Installation / Operator / Service Manual

Series III

Bench Scales

50778
Revision 8 09/16

Amendment Record

Series III

50778

Manufactured by Fairbanks Scales Inc.
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Issue 1	01/2005	New Product
Issue 2	06/2006	Add programmable division size
Revision 3	08/2007	Updated Parts List and model specifications
Revision 4	08/2009	Added Canadian approvals
Revision 5	04/2010	Added recharge information
Revision 6	07/2010	Added 150 lb exception from Measurement Canada
Revision 7	05/2014	Updated parts list and Error Code List.
Revision 8	09/2016	Updated parts list with Series III part numbers

Table of Contents

SECTION 1: GENERAL INFORMATION 4

A. INTRODUCTION 4
B. SPECIFICATIONS 4

SECTION 2: INSTALLATION 6

A. GENERAL SERVICE POLICY 6
B. OVERVIEW 6
C. UNPACKING 6
D. INSTRUMENT LOCATION 7
E. SAFETY 7
F. INSTALLATION 7

SECTION 3: PROGRAMMING 8

A. FUNCTION KEYS 8
B. PROGRAM 8

SECTION 4: CALIBRATION 9

A. FUNCTION KEYS 9
B. CALIBRATION PROCEDURE 9

SECTION 5: OPERATION 11

A. FUNCTION KEYS 11
B. OPERATION 12

SECTION 6: SERVICE AND MAINTENANCE 13

A. ERROR MESSAGE(S) 13

SECTION 7: PARTS 14

A. REPLACEMENT PARTS LIST 14

APPENDIX I: RS232 SPECIFICATIONS 15

A. SPECIFICATIONS 15
B. DATA FORMAT 15
C. CONNECTIONS 15

Section 1: General Information

A. *Introduction*

The Fairbanks Series III bench scale is a general purpose scale with a built-in rechargeable battery and integral pillar-style instrument. These scales are designed to be used in a variety of weighing applications including parts counting, inventory, material handling, and general manufacturing.

B. *Specifications*

1. Instrument Specifications

Model Series III

Product No.	*Capacities*	*Platform size*
25837	60 lb x .02	13.8” x 17.7” (350 x 450 mm)
25838	100 lb x .05	13.8” x 17.7” (350 x 450 mm)
25839	150 lb x .05	13.8” x 17.7” (350 x 450 mm)
25840	200 lb x .1	13.8” x 17.7” (350 x 450 mm)
25841	250 lb x .1	13.8” x 17.7” (350 x 450 mm)
25842	300 lb x .1	13.8” x 17.7” (350 x 450 mm)
25843	200 lb x .1	17.7” x 23.6” (450 x 600 mm)
25844	250 lb x .1	17.7” x 23.6” (450 x 600 mm)
25845	300 lb x .1	17.7” x 23.6” (450 x 600 mm)
25846	400 lb x .2	17.7” x 23.6” (450 x 600 mm)
25847	500 lb x .2	17.7” x 23.6” (450 x 600 mm)
25848	600 lb x .2	17.7” x 23.6” (450 x 600 mm)

Indicator Rating	IP 54
Display	LCD, height 1” (25 mm); 6 digit; backlit
Units	Lbs, Kgs
Zero Range	2 or 100%
Auto Zero Tracking	None, 0.6d, 1.0d, and 2.0d
Counting	Sample sizes of 10, 20, 50, 100, or 200
Cover / Platter	304 Stainless Steel Shroud
Base Construction	Welded tubular and cast aluminum design
Overload	Safe = 150% Maximum = 300%
Creep	0.02% (30min)
Bridge Resistance	350 ohms nominal

2. Environmental

Power Supply	AC/ DC adapter 110-120VAC - 9Vdc @ 500 mA Built-in 6Vdc rechargeable lead-acid battery Up to 20hrs continuous use. Recharge time - minimum of 12 hours for fully discharged battery
Operating Temperature	-14 to 104 F (-10 to 40 C) 85%RH

3. Approvals

NTEP	COC# **05-009**
MC	MC# **AM-5618**

***Note:** 150 lb capacity models are not Measurement Canada approved.

Section 2: Installation

A. General Service Policy

It is the customer/operator's responsibility to ensure the equipment provided by Fairbanks is operated within the parameters of the equipment's specifications and protected from accidental or malicious damage. Other than the procedures authorized in this manual, no service, repair, or adjustments may be performed by unauthorized/untrained service personnel. Any unauthorized repairs will void any verbal, implied, or written warranties.

B. Overview

1. These instructions apply to the instrument and its specific installation procedures.

2. All electronic and mechanical calibrations and or adjustments required to make this equipment perform to accuracy and operational specifications are considered to be part of the installation, and are included in the installation charge. Only those charges which are incurred as a result of the equipment's inability to be adjusted or calibrated to performance specifications may be considered warranty.

3. Absolutely no physical, electrical or program modifications are to be made to this equipment. Electrical connections other than those specified may not be performed, and physical alterations (holes, etc.) are not allowed.

4. Before the installation is considered complete, the equipment is to be programmed to meet or exceed any applicable weights and measures requirements, if applicable. The installing technician is responsible to make certain customer personnel are fully trained and familiar with the capabilities and limitations of the equipment. Be prepared to recommend the arrangement of components which will provide the most efficient layout, utilizing the equipment to the best possible advantage. The warranty policy must be explained and reviewed with the customer.

C. Unpacking

1. Check that all components are on hand, and agree with the equipment order.

2. Remove all components from their packing material, checking to make certain that all parts are accounted for and no parts are damaged. Advise the shipper immediately, if damage has occurred. Order any parts necessary to replace those which have been damaged. **Keep the shipping container and packing material for warranty returns, if necessary.** Check the packing list.

3. The shipping carton should contain the following: Manual, Instrument, Platform, Pillar, and AC Adapter.

D. Instrument Location

1. The Instrument should be positioned away from direct sunlight.

2. Avoid areas which have extreme variations in room temperatures. Temperatures outside the instrument's specifications will effect the weighing accuracy of this product.

3. Work areas should be relatively free from drafts and vibrations.

4. This product is intended for indoor use.

5. Do not locate near magnetic material or equipment/instruments which use magnets in their design.

6. Work surfaces should be level and rigid.

E. Safety

As is the case with any material handling equipment, certain safety precautions should be observed during operation:

1. Never load the platform beyond its rated capacity. Refer to the rating on the serial number plate of the platform.

2. Ensure that any structure which supports the platform is capable of withstanding the weight of the platform plus its rated capacity load.

3. Do not load the platform if there is any evidence of damage to the platform or supporting structure.

F. Installation

1. Using the AC adapter, insert the power cord into the receptacle located on the rear left side. Firmly push in the plug.

2. Allow the instrument to warm up for 30 minutes prior to use.

Section 3: Programming

A. Function Keys

UNITS = Select

 = [AutoTare] = Enter

B. Program

Press and hold any key while powering ON. The display will show `CAL.`
Press the [UNITS] key to access the program menu.
Press the [UNITS] key for to select the parameter value and
Press the [AutoTare] key to enter the choice and advance to the next step.
The program sequence is as follows:

	Displays:	Definition
1. **Zero Range**	`Or . 0`	100% of Capacity
	`Or . 1`	2% of Capacity
2. **Auto power off**	`AoFF 0`	None
	`AoFF 1`	5 minutes
	`AoFF 2`	10 minutes
	`AoFF 3`	20 minutes
	`AoFF 4`	30 minutes
3. **Backlit**	`bL 0`	None
	`bL 1`	Active
	`bL 2`	Auto lighting while loading
4. **Print Output**	`Pr 0`	None
	`Pr 1`	Manual Print
	`Pr 2`	Auto Print
	`Pr 3`	Continuous
	`Pr 4`	Parts Counting Mode
	`Pr 5`	Manual Print [1]
	`Pr 6`	Auto Print [1]
	`Pr 7`	Parts Counting Mode [1]

Note 1: Single print per weighment. Scale must return to zero (0) before the next print cycle will occur.

5. **Baud Rate**	`br 9600`	Baud Rate = 9600
	`br 2400`	Baud Rate = 2400
6. **Counting mode**	`SAMP 0`	Counting mode Disable
	`SAMP 1`	Counting mode Enable

Upon programming completion, the instrument will count down 9..8..7..6..5..4..3..2..1..0 and return to the weigh mode.

Section 4: Calibration

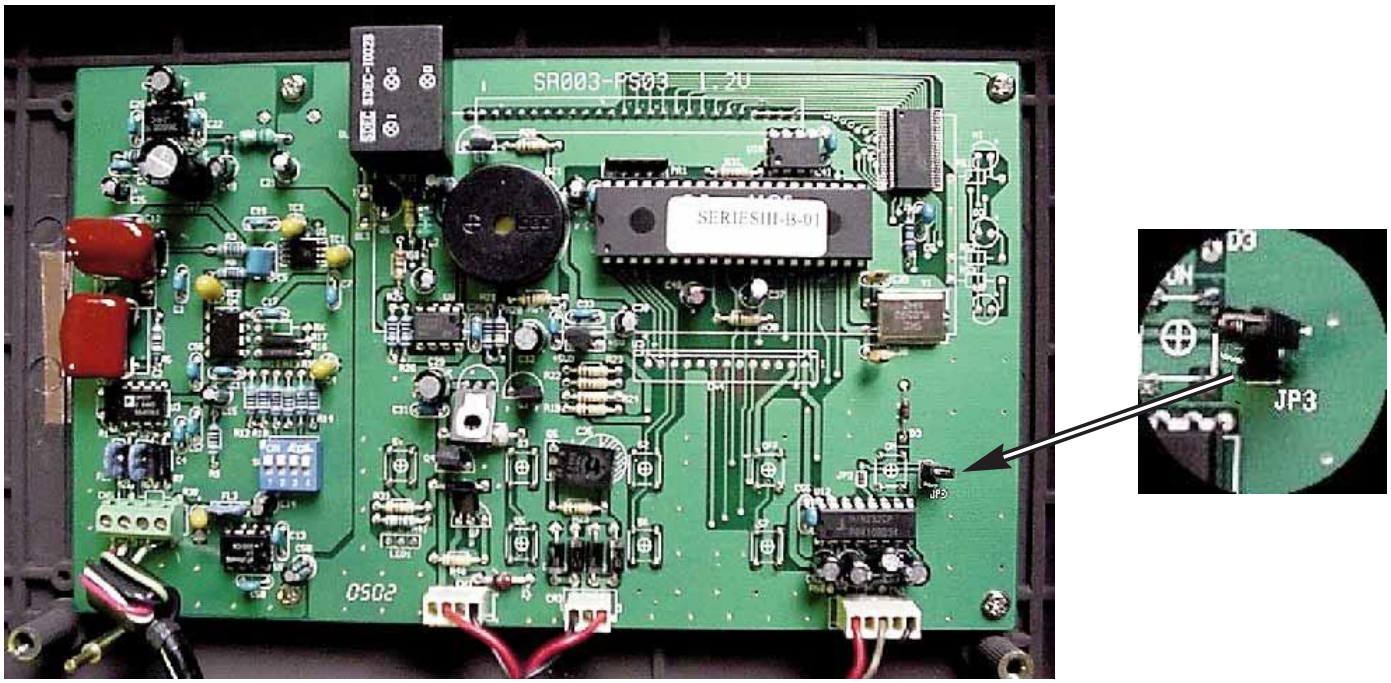
A. Function Keys

UNITS = Select

= [AutoTare] = Enter

B. Calibration Procedure

1. Remove jumper JP3 and place on only one pin to calibrate the scale.



	Displays:	Definition:
2. Press and hold [UNITS], [ZERO], or [AutoTare] while powering ON. The system goes to Calibration mode.	**CAL**	
3. Press the [AUTOTARE] key to select the AUTO ZERO mode Press the [UNITS] key to select the desired choice.	**AO 0** **AO 1 AZT** **AO 2 AZT** **AO 3 AZT**	None **0.6d** **1.0d** **2.0d**
4. Press the [AUTOTARE] key to step to the WEIGHING UNITS mode. Press the [UNITS] key to select weighing units in lb or kg mode.	**Unit.LB** **Unit.kG**	lbs kg
5. Press the [AUTOTARE] key to step to the CAPACITY mode. Press the [UNITS] key to select the appropriate Capacity.	**C XXXXX**	

6. Press the [AutoTare] key to go to the division size mode. Press the [UNITS] key to select the appropriate division size.

d=0.01
d=0.02
d=0.05
d=0.1
d=0.2
d=0.5

Note: Step 6 is available only in scales with serial number S05159000150 and above.

7. Press the [AUTOTARE] key to go to SPAN mode. (Offset value to be displayed around 5000 ~ 50000) **12222**

8. Press the [ZERO] key to set the display to zero. **0**

9. Put on the calibrating weight in lb or kg. (Span value to be 100000 ~ 250000 at full capacity) **122225**

10. Press the [AUTOTARE] key and the instrument will cycle through a list of permissible weights. When the weight on the scale is displayed, press the [AUTOTARE] key. **600**

11. The calibration is now complete, install the JP3 to secure the calibration.

Section 5: Operation

A. *Function keys*

ON	Turns instrument **On**.
OFF	Turns instrument **Off**
# of PARTS	Used to select parts sample sizes of 10, 20, 50, 100, and 200.
→0←	Captures a new zero reference for the scale.
→T←	Auto Tare. Captures the weight on scale as a tare weight. It will also switch the scale from the Net mode to the Gross mode if the platform is unloaded.
F	Function key. Used for toggle switch between displayed Net weight or total number of pieces counted based on the sample stored
PRINT	Pressing this key will transmit data to a connected peripheral device.
UNITS	Pressing this key will toggle between pounds and kilograms.
CHARGE	An LED on the front of the keypad illuminates when connected to ac power and also indicates the battery is being recharged.

B. Operation

1. Taring

All models have taring capabilities up to their total weight capacity. To weigh a sample in its container with the display showing the weight of the sample, use the following tare procedure.

a. Place sample container on pan and then press the  key.

b. Now place sample in its container.

c. When the balance is stable, the display shows the weight of the sample.

2. Counting Function

a. Counting feature must be enabled. It comes disabled from the factory.

b. Count the desired number of sample pieces (10, 20, 50, 100 or 200 total pieces)

c. Press  key to display total count numbers of 10, 20, 50 or 100.

This number will cycle; press # **of parts** key again to select sample size once it is displayed. The arrow at the bottom of the display will point to **PCS**.

d. You are now ready to perform parts counting of those specific pieces.

Press the  key for the total weight.

Repeat steps **b** through **d** for each type of piece to be counted.

Section 6: Service and Maintenance

A. Error message(s)

Symptom	*Cause*	*Solution*
	Over load : * Weighing range exceed	Unload scale or reduce load on scale.
	Under load : * Weighing pan not in place * Weighing range below zero	Ensure the weighing pan is correctly installed and surrounding parts are not touching weighing pan. Set scale to zero
	The instrument cannot read the A/D signal. The load cell cable is not connected properly or the load cell is damaged.:	Check the load cell cable connection or replace the load cell.
	Low Battery Condition * Below 5.5Vdc	Plug AC/DC adapter to scale to allow the battery to recharge.

Section 7: Parts

A. Replacement Parts List

Item	P/N	Description
1	24157	AC/DC Adapter 120VAC - 9Vdc @ 500 mA
2	24921	Battery
3	26205	Aluminum Load Cell, 50kg Cap., 2mV/V (**Series III P/N 25837**)
4	26206	Aluminum Load Cell, 75kg Cap., 2mV/V (**Series III P/N 25838**)
5	26207	Aluminum Load Cell, 100kg Cap., 2mV/V (**Series III P/N 25839 & 25840**)
6	26208	Aluminum Load Cell, 200kg Cap., 2mV/V (**Series III P/N 25841 & 25842**)
7	26209	Aluminum Load Cell, 150kg Cap., 2mV/V (**Series III P/N 25843 & 25844**)
8	26210	Aluminum Load Cell, 200kg Cap., 2mV/V (**Series III P/N 25845**)
9	26211	Aluminum Load Cell, 250kg Cap., 2mV/V (**Series III P/N 25846**)
10	26212	Aluminum Load Cell, 300kg Cap., 2mV/V (**Series III P/N 25847 & 25848**)
11	26213	Rubber Foot for Series II/III, 3/8” x 1-1/2” Threaded Stem (Sm. Plat Size)
12	26214	Plastic foot for Series II/III, 1/2” x 2-1/2” Threaded Stem (Lg. Plat Size)
13	28200	Series III PCB
14	28202	Series III Overlay
15	32480	Instrument Tilt Assembly

***Note**: There are no other serviceable parts available other than the item(s) listed above.*

Appendix I: RS232 Specifications

A. Specifications

Baud rate:	2400 / 9600
Parity:	None
Data Bits:	8
Stop Bits:	1

B. Data Format

NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	G	R	SP	x	x	x	x	x	x	x	SP	l/k	b/g	CR	LF					
	N	T	SP	x	x	x	x	x	x	x	SP	l/k	b/g	CR	LF					
	T	A	SP	x	x	x	x	x	x	x	SP	l/k	b/g	CR	LF					
	Q	T	Y	SP	x	x	x	x	x	x	SP	P	C	S	CR	LF				
	A	P	W	1	0	0	0	SP	x	x	x	x	x	x	SP	l/k	b/g	CR	LF	x
	CR	LF																		
	CR	LF																		
	CR	LF																		
	CR	LF																		
	CR	LF																		

Footnote(s): Characters designated by an “X” are characters 0~9

Leading Zeros are replaced with spaces “SP”.

C. Connections

DB-9 Male

Pin	**Description**
2	TX
5	GND