



## AS Axe Scale

### User Manual





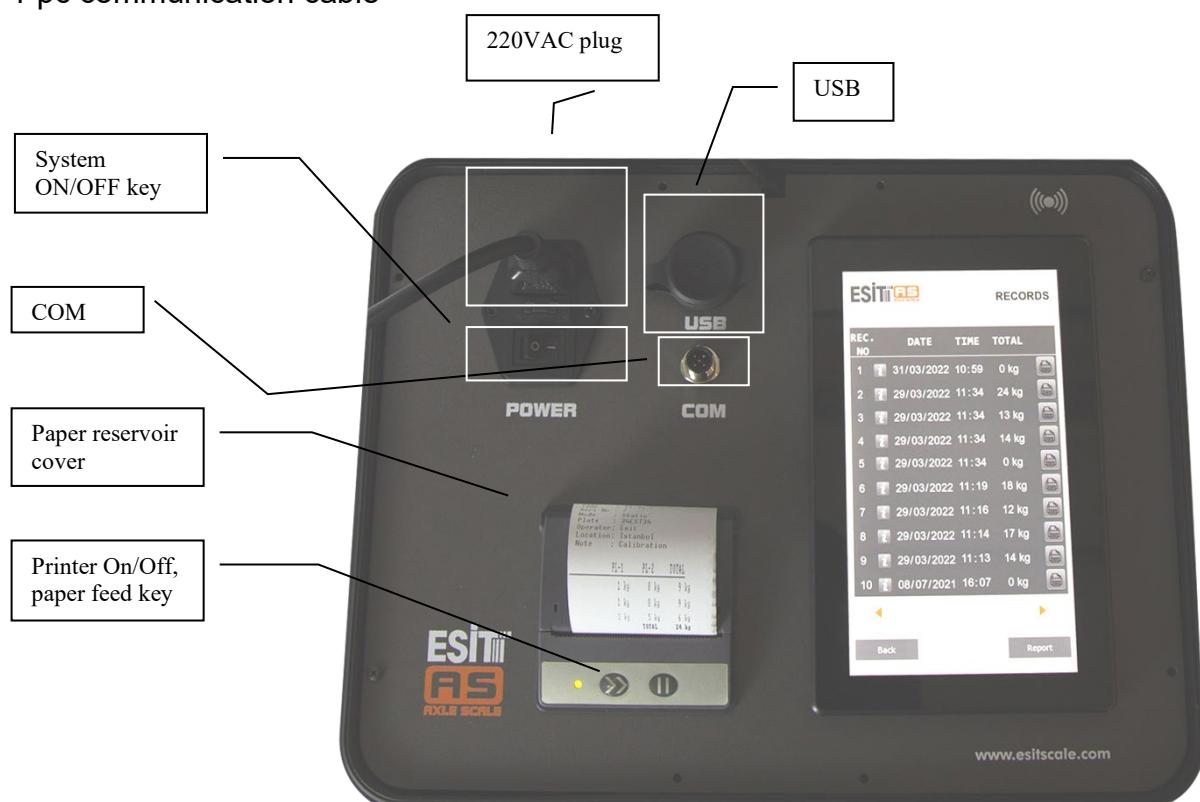
AS Axle Scale  
User Manual

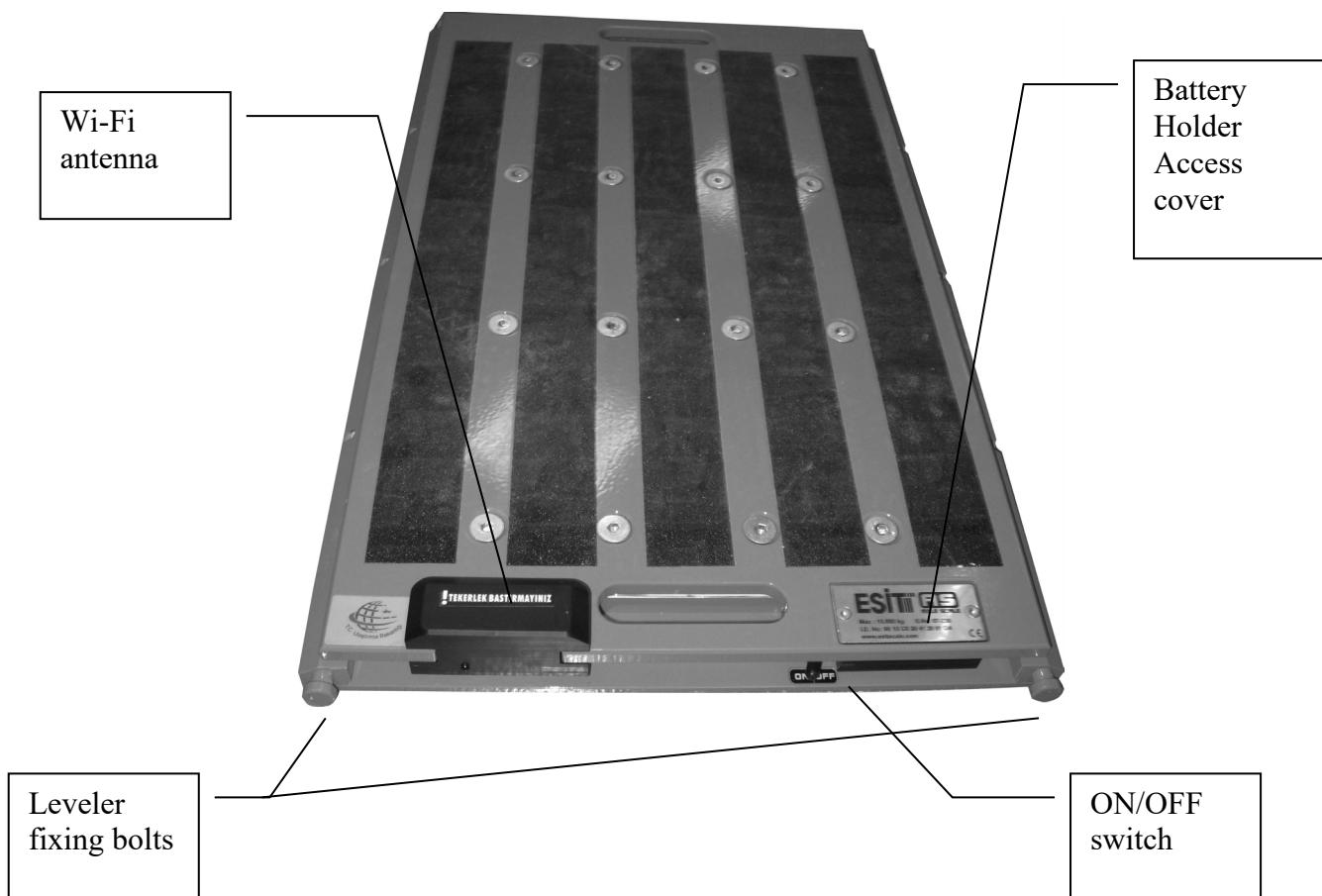
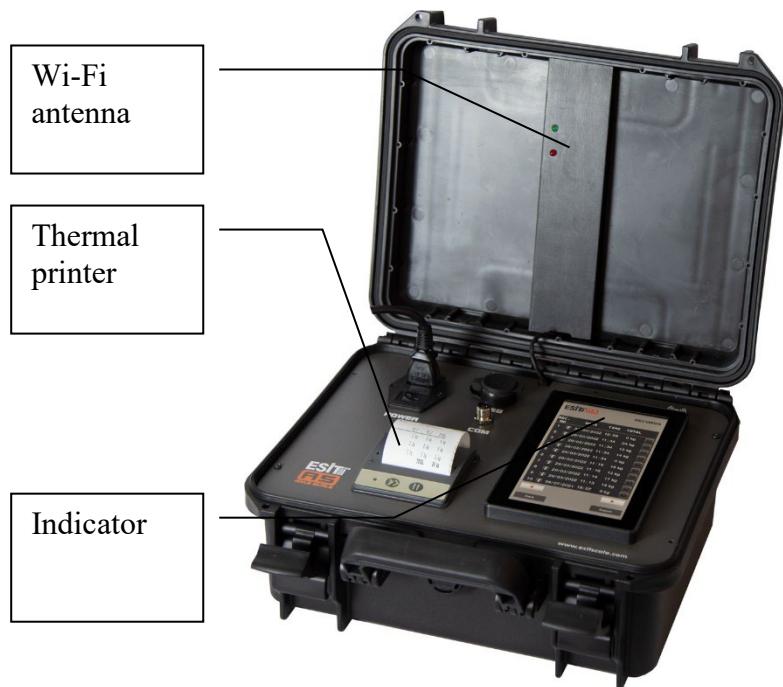
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- 1 pc coordinator (bag)
- 2 pcs platforms
- 4 pcs aluminum leveler
- 1 pc battery charger unit
- 1 pc 220 V power supply cable
- 1 pc communication cable





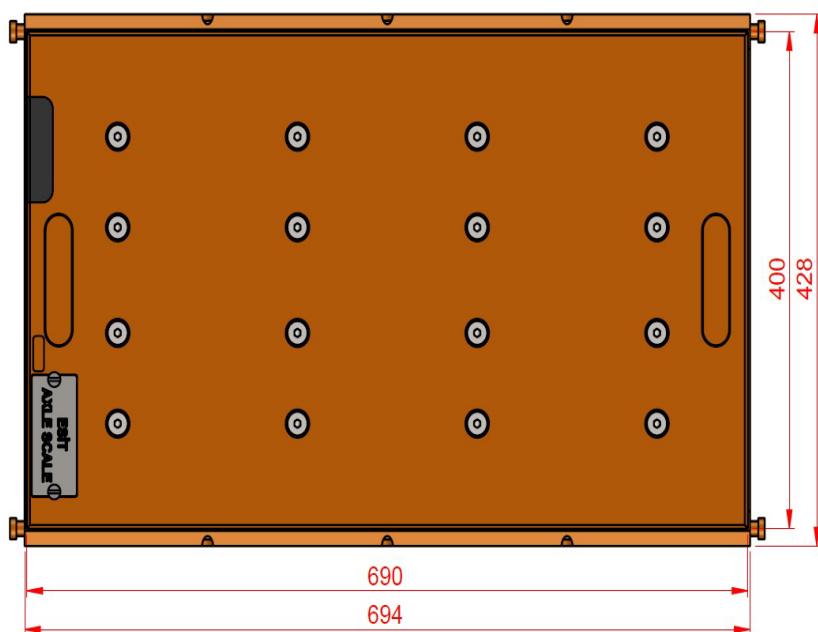
## PHYSICAL DIMENSIONS

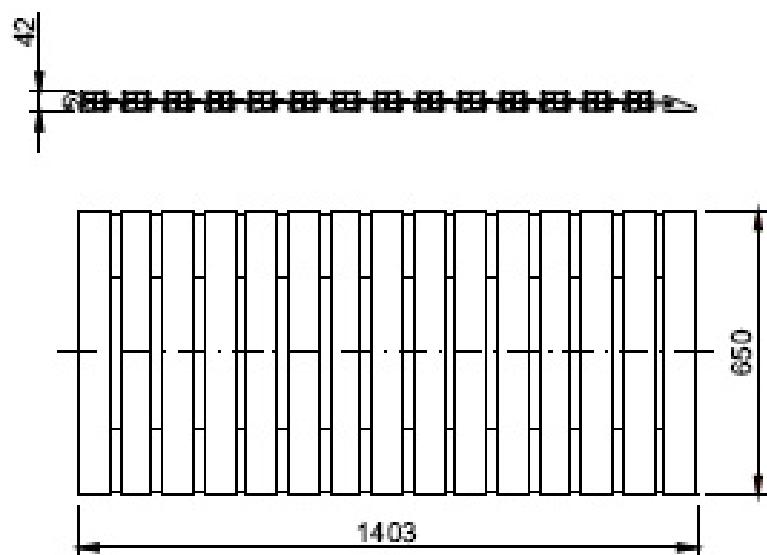
### ***AS Wireless Axle Scale Coordinator***



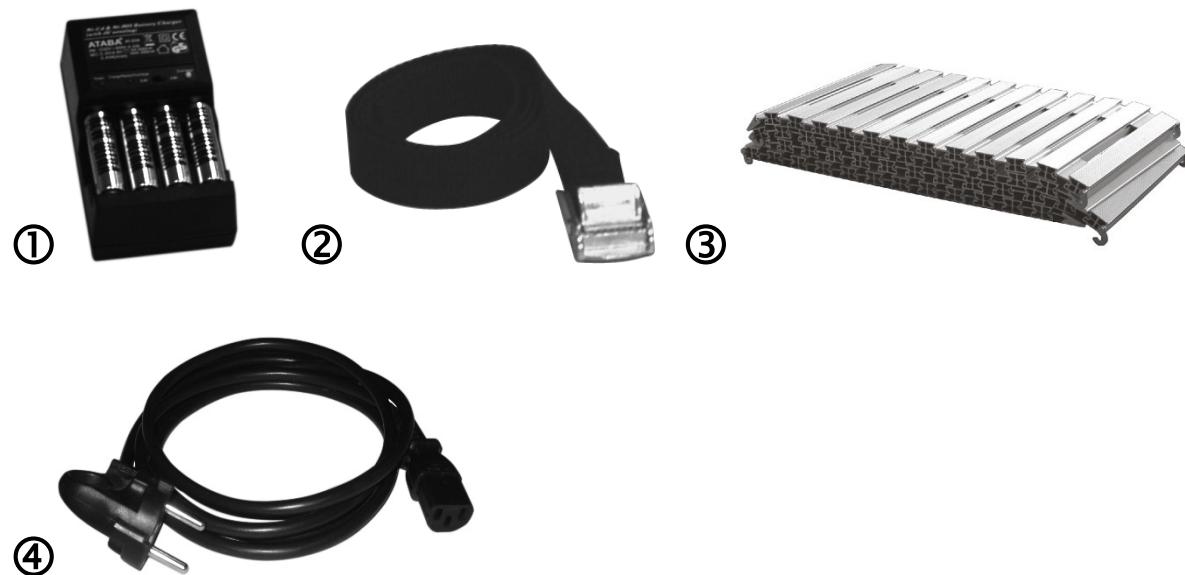
336 x 300 x H 148 mm

### ***Platforms***



**Levelers**

## EQUIPMENTS



- ① Battery charger unit:** Used for the two batteries used in the platforms. Always charge these batteries by this charger unit. Before and after charging, take care of the steps "battery holder access cover open-close directives"
- ② Leveler belt:** Used for keeping the levelers in cylindrical form
- ③ Platform levelers:** used for keeping the other axles on the platform on the same level
- ④ 220 VAC power cable:** Used for charging the axle scale coordinator (bag) unit from 220 VAC mains

## ***Charging the Units***

Before Esit AS Wireless Axle scale is used, the coordinator and platforms charge level must be checked,

The batteries inside the platforms are good for 500 charge-discharge. In normal usage, e.g., 8 hours a day, the platform batteries will last for approximately 3 months. In case the batteries are damaged, 2 AA type batteries of 1.2V can be utilized.

The coordinator unit can be charged by 220VAC mains supply.

## ***Battery holder access cover open-close directives***

To open the access cover of the battery holder of the platforms, coin or flat tip screwdriver must be used. During opening, you must reserve the insulation seal and the base foam to place during close. After charging the batteries, place them according to their polarities and place back the base foam and insulating seal under the cover and fix the screws tightly.

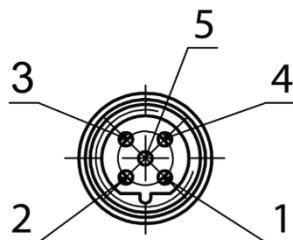
**! Never use the charger unit for non-chargeable batteries**

You can charge the coordinator unit via 220 VAC mains supply.

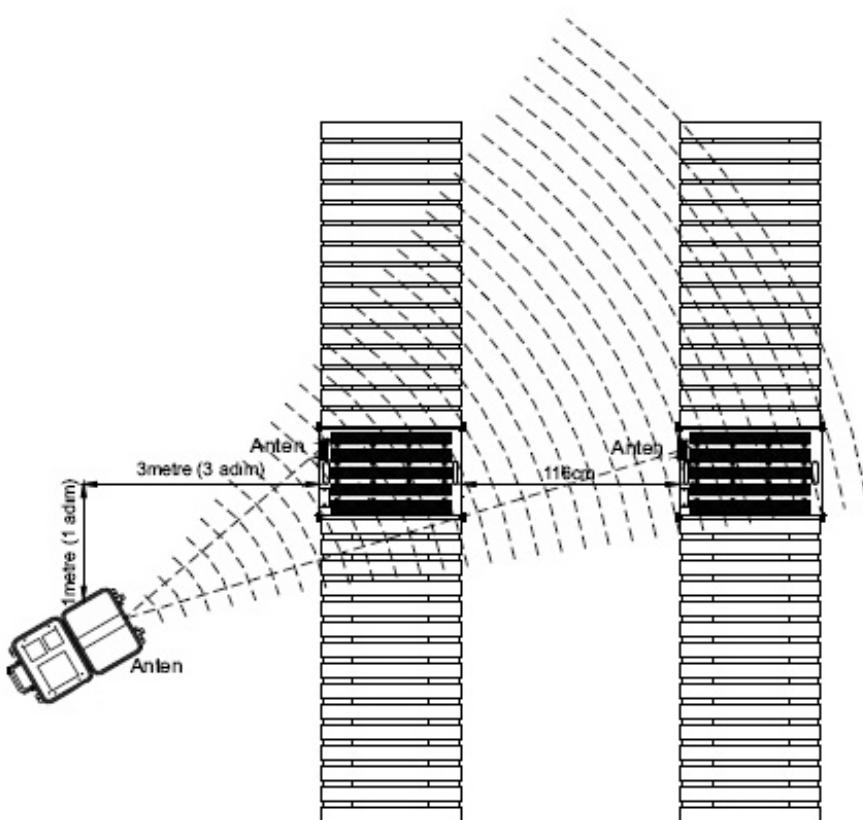


- 1- **USB** :Used for firmware upgrade and storing information of vehicles
- 2- **COM** : Used for RS232 and RS485 communication

1	White	Rx
2	Brown	B
3	Black	GND
4	Blue	Tx
5	Gray	A



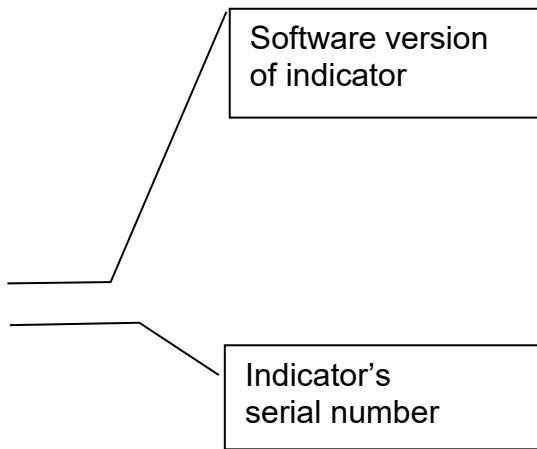
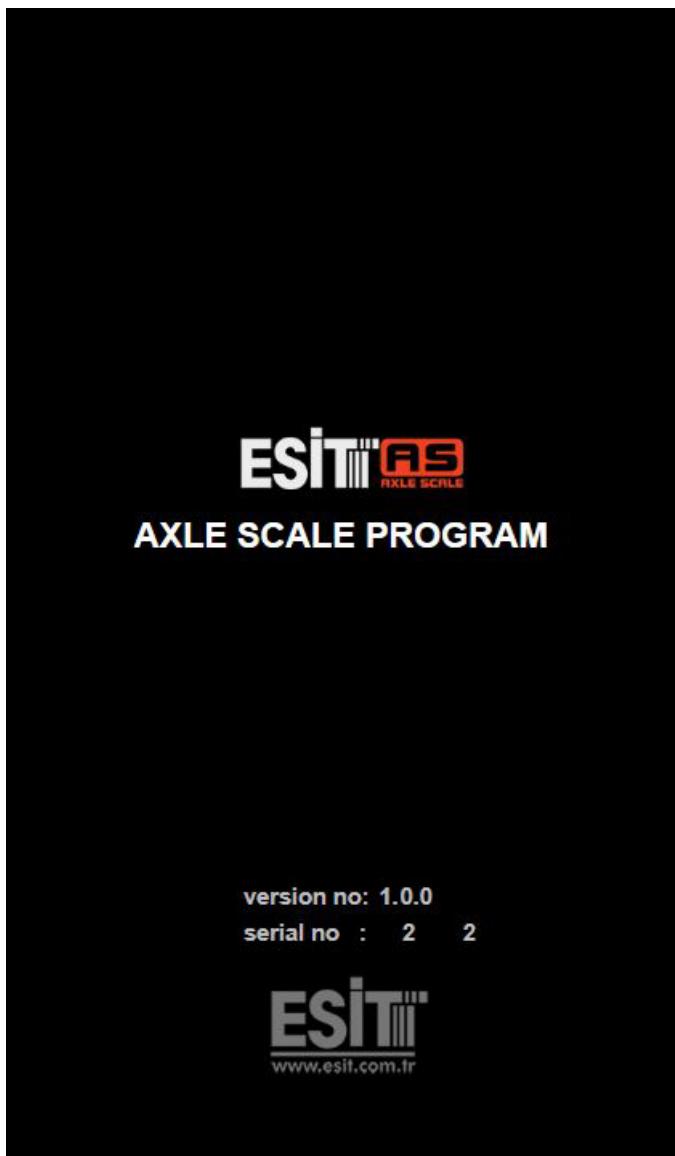
## ASSEMBLING THE SYSTEM



- ! Take utmost care while placing the components forming the system
- ! See both platforms are in “ON” state and communicate with the coordinator
- ! The surface where the platforms are laid must be smooth and clear
- ! The wheels should not press on the Wi-Fi antenna of the platforms
- ! Try not to operate on harsh weather
- ! Take necessary precautions of the traffic where the system will be operated
- ! Both wi-fi antennas should be on the coordinator side
- ! The open cover of the coordinator outer side should be facing the platforms

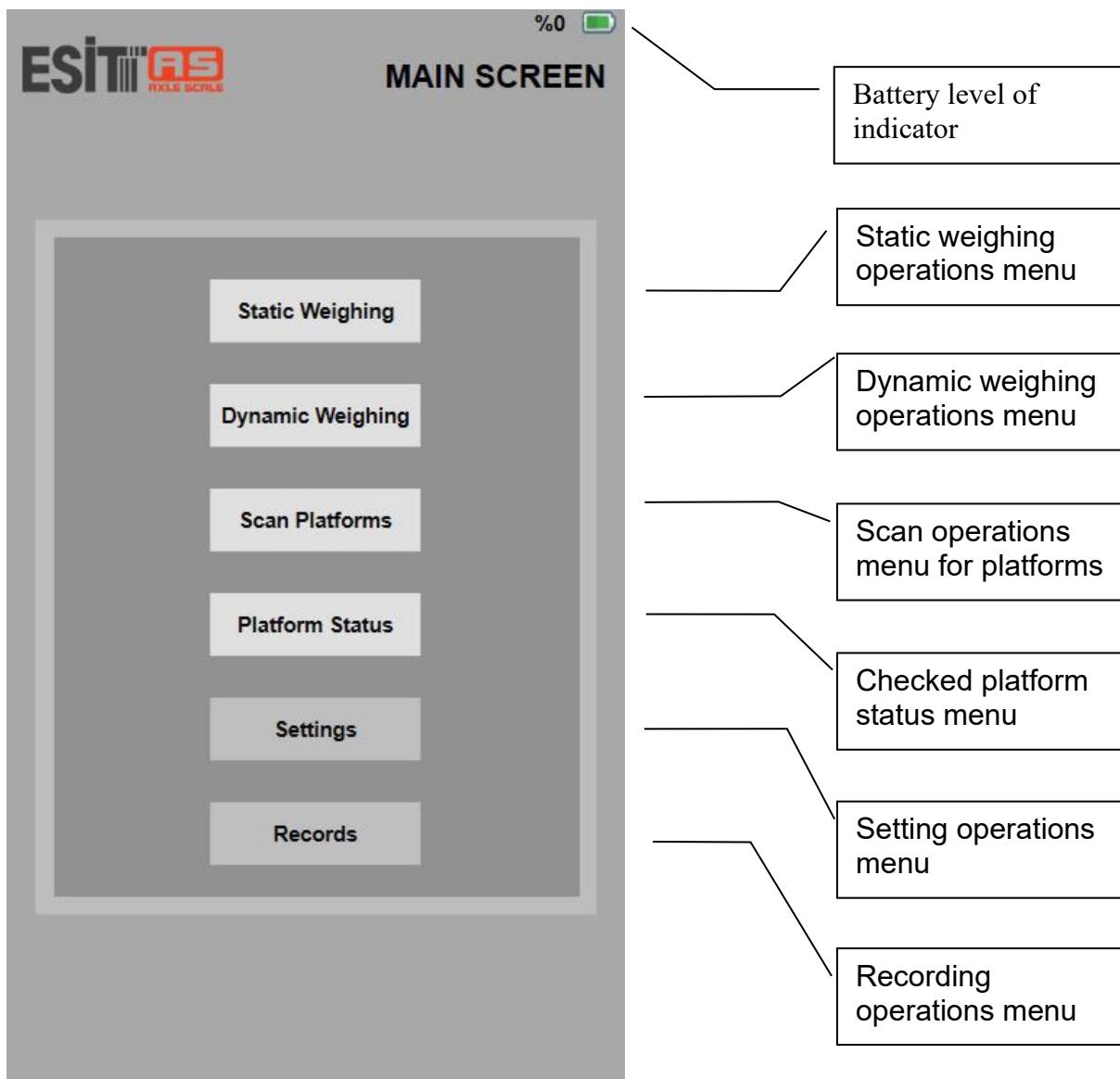
## OPERATING THE SYSTEM

After the assembly of the system is completed, both the indicator and the platforms should be turned on.



When first powered, the screen displays ESIT and system information. The information belongs to the software version and serial number of coordinator device.

When start-up procedure is completed, the device is ready for operation with its main screen on:

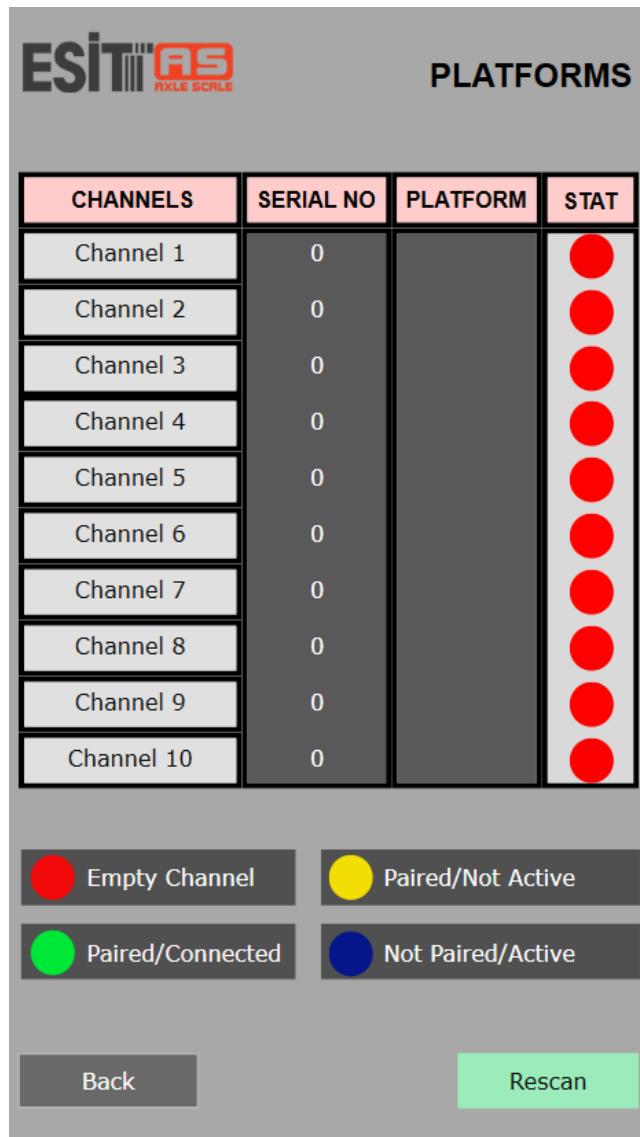


## Defining the Platforms to the system

If the platforms are not defined to the coordinator, this must be done within the

**Scan Platforms**

menu.



This part shows platforms' connection status.

Empty Channel: User can use that channel for connection.

Paired/Not Active: This channel was used for communication before, but system lost connected status.

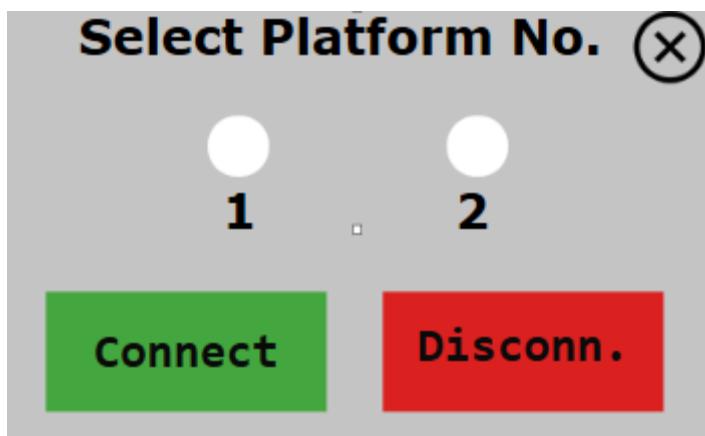
Paired/Connected: All procedure to communicate with platforms is completed successfully.

Not Paired/Active: The device and platforms have connection status, but they haven't been paired each other

Within this menu, **Rescan** is used for scanning the air. When the surrounding is scanned, all the active platforms are displayed with their serial numbers. The user should select the platforms by channel buttons

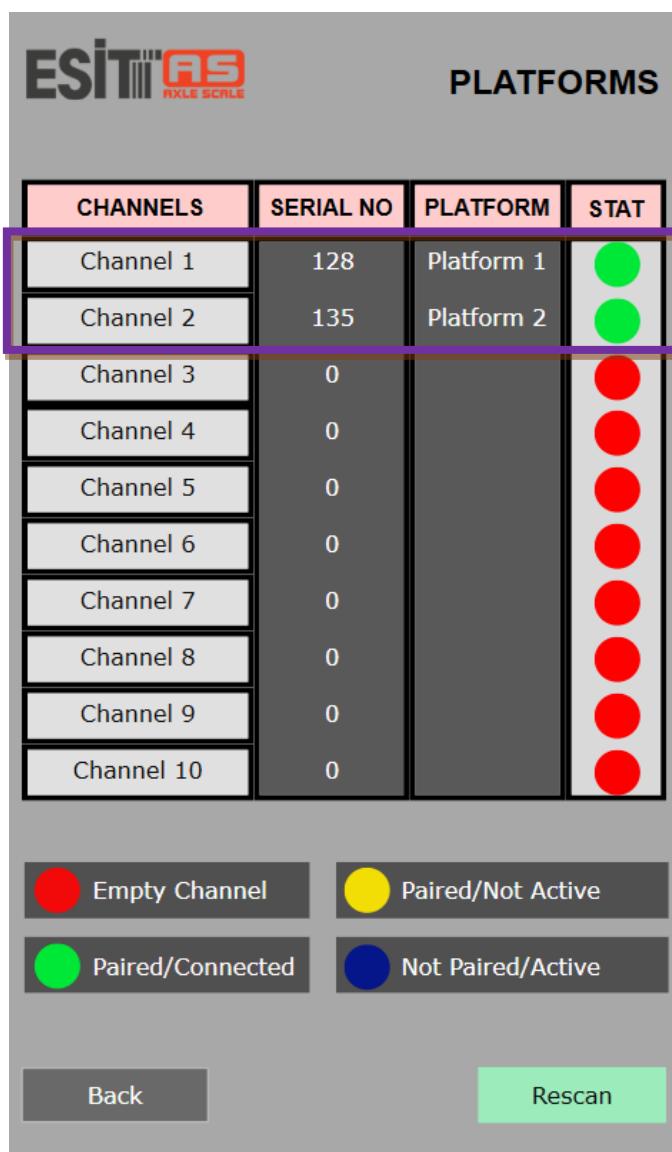
(**Channel 1**, left side of screen).

When the buttons are selected, Select Platform menu is opened:



Each platform is assigned a number and selected **Connect** button. This step should be done for each platform individually and selected different platform number.

After every definition, the list is updated by **Rescan**. When all steps are completed, user can see a screen like following picture:



If previously selected platform is changed and is out of reach, its number will be seen on the display. In this case, relevant channel should be selected, and disabled connection. If a new platform is to replace an existing one, this platform is seen at different channel, enabled new one with channel button.

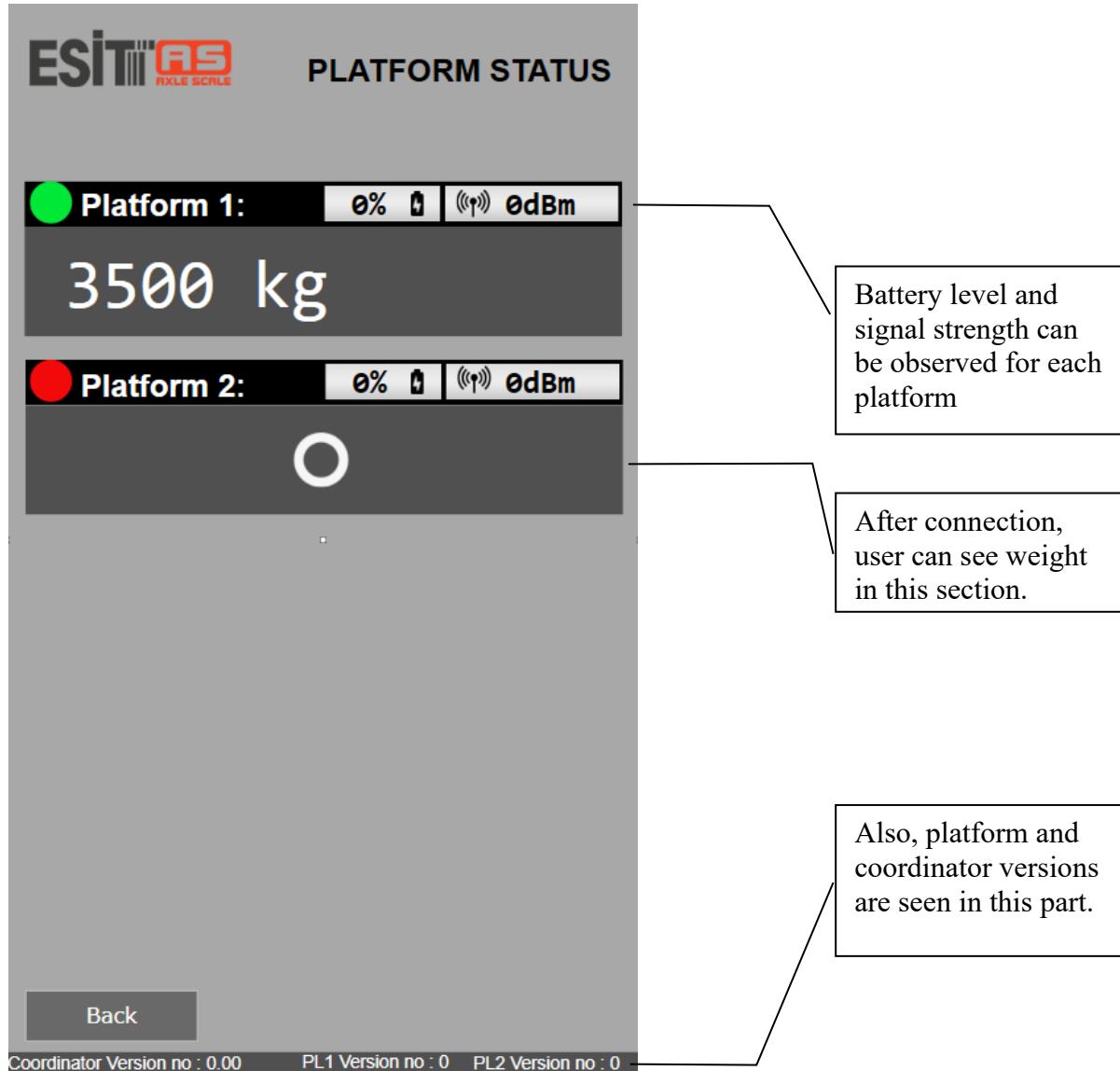
If the status change from green to blue or yellow during use the same platforms, the platform should be disabled firstly and then enabled again.

## Checking Platform Status

If the user wants to know information about platforms, should selected

**Platform Status**

menu from main screen.

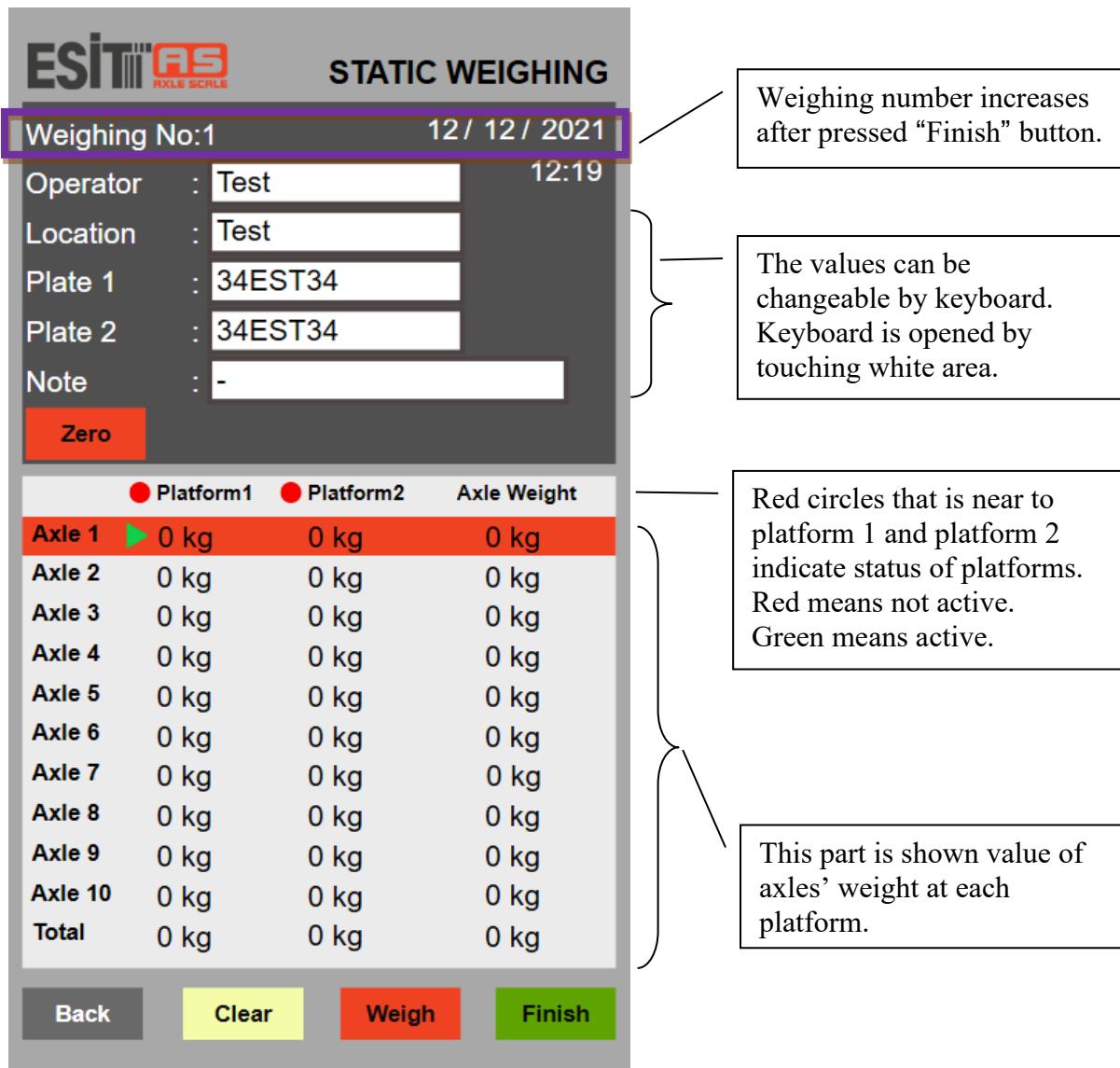


If the voltage level is below the critical limit %50, the batteries must be recharged.

## OPERATION

### STATIC WEIGHING

If the user wants to work static, should selected **Static Weighing** menu from main screen.



**Zero**

is used for zeroing current weight at each platform.

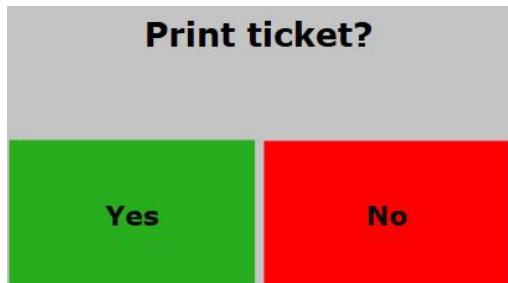
**Weigh**

When the no-motion state is achieved, **Weigh** is pressed and the weights are stored to the memory. This step should be done for each axle.

**Clear**

If the weight is repeated for that axle, **Clear** is used.

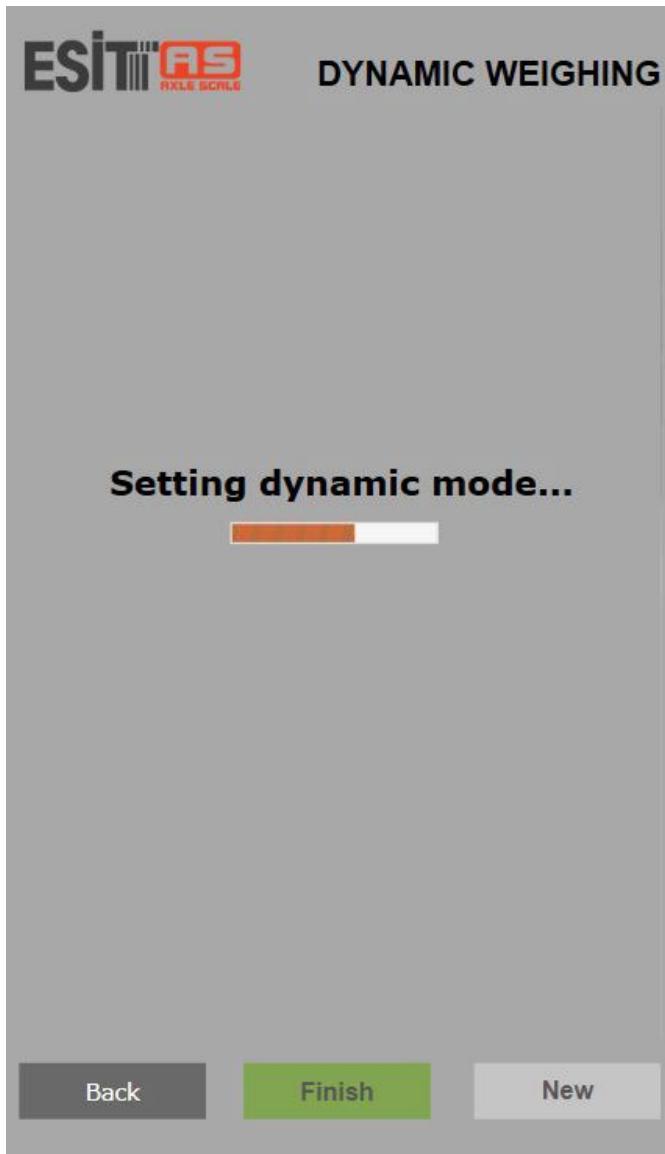
After all operation is completed, **Finish** is pressed and is showned printer screen.



If the user wants to print ticket, should pressed **Yes**, otherwise **No**.

## DYNAMIC WEIGHING

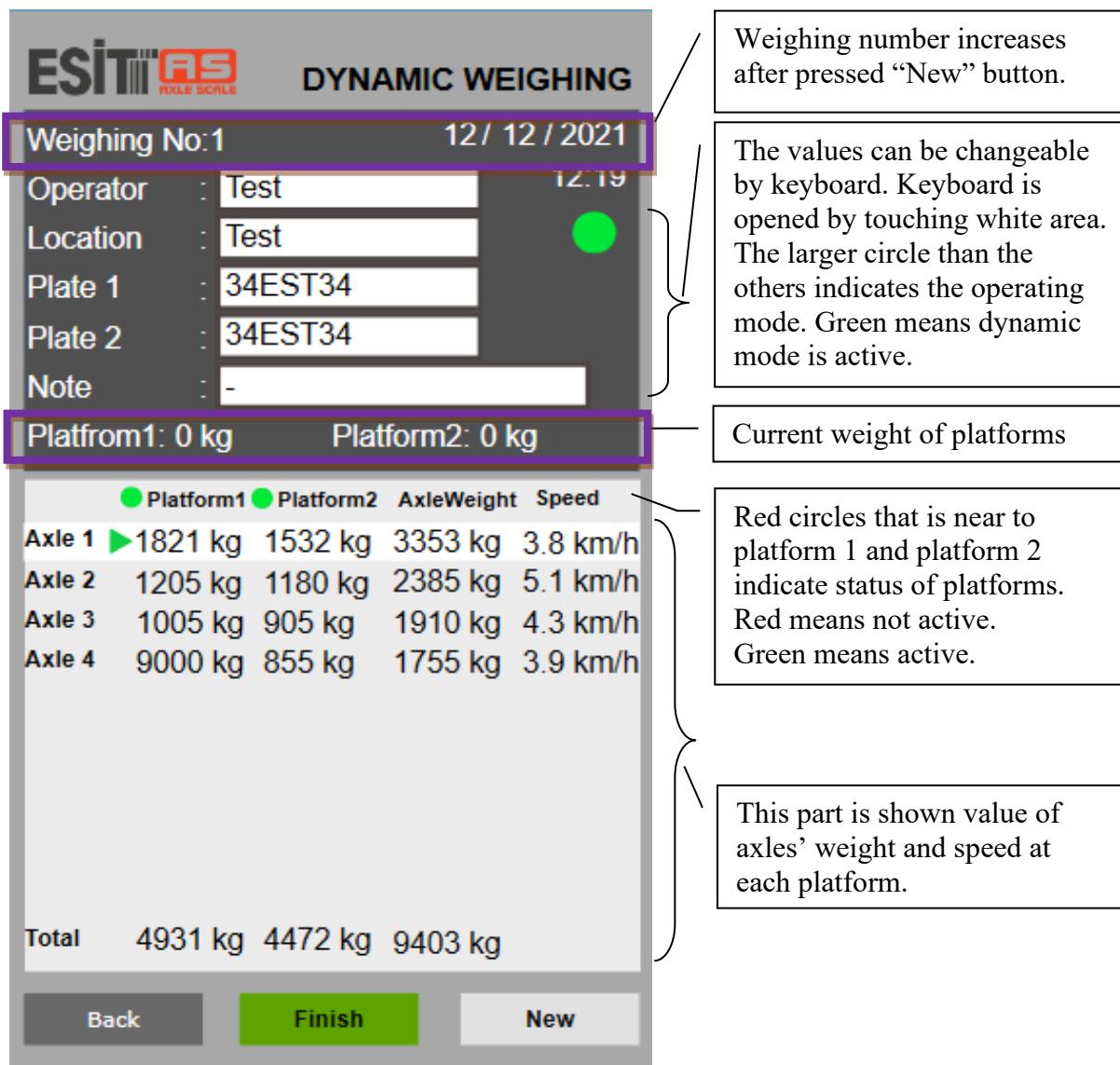
If the user wants to work dynamic, should selected **Dynamic Weighing** menu from main screen.



### Dynamic Weighing

menu from

wait until platforms' mode  
is changed as a dynamic.

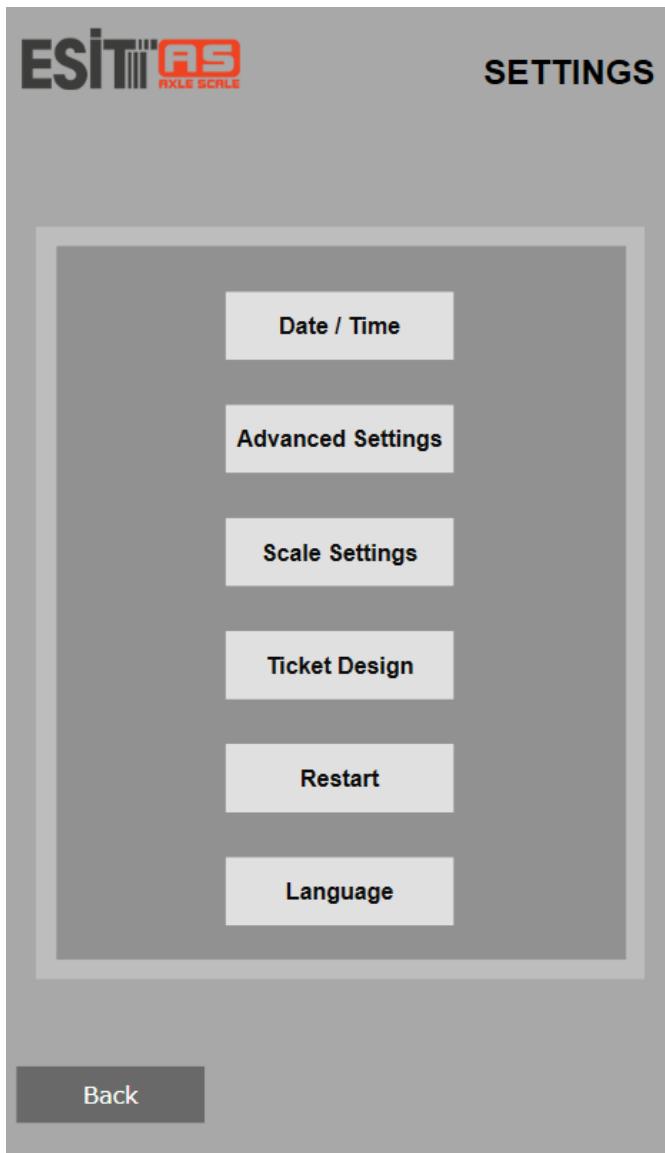


Before starting dynamic weighing, user should press **New**.

After all operation is completed, **Finish** is pressed and is shown on printer screen. The printer screen is same as static weighing.

***SET-UP (user configuration)*****Settings**

menu should be selected from main screen for user configurations.



This menu has sub-menu for each setting.

DATE / TIME adjustment

ADVANCED SETTINGS for configuring backlight, sound, sleep mode, calibration, and password

SCALE SETTINGS for system settings

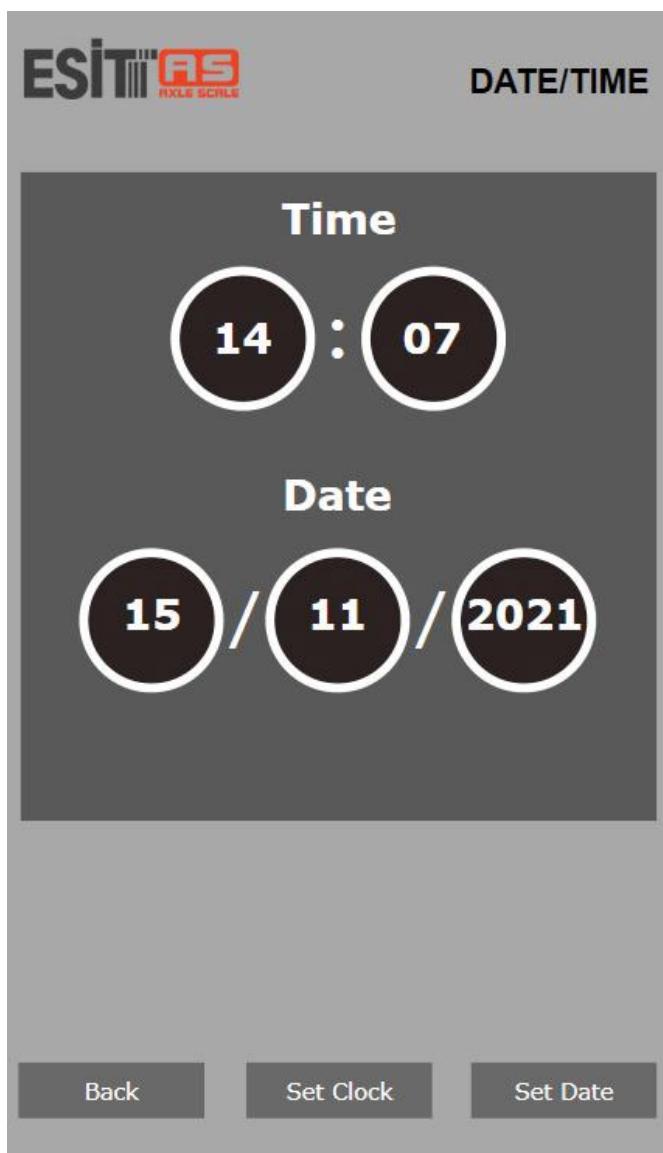
TICKET DESIGN for ticket setup

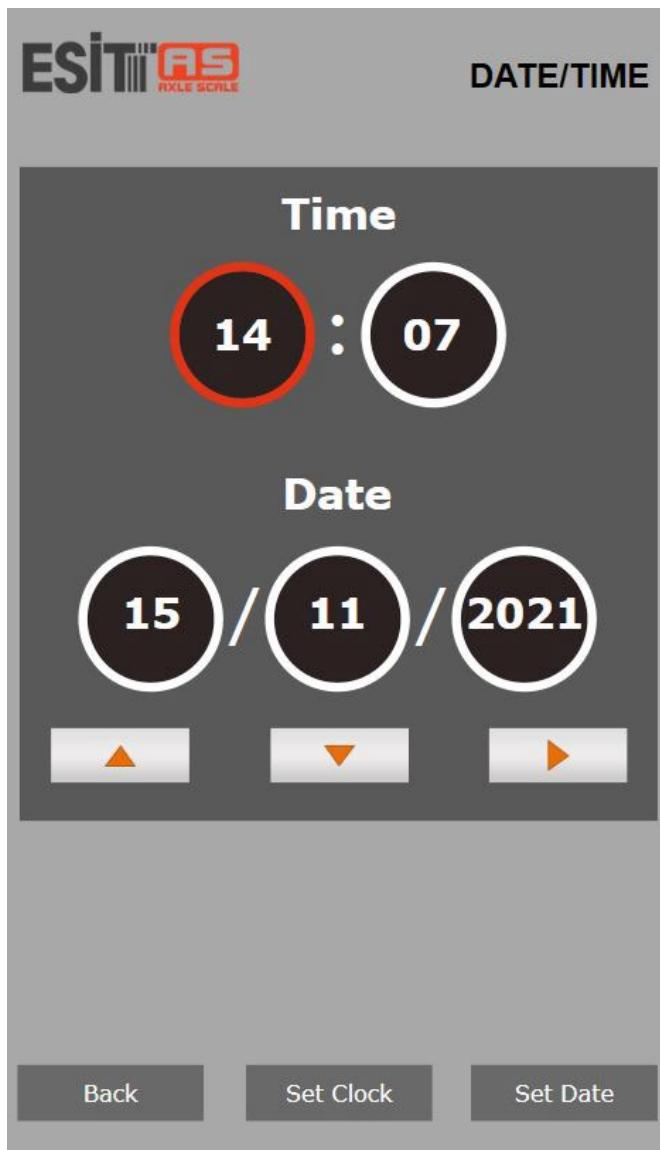
RESTART for resetting the system

LANGUAGE selection from Turkish-English

**DATE / TIME**

The real time clock in the coordinator is battery backed and can last with the power down. But in case of clock adjustment is required then this menu should be executed.





- Select **Set Clock**
- Set the hour with (up) and (down)
- Use to pass next item
- Set minute the same way you set the hour.

After all items are set, selected for sending the request. The time is in 24 hours format.



Date is written in Days/Month/Year sequence.

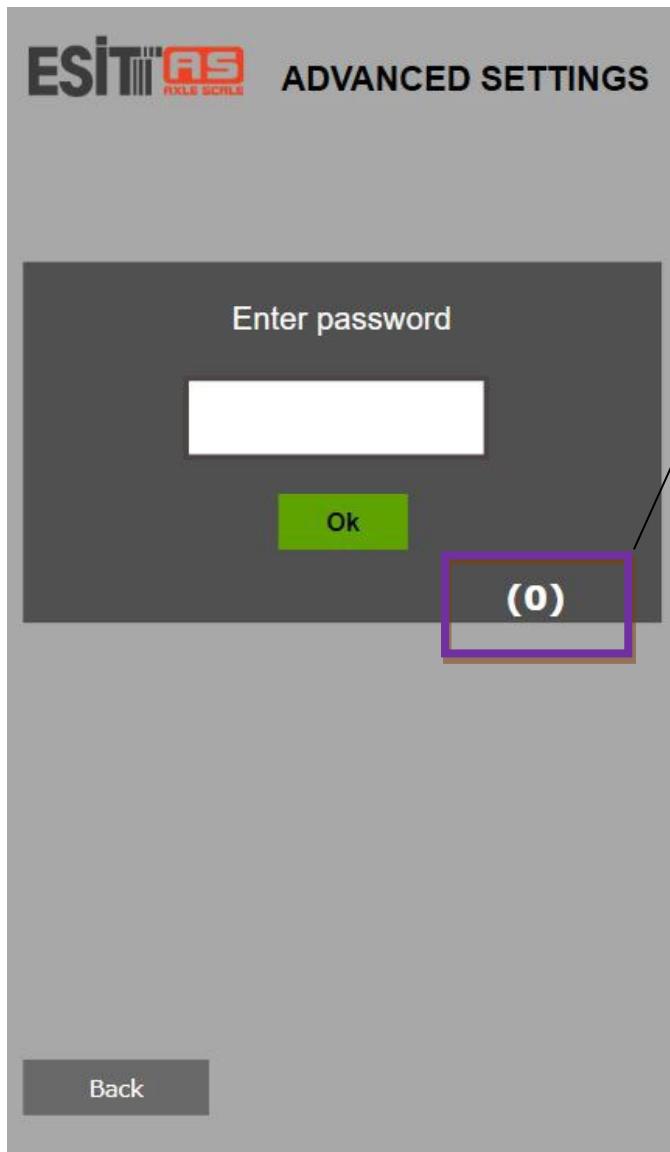
- Select **Set Date**
- Set the day with (up) and (down)
- Use to pass next item
- Set month and year the same way you set the day.

After all items are set, selected for sending the request.

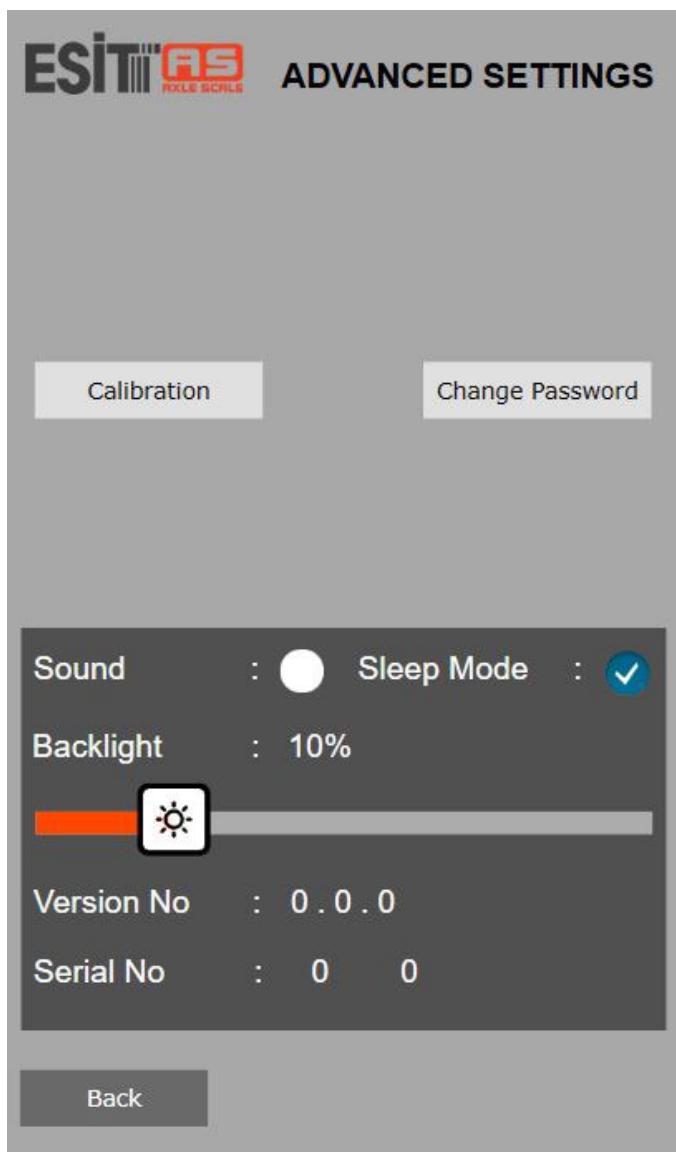
## ADVANCED SETTINGS

This part of the menu is password protected and only the authorized personnel who knows the password may access this part.

The factory default password is 1 1 1 1 1 1. When this combination is entered correctly, the “Advanced settings” menu can be accessed. Password is limited by 6 characters.



When the menu is opened in every time, a new number is produced. If you forget the password, call the ESIT service department.



Sound and Sleep Mode are selectable.

If the circle is blue mark, sound is on. Otherwise, sound is off.

Sleep mode is used for automatic backlight. If sleep mode is selected, backlight

decreases to 1% after a while if the screen is not touched. Moreover, backlight can

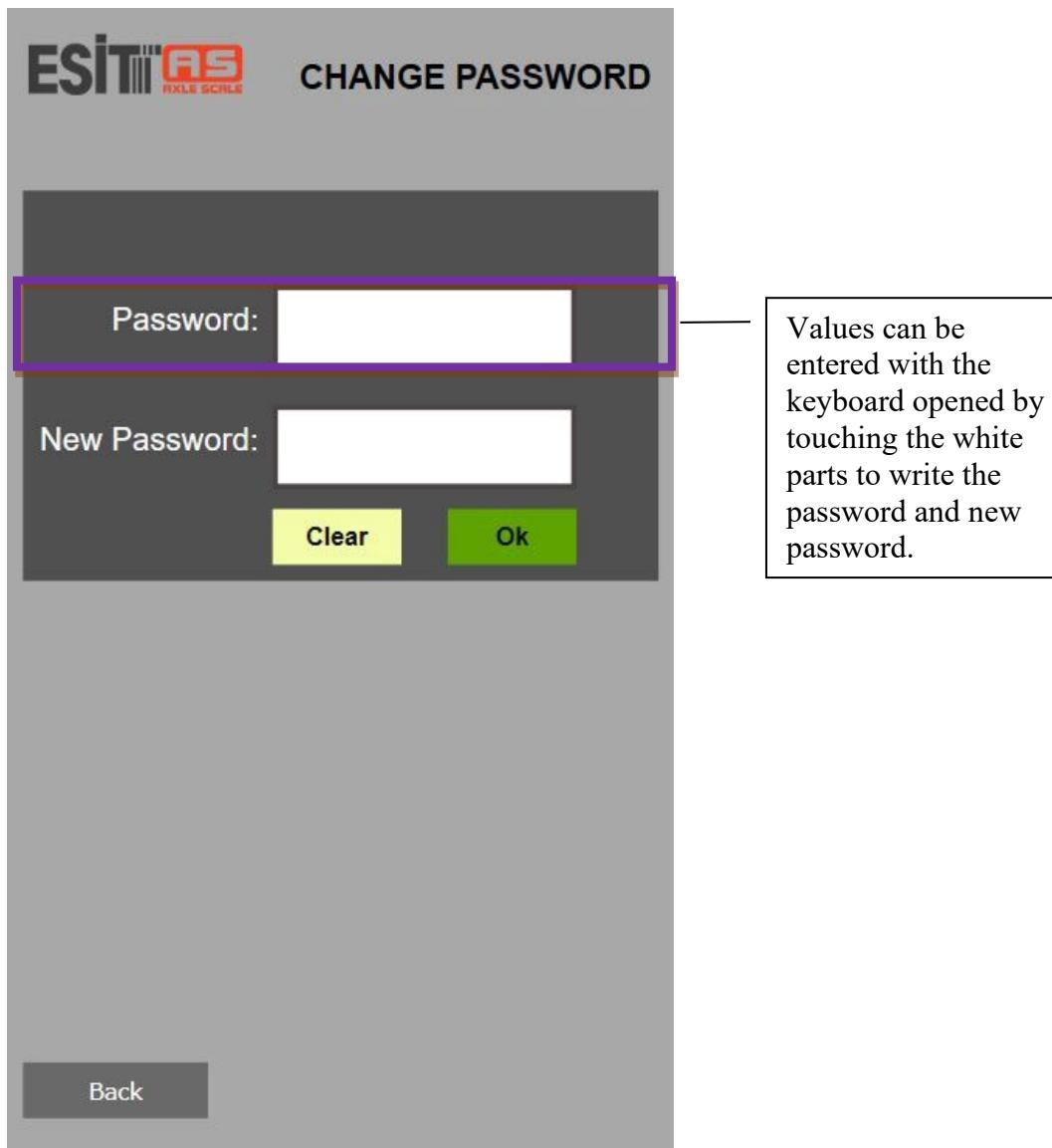
be adjusted with by user.

"Version No" is the indicator's software version.

"Serial No" is the production number of the device.

**Calibration** will be explained in "CALIBRATION" section.

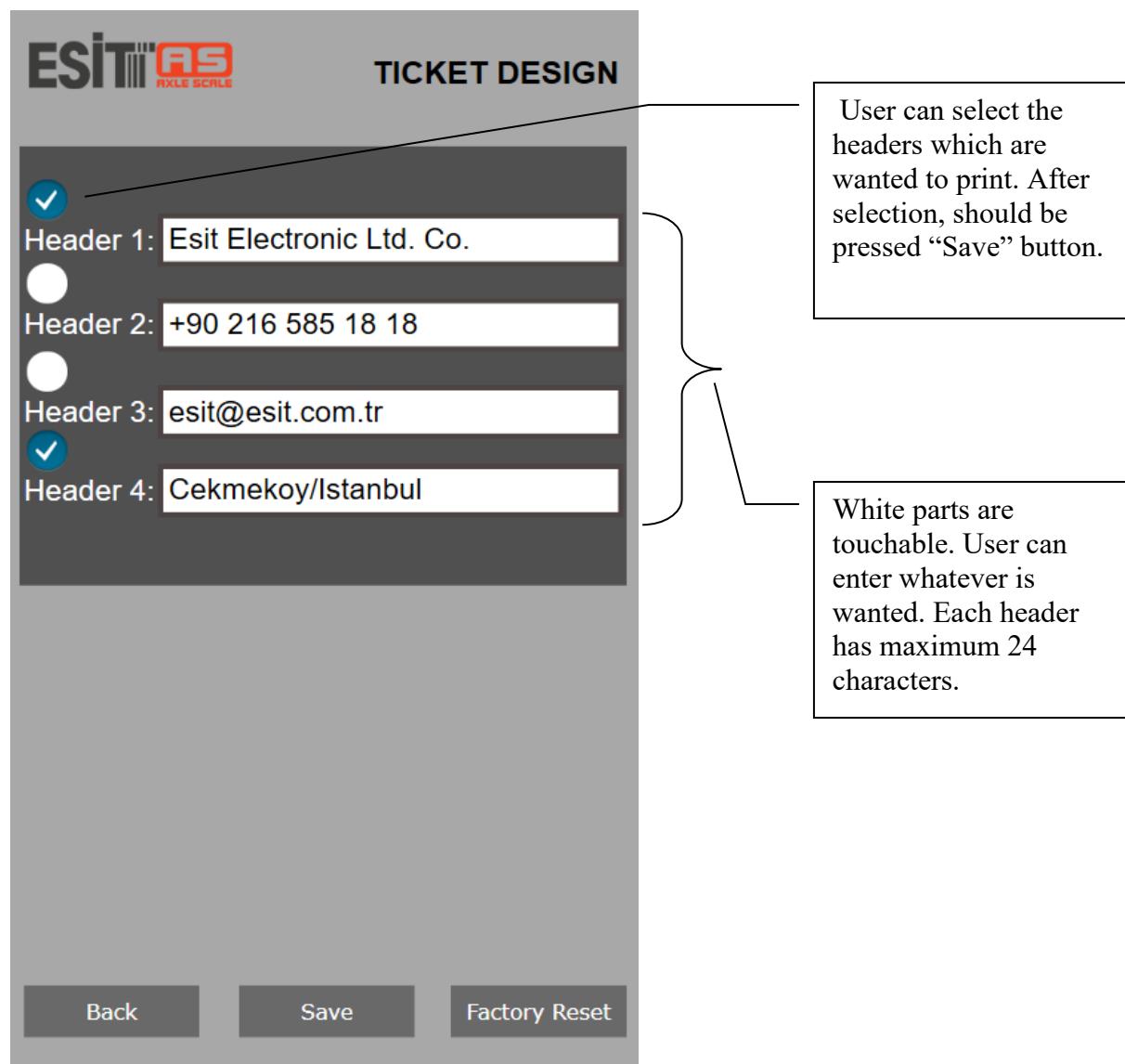
If the user wants to change password , pressed **Change Password**.

**Clear**

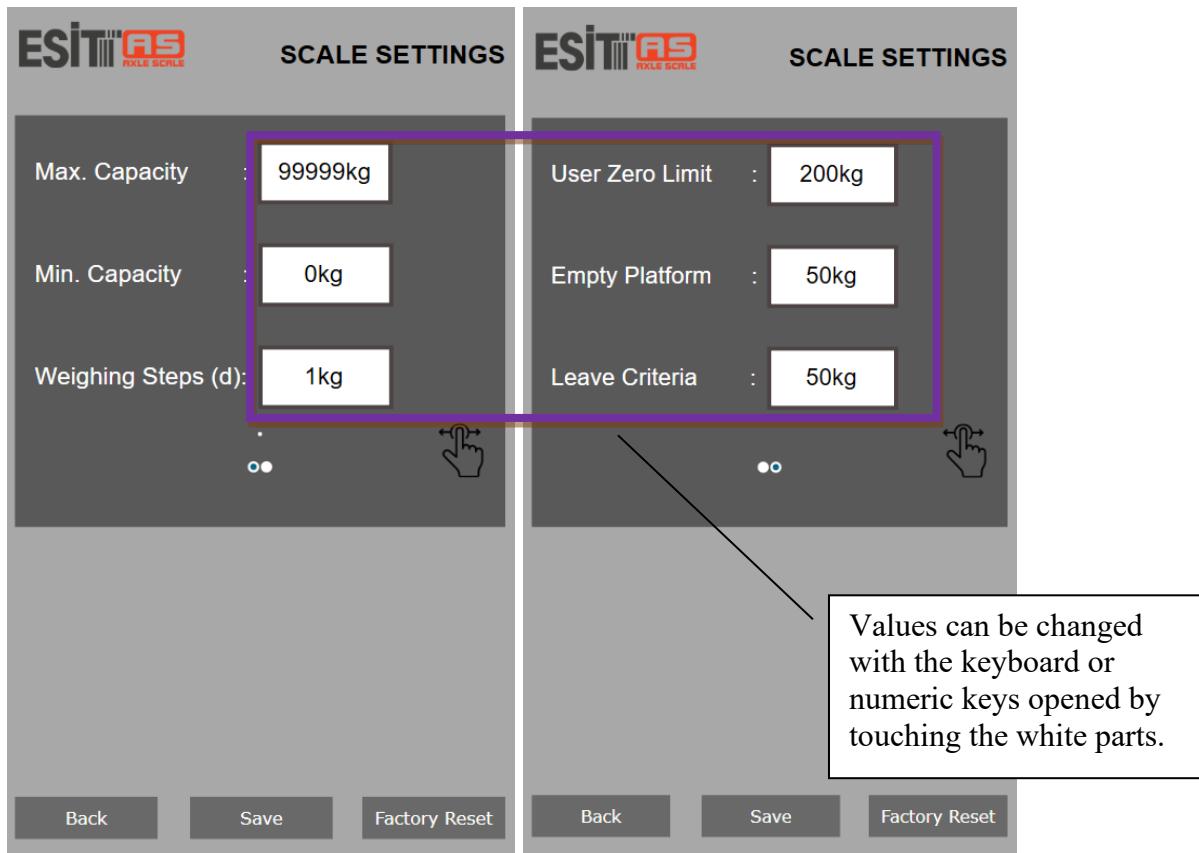
clears the password written on the screen and the user can enter a new one.

**Ok**

If the new password entered is suitable, it sets the current password in this way.

**TICKET DESIGN**

## SCALE SETTINGS



"User Zero Limit", "Empty Platform" and "Leave Criteria" are changed with numpad by user.

"Weighing Steps" are chosen among some values in opened window.

### User-Zero Limit

On the platforms sometimes there may be drifts either because of the ambient changes, or some dust or mud accumulation on the platforms. So, the operator may need to zero the weight values when there is no axle loaded on the platforms. But in some cases, where accidental pushes are to be prevented, the user must introduce a limit value for these inadvertent keystrokes. The factory default value is 200 kg.

The new value is written by using the numeric keys.

#### Weighing Steps (d)

The coordinator itself has no measuring electronics in the wireless axle scale system. All weight information is processed and found in the platforms. The coordinator transfers these data and display during operation. The weight value has an accuracy of 1 kg in the platforms where they are calculated. However, the 1 kg accuracy is not meaningful in a truck. Therefore, the user must select an accuracy not conflicting with the regulations. Also, for the sake of no-motion state, the selection is important. The no-motion criteria are 2 weighing steps value must not change in a weighing for 2 seconds. The possible values are 1, 2, 5, 10, 20, 50, 100, 200, 500. General accuracy used is either 20 or 50.

<b>1 kg</b>	<b>2 kg</b>	<b>5 kg</b>
<b>10 kg</b>	<b>20 kg</b>	<b>50 kg</b>
<b>100 kg</b>	<b>200 kg</b>	<b>500 kg</b>

#### Empty Platform Value

During operation, when an axle is weighed and stored to the memory, passing to the next axle is done by seeing the empty platform value. This shows that the wheels have left the platforms and new tires will be loaded. Besides the operation can only take place with loaded platforms. The criteria for this are EMPTY PLATFORM value. The factory default value is 200 kg.

The new value is written by using the numeric keys.

#### Leave Criteria Value

During operation, when an axle is weighed and stored to the memory, passing to the next axle is done by seeing the empty platform value. However sometimes the wheels are very close to each other, and the platform can never be weighed as empty. So, the coordinator needs a value where it will understand that the wheel is leaving the platform to be replaced by the proceeding wheel. The criteria for this are LEAVE CRITERIA value. The factory default value is 200 kg. When the weight stored drops for this amount, the coordinator will assume the wheels are leaving the platform.

The new value is written by using the numeric keys.

#### Max. Capacity and Min. Capacity

If the weight is out of between maximum and minimum capacity, warning message is shown on the screen.

## RESTART

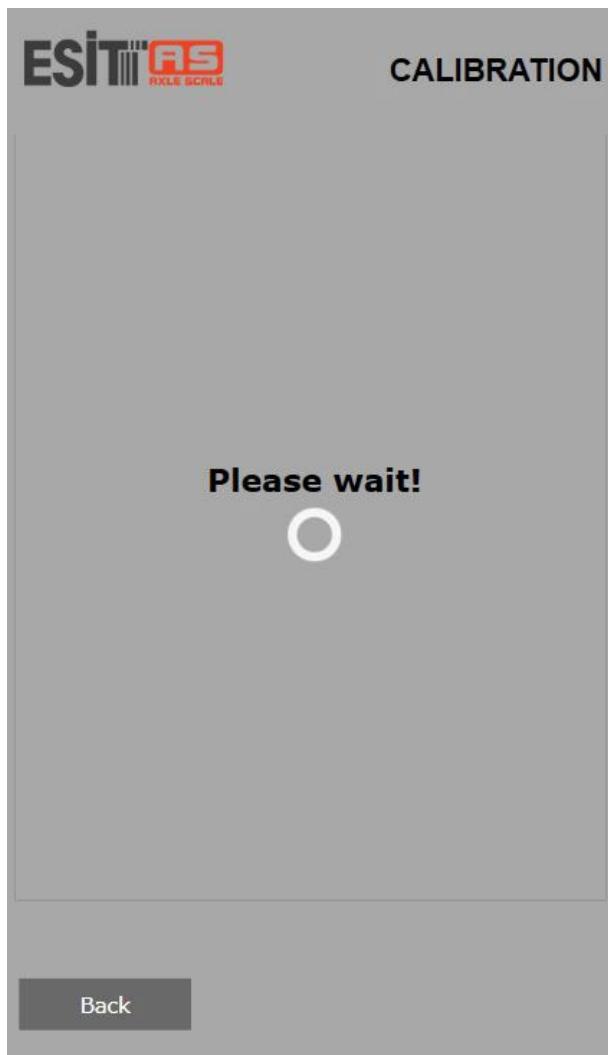
This part of settings menu is used for resetting the system. If **Yes** is selected, the system will reset.



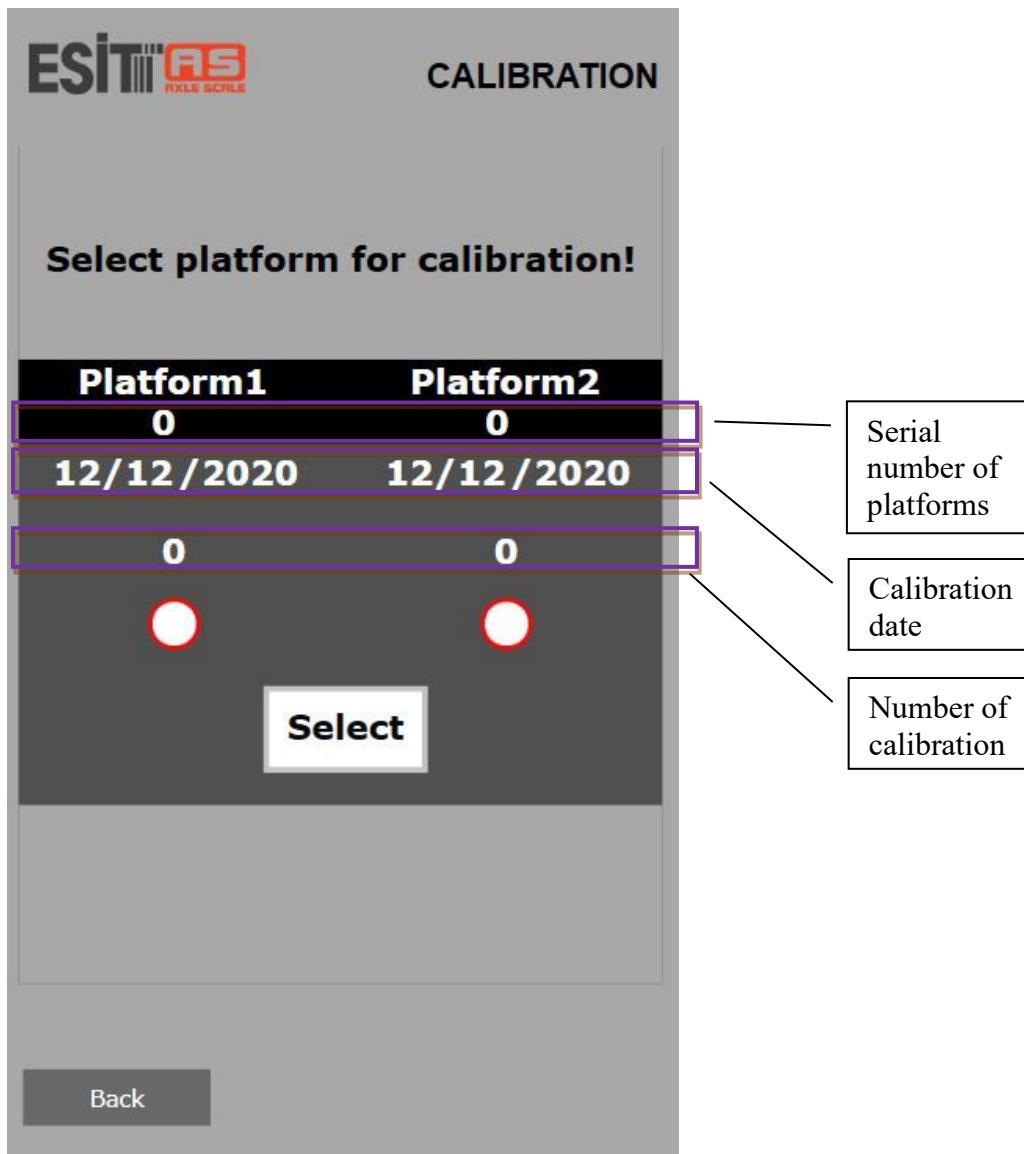
## CALIBRATION

The AS scale can calibrate the platforms that are connected to its system.

**Calibration** menu is selected from advanced settings menu and is waited until reading all parameters from platforms.

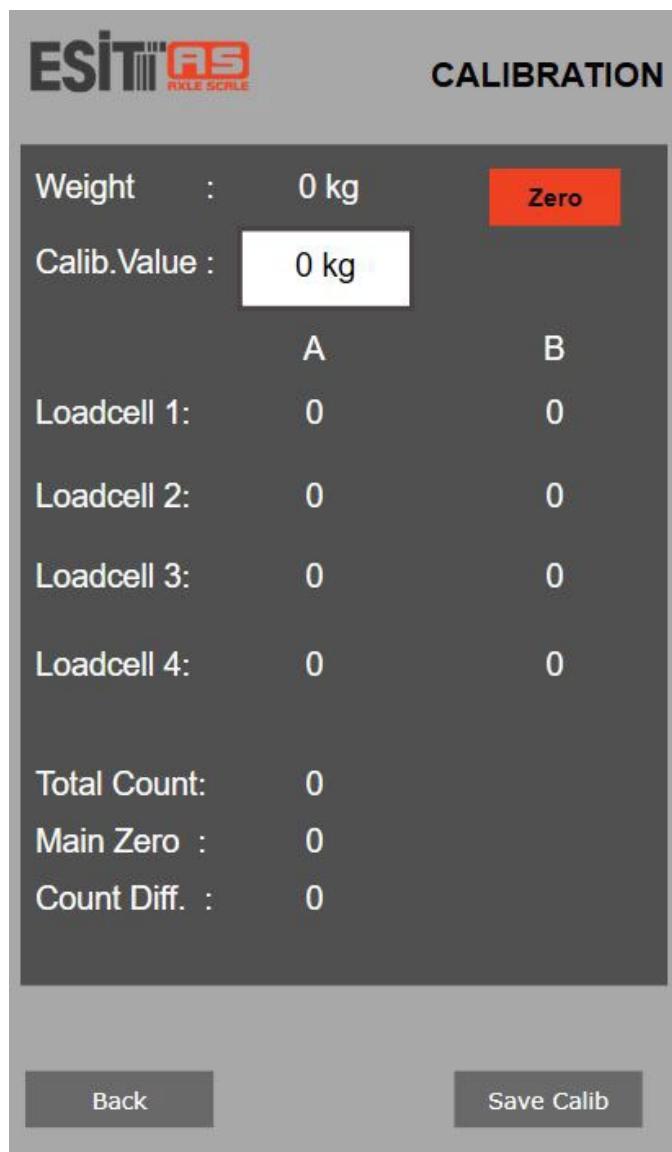


After these reading period, which may take a few seconds, selection part is shown on display. The platform that will be calibrated is marked with the circle and selected with **Select**. The calibration is done for each platform in any order is wanted.



After selection, the display will depict the internal reading counts from each load cell under the platform. Under the platform there are 8 load cells within four bodies. All are displayed at the following display.

On the top line, the reading is displayed. All other 8 are separate internal counts of load cells.



The valid buttons here are **Calib.Value : 0 kg**, white part is touchable, to write the weight value of the calibration load that is placed on the platform, **Back** for exiting the calibration process; **Save Calib** for saving the calibration.

First the user must empty the platform and press the **Zero** button. The values are not changed but main zero value is going to be close 0. The other values may change between +999999.

Then user places a meaningful and big enough load on the platform. Waits for it to stabilize and press **Save Calib** key to write its value. After the value is written correct, the calibration is processed and written back to platform. Take care not to shut the power of the platform during write process.

After the calibration is checked and seemed to be OK, **Back** is pressed to finalize the process.

Calibration of the second platform is also done as explained above.

## RECORDS

The vehicle information is stored in records menu. It has capability of 1000 weighings.

REC. NO		DATE	TIME	TOTAL	
1	i	01/01/2021	10:01	12500 kg	
2	i	01/01/2021	10:01	0 kg	
3	i	01/01/2021	10:01	0 kg	
4	i	01/01/2021	10:01	0 kg	
5	i	01/01/2021	10:01	0 kg	
6	i	01/01/2021	10:01	0 kg	
7	i	01/01/2021	10:01	0 kg	
8	i	01/01/2021	10:01	0 kg	
9	i	01/01/2021	10:01	0 kg	
10	i	01/01/2021	10:01	0 kg	

is changed the page in left direction.

is changed the page in right direction.

is used for detailed information about vehicle Those are weighing mode, weight of each axle and speed of each axle.

The vehicle informations are printed with .

If user gets the information by USB, **Report** is selected. If the USB is connected, all buttons will be active. The starting date and ending date must be set for report.



To set the starting date follow the steps;

- Select **Set Starting Date**
- Set the day with (up) and (down)
- Use to pass next item
- Set month and year the same way you set the day.

The same steps are done for ending date, except using **Set Ending Date** button . After that, **Write USB** is selected and reporting is begun.

File format is “day\_month.csv”.

## APPLICATION NOTES

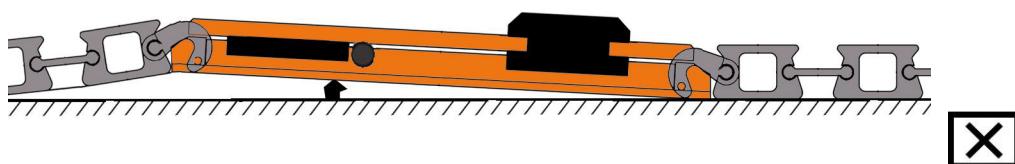
To achieve a proper usage and correct measurement for the axle scale the following statements should be keep in mind.

- Physical factors
- Pay attention to measurement

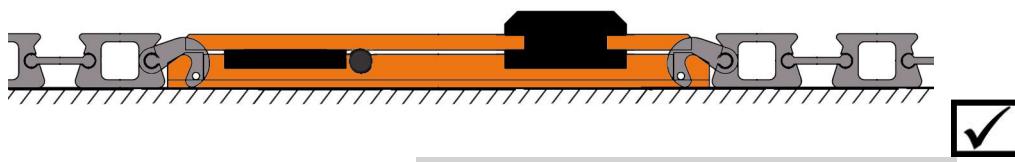
### Physical Factors

#### The ground where the platforms to be placed must be clean

When the platforms placed, he ground must be clean. There are no materials under the platform like stones or other materials that disturbs the balance of the platforms.



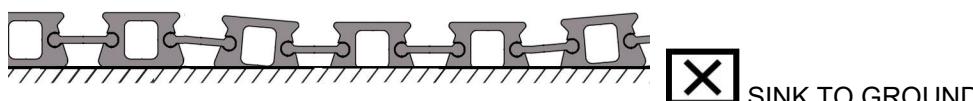
BOTTOM OF THE PLATFORM IS NOT CLEAN



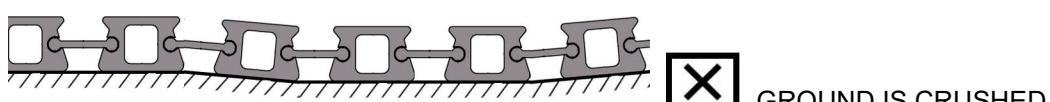
BOTTOM OF THE PLATFORM IS OK

#### Ground must be strong enough

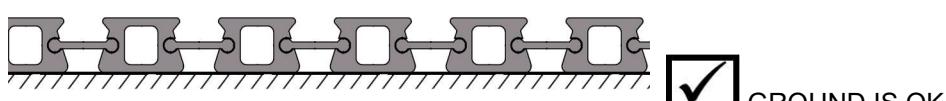
Please place the platforms to well-arranged and tough ground. The measurement will incorrect when muddy or earth places used.



SINK TO GROUND



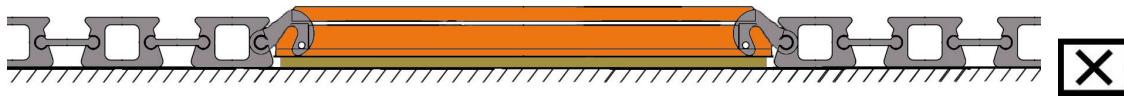
GROUND IS CRUSHED



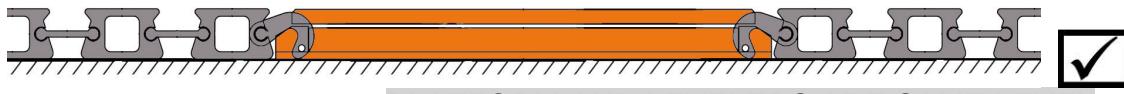
GROUND IS OK

**Platform and Levelers must be in same level.**

Please keep the levelers and platform with same levels.

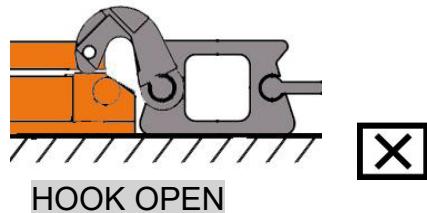


PLATFORM (HIGHER) FORM THE LEVELERS

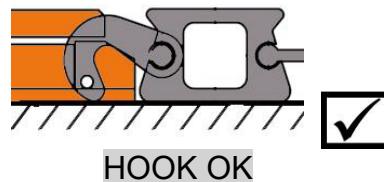


PLATFORM AND LEVELERS ARE SAME LEVEL

**Please make sure that the hooks locked to the platforms.**



HOOK OPEN

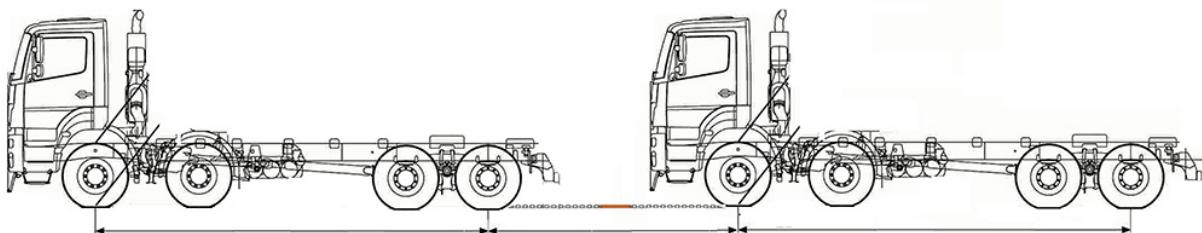


HOOK OK

**Measurement place must be well-arranged and long enough.**

There must be a well-arranged straight place before the system and after the system (each side of the system) more than the distance between the first axle and the last axle of the vehicle.

For example to make a good measurement with an 6,45meters long (distance between the first and last axle) truck, there must be a strong, well-arranged straight area front and back side.



2x6,45meter (Distance between first and last axle of the truck)

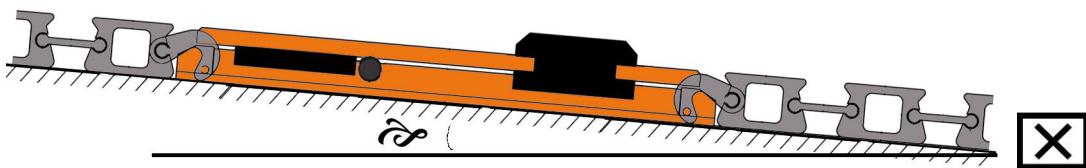
2x1,40meter (Leveler)

1x0,43meter (Platform)

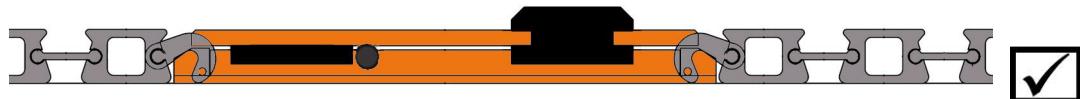
Totally there must be 16,13meters lond place. If there is bended, flexible or uneven ground then the measurement will wrong.

The advised area is 4x30meters dimension.

**There must no inclination.**



INCLINED FLOOR

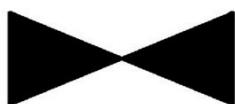


NORMAL FLOOR

If it possible the ground should be checked with inclinometer or water balance. The measurement result will be wrong if there is an inclined floor.

### **Measurement Considerations**

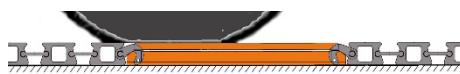
**No motion**



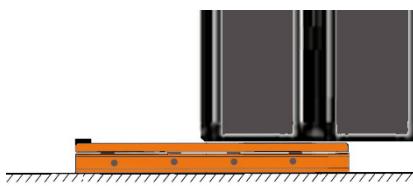
The axle that to be measured should be stable. While measuring no person should get in or get off the vehicle or tires should be stable.

### **Tires on the Platform**

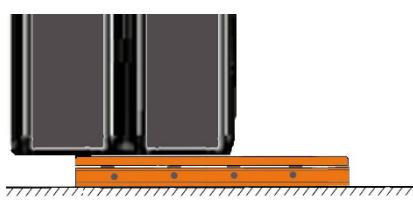
The tire must be entirely over to the platform. The tires should not touch the corners or levelers.



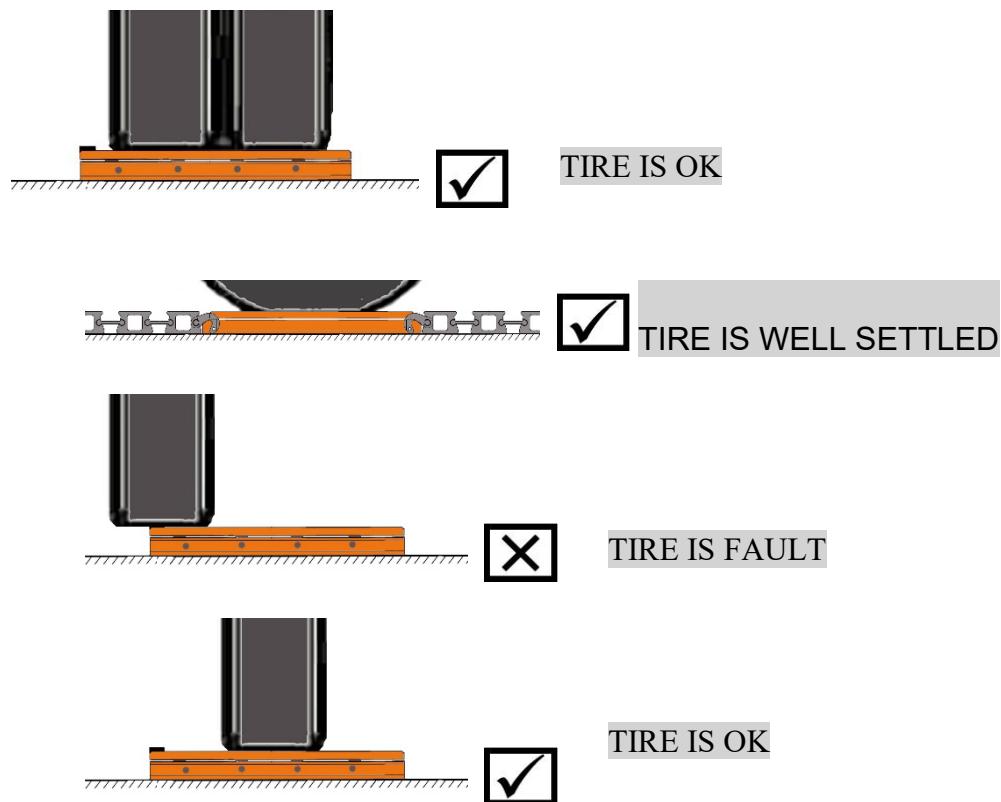
TIRE IS OUT OF PLATFORM



TIRE IS FAULT



TIRE IS FAULT



### Vehicle waiting



Axle measurement operation must be done with optimum duration. Otherwise, the suspension, braking system and chassis-drift factors will affect the result. The axle weight will change slowly when waited (increase or decrease).



A Nişantepe Mh. Gelin Çiçeği Sk. No:36 Çekmeköy 34794 İstanbul **T** (216) 585 1818 **F** (216) 585 1819 **W** [www.esit.com.tr](http://www.esit.com.tr)