



# QuickSilver IS

5001 Series







# Amendment Record

QuickSilver IS  
5001 Series  
50770

Manufactured by Fairbanks Scales Inc.  
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Kansas City, Missouri 64106

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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.

# Section 1: Introduction

## A. Introduction

The 5001 Series of bench scales and indicators are battery powered and of stainless steel construction. They are designed for use in a wash-down environment. The scales feature the capacity to store up to four (4) Over/Under checkweighing sequences in memory, each of which can be recalled at the push of a button. Programming of the Over/Under Checkweighing can be made through the front panel. The battery pack, stored in the pillar, can be easily removed for re-charging.

## Section 2: Description

### A. Serial Tag Model Legends:

P=Platform

P=Pillar (2nd "P")

I=Indicator or IND = Indicator Only

W=Wall Bracket

H =Hazardous Environment

Example: PWI = Platform + Wall bracket + Indicator

Example: PPI = Platform + Pillar + Indicator

### Note:

C = Canadian model

### B. Specifications

1. Minimum Grad Size for Commercial Applications: NTEP Approval = 5000 Divisions

NTEP Appv'd	LB	KG	OZ	G
	2.0000 X .0001	0.90715 X .00005	32.000 X .002	907.15 X .05
	2.0000 X .0002	0.9072 X .0001	32.000 X .005	907.2 X .1
YES	2.0000 X .0005	0.9072 X .0002	32.00 X .01	907.2 X .2
	6.0000 X .0001	2.72155 X .00005	96.000 X .005	2721.55 X .05
	6.0000 X .0002	2.7215 X .0001	96.000 X .005	2721.5 X .1
	6.0000 X .05	2.7216 X .0002	96.00 X .01	2721.6 X .2
	6.000 X .001	2.7215 X .0005	96.00 X .02	2721.5 X .5
YES	6.000 X .002	2.722 X .001	96.00 X .05	2722 X 1
YES	6.000 X .005	2.722 X .002	96.0 X .1	2722 X 2
	10.000 X .001	4.5360 X .0005	160.00 X .01	4536.0 X .5
YES	10.000 X .002	4.536 X .001	160.00 X .05	4536 X 1
YES	10.000 X .005	4.536 X .002	X .1	4536 X 2
	12.000 X .001	5.4430 X .0005	192.00 X .02	5443.0 X .5
	12.000 X .002	5.443 X .001	192.00 X .05	5443 X 1
YES	12.000 X .005	5.444 X .002	192.0 X .1	5444 X 2
	24.000 X .001	10.8865 X .0005	384.00 X .02	10886.0 X .5
	24.000 X .002	10.886 X .001	384.00 X .05	10886 X 1
YES	24.000 X .005	10.886 X .002	384.0 X .1	10886 X 2
YES	24.00 X .01	10.885 X .005	384.0 X .2	10885 X 5
YES	24.00 X .02	10.89 X .01	384.0 X .5	10890 X 10
YES	24.00 X .05	10.88 X .02	384 X 1	10880 X 10
	25.000 X .001	11.3400 X .0005	400.00 X .02	113400 X 5
	25.000 X .002	11.340 X .001	400.00 X .05	11340 X 1
YES	25.000 X .005	11.340 X .002	400.0 X .1	11340 X 2
	30.000 X .001	13.6070 X .0005	480.00 X .02	136075 X 5
	30.000 X .002	13.608 X .001	480.00 X .05	13608 X 1
	30.000 X .005	13.608 X .002	480.0 X .1	13608 X 2

<b>NTEP Appv'd</b>	<b>LB</b>	<b>KG</b>	<b>OZ</b>	<b>G</b>
YES	30.00 X .01	13.610 X .005	480.0 X .2	13610 X 5
YES	30.00 X .02	13.61 X .01	480.0 X .5	13610 X 10
YES	30.00 X .05	13.60 X .02	480 X 1	13600 X 10
	40.000 X .001	18.1440 X .0005	640.00 X .02	181440 X 5
	40.000 X .002	18.144 X .001	640.00 X .05	18144 X 1
	40.000 X .005	18.144 X .002	640.0 X .1	18144 X 2
YES	40.00 X .01	18.145 X .005	640.0 X .2	18145 X 5
YES	40.00 X .02	18.14 X .01	640.0 X .5	18140 X 10
YES	40.00 X .05	18.14 X .02	640 X 1	18140 X 20
	50.000 X .001	22.6785 X .0005	800.00 X .02	226800 X 5
	50.000 X .002	22.680 X .001	800.00 X .05	Not Available
	50.000 X .005	22.680 X .002	800.0 X .1	Not Available
YES	50.00 X .01	22.680 X .005	800.0 X .2	22680 X 5
YES	50.00 X .02	22.68 X .01	800.0 X .5	Not Available
YES	50.00 X .05	22.68 X .02	800 X 1	Not Available
	60.000 X .001	27.2155 X .0005	960.00 X .02	272160 X 5
	60.000 X .002	27.215 X .001	960.00 X .05	Not Available
	60.000 X .005	27.214 X .002	960.0 X .1	Not Available
	60.00 X .01	27.215 X .005	960.0 X .2	27215 X 5

2. Rounding: Nearest division (0.5 division rounded upwards)
3. Overload Protection: 500% of scale capacity. On 18" x 24" and 24" x 24" models - 300%.
4. Construction: All stainless steel
5. Humidity: 0-100%, suitable for water washdown; NEMA 4X rated enclosure
6. Operating Temperature: 14F to 104F (-10C to 40C)
7. Power: 7 volt rechargeable Nicad battery pack, removable or direct power supply
8. Battery Life: 65 hours continuous operation, 250 hours in battery saver mode
9. Display: 0.75" 6-digit, liquid crystal
10. Units: Front panel selectable
11. Zero: Programmable 2% or 100% of capacity
12. Center-of-Zero: Active when scale is within 0.25 divisions of zero
13. Checkweighing: 4 programmable target and limit weights
14. Front Panel Programming: 3 levels of security
15. Power Failure Protection: Calibration data, checkweighing target weights and limit weights protected



## QuickSilver IS Accessories :

<u>Model</u>	<u>Description</u>
14618	Intrinsically safe 65 - 250 hr battery pack, purchased WITH instrument
14692	Safe area recharger, used with 14618.
14177	Power supply (NOT for groups A & B)
14178	Power supply, Canadian Version (NOT for groups A & B)
14434	10' cable for 14177 & 14178
14432	25' cable for 14177 & 14178
14433	50' cable for 14177 & 14178

## Section 3: Unpacking & Assembly

### A. Mounting:

Mounting the QuickSilver IS Instrument with wall mounting bracket :

1. Choose a location within the length of the cable between the indicator and the platform.
2. Mount the bracket at eye level of the operator, using SS screws.
3. Attach the indicator to the wall bracket using hardware provided.
4. Route the cable where it is protected.
5. Set platform on a solid, level surface for operation.

### B. Assembly:

The QuickSilver IS bench scale is shipped partly disassembled.

To assemble the scale :

1. Carefully remove the packing materials from the box.
2. The scale is shipped in three parts, the platform, the indicator and the pillar. The platform and indicator are connected with the load cell cable. The battery pack is installed in the pillar. Remove the three components and place them on a work surface.
3. The top of the pillar is sloped, and the bottom is square. Be sure the pillar is in the correct orientation before proceeding.
4. Remove the nuts and lock washers from the weld studs on the bottom of the indicator. Place the indicator on top of the pillar with the two weld studs through the holes in the top of the pillar. Reinstall the nuts and washers on the weld studs and tighten using a 3/8" open-end wrench.
5. Remove the two bolts from the shelf on the back of the platform.
6. Place the pillar upright on the shelf and install the two bolts through the shelf and the pillar. Tighten the nuts using a 7/16" wrench.
7. Push the excess load cell cable into the QSIS instrument. Tighten the gland nut.
8. Connect the battery cable to the port in the bottom of the indicator.
9. Assembly is now complete and the scale is ready to operate.

## Section 4: Calibration & Programming

### A. Security Levels

The QuickSilver IS is shipped with the least protected security level, 00, programmed into the indicator. This level allows all parameters to be programmed from the front panel. To change the security level to a more restricted condition, change program step "SL" (security level) "10 00" to "10 01" or "10 02". Once a higher level is programmed, it CANNOT be reduced to a lower level from the front panel. To reduce the security level, call a qualified service representative.

The security levels are:

**00** - No programmable parameters are protected and all of them can be changed from the front panel. This security level can only be used in NON-COMMERCIAL applications.

**01** - Limited parameters are protected and P3 through P9 can be changed from the front panel. This security level can be used in commercial applications.

**02** - All programmable parameters are protected and NO changes can be made from the front panel. This security level may be used in commercial applications.

**03** - Same as 00.

If the scale is to be used in a commercial application, it must be placed-in-service by a certified technician or an official from the weights and measures department. To be used as a commercial scale, the security level must be set to 01 or 02.

## Section 5: Operation



**ON** - When pressed, turns the indicator ON. The display will go through a warm-up sequence and then go into the weigh mode.



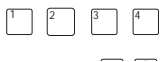
**OFF** - When pressed, turns the indicator OFF.



**UNITS** - Switches the scale between the available units, pounds, kilograms, ounces, and grams.



**UP - DOWN** - These are used to scroll through the various values in each of the program options and are used to change the over/under values in the checkweigh mode.



**1, 2, 3, 4** - These are used to program and select the stored checkweigh values.



**AUTO** - Enters the value of the weight on the platform into memory as a tare weight.



**GROSS** - Toggles the display between GROSS weight and NET weight.



**ZERO** - When pressed, sets the indicator to zero.

## B. Indicators:

**NET** When ON, indicates the scale is in the NET mode. When OFF, indicates the scale is in the GROSS mode.

**lb** Indicates the scale is using pounds as the unit of weight.

**kg** Indicates the scale is using kilograms as the unit of weight.

**oz** Indicates the scale is using ounces as the unit of weight.

**g** Indicates the scale is using grams as the unit of weight.

**Center-of-Zero** Indicates the scale is at the zero point and is ready to weigh.

## C. Weighing

Remove any weight from the platform. If the instrument is OFF, press and hold the ON key until the display comes on (not blank) and the indicator begins its initiation sequence (the PROM # and Revision will be displayed briefly i.e., 11754.3). The scale will begin operations in the Gross Weighing Mode.

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 programmed motion range. If the rate of change in weight is less than 2.5 times the motion range every second, then the weight is stable.

### 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.

**Example:** 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 in terms as follows:

$$\text{GROSS} = \text{NET} + \text{TARE}$$

$$\text{TARE} = \text{GROSS} - \text{NET}$$

$$\text{NET} = \text{GROSS} - \text{TARE}$$

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.

#### **a. Basic Weighing**

- 1). Turn ON the indicator and the display will go through the warm-up sequence.
- 2). When the warm-up sequence is complete, the display should show zero and the Center-of-Zero indicator should be ON. If it is not, press the ZERO key.
- 3). For GROSS weighing, the NET indicator should be OFF. If it is not, press the GROSS/NET key until the NET indicator is OFF.
- 4). Place the object to be weighed on the platform. As soon as the system is stable, the weight value will appear in the display.

#### **b. Tare Weighing**

- 1). Turn ON the indicator and the display will go through the warm-up sequence.
- 2). When the warm-up sequence is complete, the display should show zero and the Center-of-Zero indicator should be ON. If it is not, press the ZERO key. Any tare weight in memory when the scale was turned off will be lost. A new tare weight must be entered into tare memory.
- 3). Place the empty container that is going to be used on the platform and press the AUTO/TARE key. The weight of the empty container will be entered into memory as a tare weight.
- 4). Remove the container from the platform. The display will show a NEGATIVE tare weight value.
- 5). Place the same or similar container filled with product on the platform. The display will show the weight of the material in the container.

#### **c. To change the TARE weight value:**

- 1). With no weight on the platform, press the ZERO key. The display will show zeros and the Center-of-Zero indicator will be ON.
- 2). Place the new container on the platform and press the AUTO/TARE key. The old tare weight will be deleted from memory and the new tare weight entered.

#### d. Weighing Units

To select the desired weighing units, press the UNITS key. The Units indicator will move in response to the key.

The selected weighing units will be saved in memory each time the OFF key is pressed. This feature allows the instrument to return to the weighing units in use when power is restored.

The selected weighing units will not change unless:

1. The UNITS key is pressed.
2. Power to the instrument is lost prior to pressing the OFF key.
3. The Programming mode of the instrument is accessed.

#### e. Checkweighing

CHECKWEIGHING is a process in which a TARGET weight is entered into the scales memory. The display shows the operator where the weight on the platform is, over or under, relative to the target weight.

The **TARGET VALUE** is the weight that has been selected as the weight to be achieved in the checkweighing process. The target value refers to the absolute value of the Gross weight only. This is a programmable feature.

The **LIMIT WEIGHT** value is the amount over or under the target weight that is to be shown in the display. This is a programmable feature.

Three different ranges can be shown in the display; the accept range, the over range and the under range. The size of the ranges is set by the **LIMIT WEIGHT** value.

When the weight on the platform is within the **ACCEPT** range, the display will show a series of "- - -". A pointer will show the operator where the weight value is, within the ACCEPT range.

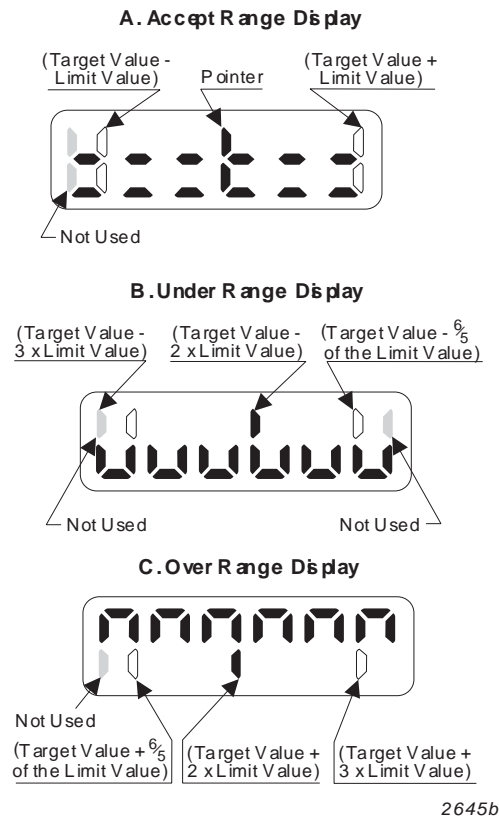
If the weight on the platform is over or under the values set by the limits, the display will show a series of "u"s for under, or up-side-down "u"s for over. A pointer will tell the operator where in the over or under range the weight value is

**Note:** *In the Checkweighing Mode the ZERO, AUTO/TARE, and UNITS keys are disabled.*

located.

To exit the Checkweighing Mode, press the GROSS/NET key.

**Note:** *Target and Limit Weight Values of 0, 1, 2, 3, or 4 divisions may be entered during the programming but the system program will ALWAYS default to 5 divisions.*



## f. Over/Under Setup

1. Press the ZERO key and the display will show "0" with the center-of-zero indicator ON.
2. Press the appropriate OVER/UNDER key, 1, 2, 3, or 4. The display will flash the last target value entered into memory and then display the OVER/UNDER graphic.
3. To change the TARGET WEIGHT, press the UP key. The display will show the current target weight in memory as a four digit number.
4. Press the UP key to increase the target weight or the DOWN key to decrease the target weight. In some cases, it will be faster to enter a new target weight or limit weight by starting from 0. Press the ZERO key. The display will be reset to all zeros. Use the arrow keys and

**Note:** *When the arrow keys are pressed, Fine adjustment changes the last two digits, Coarse adjustment changes the first two digits. The operator can toggle between fine and coarse adjustments by pressing the [UNITS] key.*



- the UNITS key to enter a new target weight or limit weight.
5. With the appropriate TARGET weight displayed, press the same OVER/UNDER key, 1, 2, 3, or 4 as was pressed in Step 2.
  6. To change the LIMIT WEIGHT, press the DOWN key. The display will show the current limit weight in memory as a four digit number.
  7. Press the UP key to increase the limit weight or the DOWN key to decrease the limit weight.
  8. With the appropriate LIMIT weight displayed, press the same

**Note:** *When the arrow keys are pressed, Fine adjustment changes the last two digits, Coarse adjustment changes the first two digits. The operator can toggle between fine and coarse adjustments by pressing the [UNITS] key.*

OVER/UNDER key, 1, 2, 3, or 4 as was pressed in Step 2.

9. Repeat this process for each of the four OVER/UNDER programs.

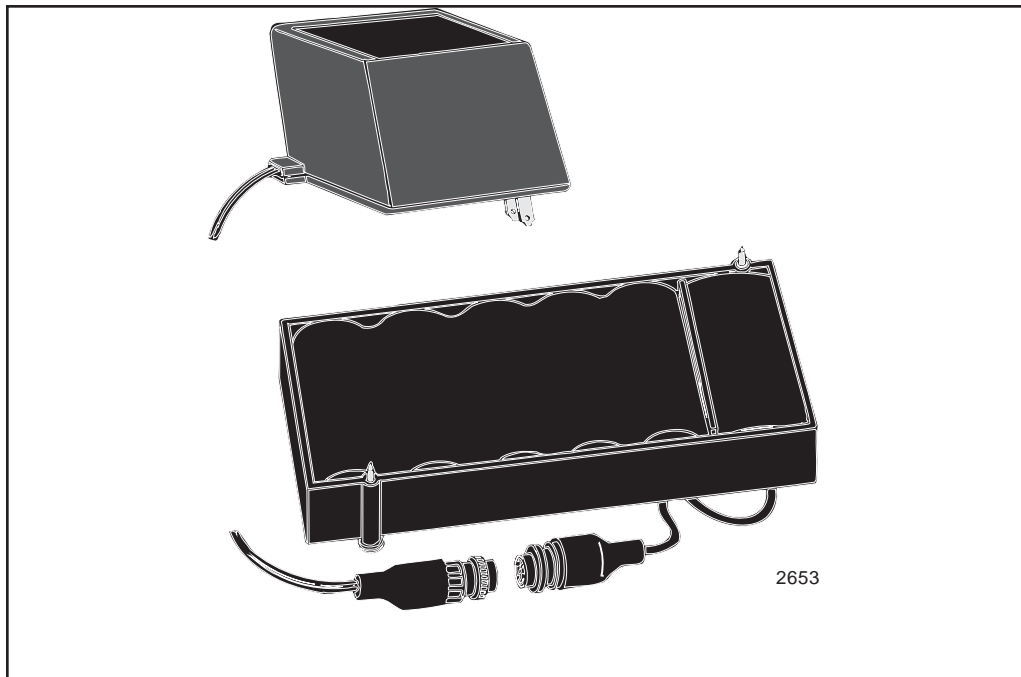
#### **g. Over/Under Weighing**

1. Press the OVER/UNDER key, 1, 2, 3, or 4, that is to be used in the weighing operation. The display will show the appropriate OVER/UNDER graphic.
2. Place the item to be weighed on the platform. The indicator in the display will move to show the weight as being UNDER, OVER, or on TARGET.
3. Add or remove material from the platform until the indicator shows on target.
4. Remove the material from the platform and repeat the process.

#### **h. Exit Over/Under Weighing**

To exit the Over/Under Weighing Mode, press the GROSS/NET key. The indicator will return to the Weigh Mode.

## Section 6: Battery Pack



### A. Battery Pack Replacement

1. Turn the indicator OFF.
2. 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.
3. Replace with a freshly charged battery pack.
4. Remove any weights from the platform.
5. Press the ON key to restore the instrument to operation.

### B. Battery Pack Recharging

The Battery Pack Recharger is to be used to recharge the Battery Pack. **DO NOT USE THE CHARGER 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.
2. Insert the recharger connector into the connector on the battery pack.
3. Plug the recharger into a standard 110 VAC/60 Hz outlet.

### C. Conditions

1. 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.
2. At temperatures above 84F, battery packs cannot be recharged to 100% of their nominal capacity.
3. 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.

### D. Specifications:

A disconnected, fully charged battery pack should read approximately 6.7vdc. Readings will vary somewhat depending on battery condition.

**\* \* WARNING! \* \***

***Battery packs are to be charged in non-hazardous areas only!***