



Operator Manual

CP Series Forklift Scale

with  **Bluetooth® Technology**

Carriage Plate Weighing System



Amendment Record

CP Series Scale

Document 51412

Created	12/2017	
Revision 1	12/2017	Released manual
Revision 2	06/2020	Updated Installation > Power Supply Cable

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Section 1: General Information

1.1. Introduction

The CP (Carriage Plate) Series Forklift Scales are designed for on-board forklift weighing. The CP Series Forklift Scales are RoHS compliant. Its highly accurate design fits into a wide variety of applications. The CP Series carriage plate attaches to the existing fork carriage without expensive modifications.

The instrument mounting allows easy viewing by the operator and communicates to the carriage assembly via  Bluetooth technology.

Warnings & Safety measures



When installing the CP Series, please observe the instructions and guidelines in this manual carefully. Always perform each step-in sequence. If any of the instructions are not clear, please contact Fairbanks Scales.

**READ
CAREFULLY**

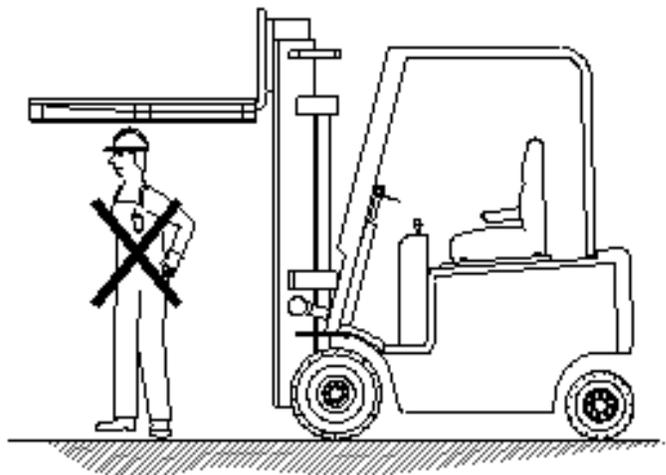


The installation of the Fairbanks CP Series should only be performed by knowledgeable personnel.

Possible failures to the equipment must be communicated to your installer.

ATTENTION

Always follow the safety measures concerning the forklift - or stacker truck.





1.2. Description

The CP Series Forklift scales do NOT interfere with the forklift’s hydraulic system, instead it utilizes proven load cell technology to capture weight. The forklift operates in its customary manner. When the forks are lifting a load, it can be read as gross or net weight on the instrument. Sizes and capacities range from 5,000 lbs x 5 lbs to 10,000 lbs x 10 lbs, for a Class II ITA and Class III ITA respectively.

1.3. CP Series Instrument Specifications

Feature	Description
Display	0.71” LCD Backlit Display
Keypad	5 multi-function keys: Zero or Enter or Code Entry AutoTare or Scroll Down or Pre-set Tare Print or Scroll Up or Check Subtotal and PrintTotal Sample or Shift Left or Enter Piece Weight On/Off or Units or Clear Entry
Units	Pounds or kilograms
Counting	Sample sizes from 1-95. Automatic or manual entered average piece weight
Accumulation	Addition of each weightment to obtain Total weight
Power Requirement	Powered by forklift. 12-80 VDC. Goes into sleep mode after 2 minutes of inactivity.
Temperature	14° F to 104° F (-10° C to +40° C)
Enclosure Rating	NEMA 4X, IP65
Communications	COM1: Bluetooth® - Fixed configuration COM2: RS232 – Configurable (Optional)
Approvals	RoHS Compliant



1.4. CP Series Carriage Specifications

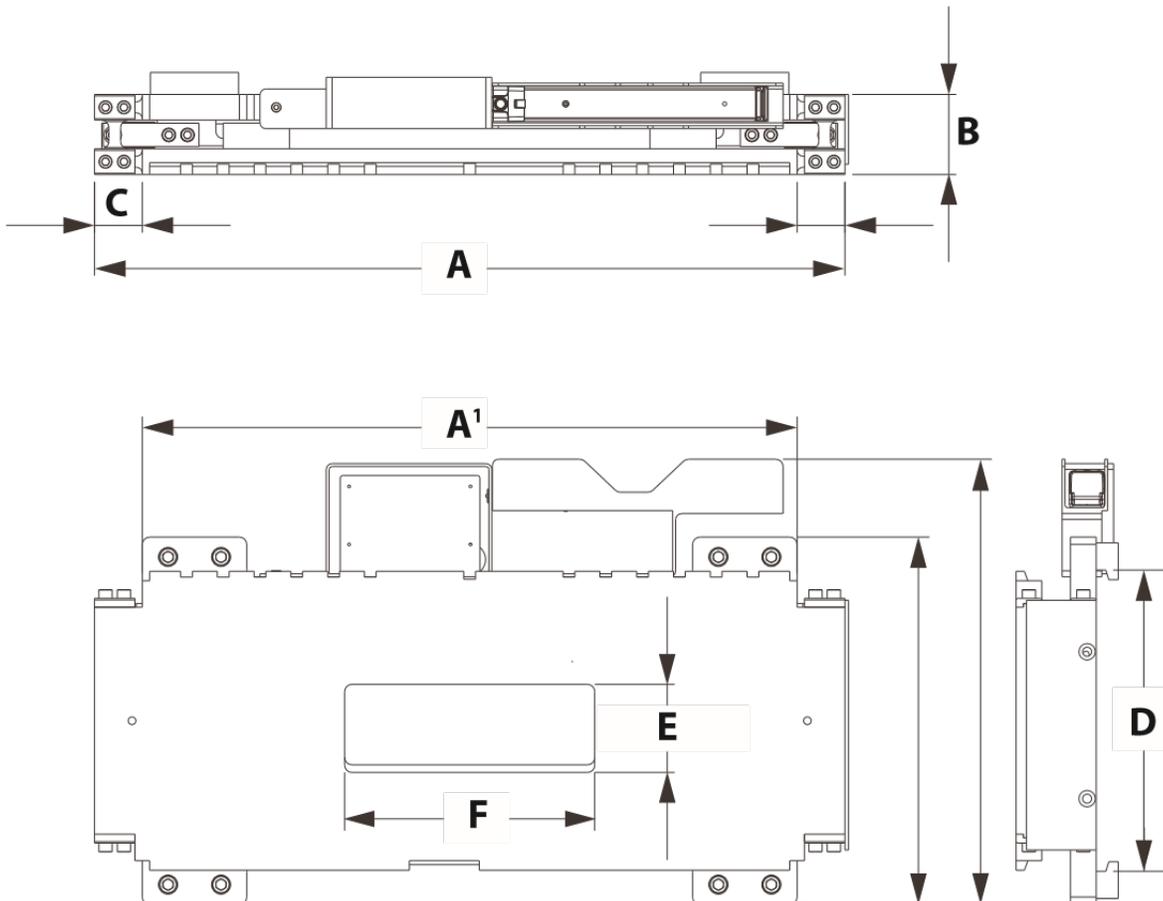
Feature	Description
Capacities	5,000 lb. capacity x 5 lb divisions
Type	Cleat
Power	Rechargeable battery
Protection	IP65
Overload	200% FS
Side loading (single fork)	100% FS
Construction	Structural carbon steel
Load cells (4)	350 ohms
Instrument-to-forks interface	Wireless Bluetooth Technology
Accessories	Thermal printer (Some models)
Approval	RoHS compliant
Max tolerance	0.2% of the load lifted

1.5. CP Series Carriage Dimensions

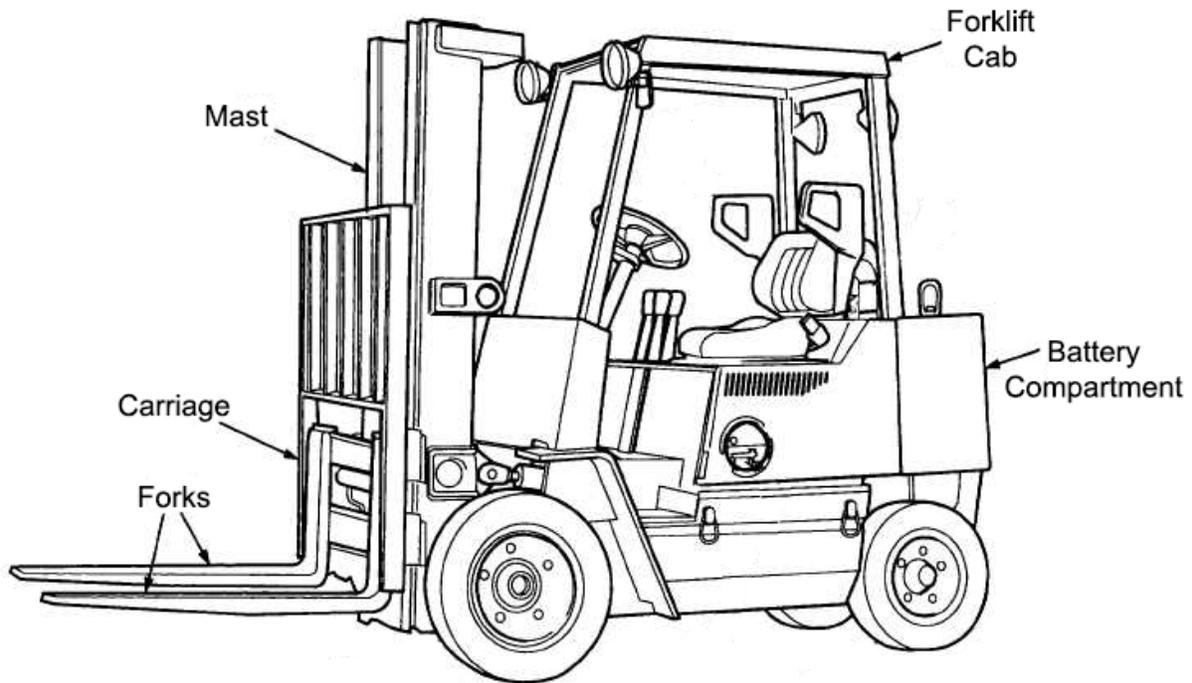
Dimensions (in inches)

	Class II 5,000 lb capacity	Class III 10,000 lb capacity	Class IV* 15,000 lb capacity
A	41.50	44.10	35.10
A'	35.00	36.20	45.70
B	4.33	5.31	6.30
C	2.56	3.15	4.33
D	16.00	20.00	25.00
E	4.72	6.69	8.27
F	13.50	14.70	14.70

* Class IV CP Series Scales available through Fairbanks Scales Solutions Group.



Section 2: Installation



2.1. Unpacking

The Fork Truck Scale is shipped on a pallet. A standard system will include the following components:

1. One (1) scale carriage assembly with safety plates.
2. One (1) load cell cable assembly with mounting bracket.
3. One (1) power cable.
4. One (1) electronic indicator with mounting hardware.
5. One (1) Operator manual.
6. One (1) Side Shift Bracket (Option).

Upon receipt of shipment, inspect to make sure the above listed parts are present.

2.2. Carriage Assembly Installation

After installation of the CP Series system on the forklift truck, the truck is part of the weighing system. The mechanical parts of the forklift truck, such as the mast and bearings, will influence the accuracy of the weightings. For this reason, it is important that these components are in good condition:

- ✓ No local wear in the mast of the forklift truck
- ✓ Clean the system
- ✓ Good lubrication of the mast and chains
- ✓ Regular maintenance so that the condition of the system is constant
- ✓ When lifting, and decreasing the forks no whistling and cracking sounds from the mast

The accuracy, repeatability and life expectancy of the CP System is determined by how the system is used. A few guidelines include:

- ✓ Loads should be lifted at a 90-degree angle from the floor
- ✓ Hydraulic fluids should always be kept at proper levels
- ✓ System is not designed for wet or wash-down areas
- ✓ Operating temperature should remain between 14° F - 104° F

To Assemble the CP Series:

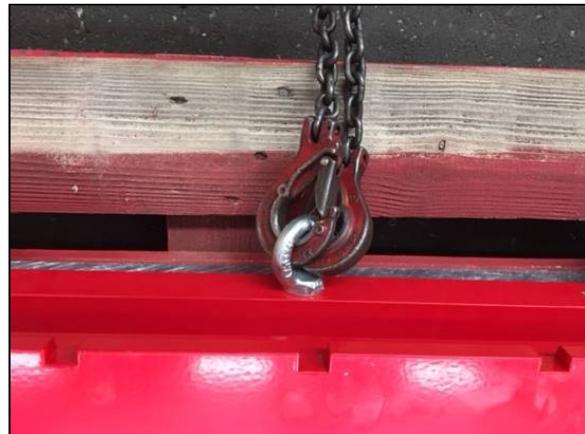
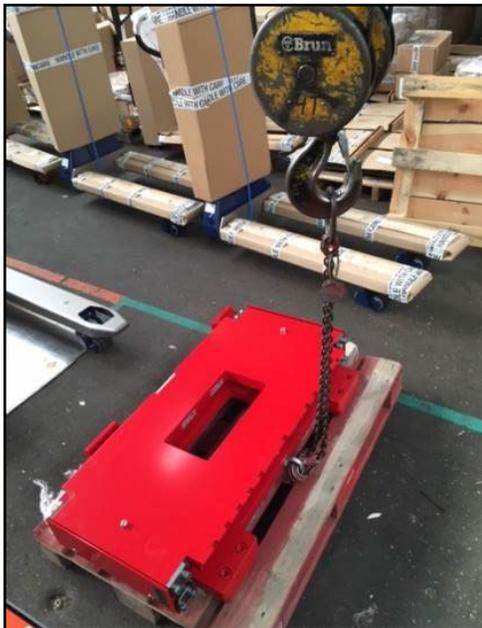
1. Park the forklift on a level surface and secure it from moving.
2. Remove the existing forks from the forklift truck.
3. Apply a layer of grease to the carriage.
4. Make sure that the fork truck's power rating is 12-80 volts DC.
5. Make sure that the fork truck has a negative ground system, The CP series will not operate on a positive grounded system.
6. Make sure the frame work of the original carriage assembly is flat and straight. If the truck is used, then the original carriage assembly could be bent which will negatively effect the accuracy of the CP Series scale. For best weighing accuracy, the lower back side of the CP Series scale must have straight and solid contact with the original carriage assembly.



7. Park Mount the eye bolt onto the top side of the weigh carriage back plate.



8. Use a properly rated chain/strap to attach to the eye bolt installed in Step 7. and slowly lift the weigh carriage and align with the center of the original forklift carriage. Position the weigh carriage onto the forklift.



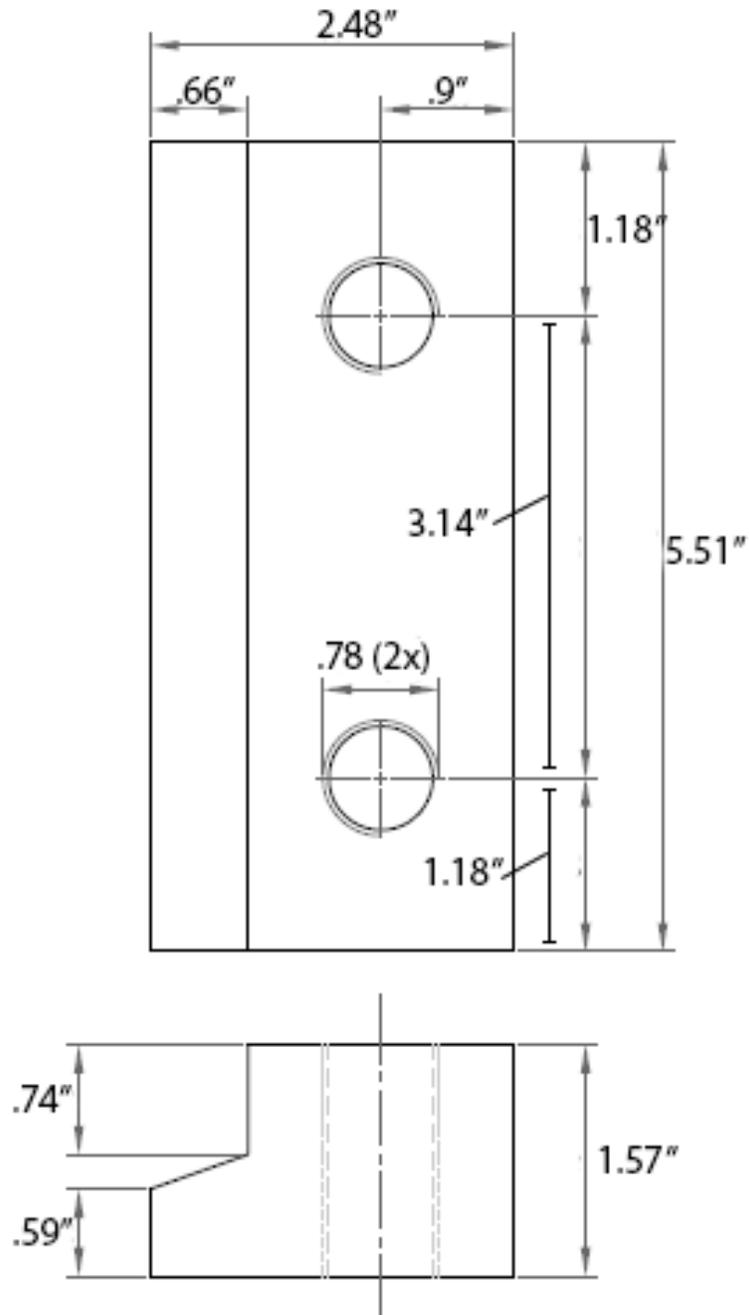


Diagram of the Claw Dimensions (in inches)



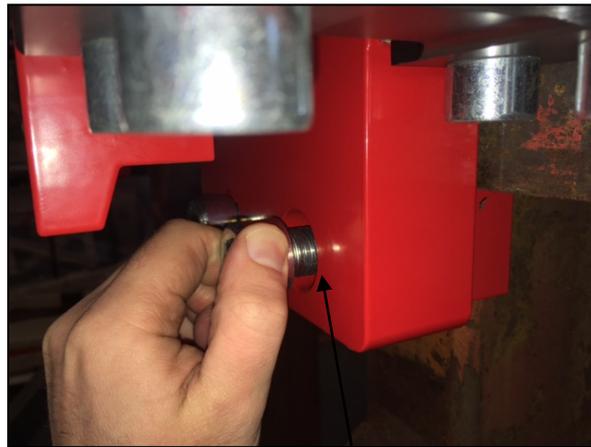
9. Once the upper claws are attached to the original forklift carriage, proceed with installing the lower blocks (lock blocks) on the lower side of the weigh carriage back plate. Torque to 222 foot pounds for 5,000 lb capacity or 443 foot pounds for 10,000 lb capacity.



Lower block



Lower blocks



Attaching the lower block and adding the locking bolt



Torque to the proper setting:

222 foot pounds for 5,000 lb capacity

443 foot pounds for 10,000 lb capacity.

10. Remove the chain/strap from the eye bolt then remove the eye bolt.

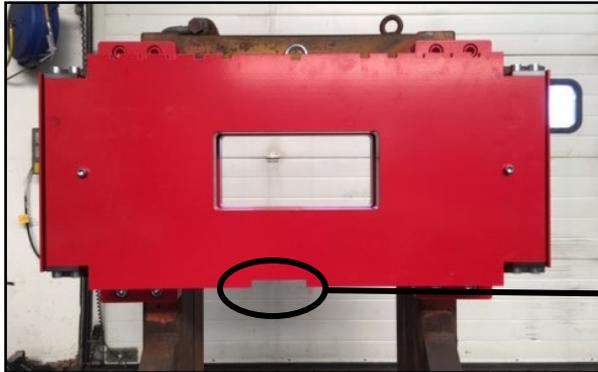


Remove the temporary eyebolt.

11. Check: If the original carriage assembly of the forklift is equipped with 'cut-outs' at the top side to lock the position of attachments, then the optional side shift bracket can be used to lock the CP Series scale in place.



12. Install each fork by aligning it with the cut-out on the bottom center of the weigh carriage front plate then slide each fork to its permanent position.



Attach the forks and slide into position.

Cut-out



13. Install each fork by aligning it with the cut-out on the bottom center of the weigh carriage front plate then slide each fork to its permanent position.



Attach the bolts (as shown)

14. Be sure to “exercise” the scale by loading it with its maximum capacity then raising and lowering the load at least two times.

2.3. Adjusting the Tension Assembly

1. Load the system with it's maximum capacity then lift and lower the load (exercise) at least two times.



2. Loosen the upper nuts of each tensioning assembly.



3. Loosen the lower nuts of the tensioning assemblies as well.



4. Hand tighten the upper nuts.



5. Tighten and lock down the lower nuts with a wrench



6. Load the system with maximum capacity and raise and lower the forks at least two times. The system is now ready for calibration.



- Fairbanks Scales Inc. recommends that the mechanical installation of this device be performed by a trained hydraulic expert.
- Fairbanks Scales Inc. recommends that any electrical wiring to the forklift or stacker should be done by a certified electrician.
- Fairbanks Scales Inc. recommends that all scale calibrations / adjustments be made by Fairbanks Scales Service, call 800-451-4107.

2.4. Carriage Plate Battery Installation

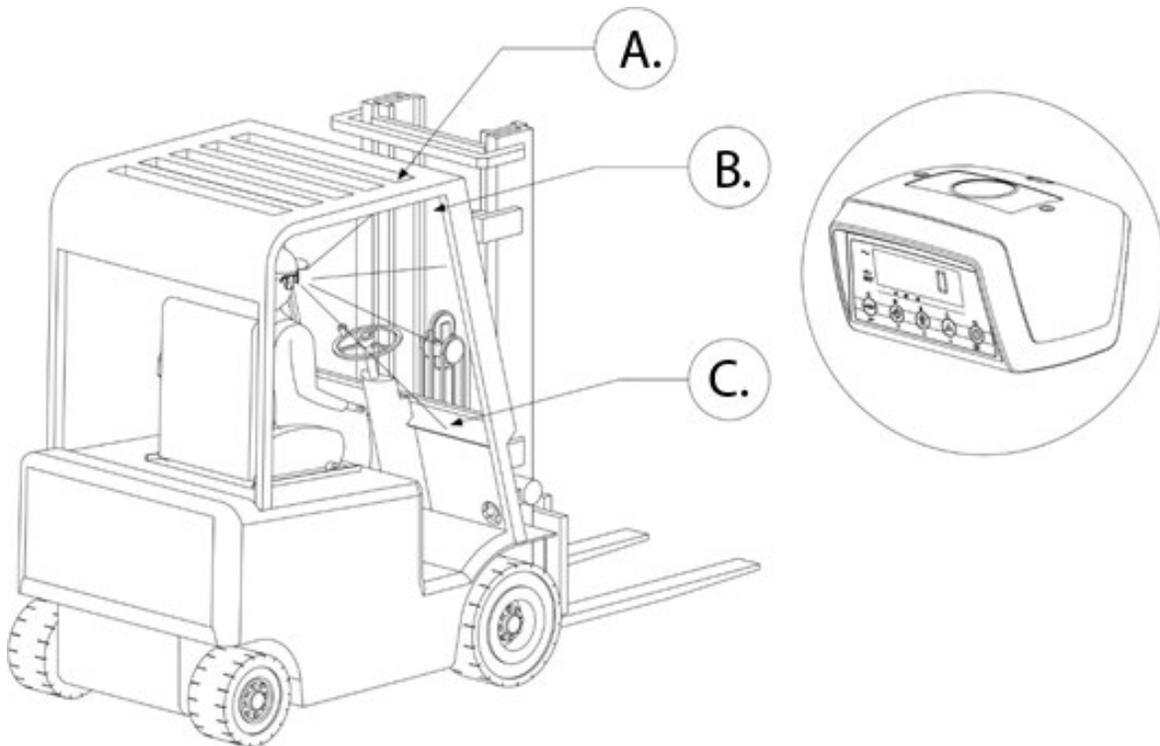
Install the carriage plate assembly's battery pack by lifting the tab, inserting the battery at the bottom first, pressing the battery down and into place, and securing the tab back down.

2.5. Instrument Installation

Note: *All Parts are assembled at the factory.*

The preferred locations to mount the instrument:

- A. Near the safety cage roof
- B. On the right side of the safety cage, mounted onto a side-rail.
- C. On the dashboard.



2.5.1 Connecting the Power Supply Cable

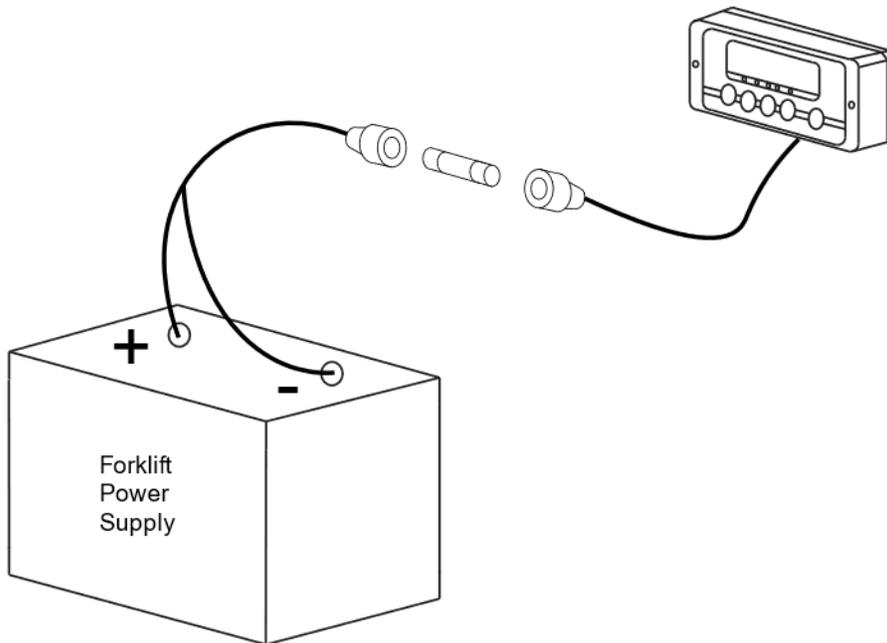
Instrument power supply from forklift truck

READ LABEL ON BACK FOR POWER SUPPLY INDICATOR

POWER REGULATOR INSIDE + = 12 VDC

POWER CONVERTER INSIDE + = 20-100VDC

FUSE: 3.15mA, 250V, 5x20mm slow blow



NOTE: Fuse and fuse holder ship loose with the instrument. This allows easier routing of the power cable. Once cable is routed, splice the fuse holder into the positive power line. Soldering is required.

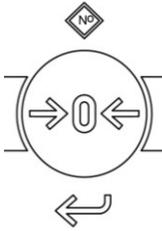
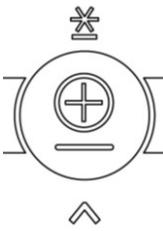
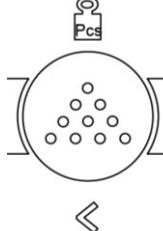
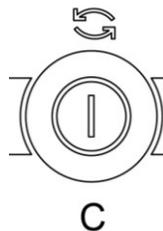
Installation of the scale instrument to the forklift power supply requires specific knowledge of the forklift's electrical system. Forklift owner is responsible for providing this information to the scale technician either with their forklift maintenance technician or wiring schematic of the forklift.

Section 3: Operations

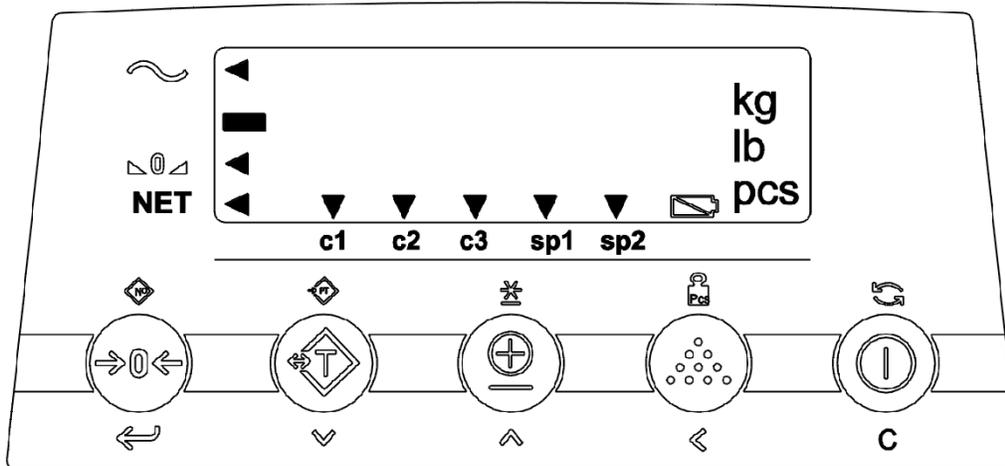
3.1. Front Panel Key Functions

This section examines the functions of the various keyboard operations that can be performed on the CP Series Forklift Scale. There are 5 keys on the keyboard with 5 secondary operational functions.

3.1.1 Key Functions

Key					
Standard Function Short Key Press	ZERO	TARE	PRINT	SAMPLE	ON UNITS
Entry Mode	ENTER	DOWN	UP	LEFT	C
Special Function Long Key Press	CODE ENTRY	PRESET TARE	SUBTOTAL PRTTOTAL	PCS WEIGHT	OFF

3.1.2 Front Panel Layout and Descriptions



Descriptions

The weighing system (including load) is stable

The weight shown is negative

The weight shown is within the zero range

NET The display is showing the net weight

c1 Displayed weight shown is in range 1 (option multi range)

c2 Displayed weight shown is in range 2 (option multi range)

c3 Displayed weight shown is in range 3 (option multi range)

sp1 Carriage / Setpoint 1 is activated (option relay output)

sp2 Carriage / Setpoint 2 is activated (option relay output)

kg Display shows weight in kilograms

lb Display shows weight in pounds

pcs Number displayed represents number of pieces on the scale.

3.2. System Power Up/Shut Down

3.2.1 System Power Up

1. Switch on the forks by pressing the **blue** button on the battery pack holder.
2. The blue LED on the CP Series weighing assembly will start blinking automatically.
3. Start up the instrument. Press the **On/Off** key.
4. The Bluetooth® communications will begin pairing the instrument to the fork weighing assembly.
5. After approximately **five (5) seconds**, the instrument will be ready to weigh.

3.2.2 System Shutdown

1. Switch off the instrument by pressing the [**On/Off**] key for **3 seconds**
2. Switch off the fork weighing assembly by pressing the **blue** button for **8 seconds**.

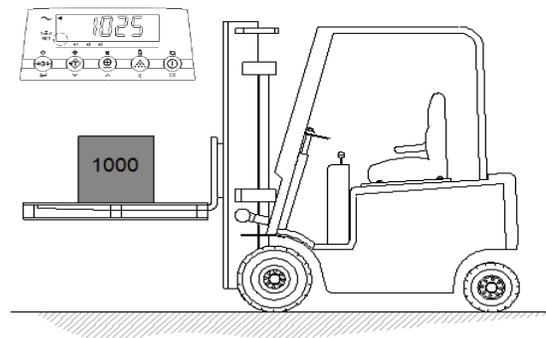
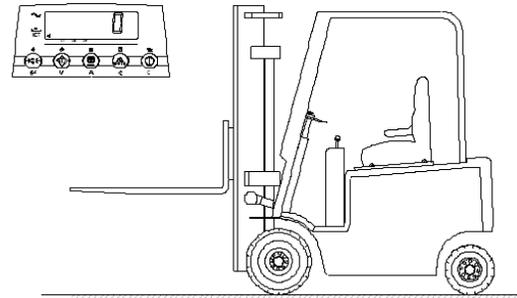
3.2.3 Automatic System Shutdown

1. After two (2) minutes of inactivity, the CP Series Forklift instrument will begin an automatic system shutdown process.
2. Press any key during the countdown process to cancel the automatic system shutdown and the instrument will return back to the weighing mode.
3. If a key is not pressed during the automatic system shutdown process, the instrument will indicate it is shutting off and the display will go blank as indicated.
4. After two (2) hours of inactivity, the forklift weighing assembly will automatically shut down and both weigh fork assembly and the instrument must be restarted. First, power on the carriage plate, then power on the instrument.

3.3. Basic Operation

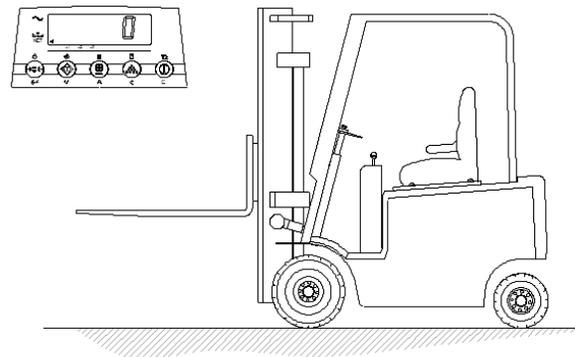
3.3.1 Gross Weighing

1. Raise empty forks off ground and level
2. Press the [ZERO] key
3. Lower forks and lift load
4. Gross weight displayed



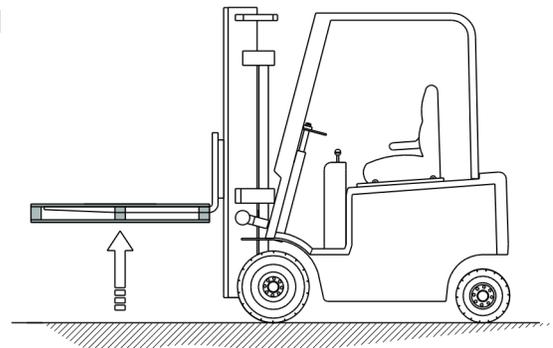
3.3.2 Net Weighing – AutoTare

1. Raise empty forks off ground and level.
2. Press the [ZERO] key

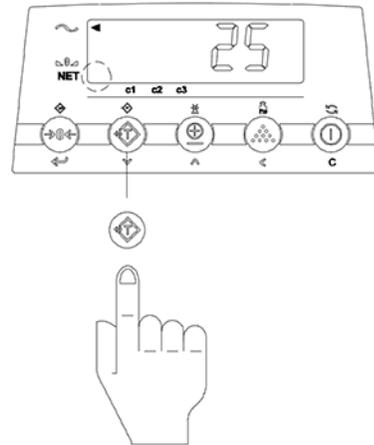


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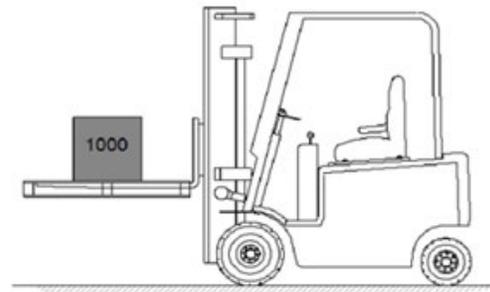
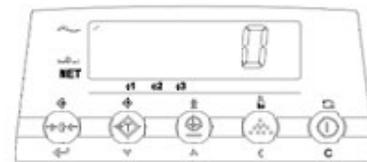
3. Lower forks and lift the Tare load



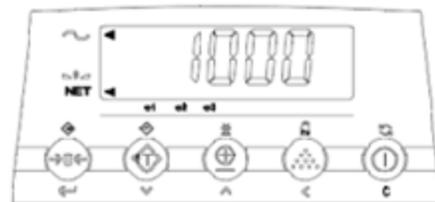
4. Press the [AUTOTARE] key.



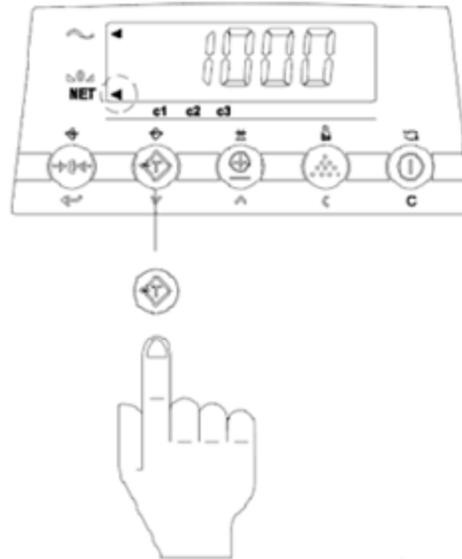
5. Net weight is now displayed. The "NET" pointer shows that the tare weight is activated.



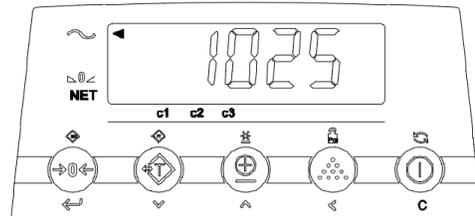
6. The display indicates the Net value of the weighed load.



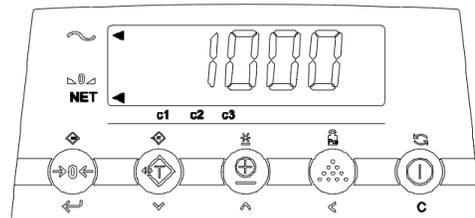
7. Press the [AUTOTARE] key to change to Gross weighing.



8. The instrument switches to Gross weighing.

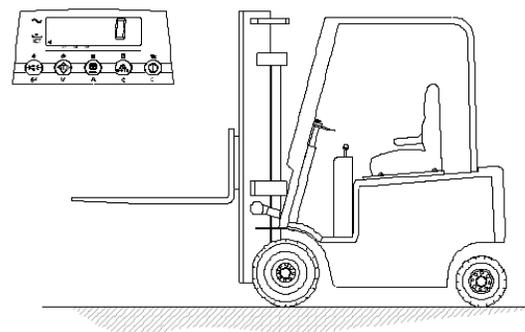


9. Pressing the [AUTOTARE] key again will switch the displayed weight back to Net.

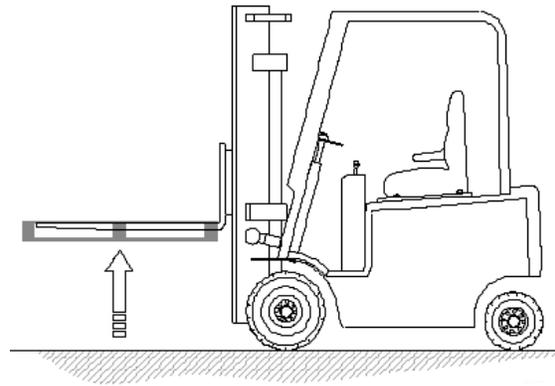


3.3.3 Net Weighing – Manual Tare

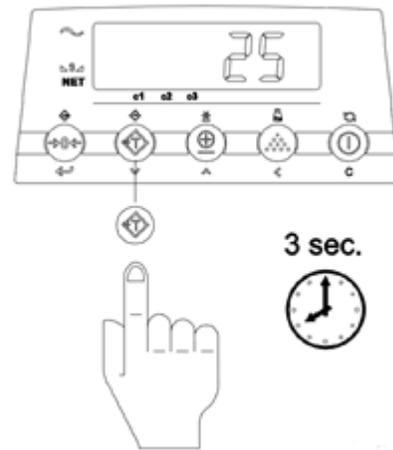
1. Raise empty forks off ground and level.
2. Press the [ZERO] key.



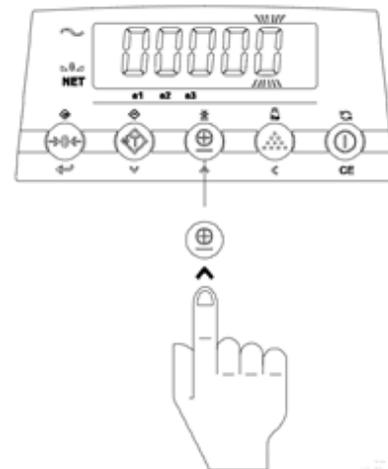
3. Lower forks and lift the Tare load.



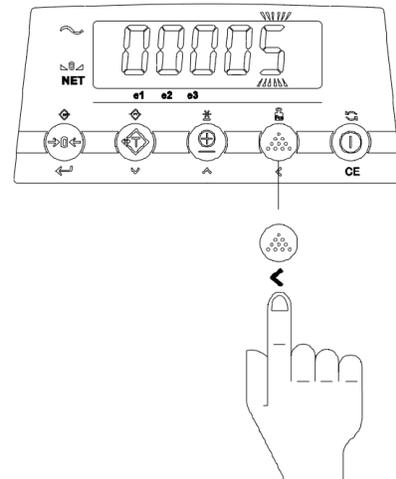
4. Press the **[PT]** key for three (3) seconds.



5. Press the **[Up]** or **[Down]** key until the desired value is reached.

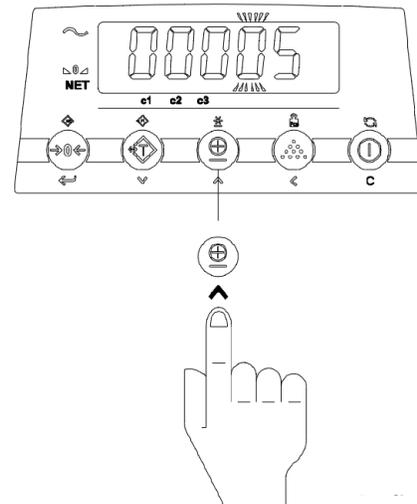


6. In this example, press the **[Up]** key five times (5x) until the number 5 is reached. Once the value is reached, press the **[Left]** key once (1x).

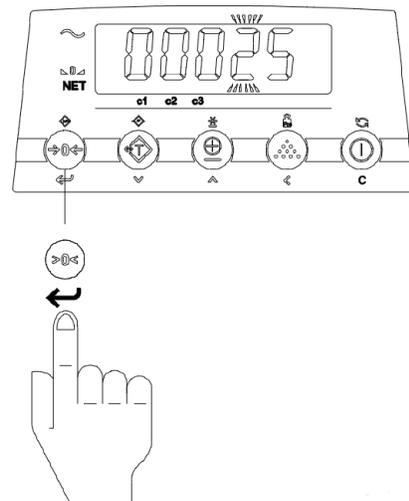


7. Press the **[Up]** or **[Down]** key until the desired value is reached.

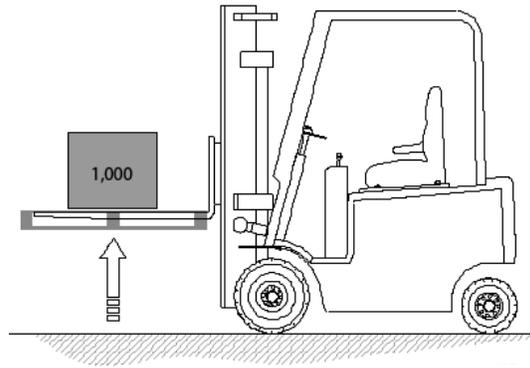
In the example, press the **[Up]** key two times (2x).



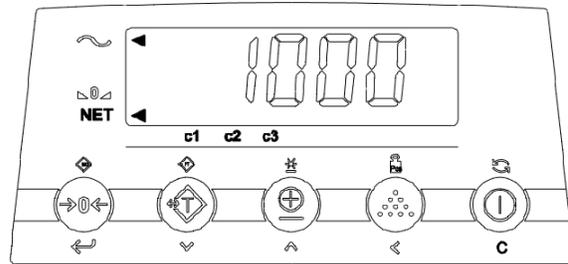
8. Press the **[Enter]** key to save the Tare entry.



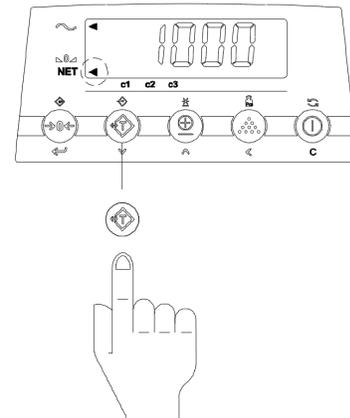
9. Lower forks and lift load.



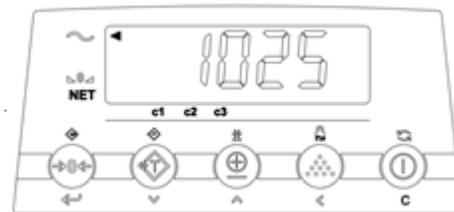
10. The Net annunciator will light and the Net Weight will be displayed.



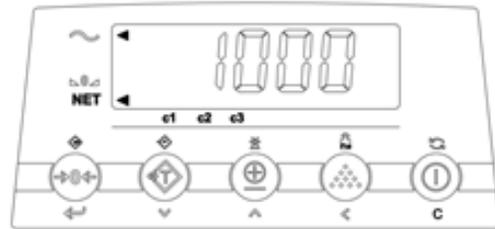
11. Press the **[AUTOTARE]** key to change to Gross weighing.



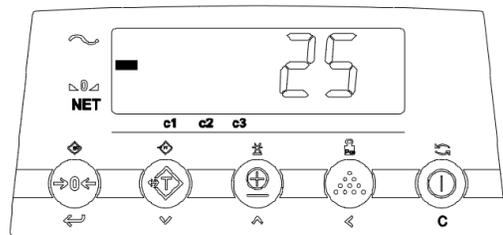
The instrument switches to Gross weighing.



- Pressing the [AUTOTARE] key again will switch the displayed weight back to Net.



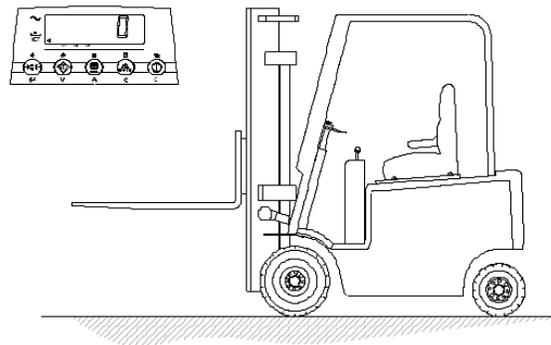
When the forklift weighing assemblies are completely unloaded, the tare value is displayed as a negative.



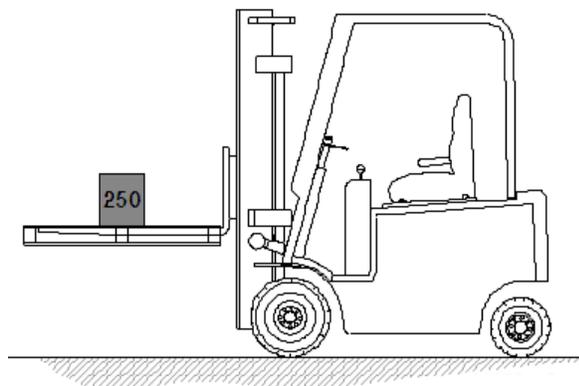
3.3.4 Accumulation

- Raise empty forks off ground and level

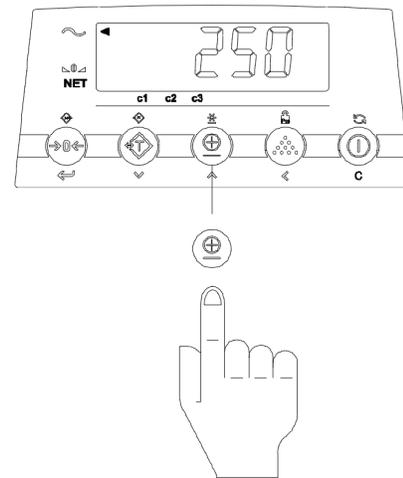
- Press the [ZERO] key



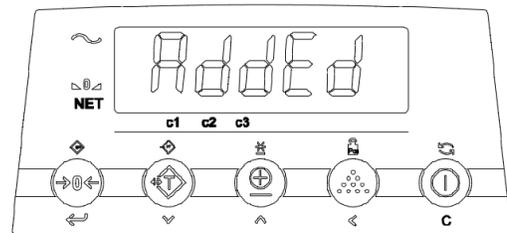
- Lower forks and lift load



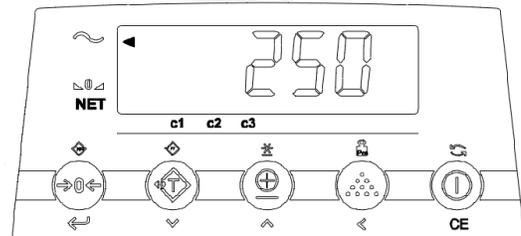
4. Press the [TOTAL] key to accumulate the weight. If a printer is installed, a printout will be made. The gross, tare and net weights are printed.



The instrument will indicate the weight has been added to the accumulator by displaying **ADDED** on the display.



The display returns to normal weighing.



**** Repeat this process for each additional load which needs to be totaled and summed together.***

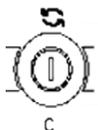
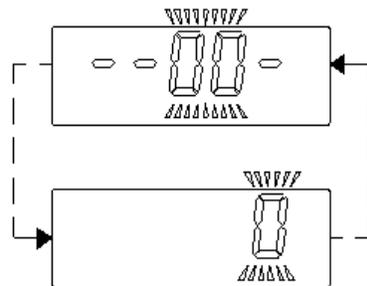
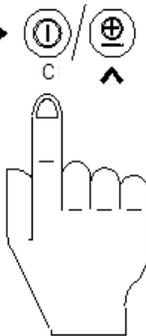
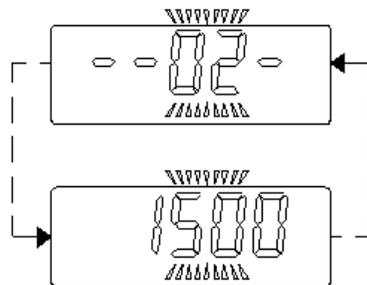
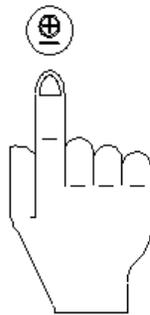
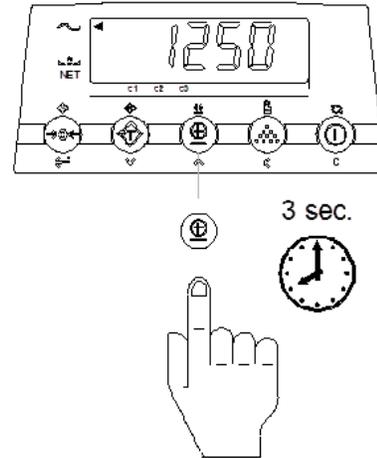
3.3.5 Check Accumulation Subtotal

The Subtotal can be checked by pressing the [TOTAL] key for 3 sec.

The display will show the number of loads weighed and the subtotal of the accumulated weights.

Press the [C] key to reset the Subtotal accumulator.

Press the [PRINT] key to reset the Subtotal accumulator and print the accumulator values.



= RESET TOTAL

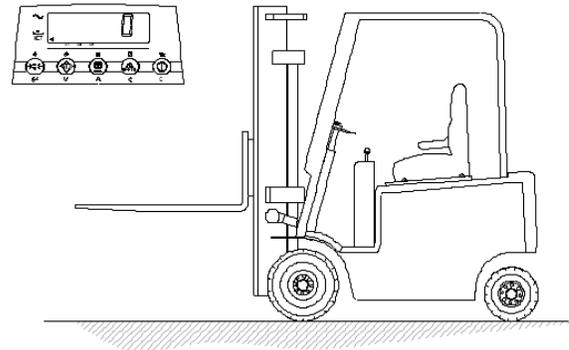


= RESET TOTAL & PRINT

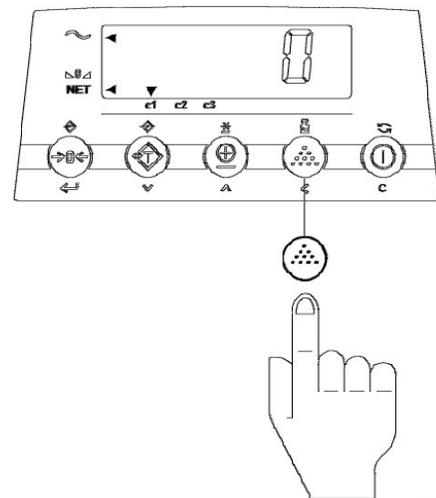
51322-48

3.3.6 Piece Counting - Sampling

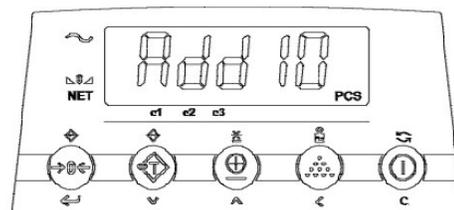
1. Raise empty forks off ground and level
2. Press the [ZERO] key



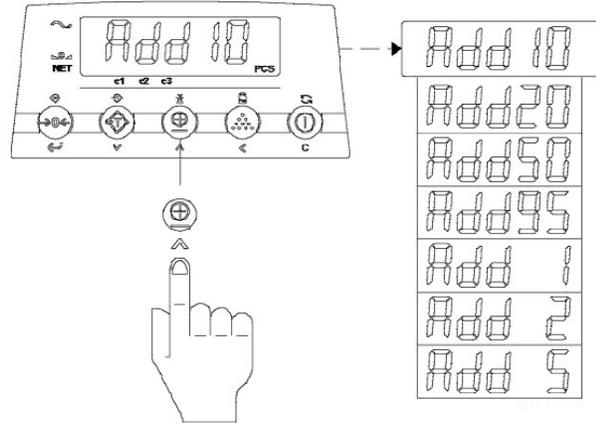
3. Press the [SAMPLE] key.



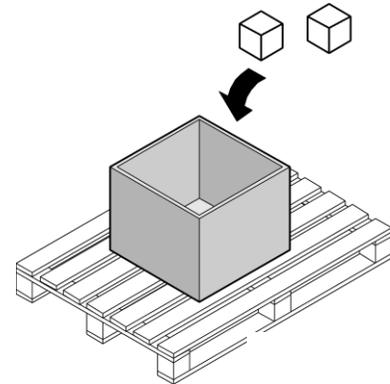
4. The Units indication turns off and PCS illuminates.



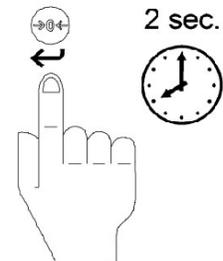
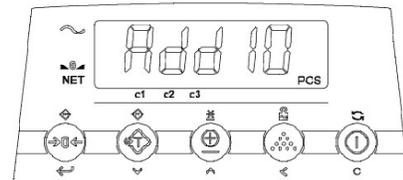
- Press the [Up/Down] key until the desired value is reached. (10 = default)



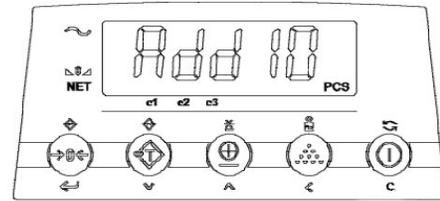
- Add 10 pieces. The total weight of the pieces should be > 20 lbs.



- Press the [ENTER] key for 2 seconds to save.

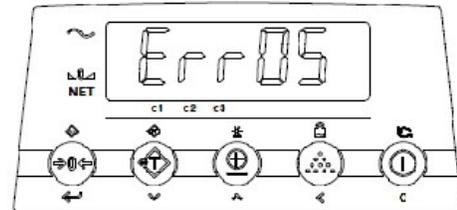


When the sampling is complete, The display will show the total number of pieces.



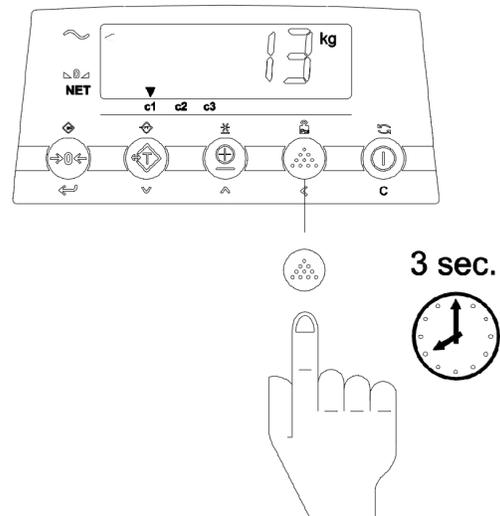
8. Press the **[C]** key for 1 sec. to return to the normal weighing mode.

If the accuracy is too low, the display will show ERR05. Press any key to return to normal weighing mode. Unload and start at 1.

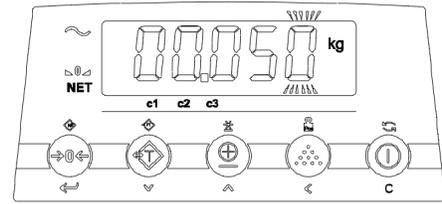


3.3.7 Piece Count – Piece Weight Entry

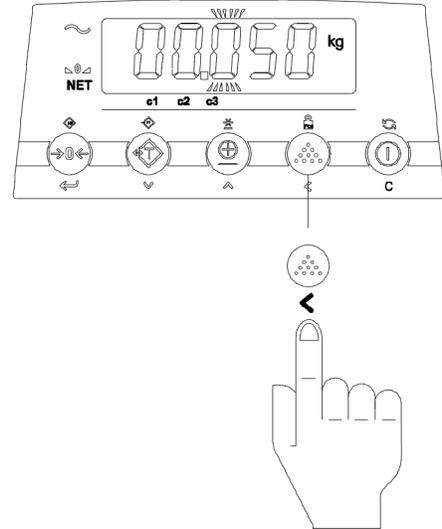
1. Press the **[SAMPLE]** key for 3 seconds.



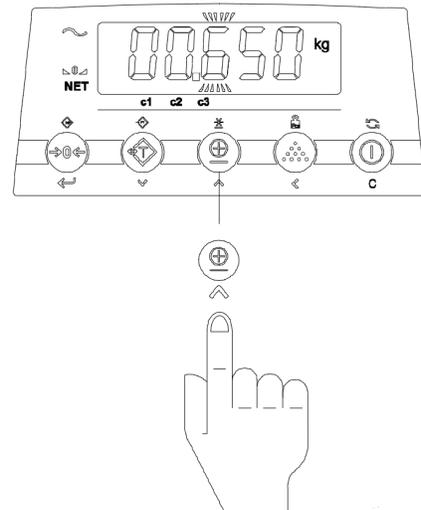
- The last used piece weight will be displayed. To accept the old value press the **[ENTER]** key or change the value until the required value is reached.



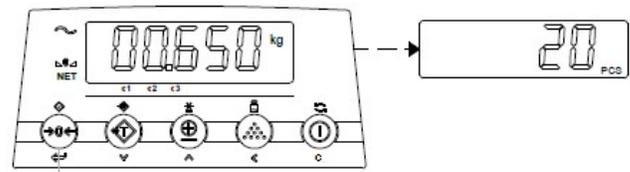
- Press the **[LEFT ARROW]** to change the next digit.



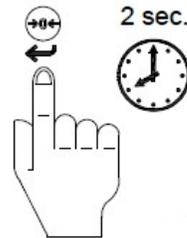
- Continue to press the **[Up/Down]** key and **[LEFT ARROW]** key until the desired piece weight is displayed.



5. Press the **[ENTER]** key for 2 seconds. The display will show the total number of pieces.

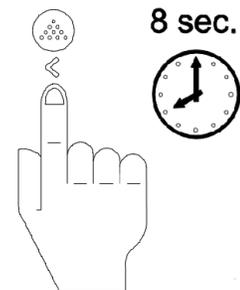
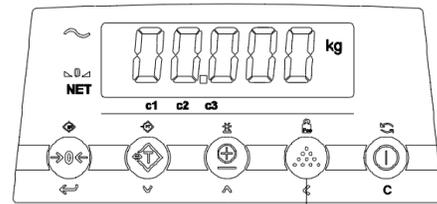


- Press the **[CE]** key for 1 sec. to return to the normal weighing mode.

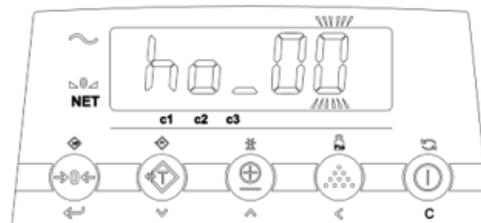


3.3.8 Setting Time and Date on Printout

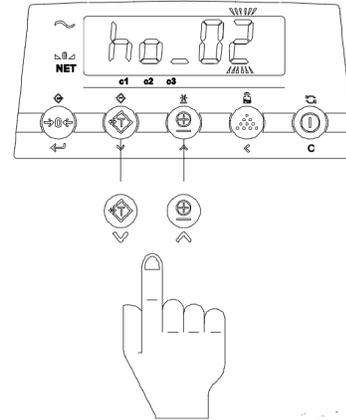
1. Press the **[LEFT ARROW]** key for 8 seconds



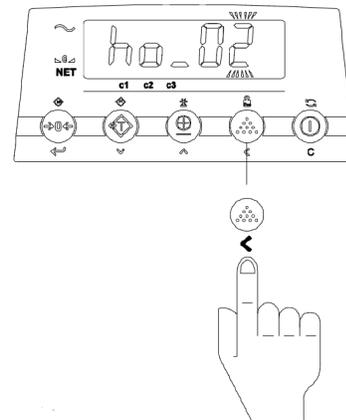
2. The display will show "ho_00" or the previous hour time setting.



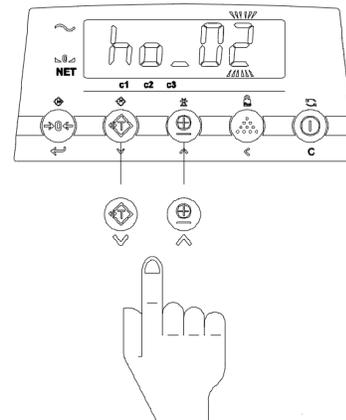
3. Press the **[UP/DOWN]** key until the desired value is reached.



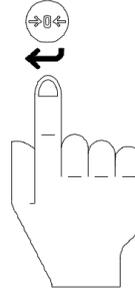
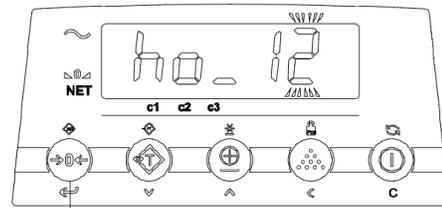
4. Press the **[LEFT ARROW]** key to change the next digit.



5. Press the **[UP/DOWN]** key until the desired value is reached.

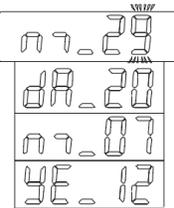
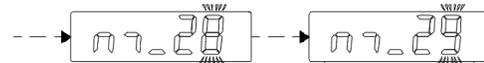


6. To accept the new value press the **[ENTER]** key..

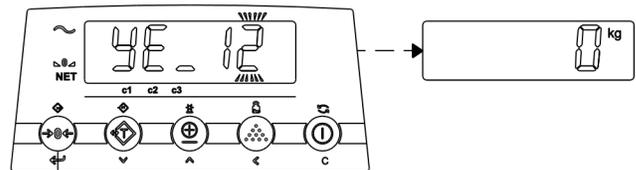


7. Repeat the procedure to accept or change:

- Minute setting "m_00"
- Date of the month setting "dA_00"
- Month setting "m_00" - the year setting "YE_00"

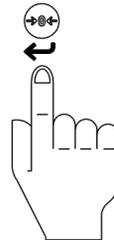


8. To accept the year setting press the **[ENTER]** key.



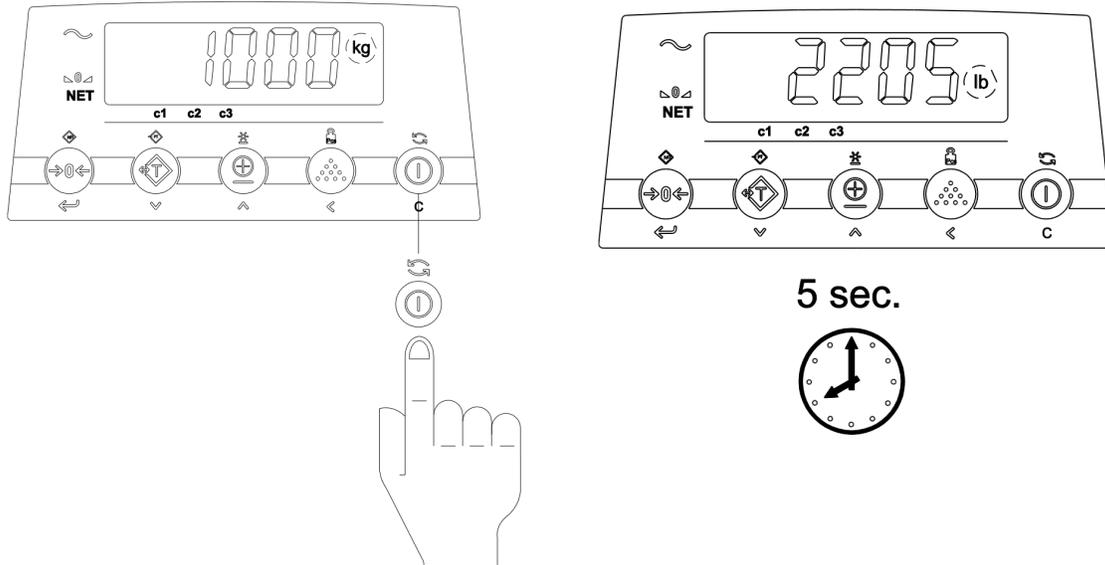
The instrument will return to normal weighing mode.

If the weighing system is equipped with a printer and an option board, the date and time can be printed together with the weight information.



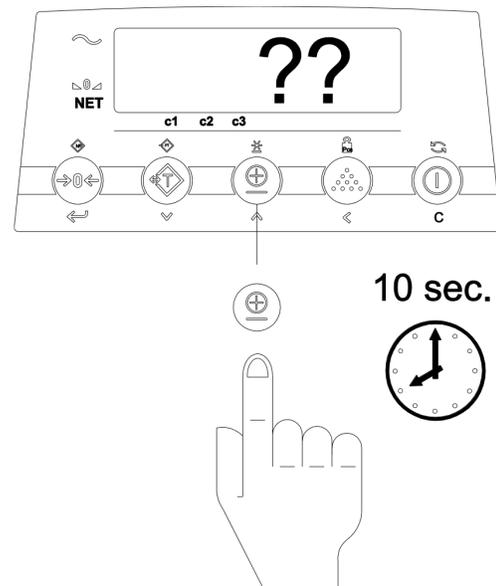
3.3.9 Changing Units

Press the  key for 5 sec to toggle the units from lbs to kg and back.

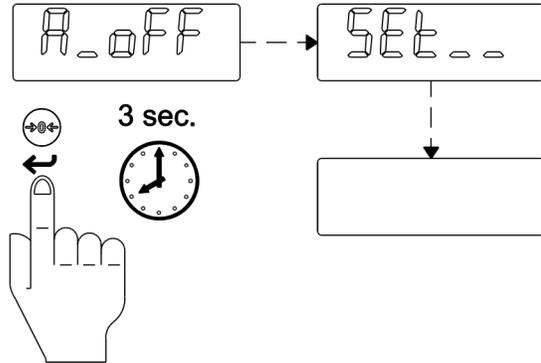


3.3.10 User Settings

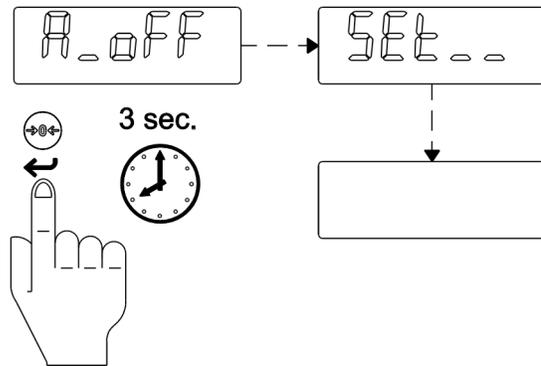
1. Press the [TOTAL] key for up to 10 sec. or until "A_off" appears in order to access the Users Menu settings.



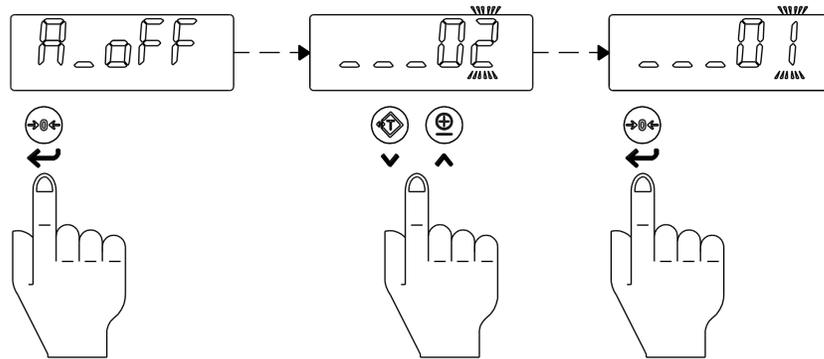
This menu will permit setting of the auto shut-off, backlight, and communication ports.



2. Press the [ZERO] key for 3 sec. to **Save and Exit** the User Menu settings.



User Settings- Auto Shut - Off



Set the Auto Shut-Off time (delay time in minutes)

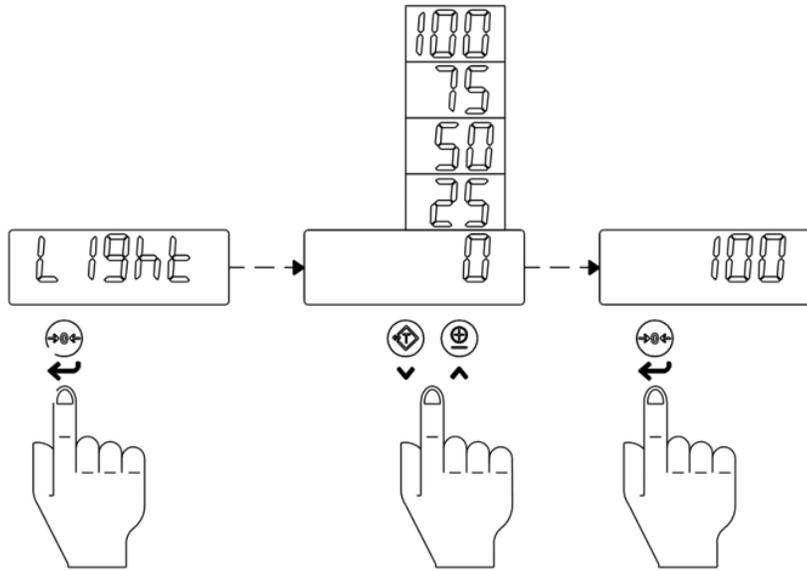
✦ 0 min = instrument always **ON**

Press the [ENTER] key to access the menu

Press the [UP/DOWN] key until the desired value is reached.

Press the [ENTER] key to **Save** the setting.

User Settings - Backlight

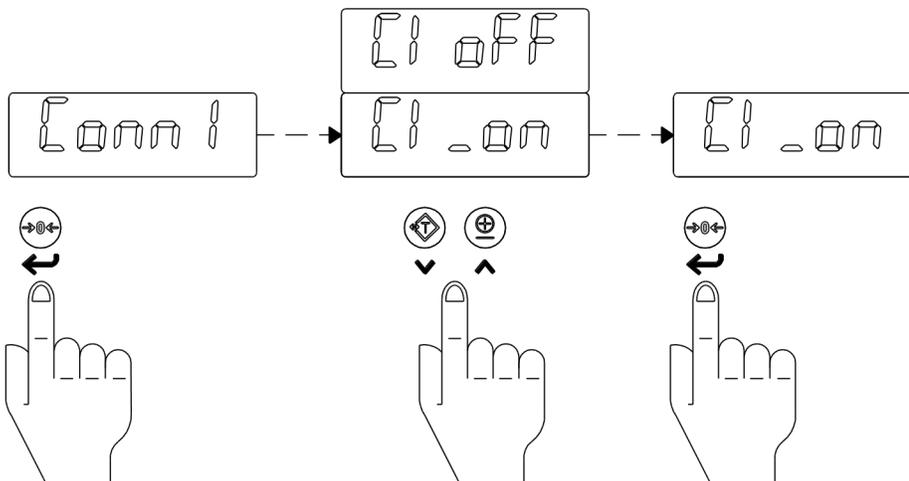


Set the Backlight intensity (in %)

✦ 0 % = backlight is **OFF**

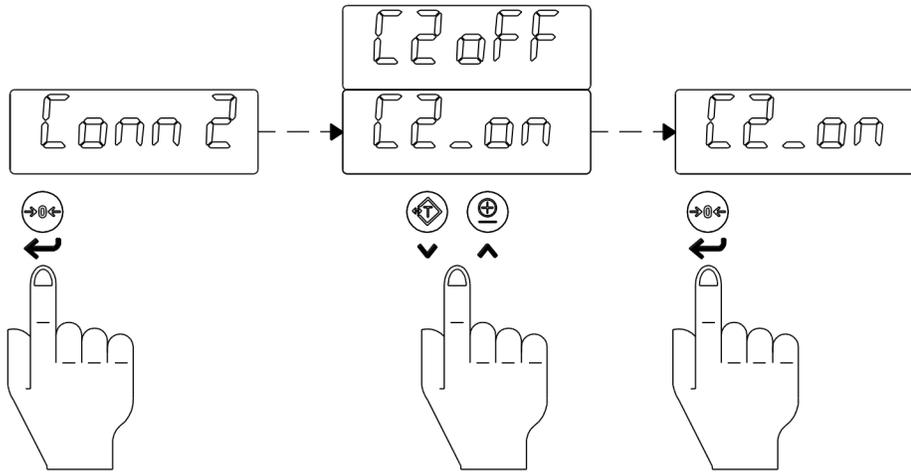
- Press the [UP/DOWN] key to select the backlight menu.
- Press the [ENTER] key to access the menu
- Press the [UP/DOWN] key to select the desired choice.
- Press the [ENTER] key to **Save** the setting.

User Settings – COM 1 Enable/ Disable



This port is fixed and cannot be disabled as it is tied to the Fork Weighing assemblies for Bluetooth® communications.

User Settings – COM 2 Enable/ Disable



Enable COM 2.

- Press the [UP/DOWN] key to select the COM 2 menu.
- Press the [ENTER] key to access the menu
- Press the [UP/DOWN] key to select **ON** or **OFF**.
- Press the [ENTER] key to **Save** the setting.

User Settings – ALIBI –View data stored in memory

To view data stored in memory:

- Press the [UP/DOWN] key to select the ALIBI menu.
- Press the [ENTER] key to access the menu •
- Press the [UP/DOWN] key to select the data to view..
- Press the [ENTER] key to view.

Section 4: Forklift Questionnaire – Form 101474

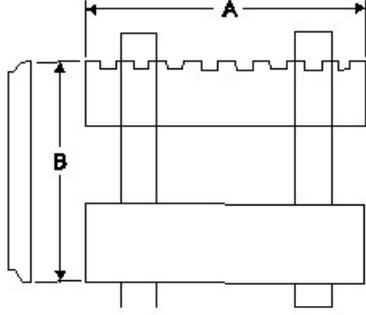


Forklift Scale Questionnaire

Hook-type fork mounting (Cleat-type)

Name

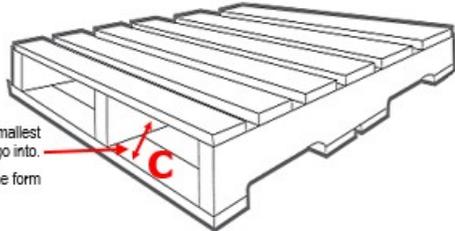
Date



A = _____

B = 16"
= 20"
= 25"
= _____
Enter size above

C = _____



Dimension of the smallest opening the fork will go into.
"C" on the form

Forklift make _____

Model _____ Capacity _____

Gas Electric Propane

Voltage 12 VDC 36 VDC 48 VDC Other _____

Fork length _____ Number of masts _____ NTEP Application? Yes No

Carriage attachments _____
If so, please provide pictures of front and side

Does the forklift have a side-shifting fork positioner?
Do not confuse with a side shifter. A side-shifting fork positioner allows the forklift operator to move each fork horizontally, completely independently of the other fork. For example, toward each other or away from each other.

Define the storage medium - pallet, tote, Gaylord, etc. _____

Dimensions of the storage medium? (L x W x H) _____

Dimension of the smallest opening the fork will go into? - **C** _____
Note: If multiple products are used, the largest storage medium dimensions and the smallest fork opening are all we require.

Environment _____

Application description _____

Customer _____



Manufactured by Fairbanks Scale, Inc.

www.fairbanks.com

CP Series

Forklift Scale

Document 51412