

OPERATING MANUAL

Factory Mutual approved Weighing Systems for hazardous (explosive) area application. Repair is expressly limited to factory trained service personnel.

Fairbanks® Scales

HAZARDOUS ENVIRONMENT INDICATOR
Model H90-3052-D

BULLETIN SJ4572 / Issue #2

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DISCLAIMER

Every effort has been made to provide complete and accurate information in this manual. However, although this manual may include a specifically identified warranty notice for the product, Fairbanks Scales makes no representations or warranties with respect to the contents of this manual, and reserves the right to make changes to this manual without notice when and as improvements are made to the product.



FIGURE 1-1: MODEL H90-3052-D

SECTION 1: DESCRIPTION

1.1 Introduction

The model H90-3052-D indicator is a general purpose indicator that can be united with a wide variety of Fairbanks platforms. Stainless steel construction makes the instrument well suited for use in wash-down locations.

The H90-3052-D is battery operated for unlimited portability. The battery packs are rechargeable.

1.2 Specifications

1. **Model Number:**
H90-3052-D
2. **Units:**
lb, kg
3. **Display:**
High visibility, 6 digit liquid crystal display, with 0.8 inch digits
4. **Display Update Rate:**
Programmable for 0.2, 0.4, 0.8 or 1.2 seconds
5. **Digital Filter:**
Programmable - 4 levels
6. **Auto-Zero Tracking:**
Programmable OFF, 0.6d, 1.0d, or 3.0d
7. **Re-zero Range:**
Programmable 0 to 100%, or 0 to \pm 2%
8. **Filter Motion Band:**
Programmable 0.5, 1.0, 2.0, 3.0d
9. **Temperature Range:**
Operating: -10° to 40° C
Storage: -20° to 60° C
10. **Controls:**
18 key keypad
11. **Battery Life:**
Continuous operation, with one 350 ohm load cell, 55 hours
12. **Capacity:**
Min: 10 lb x .002
Max: 20,000 lb x 5

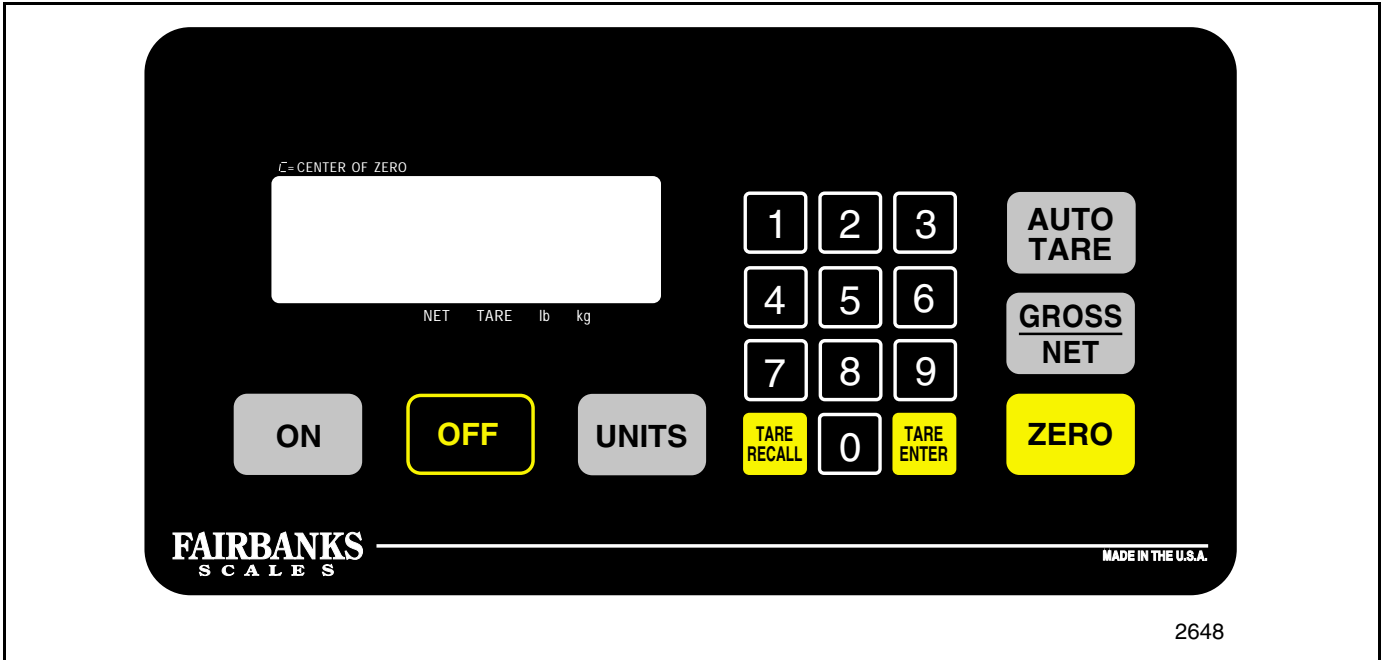


FIGURE 2-1: FRONT PANEL

SECTION 2: FRONT PANEL

2.1 Keys



Turns instrument ON, after battery pack replacement, when automatic shut-down mode turns instrument the OFF, or when the operator turns the instrument off.



Turns instrument OFF.



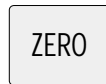
Toggles between GROSS and NET modes



Enters the weight on the platform into TARE memory and sets the scale to the NET mode



Toggles the indicators between lb and kg



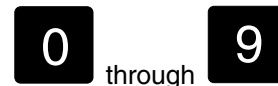
With the scale in GROSS mode, sets the display equal to ZERO and turns on the Center-Of-Zero indicator



Causes display of current tare weight



Enters tare weight as input by the operator through the numeric keypad



Numeric keys for manual input of tare weight

2.2 Indicators

NET
Net Mode

TARE
Tare Mode

lb
pounds

kg
kilograms

2.3 Displayed Legends

 (Center-of-Zero)

HILoAd

LoLoAd

LobAtt (Low Battery)

2.4 Blank Display

When the instrument is in the “OFF” condition, the liquid crystal display is completely blank.

2.5 Low Battery Condition

If the instrument is operational (ON) and senses that the input (battery pack) voltage is below the level which guarantees correct weighing, it will turn OFF.

2.6 Low Battery Legend

When the instrument is first turned ON, the “LobAtt” legend will appear briefly after warm-up and the instrument will turn itself OFF if a low battery condition exists.

2.7 Back Panel Description

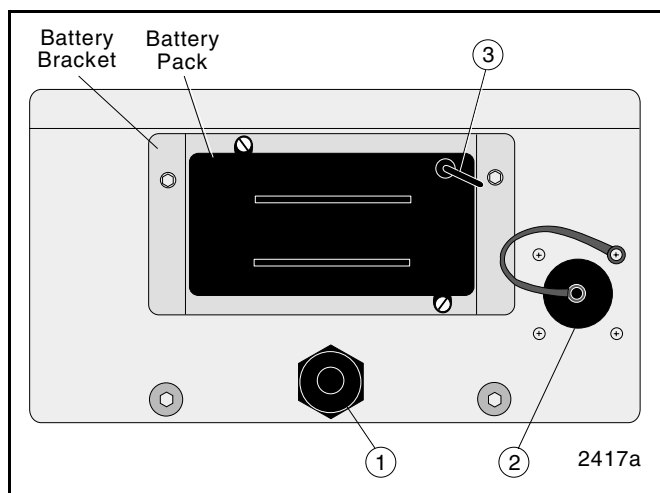



FIGURE 2-2: BACK OF INSTRUMENT

1. Load cell, waterproof gland
 2. Battery port with protective cap used when battery cable is disconnected
 3. Battery cable
-

SECTION 3: OPERATION



If the instrument is OFF, press and hold the  key until the display comes on (begins warm-up cycle). Once the warm-up cycle is complete, the indicator will respond in the manner selected in the “Zero Range” programming options.

The Zero function, Auto Tare function, and AZT require the displayed weight to be stable before these functions will operate. The weight reading is stable if the variation in weight is less than the “motion range”.

3.1 Instrument Weighing Functions

The industry uses three terms which describe the apportionment of an object’s weight. These terms are GROSS WEIGHT, TARE WEIGHT, and NET WEIGHT.

Gross weight is the total weight of an object. This would include any incidental materials as well as the primary materials which comprise the object. Tare weight is the weight of the incidental materials. Net weight is the weight of the primary materials. Tare weight and Net weight together equal the Gross weight. A can of house paint is an object to be weighed. The can is incidental material used to hold the primary material, paint, and the label is incidental material used to identify the paint. All of the incidental materials’ taken together make up the tare weight. All of the primary materials’ weights together make up the Net weight; in this case pigment, vehicle, and solvent. The object is made up of incidental materials, can and label, and primary materials, paint. Taken together, this is the gross weight.

The three weights can be expressed mathematically in terms of each other as follows:


$$\begin{aligned} \text{GROSS} &= \text{NET} + \text{TARE} \\ \text{TARE} &= \text{GROSS} - \text{NET} \\ \text{NET} &= \text{GROSS} - \text{TARE} \end{aligned}$$

The equation, $\text{NET} = \text{GROSS} - \text{TARE}$, is particularly important because it is the equation that a scale uses to figure net weights in NET WEIGHING MODE. The gross weight is a function of the weight on the platform and the zero reference. Tare weight is always an operator defined value.


3.2 General Weighing Operations

A. Basic Weighing




1. Press the  key to select Gross as indicated by the legend.



2. With the platform empty, press the  key. The display will indicate zero and the Center-of-Zero legend will appear.


The instrument is only able to measure the weight on the platform. The instrument can not tell if the weight is from the object to be weighed or from some other objects left on the platform. The operator must tell the scale when there is nothing on the platform to be

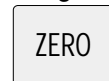


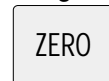
weighed. This is done by pressing the  key. The instrument will assign what ever weight happens to be on the platform a zero weight value. This is called the instrument’s zero reference.

Starting with an empty platform is not required. The




 key sets the display to “0”, if the weight on the platform is within the allowable zero range. Weighing in the Gross mode consists of pressing the



 key and placing a weight on the platform. The display will show the Gross weight of the object. The instrument understands Gross weight as the total



weight placed on the platform after the  key was pressed.


3. Place the object to be weighed on the platform.
4. The weight will be displayed.

B. Tare Weighing




The tare weight is operator defined. The  key is



used to enter tare values. Press the  key and the value of the current tare in memory will be displayed.



Press the  key to return the instrument to the weighing mode.


The tare weight value will remain unaltered in memory until power is removed or a new tare is entered in memory




using either the  key or the numeric keypad.

C. Net Weighing Using AUTO TARE



1. Press the  key. The display will read “0” and the Center-of-Zero Legend will be ON.
2. Place the empty carrier on the platform.




3. Press the  key. The display will show “0” and the NET Indicator will be ON. The weight of the container on the platform will be entered into the scales memory as a Tare weight.
4. Place the material to be weighed in the container. The display will show the weight of the material in the container.

The NET weight is the weight of the material placed in the container, minus the weight of the container that was entered as a Tare weight in Step 2.

NOTE

Net weighing of pre-packaged carriers can be accomplished by first placing an empty carrier that is the same as the product carrier on the

platform, and pushing  before beginning weighing operations.

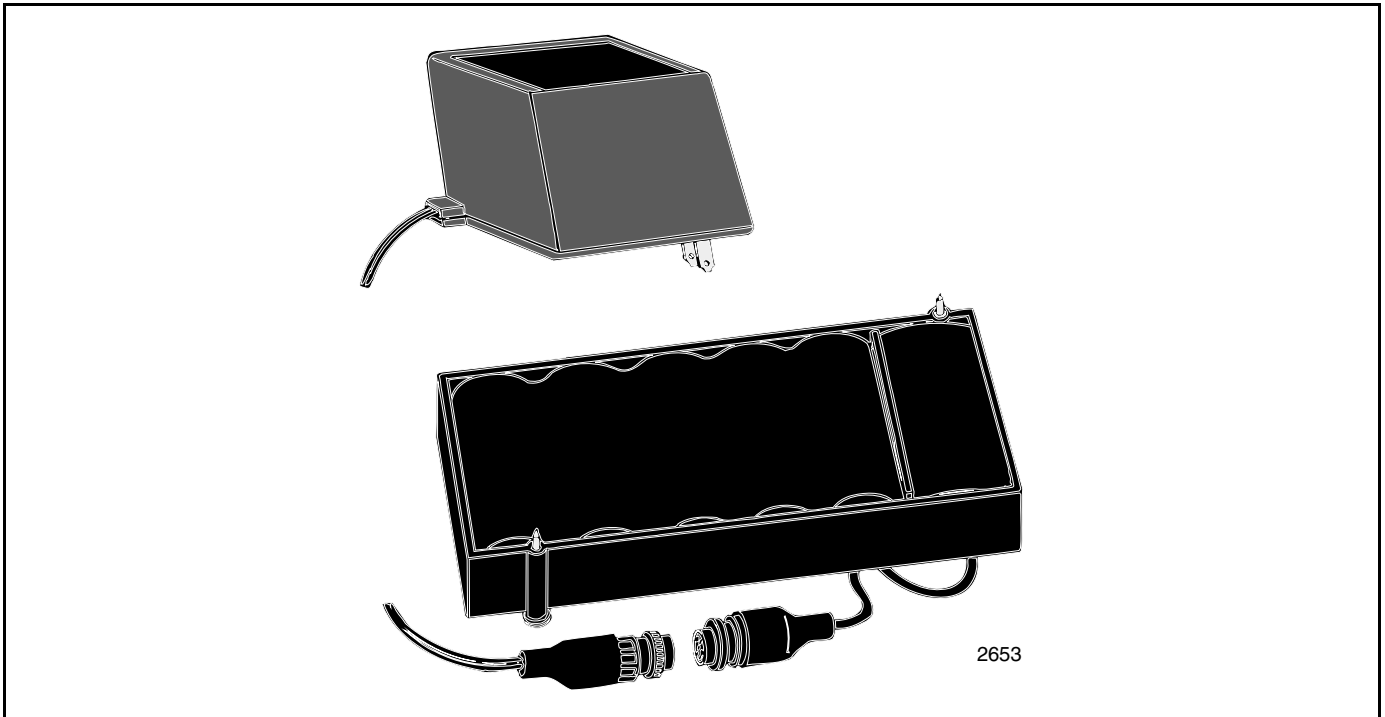



FIGURE 4-1: BATTERY PACK RECHARGER


SECTION 4: BATTERY PACK

4.1 Battery Pack Replacement

Disconnect the battery pack connector from the battery port. Loosen the two thumb screws holding the discharged battery pack in place and remove to a safe area for recharging.

Replace with a freshly charged battery pack.

Press the  key to restore the instrument to operation.

Remove any weights from the platform before pressing the  key.

4.2 Battery Pack Rechargeing

The Battery Pack Recharger is to be used to recharge the Battery Pack. **DO NOT USE FOR ANY OTHER PURPOSE.**

The Battery Pack Recharger will partially recharge a fully discharged battery pack in about 16 hours. To recharge a battery pack:

1. Place the discharged battery pack on a flat surface with the connector facing upward.
2. Insert the connector on the recharger into the connector on the battery pack.
3. Plug the recharger into a standard 110 VAC/60 Hz outlet.
4. A minimum of 16 hours of charging time is required before a battery pack can be reused. Full charge, 100% capacity, is attained between 36 and 48 hours of charging time.
5. At temperatures above 84° F, battery packs can not be recharged to 100% of their nominal capacity.

If a recharged battery pack is not required for immediate use, it should be left on the charger to maintain maximum charge. Leaving the battery pack on the charger will not damage either component.

WARNING

Battery packs are to be recharged in non-hazardous areas only.

SECTION 5: INSTRUMENT SEALING

If the scale is to be used in a commercial application, it must be “placed in service” in accordance with the rules and regulations of the local weights and measures jurisdiction. Commercial applications are the buying and selling of products by weight, weighing for a charge, or using weight as the basis to charge for a service.

Once a scale has been calibrated and “placed in service” by a technician, it must be sealed with the proper sealing devices and reported to the appropriate weights and measures authority.

If the scale seal is broken or missing, the seal is no longer accepted as proper for commercial application.

For assistance in placing the scale in Service, contact the nearest Fairbanks Service Center.

To prevent unauthorized entry, two wire seals are required. Sealing screws are located in upper right and lower left of the cover assembly.

1. Feed one end of a sealing wire through the hole in sealing screw and then through the small hole on the edge of the cover.
2. Crimp the seal with tool #LSP-100 or equivalent.
3. Repeat procedure with the second sealing screw.

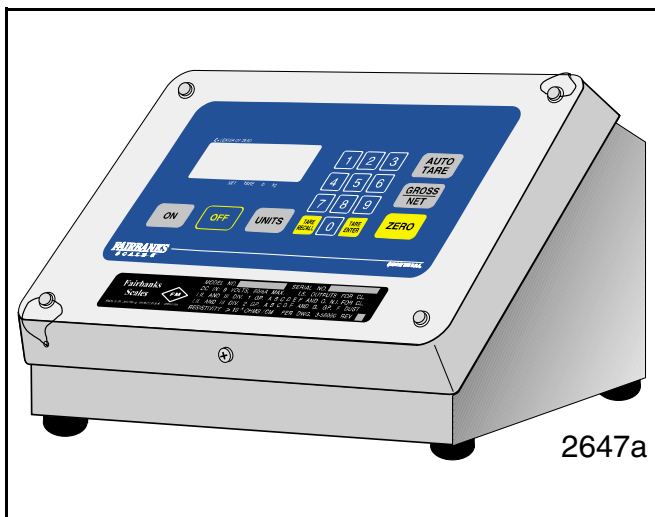


FIGURE 6-1: SERVICE SEALING