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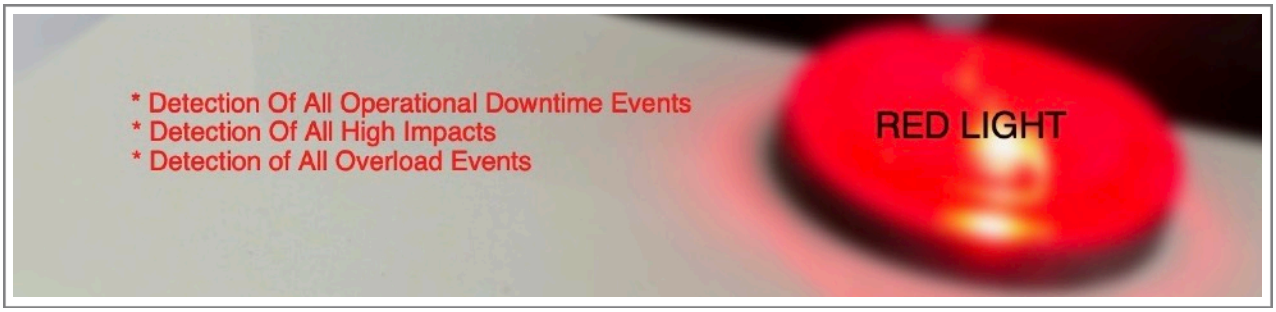
SkidWeigh Plus *Classic*
ED3C-RFID Series



Installation, Calibration Set Up & Operation Manual

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General Installation Guide

This **ED3C-RFID SkidWeigh Plus *Classic*** Series guide describes how to install, calibrate, set up and use your lift truck onboard management information system. Following the instructions in the **ADMINISTRATION MENU** you will be able to get the system set up, calibrate quickly. In the event that you require additional assistance, please contact customer support via e-mail at support@skidweigh.com , visit www.skidweigh.com

Safety

Always disconnect the vehicle battery while installing SkidWeigh Plus ***Classic*** system or any other electronic product. Make sure that main electrical cable, 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 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. No need for external fuse, system equipped with resettable fuse There is no on-off switch on the unit. (*For vehicle operating voltage of 80 VDC or higher, oder voltage convertor **VC-160**)*

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.

ED3C-RFID SkidWeigh Plus *Classic*

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 and yellow light will be activated once the power is turned on to the system. (*Vehicle operation is not disabled*)

Overview of components

The standard **ED3C-RFID** SkidWeigh Plus system consist of two main components:
- **Digital indicator** ** with RFID card reader, wiring harness, miniature multiple light alert and mounting bracket
- Hydraulic pressure transducer with 3 wires cable (*Systems with onboard weighing scale function*)
- Installation & calibration manual and operator usage instruction

** The ED3C indicator equipped with miniature multiple alert lights (Yellow, Green and Red).

Lift Truck Onboard load weighing operational principal

The load weight operational principal is based on the hydraulic pressure transducer mounted in the vehicle lifting hydraulic circuit that will automatically activate the "weighing cycle / specific algorithm" every time a skid load is lifted just above the ground. The increase in pressure is converted in an electronic signal at the sample rate of 16000 readings per measurement session which is converted into a load weight reading.

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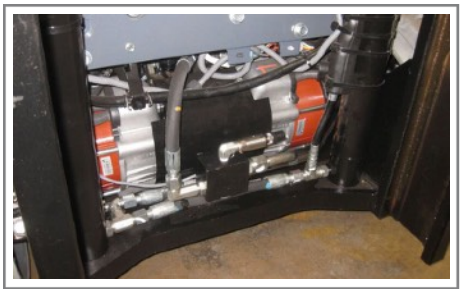

Pressure transducer installation

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 hydraulic lift line. In some cases you can install the pressure transducer in the flow divider, drilling and tapping for 1/4"-18 NPT male in spare plug (if only single or double mast configuration) or in the body of the flow divider. Also, you can drill and tap on any "larger elbow" that might be available in the hydraulic lifting circuit found in vehicles with larger hoses to accommodate larger vehicle lifting capacities.

Pressure transducer installation precautions

Before installation of the pressure transducer the hydraulic lift circuit must be pressure free.
There are two ways to do that:
1. Place the forks on the ground in their lowest position and make the hydraulic system pressure free by tilting the mast forward. The chain(s) should be slack.
2. Lift the forks and position them on the top of a supporting fixture. Start lowering the lifting cylinder into its lowest position. Be sure that chain(s) is slack.
Make sure that that installed pressure transducer will not touch any moving assemblies of the vehicle while in the 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, side railing on the right hand side or preferably on the overhead guard. 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 the unit to upper right corner of the guard or side railing.

Choose the correct location and make sure that:
- Indicator is visible and within reach of the operator
- Location so that operator has a clear unobstructed view of the working environment

Compact size

All of the SkidWeigh Plus ***Classic*** systems are of compact size, housing dimension of only 120 x 80 x 55 mm and are ideal for the installations to material handling vehicles of all kinds. All SkidWeigh systems are internally short circuit protected with resettable fuse. There is no need to install external inline fuse in orange wire that is connected to the ignition switch. Depending on the system application the main wiring harness from indicator might have 2 to 7 wires.

Electrical connections

All SkidWeigh Plus ***Classic*** systems operate from 12 to 55 VDC.

POWER CONNECTION

Orange Wire (+) Ignition switch On position
Brown Wire (-) Battery negative

HYDRAULIC PRESSURE TRANSDUCER CONNECTION

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

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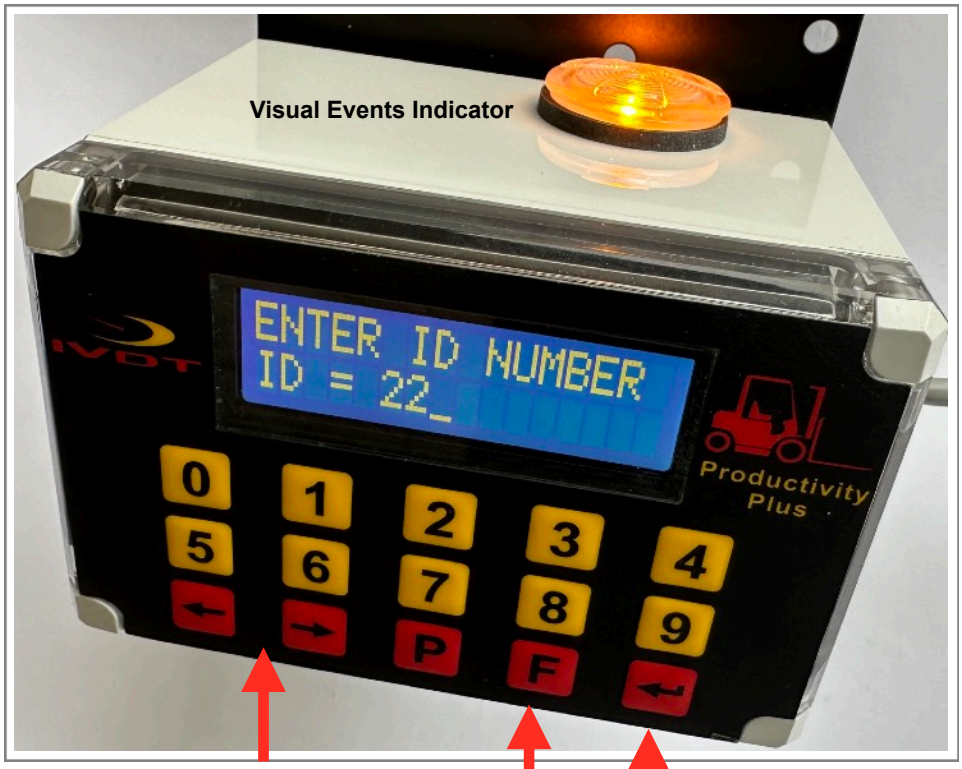
RFID CARD READER OPERATOR ACCESS CONTROL

Note: The standard ED3C with RFID card reader are supplied with one valid keypad operator card to access the system first time and master card to manage and program of adding and delating operator cards.



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Administration Menu Instructions

(Set up for Time/Date, Vehicle ID#, Impacts Setup, OSHA Safety, USB Data Upload, Utilization factor, Downtime operational tasks, Weight Scale Calibration)

To enter into the Administration Menu the LCD Display must show Data / Time. Press **F** key and then number **9** and input the password **521.**

Use **< >** keys to scroll the menu. Follow the LCD instructions.

LCD Display
MENU
PASSWORD = _

LCD Display
<> KEY TO SCROLL
F KEY TO EXIT

Date / Time Set Up

LCD Display
SET CLOCK
ENTER TO SELECT

LCD Display
SET CLOCK
AUTO _

Use left ◄ and right ► arrow key to change from AUTO to MANUAL Date/Time set up.

Note: AUTO set up refers to system utilizing a wireless RF platform with automatic Date /Time update from IVDT Base Station communication and programming hub.

For the applications without Base Station, select MANUAL _ set clock and follow the LCD instructions.

LCD Display
SET CLOCK
MANUAL _

LCD Display
Aug 28, 2010
12:20:23

Press **“Enter key”** ↵ 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.

Set vehicle ID#

- Maximum input number for vehicle ID# is 3 digits.

LCD Display
<> KEY TO SCROLL
F KEY TO EXIT

LCD Display
SET VEHICLE ID
ENTER TO SELECT

LCD Display
ENTER VEHICLE ID
1_

LCD Display
VEHICLE ID
CONFIGURATED

Saving data to USB memory stick

- Insert memory stick into USB port
- With LCD display showing date /time press **F** key and then number **9** and input password **521**.

Follow instructions shown on the LCD display.

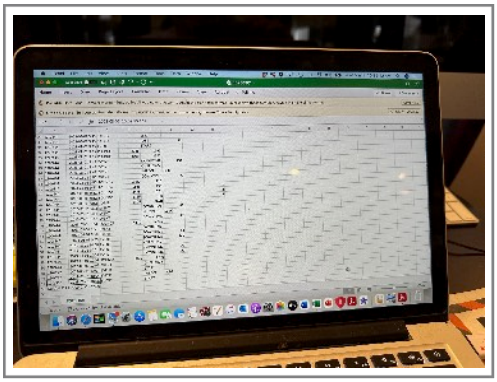
LCD Display
<> KEY TO SCROLL
F KEY TO EXIT

LCD Display
SAVE TO USB
ENTER TO SELECT

LCD Display
SAVING TO USB
- - - - - - -

LCD Display
ERASE SDRAM ? N

When the system has finished uploading the data to the USB memory stick the LCD display will prompt you to erase the SDRAM. Once you have made your selection **Y** or **N** the system will automatically bring you back to the main screen in the supervisor menu.



LCD Display
<> KEY to SCROLL
F KEY TO EXIT

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Weighing scale function calibration

The ED3C series system weighing function calibration is automatic and is done by lifting empty and loaded forks (or any other attachment such as paper clamp) just above the ground. 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 30 to 50% of maximum lifting capacity of the lift truck. Use customer floor scale or find a known skid load weight within the operational facility.

Important:

The weighing calibration must be done with known load weight in pounds.

Note:

With the system calibrated in pounds the end user can change load weight display from pounds to kg by pressing **F** key and number **0**. Use **< >** key to WEIGHT DISPLAY, select kg and press **"Enter key"** ↵.

Calibration Procedure

With LCD display showing date /time, press **F** key and than number **9** key. Input password **521 a**nd scroll to **"Calibration1"** shown on LCD display and press "**Enter key"** ↵**.**

LCD Display
<> KEY TO SCROLL
F KEY TO EXIT

Lower the empty forks to the ground. There should be no hydraulic pressure in lift hydraulic circuit.
Follow instructions shown on the LCD display

LCD Display
CALIBRATION 1
ENTER TO SELECT

Press "**Enter key"** ↵ **.**

LCD Display
CALIBRATION 1
LIFT EMPTY FORKS

Lift empty forks just above the ground the same way that you would normally do when lifting loads. Do not slow down this lifting operational cycle, do not tilt the load, do not lift to different forks heights or move vehicle.
Lift empty forks just above the ground!

After few seconds the LCD display will show **“Lower Forks”**.

LCD Display
CALIBRATION 1
LOWER FORKS

Lower the empty forks to the ground. The LCD display prompt you to input known calibration load weight.

LCD Display
CALIBRATION 1
WEIGHT = ❑

Pick up a known load weigh and **lower the loaded forks to the ground**.
(Our example of the known load weight is 4000)

LCD Display
CALIBRATION 1
WEIGHT = 4000

Input into the system the known load weight of 4000 into the LCD display and press **“Enter key”** ↵.

LCD Display
CALIBRATION 1
LIFT LOAD

Lift loaded forks just above the ground. After few seconds the calibrated load weight value of 4000 will be stored in the system memory. The LCD display will prompt you to lower **“LOWER FORKS”**.

LCD Display
CALIBRATION 1
LOWER FORKS

LCD Display
CALIBRATION 1
CONFIGURATED

As soon the loaded forks are lowered to the ground LCD will show Data / Time.

LCD Display
AUG 28, 2010
12:25:23

System weighing function calibration is done

Overload warning alert

As soon as the loaded forks are lowered to the ground during the weighing function calibration the LCD will prompt you to input the overload value for your vehicle application.

LCD Display
CALIBRATION 1
OVERLOAD = _

Input the overload value for your vehicle application and press **"Enter key" ↵.**

The LCD display will go back to default Data / Time display.

System overload set up function is done

Set Vehicles Impacts

Low impacts, default value set to 6G
High impacts , default value set to12G
Audible buzzer warning for low and high impacts
Audible buzzer warning time from 1 to 60 seconds
Continuous audible buzzer warning

To enter into the **Supervisor Menu**, press **F** key and than number **9** key and input the password **521.**

Use left ◄ and right ► arrow key (bottom left side of the keypad) to change G's value.

LCD Display
MENU
PASSWORD = _

LCD Display
SET IMPACTS
ENTER TO SELECT

LCD Display
ENTER LOW IMPACT
6.0 G _

LCD Display
ENTER HI IMPACT
6.0 G _

LCD Display
ENTER HI IMPACT
12.0 G _

LCD Display
ENTER HI IMPACT
CONTINUOUS ? Y

LCD Display
IMPACT
CONFIGURATED

How to program operator's RFID access cards

The RFID operator access HID card reader is integrated into digital indicator housing with SkidWeigh Plus / Defender system having proprietary software that allows self programming, deleting and management of authorized vehicles operators on the any of the SkidWeigh products equipped with RFID card readers.

There is no need for any additional programming devices!

- **Turn ignition switch to on position**
- **The LCD display will indicate to "SCAN CARD"**

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1. Scan RFID MASTER CARD

LCD display will show

LCD Display
SCAN CARDS
< KEY TO EXIT

2. Scan first valid HID operator card.

The LCD display will show for the moment the value of the inputed card.
The LCD display will indicate that “CARD ADDED OK “and short beep once

LCD Display
SCAN MORE CARDS
< KEY TO EXIT

3. Scan second valid HID operator card.

Follow instructions shown on LCD display.
Keep adding the valid cards to vehicle. When all cards inputed into the system press **< KEY TO EXIT**
Lift Truck SkidWeigh RFID Authorized Operator Access *System has a capability to add up to 250 valid operator cards.*
Note: ***Proceed with programming valid operator cards for each vehicle in your fleet.***

How to delete operator(s) RFID cards already in the system

Turn ignition switch to on position
The LCD display will indicate to “SCAN CARD” (as shown on the picture)

Scan RFID MASTER CARD

LCD display will show

LCD Display
SCAN CARDS
< KEY TO EXIT

Scan first valid operator CARD that you want to delete from the system

LCD display will show the card ID# . Use left ◄ and right ► arrow key to change to **Y.**

LCD Display
FC:222 ID: 44444
DELETE(Y/N)? N

The current card ID# 44444 will be deleted from the system. LCD display will automatically show

LCD Display
SCAN MORE CARDS
< KEY TO EXIT

Scan next valid operator CARD that you want to delete from the system

Follow instructions shown on LCD display.

Keep adding cards to be deleted. When all cards inputed into the system press **<** KEY TO EXIT

Note: In the case that you need replacement of RFID MASTER CARD, please call us at 905-469-0985

How to disable RFID reader

Vehicle access enable function in case of lost HID master card, valid card(s) or reader malefaction

- With digital indicator showing " IVDT SCAN CARD" press and hold **F** key for 5 seconds
- LCD display will show PASSWORD =_
- Input **521** and RFID reader will be disabled. Vehicle will be operational without RFID operator card.

How to enable RFID reader

With digital indicator showing date / time press **F** key and than input number **9**.

- LCD display will show PASSWORD =_
- Input **521**

< KEY TO SCROLL and follow instructions

LCD Display
RE-ACTIVATE RFID
ENTER TO SELECT

LCD Display
RE-ACTIVATE RFID
TURN ON RFID ? N

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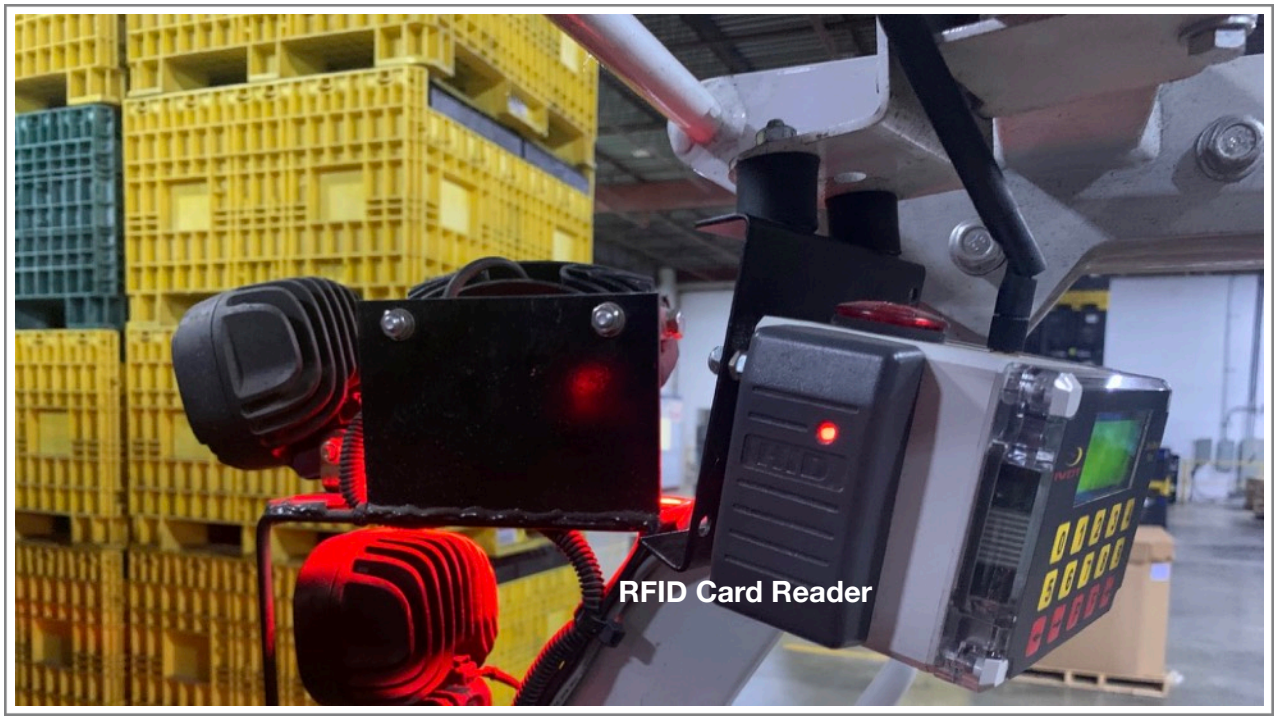
ProxPoint Plus RFID Card Reader / SkidWeigh Technology

Read Range Typical 3”
Operating Voltage 12 to 55 VDC
Operating Temperature (-35 C to 65C)
Operating Humidity 5-95% non-condensing
Transmit Frequency 125 kHz
Card Compatibility All 125 kHz HID Proximity cards, long and short formats, as well as Corporate 1000 cards formats
LED Type Bicolored (green and red)
Transient Surge and Reverse Voltage Protection
Extra Security, Recognizes card formats up to 85 bits with over 137 billion unique codes
Application for all kinds of lift trucks regardless of the vehicle make, type ,model or operating voltage
Self programming, no additional devices required to add or delete cards from the system
Memory capacity to up to 250 operators ID#
FCC Compliance, part 15 of the FCC rule


RFID Card Reader

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Lift Truck Operator Menu Instruction

The SkidWeigh Plus system allows lift truck operator to pair Bluetooth additional devices such as onboard printers or barcode scanners and set TARE, Parts count if required.


To enter into the lift truck operator menu, press **F** key and then number **0**.

Follow instructions shown on the LCD display

LCD Display
BLUETOOTH
ENTER TO SELECT

LCD Display
BLUETOOTH MODE
AUTO _

FOR BARCODE SCANNER OR PRINTER BLUETOOTH PAIRING USE MANUFACTURER MANUAL.
The scanner / printer connects to the host via Bluetooth and emulates a serial connection (SPP)
Note: Use left ◄ and right ► arrow key to choose MANUAL, INQUIRY or AUTO.

Suggestion: For Bluetooth pairing use INQUIRY function

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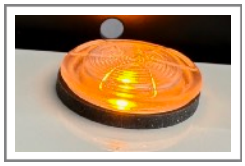
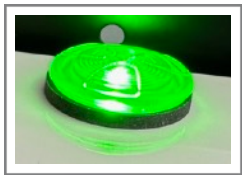
Operator Usage Guide



- Turn On ignition switch.



- Yellow light will be activated and stay on until a valid operator s*can RFID card is acceptable by the system.*
When applicable complete OSHA safety check procedure for yellow light to be changed to the green light.

- Green light will be activated when valid operator ID# is accepted representing normal vehicle operational mode

- Red light will be activated for each overload, vehicle high impact and all unidentified operational downtime events within utilization factor

LCD Display
ENTER ID NUMBER
ID = _

LCD Display
Aug 11, 2011
11:19:38

Load weighing procedure

- Insert the forks into the pallet or under the product to be weighed.

- **Lower the loaded forks to the ground.**

LCD display must show date and time in order to initiate weighing function.

LCD Display
Aug 11, 2011
11:19:38

- Activate lift control valve and lift loaded forks just above the ground.
  Do not manipulate the tilt, side shift or move the vehicle.

LCD display will show **"PLEASE WAIT" .** After few seconds a load weight will be shown on LCD display

LCD Display
Aug 11, 2011
WEIGHT = 1200

Accumulative Load Weight Total

To add loads weight press **"Enter key"** ↵ after each load weight is shown on LCD display.

LCD Display
Aug 11, 2011
WEIGHT = 1200

When **"Enter key"** ↵ is pressed LCD display will show a load weight of the first load and total load weight.

LCD Display
WEIGHT#1 = 1200
TOTAL = 1200

After each new load weight shown on LCD display and pressing **"Enter key"** ↵ system will be updated showing the latest current load weight total, number of loads and total load weight of all loads.
To reset current individual load weight or totalizing session press **"P" key** and session will be RESET.
Note: If the onboard printer is connected to the system by pressing "P" key after individual or total load weight you will get a printout ticket. If the system is utilizing RF communication data will be send to the base station.

TARE Function (When applicable)

To set up TARE value into the system press **F** key and then **0** key.

LCD Display
<> KEY to SCROLL
F KEY TO EXIT

Scroll to get to the TARE value set up.

LCD Display
TARE
ENTER TO SELECT

LCD Display
TARE ADJUSTMENT
TR = 00 Select

LCD Display
TARE
CONFIGURATED

To reset or change TARE value press **F** key and then **0** key and set to **0** to reset current TARE value. To change to the new TARE value, input another TARE value and press **"Enter key"** ↵ .

LCD Display
Aug 11, 2011
TARE = 1250

All of the following load weight measurements will be displayed with TARE sign shown on LCD display.

Important:

To reset TARE you must press **"F" key** and input number **0** and press **"Enter key"** ↵.

LCD Display
<> KEY TO SCROLL
F KEY TO EXIT

LCD Display
TARE
ENTER TO SELECT

If the current value is 500 as of example, then input 0 value and **“Enter key”** ↵.

LCD Display
TARE ADJUSTMENT
TR = 500 Select

TARE will be reset to zero. All load weights shown on LCD display will be showing actual load weight.

OSHA Safety Check

The OSHA safety check will be automatically initiated every 8, 12 hours or daily. Default value shown on LCD display is (**F**) representing “fail”.

Use **< >** key to change. Follow the LCD messages menu and press **“Enter key”** ↵ after choosing **F** or **P**

F = Fail and (P)= Pass