

Introduction

Thank you for purchasing a Setra Super Count scale. Its ease of operation and durable construction should provide years of reliable service. While your scale is easy to operate, it is advisable to read this guide carefully before use. It is designed to help you perform weighing, counting, and related operations quickly and accurately.

This manual is divided into six sections. Section One, "Installing Your Scale," explains the proper installation of your scale. Section Two, "Understanding Your Scale," explains the various keys, displays, and messages you will encounter while using your scale. Section Three, "Using Your Scale," provides the detailed instructions necessary to perform your scale's various operations. Section Four, "Advanced Functions" describes the use of the scale's databases and using APWs in exponential notation. Section Five "ScriptCoder" describes the scale's programmable RS-232 output. The appendices include setup information, calibration procedures, examples, a description of RS-232 communications, options and specifications.

Typographical Conventions used in this manual include the following:

1. **bold lower case characters** indicate specific keys on the scale keyboard.
(e.g. Press **— tare**. Asks you to press the **—** key first and then the **tare** key on the scale keyboard.)
2. "Quotation marks" enclose messages you receive from the scale display.
3. nnn indicates that a number will appear in the display message.

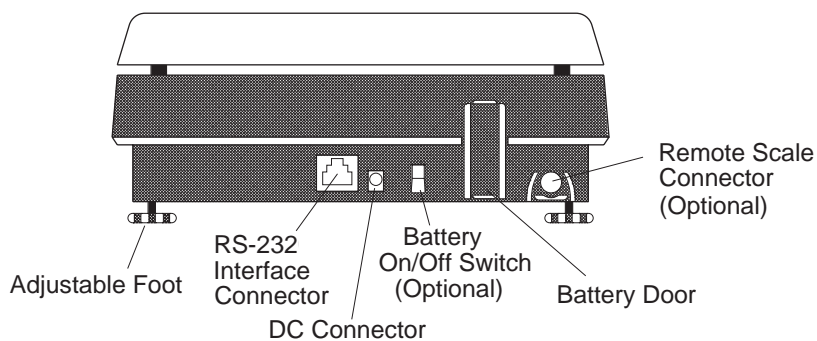
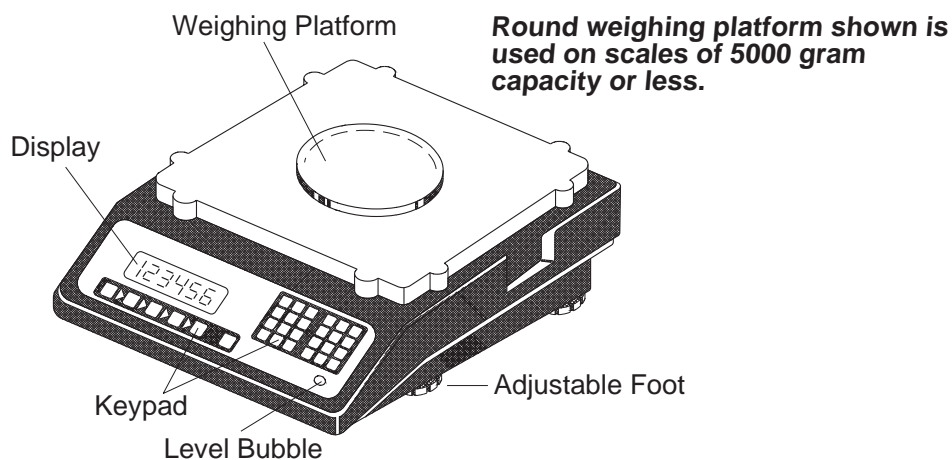
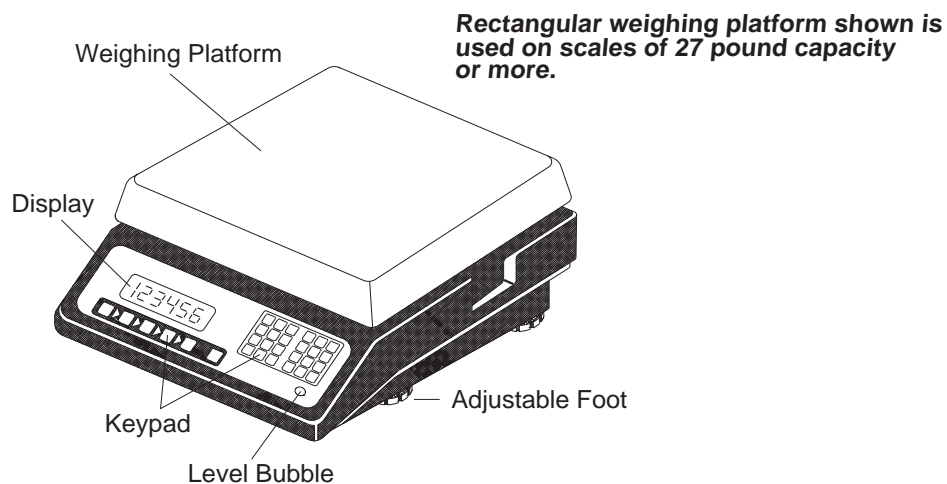


FIGURE 1. Components and features of the Setra Super Count.

Section One

Installing Your Scale

SETUP

1. Locating your scale...

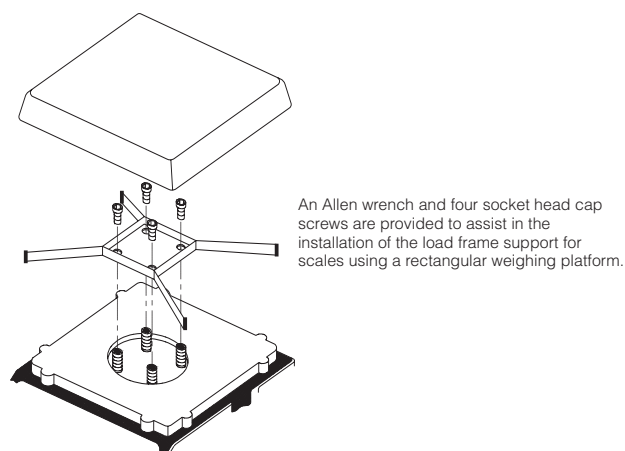
The rugged design of your Setra Super Count scale ensures that it will operate well in typical factory or office environments. Nonetheless, you should treat your scale as you would any piece of precision equipment, locating it on a clean, dry surface; protected, where possible, from extremes of draft and vibration.

2. Leveling your scale...

- a. Retract the right rear foot completely into the scale.
- b. Adjust the two front feet until the leveling bubble is centered in the circle.
- c. Extend the right rear foot until it contacts the mounting surface. Make certain that all four feet are contacting the mounting surface.
- d. Make certain the scale is stable by placing both hands on the scale platform and attempt to rock the scale. If it moves, adjust the leveling feet until the scale stands firmly on the mounting surface.

3. Installing the weighing pan...

Using the Allen wrench provided, secure the pan support to the four posts over the sensor. Next, place the weighing pan over the pan support.



4. Connecting your scale to an AC outlet...

To connect your scale to an AC outlet, insert the appropriate end of the AC adaptor into an electrical outlet. Now connect the other end into the back of the scale (see FIGURE 1). Once you have plugged your scale into a live outlet, it is automatically on, unless the scale is equipped with a battery, in which case the on-off switch on the rear panel should be in the 'on' position to power-up the scale. The scale draws very little current from an outlet, and may be left connected. This keeps your scale ready to use with no "warm-up" time.

EXPERIMENTATION

1. Display test...

When your scale is first powered on, it automatically runs through a display test lasting about six seconds, showing all possible segments which might be displayed. The scale next displays "C nnn g" (where nnn equals the full scale capacity in grams), performs self-diagnostics to ensure proper operation and then sets itself to zero. A wake up message is always transmitted upon power up. (If a tape printer is connected to the scale, the scale model, capacity and software version will be printed. If the scale is connected to a computer the wake up message will be displayed if in the terminal mode. The scale is then ready for use. For best accuracy, allow the scale to warm up for 5 minutes.

2. Using your scale for the first time...

It is important that you read this Operator's Manual thoroughly to ensure proper use of your scale. Nonetheless, experimenting with your scale and its keyboard prior to reading this manual in its entirety will not harm your scale (provided it is not overloaded) and may actually give you a better understanding of the instructions in this manual. If you instruct the scale to do something it is not capable of doing, the scale will respond by displaying the message "UnAbLE". To continue experimenting, simply press the **clear** key.

Section Two

Understanding Your Scale

KEYBOARD FUNCTIONS

- zero** Assigns the pan and whatever is currently being weighed a value of zero. While the scale is determining a stable weight reading, the display will indicate "bUSY".
- NOTE: If a tare value is stored in memory it will be cleared.
- sample size** Displays preprogrammed sample sizes (10, 25, 50, or 100 pieces).
- count** Instructs the scale to begin or resume counting. This key may also be used to "update" the average piece weight for increased counting accuracy.
- setup/cal** Instructs the scale to enter a setup or perform a calibration.
- apw** Instructs the scale to accept an average piece weight entry.
- clear** Clears the last number entered or operation requested, and displays weight.
- tare** Instructs the scale to accept a numerical tare weight entry. If a container is placed on the pan, pressing tare assigns its weight as the "tare" (i.e. container weight) and saves it in memory. The display will read net weight (i.e. contents weight).
- gross** Toggles between the gross weight and the net weight.
(gross weight - tare weight = net weight)
- print** Scale sends displayed and stored or programmed information to a printer, computer (or other RS-232 peripheral device).
- units** Converts the weighing units of measure (e.g. changes from grams to ounces).
- accum** Sums and stores the results of multiple weighing or counting operations.
- id** Instructs the scale to store an identification number of up to 25 digits (e.g. a part number or account number) to be printed or transmitted to a peripheral device.
- display** Instructs the scale to recall the value stored in any of the various registers (e.g. tare, accumulate, etc.).
- reset** Sets all counting and weighing registers to zero. Clears all volatile ID registers. Assigns the pan and whatever is currently being weighed a value of zero. Displays full scale capacity.
- Instructs scale to enter a decimal point during numeric entry.

- Instructs scale to change the sign of a number. Interpreted as a hyphen when entered as part of an ID number.

When preceding any register that stores a value, instructs the scale to clear the stored value from that specific register. (e.g. Pressing the — **tare** keys will clear the tare value in memory.)

When preceding the **units** key, instructs the scale to convert the weighing units to the factory default (grams).

- 0-9 Instructs the scale to enter numerical values given for registers such as ID number, count, tare or average piece weight.

LED

| | |
|--------------|---|
| low bat | If lit, battery needs to be charged. (Battery option only) |
| bat charge | If lit, battery is installed and is being trickle charged.* (Battery option only) |
| remote/local | If lit, the remote scale base is active. (Remote Scale Option only) |

* Depending on the condition of the battery and the line voltage this LED may turn off when the battery is completely charged.

DISPLAY SYMBOLS

| | |
|-------|---|
| OK | Reading shown is stable. Further operations may be performed. |
| gross | Reading shown is gross weight. |
| apw | Reading shown is average piece weight. |
| accum | Reading shown is the amount stored in the accumulator register. |
| tare | Reading shown is the weight stored in the tare register. |
| PC | Reading shown is given in number of pieces. |
| g | Reading shown is given in grams. |
| oz | Reading shown is given in ounces. |
| lb | Reading shown is given in pounds. |
| t oz | Reading shown is given in troy ounces. |
| dwt | Reading shown is given in pennyweights. |
| c | Reading shown is given in carats. |
| "x" | Reading shown is given in user-definable units. NOTE: "x" units are preset in kilograms. |
| INT | Scale is operating in either a fast or slow fixed integration mode (update rate). |

DISPLAY MESSAGES

| | |
|---------------------|---|
| C nnn g | Displayed when the scale is powered on and when the reset key is pressed, this message identifies the scales rated capacity. |
| bUSY | The scale is waiting for a stable reading. |
| UnAbLE | The scale is unable to complete your requested operation. Press the clear key and select another operation. |
| FLASHING DISPLAY | The weight on the pan exceeds the capacity of the scale or the scale is under loaded (the pan or pan support is missing). |
| OFLO | The displayed count or weight exceeds six digits (999,999). |
| UPdAtE | The scale is recalculating the average piece weight to enhance counting accuracy. |
| TARE CLEAR | If a value is stored in the tare register when the zero key is pressed, this message will appear warning that the tare value has been cleared. |
| Add nnn PC | The scale is requesting an additional number of pieces (nnn) to satisfy minimum accuracy and/or minimum sample size setup requirements. |
| Sub nnn PC | When kitting, the scale is requesting that an additional number of pieces (nnn) be removed to satisfy minimum accuracy and/or minimum sample size setup requirements. |

Section Three

Using Your Scale

BASIC WEIGHING

To weigh a sample on your scale, use the following procedure:

1. Press the **zero** key and place the object(s) to be weighed on the pan.
2. Wait for the "OK" symbol, then read the weight from the display.

CONVERTING THE WEIGHING UNITS

To convert from one unit to another, simply press the units key repeatedly. Continue pressing the key until the units you wish to use are displayed. The order of **units** is as follows: GRAMS - OUNCES - POUNDS - TROY OUNCES - PENNYWEIGHTS - CARATS - "x" UNITS (user defined) - GRAMS. To return to the factory default (grams) press **— units**. NOTE: The units displayed can be limited to certain selected units of measure, and can be restricted to as few as one if desired. See Appendix II, Setup Functions.

WEIGHING WITH A CONTAINER

You can use your scale to weigh objects (or liquids) by placing or pouring them into a container. To weigh objects or liquids in this manner, WITHOUT including the weight of the container, use the **tare** or **zero** keys. If you wish to retain the container weight for later reference the **tare** key should be used. If you do not need to retain the container weight, and do not need to display or print the gross weight, use the **zero** key only. To tare out or zero out the weight of a container, and then weigh the contents placed or poured into it, use the following procedure:

1. Press the **zero** key. Place the empty container on the pan.
2. Press the **tare** or **zero** key. (If the tare weight is known, a full container may be placed on the pan. In this case, enter the tare weight through the keyboard and then press the **tare** key.)
3. Wait for the "OK" symbol. Place or pour objects or liquids into the container.
4. Wait for the "OK" symbol, then read the net weight from the display.

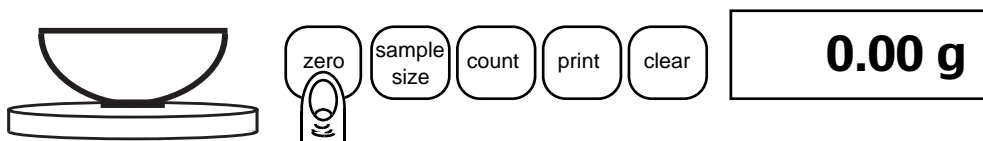
NOTE: When you press the **tare** key, the container weight is stored in memory and the display will read zero. You must use the **tare** key, not the **zero** key, in step #2 to store the container weight in memory. To recall the stored tare value, press **display tare**. To clear the stored tare value, press **— tare**.

DISPLAYING THE GROSS WEIGHT

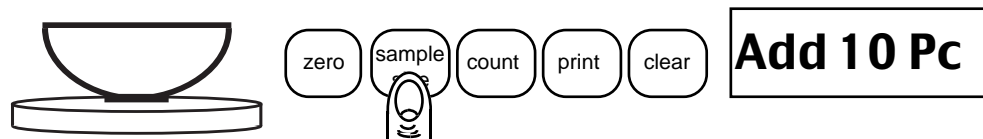
To display the gross weight, press **display** followed by the **gross** key. To toggle between the gross weight and the net weight, press the **gross** key repeatedly. The gross weight will equal the net weight unless a container weight has been entered using the tare key (see section, Weighing with a Container).

BASIC COUNTING USING THE SAMPLE SIZE KEY

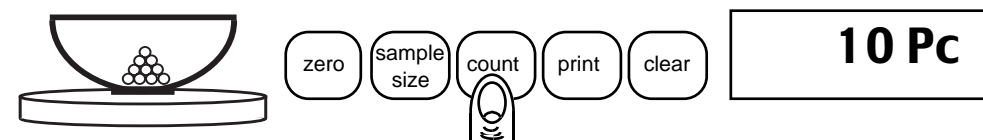
To count a number of like objects on the scale, use the following procedure:



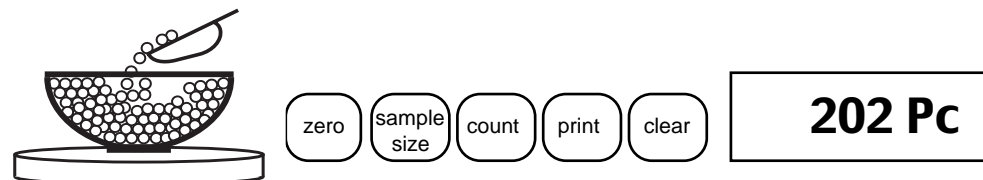
1. Place an empty container on the scale. Press the **zero** key.



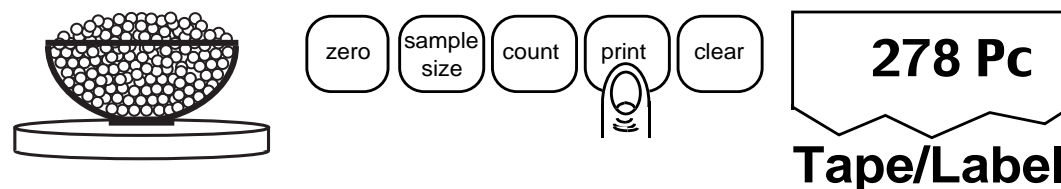
2. Press the **sample size** key. Each time the key is pressed the requested sample size will increase (i.e., Add 10, 25, 50, 100 PCs).



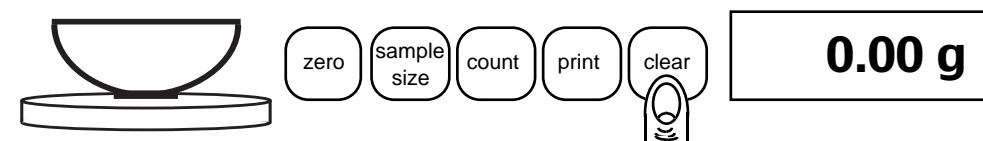
3. Place the requested number of pieces in the container. Press the **count** key.



4. Fill the container to the desired number of pieces.



5. Press the **print** key to generate a tape/label or to transmit the data from the RS-232 port.



6. Remove the pieces from the container and press the **clear** key to return the scale to the weight display.

- NOTE: a. A customized sample size may be preset by using the minimum sample size setup feature. The scale will never request a sample size less than the preset minimum sample size. (e.g. If the minimum sample size has been preset at 12 pieces then the **sample size** key will display Add 12 PCs, Add 25 PCs, Add 50 PCs, Add 100 PCs, Add 12 PCs...etc. when pressed repeatedly.)
- b. The scale may request that more pieces be added after the initial sampling if a minimum accuracy requirement has been preset. (For details see the section entitled Using the Minimum Sample Size or Minimum Accuracy Feature.)

BASIC COUNTING USING THE COUNT KEY

To count a number of like objects on the scale, use the following procedure:

1. Press the **zero** key.
2. Place a known number of pieces on the pan.
3. Enter the number of pieces through the scale keyboard.
4. Press the **count** key.
5. Wait for the "OK" symbol.
6. Add pieces until you reach the desired count.
7. Wait for the "OK" symbol, then read the display.

NOTE: The scale may request that more pieces be added after the initial sampling if a minimum accuracy and/or minimum sample size requirements have been preset.

The operator may choose to employ the counting procedure outlined above which uses the sample size key, or the procedure given for use of the count key. Both procedures deliver the same level of accuracy using the same sample size.

USING THE MINIMUM SAMPLE SIZE & ACCURACY FEATURE

Counting errors can be caused by non-uniformity in the parts being counted or by insufficient sample weight. To reduce these errors your scale is designed with two special features. The minimum sample size feature ensures the scale will calculate an average piece weight from a large enough sample which is nearly equal to the average piece weight of the entire lot. This feature prevents an operator from using a sample size which is too small and could be “biased”, i.e., not truly representative of the distribution of unequal parts in the lot to be counted. Setting the scale to require a larger minimum sample will reduce the error which is introduced by non-uniformity.

The minimum accuracy feature ensures that total sample weight is heavy enough to keep counting errors very small. The higher the degree of accuracy desired, the larger the total sample weight that will be required. This means that even if the sample satisfies the minimum sample size requirement it may still be too light to achieve the accuracy level selected and therefore the scale will request more pieces.

Your scale has been preprogrammed at the factory with no minimum-sample requirement and a minimum accuracy requirement of 95%. To change the minimum accuracy and/or a minimum sample size setting refer to Appendix II, Setup Functions.

When the scale is set up to require a minimum sample size or certain degree of accuracy it may display messages during the counting procedure. The steps are outlined below:

1. Press the **zero** key.
2. Press the **sample size** key.
3. The scale display will say “Add nnn PC”, where nnn represents the programmed minimum sample size.

The sample size requirement can be increased by pressing the **sample size** key repeatedly. The predetermined sample size are: 10, 25, 50 and 100 pcs. This sequence of predetermined sample sizes will repeat itself as the sample size key is pressed. A custom sample size may be preset by using the minimum sample size setup feature. The scale will never request a sample size less than the preset minimum sample size. (e.g. If the minimum sample size has been preset at 12 pieces then the **sample size** key will display Add 12 PCs, Add 25 PCs, Add 50 PCs, Add 100 PCs, Add 12 PCs...etc. when pressed repeatedly.)

4. When you reach the desired sample size, place the requested number of pieces on the pan.
5. Press the **count** key.
6. Wait for the “OK” symbol, then read the display.

The scale may request that more pieces be added after the initial sampling if a minimum accuracy requirement has not been met.

If the minimum accuracy requirement has been met, the scale will display the correct number of pieces and you can proceed to Step 10.

If fewer than the required number of pieces have been placed on the pan, the scale will ask you to add pieces. In this case, perform Steps 7-11 below.

7. Add the exact number of pieces requested by the scale.
8. Press the **count** key.

9. Wait for the “OK” symbol, then read the display. The scale now reads the total number of pieces on the pan.
10. Add pieces until you reach the desired count.
11. Wait for the “OK” symbol, then read the display.

COUNTING WITH A CONTAINER

You can use a container when counting pieces without including the container weight in the count. Your scale can do this by “taring out” (subtracting) the weight of the container before it begins counting. If you wish to retain the container weight for later reference, the **tare** key should be used in step #3 below. If you do not need to retain the container weight, and do not need to display or print the gross weight, use the **zero** key only. To tare out or zero out the weight of a container, use the following procedure:

1. Press the **zero** key.
2. Place the container on the pan.
3. Press the **tare** key or **zero** key. (If the tare weight is known, a full container may be placed on the pan in step #2. In this case, enter the tare weight through the keyboard and then press the **tare** key.)
4. Wait for the “OK” symbol, then press the **sample size** key.
5. The scale display will say “Add 10. PC”. (The sample size requirement can be increased by pressing the **sample size** key repeatedly. The predetermined sample sizes are: 10, 25, 50 and 100 pcs. This sequence of predetermined sample sizes will repeat itself as the **sample size** key is pressed.)
6. When you reach the desired sample size, place the requested number of pieces in the container.
7. Press the **count** key.
8. Wait for the “OK” symbol, then add pieces until you reach the desired count.
9. Wait for the “OK” symbol, then read the display. The scale will read the total number of pieces you have placed in the container.

NOTE: You may recall the tare weight by pressing **display**, **tare**, but only if it was stored in step #3 by using the **tare** key and not the **zero** key.

DISPLAYING THE GROSS WEIGHT DURING COUNTING

To display the gross weight during a counting procedure, perform the steps below:

1. Press the **gross** key to display the gross weight.
2. Press **count** to return to the counting mode.

The gross weight will equal the net weight unless a container weight has been entered using the **tare** key (see section, Counting with a Container above).

COUNTING WITH A KNOWN AVERAGE-PIECE-WEIGHT

The scale can count the number of pieces in a lot by dividing the weight of the lot by the known average piece weight (APW). To calculate the number of pieces in a lot using the average piece weight, use the following procedure:

1. Press the **zero** key.
2. Place the pieces on the pan.
3. Enter the known average piece weight through the keyboard.
4. Press the **apw** key.
5. Wait for the "OK" symbol, then read the display. The scale now reads the number of pieces on the pan.

NOTE: a. Before you enter an average piece weight, make sure your scale is reading in the units you wish to enter.

b. To determine an unknown average piece weight simply use the procedure for counting, and press **display apw** when you have a known number of pieces displayed.

COUNTING WITH A KNOWN AVERAGE-PIECE-WEIGHT AND TARE WEIGHT

Items in a filled container can be counted without opening the container if the average piece weight and tare weights are known. Simply key-in the weight values using the procedure outlined below:

1. Press the **zero** key.
2. Place a filled container on the pan.
3. Enter the value of the known tare weight and press the **tare** key.
4. Enter the value of the known average piece weight and press the **apw** key.
5. Wait for the "OK" symbol and then read the display. The scale now displays the count of items in the container.

COUNTING WITH ACCURACY ENHANCEMENT

When counting parts that are not uniform in weight, you can periodically update the average piece weight (APW) and thereby increase the accuracy. Each time the **count** key is pressed, the scale will update the APW as long as the additional weight is less than or equal to the previous sample weight. If the added weight is more than 100% of the previous sample, the APW will not be updated. For example, if you start with a sample size of 10 pieces then add 10 more and press the **count** key, the APW will be recalculated based on a 20 piece sample. The next time you wanted to update the APW you could add up to 20 pieces. If you added 11 or more to the original 10 piece sample, the APW would not be updated and would continue to represent the original 10 pieces. To count using this accuracy enhancement feature, follow the procedure below.

1. Place an empty container on the scale and press the **zero** key.
2. Press the **sample size** key. The scale display will say "Add 10 PCs."

(The sample size requirement can be increased by pressing the **sample size** key repeatedly. The predetermined sample sizes are: 10, 25, 50 and 100 pcs. This sequence of predetermined sample sizes will repeat itself as the **sample size** key is pressed.)
3. When you reach the desired sample size, place the requested number of pieces in the container.
4. Press the **count** key. Wait for the "OK" symbol, then slowly add pieces until the displayed count is increased by 100% or less.
5. Press the **count** key. The scale displays "UPdAtE" and automatically calculates a new average piece weight based on the larger number of pieces, and is ready to continue counting.

If "UPdAtE" is not displayed, the additional pieces have exceeded 100% of the previous sample weight and the APW will not be updated.

CAUTION: This accuracy enhancement feature is disabled if the average piece weight has been scanned in from a bar code or entered via a computer.

REVERSE COUNTING OR KITTING

Using this feature, you can place a container full of pieces on your scale and count the number of pieces removed. This is especially helpful when kitting (counting out a certain number of pieces to be packed together). To perform reverse counting or kitting, use the following procedure:

1. Place a container full of pieces you wish to count on the pan.
2. Press the **zero** key then press the **sample size** key.
3. The scale display will say "Add 10. PC". (The sample size requirement can be increased by pressing the **sample size** key repeatedly. The predetermined sample sizes are: 10, 25, 50 and 100 pcs. This sequence of predetermined sample sizes will repeat itself as the **sample size** key is pressed.)
4. When you have selected the desired sample size, REMOVE the indicated number of pieces from the container.
5. Press the **count** key.

6. Remove pieces until the display reads the number of pieces you wish to count out or kit.
7. Press the **zero** key.
8. Repeat Steps 6 and 7 as many times as needed.

NOTE: a. If the average piece weight is known, you may press the **—** key, enter the average piece weight, and press the **apw** key in place of Steps 2-5.

b. If the sample size is not large enough to satisfy the minimum accuracy requirement the display will read "SUB nnn.PC". Remove the specified number of pieces (i.e. nnn) from the container, then press the **count** key.

c. It is possible that the required sample size is larger than the quantity needed for each kit. For instance, the required sample size is 100 pieces but only 50 pieces are to be kitted together. In this case follow steps 1 through 5 above, then proceed as follows: place the 100 piece sample back into the container and press the **zero** key. Continue with steps 6 through 8 above.

ACCUMULATING RESULTS BY WEIGHT OR COUNT

It is sometimes necessary to accumulate weights or counts of various batches; e.g., the number of capacitors counted or the total weight of fasteners weighed out during a day. The scale can be used to simultaneously accumulate both weights and counts.

To accumulate a weight, use the following procedure:

1. Enter the weighing mode by pressing the **reset** key or the **clear** and **zero** keys (if in the counting mode).
2. To begin accumulating weights, clear the weight accumulator by pressing **0 accum** while in the weighing mode.
3. Place the object to be weighed on the pan.
4. Press the **accum** key. This weight is then added into the accumulator. The total accumulated weight is then displayed.
5. Press the **clear** key. The current weight is displayed.
6. Repeat steps 3-5 anytime you wish to accumulate the weights of further measurements.
7. Press the **display accum** keys. The scale now reads the accumulated weight.

NOTE: The **clear** key must be pressed after completing each accumulation.

To accumulate a count (or reverse count, if kitting), use the following procedure:

1. Press the **zero** key.
2. Press the **sample size** key. The scale will display "Add 10. PC". (To increase the sample size, continue to press the **sample size** key until the scale displays the desired number.)

3. Place the requested number of pieces on the pan. Press the **count** key. [To begin accumulating counts, clear the count accumulator by pressing **0 accum**.]

NOTE: (If you press **0 accum** while in the weighing mode, you will clear the weight accumulator.)

4. Add (or remove, if kitting) the desired pieces.
5. Press the **accum** key. The count is added into the accumulator and the total accumulated count is then displayed.
6. Press the **clear** key to display the count currently on the scale pan.
7. Repeat steps 4-6 anytime you wish to add to the accumulated count.
8. Press the **display, accum** keys. The number of pieces shown is the total number accumulated.

NOTE: Pressing **reset** or **— clear** will clear the contents of both accumulators.

USE OF THE “INT” MODE

The Setra Super Count automatically adjusts the display update rate to provide stable performance under environmental conditions such as vibration or draft. However, certain applications may require that a fixed display update rate be set. When weighing in the presence of vibration or draft a slower display update will provide a more stable reading. When filling containers to a target weight or count, a fast display update can help prevent overshooting the target.

Either a slow or fast display update is available when the scale is in the INT mode. The factory default setting for the INT mode is a fast display update. Refer to the Setup Functions in Appendix II to alter the mode from fast to slow. To enter the INT mode, press the **int** key. The INT symbol will appear in the display. Exit this mode by repressing the **int** key. This mode can be used while performing weighing or counting operations.

ASSIGNING AN I.D. NUMBER TO A BATCH

To assign an ID number (such as a part number or an account number) to a given batch, use the following procedure:

1. Enter the number you wish to assign (up to 25 digits).
2. Press the **id** key.
3. To recall the ID number, press **display id**.

- NOTE:
- a. The ID number you have entered will be assigned to all batches until a new ID number is entered or the **reset** key is pressed. To clear an ID number, press the **— id** keys.
 - b. If an ID number of more than six digits is used, the scale will display the last six digits entered, but will store and print the entire number (up to its limit of 25 digits). For example, if 123456789 is entered, the scale will display 456789, but will store and print 123456789 (as explained in “Printing Out Information”).
 - c. The **—** key may serve as a dash (hyphen) during ID number entry. Simply press the **—** key wherever you wish to insert a dash (you may use as many dashes as you need, however, no more than one dash may be used consecutively).

ENTERING, RECALLING & CLEARING ADDITIONAL ID ENTRIES

A total of seven separate ID numbers may be entered. These multiple ID numbers may be used to represent additional information related to a particular batch (i.e. vendor, lot number, etc.)

To enter additional ID numbers, use the following procedure:

1. Press the **setup/cal** key.
2. Enter the number you wish to assign (up to 25 digits, as indicated above).
3. Press the **id** key.
4. Enter a number from **1-7** to indicate which ID entry this data is to be assigned to.
5. Repeat steps 1-4 to assign additional ID entries to a given batch.

- NOTE: a. The ID entry numbers one, five and seven is not erased by the **reset** key or when the scale is powered off. These entry numbers can be used to store the Company name and address or any information that you wish to print with every transaction.
- b. ID field number six cannot be used if your Setra scale is equipped with the optional time/date feature.

To recall any of the seven ID entries, perform the following procedure:

1. Press the **setup/cal** key.
2. Press the **display** key.
3. Press the **id** key.
4. Enter a number from **1-7** to indicate which ID entry is to be recalled.

To clear any one of the seven ID entries, perform the following procedure:

1. Press the **setup/cal** key.
2. Press the **—** key.
3. Press the **id** key.
4. Press the ID number from **1-7** to indicate which ID entry is to be cleared.

NOTE: To clear all ID entries at once, except ID numbers one, five and seven, press the **reset** key. (ID numbers one, five and seven must be cleared using the procedure outlined directly above.)

When the seven additional ID numbers are printed, the identifying entry numbers will not be printed. We therefore suggest these numbers be formatted, if possible, to be easily recognized by the users as to what their meaning signifies. (e.g. A date can be entered as 01-05-91, or an employee id number may be 123-45-6789).

PRINTING OUT INFORMATION

The Super Count is designed to print out requested or stored information regarding a given batch when connected to an optional serial printer (see Appendix I). The default RS-232 output from the scale is all available fields formatted for a label on a Dymo Setra 300 printer.

1. Connect the printer's AC adaptor to a 110-volt outlet.
2. Connect the other end of the adaptor to the printer.
3. Connect the 6 pin telephone jack end of the printer connection cord to the printer's "Input" port.
4. Connect the male RJ45 end of the connection cord to the scale's female RJ45 port.
5. Perform the necessary counting or weighing procedures on the scale.
6. Press the **print** key on the scale.
7. Repeat Steps 5 through 6 any time you wish to print out information.

- NOTE:
- a. The print output can be changed for either printing on receipt paper or another label format on the Dymo Setra 300 printer. Refer to the Print Format in the Setup Functions.
 - b. When using a printer other than the Dymo Setra 300, reset the print format and match baud rate and parity of your scale to the match the printer(see Setup Functions).

Section Four

Advanced Functions

COUNTING WITH APW VALUES IN EXPONENTIAL NOTATION

The scale is able to accept an unlimited number of significant digits through the keyboard and serial port for APW values when the APW values are stored using exponential notation. For example, .0000567891 can be stored as 5.67891E-5. Using APW values in exponential notation is recommended when counting small parts in pounds (lbs).

RECALLING APW VALUES IN EXPONENTIAL NOTATION

There is an alternate command sequence for displaying the APW with increased resolution. The standard command sequence for displaying the APW is to press the **display** key then the **apw** key. This recalls and displays the APW as six digits (.0000012345 will be displayed as .000001). To display the APW in exponential notation, the command sequence is **setup/cal, display, apw**. The scale will display the APW as two alternating messages: the mantissa and the exponent (.0000012345 will be displayed as 1.2345 followed by E - 05). These two messages will continue to display alternately until another command is received.

NOTE: The command sequence for displaying the APW in exponential notation is only valid when entered through the scale's keyboard.

STORING A NEW I.D. & APW/TARE IN THE SCALE DATABASE

The Super Count can store up to 256 different, ten character part numbers and their associated average piece weight (APW) and tare values in memory which may be retrieved simply by entering the ID. This data can be transmitted to a printer or computer.

Once an ID number is entered the scale will automatically search its memory for a matching ID number. If a match is found, the APW and tare values will be retrieved and the scale will enter the counting mode. If no match is found, the scale will accept the entry as a new ID.

To perform the following procedure the database must be enabled and the APW and tare values must be left unprotected. (To enable the system refer to Appendix II, DATABASE SETUP.) (See PROTECTING THE APW/TARE VALUES to select a specific ID protection.)

To store a new ID and its associated APW and tare values follow the steps below:

1. Press the reset; key to zero the scale and clear the ID, APW and tare registers.
2. Create a valid APW and tare, either by entering the values through the keyboard, with a bar code scanner or by performing the tare and sampling procedures.
3. Enter the ID; up to ten characters.
4. Press the **id** key, then the **setup/cal** key and finally the **apw** key.
5. The scale will quickly display "StOrEd" and return to the previous weighing or counting mode. The APW and tare values are now stored and may be retrieved when the ID number is re-entered. If "StOrEd" is not displayed, make sure the database is enabled.

If the scale displays "UnAbLE" the ID protection is set to "LOC AL". The ID protection setup should be changed to "LOCOLD" or "NO LOC" to store a new ID in memory.

COUNTING WITH THE DATABASE

To perform the following procedure the automatic APW/tare retrieval system must be enabled. To enable the system refer to DATABASE SETUP.

To count parts using a stored APW follow the steps below:

1. Press the **reset** key. This will zero the scale and clear the ID, APW and tare registers.
2. Enter the ID, up to ten characters.
3. Press the **id** key.
4. The scale will automatically enter the counting mode if a matching ID is found. Parts may now be placed on the pan to be counted. Note; the APW and tare will reflect the values stored under the recalled ID.

If no matching ID is found, the scale will accept the entry as a new ID and will not enter the counting mode.

PRINTING IDs & APW/TARE VALUES FROM THE DATABASE

This setup allows the stored IDs and their associated APW and tare values to be transmitted to a printer, computer or another scale as backup.

To transmit the stored IDs and their associated APW and tare values use the following procedure:

1. Enter **— 17776** and press the **setup/cal** key.
2. The scale will display "ID SC."
3. To transmit the ID, APW and tare values to another scale or computer press the **setup/cal** key. To transmit the data to a printer press the **clear** key.
4. The scale will display "ID PR." To print the data to a serial printer press **setup/cal**. To exit this setup press the **clear** key.

NOTE: A backup copy of the stored IDs may be transmitted to a computer and stored on disk. Selecting "ID SC" will instruct the scale to also send the control codes which are required when the data is read back into the scale. When the data is later transmitted back to the scale from a computer, each record (1 record = 1 ID and associated APW and tare value) must be followed by a 3 second delay. The Save and Restore program that comes with the Auto Count 200 can be used to backup the scale database.

UPDATING AN ID AND APW/TARE VALUES IN THE DATABASE

To perform the following procedure the database must be enabled and APW and tare values must not be protected. (To enable the system refer to DATABASE SETUP.) (See PROTECTING THE APW/TARE VALUES to select a specific form of ID protection.)

To update an ID and its associated APW and tare values follow the steps below:

1. Enter the ID and press the **id** key. The scale will enter the counting mode.

2. Update the APW and/or tare, either by entering the values through the keyboard, bar code or by performing the tare and sampling procedures.
3. Press the **setup/cal** key and then the **apw** key.
4. The scale will display "ChAngE". To permanently store these updated values press **setup/cal**. The scale will quickly display "StOrEd" and return to the previous weighing or counting mode. The new values are now stored with the ID in memory.

To exit without changing the existing APW and tare values press the **clear** key.

If the scale displays "LOcKEd" the stored IDs are protected. The ID protection setup should be set to "NO LOC" before the APW and/or tare value may be changed.

DELETING AN ID AND APW/TARE VALUES FROM THE DATABASE

To perform the following procedure, the database must be enabled and the APW and tare values must not be protected. (See section entitled DATABASE SETUP to enable the database and PROTECTING THE APW/TARE VALUES to select a specific protection mode.)

To delete an ID and its associated APW and tare values follow the steps below:

1. Enter the ID and press the **id** key. The scale will enter the counting mode.
2. Press the **setup/cal** key then the **—** and **apw** keys.
3. The scale will display "dELetE." Press **setup/cal** to delete the ID, APW and tare values. The scale will briefly display "GOnE."

Press **clear** to exit this procedure without deleting the existing ID, APW and tare values.

If the scale displays "UnAbLE" the stored IDs are protected. The ID protection setup should be set to "NO LOC" before the APW and/or tare value may be deleted.

COUNT/WEIGHT ACCUMULATOR DATABASE

The Super Count can be programmed to accumulate the weight and count for 256 different, ten character part numbers. The accumulated count and weight are stored in non-volatile memory until they are cleared. The count/weight accumulator database feature can only be used if the APW/tare database is disabled, likewise the APW/tare database can only be used if the count/weight accumulator database is disabled. (To enable this feature, see COUNT/WEIGHT ACCUMULATE BY ID SETUP in Appendix II.)

ACCUMULATING COUNT BY ID

To accumulate the count by ID number, perform the following steps.

1. Press the **reset** key. This will zero the scale and clear the ID, APW and tare registers.
2. Enter the ID, up to ten characters.
3. Press the **id** key. The scale will automatically load the accumulated count value into the count accumulator. (If entering a new ID, a value of 0 will be loaded.)
4. Create a valid APW, either by entering the value through the keypad, a bar code scanner, or by performing the sampling procedure.
5. Place the pieces to be counted on the scale.
6. Press the **accum** key. The scale will update the count accumulator, copy the new value into the id-accumulator memory and then display the accumulated count.
7. Press **clear** to return to the count. Press **print** if you wish to print the new accumulated value. (See print setup below.)

ACCUMULATING WEIGHT BY ID

To accumulate the weight by ID number, perform the following steps.

1. Press the **reset** key. This will zero the scale and clear the ID, APW and tare registers.
2. Enter the ID, up to ten characters.
3. Press the **id** key. The scale will automatically load the accumulated weight value into the weight accumulator. (If entering a new ID, a value of 0 will be loaded.)
4. Place the material to be weighed on the scale.
5. Press the **accum** key. The scale will update the weight accumulator, copy the new value into the id-accumulator memory, and then display the accumulated weight.
6. Press **clear** to return to the weight. Press **print** if you wish to print the new accumulated value. (See print setup below.)

PRINTING THE ACCUMULATED COUNT OR WEIGHT

To print the accumulated value, follow the steps below.

1. Enter the ID, up to ten characters.
2. Press the **id** key. The accumulated value for the ID will be copied from memory into the accumulator register.
3. Press the **print** key.

NOTE: The scale must be setup to print the desired accumulator register (see ScriptCoder or Appendix II). Accumulating by ID does not store the number of entries in the accumulator.

CLEARING THE ACCUMULATED COUNT OR WEIGHT

The count and weight accumulators are stored in non-volatile memory. They will be retained when the scale is powered down. Follow the appropriate procedure below to clear the accumulator registers.

To clear an ID count accumulator:

1. Enter the ID, up to ten characters.
2. Press the **id** key.
3. Enter the count mode by entering an APW or sampling.
4. Enter **0** and press **accum**. Both the count accumulator and ID count accumulator will be set to zero.

To clear an ID weight accumulator:

1. Enter the ID, up to ten characters.
2. Press the **id** key.
3. Press **clear** if the scale is not displaying the weight.
4. Enter **0** and press **accum**. The scale will set both the weight accumulator and ID weight accumulator to zero.

To clear all ID count and weight accumulators:

1. Press the **setup/cal** key, enter **0** and press **accum**. The scale will set all accumulators to zero.

EXAMPLES OF ACCUMULATING COUNT BY ID

A manufacturer wants to accumulate the number (count) of widgets produced by several operators. Each operator will produce approximately 100 widgets before delivering them to a stocking location. At the stocking location, an inspector will count the widgets by sampling them on the scale. In addition, the inspector wants to record how many widgets were produced by the operator, the operator's ID number, the time of day and the total number of widgets produced so far that day.

RESETTING COUNT AND WEIGHT ACCUMULATOR REGISTERS

The inspector wants to count the widgets produced during the shift; therefore, the ID count accumulators should be cleared at the beginning of each shift.

1. Enter the count mode by entering an APW or sampling.
2. Press **setup/cal**, enter **0** and press **accum**. The scale will set the count and weight accumulators and *all* ID count and weight accumulators to zero.

COUNT A BATCH OF WIDGETS AND RECORD THE TRANSACTION

The inspector wants to count the number of widgets in a batch delivered to stock by an operator and print a record of the transaction.

1. Press the **reset** key. This will zero the scale and clear the ID, APW and tare registers.
2. Enter the operator's ID number, up to ten characters.
3. Press the **id** key. The scale will automatically load the accumulated count value into the count accumulator.
4. Create a valid APW, either by entering the value through the keypad, a bar code scanner, or by performing the sampling procedure.
5. Place the pieces to be counted on the scale.
6. Press the **accum** key. The scale will update the count accumulator and then copy the new accumulator value into the ID-accumulator memory.
7. The scale will display the accumulated count.
8. Press **clear** to return to the count.
9. Press **print** to print the information for this batch. (See printer setup below.)
10. Remove the pieces from the scale.

PRINTER SETUP FOR THIS EXAMPLE

The inspector wants to print a record with the following format:

```
ID#:  1234      10:27 am
      145 pc      ACC 1210 pc
```

This format can be achieved using the ScriptCoder feature. The code sequence is:

```
ID#:  1234      10:27 am
Codes: 73 68 35 58 32 128 32 32 32 32 154 13 10

      145 pc      ACC 1210 pc
Codes: 143 112 99 32 32 32 32 32 32 65 67 67 32 144 112 99 13 10
```

If using the ScriptCoder program, the count accumulator and weight accumulator selections in Appendix XI can be used for the scale output. The count accumulated number of entries and weight accumulated number of entries cannot be used when printing multiple accumulators by ID.

MULTIPLE IDENTICAL LABELS

The Super Count scale can be programmed to print the same label up to nine times with or without sequential numbering (see ScriptCoder for sequential numbering). To print multiple identical labels, perform the following steps on the scale keypad:

1. Press the **setup/cal** key followed by the script's identifying number, and then the **print** key. (For example, **setup/cal, 1, print**.)
2. The display will read "LAbELS". Enter a number (**1-9**). The scale will immediately begin printing the number of labels entered.

The scale will then return to printing single labels which can be accessed by entering the script identifying number followed by the **print** key.

INTERFACING WITH A COMPUTER

The Setra Super Count is designed to interface with a wide variety of computer equipment. If your scale is connected to a computer, transmit information to the computer by following the instructions given for "Printing Out Information." For further details, see Appendix VI.

Scriptcoder™ Custom Label Printing

Setra Super Count scales with firmware 1.8 or higher, can be programmed to print custom label designs on any serial printer, limited only by the printer's capabilities. This feature, called ScriptCoder™, allows a label design, or RS-232 output, to be written using a series of codes which are stored in the scale's memory. The set of codes, or script, is executed each time the specific label design is selected to print. The script can be written to create a customized output to a serial dot matrix printer, thermal bar code printer, or even a data collection device. The Super Count can store up to ten different scripts.

WAYS TO CREATE AND STORE A SCRIPT

A script contains preprogrammed text and data which is transmitted from the scale to the printer when the appropriate print command is sent. There are three ways to create and enter a script; the best method to use depends on the complexity of the label design.

The first method may be performed using only a Super Count and involves entering codes directly through the scale keypad. The second method involves scanning codes into the scale using a bar code menu chart available in the ScriptCoder Label Design & Cable Kit (Setra P/N 404910). Finally, the third method involves writing the script using the ScriptCoder PC program and downloading it to the scale via the RS-232 port (also available with the ScriptCoder kit).

ENTERING A SCRIPT VIA THE SUPER COUNT KEYPAD

All of the codes required for a script may be entered directly through the scale keypad. This method is most suitable for simple label designs as shown in the following example.

To print the part number and APW on a label to appear as:

Part #: 123-456
APW: 2.56789 g

the following transmission sequence would be required from the scale:

- transmit the text "Part #:" and one space
- transmit the contents of the ID register
- transmit one carriage return and one line feed
- transmit the text "APW:" and one space
- transmit the contents of the APW register and one space
- transmit the unit designation letter
- transmit one carriage return and one line feed (for longer labels add linefeeds to the end of this script to advance to the next label)

Before a script can be entered into the scale's print memory, the scale must be setup to accept the programming codes. To perform this setup and enter a script, follow the steps below:

1. Enter the print setup code **—1111** and then press the **setup/cal** key.
2. "SEt Pr" will be displayed. Press **0**, **setup/cal** to enter the script mode. "SCrIPt" will be displayed.
3. Enter the identifying number for this script, **0** through **9**, followed by **setup/cal**.

To program the script as the default label design, enter **0**. This will program the scale to print this label design each time the **print** key is pressed. To print scripts with identifying numbers 1-9, the corresponding number needs to be entered followed by the **print** key on the scale's keypad (ex. **3 print**).

CAUTION: An existing script will be erased from memory when its identifying number is reentered.

4. The display will read "CodES". Enter each code's number followed by the **setup/cal** key. (Ex. **65 setup/cal** for the capital letter A. Refer to the Appendix XI for specific code listings.) "CodES" will reappear on the display after each code is entered.

NOTE: To clear an incorrect number from the display, press the **clear** key. Then enter the correct number.

If **setup/cal** was pressed after an incorrect number was entered, enter the code **251** followed by the **setup/cal** key as a backspace command. Then enter the proper code and press **setup/cal** to proceed.

5. When the script is finished, enter **0** then **setup/cal**. The scale will return to the normal weighing mode.

CAUTION: To erase ALL scripts stored in the scale's memory, enter a **—10** as the script identifier number, followed by the **setup/cal** key. The scale will return to the normal weighing mode.

To produce a label with Part # and APW as shown below, enter the following script. (s/c = **setup/cal** key on the scale keypad)

| |
|------------------------------------|
| Part #: 123-456 APW: +2.56789 G |
|------------------------------------|

SCRIPT - Part #: (ID 0 is default register) <CR><LF>
CODES - 80 s/c, 97 s/c, 114 s/c, 116 s/c, 32 s/c,
35 s/c, 58 s/c, 32 s/c 128 s/c, 13 s/c, 10 s/c

SCRIPT - APW: (APW register) (Units ltr) <CR><LF>
CODES - 65 s/c, 80 s/c, 87 s/c, 58 s/c, 32 s/c, 141 s/c,
32 s/c, 149 s/c, 13 s/c, 10 s/c (to add line feeds enter 10 s/c here)

0 s/c (to end script)

Each time the **print** key is pressed, the scale will output the above label and advance the printer to the next label.

NOTE: A numeric part number or ID can be entered through the scale's keypad. Alphanumeric ID's will have to be entered via a bar code wand, a stand-alone alphanumeric keypad attached to the scale's RS-232 port or a PC connected to the scale.

PRINTING LABELS WITH SEQUENTIAL NUMBERING

The Super Count scale can number packages sequentially (ex. 1 of 3). The sequence can only be printed using a script program.

To set the numbering sequence:

1. Press the **setup/cal** key, then press the **count** key. The display will read "01oF01".

The first two digit number, XX, will increment by one each time the **print** key is pressed, until XX equals the YY value. The second two digit number, YY, represents the total number of packages in a lot.

2. Press the **setup/cal** key to change the sequence numbers. The scale will display "__ oF01". To retain the XX value previously displayed simply press the **setup/cal** key. To set a new XX value, enter a number (**0-99**). Press the **setup/cal** key.
3. The scale will display "XXoF__". To retain the YY value previously displayed, press the **setup/cal** key. To set a new YY value, enter a number (**0-99**) which is equal to the total number of packages in the sequence. Press the **setup/cal** key.

To view the current sequence on the scale display:

1. Press the **setup/cal** key, then press the **count** key. The display will read "XXoFYY".

The first two digit number, XX, will increment by one each time the print key is pressed, until XX equals the YY value. The second two digit number, YY, represents the total number of packages in a lot.

2. Press the **clear** key to accept these numbers and resume normal operation.

Appendix I

User-Definable Units

It is often convenient to weigh in user-defined units. Conversion factors can be entered through the keyboard to be multiplied by the displayed weight, or divisors can be entered to be divided into the displayed weight. The conversion factor will remain in memory even after the scale is powered off.

“x” UNITS

“x” units can be directly changed by entering a factor or divisor. To measure in “x” units, proceed as follows:

1. Calculate the ratio you wish to enter. If your ratio is in grams per “x” unit, ounces per “x” unit, pounds per “x” unit, etc., you will enter a divisor. Proceed with Steps 2 through 7.

If your ratio is in “x” units per gram, “x” units per ounce, “x” units per pound, etc., you will enter a factor. Proceed with Steps 2 through 7, skipping Step 3.

2. Press the **units** key until the display reads in the known units from which you wish to convert.
3. If you are entering a divisor, press **—**.
4. Enter the conversion ratio.
5. Press the **units** key.
6. Place an object on the scale.
7. Wait for the “OK” symbol, then read the display. The reading given is in “x” units.

Appendix II

Setup Functions

PRINT FORMAT

The print format setup controls the printout of various measured and stored numbers. You may setup the scale to have two different print formats for printing labels: bar code labels and/or for English (human readable) printing. In addition, ten custom print formats are available using the ScriptCoder feature. (See Section V, ScriptCoder Custom Label Printing for details.)

The key sequence — **1111** may be formatted for bar code or English (human readable) labels and determines the printing device and specific data that shall print when the **print** key is pressed. The key sequence — **4444**, (also referred to as ALTERNATE PRINT) may also be formatted for bar code or English labels, and determines the printing device and specific data that shall print when the • **print** keys are pressed. To format the information to be printed, use the following procedure:

1. Press the — key.
2. Enter **1111** or **4444**.
3. Press the **setup/cal** key. The display will read “SEt Pr.”
4. Enter **0** if you are going to program the scale using the ScriptCoder feature. Refer to Section V for programming instructions or the ScriptCoder operator's manual available with ScriptCoder Label Design & Cable Kit (Setra P/N 404910).

Enter **1** if it is connected to a Dymo Setra 300 printer with paper; press the **setup/cal** key and continue to step #6.

Enter **2** if it is connected to a Setra Auto Count™ 200 bar code printer option; press the **setup/cal** key. The scale's print format is now set and this procedure is complete.

Enter **3** if it is connected to a Dymo Setra 300 printer with labels; press the **setup/cal** key and continue to step #5.

If you are not using a Setra printer or Setra Auto Count see 'NOTE: c' at the end of this setup to determine which number (0, 1, 2, or 3) is most appropriate for your system configuration.

Press **clear** if you do NOT wish to proceed.

5. For option 3, the display will read “LinES”. The scale now asks how long the labels will be, measured in terms of lines (for most printers 6 lines = 1 inch). For the Dymo Setra 300 printer, enter **0** and **setup/cal** to enter a formfeed command. For other printers, to determine the number of lines, measure with a ruler the distance from the top of one label to the top of the next label in inches and multiply by six. Enter this value and press the **setup/cal** key.

Regardless of the number of lines of information to be printed, the Super Count will advance the printer the same preset distance each time. CAUTION: The scale will not print more lines of information than the number entered in this step.

6. Read the display. The scale now asks if you wish to print the “TARE” weight.

7. Enter **1** if you wish to print the TARE weight (enter **0** if you do not).
8. Press the **setup/cal** key.
9. Read the display. The scale now asks if you wish to print the "GROSS" weight.
10. Enter **1** if you wish to print the GROSS weight (enter **0** if you do not).
11. Press the **setup/cal** key.
12. Read the display. The scale now asks if you wish to print the "APW" , average piece weight.
13. Enter **1** if you wish to print the APW (enter **0** if you do not).
14. Press the **setup/cal** key.
15. Read the display. The scale now asks if you wish to print the "ACCUM", accumulated weight (or count).
16. Enter **1** if you wish to print the ACCUM (enter **0** if you do not).
17. Press the **setup/cal** key.
18. Read the display. The scale now asks if you wish to print the "PC", quantity of pieces (count).
19. Enter **1** if you wish to print the quantity of pieces counted (enter **0** if you do not).
20. Press the **setup/cal** key.

- NOTE:
- a. Your print output is now formatted. To change the print format, simply repeat Steps 1-20 above using the same input numbers in step #2.
 - b. To create an additional print format for another printing device or to create an alternate print format for the same printing device, simply repeat Steps 1-20 above using the other input numbers in step #2. For example, if you entered **1111** in step #2 to set the current print format and now want an alternate format enter **4444** in step #2 before setting the new print format.
 - c. The Super Count can be used with serial data printers other than those supplied by Setra, as long as the printer has a minimum buffer of 1K and no RS-232 "handshaking" requirement.

If the length of the printout is unlimited and there is no need for spacing between each printout, format the Super Count as if you are using a Dymo Setra 300 printer with paper which is equivalent to a dot matrix printer by entering the number **1** in step #4.

If you require a uniform printout length such as when printing on adhesive backed labels, format the Super Count as if you are using the Dymo Setra 300 with labels and choose the number of spaces desired after entering the number **3** in step #4.

- d. For customized output and formatting for both bar code and text printers see ScriptCoder Custom Label Printing in Section V.

PROGRAMMING A MINIMUM SAMPLE SIZE

This feature allows you to preset the minimum number of pieces that will be requested when the sample size key is pressed. To enter the minimum sample size you wish to have used when counting, use the following procedure:

1. Press the **—** key.
2. Enter **2222**.
3. Press the **setup/cal** key. The display will read “PC nnn”, where “nnn” is the current minimum sample size setting.
4. Enter the minimum number of pieces you wish to be used.
5. Press the **setup/cal** key.

NOTE: To discontinue use of the Minimum-Sample-Size feature, repeat this procedure and enter **0** in Step #4.

PROGRAMMING A MINIMUM ACCURACY

This feature allows you to preset the minimum accuracy level used by the scale based on the sample weight. To enter a specific minimum accuracy level, use the following procedure:

1. Press the **—** key.
2. Enter **3333**.
3. Press the **setup/cal** key. The display will read “ACnn.nn”, where “nn.nn” is the current minimum accuracy setting.
4. Enter the desired accuracy in percent. (A number between 95 and 99.99, e.g., **99.9**.)
5. Press the **setup/cal** key.

NOTE: For any given sample, the scale automatically calculates the number of pieces needed to be added to the sample, if any, based upon the sample weight necessary to achieve a desired accuracy. The higher the accuracy selected, the larger the sample weight the scale will request. To discontinue use of the Minimum Accuracy feature, repeat this procedure and enter **0** at Step #4.

Programming the minimum accuracy does not compensate for piece weight variations in the sample. It is always recommended that a large enough sample is used when determining an average piece weight.

PROGRAMMING BAUD RATE AND PARITY

The Setra Super Count is capable of interfacing with a wide variety of computer equipment. To set the baud rate (the rate at which the scale sends information to a computer or printer) and parity, use the following procedure:

1. Press the **—** key.
2. Enter **5555**.
3. Press the **setup/cal** key. The display will read "CAL br".
4. Enter the baud rate. Choose either **300, 600, 1200, 2400, 4800, or 9600**, depending on the baud rate required by your printer or computer.
5. Press the **setup/cal** key. The display will read "P- 012".
6. Enter the desired parity. Choose either no parity (enter **0**), odd parity (enter **1**), or even parity (enter **2**). If you are unsure, try entering **0** for no parity. If the scale cannot communicate with your computer, consult the computer's or printer's manual to determine the required baud rate and parity.
7. Press the **setup/cal** key.
8. REPEAT STEPS 1-7 TO ENSURE THIS BAUD RATE & PARITY IS RETAINED EVEN AFTER POWER IS REMOVED FROM THE SCALE.

NOTE: The factory default baud rate setting is 2400 and no parity. The scale will transmit with the parity selected; however, it does not check the parity it receives.

DISPLAY HYSTERESIS

Display hysteresis can prevent the apparent "jumpiness" of the scale display in the weighing mode from moving one digit to the next. For example: If the weight is nearly equal to 235.65 grams, the display may toggle between 235.6 and 235.7. By performing the following procedure the scale can be setup to prevent changes to the display that are less than 1 displayed increment, providing greater stability in the weight reading. The display hysteresis may be enabled or disabled by performing the following procedure:

1. Press the **—** key.
2. Enter **6666**.
3. Press the **setup/cal** key. The display will read "H - 01".
4. Enter **1** to enable the display hysteresis or enter **0** to disable the display hysteresis.
5. Press the **setup/cal** key.

NOTE: The display hysteresis does not affect the display in the counting mode.

The factory default display hysteresis setting is enabled (i.e. **1**).

DISPLAYING CAPACITY, SOFTWARE VERSION AND SETUP INFORMATION

Setra is continually making improvements to its products. As a result the operating software, or firmware, of the scale has a revision number. The revision number may prove useful in communicating with your dealer or Setra in case of difficulty.

Information regarding the scale's particular setup can be obtained at any given time; however, it is necessary to connect the scale to a printer or computer, as this information is transmitted via the serial port. The format of the printed information is as follows:

| | |
|-------------------------|---|
| Setra SUPER COUNT | |
| Capacity: | nnn g |
| Software Version: | n.n |
| Time/Date: | n:nn AM, nn (month) (year) - if equipped with P/N 404625 |
| Print: | Dymo Setra 300, Auto Count or ScriptCoder |
| | NET |
| | TARE only if setup to print |
| | GROSS “ |
| | APW “ |
| | ACCUM “ |
| | PIECES “ |
| Alt Print: | Dymo Setra 300 or Auto Count |
| | TARE only if setup to print |
| | GROSS “ |
| | APW “ |
| | ACCUM “ |
| | PIECES “ |
| Label Header: | YOUR COMPANY NAME, ETC. (if defined in ID 7) |
| Baud Rate: | nnnn |
| Parity: | none/odd/even |
| Minimum Sample Size: | nnn pieces |
| Minimum Accuracy: | nn.nn% |
| “x” units per gram = | nnn |
| Display Hysteresis: | on/off |
| Int Mode: | fast/slow |
| Weighing Units Enabled: | ‘x’ units, grams, ounces, pounds, troy ounces, pennyweights, carats |

To view the scale's capacity, software version and to print current setup information, follow this procedure:

1. Press the **—** key. Then enter **7777**.
2. Press the **setup/cal** key. The scale will display "rEF n.n", where "n.n" is the software version number. At the same time the scale will transmit all current setups via RS-232 to a printer, computer or other external device.
3. Press the **clear** key. The scale will display "nnn g", where nnn is the capacity of the scale in grams.
4. Press the **clear** key to return the scale to normal operation.

RESTORING THE FACTORY DEFAULT SETUPS

The many features described in this section allow the user to customize the Setra Super Count to suit a particular application. However, in doing this, it is also possible to inadvertently setup the scale in such a way that it will not operate as expected. To reset the scale to the original factory defaults follow the steps outlined below.

The factory defaults are set as follows:

- Baud Rate equal to 2400 and no parity.
- **print** is assigned to a standard serial tape printer to Dymo Setra 300 label format with all available data being printed.
- **alt print** is assigned to the Setra Auto Count 200 bar code label printer.
- No minimum sample size.
- The minimum accuracy is 95%.
- The display hysteresis is enabled.
- The int mode is set to fast update.
- All weighing units enabled.
- Database disabled.

To restore the factory default set-ups use the following procedure:

1. Press the **—** key.
2. Enter **8888**.
3. Press the **setup/cal** key. The display will read "dEFALt".
4. Press the **setup/cal** key to restore the factory defaults. Press **clear** if you do not wish to proceed.

WARNING: Restoring the factory default setups will erase any span calibration and return the Super Count to the factory calibration.

SETTING THE TIME AND DATE

Your Setra Super Count scale may be equipped with an optional time/date feature. If this option has been installed, set the time and date using the following procedure:

1. Enter **—9999**.
2. Press the **setup/cal** key. The display will read “00-99”.
3. Enter the year, any number from 0 to 99; e.g. enter 91 if the year is 1991.
4. Press the **setup/cal** key. The display will read “01-12”.
5. Enter the month, from 1 to 12; e.g. enter 6 for June.
6. Press the **setup/cal** key. The display will read “01-31”.
7. Enter the day, from 1 to 31; e.g. 25 for the twenty-fifth.
8. Press the **setup/cal** key. The display will read “00-23”.
9. Enter the hour, in 24 hour time; e.g. 12:00 PM (noon) is 12, 11:00 AM is 11, 3:00 PM is 15, 11:00 PM is 23, 12:00 AM (midnight) is 0, etc.
10. Press the **setup/cal** key. The display will read “00-59”.
11. Enter the minutes, from 0 to 59.
12. Press the **setup/cal** key.

NOTE: If your scale does not have the time/date stamp option, it will ignore the command **— 9999 setup/cal**.

SETTING DISPLAY UPDATE RATE (INT MODE)

The Setra Super Count scale automatically adjusts the update rate of the displayed information to provide optimum performance in various environmental conditions, such as vibration or draft. However, certain applications may require a fixed display update. The INT Mode is factory preset to provide a rapid display update (short integration time) for filling pieces to a target count. The use of this Mode can be altered to provide a slow display update (long integration time) for weighing in the presence of draft or vibration. Follow the procedure below to change the functionality of the INT Mode to either a slow or rapid display update:

1. Enter **—11110**.
2. Press the **setup/cal** key. The display will read “INT 1 or 0”.
3. Press **1** for a long integration time (vibration control). Press **0** for a short integration time (filling).
4. Press the **setup/cal** key.

UNITS ENABLE/DISABLE SELECTION

The units enable/disable feature controls which weighing units the scale will toggle between when the units key is repeatedly pressed. The units of measure can be limited to two, three, four, etc. or it can be entirely disabled so that only one unit of measure can be displayed. For example, if only the grams and pounds units are enabled, pressing the **units** key repeatedly will toggle between grams and pounds. To enable or disable units, follow this procedure:

1. Enter **—12221**.
2. Press the **setup/cal** key. The display will now read "CAL U". Press the **setup/cal** key again.
3. Read the display. The scale now asks if you wish to enable the 'X' units.
4. Enter **1** if you wish to enable the 'X' units (enter **0** if you wish to disable the 'X' units.)
5. Press the **setup/cal** key. Read the display. The scale now asks if you wish to enable grams.
6. Enter **1** if you wish to enable grams (enter **0** if you wish to disable grams.)
7. Press the **setup/cal** key. Read the display. The scale now asks if you wish to enable ounces.
8. Enter **1** if you wish to enable ounces (enter **0** if you wish to disable ounces.)
9. Press the **setup/cal** key. Read the display. The scale now asks if you wish to enable pounds.
10. Enter **1** if you wish to enable pounds (enter **0** if you wish to disable pounds.)
11. Press the **setup/cal** key. Read the display. The scale now asks if you wish to enable troy ounces.
12. Enter **1** if you wish to enable troy ounces (enter **0** if you wish to disable troy ounces.)
13. Press the **setup/cal** key. Read the display. The scale now asks if you wish to enable pennyweights.
14. Enter **1** if you wish to enable pennyweights (enter **0** if you wish to disable pennyweights.)
15. Press the **setup/cal** key. Read the display. The scale now asks if you wish to enable carats.
16. Enter **1** if you wish to enable carats (enter **0** if you wish to disable carats.)
17. Press the **setup/cal** key.

NOTE: If you attempt to disable all units, the scale will respond "UnAbLE". This feature affects the units convert function by displaying only the units that are enabled in the following sequence of units: 'X' units, grams, ounces, pounds, troy ounces, pennyweight and carats. Pressing **—, units** will return the scale to the factory default units, if it is enabled, otherwise it will display the next unit that is enabled.

PIECE WEIGHT PER THOUSAND

When counting extremely small parts, accuracy and efficiency can be increased if the APW is representative of 1000 pieces rather than of a single piece. The piece weight per thousand mode allows the scale to count tiny parts using an APW that is 1000 times the weight of one part. The factory default setting for this mode is an average piece weight for a single piece. This mode is enabled using the following steps:

1. Enter — **14443** and press the **setup/cal** key.
2. The scale will display “APW 1”.
3. To select an APW representative of a single piece press **setup/cal**.

To select the piece weight per thousand mode, press the **clear** key.

4. The scale will display “APW 1000”.
5. To select an APW representative of 1000 pieces, press the **setup/cal** key.

Press **clear** to exit this procedure without changing the setting of this mode.

CAUTION: Any APWs that were previously stored will be incorrect if this mode is changed. All APWs will become representative of either one piece or 1000 pieces depending on how the mode was set previous to the change.

APW/TARE SCALE DATABASE SETUP

This setup must be enabled before any ID's and their associated APW and tare values may be stored. The factory default for this setup is disabled.

NOTE: An ID's associated APW may be stored with no tare value but a tare value may not be stored without an APW.

To enable the scale database, use the following procedure:

1. Enter — **15554** and press the **setup/cal** key.
2. The scale will display “AUTO ? APW.”
3. Press the **setup/cal** key to store the APW value associated with the ID or press the **clear** key to exit this setup.
4. The scale will display “AUTO ? TARE.”
5. Press the **setup/cal** key to store the tare value associated with the ID or if you do not wish to store the tare value press the **clear** key.
6. The scale will now display “CLEAR.” The database is now enabled and can be used to store ID's and their associated APW and/or tare values.

If this is not the first time you have enabled the database feature then you may already have values stored. Press the **clear** key if you do not want to lose any of these existing APW and/or tare values.

Press the **setup/cal key** to clear all IDs and their APW and/or tare values that may have been previously stored.

7. The scale displays “SUrE ?.” This is a safety device to prevent you from accidentally erasing the database memory.

Pressing the **clear** key will NOT erase any IDs and associated values that may have previously been stored.

Pressing the **setup/cal** key will PERMANENTLY erase any IDs and associated values that may have previously been stored.

PROTECTING THE APW/TARE VALUES

The database allows you to add an ID and its associated APW and tare values to the scale’s memory or change any existing values. The existing values may be protected in one of three ways; first only new ID’s may be added and no changes may be made to existing values; second, new ID’s may be added to memory and existing APW and tare values may be changed; third, no new ID’s may be added and existing values may not be changed.

To select the specific protection mode, perform the procedure outlined below:

1. Enter — **16665** and press the **setup/cal** key.
2. The scale will display “LOCOLD.” In this mode the existing IDs and associated APW and tare values are protected and new IDs may be entered. To select this protection press the **setup/cal** key. To select another protection mode press the **clear** key.
3. The scale will display “NO LOC.” In this mode new IDs may be stored in memory and existing APW and tare values may be changed. To select this protection press the **setup/cal** key. To select another protection mode press the **clear** key.
4. The scale will display “LOC AL.” In this mode new IDs may not be entered and existing APW and tare values may not be changed. To select this protection press the **setup/cal** key. To exit this setup without making any changes press **clear**.

The factory default for this setup is “LOCOLD”, which protects existing IDs and allows new IDs to be stored.

COUNT/WEIGHT ACCUMULATE BY ID SETUP

This setup should be performed to enable the “accumulate by ID feature”. The factory default for this setup is disabled.

To enable accumulate by ID, follow the procedure below.

1. Enter —**21109** and press the **setup/cal** key.
2. The scale will display “Id ACCUM on”.
3. Press the **setup/cal** key to enable accumulation by ID and resume normal operation. All data stored for the ID accumulate and ID database features will be erased.
4. Press the **clear** key and the scale will display “Id ACCUM oFF”.
5. Press the **setup/cal** key to disable accumulation by ID or press the **clear** key to exit this procedure without changing the setting of this mode.

CONTINUOUS PRINT MODE

The Super Count's continuous print feature allows you to program the scale to print at specified time intervals. For example, to print every five seconds you would enter **5** and press the **print** key. Since the key sequence is the same for initiating a script to print, the factory default for this setup is disabled.

To change the continuous print mode follow the steps below:

1. Enter **—22220** and press the **setup/cal** key. The scale will display "IntPrt".

2. *To Enable the Continuous Print Mode*

Press the **setup/cal** key. The scale will return to the normal weighing mode.

To Disable the Continuous Print Mode

Press the **clear** key. The scale will display "no Int". Press the **setup/cal** key to disable the continuous print mode. The scale will return to the normal weighing mode.

To Exit This Procedure

Press the **clear** key to exit from this procedure without changing the status of the continuous print mode.

If the continuous print mode is enabled, the number that corresponds to the selected time interval cannot be used as a script's identifying number. For example, if you wanted to print every 7 seconds, the number 7 could not be used as an identifying number to store a script.

Appendix III

Calibration

The Setra Super Count is highly stable, and requires infrequent calibration. While it may be calibrated as often as desired, the factory calibration is adequate for most counting applications. For precise weighing applications, or for APW entry via bar code or computer, periodic calibrations may be desirable. These calibrations can be done quickly and easily using the scale keyboard and a high accuracy Class F or Class S stainless steel weight.

CALIBRATING YOUR SCALE

To calibrate your scale (for a calibration weight contact your dealer), use the following procedure:

1. Remove all objects from the pan.
2. Level the scale.
3. Press the **reset** key.
4. Press the **units** key until the scale reads in the units of the known weight.
5. Place the known weight on the pan.
6. Enter the value of the known weight.
7. Press the **setup/cal** key.

NOTE: To ensure maximum accuracy, a weight should be used which is as close as possible to the capacity of the scale.

Appendix IV

Typical Uses of Your Scale

Taring Out Box Weight Before Weighing Fasteners

To fill an empty box with fasteners and find the weight of the fasteners in the box, not including the weight of the box, using the tare function of your scale. Place the empty box on the scale, press the **tare** key to tare out the box weight, and then load the fasteners into the box. The resulting weight on the scale will be the net weight, or the weight of the fasteners without the box.

Finding the Number of Washers in a Full Box

To find the number of washers in a full box, knowing the tare weight of the box and the average weight of one of the washers, first press the **zero** key to zero the scale. Place the full box on the pan, enter the weight of the box when empty and then press the **tare** key to tare out the weight of the box. This will leave you with the weight of the contents of the box. Next enter the average weight of one of the washers and press the **apw** key. The display would show the number of washers in the box.

Measuring the Length of Wire on a Spool

To measure the length of wire coiled on a spool use the tare function. First enter the tare weight of the empty spool. Next, using your user-definable "x" units (see Appendix I), calculate the ratio of the weight of one unit length of wire to a known unit; for example, pounds.

Ratio = 1 foot of wire / .1 pounds of wire = 10.

Press the **unit** key until the display weighed in pounds. Enter the ratio, and press the **unit** key. The display will then read in feet of wire and indicate "x" in the display.

Counting Resistors Placed in a Bag

To store the weight of an empty bag and count the number of resistors being placed in it, use the tare function. To tare out the weight of the empty bag press the **tare** key. Place a known number of resistors on the pan and enter the number of resistors on the pan, then press the **count** key. The bag should then be filled until the scale display shows the number of resistors desired. If the scale has been formatted to transmit the tare and count to a printer, you would press **print** to make a permanent record of the transaction.

Kitting Microchips in Bags of 25

To kit microchips in bags of 25, you need to know the average piece weight of one microchip. Place the box full of chips on the scale and press the **zero** key to zero out the weight of the full box of chips. Next press the “—” key (indicating you are removing pieces) and enter the average piece weight of one microchip. Press the **apw** key and remove microchips until the scale reads “25”. Then zero the scale and repeat the process until the desired number of kits has been completed.

Counting Non uniform Plastic Lids with Accuracy Enhancement

Suppose you wish to use a large sample size because your plastic parts are not uniform, but want to avoid hand counting 100 pieces onto the scale. Start by hand counting 10 parts onto the scale, enter **10** then press the **count** key. Now add 10 more pieces and press the **count** key again (the number of pieces added must be 100% or less of the previous sample weight). Each time the **count** key is pressed the scale recalculates the APW using the larger sample, in this case, 20 pieces. Next, add 20 more pieces and press the **count** key. Repeat this two more times, once adding 40 pieces and then 20 more, pressing the **count** key after each addition. Note, you do not have to hand count each addition, the Super Count will do it for you.

Appendix V

Glossary of Terms

ACCURACY

The degree of conformity of a measured value to the true value.

AVERAGE PIECE WEIGHT

The mean weight in a sample of like pieces.

BAUD RATE

The rate at which your scale transmits or receives information to or from a computer or peripheral device.

DISPLAY HYSTERESIS

The tendency of a scale with a fluctuating reading to stabilize on the most consistent value.

GROSS WEIGHT

The weight of the contents (net weight) combined with the weight of its container (tare weight).

KITTING

Repeatedly removing a given number of pieces for inclusion in a kit; e.g., removing the number of like transistors necessary to manufacture a radio.

NET WEIGHT

The weight of the contents of a container, without the weight of the container.

PARITY

A bit used to check the validity of the data word.

PRECISION

The degree of reproducibility of an average value derived from multiple measurements usually expressed as one standard deviation (or one sigma).

REGISTER

A memory location within the scale where specific data is stored.

REPRODUCIBILITY

See PRECISION.

TARE WEIGHT

The weight of a container without its contents.

RS-232 Serial Data Communications

The Setra Super Count comes equipped with a bi-directional RS-232 interface. Users who have purchased a Dymo Setra 300 Printer may simply follow the directions under "Printing Out Information" to connect the scale with that unit. Users who are interfacing a scale to the Setra Bar Code System - Auto Count 200 should follow the installation instructions in the Operator's Guide for that equipment. The RS-232 software conventions are discussed in the first part of this appendix. The interface hardware is discussed in the second part of this appendix. For information on connection and data type, consult "The RS-232 Interface Hardware" section.

Interfacing a Setra Super Count Scale to a Computer

The bi-directional RS-232 interface not only allows the scale to transmit data to a computer, but also enables a computer to control the scale. Since the baud rate of this interface is selectable (see Appendix II - "BAUD RATE"), virtually any computer or terminal with an RS-232 interface can be connected to the scale. Setra scales do not support either hardware or software handshaking. This section describes the conventions and formats used to communicate with a Setra Super Count.

Sending Commands to the Scale

All functions which exist on the keyboard may also be accessed by a computer or terminal using the RS-232. Simply send the ASCII character which corresponds to a function. These characters are shown in the following table.

| Function | ASCII | Hexadecimal | Function | ASCII | Hexadecimal |
|--------------------|-------|-------------|----------------------|-------|-------------|
| accum | M | 4D | - | - | 2D |
| apw | A | 41 | 0 | 0 | 30 |
| setup/cal | F | 46 | 1 | 1 | 31 |
| clear | K | 4B | 2 | 2 | 32 |
| units | U | 55 | 3 | 3 | 33 |
| count | C | 43 | 4 | 4 | 34 |
| gross | G | 47 | 5 | 5 | 35 |
| id | S | 53 | 6 | 6 | 36 |
| print | P | 50 | 7 | 7 | 37 |
| • | • | 2E | 8 | 8 | 38 |
| display | • | 2E | 9 | 9 | 39 |
| tare | T | 54 | reset | X | 58 |
| zero | Z | 5A | int | I | 49 |
| sample size | O | 4F | remote scale* | < | 45 |

* For a scale with a remote base in a computer driven system, you may want the remote scale command to remain as **E**. Since **E** has been redefined for exponential notation input in software releases V1.6 and higher, this could cause a conflict. The following setup allows the user to redefine **E** back to the remote scale command. If **E** is redefined to the remote scale command, exponential entry is not possible. The setup default is to use "E" as the command for exponential notation.

To redefine the command used for accessing the remote scale follow this procedure:

1. Enter — **19998** and press the **setup/cal** key.
2. The scale will display “SCI E”. To use “E” as the command for exponential notation, press **setup/cal**. To use “E” as the command for the remote scale, press **clear**.
3. The scale will display “rS E”. To use the “E” command for the remote scale command, press **setup/cal**. To exit without altering the use of the “E” command, press the **clear** key.

Below are additional commands available via RS-232:

| Function | ASCII | Hexadecimal | Function | ASCII | Hexadecimal |
|-----------|-------|-------------|-----------------|-------|-------------|
| ID START | / | 2F | JUMP | J | 4A |
| ID FINISH | \$ | 24 | VERIFY | V | 56 |
| WAKE UP | W | 57 | Immediate Print | # | 23 |

Never include a carriage return or line feed in any command sequence. The scale uses any command character as a terminator for an input string.

For example, to enter a tare weight of 1000 (in the units currently being displayed), simply send “1000T”. This will enter the number 1000 into the TARE register. To enter an average piece weight of 12.35, send “12.35A”.

Sending Alpha-numeric ID #s to the Scale

Alphanumeric identification numbers (ID#s) may be entered into the scale through the RS-232 interface. Setra scales do not have alpha-numeric keyboards, so the RS-232 interface is the only means of entering such ID#s.

Since Setra scales recognize upper-case ASCII characters as commands, you must instruct the scale to ignore entries as commands when entering alpha-numeric ID#s. Special control sequences are used to disable interpretation of alpha-numeric characters.

To enter an ID# from a computer or RS-232 keyboard, send the following string to the scale:

/ [string identifier] \$ S

The ID START (or introducer), “/”, instructs the scale to ignore subsequent characters as commands. The ID FINISH (or terminator), “\$”, instructs the scale to interpret subsequent characters as commands. Everything between the start and finish will be stored as the identifier. The ID# entry command, “S”, instructs the scale to enter the string identifier into the ID# register.

The following table lists additional identification fields:

| <u>ASCII</u> | <u>Hexadecimal</u> | <u>Equivalent ID Field</u> |
|--------------|--------------------|----------------------------|
| S | 53 | 0 |
| D | 44 | 1 |
| R | 52 | 2 |
| L | 4C | 3 |
| N | 4E | 4 |
| Y | 59 | 5 |
| H | 48 | 6 |
| B | 42 | 7 |

Note: Field # 1, 5 and 7, are not cleared when the **reset** key is pressed or when the unit is powered off. If your scale is equipped with the time and date option, field #6 is not accessible. If your scale is not equipped with this option, field #6 is accessible for an ID entry.

The command letters indicated can be used in place of "S" in the command:

/ [string identifier] \$ S

The string identifier may consist of any uppercase ASCII character (A-Z), any number (0-9), a space, or a hyphen (-). It may be up to 25 characters in length. Lowercase ASCII character (a-z) are translated into uppercase by the scale. All other characters are ignored by the scale.

DO NOT SEND A CARRIAGE RETURN, CR, OR A LINE FEED, LF, DURING OR AFTER THE STRING IDENTIFIER.

Receiving Data From the Scale Using the Immediate Print Mode

When a scale is connected to a computer, it is suggested that immediate print ("#") be used. In response to this command the scale will transmit whatever number or message appears in the scale display. The "string format" output is shown below:

+/- 1 2 3 4 5 6 . c0 c1 c2 c3 CR LF

The first six digits represent the number field. A + or - sign always precedes a weight reading, and a decimal point is always transmitted, though their exact location depends on the number transmitted. Numbers with less than six digits are preceded by spaces and the sign is always adjacent to the leading digit. The specific location of the decimal point depends on the precision of the number transmitted.

"c0" is the INT mode character.

| CHARACTER | MEANING |
|-----------|---------|
|-----------|---------|

| | |
|---|--------------------------|
| I | Scale is in the INT mode |
|---|--------------------------|

| | |
|---------|------------------------------|
| (space) | Scale is not in the INT mode |
|---------|------------------------------|

"c1" is the "mode" character. It describes what the number being transmitted represents. The follow-

ing is a list of all possible mode characters:

| CHARACTER | MEANING |
|-----------|---|
| (space) | Number field is a message or net weight |
| G | Number field represents GROSS weight |
| T | Number field represents TARE weight |
| A | Number field represents APW |
| M | Number field represents ACCUM contents |

“c2” is the “units” character. It describes the units of the number being transmitted. The following is a list of all possible characters sent in this digit:

| CHARACTER | MEANING |
|-----------|-------------------------------------|
| G | Number is expressed in grams |
| O | Number is expressed in ounces |
| P | Number is expressed in pounds |
| Y | Number is expressed in troy ounces |
| D | Number is expressed in pennyweights |
| K | Number is expressed in carats |
| X | Number is expressed in “x” units |
| C | Number is expressed in pieces |

“c3” is the “stability” character. This character corresponds to the “OK” symbol on the display.

| CHARACTER | MEANING |
|-----------|-----------------------|
| (space) | Reading is not stable |
| S | Reading is stable |

The immediate print output is always transmitted with a carriage return and line feed.

To read data that may be stored in a specific memory register, you must first instruct the scale to display the data held in the particular memory register, and then to transmit the displayed data to the computer. For example, to read the contents of the following registers, the following codes must be transmitted.

| Register | Transmit | Hexadecimal | | |
|-------------|----------|-------------|-------|----|
| Tare | .T# | 2E | 54 | 23 |
| Accumulator | .M# | 2E | 4D | 23 |
| Count | .C# | 2E | 43 | 23 |
| APW | .A# | 2E | 41 | 23 |
| Gross | .G# | 2E | 47 | 23 |
| Net | .GG# | 2E | 47 47 | 23 |

The following are some examples of immediate print output:

“-- +12.3.GPS” means that the GROSS weight is 12.3 lbs stable.

“-- +10000.C.” means 10000 pcs, and the reading is not stable.

“-- +84.6.TO.” means that the TARE weight is 84.6 ounces.

“-- +14.2I.P.” means the NET weight is 14.2 pounds, and the scale is in the INT mode.

“UNABLE” means that the scale is cannot comply with your request. Press the **clear** key or transmit the letter K to clear the display.

Continuous Print Mode

For continuous data output, use the continuous print mode to print the contents of the display every time a new reading or message is available. The rate at which data is updated is variable and ranges from once every .2 seconds up to once every six seconds. This mode is useful if the computer/scale software interface runs as a background process.

The continuous data mode is initiated by sending **0P** over the RS-232, or by pressing **0** then **print** on the scale keypad. This mode is canceled by sending “**—P**” or pressing **—** then **print** on the keypad. Values greater than **0** can be used for longer intervals between data transmittals.

In the continuous print mode, any messages that appear in the display, including error messages such as “UnAbLE”, will be transmitted over the RS-232 port. The continuous print mode always transmits “string format”, regardless of which print format is selected.

NOTE: To enable continuous printing, a setup code must first be entered (see Appendix II). It is recommended that the baud rate be set at 2400 or higher to ensure that all of the scale output is transmitted, If the baud rate is set too low, the internal output buffer in the scale may overflow.

The Jump Function

The Jump Function causes the scale to immediately operate in a given weight unit. Using this function insures that numbers, such as tare weight or average piece weight, entered through the RS-232 interface are interpreted in the correct units. For example, if the average piece weight was stored by a computer in grams, it would be necessary to ensure that the scale was operating in grams prior to sending the APW to the scale. This feature is only available through the RS-232 interface.

To use the .Jump Function, send the following to the scale: **nJ**. Where “J” is the Jump function command and “n” is the unit code. The units code ranges from 0 to 6 as shown:

| Units Code | Unit |
|------------|---------------------|
| 0 | “X” Units |
| 1 | grams |
| 2 | ounces |
| 3 | pounds |
| 4 | ounces:troy; ounces |
| 5 | pennyweights; |
| 6 | carats |

Do not send any number other than 0-6. For example, to enter an average piece weight of 0.23456 grams from a computer, send “1J0.23456A”. The “1J” sets the scale for operation in grams. The “0.23456A” tells the scale to enter that weight into the APW register. The Jump Function prevents misinterpretation of values entered from a computer.

The Verify Function

When many scales or other peripherals are connected to a computer, it is sometimes useful for the computer to be able to check on the status of these devices. The verify function can be used to determine the model number of a scale and determine that the scale is functioning correctly. To invoke the verify function, transmit an ASCII “V”. If the scale is functioning correctly, it will send one of the following messages followed by carriage return and line feed:

```

“Setra SUPER COUNT, 1000 grams”
“Setra SUPER COUNT, 2500 grams”
“Setra SUPER COUNT, 5000 grams”
“Setra SUPER COUNT, 12500 grams”
“Setra SUPER COUNT, 25000 grams”
“Setra SUPER COUNT, 34000 grams”
“Setra SUPER COUNT, 50000 grams”

```

Status After Power is Applied

All Setra scales have an internal nonvolatile memory for storing certain status information. This memory does not erase when power is removed from the unit. All setup functions (such as print format, minimum pieces, minimum accuracy, baud rate, and user conversion factors) are stored in this memory. As a result, the baud rate and print format will not need to be reset each time the scale is turned on.

During the first 30 seconds of operation, the scale will run through a self-diagnostic procedure. When the unit is ready to be used, it will identify itself by transmitting a “wake-up” message. (This message can also be invoked by sending a “W” to the scale.)

The RS-232 Interface Hardware

Although Setra scales can communicate with almost any RS-232 device, the built-in interface does not include the complete protocol. Only the transmit and receive lines of the standard interface are used.

The data format is:

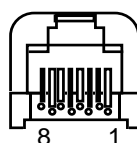
- 1 start bit
- 8 data bits including parity
- 1 stop bit
- 10 bits per frame (framing errors ignored)

NOTE: The scale will transmit using the parity selected; however it does not check the parity it receives.

Use an RS-232 cable to connect the external device to the scale, or construct one following the instructions below.

The serial port uses an eight pin modular connector. The pinout is as follows:

- 1 ground
- 2 transmit out
- 3 receive in
- 4 no connection
- 5 no connection
- 6 optional +5V @ 250 ma*
- 7 ground
- 8 ground



**Modular Jack
Connector**

(in back of scale)

* If the fuse (Setra P/N 404722) is installed, power is provided for the Auto Count 200 or an intelligent bar code wand (Setra P/N 403676), CCD or laser scanner.

NOTE: The "handshake" signals, such as "Clear To Send" (CTS), are not implemented. This requires that the peripheral have a minimal buffer (15 characters).

In addition, some computers requiring handshaking will need a connection between two pins on the computer's connector named DTR and DSR (Data Terminal Reading and Data Set Ready). CTS may also need to be jumpered to RTS at your computer interface (Clear to Send and Ready to Send).

The maximum recommended cable length is 15 meters. The cable may be longer if it has less than 2,500 pF capacitance. The load impedance of the device connected should be between 3,000 and 7,000 ohms with not more than 2,500 pF shunt capacitance. For more information, consult EIA Standard RS-232: "Interface Between Data Terminal Equipment Employing Serial Data Interchange."

The following is a short example of a BASIC program which will a) set the PC's "COM" port for use with a Setra Super Count scale, b) obtain a verification message, c) clear and zero the scale, d) set the

scale units to grams, e) set the ID to ABC-123, f) read the ID back from the scale and g) wait for a stable reading and obtain a weight. This program will work with an IBM* PC type .computer using BASIC A or GW BASIC version 3.0 or higher.

```

100 CLS
120 PRINT " Setra 404 SCALE COMMUNICATIONS TEST"
140 PRINT " PLEASE INPUT THE SCALE'S BAUD RATE .... USUALLY 2400"
160 INPUT BAUD$
180 PRINT" PLEASE INDICATE WHICH COMPUTER COM PORT YOU ARE USING (1 OR 2)";
200 INPUT I%
220 IF I%=2 THEN PORT$="COM2" ELSE PORT$="COM1"
240 REM: OPEN THE COMMUNICATIONS PORT & DISABLE ALL HANDSHAKES
260 REM: 8 DATA BITS WITH NO PARITY AND 1 STOP BIT IS SELECTED
280 O$=PORT$+";"+BAUD$+", N, 8, 1, RS, CS, DS,CD"
300 OPEN O$ FOR RANDOM AS #1
320 REM: VERIFY THE SCALE MODEL
340 REM: SCALE COMMANDS DO NOT USE A <CR> OR <LF>
360 REM: NOTE USE OF (;) AT END OF PRINT #1 STATEMENTS
380 PRINT #1, "V";
400 INPUT #1, A$
420 PRINT "SCALE MODEL IS: ";A$
500 LOCATE 7, 7: PRINT "PRESS 'Z' TO ZERO THE SCALE OR PRESS 'Q' TO QUIT"
520 REM: THIS COMMAND, '#' REQUESTS THE SCALE TO TRANSMIT DISPLAYED WEIGHT
540 PRINT #1, "#";
560 INPUT #1, A$
600 REM: THIS DISPLAYS THE WEIGHT TRANSMITTED BY THE SCALE
620 LOCATE 10, 10: PRINT "
640 LOCATE 10, 10: PRINT "THE WEIGHT ON THE SCALE IS: ";A$
699 REM: THIS CHECKS IF A COMMAND HAS BEEN REQUESTED VIA THE PC KEYBOARD
700 K$ = INKEY$
720 IF K$ = "" THEN GOTO 500
740 IF K$ = "Q" OR K$ = "q" THEN GOTO 1000
760 IF K$ = "Z" OR K$ = "z" THEN GOTO 800
780 GOTO 500
800 REM: THIS WILL ZERO THE SCALE    COMMAND IS 'Z'
820 PRINT #1, "Z"
840 REM: THIS WILL REQUEST THE READING FROM THE SCALE COMMAND '#'
860 REM: THIS READING WILL NOT BE SENT UNTIL THE SCALE IS ZEROED
880 PRINT #1, "#";
900 INPUT #1, A$
920 GOTO 500
1000 REM: THIS IS THE END OF THE PROGRAM

```

* IBM is a registered trademark of International Business Machines, Inc.

Appendix VII

Accessories and Options

The following accessories are available for the Setra Super Count. Ask you dealer for current price information and/or a demonstration.

| Part # | Description |
|--------|--|
| 401160 | Dymo Setra 300 Printer - 2.25" wide receipt/label thermal printer. Direct connect for English only or barcode printing with ScriptCoder or to the AutoCount 200 for barcoding. Dimensions: 4"w x 8"l x 6.25"h(100mm x 200 x 160mm). |
| 404530 | BATTERY CONNECTOR ASSEMBLY - designed for portability, this option permits battery operation. Included is an "on-off" switch, external and internal battery charger and a DC power clip. A battery is NOT included. |
| 404620 | BATTERY - this camcorder style lead-acid battery will provide up to twenty-four hours of scale operation on a full charge. Battery is 12 VDC, 2.3 ampere hours. Use of this battery is limited to scales equipped with the BATTERY CONNECTOR ASSEMBLY (Setra part number 404530.) |
| 404150 | AUTO COUNT 200 - scale bar code option allows use of the Setra Super Count for reading and printing bar code labels. Includes a scanning wand. |
| 404520 | REMOTE SCALE OPTION - the Remote Scale Option allows the Setra Super Count to be used for sampling, as well as for displaying weight and count for conventional strain gage load cell bases. Option includes analog to digital converter and 7 pin connector. Excites up to four load cells in one base. |
| 404625 | TIME/DATE PRINTOUT - for applications requiring a permanent record of the time and date of each transaction an optional Time/Date feature can be installed that will automatically transmit this information to a peripheral device each time the print key is pressed. |
| 404910 | SCRIPTCODER LABEL DESIGN & CABLE KIT - this programming option allows customization of labels to include any alphanumeric information, scale data fields or ASCII control characters to print any label format including bar codes on thermal printers. |

Appendix VIII

In Case of Difficulty

If you have reached a state in which the scale will no longer follow your instructions, remove all weight from the pan and press the **reset** key. If this does not solve the problem, try briefly unplugging the unit from its power source; then, plug the unit in again.

If the scale displays “d nOS”, it may have been subjected to an extreme discharge of static electricity or power line fluctuations. To restore operation follow the procedures outlined below. Note, the user setups will be restored to the original factory defaults, including calibration settings.

1. Press the **clear** key. The scale will now perform tests to verify its operation and reset all of the setups to the factory defaults. The scale will then display “PASS”.
2. Press the **clear** key. The scale will now perform the normal segment test, display the capacity, count down to zero and then enter the weighing mode.

If the unit displays any unusual messages during the warm-up period, or does not return to normal operation, contact an Authorized Setra Service Center or Setra Systems, Inc., as service may be required.

If the scale displays the “bUSY” message for an extended period of time, or the displayed reading is unstable, too much vibration or draft may be present. To correct this condition, move the scale away from the source of vibration or shield the scale from draft. If vibration or draft is not the cause of the instability, service may be required.

If “UnAbLE” is displayed during calibration, check to make sure you are using the correct calibration weight.

If you experience difficulty in sampling during a counting operation, check the “setup” of the scale. To restore the factory default setups use the following procedure:

1. Enter — **8888** and press the **setup/cal** key. The display will read “dEFALt”.
2. Press the **setup/cal** key to restore the factory defaults. Press **clear** if you do not wish to proceed.

To clear all print setups, including all scripts, use the following procedure:

1. Enter — **1111** and press the **setup/cal** key. The display will read “SEtPr”.
2. Enter **0** and press the **setup/cal** key. The display will read “SCrIPt”.
3. Enter —**10** and press the **setup/cal** key.

NOTE: All scripts and print setups will be deleted and nothing will be outputted from the RS-232 port until the scale is reprogrammed (see Appendix II and Section V for details about the ScriptCoder feature.)

If the RS-232 interface does not function correctly, first check that the correct RS-232 cable is being used, and that all cable connections are secure. Next, reset the baud rate of the scale to match the external device. See Appendix II, "Setup Functions." Now, make certain the data formats are identical. See Appendix VI, "RS-232 Serial Data Communications." If data transmission or reception is still not possible, be certain that the cable is the correct type. (When communicating with certain types of devices, especially computers, it may be necessary to "cross" the receive and transmit lines of the interface. That is, the receive line of the scale must connect to the transmit line of the external device. Likewise, the transmit line of the scale must connect to the receive line of the external device. Special cables can be purchased for this purpose from a computer dealer.) See Appendix VI for more information.

If the problem still persists, contact your dealer or consult Appendix XI, "Limited Two-Year Scale Warranty," for more information.

Appendix IX

Battery Option

Installation

Disassembly of the entire scale is not required when installing the battery option kit.

1. Position the back of the scale so it overhangs the rear of a work bench (see Figure 2).
2. Remove the (2) Phillips head screws (marked "A" in Figure 2) and the rear panel.
3. Next remove the (2) hex head screws and washers marked "D" in Figure 2.
4. Disconnect the ribbon cable and remove the power circuit board.
5. Install the battery option circuit board and reconnect the ribbon cable. Make sure to loop the battery clip out through the battery door opening.
6. Replace the (2) hex head screws and washers marked "D" in Figure 2.
7. Before replacing the rear panel, remove the pre-cut knockout for the power switch with a hammer and screwdriver. Mount the rear panel onto the scale with the (2) Phillips head screws (marked "A" in Figure 2).
8. Slide the battery halfway into the scale, attach the battery clip, then insert the battery completely into the scale.
9. Slide the battery door closed and the scale is now powered for portable operation.

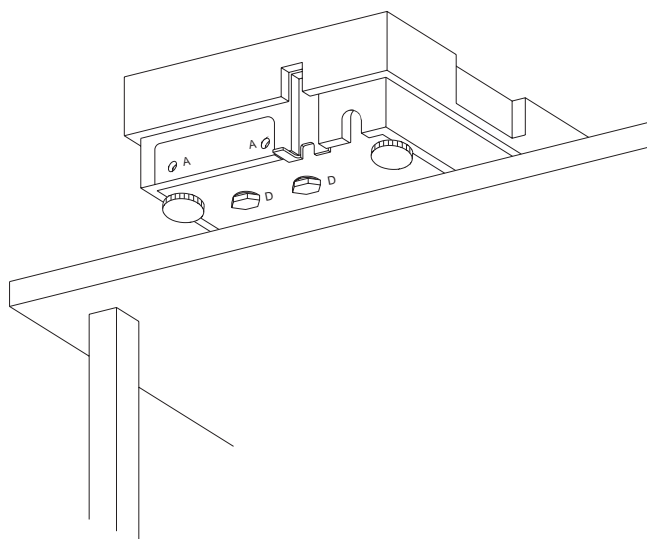


Figure 2. Installing the Battery Option.

Battery Use for Portable Operation

A fully charged battery will allow a Setra scale to operate for approximately 24 hours before recharging is needed. The battery will last one-half as long or about 12 hours if the scale is equipped with either a Remote Scale Option or an Auto Count 200. If the scale is equipped with both the Remote Scale Option and an Auto Count 200, the battery will only last one-third as long, or eight hours if fully charged. The “low bat” indicating light on the front panel of the scale will light up approximately one hour before recharging is necessary. When battery power is too low for proper scale operation the circuit will automatically shut off the battery and the scale will cease operation.

Replacement batteries can be ordered from Setra Systems (part number 404620.)

Battery Charging

When the “low bat” indicator light on the front panel of the scale turns on, use the following procedure to recharge the battery:

1. Plug the AC Adaptor, (Setra part number 404712) into an electrical outlet, and plug the power cable into the scale. Do not remove the battery. The scale will automatically recharge the battery from the electrical outlet.
2. The “low bat” indicator light will remain on during recharging until the battery reaches 40% of its rated capacity. This will take about 2.5 hours with the scale power switch in the “ON” position, and 2 hours and 10 minutes with the switch “OFF”. A battery powering a scale alone will reach 95% of its rated capacity in 8 hours if the power switch is in the “ON” position and in 7 hours if the switch is “OFF”. Note that the indicator light will not light up if the scale switch is “OFF”.
3. If the scale is equipped to power a Remote Scale Option or the Auto Count 200 from the scale's battery, it is recommended that battery recharging be done with the scale power switch in the “OFF” position.
4. The “bat charge” indicating light on the front panel of the scale will stay on until the battery reaches 95% of its rated capacity. Note that the “bat charge” light will not be lit if the scale power switch is in the “OFF” position.

Battery charging time may vary slightly depending upon the temperature in the scale operating environment. For applications requiring continuous scale operation it is recommended that the battery be removed from the scale and recharged using the external battery charger (Setra part number 404719).

Appendix X

Specifications

Setra SUPER COUNT™

| CAPACITY | REPRODUCIBILITY | READABILITY | NON-LINEARITY |
|----------|-----------------|-------------|---------------|
| 2.2 lb | +/-0.00002 lb | 0.00002 lb | +/-0.00002 lb |
| 5.5 lb | +/-0.00005 lb | 0.00005 lb | +/-0.00005 lb |
| 11.0 lb | +/-0.0001 lb | 0.0001 lb | +/-0.0001 lb |
| 27.0 lb | +/-0.0005 lb | 0.0005 lb | +/-0.0005 lb |
| 55.0 lb | +/-0.001 lb | 0.001 lb | +/-0.001 lb |
| 75.0 lb | +/-0.002 lb | 0.002 lb | +/-0.002 lb |
| 110.0 lb | +/-0.002 lb | 0.002 lb | +/-0.002 lb |
| CAPACITY | REPRODUCIBILITY | READABILITY | NON-LINEARITY |
| 1000 g | +/-0.01 g | 0.01 g | +/-0.01 g |
| 2500 g | +/-0.02 g | 0.02 g | +/-0.02 g |
| 5000 g | +/-0.05 g | 0.05 g | +/-0.05 g |
| 12,500 g | +/-0.2 g | 0.2 g | +/-0.2 g |
| 25,000 g | +/-0.5 g | 0.5 g | +/-0.5 g |
| 34,000 g | +/-1.0 g | 1.0 g | +/-1.0 g |
| 50,000 g | +/-1.0 g | 1.0 g | +/-1.0 g |

Internal Counting : 1 Part in 500,000

Counting Accuracy: Selectable from 95% to 99.99%

Minimum Sample Size: Selectable from 1 to 999 pieces

Display Update Speed: Up to 5 times per second

Display Units: grams, ounces, pounds, troy ounces, pennyweights, carats, user-definable units

Counting Capacity: 999,999 pieces

Data Communications: Bi-directional RS-232

Selectable Baud Rates: 300, 600, 1200, 2400, 4800, 9600

| | | | |
|--------------------------|---|---|---------------------------|
| Selectable Parity: | even/odd/none | | |
| Display: | 6-digit LCD | | |
| Pan: | Stainless Steel | | |
| Operating Temperature: | 40° to 110°F (5° to 43°C) | | |
| AC Adaptor: | Input - 110 VAC / 60 Hz Output - 16 VDC @ 550ma | | |
| Platform/Pan Dimensions: | 1000 g (2.2 lb.) | 5.12" diameter | 130 mm |
| | 2500 g (5.5 lb.) | 5.12" diameter | 130 mm |
| | 5000 g (11 lb.) | 6.31" diameter | 160 mm |
| | 12,500 g (27 lb.) | 11" x 14" | 280 mm x 355 mm |
| | 25,000 g (55 lb.) | 11" x 14" | 280 mm x 355 mm |
| | 34,000 g (75 lb.) | 11" x 14" | 280 mm x 355 mm |
| | 50,000 g (110 lb.) | 11" x 14" | 280 mm x 355 mm |
| Overall Dimensions: | All models: | 14.12"w x 15.59"l x h (see below) 358.65 mm x 396 mm x h (see below) | |
| | 1000 g (2.2 lb.) | 4.88" | 124.0 mm (feet retracted) |
| | 2500 g (5.5 lb.) | 4.88" | 124.0 mm (feet retracted) |
| | 5000 g (11 lb.) | 4.97" | 126.4 mm (feet retracted) |
| | 12,500 g (27 lb.) | 5.73" | 145.4 mm (feet retracted) |
| | 25,000 g (55 lb.) | 5.73" | 145.4 mm (feet retracted) |
| | 34,000 g (75 lb.) | 5.73" | 145.4 mm (feet retracted) |
| | 50,000 g (110 lb.) | 5.73" | 145.4 mm (feet retracted) |
| | Shipping Weight: Super Count - 1000g-5000g: 20 lb. (9.1 Kg) | | |
| | Super Count - 12,500g - 50,000g: 26 lb. (11.8 Kg) | | |

Specifications subject to change without notice.

Appendix XI

Script Codes for Keypad Entry

The following tables show the codes for the ASCII characters, ASCII control codes and Setra scale data codes.

ASCII Characters

| | | | | | |
|---|----|---|-----|-------|----|
| A | 65 | a | 97 | 0 | 48 |
| B | 66 | b | 98 | 1 | 49 |
| C | 67 | c | 99 | 2 | 50 |
| D | 68 | d | 100 | 3 | 51 |
| E | 69 | e | 101 | 4 | 52 |
| F | 70 | f | 102 | 5 | 53 |
| G | 71 | g | 103 | 6 | 54 |
| H | 72 | h | 104 | 7 | 55 |
| I | 73 | i | 105 | 8 | 56 |
| J | 74 | j | 106 | 9 | 57 |
| K | 75 | k | 107 | space | 32 |
| L | 76 | l | 108 | | |
| M | 77 | m | 109 | | |
| N | 78 | n | 110 | | |
| O | 79 | o | 111 | | |
| P | 80 | p | 112 | | |
| Q | 81 | q | 113 | | |
| R | 82 | r | 114 | | |
| S | 83 | s | 115 | | |
| T | 84 | t | 116 | | |
| U | 85 | u | 117 | | |
| V | 86 | v | 118 | | |
| W | 87 | w | 119 | | |
| X | 88 | x | 120 | | |
| Y | 89 | y | 121 | | |
| Z | 90 | z | 122 | | |

Punctuation and Special Characters

| | | | |
|----|----|-----------|-----|
| ! | 33 | [| 91 |
| " | 34 | \ | 92 |
| # | 35 |] | 93 |
| \$ | 36 | ^ | 94 |
| % | 37 | — | 95 |
| & | 38 | ' | 96 |
| ' | 39 | { | 123 |
| (| 40 | | 124 |
|) | 41 | } | 125 |
| * | 42 | ~ | 126 |
| + | 43 | backspace | 251 |
| , | 44 | | |
| - | 45 | | |
| . | 46 | | |
| / | 47 | | |
| : | 58 | | |
| ; | 59 | | |
| < | 60 | | |
| = | 61 | | |
| > | 62 | | |
| ? | 63 | | |
| @ | 64 | | |

(Note: The backspace will clear the code that was last entered.)

Setra Scale Data

| | | |
|--------------------|-----|---|
| ID 0 | 128 | transmit ID field 0 "S" id |
| ID 1 | 129 | transmit ID field 1 "D" id |
| ID 2 | 130 | transmit ID field 2 "R" id |
| ID 3 | 131 | transmit ID field 3 "L" id |
| ID 4 | 132 | transmit ID field 4 "N" id |
| ID 5 | 133 | transmit ID field 5 "Y" id |
| ID 6 | 134 | transmit ID field 6 "H" id time, if installed |
| ID 7 | 135 | transmit ID field 7 "B" id |
| Gross | 138 | transmit gross weight in external resolution |
| Net | 139 | transmit net weight in external resolution |
| Tare | 140 | transmit tare weight in external resolution |
| A.P.W. | 141 | transmit APW in internal resolution |
| A.P.W. exp. | 142 | transmit APW in exponential notation |
| Count | 143 | transmit count |
| Acc Count | 144 | transmit count accumulator value |
| Acc Ct Ents | 145 | transmit count accumulator entries |
| Acc Weight | 146 | transmit weight accumulator |
| Acc wt Ents | 147 | transmit weight accumulator entries |
| Units word | 148 | transmit units label, e.g., "grams", "pounds" |
| Units ltr. | 149 | transmit units letter, e.g., "g", "p" |
| Setra codes | 150 | ignored in scale, interpreted during setup to insert the appropriate scale control codes. |
| Units jump code | 151 | transmit units code number and J, e.g., "1J", "3J" |
| X of "x or y seq." | 152 | transmits the X of the "X of Y" sequence. |
| Y of "x or y seq." | 153 | transmits the Y of the "X of Y" sequence. |
| Time | 154 | transmit the time hh:mm AM, from the Super Count with time/date option. |
| Date | 155 | transmit the date mm/dd/yy, from the Super Count with time/date option. |
| Pause(.1) | 156 | Pause for a specified time before continuing to transmit the script. (Argument code 1 to 99, e.g. 5 = .5 second pause, 25 = 2.5 second pause.) |

Format Codes

| | | |
|------------------|-----|--|
| Format Length | 160 | Set the length of the field to be printed. (Argument code 1 to 99.) |
| Format Precision | 161 | Set the precision of the field to be printed. (Argument code 0 to 6.) |
| Format Sign | 162 | Transmit the “+” and “-” sign or only the “-” sign as appropriate. (Argument code “+” or “-”, 43 or 45, respectively.) |
| Justification | 163 | Justify the field to the left or right. (Argument code “R” or “L”, 82 or 76, respectively.) |
| Fill Character | 164 | The fill is the character to be repeated in order to justify the field and create the desired length. (Argument code: any printable character, e.g., “*”, “0”, or space, 42, 48 or 32, respectively.) |

ASCII Control Characters

| | | | | |
|-----|----|--------|-----|-----|
| soh | 1 | ctrl A | esc | 27 |
| stx | 2 | ctrl B | fs | 28 |
| etx | 3 | ctrl C | gs | 29 |
| eot | 4 | ctrl D | rs | 30 |
| enq | 5 | ctrl E | us | 31 |
| ack | 6 | ctrl F | del | 127 |
| bel | 7 | ctrl G | | |
| bs | 8 | ctrl H | | |
| ht | 9 | ctrl I | | |
| lf | 10 | ctrl J | | |
| vt | 11 | ctrl K | | |
| ff | 12 | ctrl L | | |
| cr | 13 | ctrl M | | |
| so | 14 | ctrl N | | |
| si | 15 | ctrl O | | |
| dle | 16 | ctrl P | | |
| dcl | 17 | ctrl Q | | |
| dc2 | 18 | ctrl R | | |
| dc3 | 19 | ctrl S | | |
| dc4 | 20 | ctrl T | | |
| nak | 21 | ctrl U | | |
| syn | 22 | ctrl V | | |
| etb | 23 | ctrl W | | |
| can | 24 | ctrl W | | |
| em | 25 | ctrl Y | | |
| sub | 26 | ctrl Z | | |

Appendix XII

Setra Systems, Inc. Limited Two-Year Scale Warranty

Setra Systems, Inc. warrants the scales it manufactures to be free from defects in material and workmanship. Upon return, transportation charges prepaid, to Setra's factory within two (2) years of the date of purchase, Setra will repair or replace, at its option, any scale which it determines to contain defective material or workmanship and will return said scale to purchaser, transportation prepaid, at any point in the United States. Setra shall not be obligated, however, to repair or replace scales which have been repaired by unauthorized parties, abused, improperly installed, altered, or otherwise misused or damaged, even if by accident, in any way. Setra will not be responsible for any dismantling, reassembly or reinstallation charges.

Nothing in this warranty shall be construed as a warranty for merchantability or fitness for any specific use or purpose, and this warranty is in lieu of all other warranties, express or implied. Setra shall not be held liable under the terms of this warranty for any special, indirect, incidental or consequential damages claimed in connection with the scales performance or availability.

Setra Systems, Inc.
Weighing Systems Division
159 Swanson Road · Boxborough, MA 01719 · (978) 263-1400

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FCC WARNING

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area may cause harmful interference in which case the user will be required to correct the interference at their own expense.

