can also see the previous multiplier and the exact difference in mm in the start and end points calculated with the new and old multipliers. If the calculation of the new multiplier fails click ‘**OK**’ and start over.

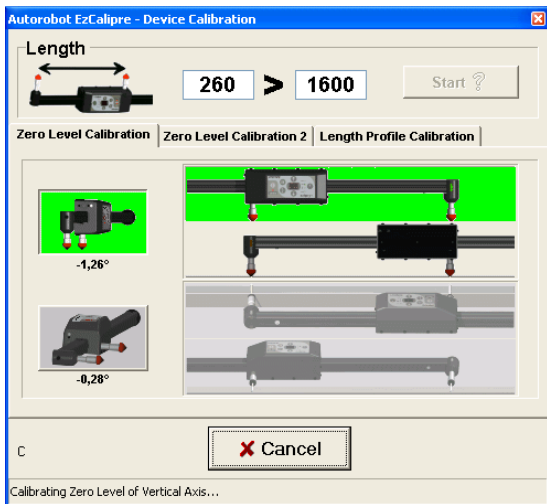
When you have finished calibrating length the button will show ‘**Done**’.

Zero Level Calibration

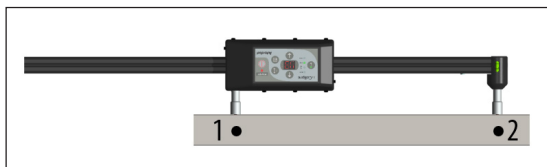
To ensure accuracy in height measuring function it is recommended to perform zero level calibration at least twice a year. In device calibration window (below the length calibration) there are 2-4 functions available for zero level calibration depending on the version of the XDimension. In ‘**Zero Level Calibration**’ sub-page there are 2 functions: vertical (heads pointing down - upperbody mode) and horizontal (panel up direction). In ‘**Zero Level Calibration 2**’ sub-page (if available) there are either 1 or 2 functions: vertical (heads pointing up - underbody mode) and horizontal (panel down direction, if available). All of these calibration functions have 2 steps.

**Vertical Zero Level Calibration
(upperbody or underbody mode)**

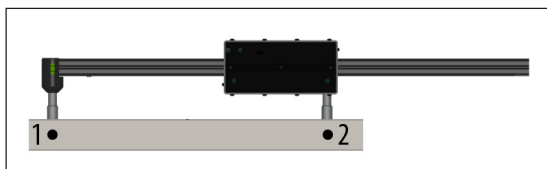
Start calibration by clicking on Vertical Zero Level button on left and that button goes green and also the first step of that phase will turn to green as well.



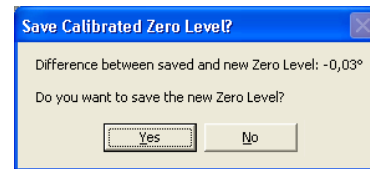
Stable base for calibration is needed, which does not move while doing the calibration. Choose 2 target points from the base with 1000mm distance and if necessary make marks for targets. Place measuring heads (without measuring instruments) to the targets and then press on save button of the XDimension panel.



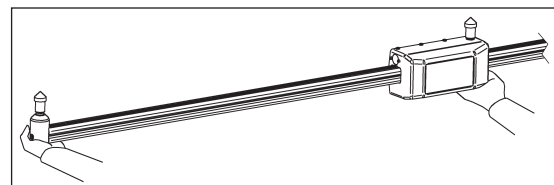
Then turn the device around to same targets changing start point to end point and end point to start point. Press on save button again of the XDimension panel.



Now the software is showing the new zero level compared to the old level. If your results is around 0° degrees you can accept the new zero level by clicking **Yes**. If you have any doubts that the calibration did not go well you may repeat the zero level calibration.



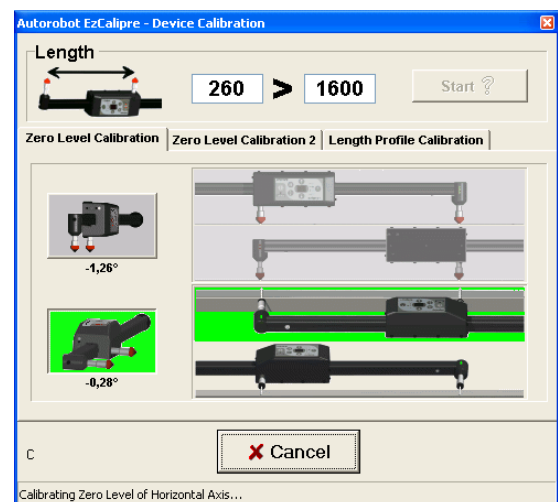
Pictures above showed calibration of zero level in upperbody measuring mode (heads down). Zero level calibration in underbody measuring mode (in **'Zero Level Calibration 2'** sub-page) is performed in same manner except that the measuring heads are pointing up.



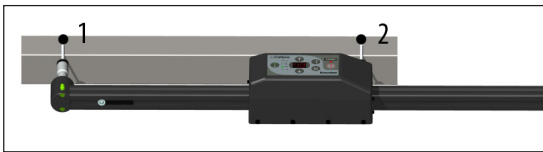
NOTICE: When performing zero level calibration in underbody mode remember to hold the tram bar correctly (see picture above): the tram bar must be supported only under the measuring heads, **DO NOT TOUCH THE LENGTH PROFILE**.

**Horizontal Zero Level Calibration
(panel up or panel down)**

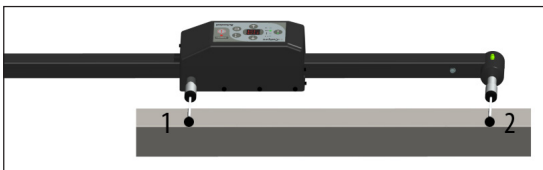
Start calibration by clicking on Horizontal Zero Level button on left and that button goes green and also the first step of that phase will turn to green as well.



Stable base for calibration is needed, which does not move while doing the calibration. The base for horizontal calibration needs to be quite narrow (about 50mm wide or less) so you can get the measuring pins to same location after turning the device around. Choose 2 target points from the base with 1000mm distance and if necessary make marks for targets. Place measuring heads with measuring pins attached to the targets and then press on save button of the XDimension panel.



Then turn the device around to same targets changing start point to end point and end point to start point. Press on save button again of the XDimension panel.



NOTICE: XDimension panel must be facing to same direction (either up or down) until calibration function has been completed.

Now the software is showing the new zero level compared to the old level. If your results is around 0° degrees you can accept the new zero level by clicking **Yes**. If you have any doubts that the calibration did not go well you may repeat the zero level calibration.

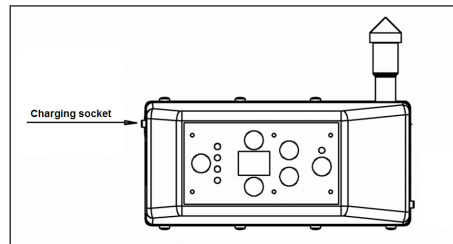
Pictures above showed calibration of zero level in panel up direction. Calibration in panel down direction (in '**Zero Level Calibration 2**' sub-page) is performed in same manner except that the direction of the panel is different.

NOTICE: Panel down horizontal direction is not available with 750EL+ model.

After doing the vertical and horizontal zero level calibrations click on '**DONE**' button to save the results to XDimension CPU. After device calibration close Datasheet Suite software and restart to make sure that the updated zero levels will be in effect.

Charging Chief XDimension batteries

Chief XDimension has Li-Ion battery inside the CPU. The battery is charged with the Li-Ion battery charger that was supplied with the device. To charge the battery, connect the plug from the charger to charging socket of the XDimension.



When battery charger is in charging mode the led indicator of the charger is red and when battery is fully charged the indicator will turn to green. Full charging takes about 3 hours, after which the using time is around 7 hours (depending on battery life/condition). In case the battery is running low during the measuring process you can plug in the charger and continue measuring.

NOTICE: If device is not being used for longer period please make sure that the battery is charged occasionally. If battery is not being charged periodically or if battery is left for storage with less than 10% left of battery level, battery level may drop too low after which it may not revive by charging.

Troubleshooting

Troubleshooting for wireless connection

If the wireless connection between the XDimension measuring device and your computer is not working, these instructions help to study what might be wrong. At least you will be able to locate where the problem is to solve it with help from Chief service personnel. First we shall find out if the problem lies in the tram gauge, in the computer, in your WLAN access point or in their settings.

Checking connection between access point and tram gauge

Checking the connection between the access point and the XDimension tram gauge happens simply so that you put power on both to the access point and to the tram gauge to see if the gauge communicates with access point. Both devices require a little bit of starting time before they can communicate. During start-up time the Power On light is blinking in the tram gauge operating panel and in the WLAN access point wireless connection indicator will turn on after it is ready for communication.

When both devices have gone through the start-up phase, the tram gauge should find the access point. On the side of the XDimension CPU there is a connection indicator (near to beeper), a white circular "window". When CPU is turned on (after start-up time) the connection indicator will either blink or show a continuous yellow light. If there is a continuous yellow light in the indicator, the connection between the measuring system and the access point is working. If the indicator is blinking, this is a sign that the measuring system does not find the access point, i.e. either the access point or the XDimension has lost its settings.

If you do not have a working connection and the connection indicator is blinking please continue three steps further to "**Connection test**" to check if WLAN access point has been reset. If the connection is OK between the measuring system and the access point (indicator shows continuous yellow light), please continue to next step.

Checking device settings in the measuring software

Please check that you have selected the correct model and entered the correct IP address for the tram gauge in Device Settings of Autorobot Datasheet Suite software. In this page make sure you have ticked "**Use Tram Bar Device**" and below that you have selected the correct model from the list (check the model of your tram gauge from the type plate of the CPU).

IP address for XDimension devices is represented in 172.25.xxx.yyy format where the numbers 172.25 are fixed and xxx.yyy corresponds to the serial number of your measuring device (check from type plate). For example if type plate says Serie 1/5 IP address is 172.25.1.5. After checking that there is a correct IP address in software settings, please continue to next step.

Checking connection between access point and computer

Please check that the access point is connected to the computer so that the ethernet cable (supplied with the access point) is plugged in access point LAN port 1,2,3 or 4 (not to WAN port) and the other end of the ethernet cable is connected to the network adapter of your computer. After connecting the ethernet cable, network indicator for the selected port number should light up in the access point (there might be an indicator next to the LAN connector of your computer also).

Alternatively you can establish a wireless connection from computer to access point if your computer has a WLAN adapter. A wireless connection can be created by searching in the list for wireless networks an access point where the identifier (SSID) is EzCalipre-x-y. Here "x" is the production series number and "y" is the device serial number. The access point uses WEP encryption and password is supplied with the unit.

NOTICE: In order to make the access point work correctly with the computer, DHCP client must be activated in your computer's operating system, i.e. there must not exist a manually typed (static) IP address in the network settings.

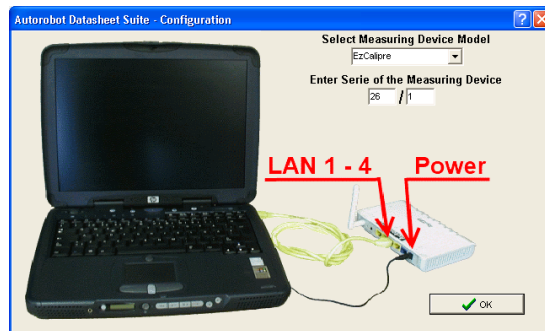
After checking the connection (wired or wireless) between access point and computer, please continue to next step.

Connection test

Use **'Test connection'** function to check if the connection between the computer and measuring device is working. This function can also be used for troubleshooting. Start the connection test by clicking on **'Test connection'** button in Device Settings window of Autorobot Datasheet Suite software.

A **'Connection Test'** panel will appear and the software tries to reach first the WLAN access point (AP) and then the tram bar device. The status of the test is showed in 6 status balls on the right side of the panel. The 3 topmost balls indicate the connection status to WLAN Access Point in this order: initial connection, login to system and configuration check. The next three balloons indicate the connection status to the tram bar in this order: initial connection, login to system and WLAN signal level check. If any of the 3 topmost balls goes red it means that there is some problems related to WLAN Access Points. If all of the 3 topmost balls are red it means that WLAN Access Point was not found. Green balls means that the test was completed successfully.

If test was completed with result of 6 red balls (connection to access point and to device failed), the software will check if it can find an unconfigured (reset) WLAN access point connected to computer and if it finds one the software will ask if you wish to perform programming for the WLAN access point to be used with XDimension. If you want to proceed with programming click **'Yes'** and follow the instructions on screen.



Before starting the programming check that the SERIE of the CPU is correct (compare the numbers on the screen to the type plate of the CPU) and click **'OK'** to proceed with the programming. After programming has finished **'Test connection'** function will be repeated automatically. If test result is still 6 red balls you may repeat the test manually. If three of the topmost balls turn to green, please go back to section **"Checking connection between access point and tram gauge"**.

If connection to measuring device still fails, please contact your Chief distributor. To speed up the troubleshooting, please identify which procedures you have already tried.

Troubleshooting for install key / serial number

If you get the following message "Invalid Serial Number or Database file not found! Database functions locked" it means that the measuring database could not be opened. The most common reason for this message to appear is that either Install key (serial number) or the company name has been entered incorrectly to the software. Please check the entered company name in software settings / general page. The company name must be typed in exactly as shown in the install key document, which was delivered by your Chief distributor. If you still receive the same message after checking the company name click **'OK'** and re-enter the install key. Make sure that you type in the install key exactly as shown in the install key / serial number document. If you still receive the same message, please re-install the software and if it does not help contact your Chief distributor. To speed up the troubleshooting, please identify which procedures you have already tried.

Troubleshooting for measuring accuracy

When points are measured with XDimension 2 measuring points from datasheet are used to get the distance and height readings. Each point has typically tolerance of $\pm 3\text{mm}$ and when using 2 points it can be even double. For this reason a 5mm tolerance has been set as default for tram gauge measuring in the Autorobot Datasheet Suite software, instead of the 3mm standard which is in use with the full size measuring systems. In most of the cases it is possible to use 3mm tolerance. If you suspect that there is something wrong with measuring accuracy, please see the following steps.

The most common reasons for measuring inaccuracy are:

- User has selected wrong vehicle model. Solution: make sure that the vehicle type, year and model matches the measured vehicle.
- User has chosen wrong point number in measuring software. Solution: check the selected point numbers and their targets carefully.
- Measuring heads are placed to wrong targets. Solution: use measuring photos to check the position of target.
- There is inconsistency between the selected (in software) and used (actual) height extensions. Solution: make sure that you update the height extension selection in the software after you change the combination of height extensions in the tram bar.
- Height rod or measuring instrument is only partially inserted. Solution: make sure all height rods/extensions and instruments are properly fastened.

If you are unable to solve measuring accuracy problems, please contact your Chief distributor. To speed up the troubleshooting, please identify which procedures you have already tried.

Troubleshooting length/distance accuracy

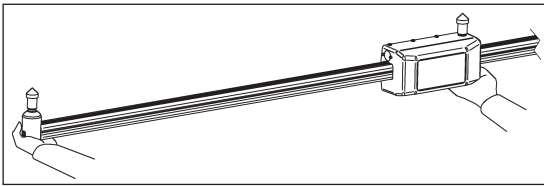
After calibration to vehicle you can see the actual reading of the distance between measuring heads. If you suspect that this reading is not accurate, you may compare the reading on the screen to for example to reading of the tape measure. Typically if distance reading is not accurate it is caused by dirt in the tooth belt and when CPU is slided back and forth (from one end to another) the inaccuracy will typically increase, because the error is multiplied. Here are some guidelines how to check length / distance accuracy:

1. Check the accuracy of the calibration length (260mm) with the following procedures. Slide the CPU all the way as close to the stationary measuring head as possible (to the calibration length). Remove all extra height extensions and leave only the 50mm height rods. Put measuring pins to both measuring rod. Use the locking plate of the length profile to check if the calibration length is accurate. In locking plate there are holes and the distance between the holes in both ends is exactly 260mm. If tips of the measuring pins have the same distance as the holes in the locking plate, then the calibration length is OK. If it is not OK, then use tape measure to check what is the distance of the tips and use that as calibration length. The calibration length can be changed while performing "Length calibration" by typing the new distance to "Calibrate to length" field.
2. Check if the accuracy error will increase when CPU is slided back and forth (from one end to another). First calibrate the length to 260mm as instructed in "Calibrating XDimension to the vehicle on site" section (see length calibration, you may skip the height calibration). Then move CPU back and forth (from one end to another) at least 5 times and finally slide the CPU back to calibration positions (260mm). Now check from the screen if the actual distance is still showing 260mm. If not, please check the tooth belt for any damages/dirt.

3. If the two previous steps showed to be OK, then the final step is to check the distance reading. Move the movable measuring head to the other end of the profile (away from the stationary head). Use small apices or measuring pins on both measuring heads. Check the distance of the measuring heads with tape measure and compare the reading to actual reading on the screen. If there is a noticeable difference, please perform length calibration as instructed under device calibration section.

Troubleshooting height accuracy

There are many factors that affect the height measuring accuracy. With XDimension measuring device it is very important to hold the device correctly.



The weight of the device must be supported only under the measuring heads. You should not touch the length profile while measuring. If tram gauge is not supported correctly during the calibration, the height reading may be inaccurate in most of the measuring targets.

Another important factor in height measuring accuracy is the distance between the points, that are used in calibration. The general rule is that you should not exceed the distance of the points used in widthwise/lengthwise angle calibration by more than 1.5x distance. For example if you perform lengthwise angle calibration with distance of 1000mm, you should not exceed distance between points more than 1500mm in lengthwise direction or otherwise the height may be inaccurate.

There is no easy way to test the accuracy of height measuring. To ensure height accuracy please perform the zero level calibration regularly (for example every 6 months, as recommended).

Accessories

Tracker (300EL+4)

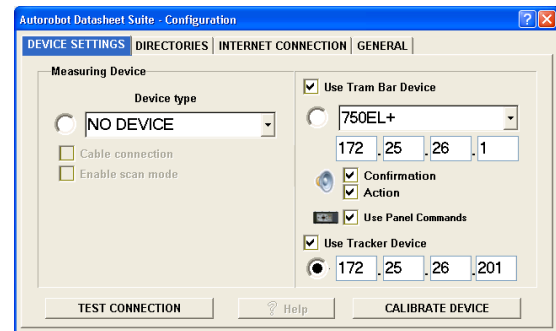


Tracker is designed to be used with XDimension for tracking the inclination changes of the vehicle during the measuring process. Tracker uses also wireless WLAN technique to communicate with measuring computer and it reports all the changes in vehicle inclination after XDimension has been calibrated to the vehicle. If inclination of the vehicle is changed, measuring software will change the calibration of the XDimension accordingly. When Tracker device is used with XDimension, vehicle can be raised or lowered on a lift or on a bench during the damage estimation or body repair work. With Tracker unit it is possible to measure the whole vehicle including body, chassis and side structures using one and the same calibration of the XDimension tram gauge.

Configuration

Start the Autorobot Datasheet Suite measuring software and go to Software settings. Select **“Use Tracker Device”** option and then if necessary fill in the IP Address of the Tracker device. If you have bought the Tracker device with XDimension measuring device Tracker is programmed to use the same WLAN access point with XDimension and in that case the IP Address for Tracker is generated automatically by the software. If you have bought Tracker device after XDimension, you need to fill in the IP Address manually for Tracker device.

IP Address for the Tracker is 172.25.X.Y, where X is the serie number of the unit and Y is the device number of the unit. For example if Tracker type plate has SERIE line 0-35, then the IP Address of the unit is 172.25.0.35. After you have determined the correct IP Address of the device, please fill it in as shown in the picture below.



You can use “Connection test” function just like with XDimension to check / troubleshoot connection between computer and Tracker. Before clicking on **“Test Connection”** button activate the balloon next to Tracker IP Address.

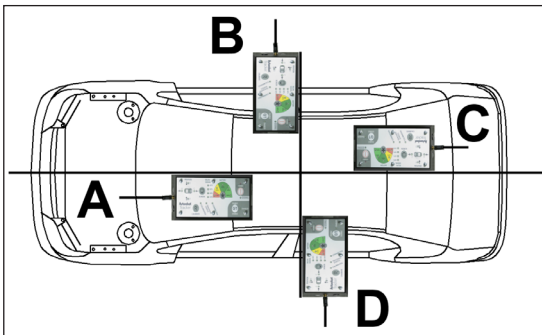
In case Tracker was bought separately and it was supplied with additional WLAN router, you must connect the new router to existing XDimension router. Use the Ethernet cable, which was supplied with the router, to connect existing router to new router. Connect one end of the Ethernet cable to LAN connector 1,2,3 or 4 of the existing router and the other end of the cable to LAN connector 1,2,3 or 4 of the new router. Also plug in and connect the power adapter to the new WLAN router.

Setting up

Push the power button of the Tracker to turn it on. If cables are correctly connected (see configuration) and measuring software is running, you should get connection to Tracker within 1 minute. You can see status of the connection and battery in the bottom right corner of the measuring window.

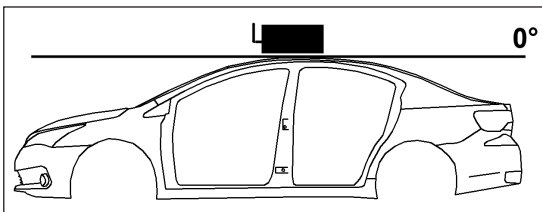
Tracker must be positioned to a place where it can follow the movement of the vehicle. Good alternative is to place Tracker on the roof of the vehicle and in that case it is recommended to use a stand for Tracker (accessory 300EL+5) with magnets. Main thing in finding a good place for Tracker is that it should stay stationary in/on the vehicle even if vehicle moves and/or inclination of the vehicle is changed.

To get the best accuracy for Tracker, it should be aligned with vehicle's center line: either parallel with center line or in 90° angle from center line (see picture below). Following this rule there are 4 different ways how to position the Tracker: positions A, B, C and D (notice the direction of antenna in each position). The corresponding position must be chosen by using position button in the Tracker panel or from the computer (in XDimension calibration window or in Tracker status window).



To get Tracker aligned with the center line you can for example go to the left or right side of the vehicle and then look over the roof and then compare the virtual "line" between B pillars to Tracker's side line and adjust the position of the Tracker to be parallel with it.

The initial inclination (both pitch and roll) of the Tracker should be near to zero level before calibration (see picture below). If Tracker is used with a stand (300EL+5), use the height adjusting screw of the stand to adjust the inclination to near 0° angle.



Calibration of Tracker to Vehicle

When Tracker is used with XDimension, there are two ways how to calibrate Tracker to vehicle: calibrate Tracker separately before XDimension is calibrated or calibrate Tracker during XDimension calibration. After Tracker has been calibrated to vehicle, you should not move the Tracker or otherwise the calibration is no longer accurate and then both the Tracker and the XDimension must be recalibrated.

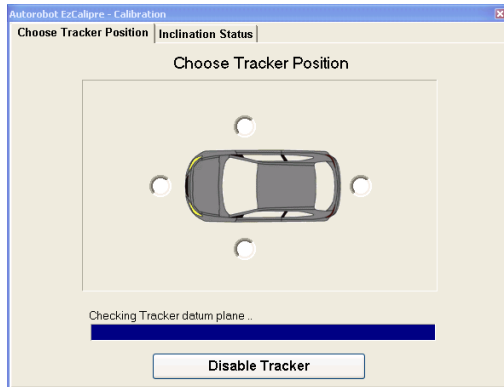
Before proceeding make sure Tracker is turned on and it has a connection with computer (status indicator shows battery and wireless status in measuring software and Tracker panel has some LEDs turned on).

Calibrating Tracker separately

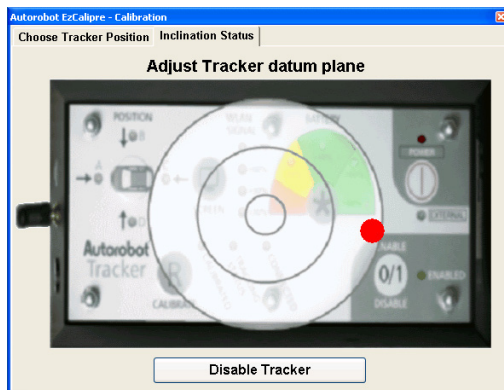
Place the Tracker to position in/on the vehicle as instructed earlier and select the corresponding position (A,B,C or D) by using the "Position" button in Tracker panel. After the correct position has been selected and Tracker is stationary in/on the vehicle push the "Calibrate" button in Tracker panel. After a short while "Calibrated" LED should turn on which indicates, that the device has been calibrated.

Calibrating Tracker along with XDimension

If Tracker has not been calibrated before XDimension calibration is initiated, measuring software will ask to select the position of the Tracker before proceeding to actual calibration of XDimension.



After Tracker position has been selected, measuring software will check the inclination status of the Tracker (initial inclination). If initial inclination is out of tolerance software will show "Inclination status" sub-page in Calibration window.

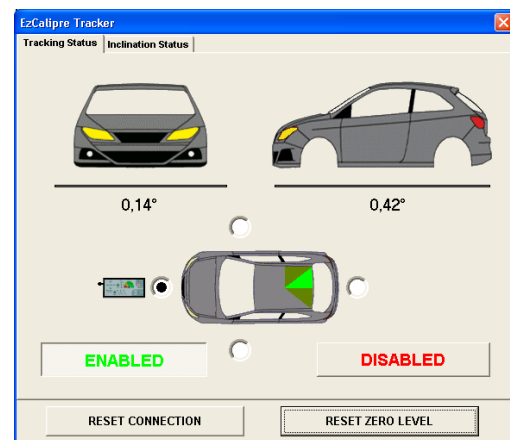


Adjust the datum plane according to picture, so that the indicator will move to center of circles (indicator turns green) and then click "OK" button. If initial inclination was OK, software will not show the mentioned sub-page.

After these steps the calibration is performed normally and after calibration has finished the Tracker has calibrated itself to current position.

Checking the Tracking Status

To check the status of the Tracker and/or inclination you can open status window by double clicking on the Tracker icon on bottom right corner or by pushing the "Screen" button in the Tracker operating panel. The status window has 2 sub-pages: Tracking status and Inclination status. Tracking status (see below) shows the changes in pitch and roll after calibration and also the selected position. Inclination status shows the current pitch and roll compared to zero level.



To close the Tracker status window push the "Screen" button again in the Tracker operating panel or close the window from the computer.

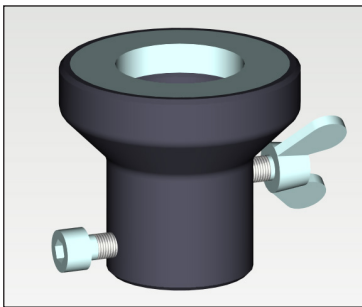
Measuring with Tracker

After Tracker has been calibrated and enabled you will not notice any difference to normal measuring with XDimension. The Tracker device will adjust the calibration of the XDimension automatically according to the changes of inclination. If Vehicle is too much inclined either in widthwise or lengthwise direction the software will show message: "Tracker inclination out of range, height measures may be inaccurate!" and height readings in the software will change to red color. To rectify this situation please check the inclination status and fix the inclination of the vehicle based on the position of the indicator in "Inclination Status" window. If that is not possible reposition the Tracker and recalibrate XDimension after that.

Magnetic holder for XDimension (300EL+M)

Magnetic holder is used with XDimension to help measuring tasks in underbody. Magnetic holder can be used with small apex and measuring cups up to size 24.

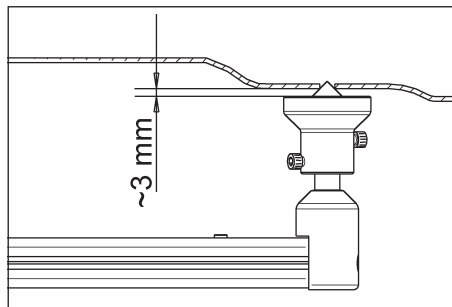
NOTE: XDimension 750EL+ model includes 1pcs of magnetic holder. For 730EL+ and 730EL+S models this can be bought separately.



Holder is placed to either start point (stationary measuring head) or to end point (movable measuring head) or to both (if you have 2 holders). Loosen the screws in magnetic holder to be able to slide holder to the height rod (remove the measuring instrument first if necessary).

WARNING: The type of the magnet is classified as a super magnet. Magnet could affect the functioning of pacemakers and implanted heart defibrillators. A pacemaker could switch into test mode and cause illness. Pacemakers and defibrillators can be sensitive to strong magnetic fields. If you or someone near to the working site has a pacemaker or defibrillator, or has health issues which require that you wear electronics of any sort, avoid using the magnetic holder completely!

WARNING: Always keep magnet away from credit cards, wind-up watches and laptop harddrives.



Magnetic holder must be locked to correct height with the locking screws. There should be approx. 2-3mm gap between the magnet and the chassis of the vehicle. First tighten the upper screw and then the lower screw. Test the height by placing the measuring instrument to the target and see that there is enough gap between the chassis and the magnet.

NOTICE: If magnet is attached to the chassis without any gap, the height reading may not be accurate.

When you do not need the magnet, please put a protective cap on it (if supplied with the magnet) or place the magnet to the cabinet/case (if supplied with the device) to prevent metal dirt from attaching to the magnet.