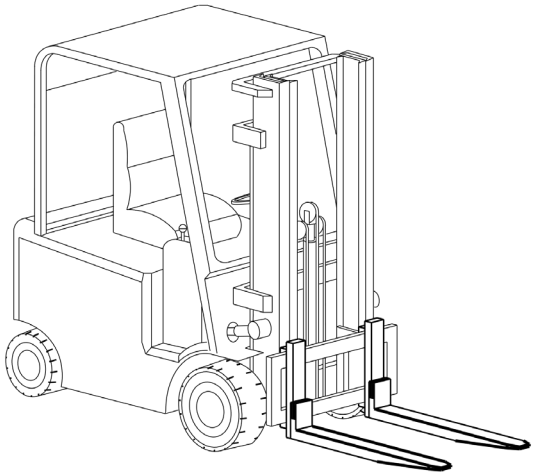
FAIRBANKS SCALES

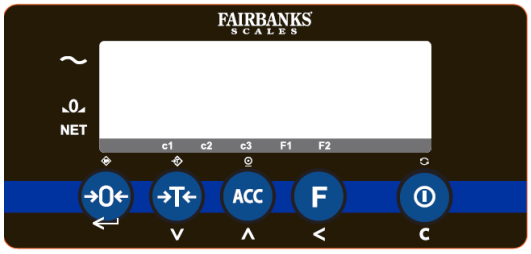
Operator Manual

WF Series Forklift Scale

with Bluetooth® Technology

FB3200 Instrument
WF Series Weighing Forks





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Revision 2 07/2020

Amendment Record

WF SERIES FORKLIFT SCALE

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Revision 2	07/2020	Updated Installation > Power Supply

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Table of Contents

Section 1: General Information

1.1. Foreword

This manual contains information about the WF Series Forklift Scale. Included in the manual are the installation instructions and parts list.

Read and understand this manual before installing. A thorough understanding of the equipment and procedures necessary for correct installation is essential.

A. Modification

Absolutely no physical or electrical modifications are to be made to this equipment. Electrical connections other than those specified may not be made and no physical alterations (mounting holes, etc.) are allowed. Alterations or modifications to the scale may void any and all warranties.

B. Customer, Operator Responsibilities

It is the customer and operator's responsibility to maintain the equipment in good condition and operating order. This includes protecting the equipment from accidental or malicious damage. Failure to do so may void any and all warranties.

Other than the procedures authorized in this manual, no service, repair, or adjustment to the equipment may be made or performed by untrained personnel.

C. Audience

This manual is intended for use by qualified personnel to install and maintain the scale. It is assumed that the people working on the scale are trained in installing and maintaining scales of this type.

1.2. Introduction

The WF Series Forklift Scales are designed for on-board forklift weighing. The WF Series Forklift Scales are available in an NTEP or non-NTEP design. Both systems utilize weigh forks to replace the existing forks on the forklift and an instrument to mount within easy viewing of the operator. The instrument communicates to the weighing forks via Bluetooth® technology.

This manual contains all necessary information to install the WF Series Forklift Scale.

1.3. Description

The WF Series Forklift Scales does NOT interfere with the forklift truck's hydraulic system, instead it utilizes proven load cell technology for weight signals. The forklift truck operates as it was intended by the manufacturer. When the forks are lifting a load and there is a momentary pause of the load, it can be read as gross or net weight on the instrument. Sizes and capacities range from NTEP versions of 5000 lb. x 5 lb., a non-NTEP 5000 lb. x 2, an NTEP 10,000 lb. x 10 lb., and a non-NTEP 10,000 lb. x 5 lb.

1.4. FB3200 Series Instrument Specifications

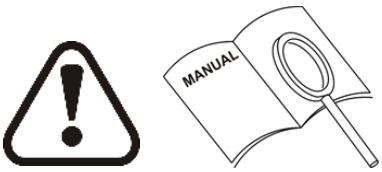
Feature	Description
Display	0.71” LCD Backlit Display
Keypad	5 multi-function keys: **Zero** or Enter **AutoTare** or Scroll Down **Print** or Scroll Up or Check Subtotal and Print Total **Function** or Shift Left **On/Off** or Units or Clear Entry
Units	Pounds or kilograms
Accumulation	Addition of each weighment to obtain Total weight
Power Requirement	12 VDC from Forklift Power Source
Temperature	14º F to 104º F (-10º C to +40º C)
Enclosure Rating	NEMA 4X
Communications	COM1: Bluetooth® - Fixed configuration COM2: RS232 – Configurable
Approvals	NTEP CC 19-051 RoHS Compliant

1.5. WF Series Weigh Forks Specifications

Feature	Description
Capacities	5,000 lb. x 5 lb. capacity, (NTEP) 5,000 lb. x 2 lb. capacity, (non-NTEP) 10,000 lb. x 10 lb. (NTEP) 10,000 lb. x 5 lb. (non-NTEP)
Power Requirement	12 VDC - Lithium Ion Rechargeable Batteries*
Construction	Mild Steel
Load cells	4 – 1000 kg. capacity @ 3mV/V – 5K WF Series 4 – 2000 kg. capacity @ 3mV/V – 10K WF Series
Communications	Bluetooth® Technology
Approvals	NTEP CC: 19-052

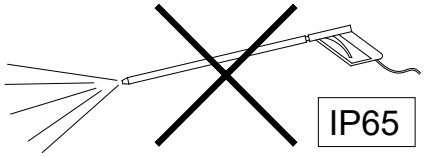
* Reference Appendix III for detailed information.

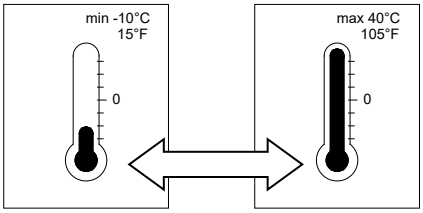
1.6. Warnings & Safety Measures

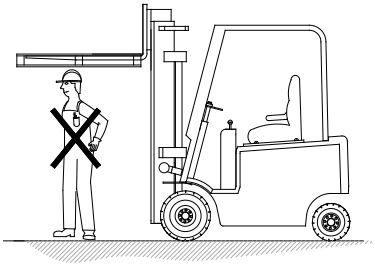


When using the WF Forklift Scale, please observe carefully the instructions and guidelines contained in this manual.

- All safety regulations that apply to the forklift remain valid and unchanged.
- No weighing operations are allowed if any persons or objects are in the vicinity; around, under or close to the load.
- Fairbanks Scales is not responsible for any physical harm done to the operator because of the presence of the instrument in the cabin.
- Any modifications done to the system must be approved in writing from the supplier, prior to any work being completed.
- It is the sole responsibility of the purchaser to train their own employees in the proper use and maintenance of this equipment.
- Do not operate this unit unless you have been fully trained on its capabilities.
- Check the accuracy of the scale on a regular basis to prevent incorrect readings.
- Only authorized Fairbanks service personnel can service the scale.
- Always follow the operating, maintenance and repair instructions of the forklift and ask your Fairbanks Scales representative when in doubt.
- Fairbanks Scales is not responsible for errors that occur due to incorrect weights or inaccurate scales.







Should you have any further questions after reading this manual, please contact your Fairbanks Scales representative.

Section 2: Installation

2.1. Unpacking

The WF Forklift Scale is shipped on a pallet and packaged within a cardboard box.

A standard system will include the following components:

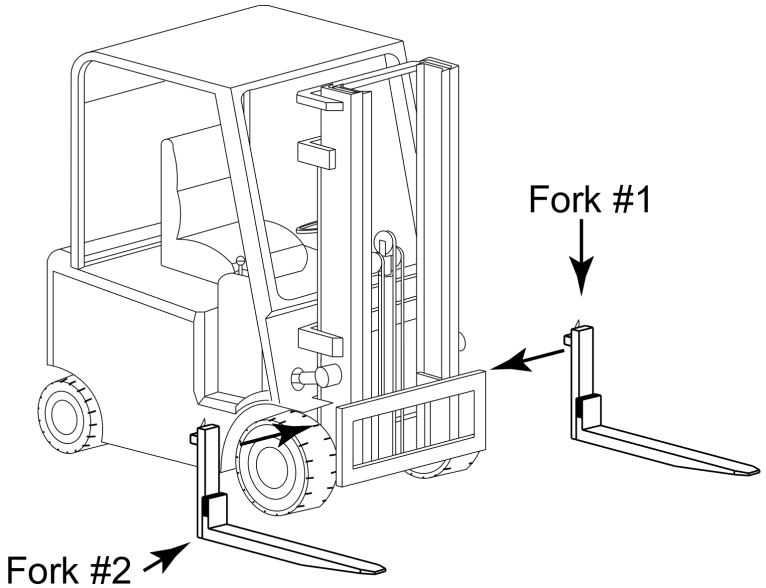
1. Two (2) weigh fork assemblies.
2. Two (2) battery packs for the weigh forks
3. One (1) dual battery charger for the weigh forks batteries.
4. One (1) FB3200 series digital instrument.
5. One (1) bracket for mounting the FB3200 series instrument

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

2.2. Fork Weighing Assembly Installation

Follow these steps for installation of the WF Series weigh forks.

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. Attach the numbered weigh fork assemblies to the carriage.



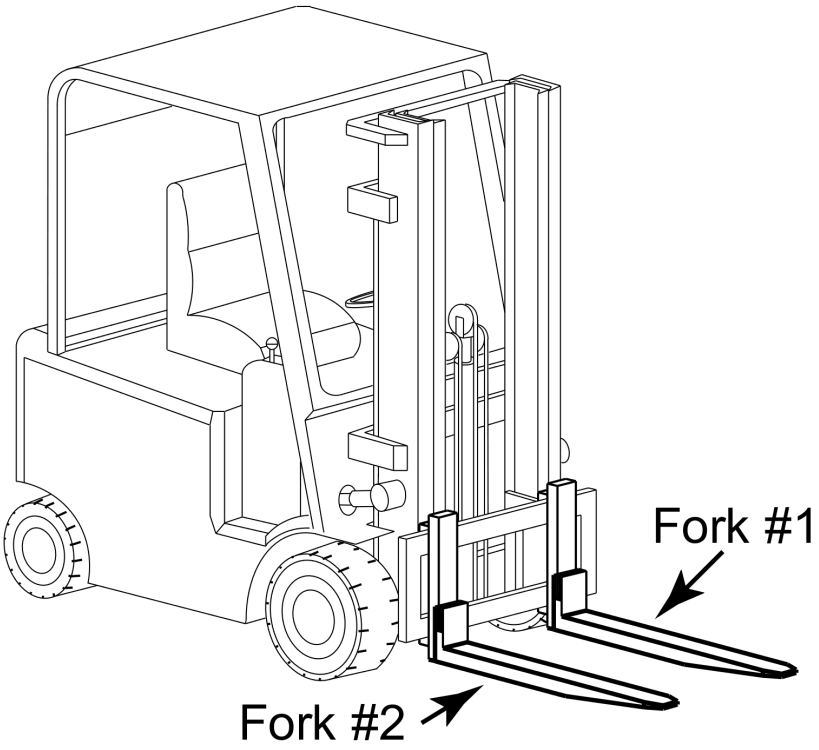
Note: *It is recommended to use **two (2) individuals** to perform this step.*

2.2. Fork Weighing Assembly Installation, Continued

5. The weigh fork assemblies have a right and left-hand orientation. The number 1 fork should be to the left when viewing from the forklift cab. The number 2 fork will be located on the right. The weigh forks are marked to identify them at the factory.

   Once on the carriage, slide the weigh fork assembly to the outside edge of the carriage to make room to install the second fork weighing assembly. Latch the fork weighing assemblies when complete.
   It is recommended to use two individuals to perform this step.

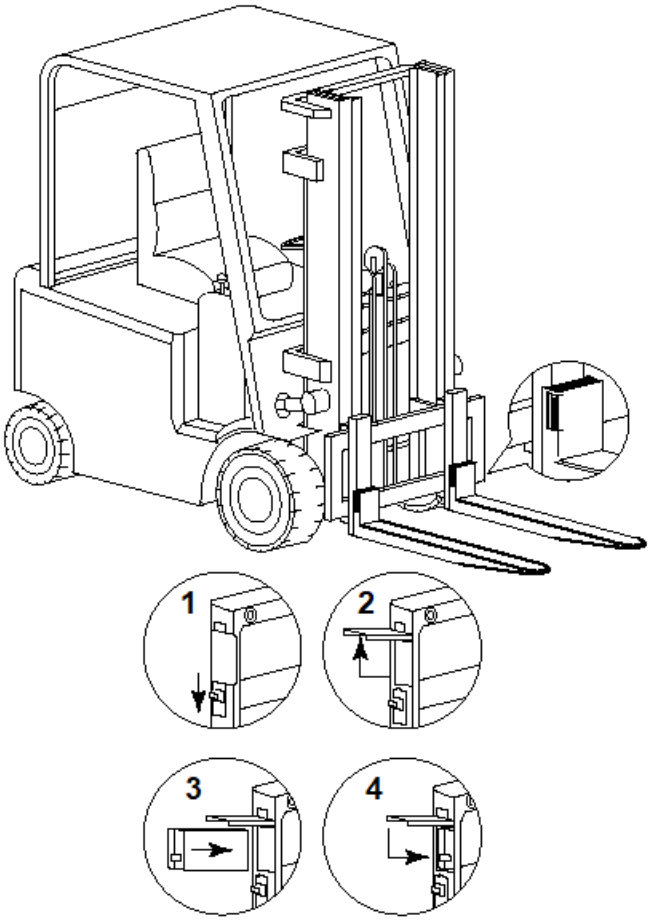
Note: *It is recommended to use **two (2) individuals** to perform this step.*



2.2. Fork Weighing Assembly Installation, Continued

Installation of the weigh forks battery packs:

6. Push the red locking clips down to unlock the battery holders.
7. Open the battery holders of both forks.
8. Position the battery packs in the battery holders of both forks until the red locking clip shifts up again.
9. Close the battery holders of both forks until you hear a "click".

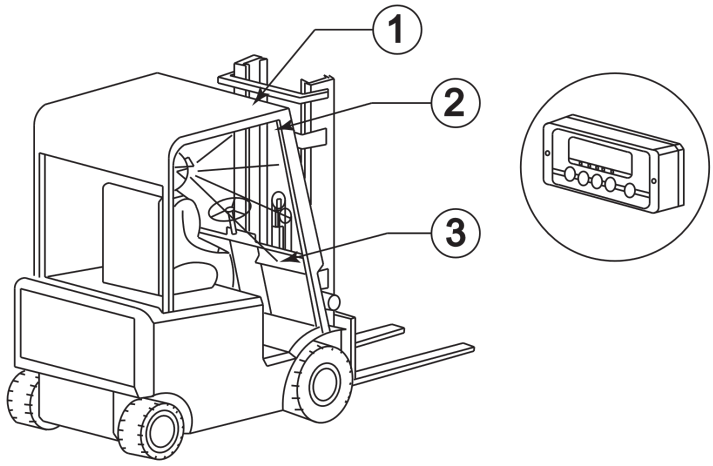


2.3. Instrument Installation

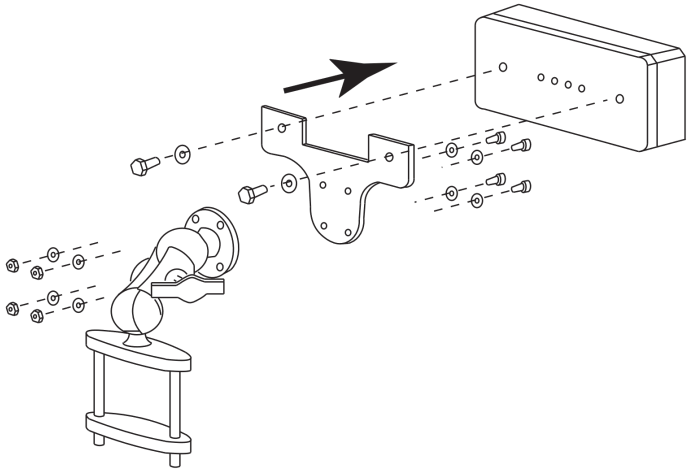
Location of the instrument is a matter of safety and operator preference. The universal-mounting bracket (included) enables the instrument to be mounted to the safety cage or on the lift truck's dashboard. Mount the instrument at the preferred location using the supplied hardware.

Find a suitable position for the indicator:

1. at the cabin's roof.
2. on the right side of the cabin, mounted onto a side-rail.
3. on the dashboard.



Installation of the indicator bracket & support, if necessary.



2.4. Connecting the Power Supply Cable

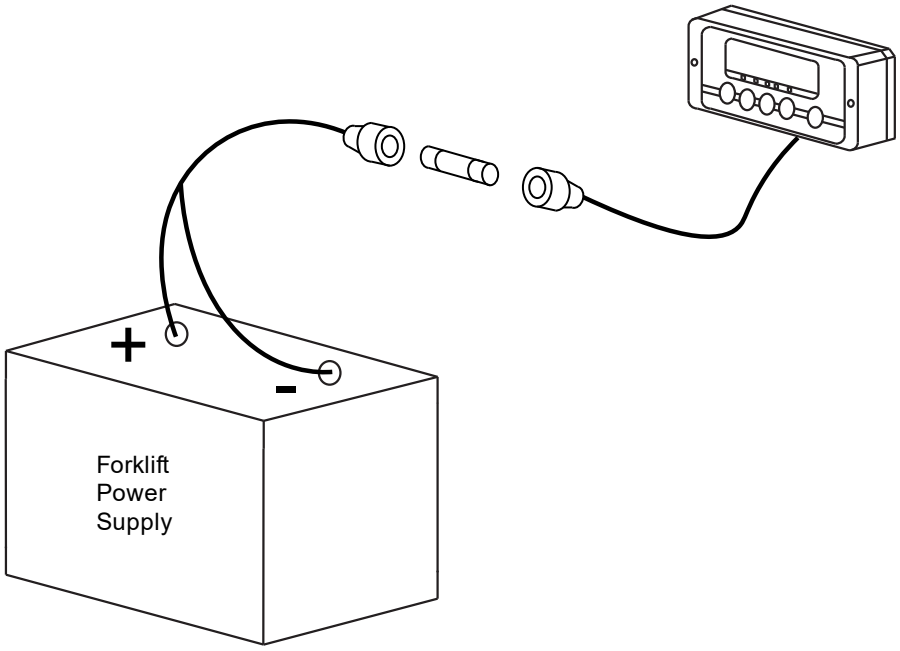
Instrument power supply from forklift truck

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



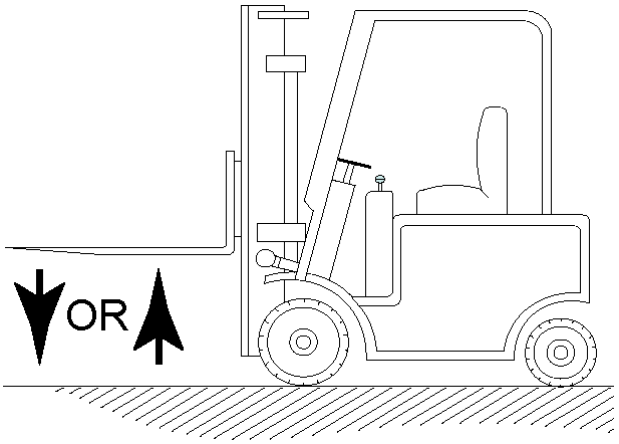
NOTE: Fuse and fuse holder ship loose with the instrument. This allows easier routing of the power cable. Once cable is routed, splice the fuse holder into the positive power line. Soldering is required.

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.

2.5. Turning the WF Series Forklift Scale On and Off

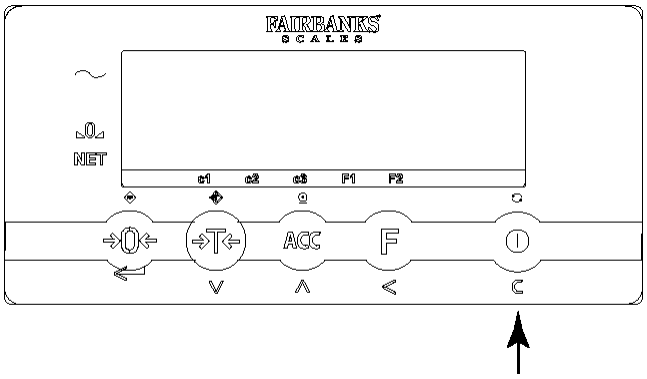
1. **To turn on the battery powered forks:**
   Abruptly lift or lower the forks. The weigh forks will sense the movement and automatically turn on.

   The forks are programmed with a time value to automatically shut off.



2. **To turn on or off the forklift powered Instrument:**

   Press the [**On/Off**] key.

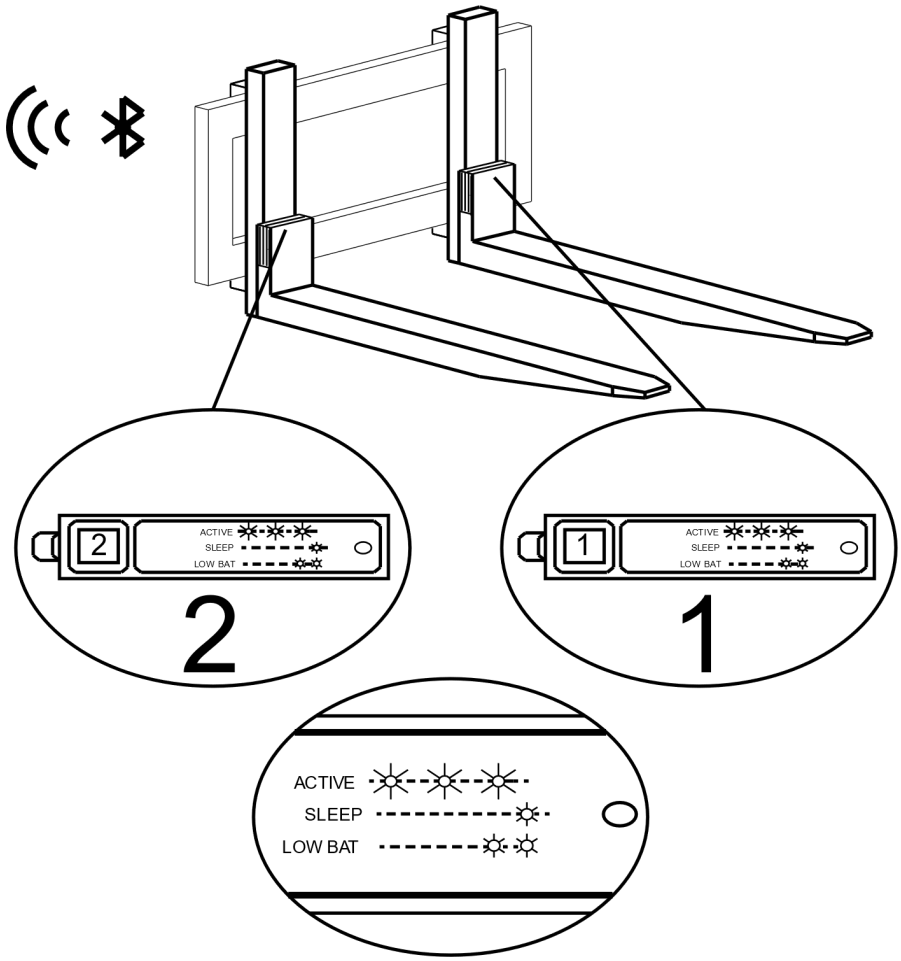


The Bluetooth link between the indicator and the forks will connect automatically.

After 5 seconds all electronics are warmed up and you can start weighing.

2.6. Weigh Fork LED Indicators

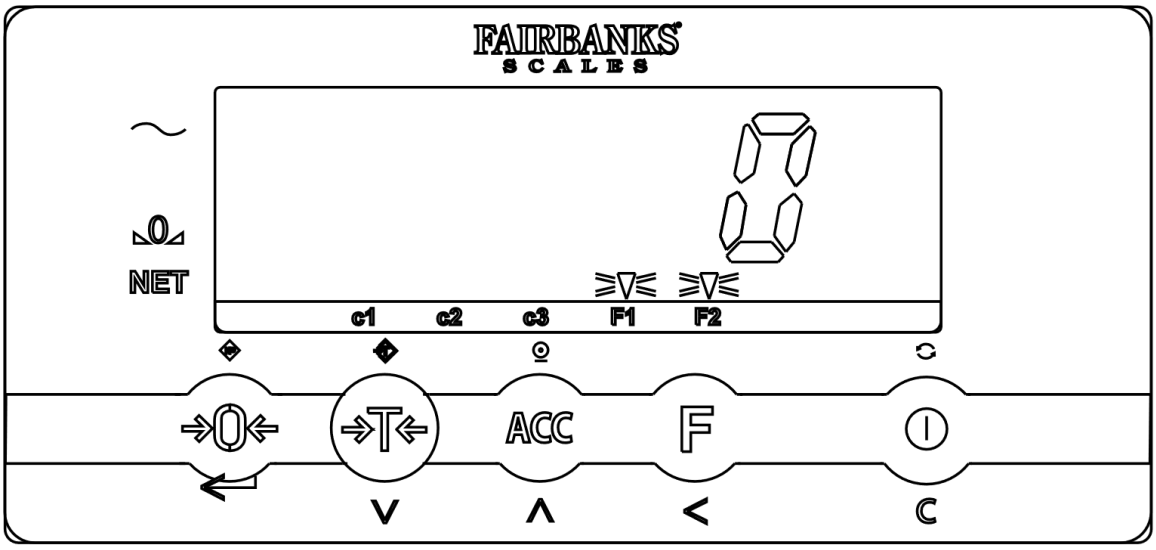
Battery Status	Blue LED
Operating Mode (Normal)	Blinks every 1.5 seconds
Sleep Mode	Blinks every 12 seconds
Low Battery	Blinks twice every 10 seconds



2.7. Weigh Fork Low Battery Warning at Instrument

When the voltage level of the battery packs is running low, the annunciator of the relating fork - “F1”, ”F2”, or both, will start flashing on the display.

The weigh forks will switch off automatically after 10 minutes.



Section 3: Configuration

This section provides configuration instructions for the WF Series Forklift Scale instrument. The instrument configuration is accomplished by entering various values through the instrument keypad.

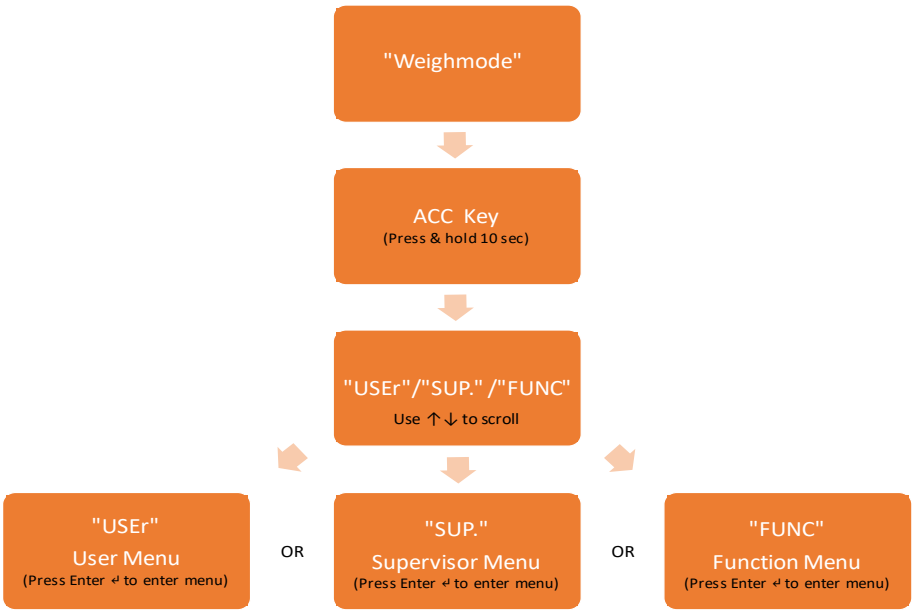
There are 3 menus available for the user via front panel access.

User menu – Allows setup/changing of the time, date, sleep time, backlight and allows viewing of the Bluetooth addresses.

Supervisor menu – Allows setup/changing of the communication (RS232) ports, if available.

Function menu – Allows setup/changing of the set-points, if available.

3.1. Accessing User, Supervisor, & Function Menus:

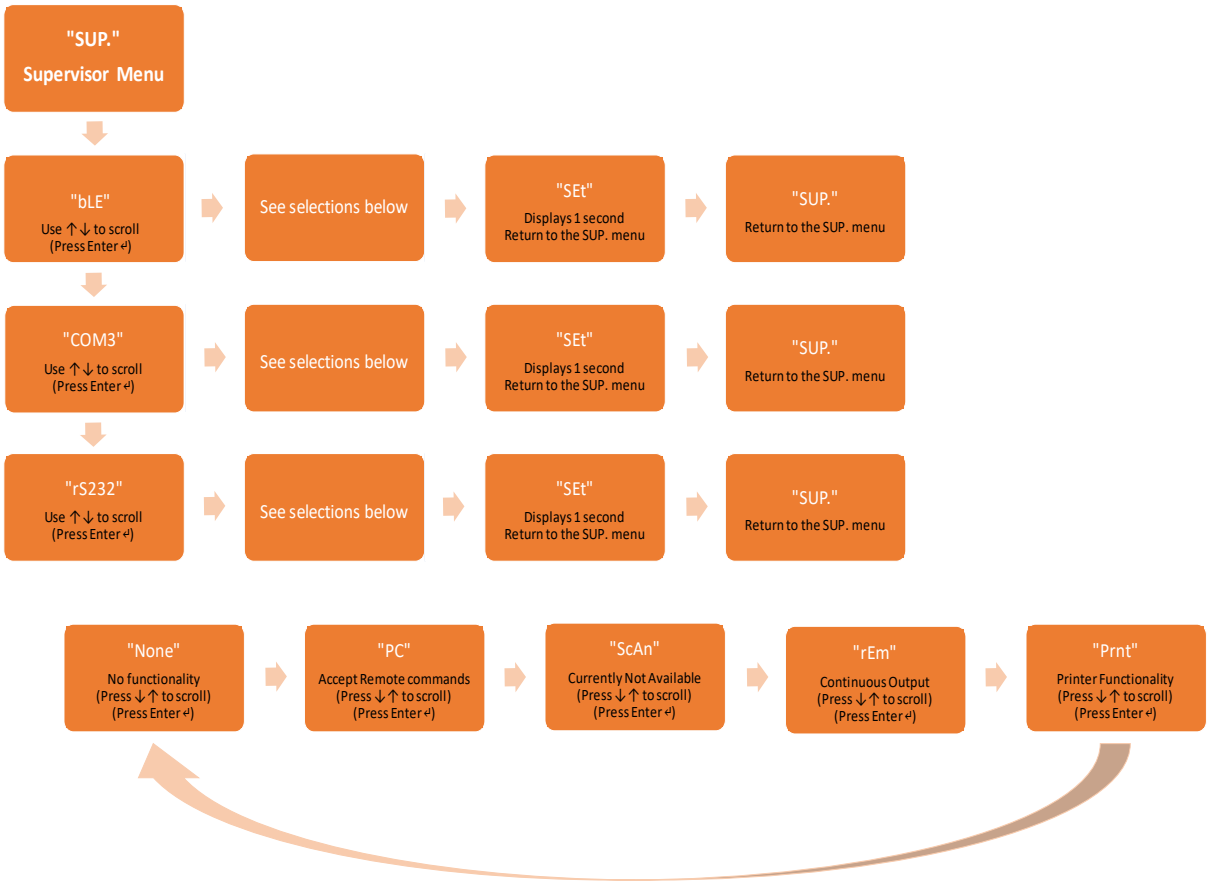


3.2. User Menu

User Menu FB3200

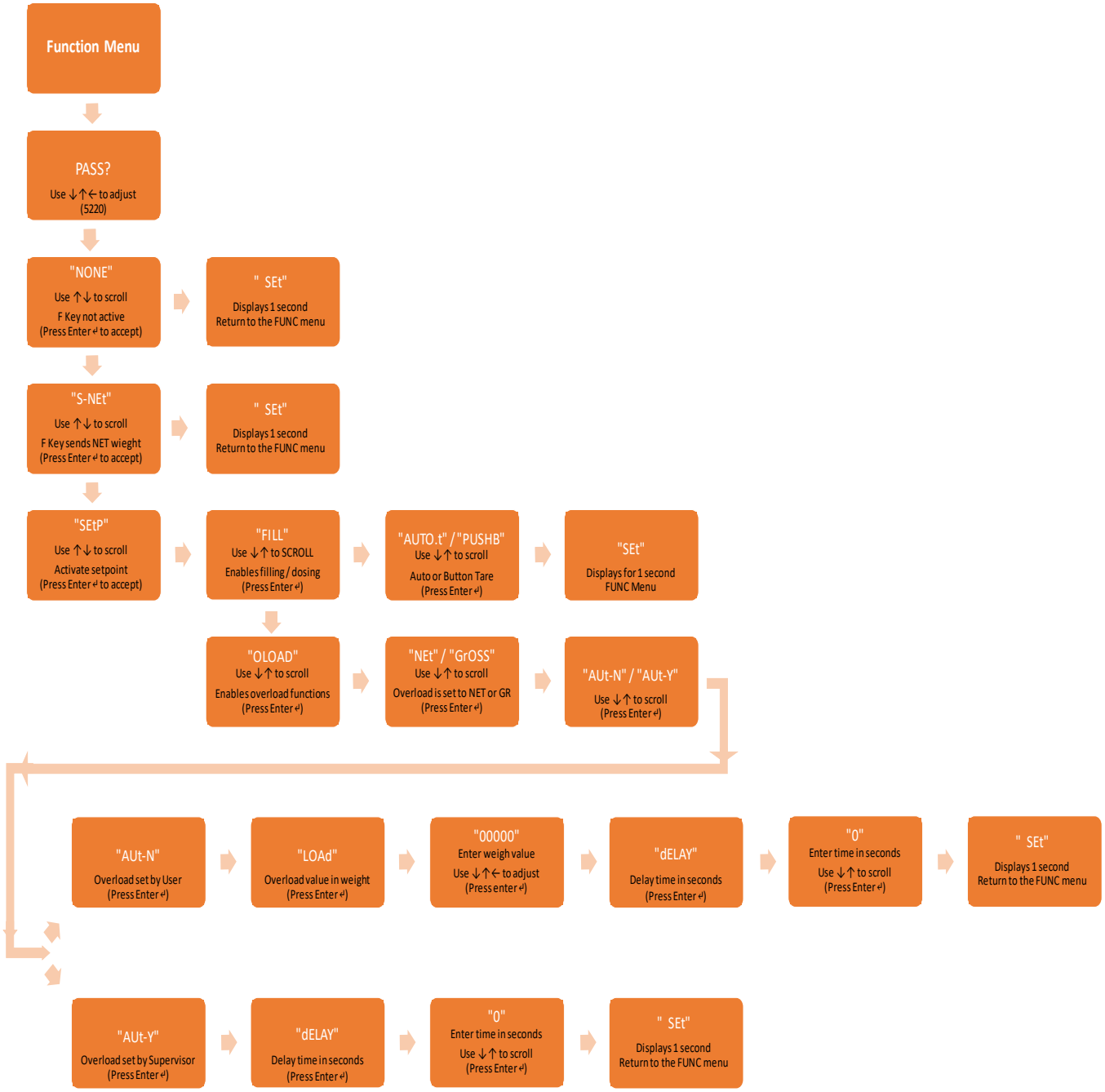
3.3. Supervisor Menu

Supervisor Menu FB3200



3.4. Function Menu

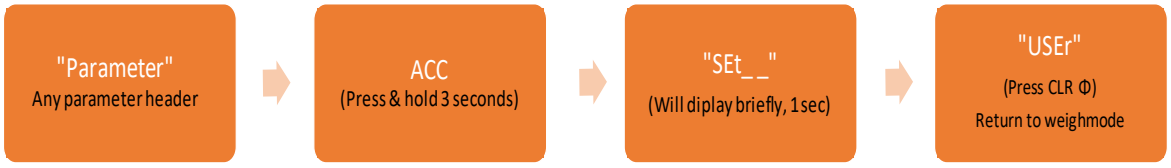
Function Menu FB3200



3.5. Exiting User, Supervisor, & Function Menus

Exiting Procedure User, Supervisor, Function Menus

Exit and save



Exit without saving

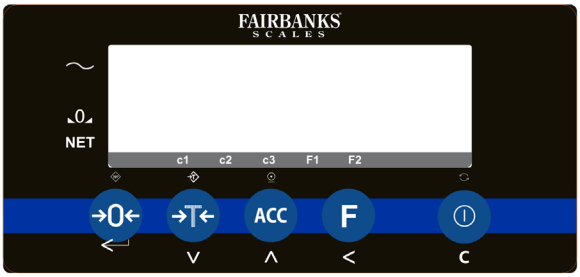
Section 4: Operations

4.1. Front Panel Key Functions

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

Key					
Standard Function Short Key Press	**ZERO**	**TARE**	**Accumulate / PRINT**	**FUNCTION**	**ON / UNITS**
Entry Mode	**ENTER**	**DOWN**	**UP**	**LEFT**	**C**
Special Function Long Key Press	**CODE ENTRY**	**PRESET TARE**	**SUBTOTAL PRTTOTAL**		**OFF**

4.2. Front Panel Layout and Descriptions



Descriptions

	◀	The weighing system (including load) is stable
	▬	The weight shown is negative
ZERO	◀	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)
F1	▼	Low battery voltage in Fork 1
F2	▼	Low battery voltage in Fork 2
kg		Display shows weight in kilograms
lb		Display shows weight in pounds
	▭	Low battery indication

4.3. System Power Up

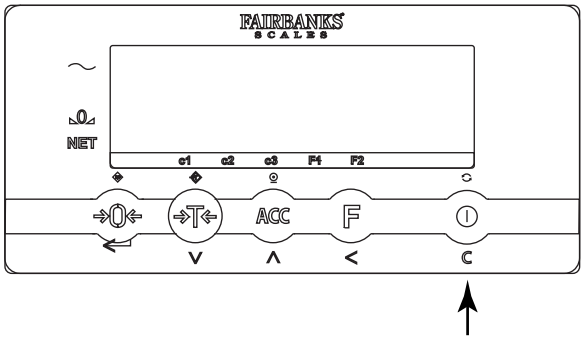
Power-up sequence:

1. Abruptly lift or lower the forks. The weigh forks will sense the movement and automatically power on.

   The forks are programmed with a time value to automatically shut off.

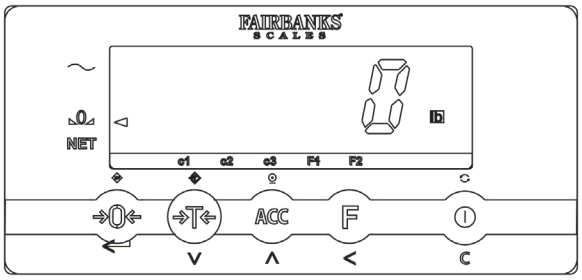
2. Start up the instrument.

   Press the [**On/Off**] key.



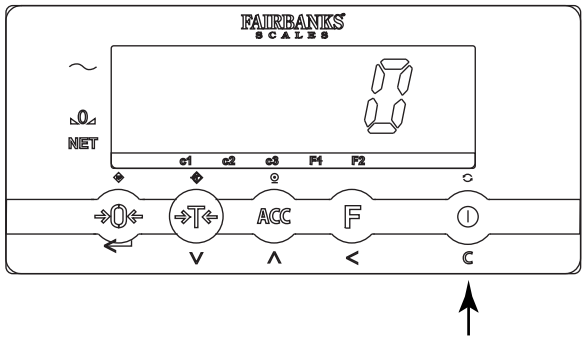
The Bluetooth® communications will begin pairing the instrument to the Fork Weighing assemblies.

4. After approximately **five (5) seconds**, the instrument will be ready to weigh.



4.4. System Shutdown

1. Switch off the instrument by pressing the [**On/Off**] key for **3 seconds**.



The forks are programmed with a time value to automatically shut off.

4.5. Automatic System Shutdown

1. After two (2) minutes of inactivity, the WF 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.

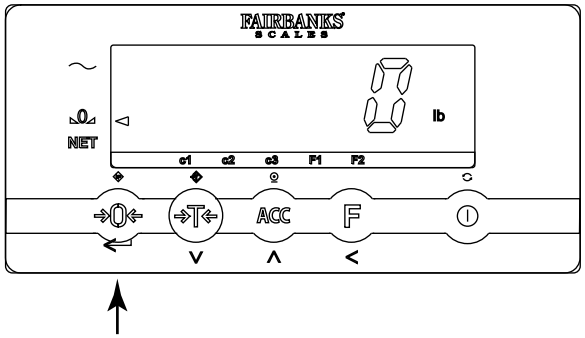
3. If a key is not pressed during the automatic system shutdown process, the instrument will indicate it is shutting off and the display will go blank as indicated.

4. After two (2) hours of inactivity, the Forklift Weighing assemblies will automatically shut down and both the weigh fork assemblies and the instrument must be restarted.

4.6. Gross Weighing

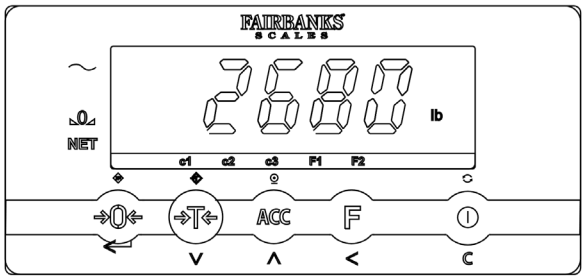
1. Raise the empty forks off the floor and level them.

   Press the [**Zero/Enter**] key.



2. Engage and lift the load on the forks.

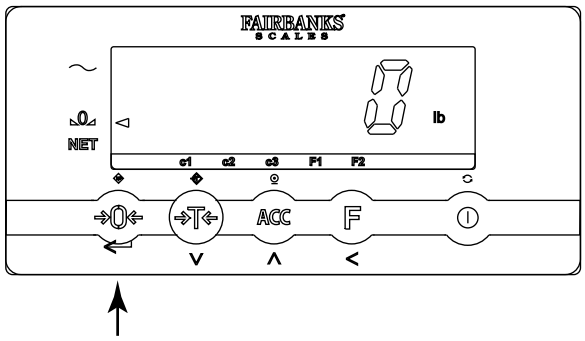
   The Gross weight will be displayed.



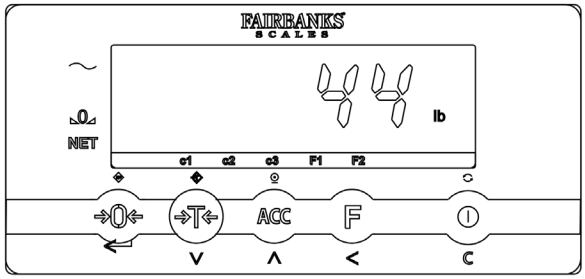
4.7. Net Weighing – AutoTare

1. Raise the empty forks off of the floor and level them.

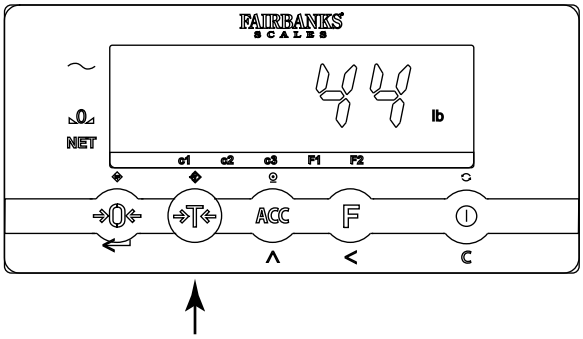
   Press the [**Zero/Enter**] key.



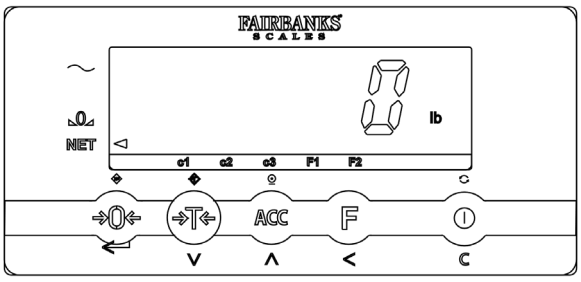
2. Engage and lift the Tare load onto the forks.



3. Press the [**Tare**] key.



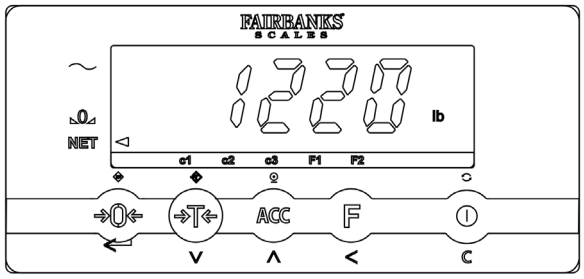
4. Net weight is now displayed. The “NET” pointer shows that the tare weight is activated.



4.7. Net Weighing – AutoTare, Continued

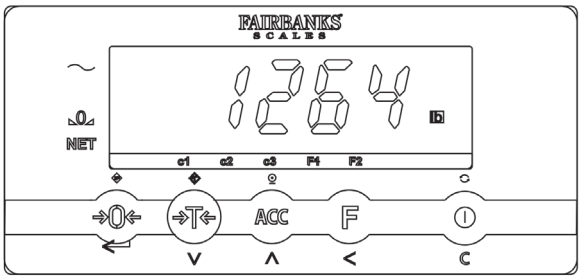
5. Engage and lift the load on the forks.

   The display indicates the Net weight value of the load.

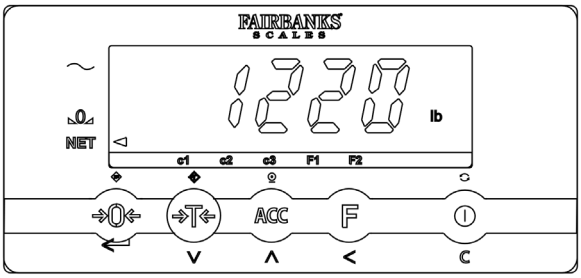


6. Press the [**Tare**] key to change to Gross weighing.

   The instrument switches to Gross weighing.



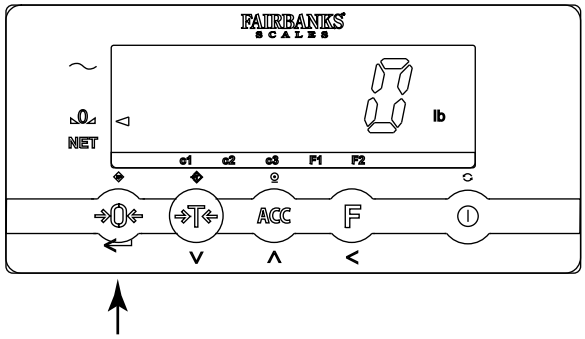
7. Pressing the [**Tare**] key again will switch the displayed weight back to the Net weight mode.



4.8. Net Weighing – Manual Tare

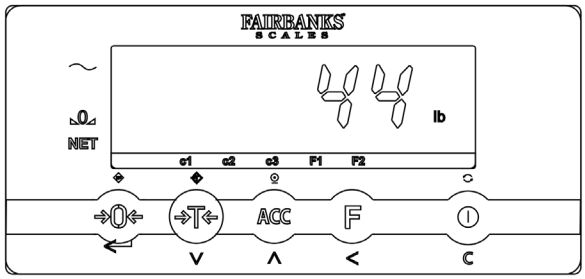
1. Raise the empty forks off of the floor and level them.

   Press the [**Zero/Enter**] key.

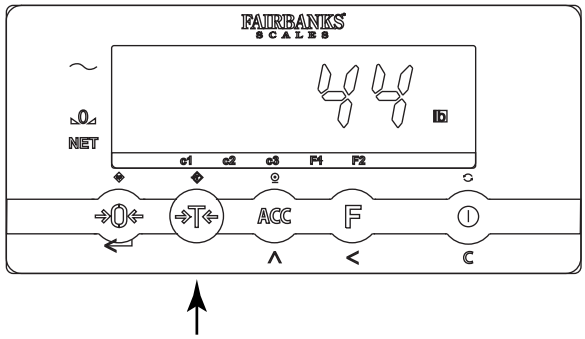


2. Engage and lift the Tare load onto the forks.

   Note that the Tare weight is 44 lb.



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



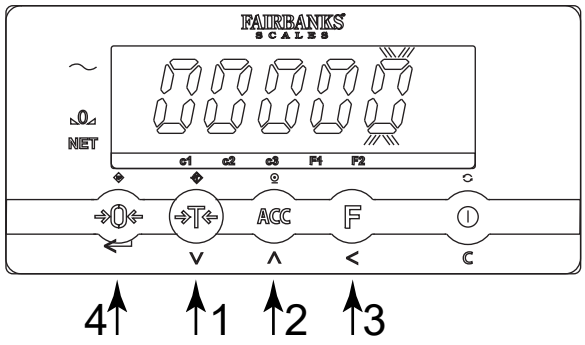
4. The least significant digit will flash.

#1: Will Increment the flashing digit down.

#2: Will increment the flashing digit up.

#3: Will shift the flashing digit to the left.

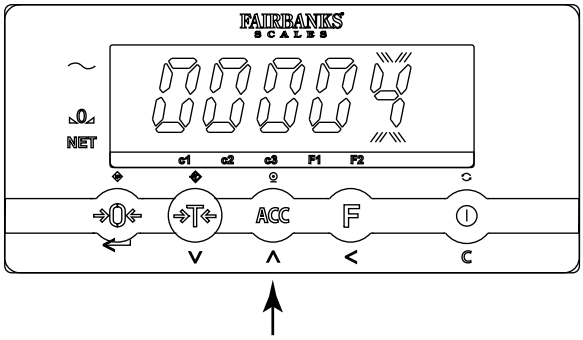
#4: Will enter the tare weight value.



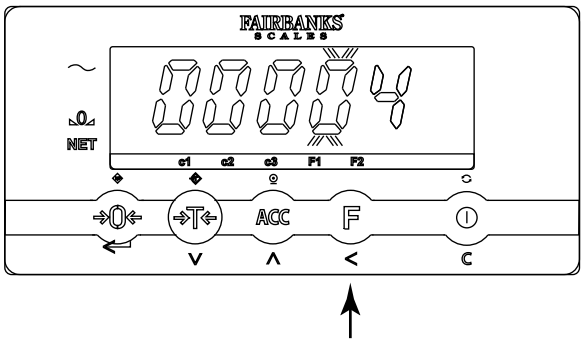
4.8. Net Weighing – Manual Tare, Continued

5. Increment the least significant digit with The [**ACC/Up Arrow**] key.

   This should match the least significant digit of the Tare weight value.

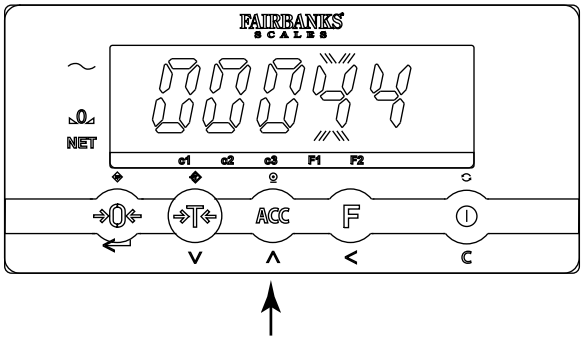


6. Shift the flashing digit to the tenths position with the [**F/Left Arrow**] key.

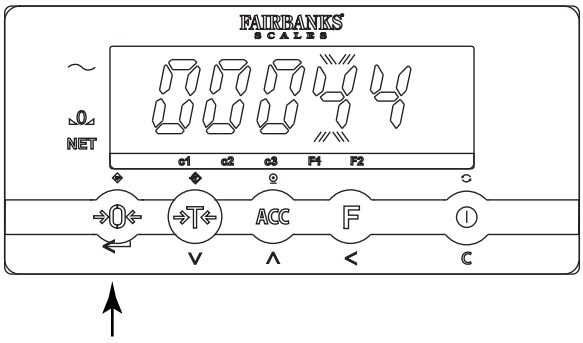


7. Increment the tenths position digit with The [**ACC/Up Arrow**] key.

   This should match the tenths position digit of the Tare weight value.



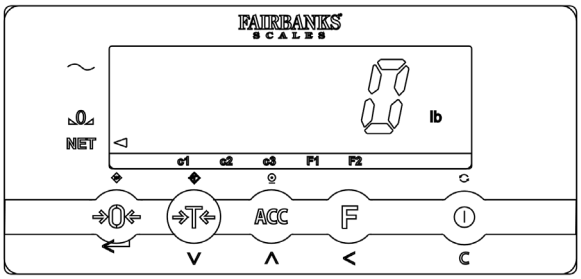
8. Enter the Tare weight value with the [**Zero/Enter**] key.



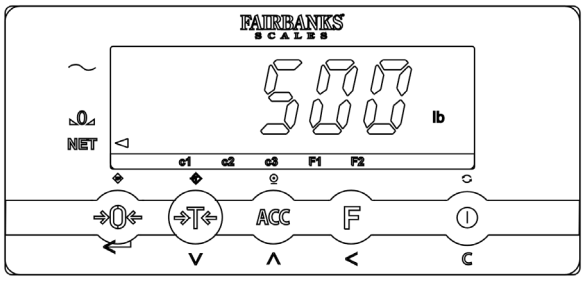
4.8. Net Weighing – Manual Tare, Continued

9. Upon entering the tare weight value, the Instrument will be in the net weighing mode.

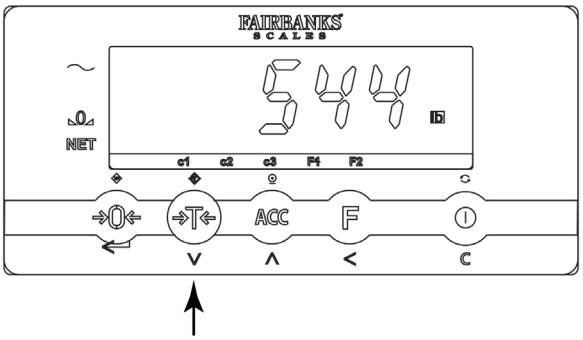
   The net weight annunciator will indicate the Scale is in the net weighing mode.



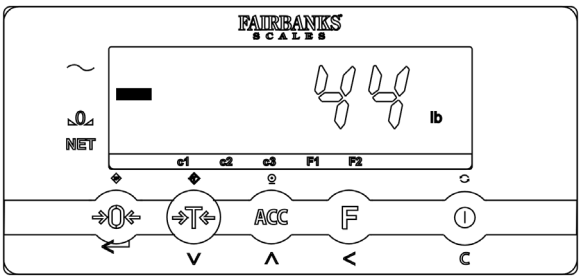
10. Engaging and lifting the load onto the forks and the Instrument will display the net weight.



11. Pressing the [**Tare**] key will toggle the display mode from Net to Gross.



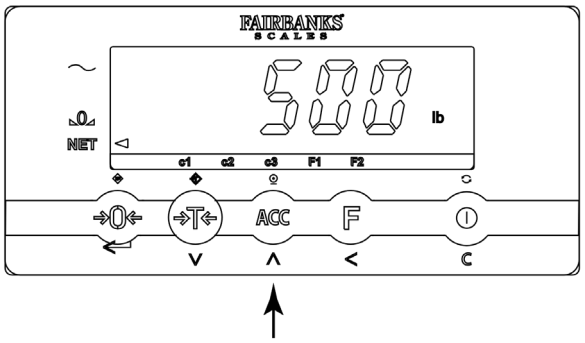
12. When the forklift weighing assemblies are completely unloaded, the tare value is displayed as a negative.



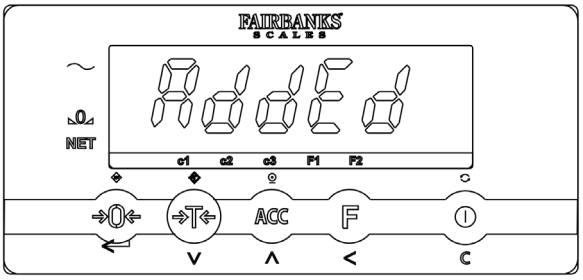
4.9. Accumulation

1. With a properly tared off load on the forks and raised above the floor, press the [**ACC**] key.

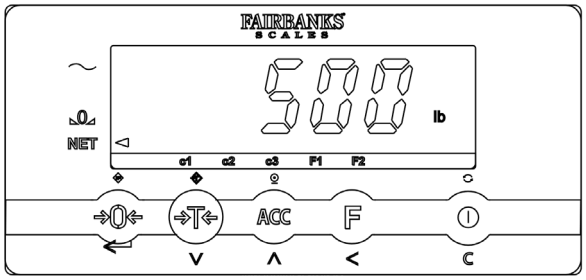
   If a printer is installed, a printout will occur and the gross, net and tare weights are printed.



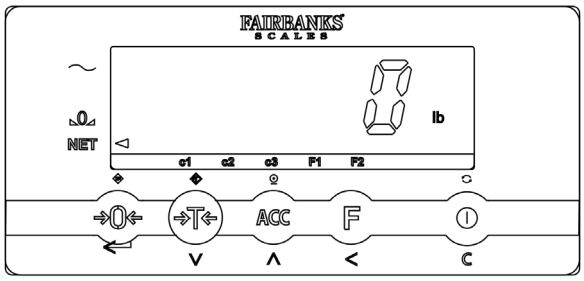
2. The instrument will indicate the weight has been added to the accumulator by displaying **ADDED** on the display.



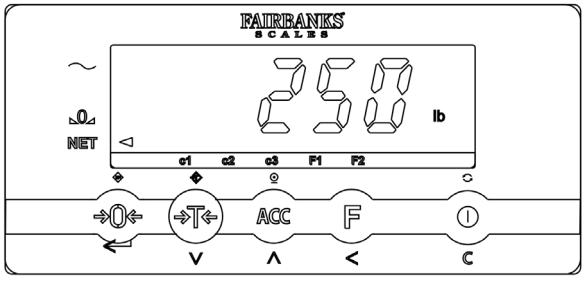
3. The Instrument will return to the weigh screen automatically.



4. The load can be tared off with the [**Tare**] key.



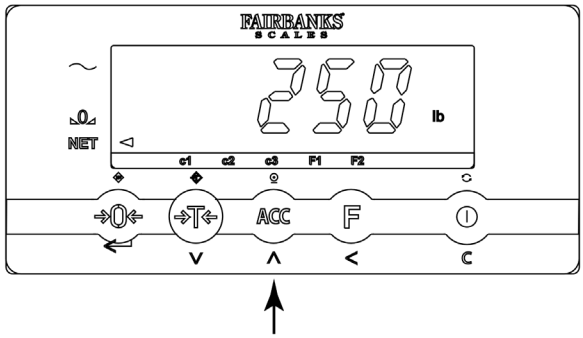
5. Additional items can be added to the weigh forks.



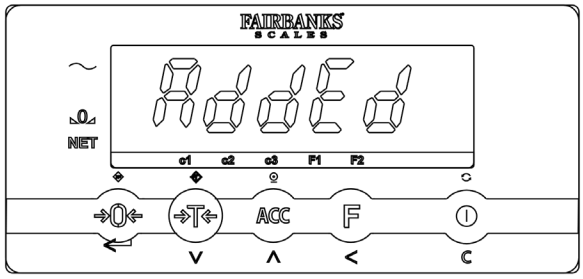
4.9. Accumulation, Continued

6. Pressing the [**ACC**] key will add this additional Weight to the accumulator.

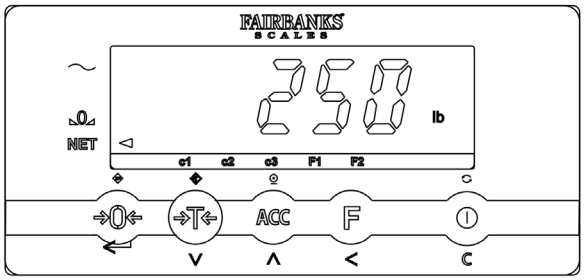
   If a printer is installed, a printout will occur and the gross, net and tare weights are printed.



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

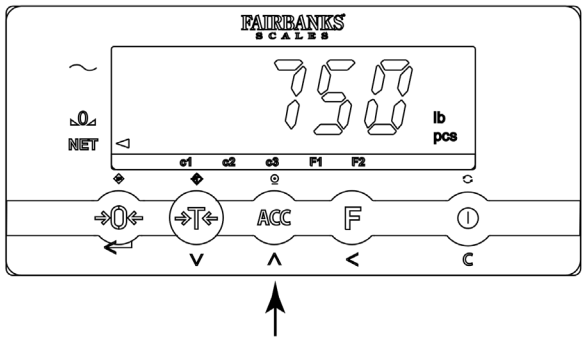


8. The Instrument will return to the weigh screen automatically.



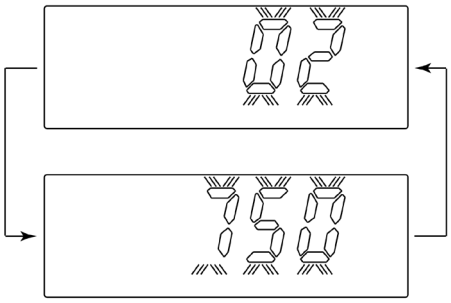
Repeat this process for each additional load which needs to be totaled and summed together.

9. The subtotal can be checked by pressing the [**ACC**] key for 3 seconds.



4.9. Accumulation, Continued

10. Pressing the [**ACC**] key for 3 seconds will display the number of accumulations and the subtotal of the accumulated weights.



4.10. Resetting Accumulation

A. Press the [**ACC**] key to reset the subtotal accumulator and to print the accumulator values.
B. Press the [**On/Off**] key to reset the subtotal accumulator.

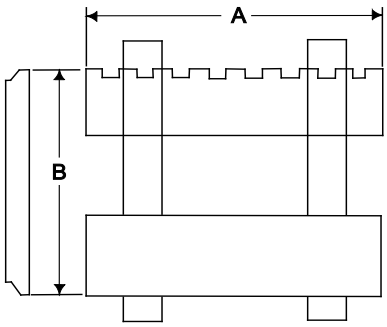
Appendix I: Forklift Questionnaire – 101813

FAIRBANKS SCALES

Forklift Scale Questionnaire

Hook-type fork mounting
(Cleat-type)

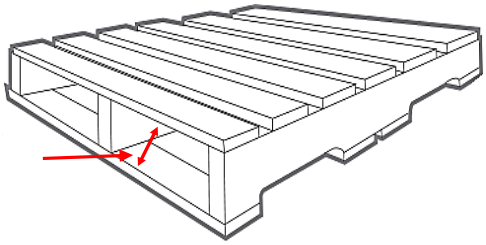
Name _____ Date _____



A = _____

B = _____
Enter size above

C = _____



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

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 (Cycle of Operation) _____

_____

_____

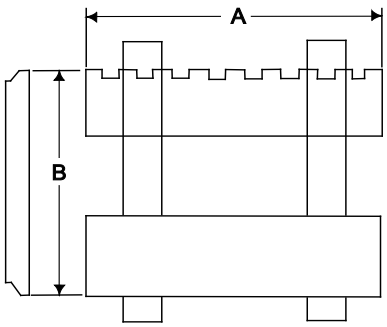
Customer _____

FAIRBANKS SCALES

Forklift Scale Questionnaire

Hook-type fork mounting
(Cleat-type)

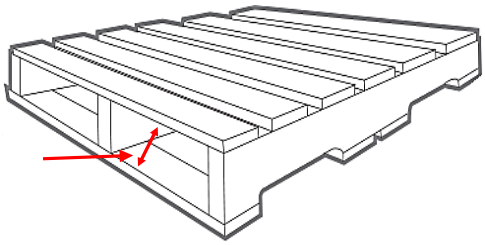
Terry Clark (Name) **01/03/21** (Date)



A = 33"

B = 16"
Enter size above

C = 3.2"



SAMPLE

Forklift make Toyota

Model 8FGCU15 Capacity 3000 lbs

Gas [X] Electric [ ] Propane [ ]

Voltage 12 VDC [X] 36 VDC [ ] 48 VDC [ ] Other [ ] _____

Fork length 42" Number of masts 2 NTEP Application? Yes [X] No [ ]

Carriage attachments Yes, side shifting fork positioner
If so, please provide pictures of front and side

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

Dimensions of the storage medium? (L x W x H) 48" x 40" x 36"

Dimension of the smallest opening the fork will go into? - **C** 3.2"
Note: If multiple products are used, the largest storage medium dimensions and the smallest fork opening are all we require.

Environment Warehouse, indoors

Application description (Cycle of Operation) Move incoming and outgoing palletized Gaylords with fruit. Internal operations will include placing product on shelving. Weight will be taken at the beginning of the process.

Customer Pat's Perfect Produce

Appendix II: Lithium Ion Battery

Important Safety Information
For replacement or additional battery pack, contact Fairbanks Scales.
Do not disassemble or alter this product.

DANGER
Use the specific Li-ion charger and observe the specified charging conditions when charging the battery.

- Avoid high temperatures and do not throw the battery into a fire.
- Do not deform, modify or disassemble of the battery.
- Do not connect the (+) and (-) terminals with metal objects.
- Do not put the battery into any water.
- Do not throw the battery to avoid strong shocks.

WARNING

- When a battery leaks, the battery should immediately be wrapped up properly and recycled.
- When, due to leaking from the battery, liquid gets into your eyes, immediately clean the affected area with water without rubbing your eyes and seek medical attention.
- The charging of the battery will stop automatically. When the battery is not fully charged after 8 hours (LED of the charger doesn't become green), immediately unplug the battery from the holder to stop charging. Battery or charger does not work properly, exchange battery or charger.
- The operating temperature ranges are: during use: -10°C - +50°C
  during charging: 0°C - +40°C
- Storing and/or using the battery outside the given temperature ranges may have a negative effect on the lifetime performance of the battery.
- Do not longer use a battery with leakages, deformation or when any other abnormalities occur.
- Battery should be charged in a dry surrounding.
- Charging can be carried out at any time regardless of the amount of charge remaining, but you should fully charge the battery.
- The battery is not fully charged at the time of delivery! Before using the weighing system, be sure that the battery is fully charged.
- After the battery has become completely empty. An empty battery will get broken (loss of capacity) when not directly fully charged.

Specifications

Nominal voltage / capacity BA-3.7V-5.2A: 5.2 Ah

Operating temperature range During use: -10°C - +50°C
During charging: 0°C - +40°C

Operation

- Normal charging
- Charging takes up to 6-7 hours for a full charge
  (a partially discharged battery will be fully charged sooner).
- When the battery is fully charged, charger stops automatically.
- After charging, the battery should be taken out of the charger.

Storing the battery

When the weighing system is not used for a longer period, make sure the battery has approximately 70% of the battery capacity remaining. Take care not to let the battery become completely empty by charging it every 6 months.
Store the battery separated from the weighing system in an indoor place (approx. +10°C - +20°C) where it does not become exposed to direct sunlight or rain.

Battery life

The battery is a consumable item. The battery will gradually lose its capacity for charging after repeated use and after time has passed. If the operating time that the battery can be used has substantially lessened, it has probably reached the end of its life. Order a new battery (proper use and charging will result into a longer life time).

About used batteries

Lithium ion batteries are recyclable, valuable resources. For recycling of broken batteries, follow the local guidelines in your area.

WF Series

Forklift Scale

Document 51483

Manufactured by Fairbanks Scales Inc.

www.fairbanks.com