

Installation & Calibration



ED3 & ED4 SkidWeigh Plus Series

Onboard Weighing Scale & Management Information Systems

Version: V1.15



General Installation Guide

This **ED3 & ED4 SkidWeigh Plus** installation & calibration guide describes how to install, calibrate, test and use your lift truck on-board weighing & management information systems. Following the instructions in this guide will enable you to get your system operating quickly and easily. In the event that you require additional assistance, please contact customer support via e-mail at support@skidweigh.com , visit www.skidweight.com or contact us at the address or contact number below:

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Phone: 905-469-0985

Safety

Always disconnect the vehicle battery while installing SkidWeigh Plus system or any other electronic product. Make sure that unit, pressure transducer and any other associated cables are securely mounted and do not impede any of the vehicle's controls. Use care when routing the components cables. Route the cables where they will be protected. Use commonly accepted install practices for after market industrial vehicle electronic devices. The installation of the SkidWeigh Plus systems should only be performed by an acknowledged lift truck dealer technician or end user electro and hydraulic technical installer.

Here are two acceptable methods of making a wire connections:

- * Soldering your connections (recommended)
- * Crimp connectors (with the use of the proper crimping tool)

Regardless of the method you choose, ensure that the connection is mechanically sound and properly insulated. Use high quality electrical tape and shrink tubing where necessary.

This product is connected directly to the vehicle's ignition switch, 12 to 55 V DC. There is no on-off switch on the unit.

Electro-Magnetic Compatibility

CE conformity to EC directive 89/336 (EMC) by application of harmonized standards: Interference stability EN 61000-6-2 and EN 61326-1 interference emit EN 61000-6-3, EN 61326-1 for the pressure transducer.

ED3 & ED4 SkidWeigh Plus Series

Our policy is one of continuous improvement and the information in this document is subject to change without notice. Check that software version displayed on LCD is the one applicable for your application.

Overview of components

The standard ED3 & ED4 SkidWeigh Plus weighing system consist of following components:

- * Digital indicator with wiring harness, mounting bracket and anti-vibration mount

- * Hydraulic pressure transducer with 3 wires cable
- * Installation & Calibration manual and operator usage instruction

Operational principal

The ED3 & ED4 SkidWeigh Plus operational concept is based on the hydraulic pressure transducer mounted in the vehicle lifting hydraulic circuit and specific software algorithm. The increase in the hydraulic pressure will activate the “weighing cycle, microprocessor will take a readout only of the predetermined valid pressure transducer input signals at the sample rate of 16000 readings per measurement session and will convert it to the load weight that will be shown on LCD display.

Pressure transducer installation

The pressure transducer **must be installed in the lifting hydraulic line between the lift control valve and lift cylinder.** Mount a T-piece in lifting hydraulic line to install pressure transducer.

Pressure transducer installation precautions

Before installation of the pressure transducer the hydraulic lift circuit must be pressure free.
Make sure that that installed pressure transducer will not touch any moving parts or assembly of the electric pallet truck while in normal operation.
Pressure transducer has **1/4”-18 NPT male thread.** Use thread seal to ensure tight fit.



Selecting the mounting location for digital indicator

Use the mounting bracket with the anti vibration mount and fasten digital indicator on the vehicle dashboard, load backrest or any other convenient place on the electric pallet truck body, However, additional mounting items such a a flat brackets may be needed to help secure the digital indicator.



Compact size (Enclosure: 120 mm x 80 mm x 55 mm)

Electrical

- **Orange Wire (+) Power on switch**
- **Brown Wire (-) Battery negative**
- **Red Wire, connect to RED wire of the pressure transducer cable**
- **Black Wire, connect to BLACK wire of the pressure transducer cable**
- **White Wire, connect to WHITE wire of the pressure transducer cable**

Power short circuit protection

All SkidWeigh Plus systems are internally short circuit protected with resettable fuse. There is no need to install external inline fuse in orange wire connected to the ignition switch.

- Automotive 60 V load dump protection
- Reversal power supply protection

Note: Any external devices connected to the SkidWeigh Plus system, such as non standard onboard printer might require external fuse.

“Quick test to determine if electrical connections are done right”

Note: SkidWeigh weighing calibration function is not done yet at this stage. This procedure is only to test if electrical connections of the system installation into the vehicle is done properly!

After you have connected electrical power and pressure transducer cable you can “quickly” check the system operation.

- Lower the forks to the ground
- Turn On ignition switch
- Digital LCD display will be activated, showing software version and serial number
- Digital LCD display will show current date and time. If the forks are lifted above the ground or perhaps engage the second stage to get some increased hydraulic pressure to test the sensor, LCD digital display will show within few seconds display some random load weight. (Example: 455)

If the above test is valid than the system electrical connections are done right. The next procedure will be to calibrate the SkidWeigh weighing function and set the right time and date if current value is wrong.

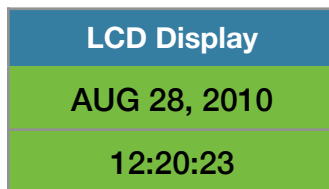
Digital Indicator Bluetooth Pairing With Onboard Printer (Printer is optional)

- Lower the forks to the ground.
- There should be hydraulic pressure in lift hydraulic system.
- The LCD display must show time /date
- Make sure that your Bluetooth printer is turned On.
- Press **“F”** key button and input number **7**. The LCD display indicate BLUETOOTH PAIR.
- After few seconds the LCD display will show **CONNECTED** and LCD display will go back to showing time /date.
- The Bluetooth LED light on your printer will be turned ON indicating that pairing was successful.
- If bluetooth pairing was not successful the LCD display will show **“TIMED OUT”** message.

Date / Time Set Up

- Turn power switch to the On position - Forks must be on the ground, no hydraulic pressure in lifting circuit.
 - LCD display will show software version and serial number for the moment and date and time will be displayed
- In the event that date and time is not right you can correct when you press “F” key and hold it for the moment until LCD display shows **ENTER NUMBER**.

Press number “3” and the LCD display will be in date / time change mode.



Use left ◀ and right ▶ arrow key (**bottom left side of the keypad**) to change the value. Press “Enter key” ↵ (**bottom right side keypad arrow**) to confirm the setting. The cursor will automatically move to the next item to be changed (Month, Day, Year, Hours, Minutes, Seconds). On the last correction, seconds item press “Enter key” ↵ to confirm new date / time set up.

Weighing function calibration procedure

The ED3 & ED4 SkidWeigh Plus calibration is automatic and is done by lifting empty and loaded forks above the ground to initiate automatic weighing cycle. **MAKE SURE THAT YOU HAVE A KNOWN LOAD WEIGHT AND KEEP IT NEARBY TO COMPLETE THE CALIBRATION.** For the best results use at least minimum calibration load test weight of 50% to 80% of maximum lifting capacity of the lift truck. Use customer floor scale or find a known skid load weight within the operational facility.

Important:

If you want the system to show **load weight in pounds**, use the known load weight in pounds and enter that value into the system. The same would apply if you want the system to show load weight in kilograms. Use the known load weight in kilograms and enter that value into the system accordingly.



Calibration starting point

Lower the empty forks to the ground. There should be no hydraulic pressure in lift hydraulic circuit.

- Turn power switch to the On position
- LCD display will show software version and serial number for the moment and date and time will be displayed

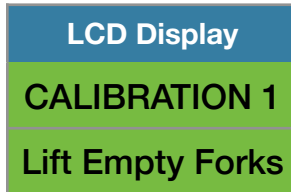
Calibration (Empty forks to be lifted)

To initiate system calibration and LCD display must be showing **date / time**.

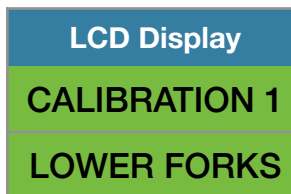
- Lower the forks to the ground. There should be no hydraulic pressure in lift hydraulic circuit.
- Press and hold **"F"** key and hold it until LCD display shows **ENTER NUMBER**.



- Press number **"0"** and the LCD display will show



- With LCD display showing **"Lift Empty Forks"**.
- Lift empty forks just above the ground.
- After few seconds the LCD display will show **"Lower Forks"**.

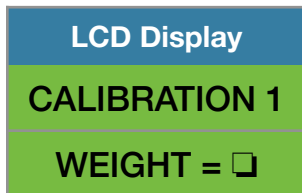


Lower the empty forks to ground.

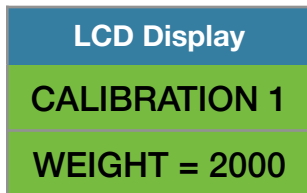
The automatic zero weight function is finished

Calibration (Loaded forks to be lifted)

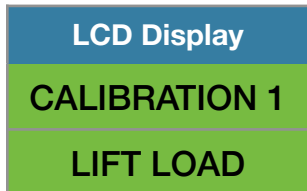
At this point you must lower the empty forks to the ground. The LCD display will indicated to you to input a known load weight into the system. (*In our example of the known load weight is 2000 kg*)



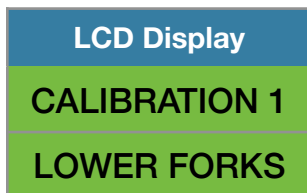
At this point you must pick up a known load weigh and **lower the loaded forks to the ground.**



Enter the known load weight of 2000 into the LCD display and press **“Enter key”** ↵.



- The LCD display will indicate to **“Lift Load”**.
- Lift loaded forks just above the above the ground.
- After few seconds the calibrated load weight value of of 2000 will be stored in the system memory and the LCD display will prompt you to **“Lower Forks”** to the ground.



- The LCD display go back to showing date and time.

LCD Display

AUG 28, 2010

12:25:23

Calibration of the ED3 & ED4 system weighing function is finished.

Overload Warning (Optional)

- The SkidWeigh Plus systems with overload warning will automatically show on the LCD display a message **OVERLOAD = .** once loaded forks are lowered to the ground.
- At this point input the overload value for that particular vehicle application and press **“Enter key”**.
- Every time if the vehicle is lifting the pre-set overload value or more, the LCD display will show the overload value and LCD display will “flash”.
- Optional audio warning will be activated as well.
- To stop overload warning load must be lowered to ground.



Weighing Procedure



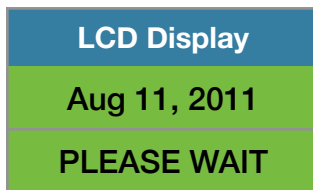
- Insert the forks into the pallet or under the product - Lower the loaded forks to the ground.

- **LCD display must show date and time.**

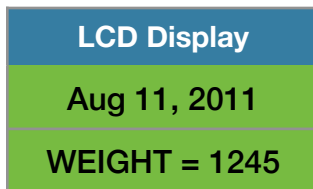


- **Activate lift control valve and lift the load just above the ground.**

(Lift the load "Quickly", do not activate the lift control valve slowly)



LCD will display **PLEASE WAIT** and after few seconds a load weight will be shown on LCD display



Example: Lifted load weight of 1245.



Optional Functions

Accumulative Load Weight Total

- Insert the forks into the pallet or under the product to be weighed.
- Lift loaded forks
- When first load weight is shown on LCD display, press **“Enter key”** to initiate load weight total accumulation function.
- LCD display will show **Weight #1** in the upper row and **Total Weight** in the lower row.
- When next load is lifted and is shown on LCD display, press **“Enter key”** and that load weight will be added to the **Weight #1**.
- The LCD display will show **Weight #2** in the upper row and new TOTAL ACCUMULATIVE LOAD WEIGHT in the lower row.
- You can keep accumulating load weight by pressing **“Enter key”** after each load weight shown on LCD display.
- All load weights will be numbered, Weight #1, Weight #2, Weight #3, etc.
- TOTAL ACCUMULATIVE LOAD WEIGHT will be updated and shown in the lower row on LCD display.
- When you have finished the total accumulative load weight function you must press **“P”** key button to reset your current total accumulative load weight.

Note:

- If you have onboard printer connected to the system, by pressing **“P”** key button you will get printout of all individual load weights and total accumulative.
- If you have USB port all load weights will be recorded on the memory stick.

TARE Manual Input

- With LCD display showing time / date, press **“F”** key (*Hold it for a moment*)
- Input number **“8”** to enter into the **TARE** set up mode.
- Input TARE value and press **“Enter key”**.
- From now on every load lifted to be weighed will be less than TARE value.
- To reset TARE value , press **“F”** key and input number **8**.
- Make sure that you input value **“0”** and press **“Enter key”** to reset current TARE to zero.

Note:

For other customized options such as input for Waybill ID#, parts count by weight, automatic “Load Weight Send”, impact detection, utilization, operator access ID#, or any other customized functions, please contact us to provide you with specific operational instructions.