![IVDT logo - INTEGRATED VISUAL DATA TECHNOLOGY INC. Solutions that lift your business]

Installation, Calibration, Set Up & Operation Manual

Measuring Tape Attached to Mast

POUNDS = 3692

56789
VID = 678
DEC 24, 2025 17:20
WAYBILL# 7777
W=48
L=40
H=55
POUNDS = 1227

MobilePrinter   POWER   FEED

FORKLIFT ONBOARD FREIGHT DIMENSIONING & LOAD WEIGHT

ED3-DIM /ED3-DIM-RF CubeFreight Systems

OCT 26, 2016
WEIGHT = 1565
SkidWeigh Plus
0 1 2 3 4
5 6 7 8 9
- + P F →

ID = 444
POUNDS = 315

VID = 999
AUG 14, 2025 12:00
WAYBILL# 1234
W=48
L=48
H=88
POUNDS = 1230

MobilePrinter   POWER   FEED
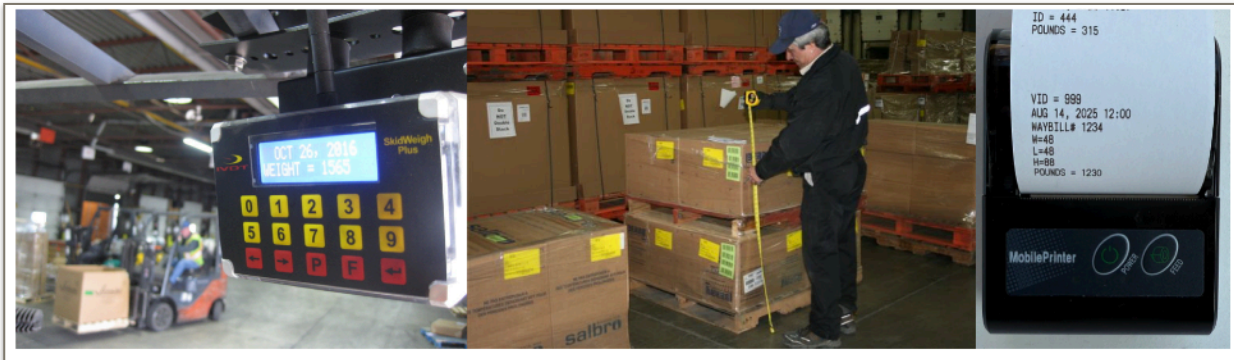
ED3-DIM and ED3-DIM-RF V1.47

General Installation Guide

This CubeFreight ED-DIM Series guide describes how to install, calibrate, set up and use your onboard systems. 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 or contact us at the

Integrated Visual Data Technology Inc.
3439 Whilabout Terrace, Oakville, ON, Canada, L6L 0A7
Phone: 905-469-0985

Safety

Always disconnect the vehicle battery while installing CubeFreight 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. 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.

CubeFreight

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 CubeFreight system consist of two main components:

- **Digital indicator** ** with wiring harness, mounting bracket *(Bluetooth module included)*
- Hydraulic pressure transducer with 3 wires cable
- Installation & calibration manual and operator usage instruction

** The CubeFreight configuration might consist of additional hardware.

Depending on the system application the additional hardware such as USB port, operator access control RFID card reader, impact module, strobe alert modules, RF module, etc., might be included in the indicator.

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.
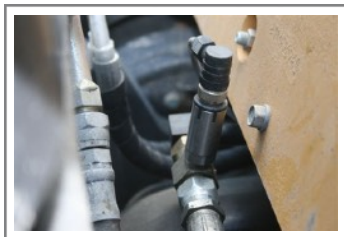
Pressure transducer installation

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

Electrical connections

All ED3-DIM CubeFreight systems operate from 12 to 55 VDC.

POWER CONNECTION

Orange Wire (+) Ignition switch On position

Brown Wire (-) Battery negative

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**

Vehicle Disable Function (If applicable)

- **BLUE Wire**
- **GREEN Wire**

   The application where operator access control to operate the vehicle via keypad or RFID card reader is required use two wires **BLUE** and **GREEN** to interface with vehicle seat switch.

Connect **BLUE** and **GREEN** wire in **series with one of the wire connected to the seat switch.** The indicator internal relay contacts SPST are normally open and connected to **BLUE** and **GREEN** wires.

When valid operator keypad ID# or RFID card is inputed into the system the internal relay will be activated, contact will close and stay closed until the ignition switch is turned OFF.

Impact Module Icon
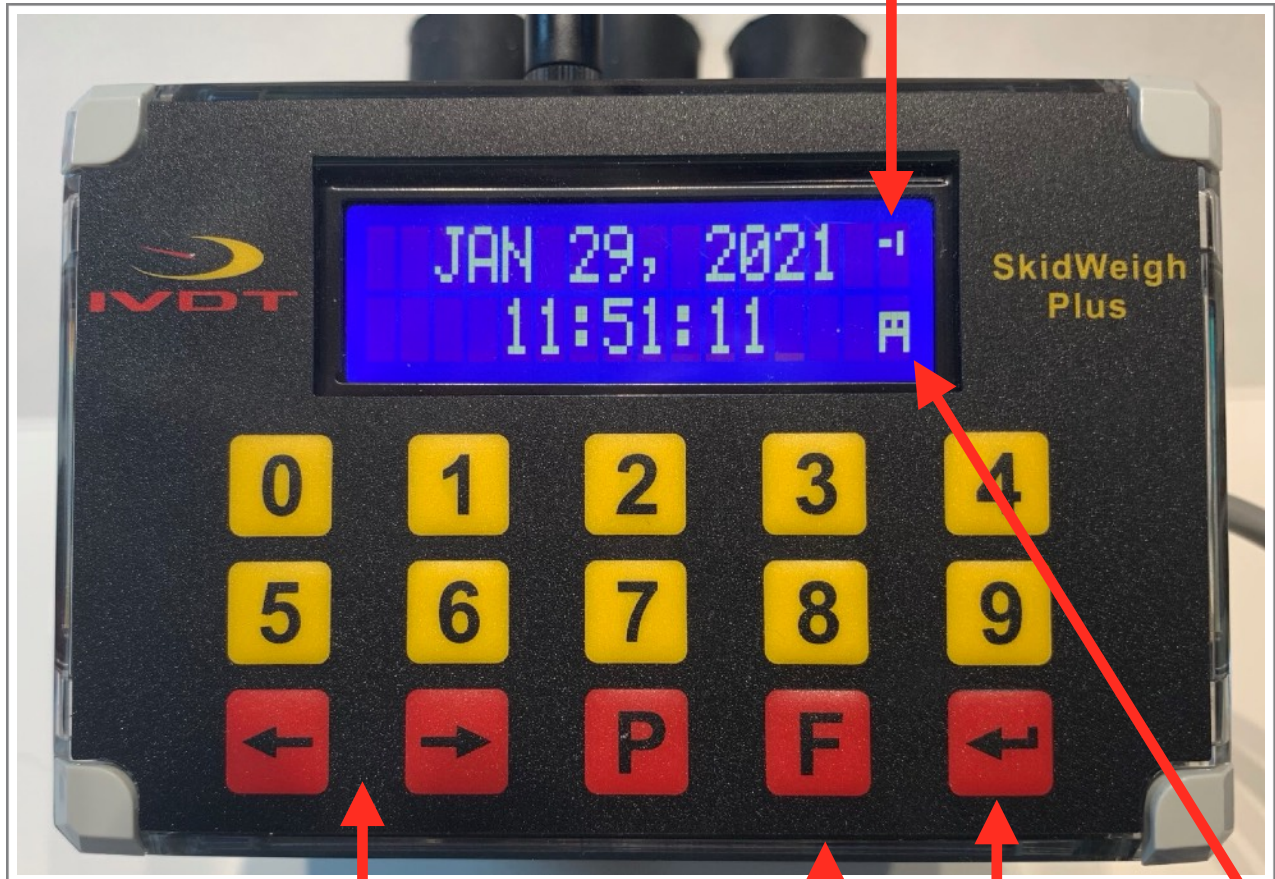
SCROLL KEYS

- Red Wire, power   supply + 11 VDC

"Enter key" ↵

Bluetooth Icon
Bluetooth Barcode
Scanner Connection
or Bluetooth Printer

F 9 Administrative Menu
F 0 Operator Menu

Note: The keypad operator access control has a capability for input of 150 valid operators ID's, up to 3 digits maximum, valid range from 1 to 999.
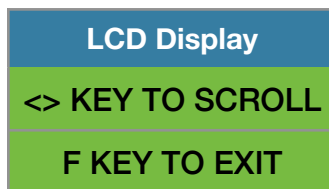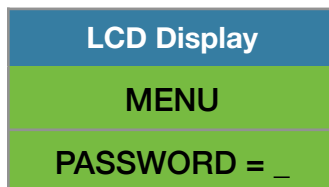
- All new systems are supplied with default operator ID# 111.

- All new systems with RFID reader are supplied with one valid RFID card.
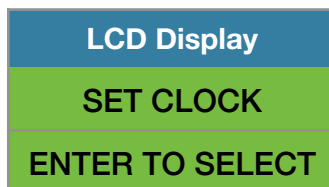
Administration Menu Instructions

(Set up for Time/Date, Vehicle ID#, Impacts Setup, OSHA Safety, USB Data Upload, 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   _
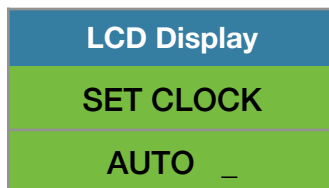
Use left ◄ and right ► arrow key to change from AUTO to MANUAL Date/Time set up.

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

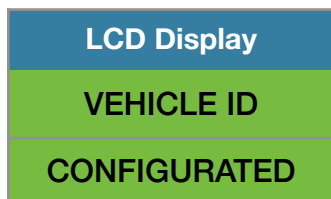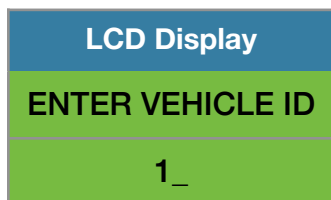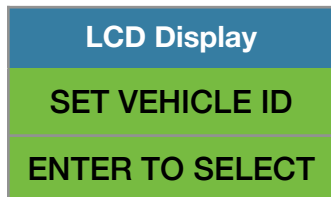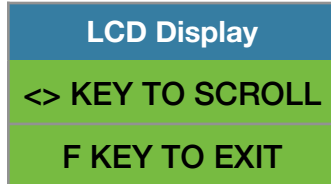For the applications without InfoHUBX select MANUAL, set clock and follow the LCD instructions.

LCD Display
SET CLOCK

LCD Display
MANUAL _

LCD Display
Aug 28, 2010
12:20:23
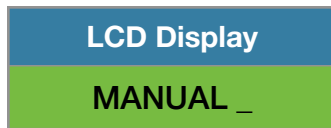
Press **"Enter key"** ↵ to confirm the setting. The cursor will automatically move to the next item to be changed (Month, Day, Year, Hours, Minutes, Seconds). On the last correction, seconds item press **Enter key** ↵ to confirm new Date / Time set up.

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 (If applicable)

- 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

Weighing scale calibration

The CubeFreight system 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

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

LCD Display
<> KEY TO SCROLL
F KEY TO EXIT
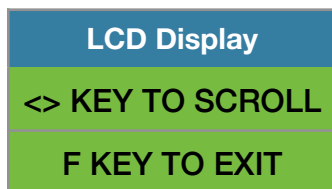
Lower the empty forks to the ground. There should be no hydraulic pressure in lift hydraulic circuit.
Follow instructions shown on the LCD display

LCD Display
CALIBRATION 1
ENTER TO SELECT

Press "**Enter key**" ↵ **.**

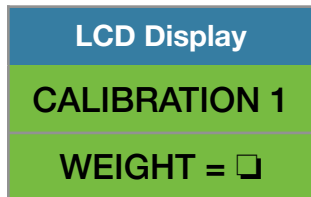| LCD Display |
|:---:|
| CALIBRATION 1 |
| LIFT EMPTY FORKS |
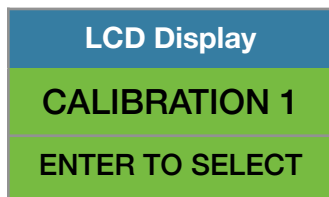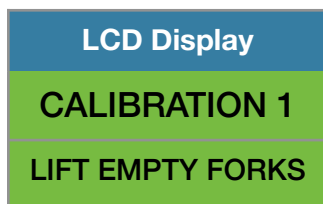
Lift empty forks just above the ground the same way that you would normally do when lifting loads. Do not slow down this lifting operational cycle, do not tilt the load, do not lift to different forks heights or move vehicle. **Lift empty forks just above the ground.**

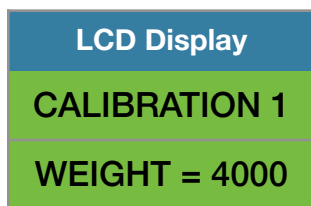After few seconds the LCD display will show "Lower Forks".

LCD Display
CALIBRATION 1
LOWER FORKS
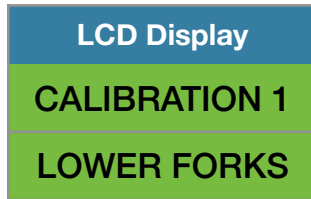
Lower the empty forks to the ground. The LCD display prompt you to input known calibration load weight.
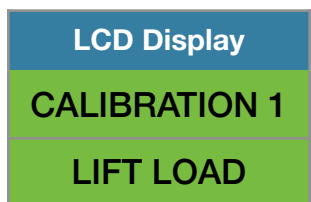
LCD Display
CALIBRATION 1
WEIGHT = ❏

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"**.
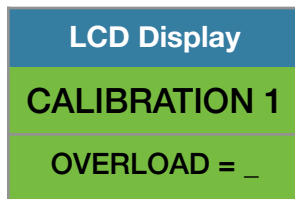

LCD Display
CALIBRATION 1
LOWER FORKS

LCD Display
CALIBRATION 1
CONFIGURATED
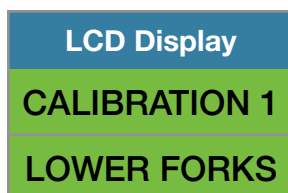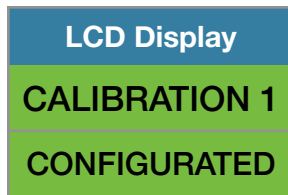
As soon the loaded forks are lowered to the ground LCD will show Data / Time.
System is ready to be used!

LCD Display
AUG 28, 2010
12:25:23

Overload warning alert (If applicable)

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.

The load weight calibration and overload set up function is finished

Set Vehicles Impacts (If applicable)

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

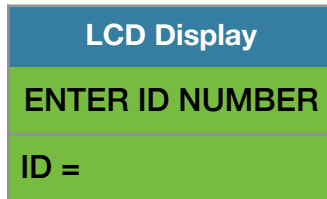ENTER HI IMPACT

CONTINUOUS ? Y

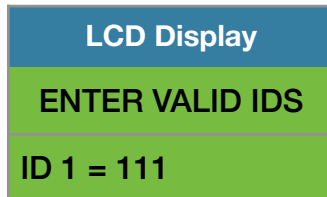**LCD Display**

IMPACT

CONFIGURATED

Type to enter text

## How to program keypad operator vehicle access ID#'s (If applicable)

- With power turned on to the system the LCD display will indicate to **"ENTER ID NUMBER"**

LCD Display
ENTER ID NUMBER
ID =

- Input code **742F**. The LCD display will prompt you to input first valid operator ID#.
(Any number in range from 1 to 999) and press **"Enter key"** ↵.

LCD Display
ENTER VALID IDS
ID 1 = 111

- LCD display will advance and prompt you to input second valid operator ID# and press **"Enter key"** ↵.

LCD Display
ENTER VALID IDS
ID 2 = 222
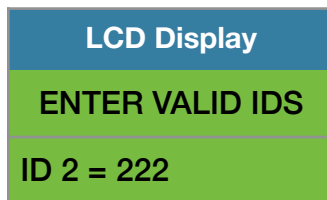
- LCD display will advance and prompt you to input third valid operator ID# and so on.

LCD Display
ENTER VALID IDS
ID 3 = 333
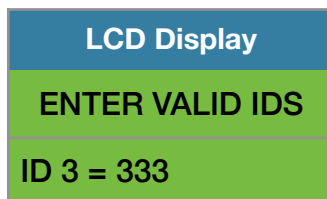
* Above example showing operators ID# 111, 222 and 333.
On the last valid operator ID number that you have inputed into the system you must press **"Enter key"** ↵ and then press **F** key.
At any time if you want to look at the current operators ID numbers already in the system, change or delate them you must input password **742F** while LCD display is showing "Enter ID Number".

How to program operator(s) RFID access cards (If applicable)

The RFID operator access HID card reader is integrated into digital indicator housing with ScanWeight 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.
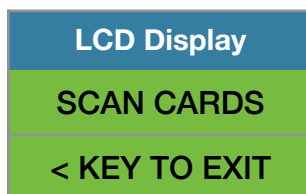
There is no need for any additional programming devices!

- **Turn ignition switch to on position**
- **The LCD display will indicate to "SCAN CARD"**
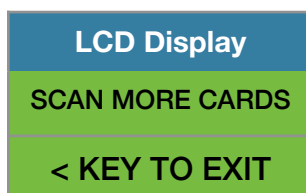
1. Scan RFID MASTER CARD

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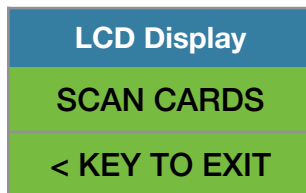
How to delete operator(s) RFID cards already in the system

Turn ignition switch to on position
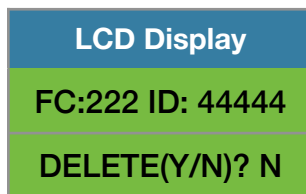The LCD display will indicate to "SCAN CARD" (as shown on the picture)
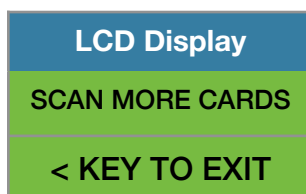
Scan RFID MASTER CARD

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

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 rules

Onboard Mobile Bluetooth Printer Pairing

The CubeFreight system allows to pair IVDT mobile Bluetooth printer.

To enter into the Bluetooth pairing menu, press **F** key and then number **0 and scroll to Bluetooth set up**. NOTE**:** For pairing use INQUIRY function.

Follow instructions shown on the LCD display for pairing process.

OSHA Safety Check (If applicable)

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

Automatic Dimensioning & Weighing Cycle

The CubeFreight system requires automatic weighing cycle to be initiated with barcode scanner or by activating "By Pass Switch".

The "By Pass Switch" is used for system with onboard printer to input Waybill ID#.

* In systems with barcode scanner use "By Pass Switch" should the barcode label be damaged or not available.

* If operation requires the load weight readout only without barcode label ID# readout press "By Pass   Switch" twice.

Operator Usage Guide (Application with Barcode Scanner)

- Turn ignition switch
- Scan valid operator RFID card if applicable.

Note: Input an operator ID# and press **"Enter key"** ↵ if keypad operator access control is used. *If applicable complete OSHA safety check procedure.*

LCD Display
ENTER ID NUMBER
ID = _

LCD Display
Aug 11, 2011
11:19:38
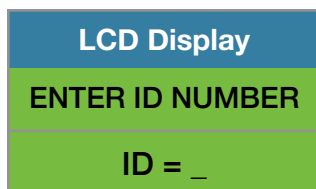
- Insert the forks into the pallet or under the product to be weighed and lowered to ground.
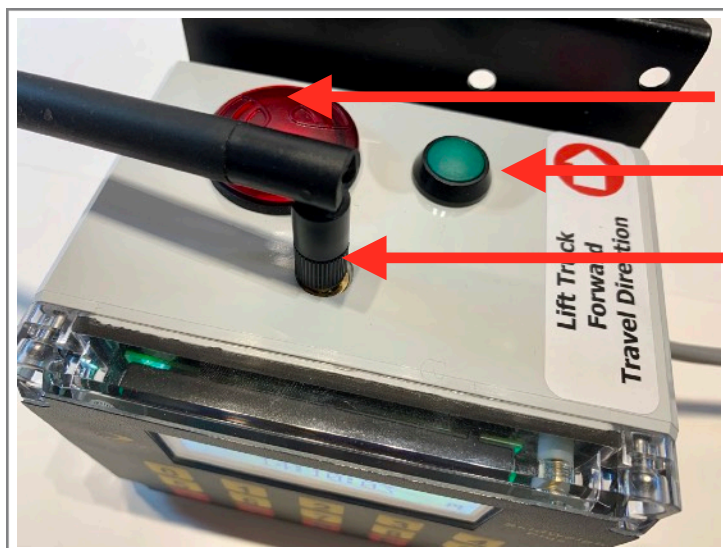
Impact, Overload Audio / Visual Alert

Barcode scanner "By Pass Switch"

RF Antenna

1. With LCD display showing Date/ Time scan the barcode on pallet and follow instruction. *(Should the barcode scanner be not available or barcode damaged and not be readable, **press Green button once** (By Pass Switch) to continue with measurement cycle and*

input pallet ID# by keypad)

2. LCD display will show the barcode scan ID# for a moment and display will advance to **default** PALLET SIZE 48 x40. This menu has all of the most popular pallet sizes and manual input for non palletized loads. Use **< >** key to select other pallet size and press **"Enter key".**

3. Next LCD display show will be SELECT PALLET HEIGHT. Input pallet height and press **"Enter key".** The LCD display will prompt you to lift loaded forks. Lift the load just above the ground. Within few


CubeFreight Data Session

- Date/Time
- Vehicle ID#
- Barcode ID#
- Operator ID#
- Freight size, WIDTH, LENGTH and HEIGHT
- Load weight

seconds LCD display will show load weight.
The measurement session is completed. The CubeFreight date will be automatically send to the USB port or/and RF Base Station without operator input.

4. **For non palletized freight** use **< >** key in pallet size menu and select PALLET SIZE MANUAL and press **"Enter key".** Input WIDTH, LENGTH and HEIGHT and press **"Enter key".** The LCD display will prompt you to lift loaded forks. The measurement session is completed.
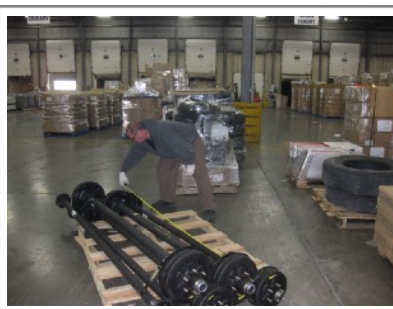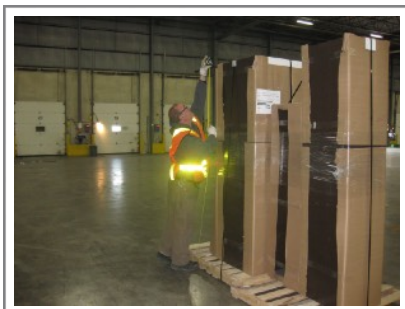
Operator Usage Guide (Application with IVDT Bluetooth Mobile Printer)

The CubeFreight system using mobile Bluetooth printer requires automatic weighing cycle to be initiated by activating "By Pass Switch", **pressing it once**. Press GREEN button and use keypad to input palletized load ID#". After each keypad number input press **"Enter key"**

NOTE: Should the application require only the load weigh measurement, press "By pass switch" **GREEN BUTTON TWICE.** The system LCD display will prompt you to lift loaded forks. The load weight will be shown on LCD display and will be recorded.

1. With LCD display showing Date/Time press GREEN **button only once.**

2. LCD display will prompt operator to input the pallet load ID#. Use keypad and input load ID# and make sure that you press **"Enter key"** after each digit entered into the system. On last ID# digit input press **"Enter key"** to advance to **default** PALLET SIZE 48 x40 menu. This menu has all of the most popular pallet sizes and manual input for non palletized loads. Use **< >** key to select other pallet size and press **"Enter key".** Use **< >** key to select other pallet size and press **"Enter key".**

3. Next LCD display show will be SELECT PALLET HEIGHT. Input pallet height and press **"Enter key".** The LCD display will prompt you to lift loaded forks. Lift the load just above the ground. Within few seconds LCD display will show load weight.
The measurement session is completed. The CubeFreight date in addition to printout ticket will be automatically send to the USB port or/and RF Base Station without operator input.

4. **For non palletized freight** use **< >** key in pallet size menu and select PALLET SIZE MANUAL and press **"Enter key".** Input WIDTH, LENGTH and HEIGHT and press **"Enter key".** The LCD display will prompt you to lift loaded forks.
The measurement session is completed.

Multiple Pallet Loads with Same Pallet Load Weight

With LCD display showing Date/Time press **"Enter key"**and input number of pallets in the shipment, scan barcode and follow instruction to complete measurement cycle. *(Should the barcode scanner be not available or barcode damaged and not be readable, press Green button once (By Pass Switch) and input pallet ID# by keypad and continue with measurement cycle. **Note:** After each ID# number press **"Enter key".** On last ID# press **"Enter key"** again.*