INTEGRATED VISUAL DATA TECHNOLOGY INC.
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Installation & Calibration Manual

ED2-EP Series (Version 2.3)

Electric Pallet Truck Onboard Check Weighing

ED2-EP *V2.3*

Integrated Visual Data Technology Inc. 3439 Whilabout Terrace, Oakville, Ontario, Canada L6L 0A7 www.skidweigh.com

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General Installation Guide

This **ED2-EP V2.3 Series** guide describes how to install, calibrate, test and use your material handling vehicle onboard check weighing system for electric pallet truck. Following the instructions in the **ADMINISTRATIVE MENU** guide will enable you to get the weighing scale calibrated and the system up and running. In the event that you require additional assistance, please contact customer support via e-mail at support@skidweigh.com , visit www.skidweigh.com or contact us at the address or contact number below:

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Safety

Always disconnect the vehicle battery while installing SkidWeigh 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 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 VDC. There is on-off power switch on the top of the housing.

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.

Our policy is one of continuous improvement and the information in this document is subject to change without notice. The software version is displayed on the LCD display once the power is turned on to the system.

Overview of components

The standard **ED2-EP V2.3** system consist of two main components:

* Digital indicator, wiring harness, mounting bracket and anti-vibration mount
* Hydraulic pressure transducer with 3 wires cable
* Installation & calibration manual and operator usage instruction

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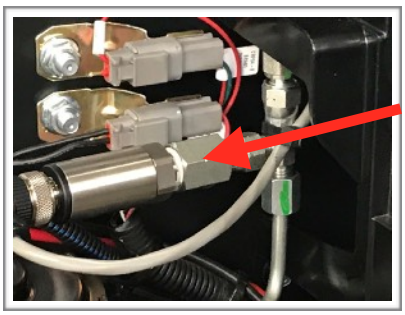
Operation

The **ED2-EP V2.3** operation is based on the hydraulic pressure transducer mounted in the vehicle lifting circuit

Pressure transducer installation

The pressure transducer must be installed in the lifting hydraulic line ***between the lift control valve and lift cylinder(s).***



Mount a T-piece in lifting hydraulic line.

Pressure transducer installation precautions

Before installation of the pressure transducer the hydraulic lift circuit must be pressure free.

Pressure transducer has 1/4”-18 NPT male thread. Use thread seal to ensure tight fit.

Selecting the mounting location for digital indicator

Note: Use the mounting bracket with the anti vibration mount and fasten digital indicator on the vehicle dashboard. There are many examples of mounting locations that will depend on the vehicle model. However, additional mounting items such as a flat brackets may be needed to help secure digital indicator.

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Electrical connections

All ED2-EP V2.2 systems operate from 12 to 55 VDC.

- **Orange Wire (+) Ignition 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**

Two Black Wires

Connect two wires is series with control circuit to disable lift motor travel during load weighing cycle **(Method A / B)**

Automatic lift motor travel control during the load weighing cycle

Method A.

Two **BLACK wires** are connected to the internal relay, dry contacts located in the ED-EP digital indicator. This internal relay is controlled by the microprocessor and activate only during the load weighing cycle. **There is no power connected to these two BLACK wires.**
Internal relay configuration is **SPST**, normally closed contacts NC, at 1A current contacts rating.

(Electric pallet trucks with CANbus controller)
Use two **BLACK wires** and “splice” them in series with the operator activated **lift control switch** wire or signal wire to the input controller that activates pump motor solenoid.
(With vehicle stationary and during the lifting cycle diagnostic display on some vehicles might show “ No power to lift motor” or audio signal might be activated for short time period.)

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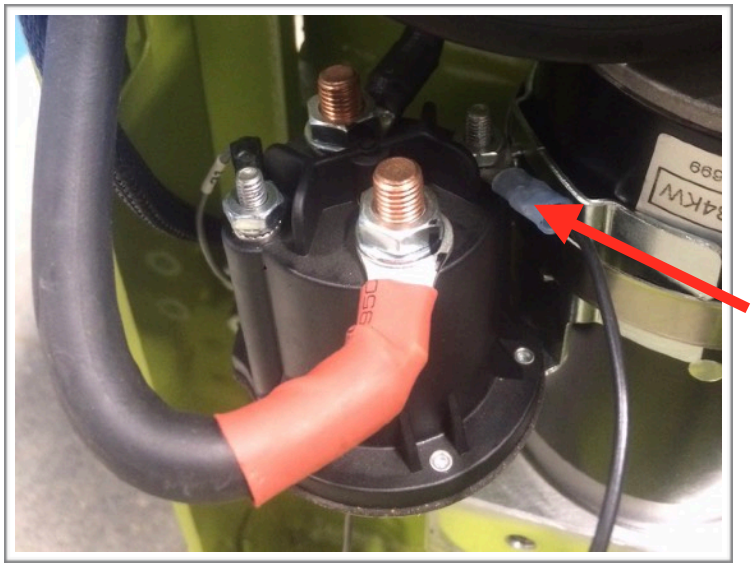
Method B.

Consult vehicle wiring diagram or contact the OEM for the proper interface of two black wires to control circuit of the lift pump motor



Use two **Black wires** and splice them in series with one wire of the **lift solenoid coil** wires activating the lift motor solenoid.

Disconnect positive or negative wire connected to solenoid terminal.

With vehicle stationary and during the lifting cycle diagnostic display on some vehicles might show " No power to lift motor" or audio signal might be activated for short time period

Note 1: When unloaded vehicle is in motion the hydraulic "spikes from pressure transducer signal" might be seen by the vehicle controller as start of the "weighing cycle".

Note 2: Short interruption of the power to the lift solenoid coil during measurement cycle the controller on some vehicles will show "fault" and on other cases the power to the vehicle will be cut.

Power short circuit protection

All **ED-EP** 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.

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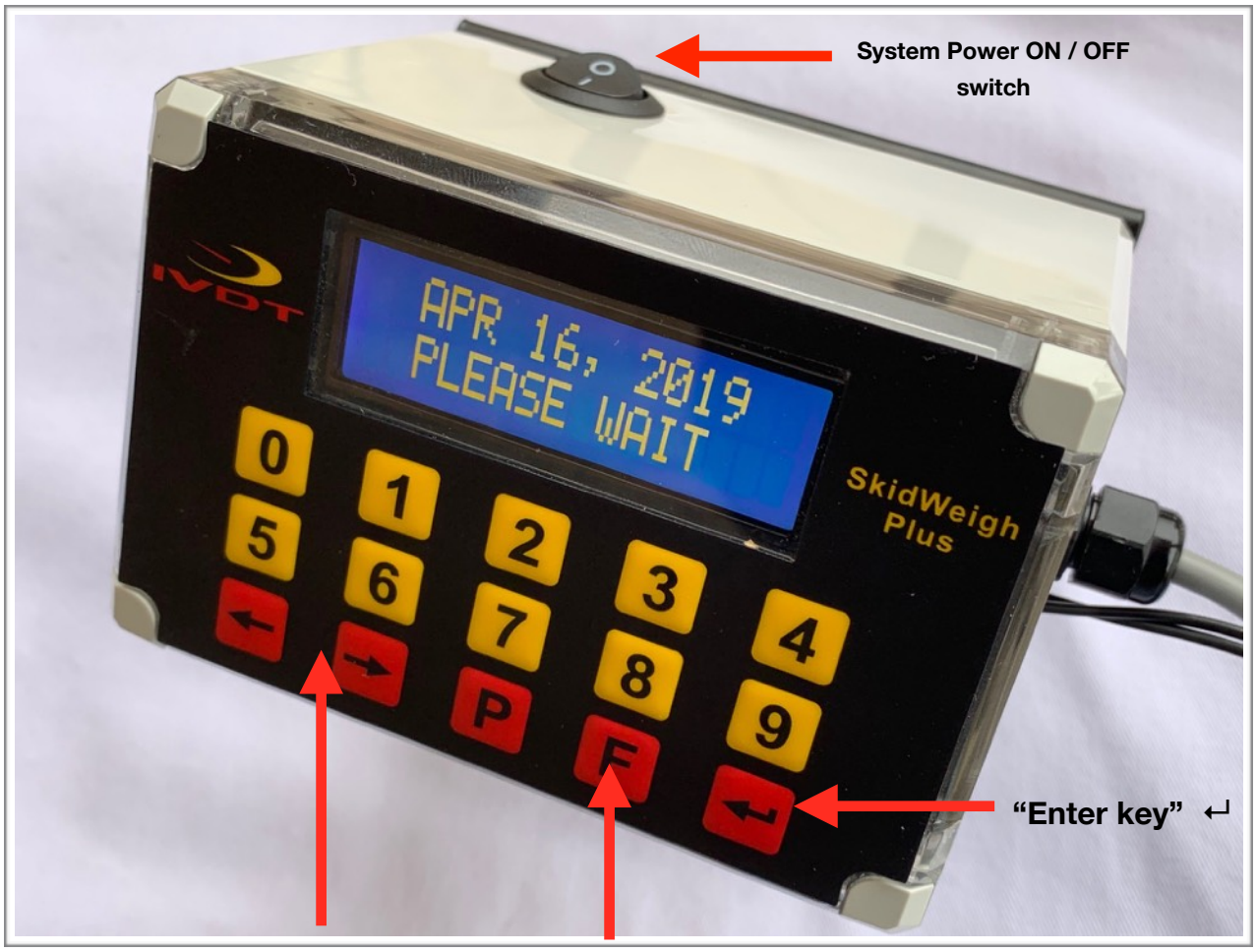


Scroll Keys
< >

Function Key

- Weight system calibration **F key** and than press **0** key
- Display showing in kilograms **F** key and than press **5** key

Verification of the electrical connections done properly

- Turn on vehicle and indicator power on switch
- Lower forks to the ground
- Digital LCD display will be activated, showing software version and serlal number
- Digital LCD display will show current date and time
- Activate and **hold lift control switch until motor stops**. Lift motor should stop at predetermined forks lift height of approx. half of the full lift travel.

- LCD display will indicate **“Time / Date”** and after few seconds load weight will be shown. *(This is not calibrated load weight)*
- The load weight will be shown on LCD display until forks are lowered to the ground.

LCD Display
APR 16, 2019
12:20:23

- As soon the forks are lowered to the ground LCD display will show Date / Time.

If the above test is valid than the system electrical connections are done right.

Date / Time Set Up

- In the event that date and time is not right you can correct it by pressing **F** button and than pressing number **3**. Use left ◀ and right ▶ arrow key *(bottom left side of the keypad)* to change the value. Press **“Enter key”** ↵ to confirm the setting. The cursor will automatically move to 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.

To set clock / date. Follow the LCD instructions and press **“Enter key”** ↵ to confirm.

LCD Display
APR 16, 2019
12:20:23

Weighing scale function calibration

Make sure that **empty forks are on the ground** and LCD display is showing time and date.

LCD Display
APR 16, 2019
12:20:23

To enter into the system load weight calibration menu, press **F** key and than press **0** key.

LCD Display
CALIBRATION 1
LIFT EMPTY FORKS

Activate and **hold lift motor switch until lifted forks are stopped automatically**.
After few seconds the LCD will indicate to "**LOWER FORKS**".

LCD Display
CALIBRATION 1
LOWER FORKS

Lower the empty forks to the ground.
The LCD display will prompt you to input known calibration load weight.
NOTE: **Make sure that calibration load weight is in pounds.**

(In our example the known calibrated load weight is 2000 pounds.)

LCD Display
CALIBRATION 1
WEIGHT =_

LCD Display
CALIBRATION 1
WEIGHT = 2000

Pick up a known load weight and **lower the loaded forks to the ground**. Input into the system the known load weight (***Our example is 2000 pounds***) and press **"Enter key"** ↵ .

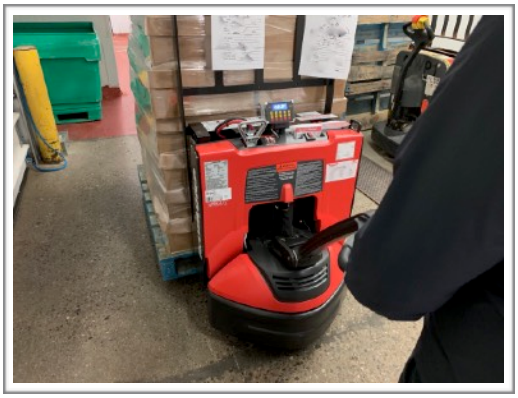
LCD Display
CALIBRATION 1
LIFT LOAD

With LCD display indicating "LIFT LOAD" activate and hold lift motor switch until loaded forks are stopped automatically. After few seconds the LCD will indicate to "**LOWER FORKS"**. The calibrated load weight value of 2000 will be stored and system.

LCD Display
CALIBRATION 1
LOWER FORKS

As soon the loaded forks are lowered to the ground the LCD display will show date / time.

LCD Display
APR 16, 2019
12:20:23



Calibration Accuracy Adjustment

Specification accuracy is +/-1.0% of electric pallet truck maximum lifting capacity. However it may be possible to improve that variance by inputing a calibration factor.

Example:

- Electric pallet truck lifting capacity is 4500 pounds

- Known calibrated load weight 2000 pounds *(as per above example)*

- 1.0% of 4500 maximum vehicle lift capacity is 45 pounds

- When entering 'known weight' during the calibration process enter the load weigh + calibration factor 1.0% of lifting capacity (2000 pounds + 45 pounds = 2045 pounds)

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Operator Usage Guide

Weighing Loads

System weighing function calibration is completed.

Activate and hold lift motor control switch control until loaded forks are stopped automatically at predetermined forks height.
After few seconds LCD display will show load weight. The load weight will be shown on LCD display until loaded forks are lowered to ground.

LCD Display
APR 16, 2019
WEIGHT = 1250

Accumulative Load Weight Total

To add loads press **"Enter key"** ↵ after each load weight is shown on LCD display. To reset current load weight or accumulative total load weight press "**P**" key.

TARE Function Input

To set up TARE value into the system press **F** key and than input number **8.** Input TARE value as required and press **"Enter key"** ↵**.** **Note:** To reset TARE value press **F** key and input **0** and press **"Enter key"** ↵**.**

LCD Display
TARE ADJUSTMENT
WEIGHT = _

Note: Default load weight shown on the indicator is in pounds. To change load weight to be shown in kilograms operator must press **F** key and than number **5.**
Use **< >** keys to toggle to **kg** or back to the **pounds** and press **"Enter key"** ↵**.**

LCD Display
Displayed Weight
POUNDS