

STEERING LAB .  V2

# USER MANUAL

2021

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# ABOUT

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## INTRODUCTION

The Steering Lab V2 device is a device that can be used in the repair of vehicles' electrical steering systems. With the device itself, its modules and software, it is possible to simulate the electrical steering system of the supported vehicles, see the errors, if any, and detect and repair parts that do not work.

Steering Lab V2 can perform transactions with data stores (EEPROM) on electronic cards used in steering systems, read the data of the communication protocol between the electronic control system (ECU) in the vehicle and this card, and can view operational errors and fix errors by performing transactions on these data. The electronic cards of the pumps used in steering systems can simulate driving the electric motor and show whether the mosfets on the card are working correctly. In addition, if the torque sensor in the steering system is out of calibration, it can guide the user to calibrate the sensor and perform the calibration correctly. In addition, to be able to simulate the vehicle, it can be connected directly to the steering system with the help of OBD2 socket, ignition starting and so on. It can test the steering system by simulating commands.

During this process, it reaches its maximum working power. Steering Lab. When using the V2 device and its modules, it should not be forgotten that the minimum 12V voltage value and maximum 40A ampere value can be seen on the device, and it should be used by taking the necessary precautions. Otherwise, Hobitek Technology Services and its employees are not responsible for any damages or losses.

The authorized service of Steering Lab V2 device and modules is only and only Hobitek Technology Services LTD. ŞTİ. provided by. If you encounter the opposite, please inform the company authorities..

# ABOUT

## **Usage requirements for the Steering Lab. V2 instrument:**

- In order to use the device without problems, a computer with the following minimum specifications is required;
- Windows 10 and above operating system (64 bit)
- Minimum 7th generation Intel Core i5 processor or a similar processor,
- 4 GB RAM minimum,
- A video card with a minimum of 2 GB of memory,
- A monitor with a minimum 720p resolution,
- Minimum 500 MB of storage

Users of Steering Lab. V2 device and modules have the right to repair and / or replace free of charge, if the product is found to be defective in accordance with the third part, first part and article 11 of the Law on the Protection of the Consumer, as the product is covered by the warranty. The defectiveness of the goods sent back or objected by the customer will be determined after the damage and defect determination process. All expenses related to the defective goods belong to Hobitek Technology Services. If the product is not covered by the warranty and there is no defective product, all costs incurred in the repair and shipment of the device belong to the user.

- \* Products for which a warranty certificate or invoice cannot be submitted,
- \* If the current wear condition of the product is not compatible with the invoice date, it is determined that the invoice was issued later. situations,
- \* Malfunctions in the product as a result of not following the user manual,
- \* Defects caused by modifications or additions to the product,

# ABOUT

- \* Malfunctions caused by persons other than authorized services opening the product, intervening and using non-original spare parts,
- \* Parts depending on usage or completing their natural life (transistors, relays, capacitors, connectors etc.),
- \* Malfunctions in accessories and other parts for improper use, excessive force, insufficient maintenance or protection ( housings, collets, chucks, hoses, couplings, nipples etc.),
- \* Abnormal environmental conditions and use in unsuitable operating conditions, malfunctions caused by the use of dust, burr, liquid in the product without cleaning even though it is not cleaned,
- \* Damages and failures caused by the use of non-original or worn, dull, accessories,
- \* Malfunctions caused by incorrect product selection (Use of fasteners different from the package content etc.),
- \* Malfunctions and damages caused by transportation, unloading, loading, external physical (broken, cracked, scratched, crushed, etc.) and chemical factors after the delivery of the product,
- \* Failures caused by fire, lightning strikes, freezing and natural disasters,
- \* Defects and damages resulting from war, terrorism, demonstrations and actions,

**NOT COVERED BY WARRANTY.**



# ABOUT

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## EXPLANATIONS IN THE MANUAL

- In this manual, terms such as Windows 10 refer to Microsoft's product called Windows 10 operating system.
- The term EEPROM means electronically erased programmable read-only memory.
- Terms like 12V mean voltage values, 40A etc. terms refer to current values.
- The term EPS (Electronic Power Steering) refers to the electronic steering system.
- The term EHPS (Electric-Hydraulic Power Steering) refers to the electric-hydraulic steering system.
- The term PWM (Pulse Width Modulation) refers to the square wave signal.
- The term CAN-BUS refers to the communication protocol CAN-BUS line.
- The term K-Line refers to the communication protocol K-Line line.
- The term MCU is short for Micro Controller Unit.
- The term SMS means phone text message.
- The term Google Map URL refers to the URL anchor link to be directed to the Google maps service.
- The term URL is a syntax suitable for a standard format that strikes a resource on the Internet

# INSTRUCTIONS

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## SAFETY INSTRUCTIONS

Follow these instructions to use the product safely. Keep this manual for future reference. Also, take care to use the device by following all symbols and instructions indicated on the device.

- Use only the connecting cables and fasteners provided in the package and do not use them with other equipment. Use of cables and connectors other than the package contents with this device may result in electric shock to the user.
- Make sure that your power supply to be used complies with the local safety standard.
- Never disassemble, alter or attempt to repair the power cord, connectors, sockets, modules and pins, unless specifically stated in the instruction manual.
- If the power cable is damaged, water penetrates into the device or modules, the device and modules are hit and the case is damaged, if the device does not operate normally or its operation is different from the past, turn off the power of the device and contact the authorized service immediately.
- Place the power unit of the device in a socket where the plug can be easily removed.
- Do not place or store the device near excessive dirt or dust, water, heat sources, or in locations subject to shock, vibration, high temperature or humidity.
- Be careful not to spill liquid on the device or use it with wet hands.
- Keep the printer at least 30 centimeters away from pacemakers and similar electronic health devices. Radio waves that provide the internet connection of the device may damage these devices.

# INSTRUCTIONS

## SUGGESTIONS AND WARNINGS REGARDING THE STEERING LAB. V2 DEVICE

### 1) ABOUT INSTALLATION / USAGE

In order to use the Steering Lab. V2 device, software of the same name is required. You can download this software from Windows 10 operating system, Microsoft store. After you find the software in the store, if you click the download button, you can accept the necessary terms of use and start downloading the installation file of the software.

After downloading the installation file of the software, you can install the software by right-clicking on the file, clicking run as administrator and opening the file. While installing the software, read and accept the license agreement and clarification text. Otherwise, you cannot install the software. Also, while installing the software, the setup file will ask you to access certain privileges (Find location, etc.). These requested authorizations are for the security of the device and the user.

To facilitate the use of the device and software, the manufacturer has included training videos, documents and technical documents in the software. It is sufficient to have an internet connection to access these training files and fully use the device. If your internet connection is at the same speed and quality, it will be easier for you to access videos and documentation.

In the use of the device, follow the training videos where necessary and do not do anything other than the instructions in the videos. Otherwise, Hobitek Technology Services is not responsible for any damages and expenses incurred.

# INSTRUCTIONS

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## SUGGESTIONS AND WARNINGS REGARDING THE STEERING LAB. V2 DEVICE

### 2) SUGGESTIONS AND WARNINGS

To avoid damaging the Steering Lab. V2, your computer and the steering system to be repaired, read and follow the instructions below. Keep this manual for future reference.

- Do not block or cover the air / cooling holes on the device and modules.
- Only use power supplies of the type specified by the manufacturer in the manner specified by the manufacturer.
- Do not connect it to the same outlet, line or power supply as devices that are regularly switched on and off and that consume high power.
- Do not use the device with electrical sockets controlled by wall buttons or automatic timers.
- Keep the entire electronic system of the Steering Lab V2 device and its modules away from sources that may cause electromagnetic interference, such as speakers or sockets of cordless phones.
- Electrical cables should be placed in such a way that there is no friction, cut, wear, damage, bending and knotting. Do not place any objects on the cables and do not step on the cables. Make sure that the cable is properly placed, especially at the input and output parts of the power supply.
- If you use extension cords with the power supply of the device, make sure that the total ampere value of the devices connected to the extension cord will not exceed the maximum ampere and voltage value of the extension cord and the socket it is connected to.

# INSTRUCTIONS

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## SUGGESTIONS AND WARNINGS REGARDING THE STEERING LAB. V2 DEVICE

- Make sure that the device and the computer, the device and the steering system, the device and the modules and the cards to be connected to the modules, connection directions and shapes are correct. Incorrect connection can damage both connecting elements. Hobitek Technology Services is not responsible for any damage caused by an unspecified connection.
- In case of connecting the EEPROM socket on the device, follow the connection instructions shown in the software exactly. Otherwise, you may damage the EEPROM IC.
- When using the device, do not choose places with sudden changes in temperature and humidity. Also, keep the printer away from direct sunlight or strong light sources of light or heat.
- Do not insert any objects into the gaps in the device.
- While the device is in operation, do not place the device on, near or under devices with high power or magnetic power.
- When you disconnect the device from the computer, disconnect it with the Safe exit from computer option every time. This will prevent data communication failures that may occur.
- When connecting to steering systems, always follow the instructions shown in the software, connect the appropriate vehicle plug cables to the appropriate steering systems. Otherwise, you may damage the steering systems or the device.
- If you are not going to use the device for a long time, disconnect the power cables from the power unit and the device and store the device in its bag.

# INSTRUCTIONS

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## WIRELESS USE INSTRUCTIONS

### 1) RECOMMENDATIONS AND WARNINGS FOR USE WITH WIRELESS CONNECTION

- Radio waves from the Steering Lab. V2 can disrupt the operation of medical devices, causing malfunctions. When using the device inside medical facilities or near medical devices, follow the instructions of the relevant personnel of the medical facility and the instructions of the manufacturer of the devices. Also, comply with all relevant warnings and regulations regarding medical devices.
- Radio waves from the Steering Lab. V2 can adversely affect the operation of automatically controlled devices such as automatic doors or fire alarms and may cause accidents due to malfunction. When using this device near automatically controlled devices, follow all warnings and instructions on the relevant devices.
- Radio waves from the Steering Lab. V2 device may adversely affect the proper functioning of externally connected devices or implanted devices that are used to measure signals such as a pacemaker, oxygen level meter, electromyogram (EMG) and similar signals used in various treatments in the body. It is recommended that users with such implanted and externally connected healthcare and treatment devices do not use the device. If used, it must be used at least 30 centimeters from the implanted device or externally connected device.

# INSTRUCTIONS

## PROTECTION OF PERSONAL INFORMATION

Hobitek Technology Services is responsible for the security of your personal data through Steering Lab V2 product. The personal data required to use the Steering Lab V2 device and software are contact information, location information, customer transaction information, transaction security information and financial information. You can find out why this information is requested in the explanations below.

- **ID information:** Execution of User Access Authorities, Execution of Activities in Compliance with the Legislation, Execution of Finance and Accounting Affairs, Execution / Control of Business Activities, Execution of Business Continuity Activities, Execution of Logistics Activities, Execution of Goods / Service Purchase Processes, Execution of Goods / Service After Sales Support Services , Execution of Goods / Service Sales Processes, Execution of Customer Relationship Management Processes, Execution of Custody and Archive Activities, Informing Authorized Persons, Institutions and Organizations
- **Contact information:** Execution of Emergency Management Processes, Execution of Activities in Compliance with the Legislation, Execution of Finance and Accounting Affairs, Execution of Communication Activities, Execution / Supervision of Business Activities, Execution of Logistics Activities, Execution of Goods / Services Purchasing Processes, Execution of Goods / Services After-Sales Support Services, Execution of Goods / Service Sales Processes, Execution of Customer Relationship Management Processes, Execution of Storage and Archive Activities, Providing Information to Authorized Persons, Institutions and Organizations

# INSTRUCTIONS

## PROTECTION OF PERSONAL INFORMATION

- **Location Information:** Execution of Emergency Management Processes, Execution of Goods / Service After Sales Support Services, Execution of Custody and Archive Activities, Execution of Contract Processes, Ensuring Security of Movable Goods and Resources, Providing Information to Authorized Persons, Institutions and Organizations
- **Customer Transaction Information:** Execution of Activities in Compliance with the Legislation, Execution of Finance and Accounting Affairs, Execution of Business Continuity Activities, Execution of Logistics Activities, Execution of Goods / Service Purchase Processes, Execution of Goods / Service Sales Processes, Execution of Storage and Archive Activities, Execution of Contract Processes, Authorized Person, Institution And Informing Organizations
- **Transaction Security Information:** Execution of Emergency Management Processes, Execution of Information Security Processes, Execution of Access Authorizations, Execution / Control of Business Activities, Execution of Business Continuity Activities, Execution of Goods / Services After-Sales Support Services, Execution of Storage and Archive Activities, Authorized Persons, Institutions and Organizations Giving Information
- **Financial Information:** Execution of Activities in Compliance with the Legislation, Execution of Finance and Accounting Affairs, Execution of Storage and Archive Activities, Execution of Remuneration Policy, Providing Information to Authorized Persons, Institutions and Organizations



# BASICS OF STEERING LAB

## V2

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### PAKET İÇERİĞİ

- Steering Lab. V2 Device
- EHPS / Card Test Module 1 (for Opel, Ford etc.)
- EHPS / Card Test Module 2 (for Volkswagen, Volvo etc.)
- Torque Sensor Socket Module
- EEPROM Integrated Socket Module
- Temperature Sensor
- Steering Lab. V2 Master Connection Cable
- 16 Pieces Steering Pump Connection Cables
- Vehicle Connection Cable (ODB2)
- Battery Connection Cables and Clips
- Bosch C3 Battery Charger
- User Manual
- Specification
- Warranty Certificate

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## PART NAMES AND FUNCTIONS

### 1) STEERING LAB. V2 MAIN DEVICE

The Steering Lab. V2 main device contains the main elements for the repair and simulation of steering boxes. It has a processor integrated with the desktop software and is connected to and used by the desktop software via a USB type connection.

# BASICS OF STEERING LAB V2

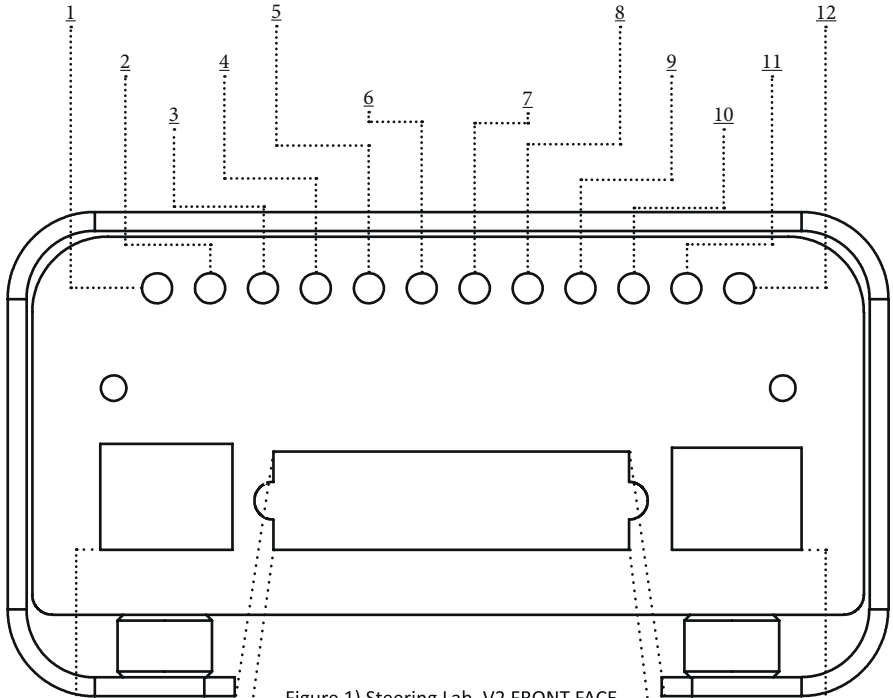


Figure 1) Steering Lab. V2 FRONT FACE

EPS Electronic card module connection. The board will be connected to the test module with an RJ50 type socket.

Torque and angle sensor socket module connection. It will be connected to the sensor socket module with RJ45 type socket.

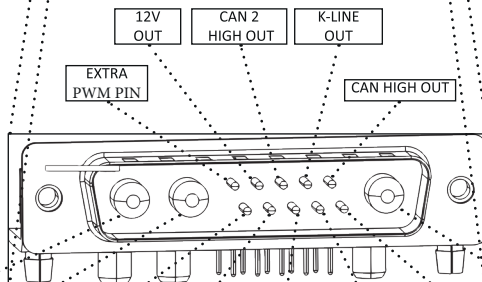


Figure 2) Steering Lab V2 Main Socket

- EPS + OUT
- EPS - OUT
- 3.3V OUT
- 5V OUT
- CAN 2 LOW OUT
- RPM OUT
- CAN LOW OUT
- IGNITION POWER OUTPUT

# BASICS OF STEERING LAB

## V2

### STEERING LAB. V2 LED INFORMATION

1. EEPROM STATUS LIGHT: THE LIGHT WILL BE ON WHEN THE EEPROM CONNECTION IS PROVIDED.
2. CAN-BUS STATUS LIGHT: THE LIGHT WILL ON WHEN THE CAN-BUS COMMUNICATION LINE IS ACTIVE
3. COMPUTER STATUS LIGHT: THE LIGHT WILL BE ON WHEN THE STEERING LAB. V2 DEVICE IS CONNECTED TO A COMPUTER.
4. SENSOR STATUS LIGHT: THE LIGHT WILL ON WHEN THE TORQUE SENSOR IS CONNECTED.
5. 3.3 V POWER LIGHT: IF 3.3V IS INSIDE THE DEVICE, THE LIGHT WILL BE ON.
6. 5 V POWER LIGHT: IF 5V VALUE IS INSIDE THE DEVICE, THE LIGHT WILL BE ON.
7. MAIN POWER LIGHT: THE LIGHT WILL BE ON IF THE DEVICE IS AVAILABLE. (12-16 VOLT)
8. SHORT CIRCUIT LIGHT: IF THE DEVICE PERCEIVES SHORT CIRCUIT, THE LIGHT WILL BE ON.
9. EPS + RELAY LIGHT: THE LIGHT WILL ON WHEN THE EPS+ RELAY IS ACTIVE
10. EPS - RELAY LIGHT: THE LIGHT WILL BE ON WHEN THE EPS- RELAY IS ACTIVE
11. IGNITION LIGHT: THE LIGHT WILL ON WHEN THE IGNITION RELAY IS ACTIVE.
12. PGANG INFORMATION LIGHT: THE LIGHT WILL BE ON WHEN USB COMMUNICATION IS ACTIVE.

# BASICS OF STEERING LAB V2

## V2

**KENSINGTON LOCK SECTION WITH THIS PART, STEERING LAB V2 DEVICE CAN BE LOCKED TO LAPTOPS ETC. DEVICES**

**FEMALE OBD SOCKET**  
STEERING LAB V2 DEVICE CONNECTED TO VEHICLES VIA THIS SOCKET

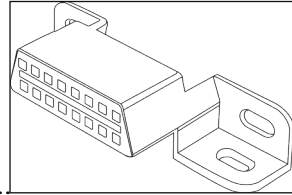


Figure 3) OBD Socket (Isometric)

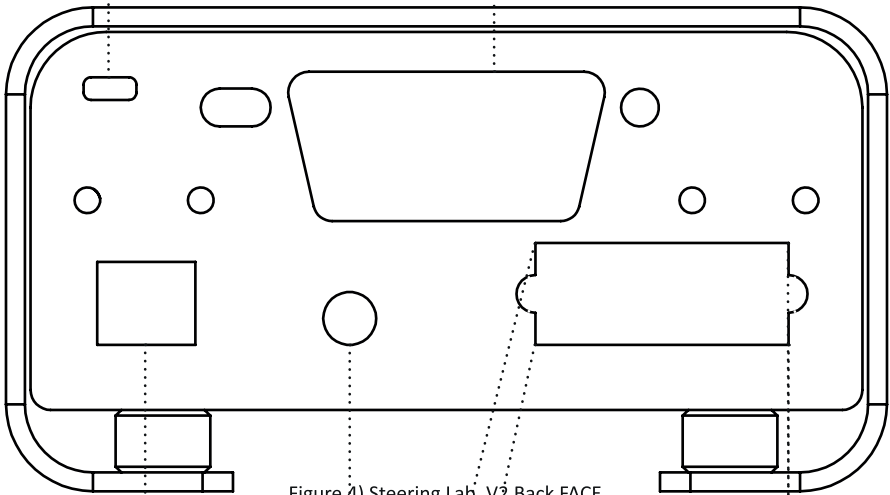


Figure 4) Steering Lab. V2 Back FACE

**USB CONNECTION**  
THE STEERING LAB V2 DEVICE IS CONNECTED TO THE COMPUTER THROUGH THIS SOCKET

**TEMPERATURE SENSOR JACK CONNECTION**  
STEERING LAB V2 CAN MEASURE TEMPERATURE WITH THIS CONNECTION

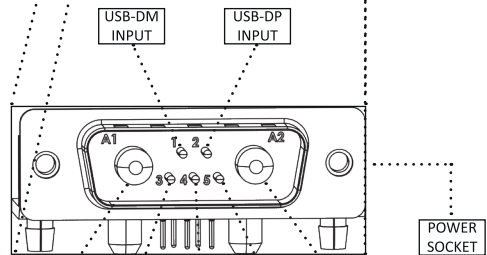


Figure-5) Steering Lab. V2 POWER SOCKET



# BASICS OF STEERING LAB V2

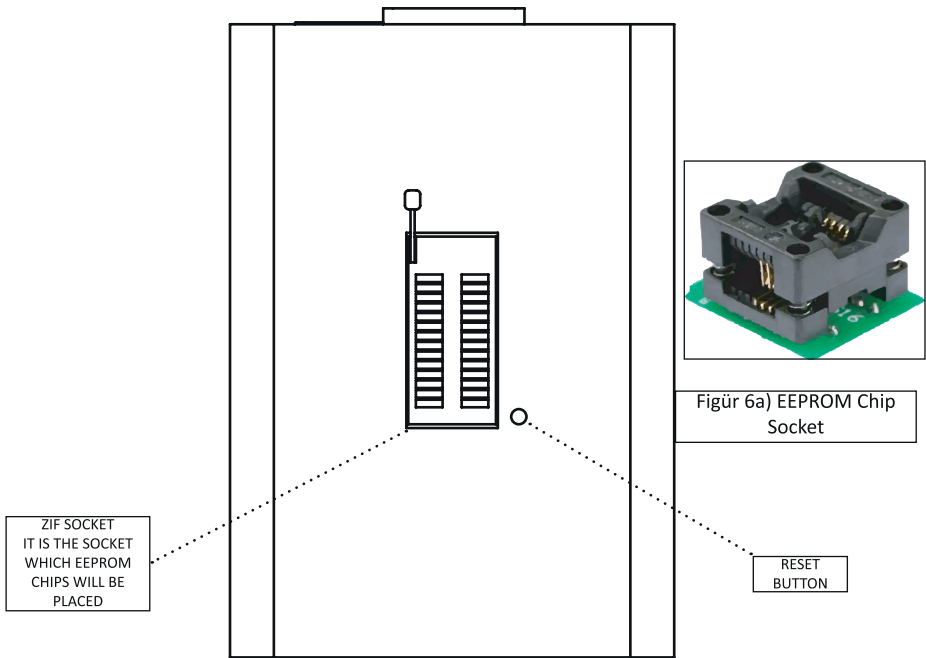


Figure 6) Steering Lab. V2 Upper Face

- ZIF Socket: It contains the connection that must be made to connect the Steering Lab. V2 device to EEPROM chips.
- Programming software to EEPROM chips takes place over 2 different communication protocols. These communication protocols are I<sup>2</sup>C protocol and SPI protocols. In each EEPROM connection, which communication protocol to use in Steering Lab. V2 software is shown to the user by the software. Depending on the selected EEPROM model, the Steering Lab. V2 software shows the user how to connect the EEPROM to the socket. The user who inserts the SMD EEPROM into the SMD EEPROM socket can proceed to the next operation, after connecting the SMD EEPROM socket with the ZIF Socket, they can download software to the selected EEPROM.

# BASICS OF STEERING LAB

## V2

- With the Reset Button, you can reset the device when necessary. After resetting, the device will automatically reconnect to the software.

### 2)EHPS / CARD TEST MODULE 1

EHPS / Card Test Module 1 is connected to the Steering Lab V2 main device with a RJ 50 type socket and a connection cable suitable for this socket.

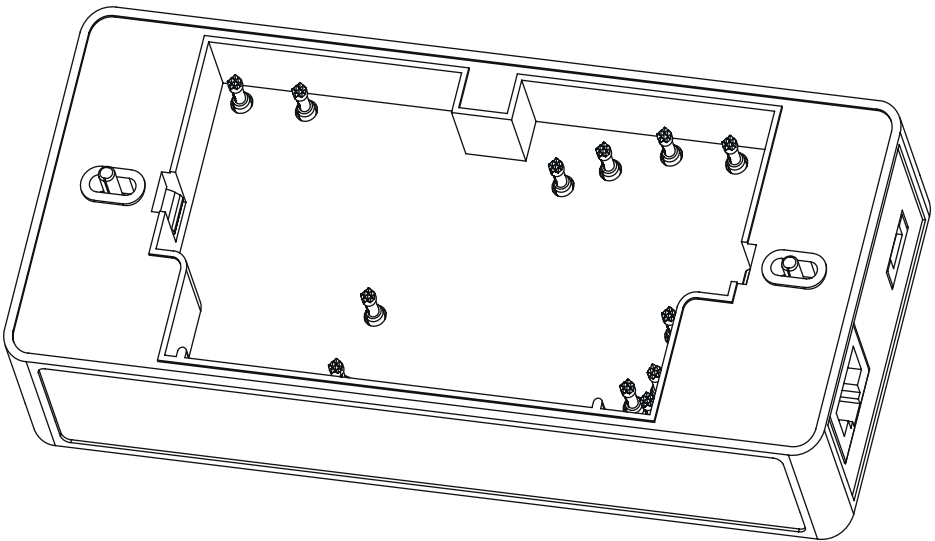
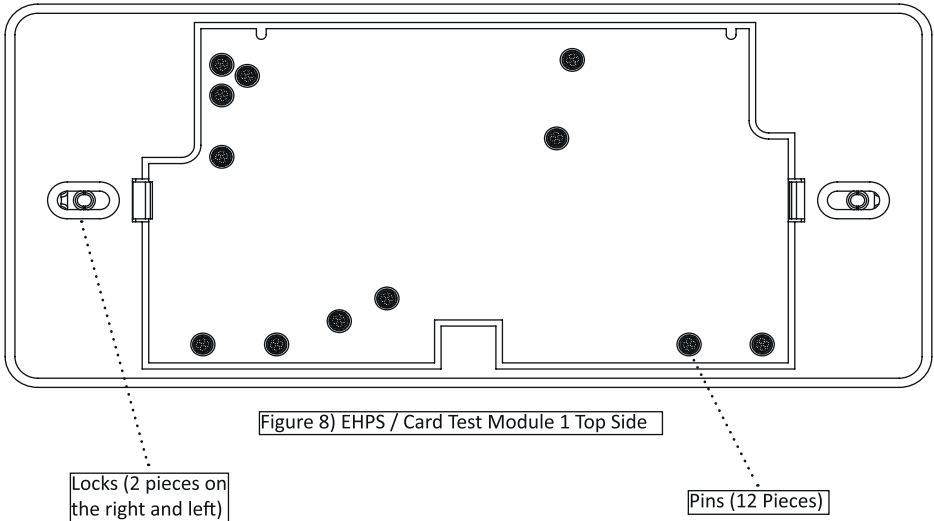


Figure 7) EHPS / Card Test Module 1

With the EHPS / Card Test Module 1 module, you can perform tests of the pump electronic card of the electric steering boxes suitable for the module. You can learn how to remove the pump boards from the steering boxes and the pump through the training videos in the Steering Lab. V2 software and proceed to the test processes.

# BASICS OF STEERING LAB V2



As in the figure shown above, there is an area where you need to insert the electric steering pump board that matches the module. With this visual information, you can understand which card should fit into which module, since the boundaries in the seat of the module are identical to the appropriate cards. Examples of card models suitable for this module are the electric steering pump cards of Opel and Ford vehicles. After the board is inserted, the locks on the upper surface will automatically close, and the gold-plated conductive pins on the module will contact the necessary control points on the power steering pump board. After making sure that you have seated the board correctly, you can connect the module to the Steering Lab. V2 main device with the connection cable compatible with the RJ50 socket and perform the pump board tests.

# BASICS OF STEERING LAB V2

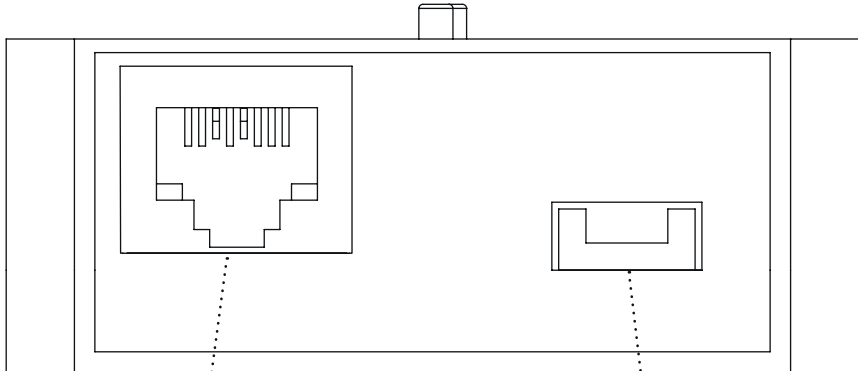


Figure 9) EHPS / Card Test Module 1 Side Face

**RJ45 TYPE SOCKET:**

Socket to connect to Steering Lab. V2 main device.

**MODE CHANGE BUTTON:**

The Steering Lab. V2 software will inform the user in which mode to run the module. Please do not connect the module to the main device without following the instructions in the software.

Please follow the instructions below when connecting the EHPS / Card Test Module 1 module to the Steering Lab. V2 master device.

- In the Steering Lab. V2 main software, select the vehicle model you will test.
- After selecting the model, select the mode in which you will use the module with the guidance of the software. If you choose the inappropriate mode, you may damage the pump board communication line and/or the pump board.
- Insert the card after selecting the mode. Make sure that the card is properly seated in the module and is locked.
- Attach the connecting cable and carry out your tests.



# BASICS OF STEERING LAB

## V2

### 3) EHPS / CARD TEST MODULE 2

EHPS / Card Test Module 2 is connected to Steering Lab. V2 main device with RJ 50 socket and connection cable suitable for this socket.

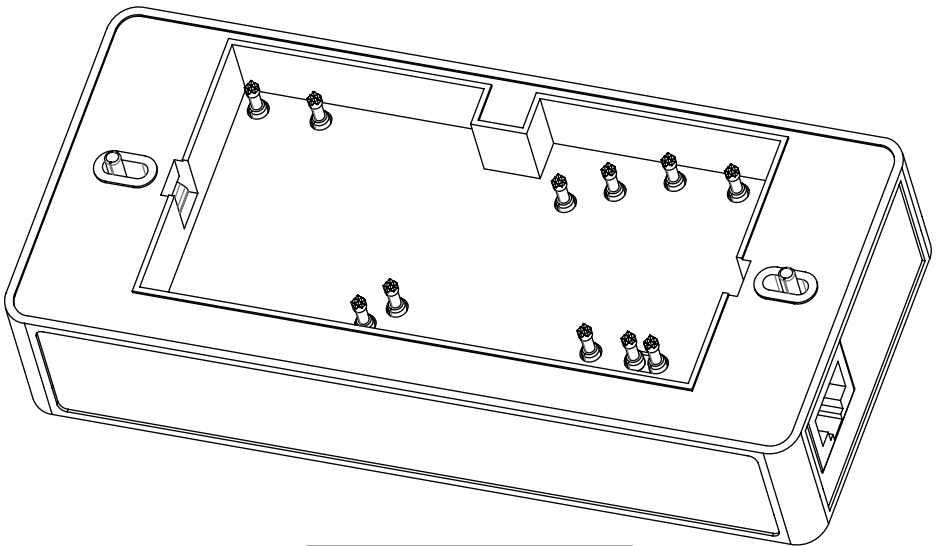
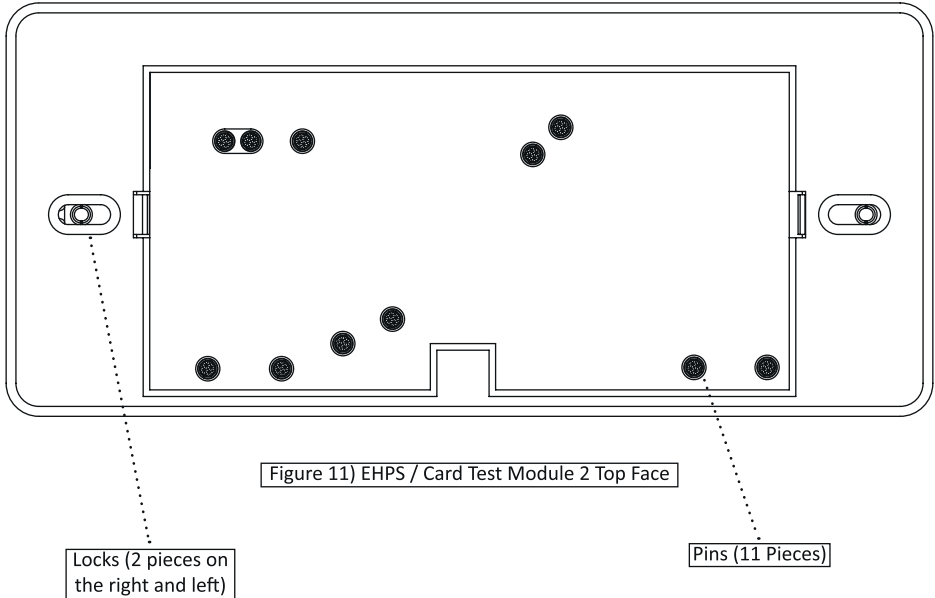


Figure 10) EHPS / Card Test Module 2

With the HPS / Card Test Module 2 module, you can perform tests of the pump boards of the electric steering boxes that match the module. There is no option to change the mode in this module. You can learn how to remove the pump boards from the steering boxes and the pump through the training videos in the Steering Lab. V2 software and proceed to the test processes.

# BASICS OF STEERING LAB V2



As in the figure above, there is an area where you need to place the electric power steering pump board that is suitable for the module. With this visual information, you can understand which card should fit into which module, since the boundaries in the seat of the module are identical to the appropriate cards. Examples of card models suitable for this module are the electric steering pump cards of Volkswagen and Volvo brand vehicles. After the board is inserted, the locks on the upper surface will automatically close, and the gold-plated conductive pins on the module will contact the necessary control points on the power steering pump board. After making sure that you have seated the board correctly, you can connect the module to the Steering Lab. V2 main device with the connection cable compatible with the RJ50 socket and perform the pump board tests.

# BASICS OF STEERING LAB

## V2

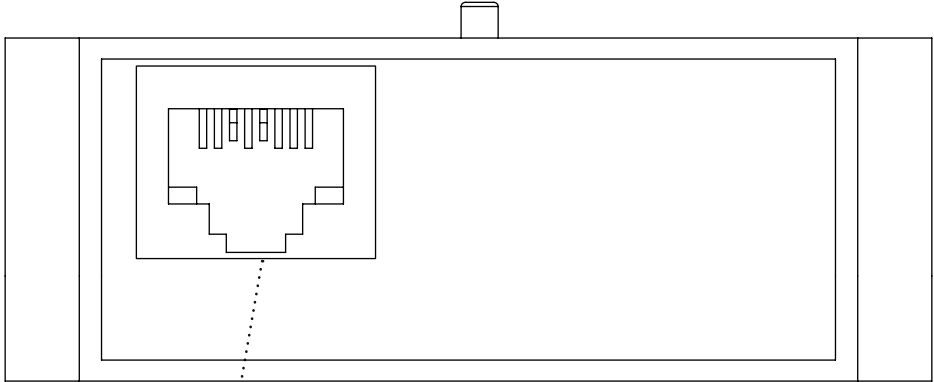


Figure 12) EHPS / Card Test Module 2 Side Side

**RJ45 TYPE SOCKET:** Socket to connect to Steering Lab. V2 main device.

Please follow the instructions below when connecting the EHPS / Card Test Module 2 module to the Steering Lab. V2 master device.

- In the Steering Lab. V2 main software, select the vehicle model you will test.
- Follow the instructions given in the software and insert the pump board into the module.
- Make sure the card is properly seated and locked in the module.
- Attach the connecting cable and carry out your tests.

### 4) TORK SENSOR SOCKET MODULE

One of the most problematic system parts in electric steering systems is the torque sensor. Steering Lab. V2 can test the sensors by simulating the operation of these sensors. It can also calibrate the sensor through simulation. Torque sensors used in vehicles are divided into 6 pins and 8 pins.

# BASICS OF STEERING LAB

## V2

The torque sensor socket module of the Steering Lab. V2 device supports both sensors. You can use the included cable with RJ45 socket connection to connect the torque sensor socket module to the Steering Lab. V2 main device.

**Main Device Connection:**  
Torque sensor socket is connected to Steering Lab. V2 main device via RJ45 type socket.

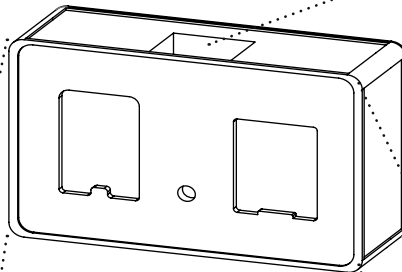


Figure 11) Torque Sensor Socket Module

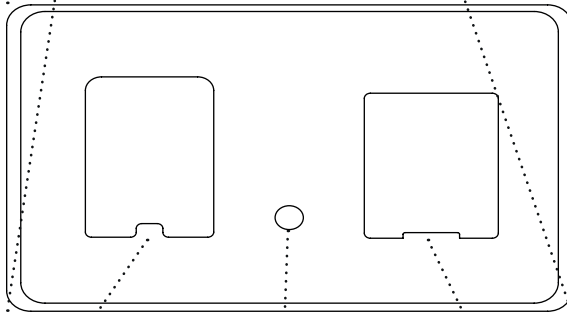


Figure 12) Torque Sensor Socket Module Top Face

**8 Pin Socket Section:**  
Used for 8 pin torque sensors.

**Status Light:** The light will turn on when the sensor is connected.

**6 Pin Socket Section:**  
Used for 6 pin torque sensors.

# BASICS OF STEERING LAB

## V2

### 5) EEPROM SOCKET MODULE

It is the module to which EEPROM integrations, which are inside the cards in electric steering systems and are used for data storage, are connected. The module consists of a 28 pin zif socket embedded in an electronic circuit board, fasteners and EEPROM integrated socket module. In Steering Lab. V2 software, the user can see how the EEPROM integrations will be correctly connected to the module. The IC must first be connected to the EEPROM IC socket. Then the EEPROM socket module must be connected to the Steering Lab. V2 main device. After completing these operations, you can connect the EEPROM integrated socket module, EEPROM socket module by following the instructions in the software.

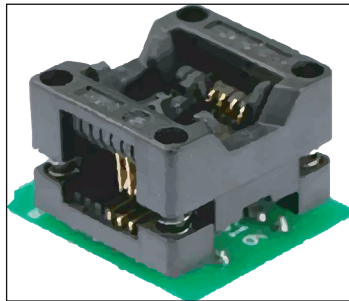


Figure 13) EEPROM Chip  
Socket

# BASICS OF STEERING LAB

## V2

### **6) TEMPERATURE SENSOR**

There is a temperature sensor module that can be connected to our main device, Steering Lab. V2, with a 3.5mm jack (the connection is shown in Figure 4.). By means of this temperature sensor, the user can understand which electronic element has caused or removed a problem in case of short circuit or similar malfunctions on the pump boards.

It is used to measure the surface temperature of electronic elements or mechanical elements. For the most accurate measurement, hold the tip of the sensor less than 1 centimeter from the surface of the element you want to measure. Thus, the focal point of the sensor will only be on the element you want to measure if the element you want to measure is small. The sensor measures using infrared light. Keeping it perpendicular to the element or surface you want to measure will ensure the most accurate measurement. The sensor uses the I<sup>2</sup>C communication protocol. When you want to measure with the sensor, do not connect any EEPROM integrated to the main device. Since it occupies the same communication line, there may be inaccuracies in the measurements. When you want to measure temperature in the software, you will see this warning.

# BASICS OF STEERING LAB

## V2

---

### INTERCONNECTIONS AND POWER COMPONENTS

#### 1) STEERING PUMP CONNECTION CABLES

There are 16 steering pump cables in the Steering Lab. V2 package. These steering pump connection cables are in different models, and they are all compatible with the Steering Lab. V2 main device thanks to the unique interconnections. These connection cables are connected to the main socket from the Steering Lab. V2 main device via the intermediate socket element. The intermediate socket element consists of two different sockets, male and female. One of these sockets is at the end of the pump connection cable and the other is at the end of the main connection cable.

Here are the ways to connect the Steering Lab. V2 main device and steering pump:

- Connect the steering pump you have chosen to the Steering Lab. V2 main connection cable,
- Plug the other end of the main connection cable into the main socket part on the front face of the Steering Lab. V2 main device,
- Once you are sure of the soundness of the connections, you can start your tests and simulations.

#### 2) VEHICLE CONNECTION CABLE (OBD2)

There is a vehicle connection cable in the Steering Lab. V2 package. This connection cable contains OBD2 type socket which is generally used in vehicles. You can connect this connecting cable to vehicles while Steering Lab. V2 is actively working on the desktop. With the guidance of the Steering Lab. V2 software, you can see and edit the malfunction records related to the steering wheel in vehicles.

# BASICS OF STEERING LAB

## V2

The ways to be followed when making a connection between the Steering Lab. V2 main device and the OBD2 socket of vehicles:

- Take the vehicle connection cable included in the Steering Lab. V2 package,
- Connect one end of the vehicle connection cable to the OBD2 socket on the back of the Steering Lab. V2 main device, and the other end to the OBD2 socket in the vehicle,
- The location of the OBD2 socket in the vehicle varies from vehicle to vehicle. Please pay attention to this issue.
- After making sure that the connections of the vehicle connection cable are secure, you can perform your operations through the software of the Steering Lab. V2 main device.

### **3) BATTERY CONNECTION CABLES AND CLIPS**

Thanks to the battery connection cables and clips included in the Steering Lab. V2 package, you can get power from the vehicle batteries and operate the Steering Lab. V2 main device. You can find the battery connection cables and clips in the “Power Junction Box” that comes with the Steering Lab. V2 main device. Contents of the power junction box:

- Battery connection cable,
- Battery connection clips,
- OBD2 vehicle connection sockets,
- Bosch C3 battery charger,
- Includes Bosch C3 battery charger accessories and manual.



# BASICS OF STEERING LAB

## V2

**Power Connection Cable:**  
The power connection cable is used for power coupling of the Steering Lab. V2 main unit.

**Battery Connection Clips:**  
There are two types of battery connection clips.

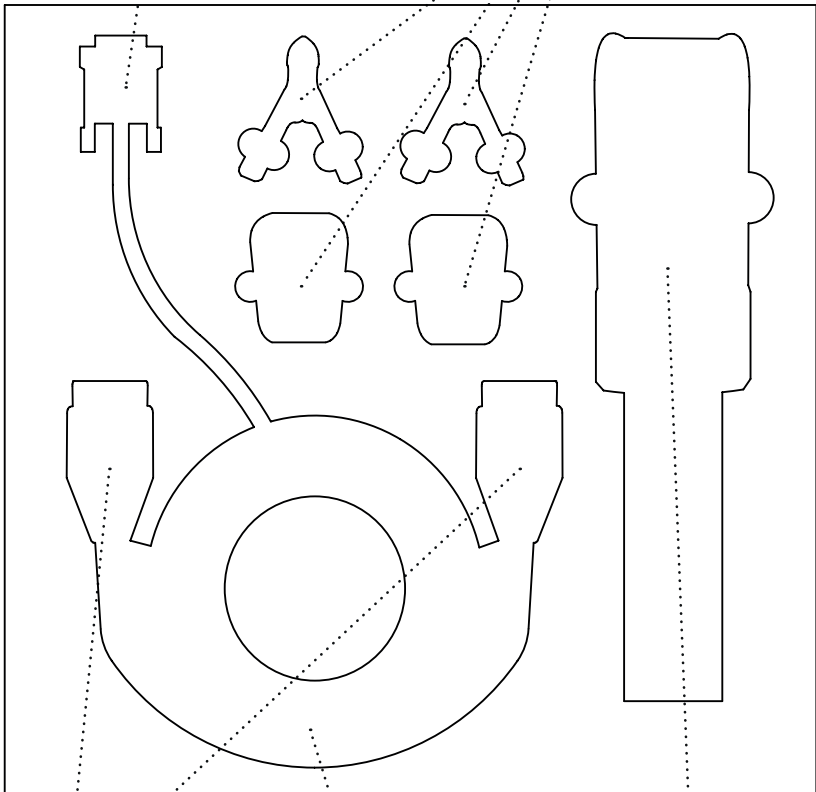


Figure 14) Power Junction Box Content Top View

**Vehicle connection cable:**  
It is used to connect the Steering Lab V2 main device to the control unit of vehicles via OBD2 socket.

**Cable Spacing:**  
Accommodates vehicle connecting cable and main power cable.

**Bosch C3 Battery Charger:**  
It is used to charge the battery. It can also feed the Steering Lab. V2 main device.

# BASICS OF STEERING LAB V2

## **4) BOSCH C3 BATTERY CHARGER**

The BOSCH C3 battery charger included in the Steering Lab V2 package allows charging all the batteries that can be used with the Steering Lab V2. It is also used for the power supply of the Steering Lab V2 main device. Thanks to the special structure of the device, it allows almost completely discharged batteries to be recharged compared to other conventional charging devices. High-level measures have been taken to prevent short circuit and misuse and provide a safe working environment for the user. Thanks to the memory function, it has the ability to save the settings of the last device used.

Includes cable adapter, small charger cable, wall holder, portable hook and fused plug battery charger accessory.

Bosch battery chargers are easy to use. Thanks to its single-button use, it can select a mode and also provides the opportunity to charge the battery without removing it from the vehicle.

The only thing to do during use is to connect the cables to the terminals of the battery and start the charging process by pressing a single button.

For extra information and detailed instructions for use, you can refer to the Bosch C3 battery charger user manual located inside the power junction box.

# BASICS OF STEERING LAB

## V2

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### ABOUT THE SOFTWARE

Steering Lab. V2 software, thanks to its easy use, provides the opportunity to repair the steering system even for individuals who do not have training in electric steering systems and electric-hydraulic steering systems. The training videos included in the software include visual and audio training starting from the beginning of the repair phase to the completion of the repair. In addition to the training videos, there are technical documents required for repairs in the software. Steering Lab. V2 software, which is equipped with a customer follow-up program in order for Steering Lab. V2 customers to provide a better quality service to their customers, includes many services such as work order creation, work order tracking and payment, as well as steering repair and simulation services.

A computer with the following minimum specifications is required to use the software.;

- Windows 10 and above operating system (64 bit)
- Minimum 7th generation Intel Core i5 processor or a similar processor,
- 4 GB RAM minimum,
- A video card with a minimum of 2 GB of memory,
- A monitor with a minimum resolution of 720p,
- Minimum 500 MB storage space,
- Current, active e-mail address

# STEERING LAB. V2

# SOFTWARE INSTALLATION

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## SOFTWARE INSTALLATION

In order to have the Steering Lab. V2 software, enter the Microsoft Store application in Microsoft's Windows operating system. You can access Steering Lab. V2 software from the search section on the application screen. You can also access the download section of Steering Lab. V2 software by clicking the Microsoft Store link on our websites.

After downloading the installation file of Steering Lab. V2 software via Microsoft Store application, if your computer meets the necessary criteria, you can easily install the Steering Lab. V2 software.

During Steering Lab. V2 Setup, please follow the steps explained in the following sections.

- Connect the Steering Lab. V2 master device to your computer and make sure that the connection will not be lost during the installation.
- While installing the program, make sure that your computer is connected to the internet and do not disconnect your computer from the internet during program installation.
- After downloading the Steering Lab. V2 setup file from the Microsoft Store application, open the setup file.
- After opening the installation file, accept the agreements that will appear. (Figure 15. and Figure 16.)
- After accepting the agreements, the installation file will begin the process of installing the Steering Lab. V2 software on your computer.
- After the setup file completes the installation of the Steering Lab. V2 program, you can start the program.

# STEERING LAB. V2

## SOFTWARE INSTALLATION

The license agreement, which you must read and approve during the installation of the Steering Lab. V2 software, must be read and approved before you can install and use the program. During the installation of the program, you can read the contract in two different languages, English and Turkish.

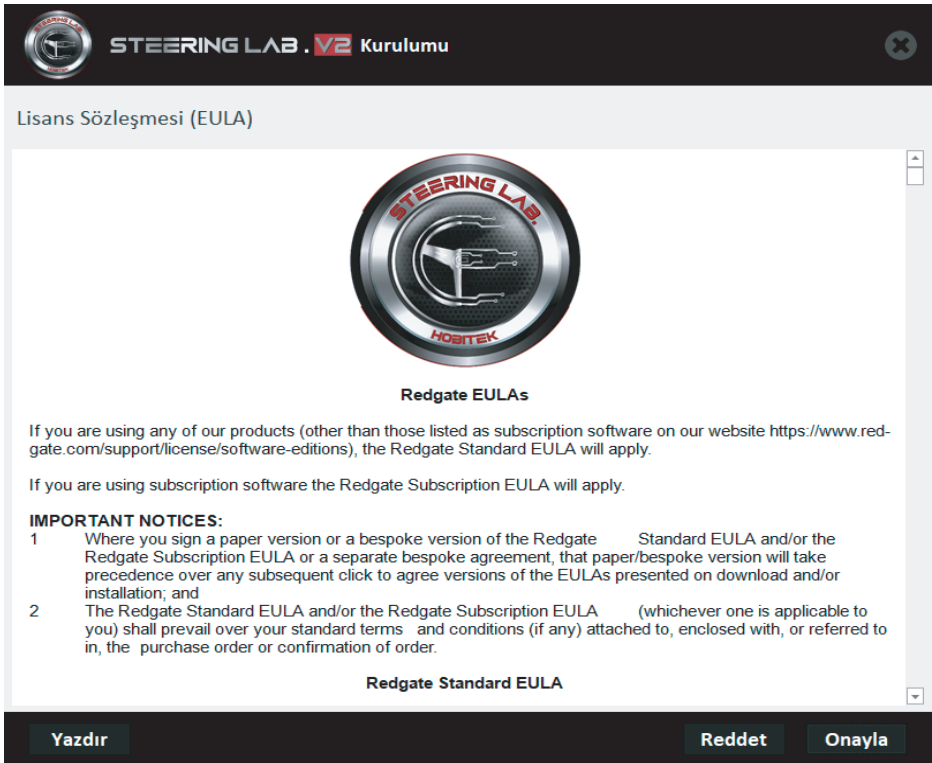



Figure 15) Steering Lab. V2 Software License Agreement

# STEERING LAB. V2 SOFTWARE INSTALLATION

The illumination text for the processing of illumination personal data that you must read and approve during the installation of the Steering Lab. V2 software must be read and approved before you can install and use the program. During the installation of the program, you can read the lighting text in two different languages, English and Turkish.

STEERING LAB . V2 Kurulumu

Aydınlatma Metni (KVKK)

**Kişisel Verilerin İşlenmesine İlişkin Aydınlatma Metni**

**İNTERNET SİTESİ**  
**KİŞİSEL VERİLERİN İŞLENMESİNE İLİŞKİN AYDINLATMA METNİ**

İş bu Aydınlatma Metni, www. dzynzone.com (Bundan sonra "site" olarak anılacaktır.) internet sitesi ile alakalı olarak Kişisel Veri Sahiplerinden ve/veya üçüncü kişilerden elde edilen kişisel verilerin kullanımına ilişkin olarak 6698 sayılı Kişisel Verilerin Korunması Kanunu ("KVKK") uyarınca veri sorumlusu olan, Dizaynzone Endüstriyel Tasarım Anonim Şirketi tarafından kişisel verilerinizin toplanma şekilleri, kişisel veri işleme faaliyetlerinin amaçları ve hukuki nedenleri, kişisel veriler aktarıyorsa buna ilişkin esaslar ve veri sahibi olarak haklarınız konularında şeffaf bir şekilde sizleri bilgilendirmek ve aydınlatmak amacıyla hazırlanmıştır.

KVKK uyarınca kişisel veri sahibi olarak paylaştığınız Kişisel Verileriniz Veri Sorumlusu olarak belirlenen Şirket tarafından aşağıda belirtilen kapsamda toplanacak ve işlenebilecektir.

**1.TANIMLAR ve KISALTMALAR**  
İşbu Aydınlatma Metni'nde geçen;  
**Şirket** : Cumhuriyet Mah. Hacı Osman Bayın Cad. No: 25  
34457 Tarabya-Sarıyer/İstanbul  
mukim Dizaynzone Endüstriyel Tasarım Anonim Şirketi ' yi,  
**Kişisel Veri** : Kimliği belirli veya belirlenebilir gerçek kişiye ilişkin her türlü bilgiyi,  
**Kişisel Verilerin İşlenmesi** : Kişisel verilerin tamamen veya kısmen otomatik olan ya da herhangi bir veri kayıt sisteminin parçası olmak kaydıyla otomatik olmayan yollarla elde edilmesi, kaydedilmesi, depolanması, muhafaza edilmesi, değiştirilmesi, yeniden düzenlenmesi, açıklanması, aktarılması, devralınması, elde edilebilir hâle getirilmesi, sınıflandırılması ya da kullanılmasının engellenmesi gibi veriler üzerinde gerçekleştirilen her türlü işlemi,  
**Kişisel Veri Sahibi** : Kişisel verisi işlenen gerçek kişiyi,  
**KVKK** : 7 Nisan 2016 tarihinde Resmî Gazete' de yayımlanarak yürürlüğe giren 6698 sayılı Kişisel Verilerin Korunması Kanunu'nu,  
**Veri İşleyen** : Veri sorumlusunun verdiği yetkiye dayanarak onun adına Kişisel Verileri işleyen gerçek veya tüzel kişiyi,  
**Veri Sorumlusu** : Kişisel Verilerin işleme amaçlarını ve vasıtalarını belirleyen, veri kayıt sisteminin kurulmasından ve yönetilmesinden sorumlu olan gerçek veya tüzel kişi  
**İnternet Sitesi/Site** : www. dzynzone.com 'u ifade eder.

**2.İŞLENEN KİŞİSEL VERİLER**  
Şirket ile aranızdaki ilişkiye bağlı olarak işlenen ve kişisel verilerinizin çeşitleri ve sayıları işleme nedenine göre değişiklik göstererek olmakla birlikte: Şirket ile navlastığınız vahit Şirket tarafından üçüncü kişilerden elde edilen Kişisel Veriler

**Yazdır** **Reddet** **Onayla**

Figure 16) Steering Lab. Clarification Text on the Processing of Personal Data of V2 Software

# STEERING LAB. V2 SOFTWARE INSTALLATION

## SOFTWARE LOGIN SCREEN

After completing the installation of the Steering Lab. V2 software, you can start the software. The first screen that will appear when you start the software is the login screen of the program. This login section contains the section on creating a user account and logging in to use the software.

On the Steering Lab. V2 software login screen, you can see the serial number of your device. Once you log in with the user account information, you will not need to login for the second and subsequent program runs.



Figür 17) Steering Lab. V2 Yazılımı Giriş Bölümü

# STEERING LAB. V2 SOFTWARE INSTALLATION

## SYSTEM REGISTRATION SECTION

In order to use the Steering Lab. V2 software, you must register with the Steering Lab. V2 system. You can register to the system from the Steering Lab. V2 login screen that will appear when you start the program for the first time.

On the registration screen, your name and surname, e-mail address, work address information, workplace landline and mobile phone information are requested as your personal information. You need to set a username and password to log into the same system. Please do not share your user password with anyone.

10350228

**STEERING LAB. V2**

**FOTOĞRAF EKLE**

AD  SOYAD

E-POSTA

İL  İLÇE  POSTA KODU

ADRES

TELEFON (İŞ)  TELEFON (GSM)

KULLANICI ADI  PAROLA

**KAYIT**

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Figure 18) Steering Lab. V2 System Registration Section



# STEERING LAB. V2

## SOFTWARE CONTENTS

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### SOFTWARE LOGIN AND HOME PAGE

After successfully installing the Steering Lab. V2 program and registering to the system, you can start using the program. Before opening the program, please make sure that your device is connected to the computer and your computer is connected to the internet. When you open the program, the program will first check your connections. Once you have provided the necessary links, the program will redirect you to the login and create new user section. When you create a user and log in to the system, the main screen of the Steering Lab. V2 program will appear. The main screen of the program consists of 4 different sections.

- The first section is the section that provides access to the basic usage areas of the device. You can perform the repair and simulation processes of electric steering systems and electric-hydraulic steering systems in this area.
- The second section is the section where you can access the auxiliary usage areas of the device. In this area, you can access sections such as live support, remote help, past connections and customer follow-up program.
- The third section is the section where you can access the settings and connection controls of your device and program. In this area, you can access your personal information, commercial information, device settings and software settings.
- The fourth section is the section where you can choose the vehicle brands and make transactions. After choosing vehicle brands and models, you can process, access training videos and documents.

# STEERING LAB. V2

## SOFTWARE CONTENTS

**Fourth Section:** This is the section where vehicle models can be selected and processed.

**Third Section:** It is the section where connection controls, software settings and device settings can be made.

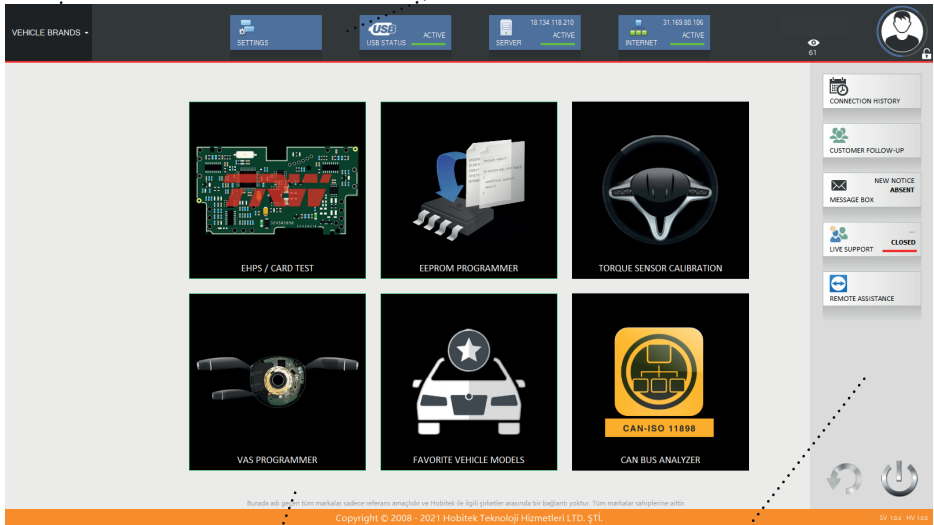


Figure 19) Steering Lab. V2 Main Screen

**First Section:** Main usage tabs. It is the section where repair and simulation operations can be performed.

**Second Section:** It is the section that includes the auxiliary usage areas.

Connection  
Refresh  
Button

Close  
Button

# STEERING LAB. V2

## SOFTWARE CONTENTS

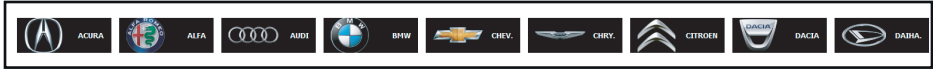


Figure 20) Steering Lab. V2 Fourth Section Example

## SETTINGS

Before using the Steering Lab. V2 program for the first time, please check the settings and complete the necessary settings.

### 1) Personal Information

Personal information settings are one of the necessary settings to use the device. In this section, you can add and edit your user information and commercial information. The settings you can edit in this section;

- Adding photos,
- User name and password remember function,
- Adding and editing social media accounts,
- You can also view the username and user registration time

**User Information:** In the user information section, there is a section to determine your name, surname, e-mail address, contact address, business telephone landline number, mobile phone number, date of birth and a new password if you want to change it.

# STEERING LAB. V2

## SOFTWARE CONTENTS

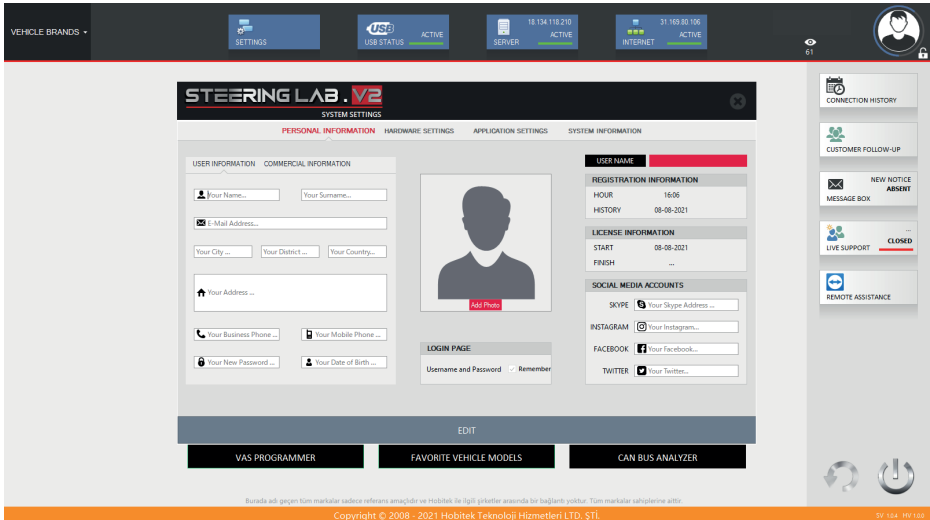


Figure 21) Steering Lab. V2 Settings - Personal Settings - User Information

**Commercial Information:** In the commercial information section, you can save and edit your company information in the software. In this section, you can add and edit company title, company tax office, company tax number, company e-mail address, company address and province, district details, business landline phone number and business mobile phone number from your company / commercial information.

Your company's information (commercial information) plays a key role in communication with Hobitek Technology Services. In case of a malfunction in the device or in the software, communication will be made in line with your company's information. Hobitek Technology Services will contact your company again for warranty work.

# STEERING LAB. V2 SOFTWARE CONTENTS

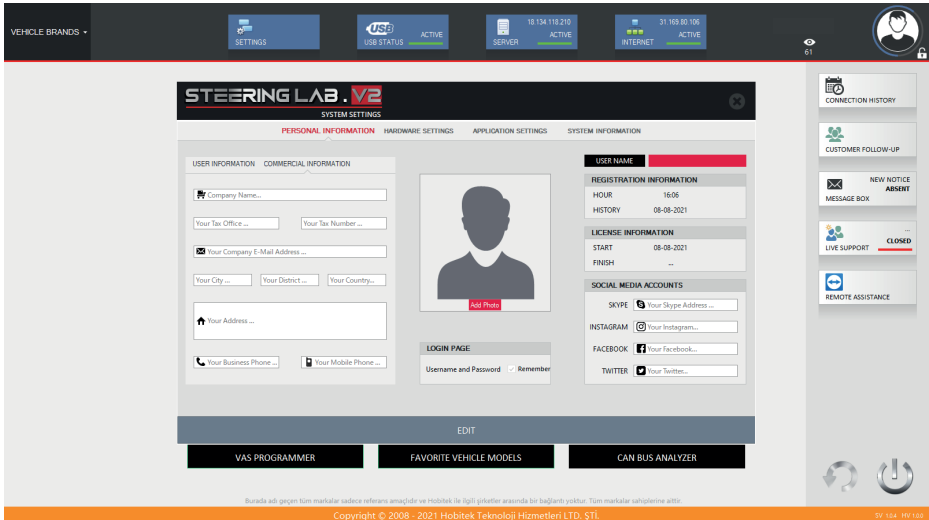


Figure 22) Steering Lab. V2 Settings - Personal Settings - Commercial Information

## 2) Hardware Settings

Hardware settings include critical settings to be used during the repair phase and the simulation phase. The correct measurement, repairs and simulations of the device depend on these settings. The sections you can view and edit in the hardware settings;

- **Ampere Meter Reference Setting:** In this section, there are precise settings made to see how much voltage and amperage the device draws from the power source when the device is connected or not.

# STEERING LAB. V2

## SOFTWARE CONTENTS

- **OBD2 Multiplex Status:** In this section, you can view and change the connection status of the vehicle connection socket (OBD2). With fixed +12V and GND pins; user can switch other pins between K-LINE, CAN HIGH and CAN LOW connections. In order to make this change, the pin can provide the desired connection by clicking on the pin it wants to change and changing the pin color until you see the appropriate color on the pin. Please wait at least 1 second between the color change phases, not to change the connection quickly.
- **Can Bus Channel Status:** Steering Lab. V2 device has 2 Can-Bus communication channels. These two communication channels cannot be activated at the same time and one of them is used as a backup communication channel. To activate and deactivate the channel, simply click the button. You can understand which channel is active and which channel is inactive by the text "OFF / ON" next to the button.
- **Hub WIFI Setting:** Contains the settings of the Wi-Fi connection module in the Steering Lab. V2 device. Thanks to these connection settings, you can connect to Steering Lab. V2 device via Wi-Fi protocol.
- **Steering Lab. V2 MCU Repair:** In this section, software repair of the microprocessor in the Steering Lab. V2 device is performed.
- **Relay Test Screen:** In this section, you can understand whether the relays are working by performing the on-off test of the relays in the Steering Lab. V2 device.

# STEERING LAB. V2

## SOFTWARE CONTENTS

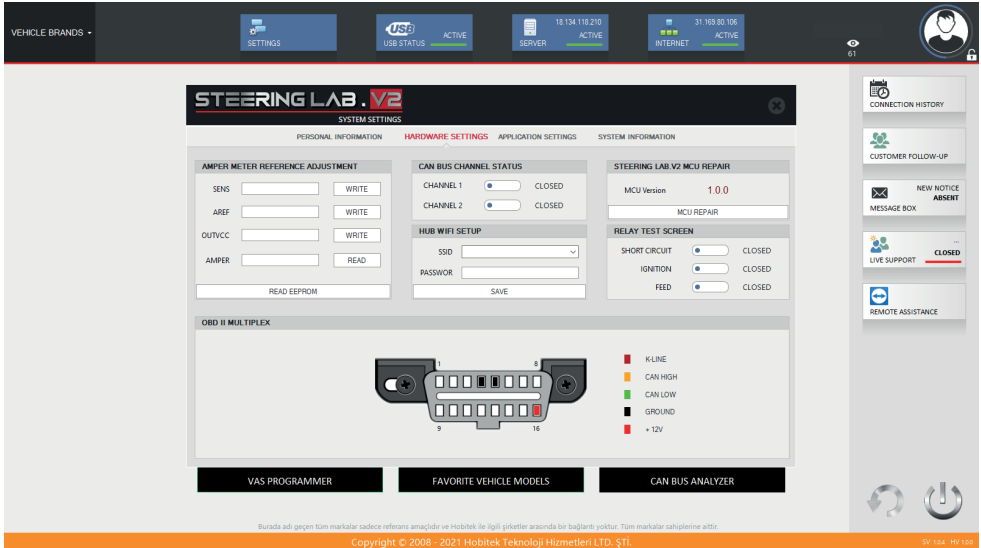


Figure 23) Steering Lab. V2 Settings - Hardware Settings

### 3) Application Settings

The application settings include the data that must be added for the user to use the extra items in the application, the number of remaining usage / access rights of the user and the barcode directed to the [www.hobitek.com.tr](http://www.hobitek.com.tr) website. This data includes user data for sending short messages, bank data and sending settings, and are the personnel settings that are used to keep and organize the records of the personnel. Sending short messages is used to serve customers better. The personnel registered in the personnel settings are also used for service tracking in the customer follow-up program.

# STEERING LAB. V2

## SOFTWARE CONTENTS

**Text Message Settings:** Text message settings are the section that contains the settings of the system that sends sms to their customers for information purposes for users using Steering Lab. V2 package. There are three sections that need to be set in order to be able to send an SMS. These sections are user setting, bank setting and shipping setting..

- **User Settings:** In this section, the user's user name, user password and the name of the organizer serving the short message service company are entered. At the same time, it is seen as information about how many short messages the organizer gives the user. The user can test the service by clicking the "TEST" button next to the organizer name entry.

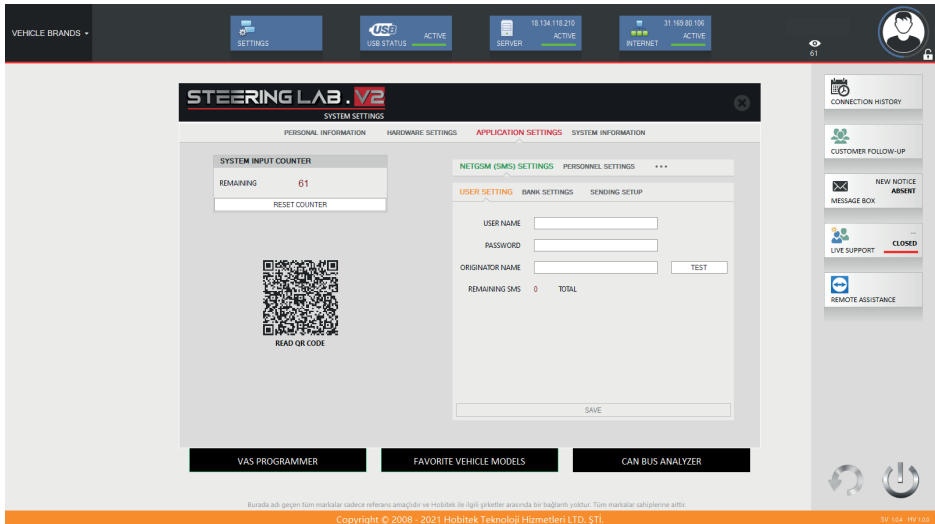


Figure 24) Steering Lab. V2 Settings - Application Settings - SMS Settings - User Settings



# STEERING LAB. V2

## SOFTWARE CONTENTS

- **Bank Setting:** In this section, the user's bank information, which will be found in the SMS sent by the short message service company, must be entered. This information includes the name of the bank where the user works, the user's account name, the user's bank IBAN number and the bank accounts that the user can select. You can add the information entered in the input boxes to the bank account memory by clicking the add bank information button, you can update the bank information that has already been added by clicking the update button, you can clear the input boxes during the update or add process by clicking the clear button, and delete the saved bank accounts by clicking the delete button.

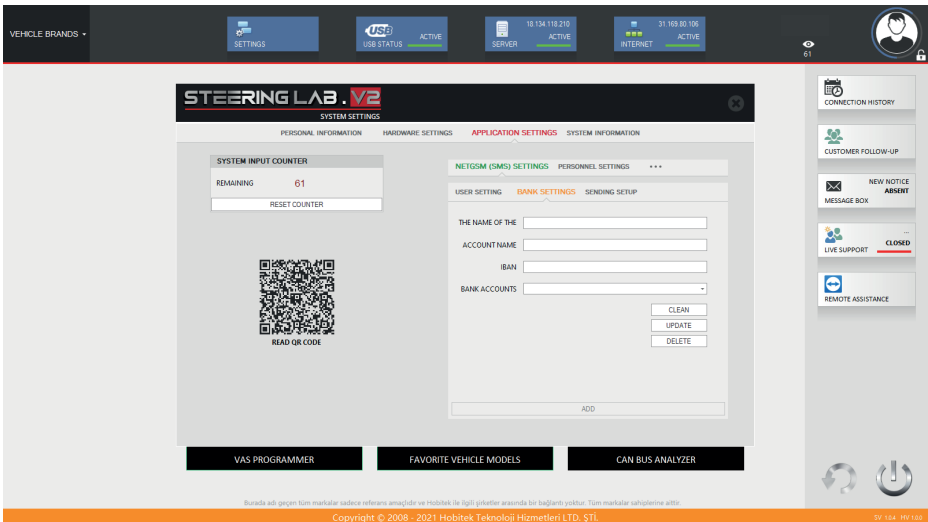


Figure 25) Steering Lab. V2 Settings - Application Settings - SMS Settings - Bank Settings

# STEERING LAB. V2

## SOFTWARE CONTENTS

- **Sending Setting:** In this section, the content of the SMS sent by the company providing short message service is determined. The content of the SMS to be sent can be shaped as desired by the user. SMS sending service, which works with the customer follow-up program, takes its variables from the data to be entered in the customer follow-up program. The specified contents of the SMS to be sent consist of the following contents:
  - » **Registration Message:** When the work order record in the customer follow-up program is opened, it will be sent to inform the customer. Within this short message, the customer's name and surname, vehicle plate and company title information are taken from the customer follow-up program as variables and sent to the customer's mobile phone number in the text message.
  - » **Vehicle Delivery Message:** It contains the information that the customer's vehicle has been delivered to the customer or the relevant person. The customer's name and surname, license plate and company title are taken as variables from the customer follow-up program and embedded in the text message.
  - » **Information Message:** It is the message indicating that the repair service of the vehicle of the customer served is completed. The user sends this message to the customer when the vehicle completes the repair.
  - » **Contact Information:** Contains the contact information of the user's company. When desired, the user's company information can be sent as a message to the customer with whom we have worked before.
  - » **Google Map URL:** It is a message that is created in line with the computer location information of the user's company and contains a link to the location information used via the Google Maps service. The user can send this message to his customers and share their location, so that the user's customers can easily find the user's company via Google Maps.

# STEERING LAB. V2

## SOFTWARE CONTENTS

By clicking the “Find Location” button, location information is obtained from the user’s computer and Steering Lab. V2 software can embed this location information in the SMS to be sent.

- » Google Comment URL: In this message, it redirects to the user’s company’s Google account to comment link, if any. If the user wishes, he / she sends a Google account link to his customers in order to reach more customers and to increase the quality of the company. You can redirect your company’s Google account via the “My Business” button.

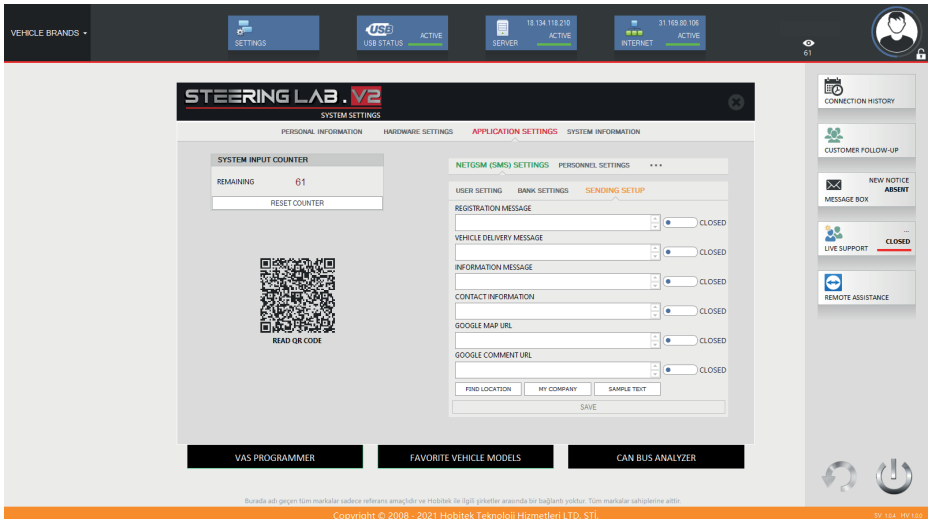


Figure 26) Steering Lab. V2 Settings - Application Settings - SMS Settings - Sending Settings

# STEERING LAB. V2

## SOFTWARE CONTENTS

The user can activate or deactivate the message contents via the button next to the sections indicating the SMS contents. Thus, while the user is using the customer follow-up program, he / she can block the sending of the messages he / she does not want to be sent, or he / she can send the messages he / she wants to be sent. The user can save the settings with the “SAVE” button.

- **Staff Settings:** This section is the section that contains the list of personnel included in the user’s company. When the user uses the Steering Lab. V2 software for the first time, he / she should record the personnel who will be assigned to repair in this section. Information in company staff settings will be used in work order sections within the customer follow-up program.

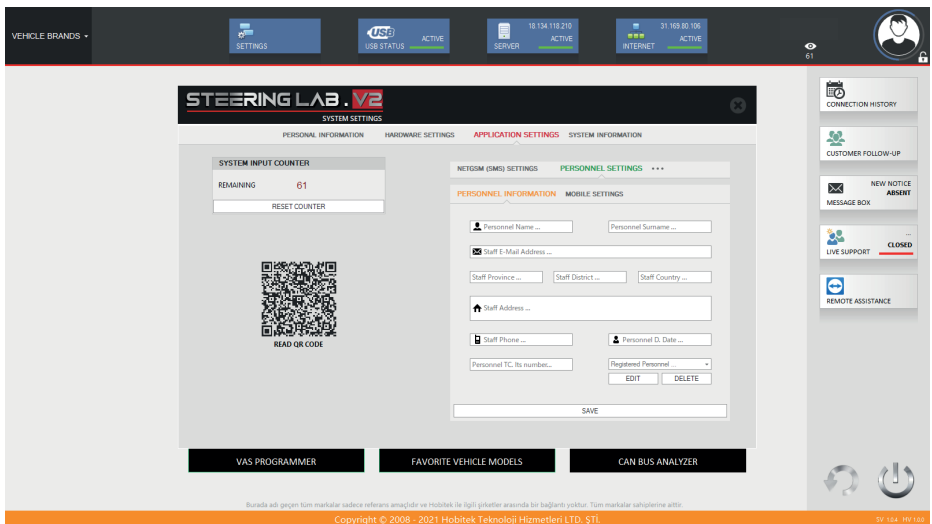


Figure 27) Steering Lab. V2 Settings - Application Settings - Staff Settings

# STEERING LAB. V2

## SOFTWARE CONTENTS

The user can view which personnel are providing what repair service is going to give, or are giving. The sections that can be filled in the staff settings section, personnel name and surname, e-mail address, address information of the company where the personnel are located, personnel telephone number, date of birth and personnel T.C. If you are a national of T.C. ID number. (TR ID number is not mandatory.)

### 4) System Information

The user can see the properties of the computer system and the details of the application in the settings section of the Steering Lab. V2 software. This information shows computer hardware information, operating system information, and operating system basics that the application uses.

**STEERING LAB. V2**  
SYSTEM SETTINGS

PERSONAL INFORMATION    HARDWARE SETTINGS    APPLICATION SETTINGS    **SYSTEM INFORMATION**

INFORMATION	EXPLANATION
OS Name	HomeGroup-DESKTOP-AGJ3ZNG
OS Architecture	64-bit
OS Language	2057
Registered User	ahmet@ghmail.com
Serial Number	03042-41346-89018-A-KOEM
System Drive	C:
Version	10.0.19043
Domain	WORKGROUP
Manufacturer	LENOVO
Model	80WE
Name	DESKTOP-AGJ3ZNG
System Family	IDEAPAD
System Type	x64-based PC
Caption	(UTC-03:00) Istanbul
Standard Name	Turkey Standard Time
Full Name	
Name	NT AUTHORITY\SYSTEM
Full Name	ahmet@gh
Name	DESKTOP-AGJ3ZNG\ahmet
Caption	#C:\WINDOWS

VEAS PROGRAMMER    FAVORITE VEHICLE MODELS    CAN BUS ANALYZER

Burada adı geçen tüm markalar sadece referans amaçlıdır ve hiçbir şekilde ticari amaçla kullanılmamalıdır. Tüm markalar sahiplerine aittir.  
Copyright © 2008 - 2021 Hobitek Teknoloji Hizmetleri LTD. ŞTİ.    SW 1.04 - RH 1.03

Figure 28) Steering Lab. V2 Settings - System Information

# STEERING LAB. V2

## SOFTWARE CONTENTS

### EHPS / Card Test Section

When you click the EHPS / Card Test section in the main screen of the Steering Lab V2 software, the EHPS / Card Test main screen will appear. On this screen, you can test your EHPS Card and check the card. First, connect the EHPS Card Test Module, which will come out of the Steering Lab V2 bag, and the EHPS module connection cable that will come out of the bag, to the Steering Lab V2 main device. After the connection is complete, you can select the vehicle option that matches the EHPS Card Test module. After selecting the vehicle model to be processed, insert the appropriate EHPS Card into the module. After making sure that the connections are okay, you can begin the card test.

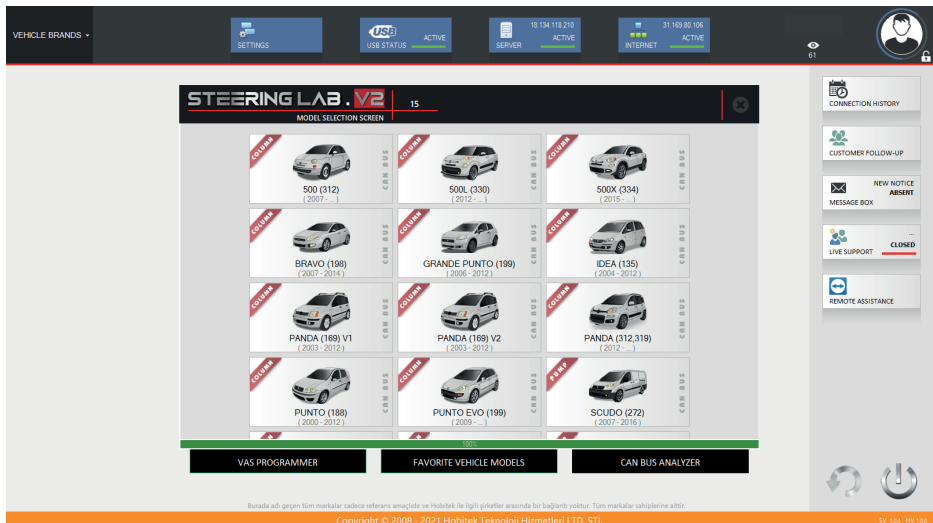


Figure 29) Steering Lab. V2 EHPS / Card Test Screen - Vehicle and Model Selection

# STEERING LAB. V2

## SOFTWARE CONTENTS

To start the EHPS / Card test process in Steering Lab. V2 software, click the ignition button. When you click the ignition button (IGNITION) in the Steering Lab. V2 software, the Steering Lab V2 main device will send the vehicle's ignition command to the EHPS card. If the Can-Bus line and relay circuits are working without any problems, the contact relay on the Steering Lab. V2 main device will open and first the contact light (EPS-) on the Steering Lab. V2 main device will turn on. If there is a short circuit in the EHPS board, the contact light (EPS-) on the device will turn off and the short circuit light (SCT) will turn on. In this case, there is a short circuit in the EHPS board and you need to make the necessary repairs by checking it with your measuring device. If there is no short circuit on the EHPS board, the ignition power light (EPS +) will be on, indicating that the Steering Lab. V2 main device is ready to receive the engine ignition command. If there is no card fault after clicking the ignition button, click the engine ignition button (ENGINE START).



Figure 30) Steering Lab. V2 EHPS / Card Test Main Screen

# STEERING LAB. V2

## SOFTWARE CONTENTS

If you fail to simulate the EHPS Card, the Fault Light warning will flash. If you have not encountered any malfunctions in the Can-Bus line, relay circuits and mosfet circuits when you click the engine ignition button, the EHPS card has approved the engine ignition command and the Steering Lab V2 device simulates the EHPS card with the vehicle running. During the simulation, you can perform operations on the EHPS card in the EHPS Card Test section and see the live values on the card. These values show how many volts the EHPS board operates, how many amps it draws from the power unit, and how much power it uses.

You can see the picture of the selected vehicle model on the EHPS Card Test main screen. During the simulation, you should have the error code searched to find the failure. You can do this by clicking on the error code arrow section at the top left. To fix the errors found, you should click the delete error code button after reading the error. If the vehicle supports it, you can choose between long-distance and city mode and check whether there is a malfunction in these modes.

For Can-Bus line control, click on Can-Bus Transfer section. In this section, you can see the messages that the EHPS card will send to the vehicle computer (ECU). In the EHPS Card Test main screen, you can click the Live Values section and see the live values on the EHPS card. From the EHPS Board Test Main Screen, you can access the steering angle sensor repair section by clicking the Torque Sensor Calibration button and the Position calibration button. You can access the EEPROM programming section from the EHPS Card Test Main Screen. The file you will use for EEPROM programming can be downloaded by clicking the Download Flash File button, and you can proceed to the programming section.



# STEERING LAB. V2

## SOFTWARE CONTENTS

Training videos related to the selected vehicle are available on the EHPS Card Test Main Screen. By clicking on the promotional video, you will reach the short promotional video of the process and the device. By clicking on Coding Procedure, you will reach the EEPROM coding training video related to the selected vehicle. By clicking on the Assembly Video, you will reach the video of how to disassemble the steering box of the selected vehicle from the vehicle, disassemble the steering box, reassemble the separated parts and reassemble the steering box to the vehicle. From the technical drawings section, you will be able to access the technical documents of the parts that you will use in the steering repair. On the information screen on the EHPS Card Test Main Screen, you will be able to access information about the simulation and the operations performed.

---

### Emulator Programming Section

The emulator programming section in the main screen of the Steering Lab. V2 software is the emulator module that will be connected to the vehicles of the customers that the user successfully serves. This is the section that is programmed. Under the terms of warranty, the user connects an emulator module to the customer's vehicle in order to provide better service to the customer he serves, and this module is used to process data about the steering system. If the vehicle fails after the repair service provided by the user, the detection of the source of the fault will be very fast thanks to the module. Thus, the user will both provide better quality and faster service to the customer, and speed up the warranty processes that will take place within the user's company. **Since the emulator programming section is not yet ready with its full version, it will be active with future software updates.**

# STEERING LAB. V2

## SOFTWARE CONTENTS

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### EEPROM Programming Section

You can program the EEPROM chips in the EHPS cards in the EEPROM programming section of the Steering Lab. V2 software's main screen. EEPROM models programmable by Steering Lab. V2 main device;

- 24C02C,
- 24LC04B,
- 24LC16B,
- M95160,
- AT25320A,
- M95320A,
- M95320W,
- S93C46B,

a total of 8 pieces.

When you choose a model, the picture below the model selection section shows how to plug the EEPROM IC into the 28-pin socket (Figure 31). By looking at this picture, you can insert the EEPROM IC in the socket correctly. Below the picture showing how to insert the EEPROM chips into the socket, there is information about the EEPROM chips. The EEPROM chip information consists of three, namely the manufacturer of the integrated, the number of integrated BYTES, and the algorithm showing how to install the chip software (SPI communication protocol, I<sup>2</sup>C communication protocol, etc.). Under the section where the chip information is located, there is the section where the process followed while assigning software to the EEPROM chip is shown as a percentage.

# STEERING LAB. V2

## SOFTWARE CONTENTS

At the top of the EEPROM programmer section are the file, save, read, write, verify and delete buttons. Click on the open file button-Rak, select the memory file to be loaded into the EEPROM IC, You can view the contents of the file and upload it to the EEPROM model of your choice. When you click the Read button, you can read the memory data in the EEPROM. After reading the data, you can save the read data by clicking the save button. By clicking the Write button, you can write the selected memory file into the EEPROM integration. After typing, you can check the memory file of the IC and see if it is written correctly by clicking the verify button. When you click the Delete button, you can delete the memory file in the integrated.

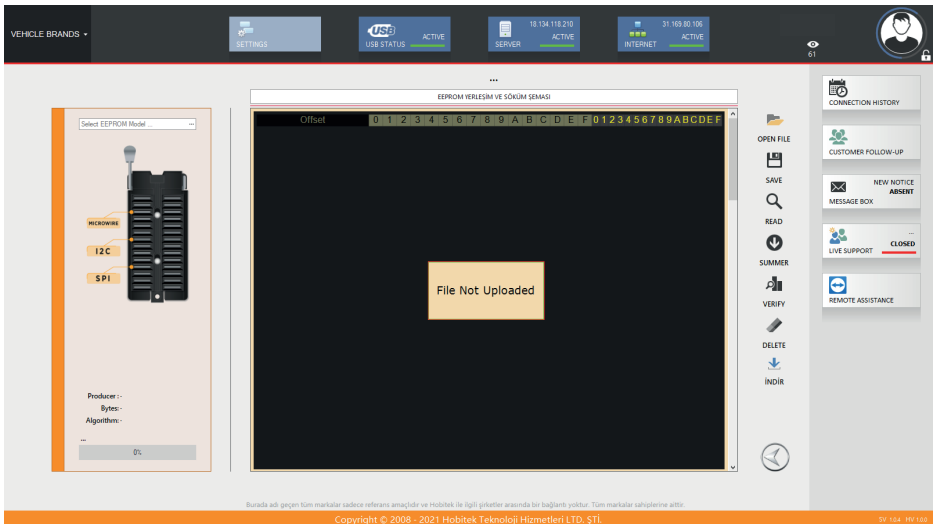


Figure 31) Steering Lab. V2 EEPROM Programming Section

# STEERING LAB. V2

## SOFTWARE CONTENTS

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### Torque Sensor Calibration Section

You can repair malfunctioning sensors in the torque sensor calibration section of the Steering Lab. V2 software main screen. It is the section where the value of the torque sensor in the steering system is calibrated. First, connect the connection cable of the torque sensor to the torque sensor socket module that comes out of the bag. After the torque sensor is attached to the module, connect the connection cable coming out of the bag to the torque sensor socket module first, then to the Steering Lab. V2 main device. When a non-malfunctioning torque sensor is connected in the energizing part of the torque sensor, the light indicating that the torque sensor is connected will turn on in the lamp indicator parts on the device. With the light on, you can see the data to be calibrated on the screen. These data vary depending on the vehicle model of the sensor selected. Calibration and repair can be done in two different ways.

- 1) During the beginning of the repair process, the arrows and line marks on the torque sensor must come together. Match the arrow on the inner rotating part of the torque sensor to the line on the outer rotating part of the torque sensor. Then click the "RESET" button in the Steering Lab. V2 software torque sensor calibration section. After averaging the values, your repair is complete.

# STEERING LAB. V2

## SOFTWARE CONTENTS

2) If the error code is for the torque sensor in the vehicle, you can follow the steps below to calibrate the sensor.

- While the vehicle is running, the calibration value of the defective sensor must be taken,
- While the vehicle is running, the user must center the steering wheel and record the torque sensor data while the steering wheel is in the middle.
- These operations must be done while the vehicle is running and without disconnecting the steering system from the vehicle.
- After the centered value of the torque sensor is recorded, remove the torque sensor by removing the steering system from the vehicle,
- Connect the torque sensor to the torque sensor socket module, then connect the torque sensor socket module to the Steering Lab. V2 master device.
- Calibrate the recorded average value by rotating the torque sensor and press the “RESET” button.

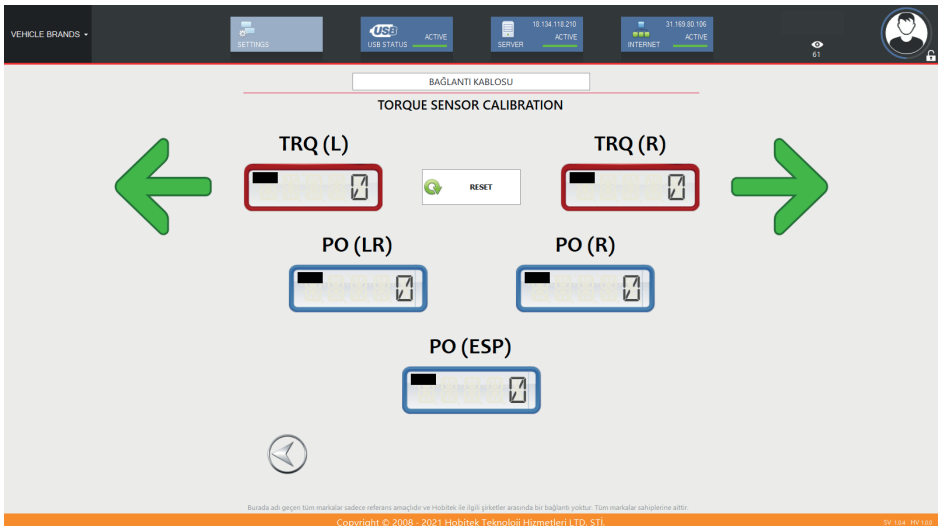


Figure 32) Steering Lab. V2 Torque Sensor Calibration Section

# STEERING LAB. V2

## SOFTWARE CONTENTS

### CAN-BUS Data Exchange Analysis Section

You can read Can-Bus data from vehicles in the CAN-BUS Analyzer section of the Steering Lab. V2 software's main screen. First, connect the vehicle connection cable (OBD2) to the OBD2 socket in the vehicle, then to the Steering Lab. Connect it to the OBD2 socket on the V2 main device. Then open the Can-Bus Analyzer section and click the "CONNECT" button. After connecting to the vehicle, you can see the Can-Bus data returning inside the vehicle. The Can-Bus Analyzer section can not only read in-vehicle data, but also can read data from modules working with Can-Bus outside the vehicle. All you have to do is determine the Can-Bus High and Can-Bus Low pins from the OBD2 socket and connect these pins to the corresponding pins on the module. If the connections and the modules you will test are OK, you can view Can-Bus messages and send Can-Bus messages at the same time.

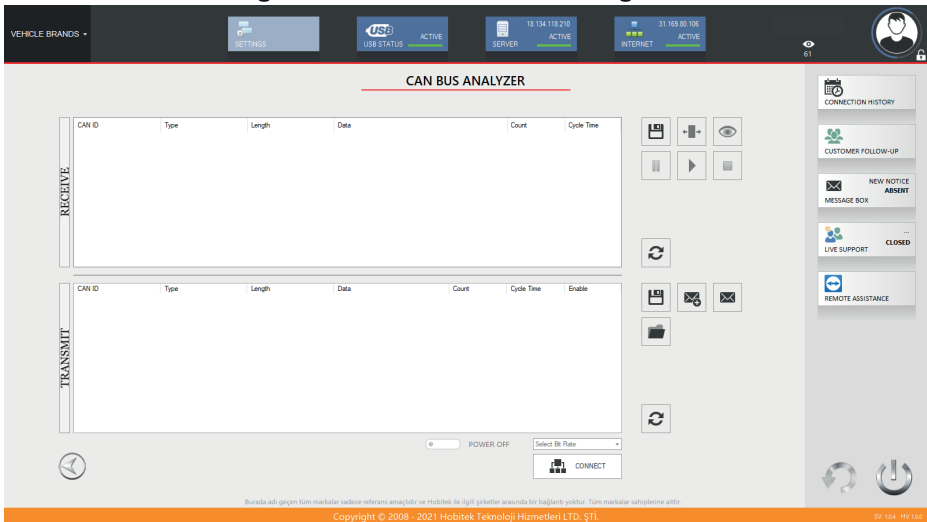


Figure 33) Steering Lab. V2 CAN-BUS Analyzer Section

# STEERING LAB. V2

## SOFTWARE CONTENTS

### Past Connections Section

In the main screen of the Steering Lab V2 software, the historical links section in the second section, which contains auxiliary usage areas, shows the connections of the users to the vehicles of the customers that they have served before. In this section, you can select the registration date and see the vehicle connections specific to the selected date. Vehicle connection information consists of vehicle serial number, vehicle brand, vehicle model, connection date and connection time. You can also view the total number of registered vehicles.

The screenshot shows the 'STEERING LAB. V2' software interface. At the top, there is a dark navigation bar with several status indicators: 'SETTINGS', 'USB STATUS ACTIVE', 'SERVER PASSIVE', and 'INTERNET ACTIVE'. Below this, the main content area is titled 'STEERING LAB. V2 PAST VEHICLE CONNECTIONS'. It features a table with the following data:

SERIAL NUMBER	CAR BRAND	VEHICLE MODEL	CONNECTION DATE	CONNECTION HOUR
10050218	Fiat	GRANDE PUNTO (159)	15-11-2021	12:34:51 pm

Below the table, it indicates 'NUMBER OF REGISTERED VEHIC 1 5'. At the bottom of the main area are three buttons: 'VAS PROGRAMMER', 'FAVORITE VEHICLE MODELS', and 'CAN BUS ANALYZER'. On the right side, there is a sidebar with several menu items: 'CONNECTION HISTORY', 'CUSTOMER FOLLOW-UP', 'NEW NOTICE ABSENT', 'MESSAGE BOX', 'LIVE SUPPORT CLOSED', and 'REMOTE ASSISTANCE'. The bottom of the screen has a footer with copyright information: 'Copyright © 2008 - 2021 Hobitek Teknoloji Hizmetleri LTD. ŞTİ.' and a version number 'SV 1.04 - 10/1/2021'.

Figure 34) Steering Lab. V2 Past Connections Section

# STEERING LAB. V2

## SOFTWARE CONTENTS

### Customer Follow-Up Program

The customer follow-up program, located in the second part of the main screen of the Steering Lab. V2 software, which includes the auxiliary usage areas, is designed to provide the user with better quality and faster service. In this section, when the customer requests a service from the user, he/she can create a work order, query the work order to see the work done, receive payment, and share the user company information so that the customers can easily reach the user.



Figure 35) Steering Lab. V2 Customer Follow-Up Program Main Screen



# STEERING LAB. V2

## SOFTWARE CONTENTS

### 1) Creating a New Work Order

When a new customer arrives, the user can create a work order in order to provide a better quality service to the customer and to list and edit the services provided. These created work orders can control the guarantee transactions to be presented to the customer, as well as provide the work order within the company. There are three different sections of the new work order creation screen. These sections are as follows:

- Customer Information Section
- Commercial Information Section
- Vehicle Information Section

**Customer Information:** In this section, there is the information of the customer to be served. When entering customer information, the red stars at the bottom right of the input boxes indicate that the data must be entered (Figure 36). Customer information that can be entered, customer name and surname, customer T.C. Identification number (for the invoice), the customer's e-mail address, the customer's city of residence, county and address information, and the customer's phone number. User can also add vehicle photo. The processing date of the vehicle, ie vehicle entry date, will be automatically determined by the software, and the date and time of the work order will be received.

# STEERING LAB. V2

## SOFTWARE CONTENTS

NEW WORK ORDER CREATION SCREEN

CUSTOMER INFORMATION    COMMERCIAL INFORMATION    VEHICLE INFORMATION

**PERSONAL INFORMATION**

First Name \*    Last name \*

T.C. CITIZENSHIP ID

Email

Province \*    District \*    Country

Address

Business Phone    Mobile Phone \*

**VEHICLE CHECK-IN DATE**

HISTORY    15-11-2021

HOUR    12:38 pm

**VEHICLE DELIVERY DATE**

HISTORY    ...

HOUR    ...

Add Photo

Figure 36) Steering Lab. V2 Customer Follow-Up Program -  
New Work Order - Customer Information

**Commercial Information:** In this section, there are fields where the current information of the customer company can be entered if the customer is a company. It includes company current information, company title, company data department, company tax number, e-mail address to be used in communication with the company, address information such as the company's province and district, and the company's telephone information. At the same time, the user can add the logo of the client company.

# STEERING LAB. V2

## SOFTWARE CONTENTS

NEW WORK ORDER CREATION SCREEN

CUSTOMER INFORMATION    **COMMERCIAL INFORMATION**    VEHICLE INFORMATION

**COMPANY INFORMATION**

Company Name +

Tax Administration     Tax Number

Email

Province     District     Country

Address

Business Phone     Mobile Phone

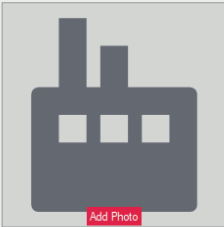
 Add Photo

Figure 37) Steering Lab. V2 Customer Follow-Up Program -  
New Work Order - Current Information

**Vehicle Information:** This section contains the information of the vehicle the customer brought for service. Customer vehicle information is necessary to provide a better quality and reliable service to the customer. In this section, the user can enter detailed information about the vehicle into the system before processing it within the vehicle, take a photograph of the vehicle from various aspects, take a photograph of the vehicle's critical and problematic areas, if any, and upload it to the system. Thus, the user documents the condition of the vehicle before it was put into operation. Documentation of vehicle information prevents disputes that may occur for both the user and the user's customer after the transaction.

# STEERING LAB. V2

## SOFTWARE CONTENTS

Customer Vehicle informations are, receiving and interested control personnel, vehicle license plate, vehicle brand and vehicle model, vehicle model year, vehicle chassis number, vehicle mileage and fuel status, vehicle license in the vehicle, type of work to be done, estimated fee of the work to be performed and the customer's complaint note information about the vehicle

Apart from this information, the user can add photos related to the vehicle, which the user sees as critical and wants to document, to the system while creating a work order. A maximum of six (6) photos can be added at each new work order creation stage. After taking these photos with a mobile phone or camera, the user can upload them to the computer, and add the photos uploaded to the computer to the system by clicking the "ADD PICTURE" buttons.

The screenshot displays the 'NEW WORK ORDER CREATION SCREEN' with a focus on the 'VEHICLE INFORMATION' section. The interface is divided into three main tabs: 'CUSTOMER INFORMATION', 'COMMERCIAL INFORMATION', and 'VEHICLE INFORMATION'. The 'VEHICLE INFORMATION' tab is active, showing a grid of six 'ADD PICTURE' buttons, each with a 'No image data' placeholder and a red label: 'CAR PICTURE 1', 'VEHICLE PICTURE 2', 'CAR PICTURE 3', 'VEHICLE PICTURE 4', 'VEHICLE PICTURE 5', and 'VEHICLE PICTURE 6'. To the left of this grid is a form for 'CUSTOMER VEHICLE INFORMATION' with fields for Control Staff, License Plate Number, Vehicle Brand, Vehicle Model Year, Vehicle Chassis Number, Vehicle Km, Vehicle Fuel Typ, Vehicle License, Work Type, Estimated Fee, and Customer Complaint. At the bottom of the screen is a '+ REGISTER' button.

Figure 38) Steering Lab. V2 Customer Follow-Up Program -  
New Work Order - Vehicle Information

# STEERING LAB. V2

## SOFTWARE CONTENTS

### 2) Active Work Orders Inquiry

The user can inquire about ongoing work orders related to the customers he serves. Open work orders in this area will be listed according to vehicle information and customer name and surname information. On the open work orders screen, you can see the vehicle chassis number, vehicle plate, customer name and surname, vehicle brand, vehicle model and type of work to be done regarding the open work orders. When you select the open work order, you can see the customer's customer note containing the problem with the vehicle, the type of payment, the estimated amount and the warranty period information in the lower section. By right clicking on the selected open work order, you can send an information message to the customer and edit the work order (Figure 39). Also, by clicking the "CLOSE WORK ORDER" button, you can terminate the open work order.

CHASSIS NO	THE LICENSE PLATE NUMBER WAS	CUSTOMER NAME / SURNAME	CAR BRAND	VEHICLE MODEL	TYPE OF WORK
------------	------------------------------	-------------------------	-----------	---------------	--------------

**CUSTOMER VEHICLE PROBLEM**

**PAYMENT AND WARRANTY INFORMATION**

Payment Type: [dropdown]  
Amount: [text input]  
Warranty: [dropdown] / MOON

CLOSE WORK ORDER

Figure 39) Steering Lab. V2 Customer Follow-Up Program - Active Work Orders

# STEERING LAB. V2

## SOFTWARE CONTENTS

### 3) Work Order Inquiry

The user can inquire about the terminated work orders related to the customers he/she serves. Work orders that have been terminated in this field will be listed according to the vehicle information and customer name and surname information. On the active work orders screen, you can see the vehicle chassis number, vehicle plate, customer name and surname, vehicle brand, vehicle model and type of work to be done regarding the open work orders. According to the vehicle license plate and brand information, according to the customer's name and surname information, the title of the customer company and the T.C. / by tax number and by selecting two dates and searching between those dates. You can reactivate the finalized work order with the "Reactivate WORK ORDER" button in the lower section.

CHASSIS NO	THE LICENSE PLATE NUMBER WAS	CUSTOMER NAME / SURNAME	CAR BRAND	VEHICLE MODEL	TYPE OF WORK
------------	------------------------------	-------------------------	-----------	---------------	--------------

Figure 40) Steering Lab. V2 Customer Follow-Up Program - Work Order Inquiry

# STEERING LAB. V2

## SOFTWARE CONTENTS

### **4) Receiving POS Payment**

The user can receive payment from the customers through Steering Lab. V2 for the finished and related work orders of the customers he serves. The payment method is implemented by following the protocols determined by the MOKA Payment Institution. By sending an SMS or e-mail to the customer, the customer can pay the user with the payment information only the customer can see and enter. With this payment system, the user can give the customer the opportunity of installments up to 12 months. This payment system is compatible with most banks in Turkey and each bank has a separate installment policy.

MOKA payment system will be active with future updates. In order to use this payment system, you must register with the MOKA Payment Authority.

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## **Live Support Section**

In the main screen of the Steering Lab. V2 software, the live support section, which contains the auxiliary usage areas, is one of the sections where the user can reach the Hobitek Technology Services authorities and get help when they have a problem with the Steering Lab. V2 main device or program. In this section, the user can send a live message to the authorities and if there is an online authority, he can explain the problem on this section and find solutions to the user problem with the authorities.

# STEERING LAB. V2

## SOFTWARE CONTENTS

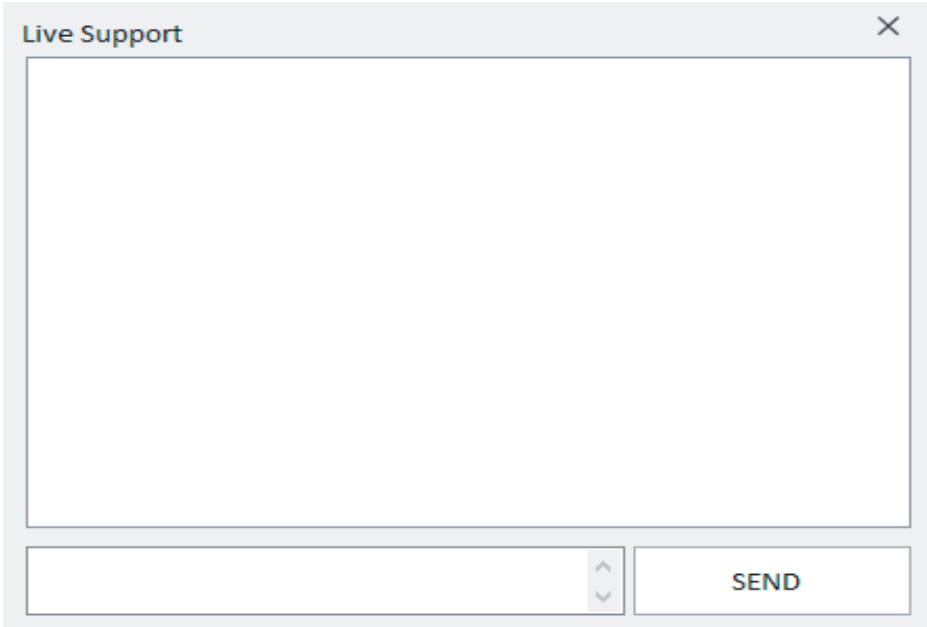


Figure 41) Steering Lab. V2 Live Support Section

## Remote Assistance Section

In the main screen of the Steering Lab. V2 software, the remote assistance section, which contains the auxiliary usage areas, is one of the sections where Hobitek Technology Services authorities can reach and receive assistance when they have a problem with the Steering Lab. V2 main device or program. In this section, the user, Hobitek Technology Services Company officials, connects to the user's computer via the TeamViewer program. TeamViewer application must be available on the user's computer.



# STEERING LAB. V2

## SOFTWARE CONTENTS

If there is no TeamViewer application on the user's computer, it must be downloaded in order to use the remote help section. When the "REMOTE HELP" section in the second section of the Steering Lab V2 software's main screen, which contains the auxiliary usage areas, is clicked, the TeamViewer application will open. In this section, after the user provides the connection information to Hobitek Technology Services, Hobitek Technology Services officials can connect to the user's computer and help the user with high performance and find solutions to user problems.

# WARRANTY CERTIFICATE

## WARRANTY CERTIFICATE COMMITMENT

### Manufacturer or Importer Company's;

Title : HOBİTEK TEKNOLOJİ HİZMETLERİ ELEK.ELEKTRBİ.MA.SA.V.T.LTD.ŞTİ  
Address : Irmak Mah. Hasan Güven Cad. no:69/4A Gaziemir/İZMİR  
Phone : 0 850 305 9262  
Fax :  
E-Mail : info@hobitek.com.tr

Authorized's Name and Surname:

Company Stamp:

### Authorized Dealer Company's;

Title :  
Address :  
Phone :  
Fax :  
E-Mail :

Authorized's Name and Surname:

Company Stamp:

### OFFERED PRODUCT's

Type :  
Model :  
Brand :

Warranty Period: 2 YEARS

# WARRANTY CERTIFICATE

## WARRANTY CONDITIONS

- 1) The warranty period starts from the date of delivery of the product and is 2 years.
- 2) The entire product, including all its parts, is under warranty.
- 3) In case it is understood that the good is defective, the consumer is in Article 11 of the Law No. 6502 on the Protection of the Consumer;  
Withdrawing from the contract,  
Asking for a discount from the sales price,  
Asking for free repair,  
Requesting to be replaced by a multiple of what is sold,  
Customer can use one of his rights.
- 4) If the consumer chooses the right to repair free of charge from these rights, the seller is obliged to repair or have the product repaired without any charge under the name of: labor cost, replacement part price or any other name. The consumer can also use the right of free repair against the manufacturer or importer. The seller, manufacturer and importer are jointly responsible for the consumer's exercise of this right.
- 5) If the consumer uses his right to free repair, the goods;
  - a) Failure again within the warranty period,
  - b) Exceeding the maximum time required for its repair,
  - c) If it is determined by a report that the repair is not possible by the authorized service station, seller, manufacturer or importer; The consumer may request the seller to return the price of the goods, a price discount at the rate of defects or, if possible, the replacement of the goods with the amount without defects. The seller cannot refuse the consumer's request. If this request is not fulfilled, the seller, the manufacturer and the importer are jointly and severally liable.
- 6) The repair period of the product cannot exceed 20 working days. This period starts on the date of notification of the defect related to the product to the authorized service station or seller within the warranty period, and on the date of delivery of the product to the authorized service station if it is out of the warranty period. If the defect of the goods is not corrected within 10 working days, the manufacturer or the importer; Until the repair of the good is completed, he has to allocate another good with similar characteristics to the use of the consumer. In case of malfunction of the product within the warranty period, the time spent in repair is added to the warranty period.

# WARRANTY CERTIFICATE

- 7) Defects arising from the use of the product contrary to the points in the user manual are not covered by the warranty.
- 8) The consumer may apply to the Consumer Arbitration Committee or the Consumer Court in the place where the settlement is located or where the consumer transaction is made in case of disputes that may arise regarding the use of his rights arising from the guarantee.
- 9) In the event that this guarantee certificate is not given by the seller, the consumer shall be entitled to T.C. The Ministry of Commerce can apply to the General Directorate of Consumer Protection and Market Surveillance.
- 10) The above-mentioned provisions are for products that have a warranty obligation in accordance with the Law No. 6502 on the Protection of the Consumer. We undertake that the products not included in this scope will be under the guarantee of our company, which has applied for at least two years.
- 11) Users of Steering Lab. V2 device and modules have the right to repair and / or replace free of charge, if the product is found to be defective in accordance with the third part, first part and article 11 of the Law on the Protection of the Consumer, as the product is covered by the warranty. The defect of the goods sent back or objected by the customer will be determined after the damage and defect determination process. All expenses related to the defective goods belong to Hobitek Technology Services. In the event that the product is not covered by the warranty and there is no defective product, all costs incurred in the repair and shipment of the device belong to the user.

## CONDITIONS NOT COVERED BY WARRANTY

- \* Products whose warranty certificate or invoice cannot be presented,
- \* The current state of wear of the product and the invoice date are not compatible, situations where it is determined that the invoice was issued later,
- \* Any malfunctions in the product as a result of not following the user manual,
- \* Malfunctions caused by changes or additions to the product,
- \* Malfunctions caused by persons other than authorized services opening the product, intervening and using non-original spare parts,
- \* Parts depending on usage or completing their natural life (transistors, relays, capacitors, connectors etc.),
- \* Malfunctions in accessories and other parts for improper use, excessive force, insufficient maintenance or protection (housings, collets, chucks, hoses, couplings, nipples etc.),

# WARRANTY CERTIFICATE

- \* Abnormal environmental conditions and use in unsuitable operating conditions, malfunctions caused by the use of dust, burr, liquid in the product without cleaning even though it is not cleaned,
- \* Damages and failures caused by the use of non-original or worn, dull, accessories,
- \* Malfunctions caused by incorrect product selection (Use of fasteners different from the package content etc.),
- \* Malfunctions and damages caused by transportation, unloading, loading, external physical (broken, cracked, scratched, crushed, etc.) and chemical factors after the delivery of the product,
- \* Failures caused by fire, lightning strikes, freezing and natural disasters,
- \* Defects and damages resulting from war, terrorism, demonstrations and actions

**NOT COVERED BY WARRANTY.**

