Instruction Manual

Portable Utility Scale

1155 SERIES SCALE WITH THE FB2255 INSTRUMENT

51315
Revision. 5 04/19

AMENDMENT RECORD

Portable Utility Scale
Model 1155
With FB2255 Instrument

Document 51315

Manufactured by Fairbanks Scales Inc.

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Kansas City, Missouri 64106

Created	02/13	
Revision 1	02/13	Released new product
Revision 2	02/15	Updated parts list
Revision 3	10/16	Updated parts, assembly instructions
Revision 4	02/18	Updated parts list
Revision 5	04/19	Updated parts

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.

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Section 1: General Information

1.1. INTRODUCTION

The **1155 Series Scale** is a combination of a roll-around cast-iron base and a battery/AC powered digital indicator. NTEP and MC approved for "**Legal for Trade**" applications.

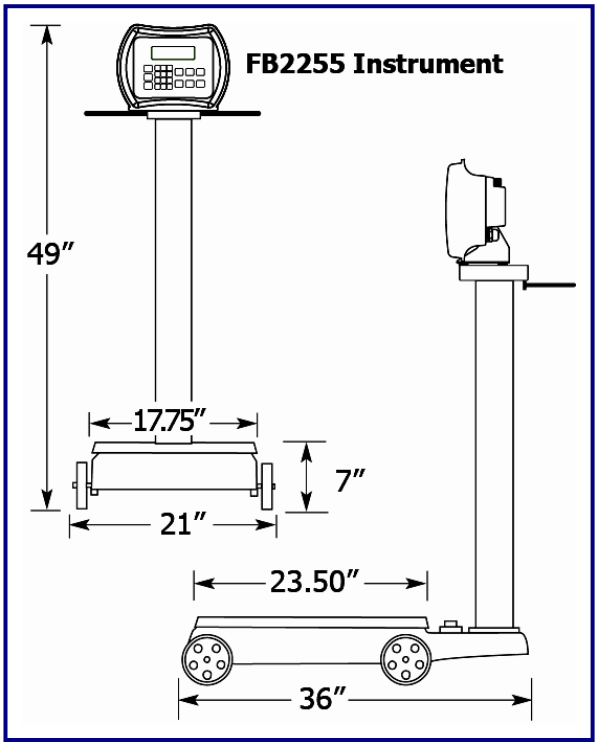
APPLICATIONS

- Material handling
- Warehousing
- Inventory management
- Auditing
- Parts distribution
- Bag filling

The **1155 Portable Platform Scale Base** is constructed of cast iron with cast iron levers.

- The weight display is an AC/Battery powered **FB2255 Series Indicator.**
- It is equipped with communication ports for connecting printers, displays, and/or computers.
- The scale is rated at **1000 pounds** capacity.
- The interval, or graduation size is 0.2 pounds.

Although the unit is factory calibrated, some assembly is required.



W A R N I N G !

The 1155's shipping weight is approximately 185 pounds.

Use caution to prevent personal injury and/or damage to the product when lifting or moving it.

NOTE: *For commercial weighing applications, the scale must be* **'placed-in-service'** *by a licensed scale technician.*

For product solutions, please call **FAIRBANKS SCALES TECHNICAL SERVICES.**

Power supply must be used with a correctly **grounded** outlet.

- Place the scale on a solid and level floor.
- Avoid extremes in temperature, humidity, shock, moisture and dust.
- The scale is factory calibrated and supplied ready to be assembled and used.
- The **1155 Series Scale** must be serviced a by qualified technician.
  - *Failure to do so may void all implied and/or written warranties.*
- Ensure that no shipping damage has occurred to any of the equipment.
  - *Damage to the shipping carton must be noted by the receiving party.*
  - *Damage must be made known to the shipper.*
  - *Claims for shipping damage are made by the receiving party to the shipper.*
- It is the customer's/owner's responsibility to maintain the scale in good operating condition, and to protect the scale from accidental damage.

A T T E N T I O N !

DO NOT *pack or ship an instrument with batteries installed.*

If batteries are expected to be left for an extended period of non-use, remove them all from their holder.

1.2. AC POWER SETTINGS

110VAC

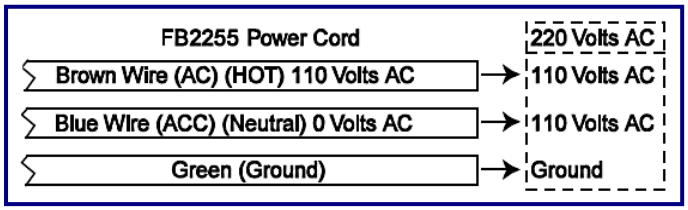
The FB2255 is designed to operate from **80 to 260 volts AC, 50 to 60 HZ.**

- 110 VAC operations.
- The Instrument is factory wired for 110 VAC and requires a three prong grounded outlet.

220 VAC

The FB2255 has **AUTO SWITCHING** capabilities.

- Rewire the power Cord according to the diagram.



1.3. DC POWER

Batteries	**Five (5) Size "D" Alkaline batteries @ 1.5 Volts DC each.**
Battery Life	• **Up to forty (40) Hours or greater with a maximum load of 4, 350 load cells and backlighting enabled.** • **Battery usage time can be adversely affected by battery storage, battery capacity and battery brand.** • **To maximize battery life, Serial Ports 1 and 2 should be switched OFF if not used.**
Internal Battery	• **Should be replaced every 12 months using Panasonic CR 1220 3V or equivalent.**

C A U T I O N

This product is shipped from the factory set for 110-120VAC operation.

For 220-240 VAC operation, settings must be changed before powering up.

1.4. SPECIFICATIONS

1.4.1. INSTRUMENT APPROVALS

CC	**09-023**
MC	**AM-5720**
ETL	**ETL Listed**
Conforms to ANSI/UL STD **60950-1**	
Certified to CAN/CSA C22.2 STD NO. **60950-1-03**	

1.4.2. BASIC SPECIFICATIONS

ENCLOSURE	**ABS, Black NEMA 1**
DISPLAY	**6-digits, One inch (1") LCD, Green Backlight**
FRONT PANEL KEYS	**On/Off, Units, Zero, B/G, Net, Tare and Print**
UNITS	**lb, oz, kg, g and lb/oz, or custom**
GRADUATION SIZE	**0.0001 to 50**
AD CONVERSION	**66 per second**
LOAD CELL EXCITATION	**5 Volts DC**
SENSITIVITY	**1µv/d (microvolt/division)**
LOAD CELLS	**Eight (8) 350 ohm or Sixteen (16) 1000 ohm**
DISPLAYED DIVISIONS	**10,000d Commercial and 100,000d Non-Commercial**
CAPACITIES	**Programmable to 999999**

1.4.3. STANDARD SETTINGS

Zero Range	**Off, 2 % or 100%**
Auto Zero Tracking	**OFF, 0.5, 1 or 3 divisions**
Balance	**OFF, 0.5, 1 or 3 divisions**
Filter	**Slow, Animal, Standard, and Fast**
Display Update Rate	**0.2, 0.4, and 0.8 seconds**

1.4.4. WEIGHT ACCUMULATOR

Capacity	**999,999 Weight Units** – Printed or viewed.

1.4. SPECIFICATIONS, CONTINUED

1.4.5. OUTPUTS

PORT 1	Bidirectional Serial Port. Settings include **OFF, RS232**, and **RS485**. RS232 has 30+ updates a second
PORT 2	Port 2 is used to interface to the **PC2255 program**, OR, Provide **20 mA passive, RS 232**, or **RS 485.**

1.4.6. PC2255

- Computer software utility program is available for download using the Fairbanks Intranet.
- PC2255 is required for setting certain aspects of programming, such as custom Units and custom ticket formatting.

1.4.7. POWER REQUIREMENTS

- 117 volts AC +/- 10 %
- 220 volts AC +/- 10 %
- ≤ 0.2 volts AC between Neutral and Ground
- 1.5 watts maximum
- The FB2255 is designed to operate from 80 to 260 volts AC, 50 to 60 Hertz

1.4.8. OUT OF RANGE WARNINGS

HiCAP	**Scale input is over capacity**
- - - - - - -	**Displayed weight exceeds 6 digits**

1.4.9. ENVIRONMENT

Temperature	**-10ºC to + 40ºC (+14ºF to + 104ºF)**
Storage Temp.	**-40ºC to + 60ºC (-40ºF to + 140ºF)**

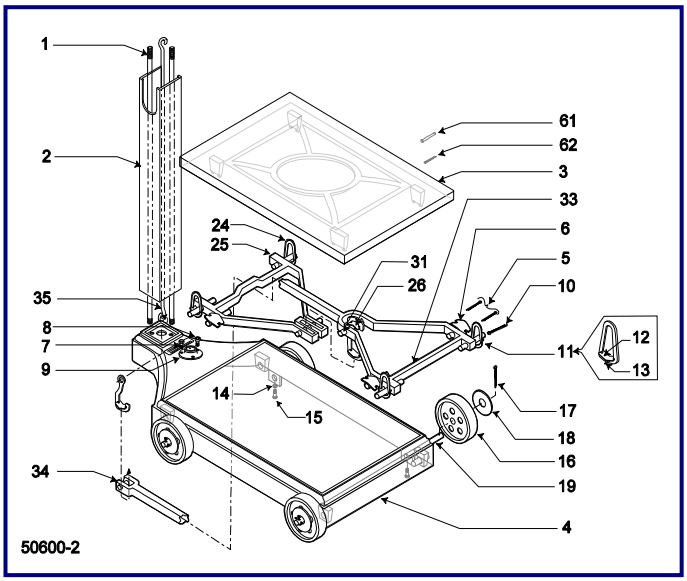
Section 2: Assembly

2.1. NECESSARY TOOLS

- ✓ **Small Slotted Screwdriver**
- ✓ **Phillips Screwdriver**
- ✓ **10" Adjustable Wrench**
- ✓ **Common Pliers**

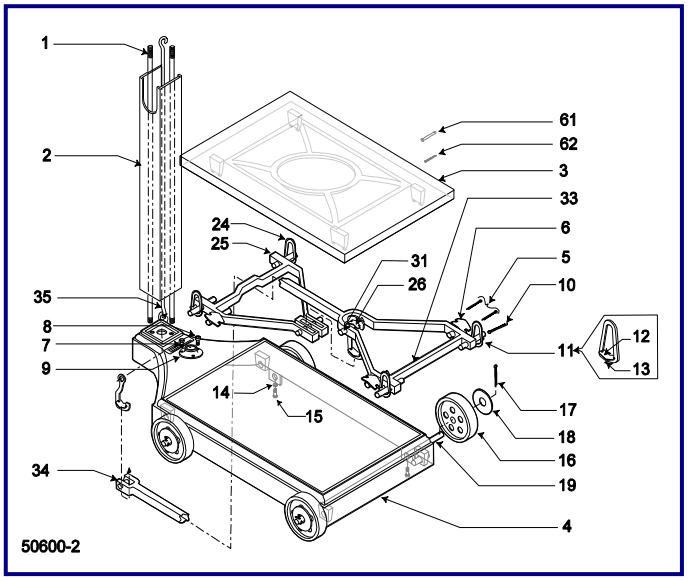
2.2. WHEEL & PILLAR ASSEMBLY

1. Set the **Scale Base Assembly** (**#4**) sideways on the floor.
2. Insert a **cotter pin** (**#17**) through the small hole in one end of the **first axle** (**#19**).
3. Place a **flat washer** (**#18**) and a **wheel** (**#16**) onto the open end of the axle.
4. Insert the axle's other end through ***both*** holes in the base.
5. Place the **second wheel** (**#16**) onto the axle.
6. Place a **flat washer** over the axle, and then insert a **cotter pin** through the axle's small hole.
7. **Repeat steps 2-4 for the second axle**.
8. With the scale in its upside-down position, center the axles in the base.
9. Insert the **locking screws** (**#15**) into the tapped holes in the bottom of the base, tightening the axle into place with the screws.
   - Directly under the axle holes.
10. Secure the **lock nuts** (**#14**).



2.2. WHEEL & PILLAR ASSEMBLY, CONTINUED

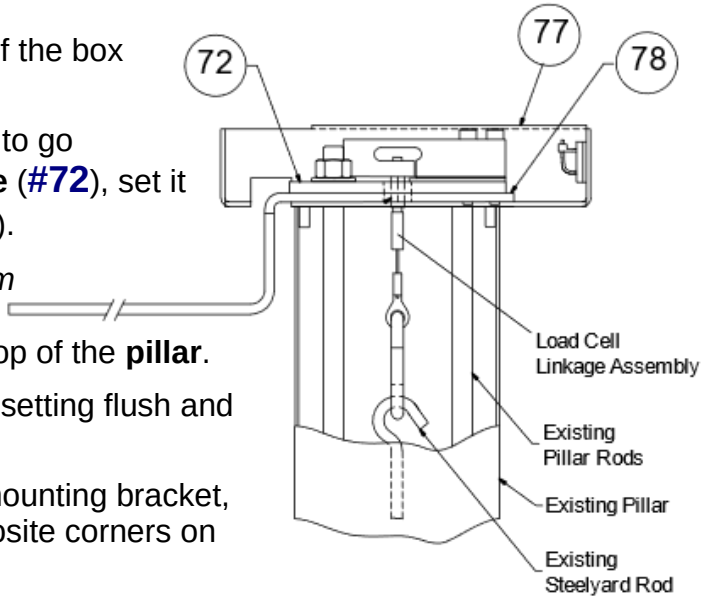
11. Screw the two (2) **pillar rods** (**#1**) into the two (2) tapped holes of the base.
12. Place the **pillar** (**#2**) over the pillar rods.
    - The cutouts face to the left and right of the platform
13. Insert the **steelyard rod** (**#35**) down through the pillar.
    - The bent hook is on top, and the loose swivel hook is on the bottom.



2.3. MOUNTING BRACKET KIT ASSEMBLY

NOTE: *The Adapter is partially assembled and packed with bubble-wrap. The* **ADAPTER BRACKET (#77), STIFFENER PLATE (#78),** *and* **LOAD CELL MOUNTING PLATE (#72)** *are in correct orientation within the box.*

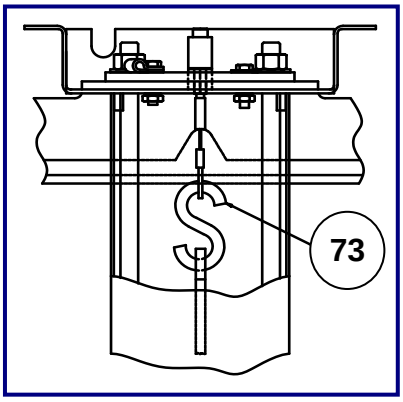
1. Lift the entire mounting bracket kit out of the box and remove the bubble-wrap.
2. Allowing the load cell linkage assembly to go through the hole and the **load cell plate** (**#72**), set it flush on top of the **stiffener plate** (**#78**).
3. With the slot in the back (*as viewed from the platform*), place the assembly on *over* the **two pillar rods** so it rests on top of the **pillar**.
    - Ensure that the mounting bracket is setting flush and aligned.
    - Looking up from the bottom of the mounting bracket, there are two (2) small studs in opposite corners on the ***inside*** of the pillar.

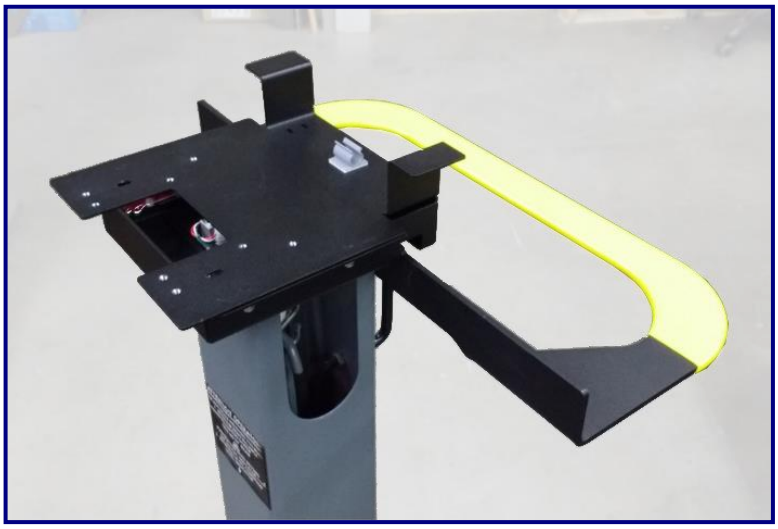


4. Fasten the two (2) **pillar rods** to the **top of the pillar** with the two (2) washers and nuts.

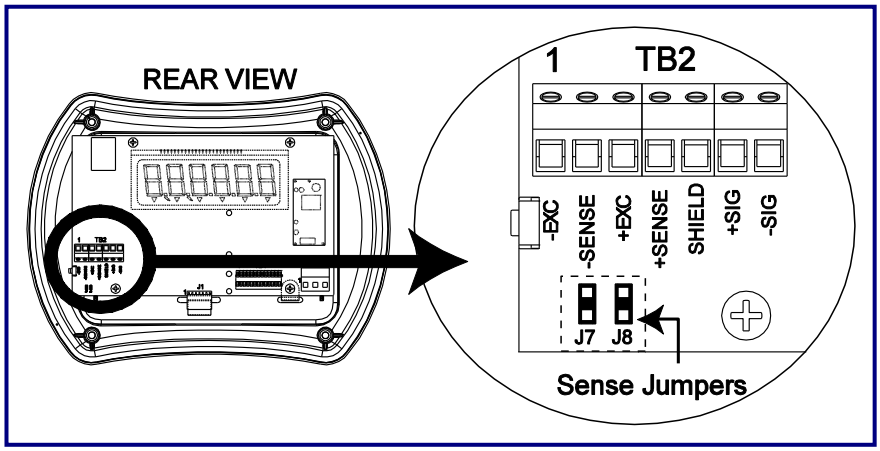
2.3. MOUNTING BRACKET KIT ASSEMBLY, CONTINUED

5. Tighten the pillar rod nuts.
   - ***Do not*** to touch the load cell while tightening.
6. On the bottom back-side of the scale's base, lift up the **lever end** while placing the hook under the lever's pivot.
   - Do this while holding the hook on top of the pull rod.
7. Inserting the **"S" hook**:
   a. Insert the **"S" hook** (**#73**) through the eyelet of the load cell linkage cable adapter.
   b. Slide the **"S" hook bottom** into the top hook on the **Steelyard rod**.





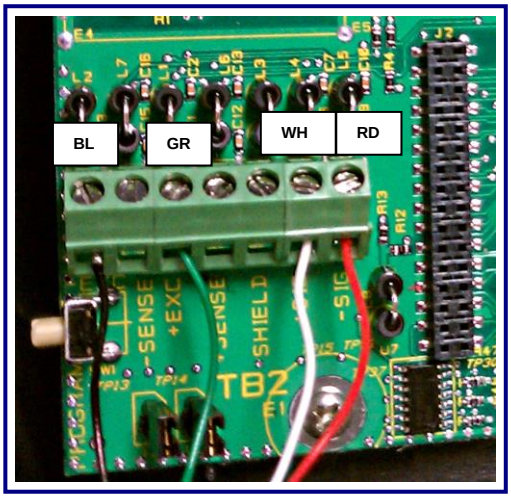
2.4. LOADCELL CONNECTIONS



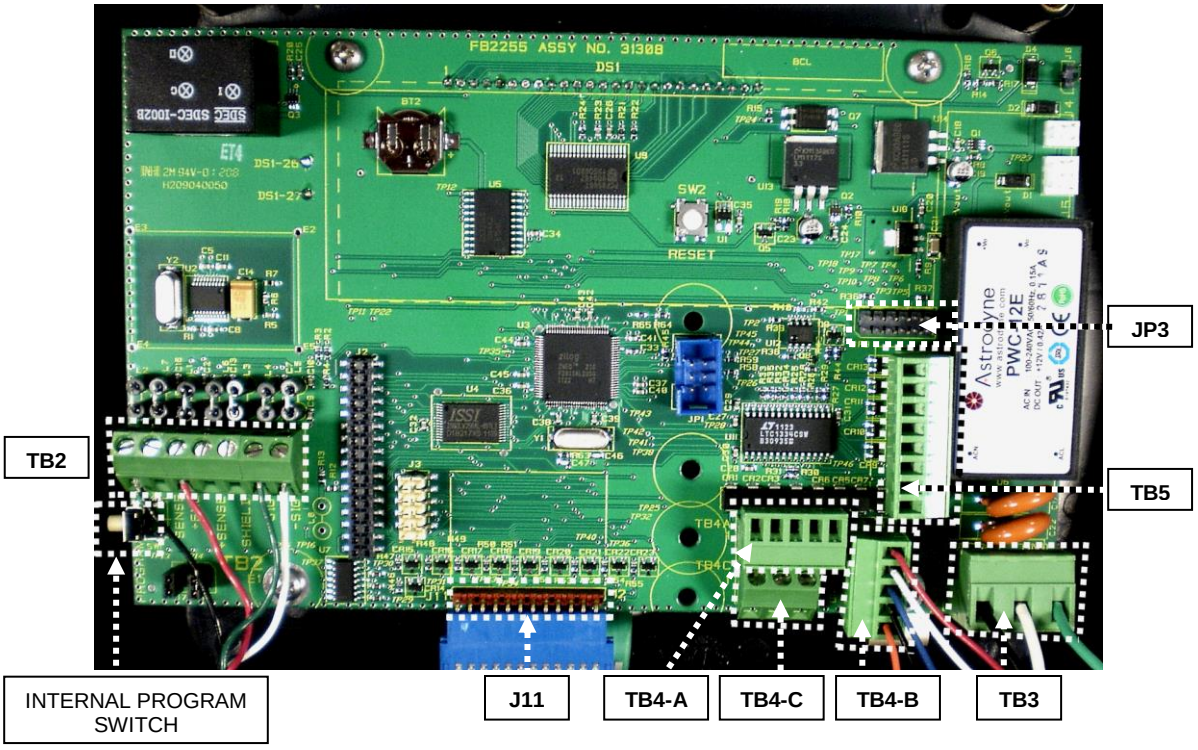
1. Remove the screws on the back cover of the Indicator to access the main printed circuit board inside the enclosure.
   – Use caution to avoid pulling cables out of their connectors.
2. Bring the dressed end of the load cell cable through the strain relief connector on the back of the instrument, allowing enough cable on the inside to reach the load cell connection terminal on the main board.
3. Tighten strain relief as needed to grip the load cell cable.
4. Replace and refasten the back onto the Indicator.

2.5. INSTRUMENT WIRING

INSTRUMENT	COLOR CODE	LOAD CELL
TB2 - 1	Black	(–) EXC
TB2 - 3	Green	(+) EXC
TB2 - 7	White	(+) SIG
TB2 - 8	Red	(–) SIG



2.5. INSTRUMENT WIRING, CONTINUED



***Printed Circuit Board* (31308)**

2.5.1. JP3 JUMPER CONFIGURATION)

JP3	RS232	RS485	RS422*	PORT
1-2	**Out**	**120 Ohm Resistor**	**120 Ohm Resistor**	**COM1**
3-4	**Out**	**In**	**Out**	**COM1**
5-6	**Out**	**In**	**Out**	**COM1**
7-8	**Out**	**In**	**Out**	**COM2**
9-10	**Out**	**In**	**Out**	**COM2**
11-12	**Out**	**120 Ohm Resistor**	**120 Ohm Resistor**	**COM2**

*Port should be set to RS485.

NOTE: 120 ohm Termination Resistors *are required if the receiver is the last node on the network.*

2.5.2. TB2 LOAD CELL

TB2	LOAD CELL
1	**(–)Excitation 5V**
2	**(–)Sense**
3	**(+) Excitation**
4	**(+) Sense**
5	**Shield**
6	**(+) Signal**
7	**(–) Signal**
JP7	**(+) Sense Shorting Link**
JP8	**(–) Sense Shorting Link**

2.5.3. TB3 WIRING CONNECTIONS, AC INPUT

1	AC	AC Input
2	ACC	ACC Input
3	Ground	AC Ground

2.5.4. TB4 WIRING CONNECTIONS, COM1 (A), COM2 (B), AND COM2 (C)

TB4 (A)	RS232	RS485	RS422*	PORT
1	Rx – Receive Data	(–) RS485	RS422 (–) Rx	COM1
2	Tx – Transmit Data	(–) RS485	RS422 (–) Tx	COM1
3	CTS – Clear-to-Send	(+) RS485	RS422 (+) RX	COM1
4	GND -- Ground	GND	GND	COM1
5	RTS – Ready-to-Send	(+) RS485	RS422 (+) Tx	COM1

TB4 (B)	RS232	RS485	RS422*	PORT
1	Rx – Receive Data	(–) RS485	RS422 (–) Rx	COM2
2	TX – Transmit Data	(–) RS485	RS422 (–) Tx	COM2
3	CTS – Clear-to-Send	(+) RS485	RS422 (+) Rx	COM2
4	GND – Ground	GND	GND	COM2
5	RTS – Ready-to-Send	RS485	RS422 (+) Tx	COM2

TB4 (C)	20 MA	RS485	RS422	PORT
1	(+) TX – Remote Display Passive, 20 mA Output			COM2
2	(–) TX – Remote Display Passive, 20 mA Output			COM2
3	(+) 7.5V Bluetooth® Technology Supply			

*Port should be set to RS485.

2.5.5. TB5 REMOTE SWITCH INPUTS

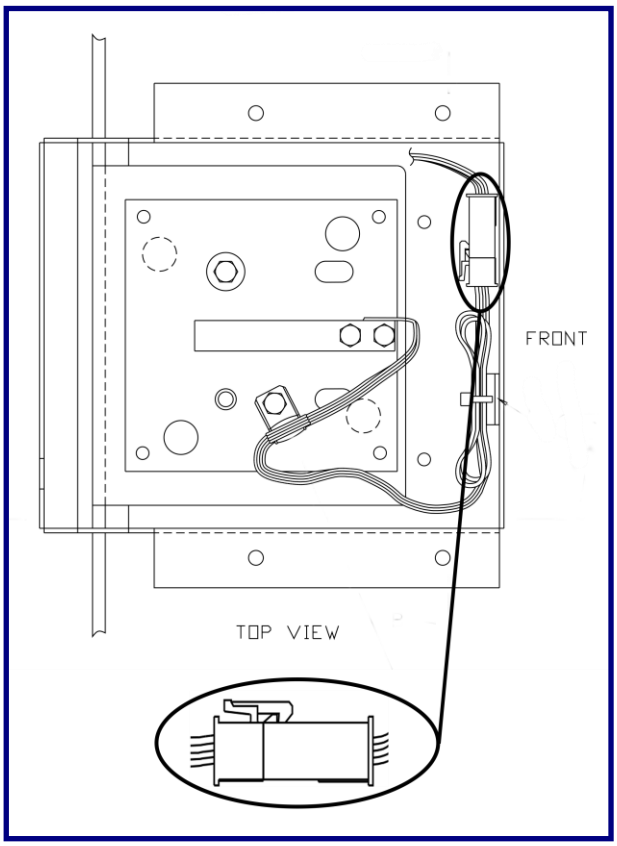
1	Ground	
2	Ground	
3	Ground	
4	Print	Connect to ground to perform programmed Print function
5	Tare	Connect to ground to Tare off Gross weight
6	B/G Net	Connect to ground to Select Gross/Tare displays
7	Zero	Connect to ground to Zero Platform Weight
8	Units	Connect to ground to change to alternate weight units

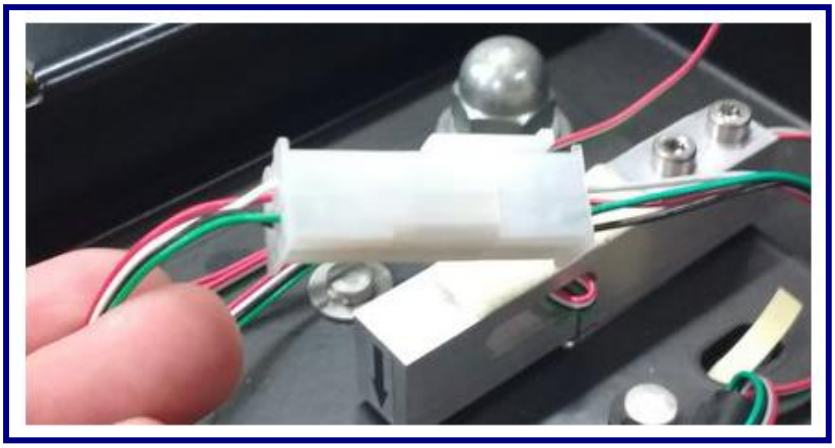
2.5.6. REMOTE DISPLAY ACTIVE KEYS

INSTRUMENT	FB2255 ACTIVE FRONT PANEL KEYS
FB2200	No Active Keys
FB2255	Units, Zero, Gross Net, Auto Tare, Print
FB2255	Units, Zero, Gross Net, Auto Tare, Print
2300	No Active Keys
2500	No Active Keys
2800	No Active Keys
5200A	Units, Gross Net

2.6. INSTALLING THE INSTRUMENT

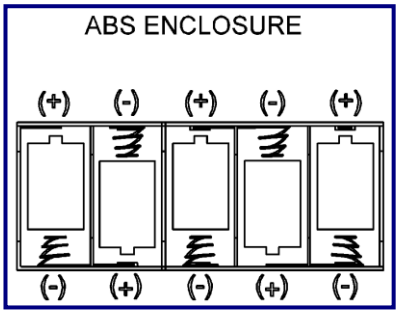
1. The load cell cable has attached a 4-pin Molex connector.
2. If necessary, wire the 24” ribbon cable (P/N 22706) to the instrument per wiring diagram. Opposite end of cable has mating 4-pin Molex connector.
3. Gently slide the connectors together until they snap in place.
4. Bundle excess load cell cable using the cable tie so it does not contact the load cell or become damaged.





5. Place the instrument on top of the mounting bracket with the keypad/display facing the scale platform.
6. Remove the rubber feet on the bottom of the FB2255’s tilt bracket.
7. Fasten the instrument to the mounting bracket using the four (4) screws, washers, lock washers and nuts (*as shown*).

2.7. BATTERY INSTALLATION



1. Loosen the Indicator positioning knobs (located at each side), and then rotate the unit forward to access the back **Battery (ABS) Enclosure**.
2. Unscrew the two large knurled screws on the back of the Instrument
3. Remove the battery cover.
4. Insert **five (5) alkaline "D" cell batteries**.
   – Industrial 'D' size Energizer EN95 battery or equivalent is recommended for maximum operating time.
5. Refasten the back cover and tighten the knurled screws.
6. Reposition the indicator and tighten back the knobs.

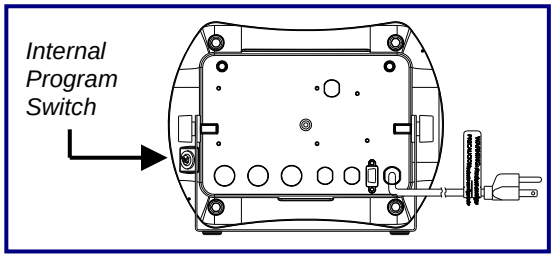
Section 3: Programming

3.1. POWERING ON AND OFF THE FB2255

- To **turn on** the FB2255, press and hold the **ON / OFF Key** for two (2) seconds.
  - The Instrument will display "**888888**", then a **"1234567890"** character display moving from right to left, followed by the revision of software.
  - Upon completing the warm-up, the FB2255 will display the actual weight on the scale.
- To **turn off** the FB2255, press and hold the **ON / OFF Key** for two (2) seconds.

3.2. ENTERING PROGRAM MODE

Unscrew the plastic lockout plug located at the rear of the enclosure and press the **Internal Program Switch**.



NOTE: *Repeatedly pressing the program switch will cycle through* **Set-up, Config, APP, CAL,** *and back to the* **Weigh Mode.**

If the program parameters are outside of set limits, the **Program Defaults** *are loaded/reloaded at power-up.*

3.3. SAVING PROGRAM CHANGES

- Program changes are automatically saved upon exiting the **Program Mode**.
- Press the **PROGRAM SWITCH** to exit to the **Weigh Mode**.

3.4. SETUP MENU PROGRAMMING PARAMETERS

1. Press and hold the **Internal Program Switch** until **SEtUP** displays.
2. Use the right arrow key to scroll through each menu item.
3. Program the **Set Time, Set Date** and **Port 1** functions, as shown in the following information.

3.4.1. SETTING AND PROGRAMMING TIME

4. At **SEtUP**, press the **RIGHT ARROW** key **Set-ti** displays, followed by the current setting in **HHMMSS**.
5. Press the **MENU** key.
6. Key the new time setting with the **0-9** keys.
7. Press **ENTER**.
8. At the **"12hr A"** prompt, press the **MENU** key.
9. Use the **ARROW KEYS** to toggle through the option noted below.

- **12hr A –** 12 hour clock, currently AM.
- **12hr P –** 12 hour clock, currently PM.
- **24 hour –** Military time (1:00 PM = 1300 hours).

10. Press **ENTER** to save the setting.

3.4.2. PROGRAMMING THE DATE

- **Set-dA** displays**,** followed by the current date setting.
- Date is entered in the **MM-DD-YY** format.

11. Press **Menu**.
    – The first digit will blink.
12. Key the new date setting with the **0-9** keys.
13. When complete, the program will advance to Port 1.
14. Press the **INTERNAL PROGRAMMING SWITCH** four (4) times slowly, and the instrument will return to the **Weigh Mode**.

Section 4: User Operations

4.1. FRONT PANEL KEY FUNCTIONS

NOTE: *Installing a jumper at* **J6,** *located at the upper-right corner of the main* **PCB Assembly**, *will disable the* **ON/OFF switch.**

This is ***not recommended*** *in battery powered applications.*

KEY	FUNCTION
ON/OFF	Turns the Instrument on or off.
UNITS	Switches between pre-programmed selectable weight units.
ZERO	Sets the display to zero, programmable: 2% or 100% of capacity.
B/G – NET	Toggles between Gross and Net weights • This apples only if a Tare Value has been entered greater than ZERO.
TARE	Automatically tares off displayed weight when key is pressed.
PRINT	Simple RS232 output when key is pressed.
0-9	Used for Programming and inputting manual tares.
MENU	Gains access to the sub-menus in the **Configuration Mode**.
ARROW KEYS	Used for scrolling through the menu selections.

Depending on programmed selection, **Tare Weight** *amount will do one of the following.*

- Be retained for reuse until changed, or if power is removed.

OR…

- Automatically clear when **Gross Weight** returns to **ZERO**.

4.2. OPERATING PROCEDURES

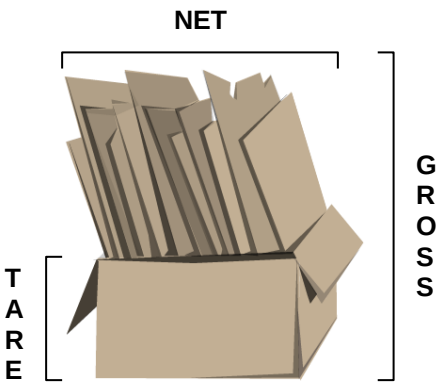
- The **Zero, Tare** and the **AZT** functions require the displayed weight to be stable before these functions will operate.
- The weight reading is stable if the variation in weight is less than the programmed **MOTION BAND**.

4.3. GROSS, TARE AND NET Weight

There are three terms used when weighing an object's or load's amount.

The **NET WEIGHT** (***product only***) is the **GROSS WEIGHT** (**total amount**) minus the **TARE WEIGHT** (***container only***)**.**

NET WEIGHT = Gross Weight – Tare Weight



WORKING EXAMPLE

A full can of house paint is an object to be weighed. The empty can is the **TARE** weight. The paint is the **NET** weight. Together they equal the **GROSS** weight.

4.4. BASIC WEIGHING

Follow these steps for **Basic Weighing***.*

1. Empty the platform.
2. Turn the scale **ON**.
3. Press **ZERO**.
   – When the display indicates **"0",** it is ready for use.

4.5. Gross Weighing

Follow these steps for **Gross Weighing***.*

1. Press the **GROSS/NET** key, if required, to set display to GR (gross).
2. Press the **ZERO** key, if required, to set scale to **"0".**
3. Place the container/object on the scale (Tare weight).
4. Read the **Gross Weight** on the display.

4.6. Net Weighing

Follow these steps for **Net Weighing***.*

1. Press the **GROSS/NET** key, if required, to set display to GR (gross).
2. Press the **ZERO** key, if required, to set scale to "0".
3. Place container/object on scale (Tare weight).
4. Press the **TARE** key.
5. Place material in container or add objects (Net weight).
6. Read the **Net Weight** on the display.

4.7. GROSS/TARE/NET WEIGHING

1. Press the **GROSS/NET** key to display **GR** (Gross).
2. Press the **ZERO** key, if required, to set scale to **"0".**
3. Place container/object on scale, noting the weight.
4. Press **TARE**.
5. Place material in container or add objects.
6. Note the **Net Weight** on the display.
7. Press the **GROSS/NET** key to switch to **Gross.**

Read the **Gross Weight** on the display.

Section 5: Parts

5.1. 1155 SERIES

5.1.1. PARTS LIST

Item(s)	Part NO.	Description
1	95850	PILLAR ROD, (SHORT)
2	58933	PILLAR
3	95847	PLATFORM COVER
4	95848	FRAME
5	95855	COTTER PIN
6	58937	BEARING, PLATFORM
7	95856	SCREW, PH HD
8	95857	SCREW, ALLEN
9	95858	LEVEL, BUBBLE
10	95859	PIN, CORNER LOP
11	71623	LOOP, CORNER
12	71624	BEARING, CORNER Loop
13	71625	COTTER PIN
10,11,12,13	58938	LOOP, CORNER ASSY
14	95867	HEX NUT
15	95868	HEX HEAD BOLT
16	95869	WHEEL, 5” DIAMETER
17	71627	COTTER PIN
18	71629	WASHER, FLAT
19	71630	AXLE
24	95861	PIVOT, LOAD & FOLCRUM
25	72948	SHORT LEVER ASSY
26	58939	CENTER CONNECTION ASSY
31	95863	CENTER PIVOT, LONG LEVER
33	72947	LONG LEVER ASSY
34	95864	LONG LEVER TIP PIVOT

35	168302	STEEL YARD ROD ASSY
44	71592	ACORN NUTS (2)
61	95865	PLATFORM LOCKING PIN
62	95866	COTTER PIN, PLATFORM LOCKING PIN
71	35341	Load cell assembly
72	14237	Plate, mounting
73	12643	“S” hook
75	17617	Mount, cable tie
76	17613	Tie, wire
77	20176	Bracket
78	26299	Handle assembly
79	11263	Clip, cable
80	13182	Screw, cap, socket head M4 x .25
81	11119	Washer, plain-flat #10
82	11189	Washer, lock extension tooth spring #10
83	11003	Nut-hex 10-32
84	11076	Screw, cap, hex head, 10-32 x .75
85	15716	Nut, threadlock acorn, 10-32
88	35145	Plate, Mount, universal instrument to line scale
99	30047	Instrument assembly with battery installed FB2255 ABS
90	34971	Manual card (26461)
91	13584	Shim
92	14342	Spacer, load cell
93	13099	Linkage, cable
94	17579	Spacer, 8-32 threads x .38 lg
95	22706	Cable assembly, W1
98	17626	Clip, plastic

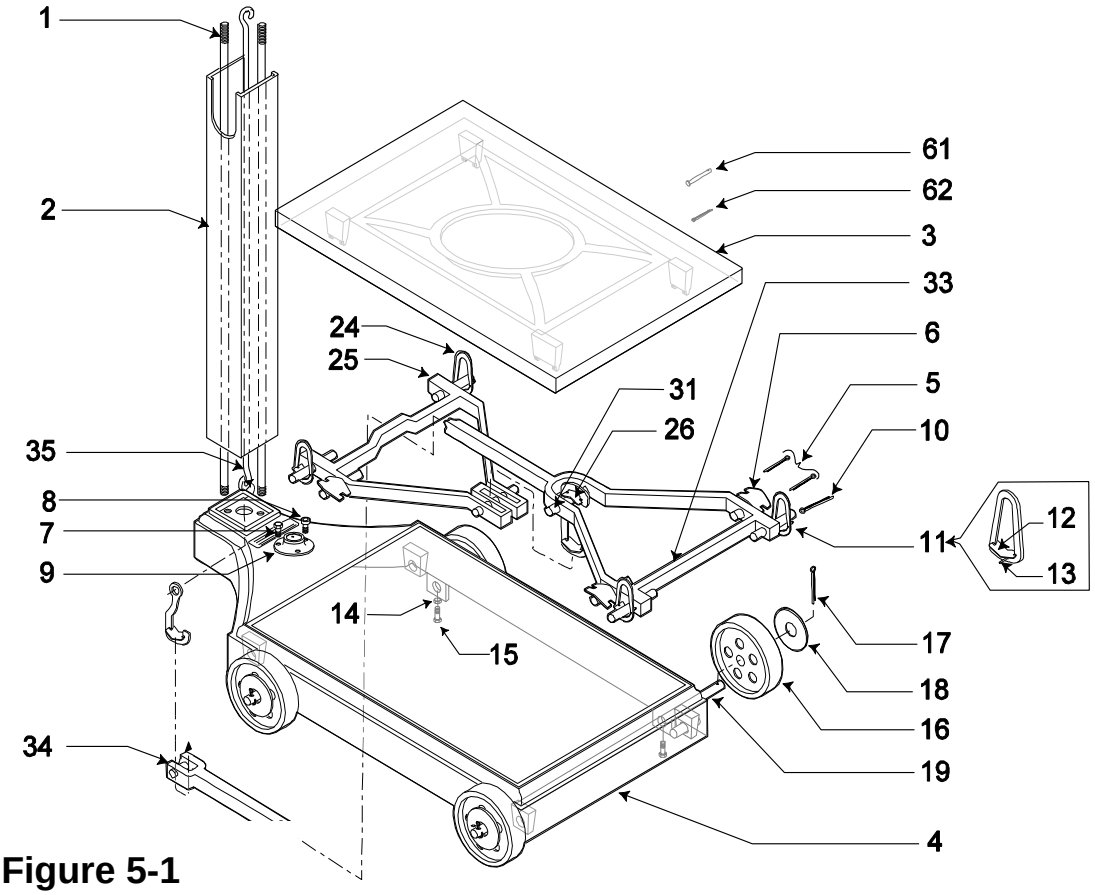


Figure 5-1

5.1.2. PARTS DIAGRAM

(Figures: 5-2, 5-3, 5-4, 5-5 and 5-6)

Figure 5-2

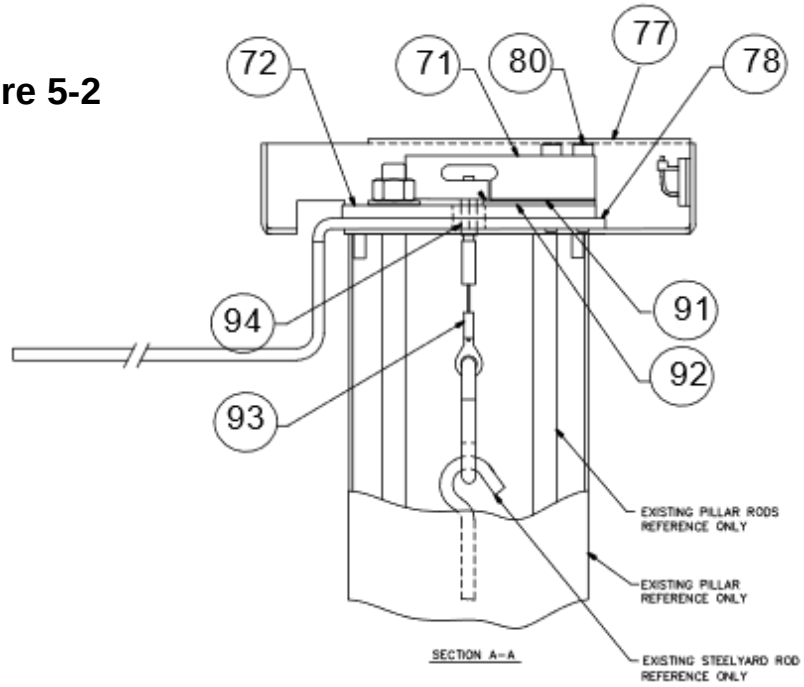


Figure 5-3

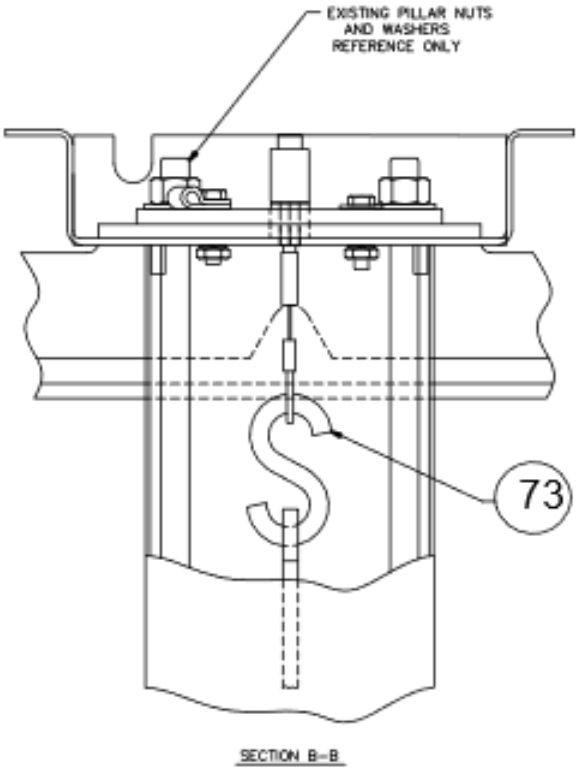
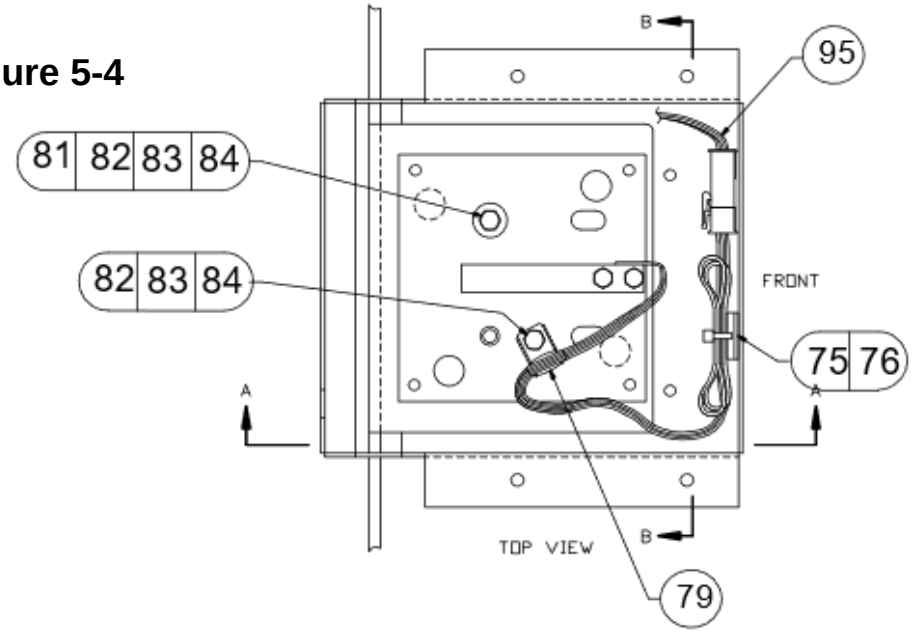


Figure 5-4



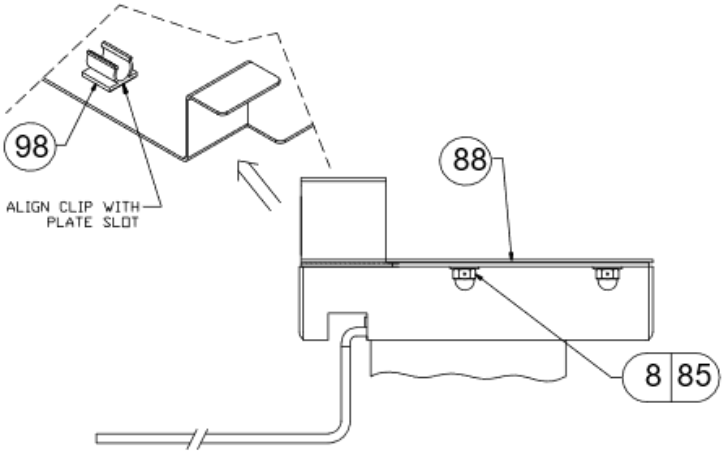


Figure 5-5

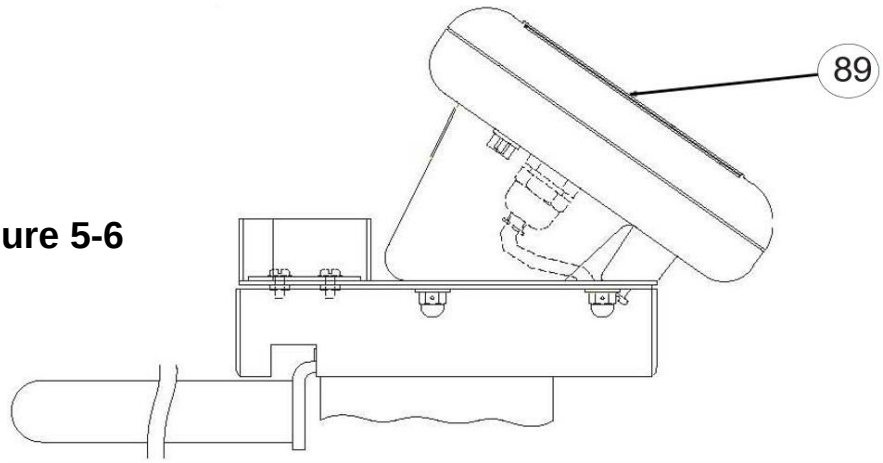


Figure 5-6

Portable Utility Scale

Model 1155 Series

FB2255 Instrument

Instructional Manual

Document 51315

Manufactured by Fairbanks Scales, Inc.
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Kansas City, MO 64106

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