DC-530

Counting Scale
Version 2.01

Operation Manual

Contents

About This Manual

This manual contains operating procedures for the DC-530 counting scale and provides the user with all the information necessary for its setup and operation. It is organized based on the procedures you will likely follow when setting up and using your counting scale. This manual applies to Version 2.01 of the DC-530 counting scale series.

⚠ **Caution** *Some procedures described in this manual require work inside the scale base. These procedures are to be performed by qualified service personnel only.*

Authorized distributors and their employees can view or download this manual from the DIGI distributor site at **www.ricelake.com**.

1.0   Introduction

The DC-530 is high-precision counting scale that offers practical solutions for a full range of counting applications. With an internal counting resolution of 1/1,000,000, the UniBloc one-piece force cell design provides quick response, stability against temperature change, and outstanding durability on top of maximum counting precision and accuracy. Its high-visibility full dot color LCD display enables operators to easily see weights and quantities. Counting and weighing operations are greatly speeded by the DC-530's ability to store and recall the item code, tare weight, unit weight, and three setpoint values for 200 of your pieces, parts, or items. The RS-232 ports allow you to connect to a printer, PC, or barcode scanner, while the optional remote scale channel lets you add another weighing platform.

The DC-530 Counting Scale includes the DIGI TEP (Teraoka Error Prediction) Function which detects weight variances in sample quantities and calculates the maximum quantity of that piece that can be counted without introducing error. To make the operator's job easier, the scale's display will change from green to yellow or red when the maximum safe quantity has been exceeded. This function works by performing a series of sampling operations which the scale uses to plot the weight variances of the pieces being weighed. By then accumulating counting results within the calculated safe quantity, the counting operation can be completed without a counting error.

1.1   Capacities and Resolutions

Table 1-1 lists the scale capacities, minimum graduations, and tare ranges for all models of the DC-530 counting scales. The internal count span and display resolution can be set by the user in the weight and measurement specifications (See Section 3.X). Weight units can also be set between lb and kg using the scale's weight and measurement specifications.

DC-530 Single Scale

DC-530 Capacity	Minimum Graduation	Platter Size
10 lb	0.0001 lb	13" x 9.3"
20 lb	0.0002 lb	13" x 9.3"

Table 1-1. DC-530 Capacities, Minimum Graduations and Platter Sizes

1.2   Modes of Operation

The DC-530 has four modes of operation that are accessed from the **MODE** key:

- Counting Mode –   where all weighing, counting and printing operations take place.
- Program Mode –   where item data can be programmed into the memory of the scale and edited.
- Date & Time -   where you can set the date and time used in printing on labels and reports.
- Set Point Setting -   where you can program general set points.

1.3   Keyboard and Display

Figure 1-1 shows the DC-530 console with its indicator lamps, the main function keys and the numeric keypad. Indicator lamps are described in Section 1.3.2. Section 1.3.3 shows the two main counting displays (Normal and TEP); while Section 1.3.4 describes the DC-530 keys and keypad.

Figure 1-1. DC-530 Display

1.3.1   Display Specifications

Weight display	6 digits
Unit Weight display	5 digits
Quantity display	7 digits

Table 1-2. DC-530 Display Specifications

1.3.2   Indicator Lamps

Table 1-3 shows a list of the indicator lamps that the DC-530 uses to provide additional information about the value being displayed. The indicator lamps are illuminated when the specific function is being performed.

Indicator Lamp	Function or Meaning
ZERO	On when the gross weight is at zero and is stable
STABLE	On when the weight on the platter is stable.
NET	On when the display shows net weight (when a tare weight is entered or recalled)
INSUFF	On when the net weight is below the specified percentage of scale capacity
ACC	Indicates that an accumulated quantity is stored in memory.
RECOM	On when unit weight recomputing is possible

Table 1-3. DC-530 Indicator Lamps and Function

1.3.3 Display Elements

The DC-530's display shows different elements depending on whether it is in "Normal Counting Mode" or "TEP (Teraoka Error Prediction) Counting Mode".
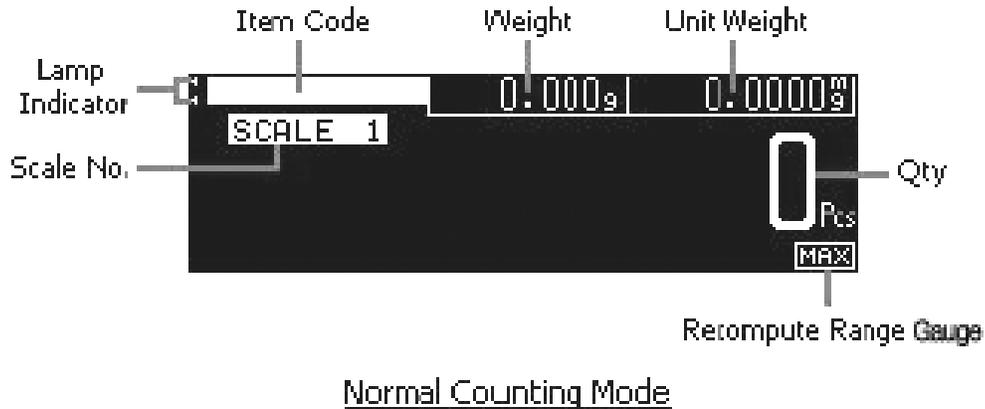
Figure 1-2. Normal Counting Mode Display Elements
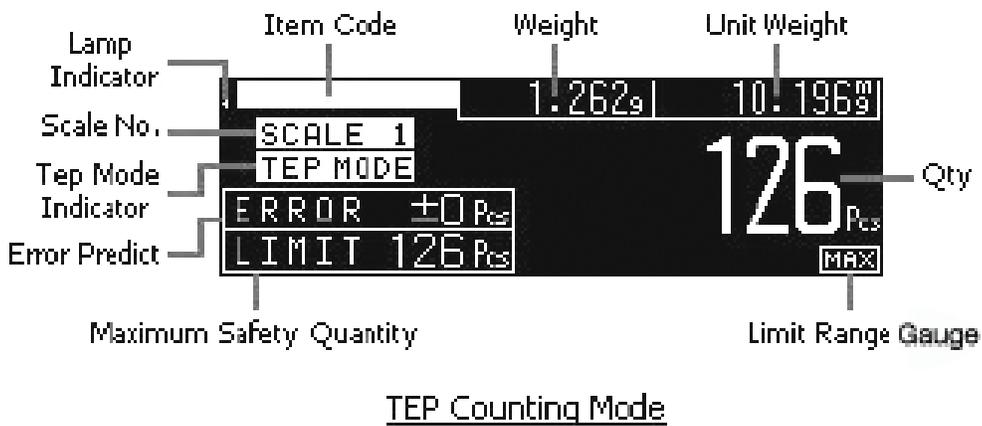
Figure 1-3. TEP Counting Mode Display Elements

1.3.4 Key Functions

The DC-530 features many functions for managing item information and scale operation. Table 1-4 lists the keys and key functions of the DC-530 keyboard and keypad.

Some keys have different functions depending on what mode or function you are in.

Key	Description
ON/OFF -	Turns the scale display on or off.
REZERO key -	Used to reset the weight display to zero.
SCALE key -	Used to select between Scale 1 and Scale 2 if an external scale is connected.
TEP key -	Used to toggle between "Normal Counting Mode" and "Teraoka Error Prediction (TEP) Counting Mode".
+ (Plus) key - Counting Mode - Program Mode -	 Used to accumulate quantity data. Also prompts printing of a label if an external printer is connected. Used to navigate to the next editable data in all modes except Normal and TEP counting modes.
- (Minus) key - Counting Mode - Program Mode -	 Used to subtract a quantity during accumulation. Used to navigate to the previous editable data in all modes except Normal and TEP counting modes.
* PRINT key - Counting Mode - Program Mode -	 Used to output data to print a label when an external printer is connected. Used to show and then clear accumulated TOTAL data when doing accumulation. Used to save changes in data in all mode operations except Normal and TEP Counting modes.
MODE key -	Used to access the MODE menu for Program Mode, Date & Time Setting, and Set Point Setting.
Numeric keys -	Used to enter numeric values. When using the scale, first enter a numeric value, then press the appropriate function key.
DECIMAL key -	Used to set the decimal point.
PCS key -	Used for computing Unit Weight by sampling.
TARE key - Counting Mode - Program Mode - Maintenance Mode -	 Used to set or clear the tare value. Used to store SPEC changes and escape to the Weighing Mode when programming specifications. Used to escape to the Weighing Mode from the Maintenance Mode.

Table 1-4. DC-530 Key Functions

Key	Description
UNIT WEIGHT	**UNIT WEIGHT** key - Counting Mode - Used to set the Unit Weight. Program Mode - Used to register an item code being entered into memory.
#	**POUND** key- Used to call up or recal an item code from memory.

Table 1-4. DC-530 Key Functions

2.0   Installation

This section describes the procedure for the installation and setup of the DC-530 counting scale.

2.1   Unpacking

⚠ **Caution**   *Do not turn scale upside down. Always work with scale on its side! Damage to the load cell can occur if the scale is turned upside down.*

1. Immediately after unpacking, visually inspect the DC-530 counting scale to ensure all components are included and undamaged. If any were damaged in shipment, notify Rice Lake Weighing Systems and the shipper immediately.
2. The DC-530 counting scale is carefully packed for protection during shipping. After opening the box, remove all the components. Check the insides of the box carefully to make sure you have all of the pieces. The package should include the following:

   - DC-530 counting scale
   - Platter support
   - 4 rubber caps
   - 4 screws for platter support
   - Stainless steel platter
   - AC power cord
   - Operation Manual
   - Warranty card

3. Remove the bag protecting the scale and the protective film covering the front panel and platter.
4. Put the 4 supplied rubber caps on the ends of the platter support.
5. Set the platter support on the scale, lining up the screw holes on the support with the corresponding holes on the scale. Use the 4 screws supplied to fix the platter support to the scale, taking care not to put strong pressure down on the platter support while screwing it down to avoid damage to the force balance.
6. Seat the stainless steel platter on the platter supports, making sure that the rubber caps are completely seated in the corners of the platter.
7. Connect the AC power cord to the plug on the bottom right-hand side of the scale.
8. Store the DC-530 scale box for possible future use.

2.2   Repacking

If the DC-530 counting scale must be returned for modification, calibration or repair, it must be properly packed with sufficient cushioning materials. Whenever possible, use the original carton when shipping the DC-530. Damage caused by improper packaging is not covered by the warranty.

2.3 Setting Up

Place the scale on a solid, level surface away from fans, breezes, and sources of electrical interference or magnetic fields. The installation location should also be free from high humidity, direct sunlight, or excessive dust. The operating temperature is 0 - 40º C.

Level the scale by turning the four adjustable legs located on the bottom of the scale while referencing the bubble level located on the front of the scale (see Figure 2-1).

NOTE: *To ensure a higher degree of scale stability, turn all four adjustable legs al the way in before leveling. Turn the adjustable legs out to level as needed.*
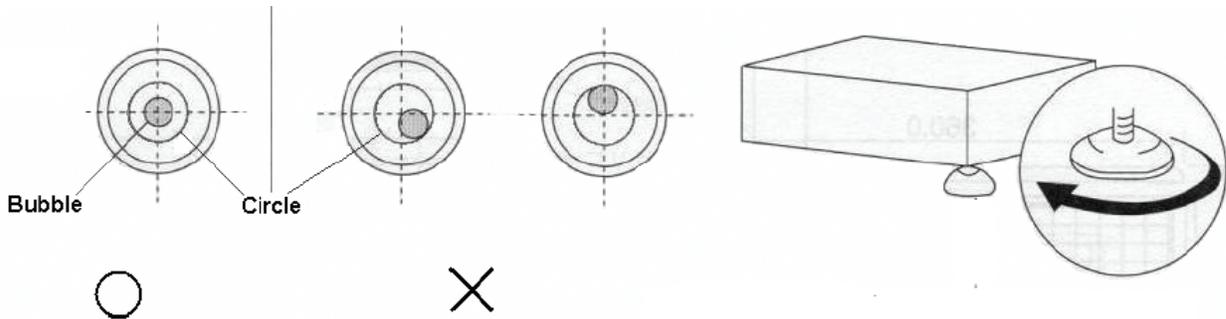
Figure 2-1. Leveling Bubble

2.4 Powering Up the DC-530

2.4.1 AC Power Cord and On/Off Switch

1. Connect the AC power cord under the scale base as shown in Figure 2-2.

Figure 2-2. AC Plug-in and ON/OFF Switch Location on Underside of DC-530

2. Plug the AC power cord into a grounded 115 VAC receptacle and switch the **ON/OFF** rocker switch on the bottom right-hand side of the scale to the "On" position.

3. Press the **ON/OFF** key located on the front of the scale. This key turns the scale display on and off. To turn AC power to the scale on and off, use the **ON/OFF** rocker switch.

2.4.2 Start-Up Screens

1. When powering up, the DC-530 will display the model number and firmware version.
2. Next, the scale tests the color modes of the display and says *SEARCHING SCALE* before bringing you to the Normal Counting Mode screen.

3. If there is anything on the platform(s) and it exceeds the scale start range, the display will show the error message *OUT OF START RANGE*. If this error appears, remove the weight from the platform and the scale will continue its startup sequence.

2.5 Setting the Date and Time

Once the date and time have been set, the internal clock will be maintained by the main board battery even when the DC-530 is not plugged in or turned off. The procedure below can also be used to adjust the time when moving from Standard to Daylight Savings Time or when the scale is moved to a new facility in a different time zone.

1. Press the **MODE** key until the display shows the Menu Screen.
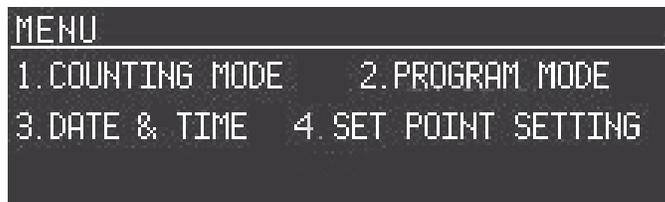
2. Press the **3** key to enter the Date and Time Setting Screen.

(NOTE: *The order in which the day/month/year fields appear on the screen may vary depending on how you scale is programmed.).*

3. Use the numeric keypad to enter the current date (2 digit format). Then press the **+ (Plus)** key to move to the setting of the month.
4. Use the numeric keypad to enter the current month (in 2 digit format). Continue forward to the other fields by pressing the **+ (Plus)** key. To move backwards to a modify a previous field, press the **[-] (minus)** key. To move to the next field without making any change, simply press the **+ (Plus)** key without entering data.
5. When all the date and time fields have been entered, press the *** PRINT** key to save the date and time setting. To exit without saving the changes, press the **TARE** key to return to the Mode Menu screen.
6. Press the **[1]** key to exit the menu and return to the Counting Mode Screen.

2.6   Replacement Parts

The following table lists the part numbers and descriptions of replacement parts available for the DC-530 Counting Scale.

RLWS Part Number	Description
97002	Platter
97003	Platter Support (without rubber stops)
97004	Rubber Stops for Platter Support (97003)
97005	Overlay
97006	Overlay Lens
97007	Display Board
97008	Loadcell Block, 10 lb
97009	Loadcell Block, 20 lb
97010	A/D Assembly
97011	Power Supply
97012	Main CPU Board
15438	Power Cord

Table 2-1. DC-530 Replacement Parts

2.7   Scale Dimensions

The following diagram illustrates the external dimensions of the DC-530 Counting Scale.
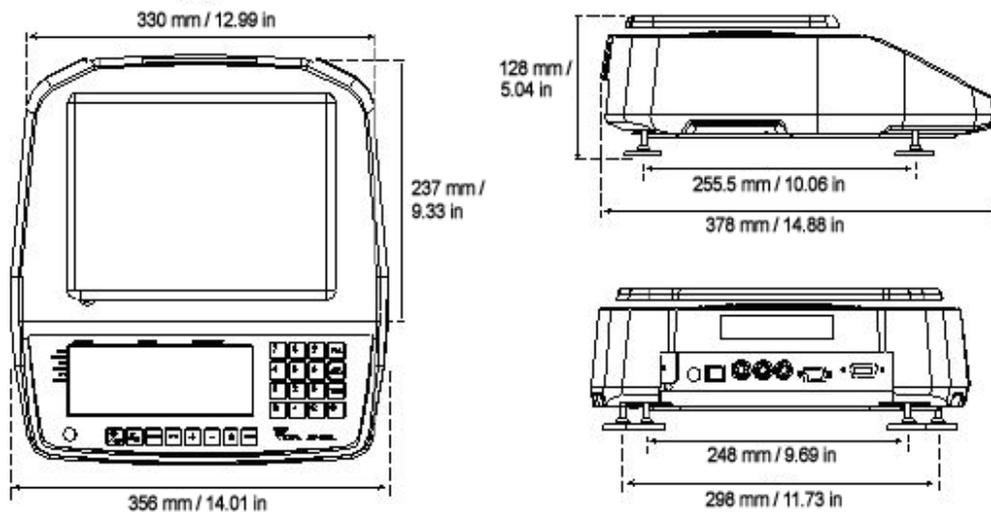
3.0   Configuration Settings

This section presents the setup and configuration of the DC-530 Counting Scale to be used specifically by distributors and service technicians. Configuring these specifications allow you to tailor the DC-530 to your specific applications.

Setting the specifications allows you to modify the functionality of the DC-530. Use the tables in this section to view the options you can modify. For example, if you want to deactivate the DC-530's ability to enter Tare weights digitally, refer to the specification table and locate SPEC 35, Bit 2. The default for SPEC 35 is 1, which means it is enabled. To turn it off or disable it, change the SPEC setting to 0: No.

The following tables list the DC-530 specifications and their corresponding default values. The default values are automatically set when the scale's memory is initally set by the dealer.

SPEC 00 through SPEC 12, and SPEC 51 through SPEC 55 (Table 3-1) are Customer Specifications while SPEC 20 through SPEC 49 (Table 3-2) are Weight and Measurement specifications. In programming specifications, the **+ (Plus)** and **– (minus)** keys allow you to move to the next or previous specification while saving changes to the SPEC code you were just in. To exit from a specification without saving your changes, press the **TARE** key. To save the changes when exiting, press the *** PRINT** key.

3.1   Configuring Customer Specifications

1. To configure customer specifications, press the **MODE** key to enter the Menu Screen.
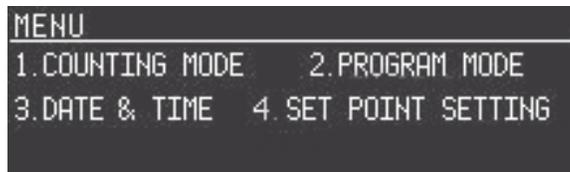
```
MENU
1.COUNTING MODE    2.PROGRAM MODE
3.DATE & TIME   4.SET POINT SETTING
```

2. In the Mode Menu Screeen, hold down the **REZERO** key while entering **141** from the numeric keypad. The first SPEC code, *SPEC 00* is displayed along with its *OLD SETTING* meaning its current setting.
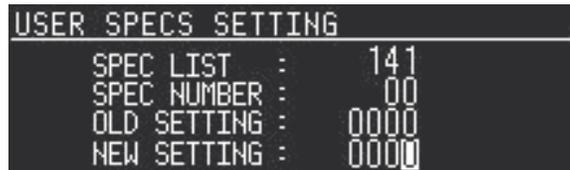
```
USER SPECS SETTING
      SPEC LIST    :    141
      SPEC NUMBER :     00
      OLD SETTING :    0000
      NEW SETTING :    0000
```

3. Press the **+ (Plus)** key until the specification you want to modify is displayed. (You can use the **- (Minus)** key to move backwards through the list.)

4. Enter the new value for the specification. You must enter values for all four bits of this specification even if you are only changing one of the bits, so your entry must be 4 digits long. Your new entry will be displayed in the *NEW SETTING* field.

```
USER SPECS SETTING
      SPEC LIST    :    141
      SPEC NUMBER :     00
      OLD SETTING :    0000
      NEW SETTING :    1010
```

5. Once you have entered your change, you have the following options:
    *   press the **+ (Plus)** key to temporarily store the change and move to the next specification, then press the *** PRINT** key to permanently record the change and leave the SPEC setting mode.
    *   Press the **TARE** key to exit without saving the change.

6. To change another SPEC code before exiting, repeat Steps 3 and 4.

⚠️ **Caution** *If you power off the scale while the saving process in going on, you can clear the entire memory of the scale! Wait until the scale has returned to the Menu Screen before performing any other functions.*

7. After returning to the Normal Weighing Mode, power the scale down completely by using the **ON/OFF** rocker switch on the bottom of the scale to complete the registering of the changes.

SPEC No	Bit 3	Bit 2	Bit 1	Bit 0
00				
01	Set Point Operation 00: No Operation [DEFAULT] 01: Common Setpoint 10: Item Setpoint 11: Not Used			LAN [not currently used - for future expansion] 0: Disable [DEFAULT] 1: Enable
02	Buzzer Output Type 0: Proper [DEFAULT] 1: Scare/Over	Setpoint Selection 0: Pieces [DEFAULT] 1: Weight	Setpoint Buzzer Output 0: No 1: Yes [DEFAULT]	Setpoint Range 0: Negative 1: Positive [DEFAULT]
03 RS232B for Printer	Printer Model 00: No Connection [DEFAULT] 01:DIGI TVP1000/ Zebra LP2824 10: EPSON CTM290/TM-U295/TM-U220 11: FL-2			
04 RS232A for Scanner		Connection Type 00: No Connection [DEFAULT] 01: Barcode Scanner		
05 RS232C for PC		Connection Type 00: No Connection [DEFAULT] 01: PC		
06 RS232C Output	Output Protocol 00: No Output 01: Continuous (this affects the printer output) 10: Manual [by key press] Key [DEFAULT] 11: Not Used		Header Type NOTE: The header type SPEC only affects output to a PC, not communication to a printer. 00: No Header 01: Code [DEFAULT] 10: Title 11: Not Used	
07 RS232C1 Force Balance	Baud Rate 000: 19200 001: 9600 010: 4800 [DEFAULT] 011: 2400 100: 1200			
08 RS232C1 Force Balance	Parity 00: Even [DEFAULT] 01: Odd 10: None 11: None		Stop Bit 0: 1 [DEFAULT] 1: 2	Data Length 0: 7 [DEFAULT] 1: 8

Table 3-1. DC-530 Customer Specifications

SPEC No	Bit 3	Bit 2	Bit 1	Bit 0
09 RS232C2	Baud Rate 000: 19200 001: 9600 [DEFAULT] 010: 4800 011: 2400 100: 1200			
10 RS232C2	Parity Bit 00: Even 01: Odd 10: None [DEFAULT] 11: None		Stop Bit 0: 1 [DEFAULT] 1: 2	Data Length 0: 7 1: 8 [DEFAULT]
11 RS232C3	Baud Rate 000: 19200 001: 9600 [DEFAULT] 010: 4800 011: 2400 100: 1200			
12 RS232C3	Parity Bit 00: Even 01: Odd 10: None [DEFAULT] 11: None		Stop Bit 0: 1 [DEFAULT] 1: 2	Data Length 0: 7 1: 8 [DEFAULT]
13 - 19	not currently in use			
51	Insufficient Range for Load Cell 00: 0.1% of Full Scale [DEFAULT] 01: 0.2% of Full Scale 10: None 11: None		Insufficient Sample 0: Disable 1: Enable [DEFAULT]	Insufficient Range for Force Balance 0: 0.01% of Full Scale [DEFAULT] 1: 0.1% of Full Scale
52	Unit Weight Sampling Times 0: 5 times [DEFAULT] 1: 10 times	Change Scale When Weight Stable 0: No [DEFAULT] 1: Yes	Negative Counting 0: No 1: Yes [DEFAULT]	Sampling Times 0: 5 times 1: 10 times [DEFAULT]
53	Gross Weight Output 0: Display [DEFAULT] 1: Internal	Normal Counting Mode Auto Re-Computing 0: Manual 1: Automatic [DEFAULT]	Exit the Total Mode 0: Manual 1: Automatic [DEFAULT]	TEP Sampling Method 0: Manual 1: Automatic [DEFAULT]
54	Wait for Stable Weight During Unit Weight Calculating 0: No [DEFAULT] 1: Yes	Work Filter Function 0: No 1: Yes [DEFAULT]	Uni Bloc Average Sample (filter function) 00: 16 samples 01: 32 samples 10: 64 samples [DEFAULT] 11: 128 samples	

Table 3-1. DC-530 Customer Specifications

SPEC No	Bit 3	Bit 2	Bit 1	Bit 0
55	Scan Quantity Type	Buzzer at Error (activates the buzzer when an operational error is performed)	USA Pharmacy	Download Print Format When Power On
	0: Item Quantity [DEFAULT] 1: Accumulate Quantity	0: Open [DEFAULT] 1: Close	0: Disable [DEFAULT] 1: Enable NOTE: This SPEC must be enabled for use in pharmaceutical applications. When this SPEC is enabled, if the Unit Weight is less than 3d or the sample size is less than 10 the error message "UNIT WEIGHT BELOW LIGHT RANGE, PLEASE RESAMPLE" will appear.	0: No 1: Yes
56 - 59	not currently in use			

Table 3-1. DC-530 Customer Specifications

3.2 Configuring Weight and Measurement Specifications (Dealer/Technician Maintenance)

1. To configure customer specifications, press the **MODE** key to enter the Menu Screen.

```
MENU
1.COUNTING MODE    2.PROGRAM MODE
3.DATE & TIME   4.SET POINT SETTING
```
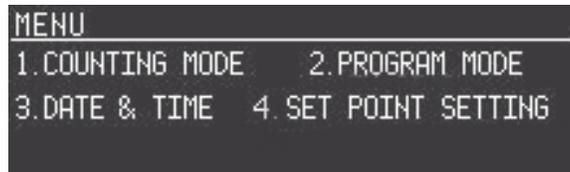
2. In the Mode Menu Screeen, hold down the **REZERO** key while entering **142** from the numeric keypad. The first SPEC code, *SPEC 20* is displayed along with its *OLD SETTING* meaning its current setting.

```
USER SPECS SETTING
    SPEC LIST   :    142
    SPEC NUMBER :     00
    OLD SETTING :   0000
    NEW SETTING :   0000
```

3. Press the **+ (Plus)** key until the specification you want to modify is displayed. (You can use the **- (Minus)** key to move backwards through the list.)

4. Enter the new value for the specification. You must enter values for all four bits of this specification even if you are only changing one of the bits, so your entry must be 4 digits long. Your new entry will be

displaced in the *NEW SETTING* field.

```
USER SPECS SETTING
      SPEC LIST   :      142
      SPEC NUMBER :       00
      OLD SETTING :     0000
      NEW SETTING :     1100
```

5. Once you have entered your change, you have the following options:

    •   press the **+ (Plus)** key to temporarily store the change and move to the next specification, then press the *** PRINT** key to permanently record the change and store it and leave the SPEC setting mode.

    •   Press the **TARE** key to exit without saving the change.

6. To change another SPEC code before exiting, repeat Steps 3 and 4.

⚠️ **Caution**   *If you power off the scale while the saving process in going on, you can clear the entire memory of the scale! Wait until the scale has returned to the Menu Screen before performing any other functions.*

7. After returning to the Normal Weighing Mode, power the scale down completely by using the **ON/OFF** rocker switch on the bottom of the scale to complete the registering of the changes.

SPEC No	Bit 3	Bit 2	Bit 1	Bit 0
20	Minimum Display (Uni Bloc) 00: 1 [DEFAULT] 01: 2 10: 5 11: 10		Display Resolution (Uni Bloc) (when internal count span is 500,000) 00: 1/10,000 01: 1/5,000 [DEFAULT] 10: 1/2,500 11: 1/12,500 (when internal count span is 1,000,000) 00: 1/100,000 01: 1/50,000 [DEFAULT] 10: 1/25,000 11: 1/20,000	
21	Internal Count Span (Uni Bloc) 0: 500,000 1: 1,000,000 [DEFAULT]	Weight Decimal Point Position (Uni Bloc) (when internal count span is 500,000) 000: 00000 001: 0000.0 [DEFAULT] 010: 000.00 011: 00.000 100: 0.0000 Weight Decimal Point Position (Uni Bloc) (when internal count span is 1,000,000) 000: 000000 001: 00000.0 [DEFAULT] 010: 0000.00 011: 000.000 100: 00.0000 101: 0.00000		
22	not currently in use			

Table 3-2. DC-530 Weight and Measurement Specifications

SPEC No	Bit 3	Bit 2	Bit 1	Bit 0
23	Minimum Display (Load Cell 1) 00: 1 01: 2 10: 5 11: 10		Display Resolution (Load Cell 1) (when internal count span is 500,000) 00: 1/10,000 01: 1/5,000 [DEFAULT] 10: 1/2,500 11: 1/12,500 (when internal count span is 1,000,000) 00: 1/100,000 01: 1/50,000 [DEFAULT] 10: 1/25,000	
24	Internal Count Span (Load Cell 1) 0: 500,000 [DEFAULT] 1: 1,000,000	Weight Decimal Point Position (Load Cell 1) (when internal count span is 500,000) 000: 00000 001: 0000.0 [DEFAULT] 010: 000.00 011: 00.000 100: 0.0000 Weight Decimal Point Position (Load Cell 1) (when internal count span is 1,000,000) 000: 000000 001: 00000.0 [DEFAULT] 010: 0000.00 011: 000.000 100: 00.0000 101: 0.00000		
25	Weight Stable Condition for Load Cell 1 - waiting time 0.5 seconds to 10 seconds 0000: 0.5 seconds 1000: 4.5 seconds 0001: 1.0 seconds 1101: 5.0 seconds 0010: 1.5 seconds 1010: 5.5 seconds 0011: 2.0 seconds [DEFAULT] 1011: 6.0 seconds 0100: 2.5 seconds 1100: 7.0 seconds 0101: 3.0 seconds 1101: 8.0 seconds 0110: 3.5 seconds 1110: 9.0 seconds 0111: 4.0 seconds 1111: 10.0 seconds			
26	Weight Stable Condition for Load Cell 1 - Limit No Check to ± 10.0d 0000: No Check 1000: ± 5.0d 0001: ± 0.1d 1001: ± 10.0d 0010: ± 0.2d 0011: ± 0.3d 0100: ± 0.4d 0101: ± 0.5d [DEFAULT] 0110: ± 1.0d 0111: ± 2.0d			

Table 3-2. DC-530 Weight and Measurement Specifications

SPEC No	Bit 3	Bit 2	Bit 1	Bit 0
27	Minimum Display (Load Cell 2) 00: 1 [DEFAULT] 01: 2 10: 5 11: 10		Display Resolution (Load Cell 2) (when internal count span is 500,000) 00: 1/10,000 01: 1/5,000 [DEFAULT] 10: 1/2,500 11: 1/12,500 (when internal count span is 1,000,000) 00: 1/1,000,000 01: 1/50,000 [DEFAULT] 10: 1/25,000	
28	Internal Count Span (Load Cell 2) 0: 500,000 [DEFAULT] 1: 1,000,000	Weight Decimal Point Position (Load Cell 2) (when internal count span is 500,000) 000: 00000 001: 0000.0 [DEFAULT] 010: 000.00 011: 00.000 100: 0.0000 Weight Decimal Point Position (Load Cell 2) (when internal count span is 1,000,000) 000: 000000 001: 00000.0 [DEFAULT] 010: 0000.00 011: 000.000 100: 00.0000 101: 0.00000		
29	Weight Stable Condition for Load Cell 2 - waiting time 0.5 seconds to 10 seconds 0000: 0.5 seconds 1000: 4.5 seconds 0001: 1.0 seconds 1101: 5.0 seconds 0010: 1.5 seconds 1010: 5.5 seconds 0011: 2.0 seconds [DEFAULT] 1011: 6.0 seconds 0100: 2.5 seconds 1100: 7.0 seconds 0101: 3.0 seconds 1101: 8.0 seconds 0110: 3.5 seconds 1110: 9.0 seconds 0111: 4.0 seconds 1111: 10.0 seconds			
30	Weight Stable Condition for Load Cell 2 - Limit No Check to +/- 10.0d 0000: No Check 0001: ± 0.1d 0010: ± 0.2d 0011: ± 0.3d 0100: ± 0.4d 0101: ± 0.5d [DEFAULT] 0110: ± 1.0d 0111: ± 2.0d 1000: ± 5.0d 1001: ± 10.0d			
31 - 34	not currently in use			

Table 3-2. DC-530 Weight and Measurement Specifications

SPEC No	Bit 3	Bit 2	Bit 1	Bit 0
35	Enble Tare 0: No 1: Yes [DEFAULT]	Digital Tare Setting 0: No 1: Yes [DEFAULT]	Tare Range 00: 100% of Full Scale [DEFAULT] 01: 50% of Full Scale 10: 5% of Full Scale	
36		Weight Stable Timeout 00: 2 10:6 01: 4 11:8 [DEFAULT] This SPEC sets how many seconds it is before the scale sounds its error buzzer if the weight does not stabilize within that time after a function key (TARE, REZERO, PCS, * PRINT, + (plus), - (minus).		Zero Reset When Scale Change 0: No 1: Yes [DEFAULT] NOTE: If both this SPEC and SPEC 37 BIT 1 - Clear Tare When Re-Zero Operation are set to 1: Yes, the tare value will be changed when changing scales even if SPEC 45 Bit 1 - Clear Tare on Scale Change and SPEC 47 Bit 0 - Keep Tare are both set to 0: No.
37	Digital Tare Rounding 00: As Entered 01: Round to Nearest Increment [DEFAULT] 10: Not Used 11: Not Used		Clear Tare When Re-Zero Operation 0: No [DEFAULT] 1: Yes NOTE: If both this SPEC and SPEC 36 BIT 0 - Zero Reset When Scale Change are set to 1: Yes, the tare value will be changed when changing scales even if SPEC 45 Bit 1 - Clear Tare on Scale Change and SPEC 47 Bit 0 - Keep Tare are both set to 0: No	Clear Unit Weight on Scale Change 0: No [DEFAULT] 1: Yes
38	Digital Tare When Loaded 0: No 1: Yes [DEFAULT]	Auto Tare Weight Clear 0: No [DEFAULT] 1: Yes	Zero Tracking With Tare 0: No 1: Yes [DEFAULT]	Zero Tracking 0: No 1: Yes [DEFAULT]
39	Rezero on Power-Up 0: No 1: Yes [DEFAULT]	Condition of Auto Item Clear 00: >=Net 5d & gross 21d [DEFAULT] 01: >=Net 1d & stable 10: >=Net 1d & stable & quantity=0 NOTE: For auto tare clear, 10: >=net 5d & stable		Auto Item Clear in Normal Counting Mode 0: No [DEFAULT] 1: Yes

Table 3-2. DC-530 Weight and Measurement Specifications

SPEC No	Bit 3	Bit 2	Bit 1	Bit 0
40	Load Cell 1 Sensitivities Selection (mV/V) 1000(8 H): 2.08 1001(9 H): 1.84 1010(A,H):1.60 1011(B H): 1.36 1100(C H): 1.12 [DEFAULT] 1101(D H): 0.88 1110(E H): 0.64 1111(F H): 0.40			
41	Load Cell 2 Sensitivities Selection (mV/V) 1000(8 H): 2.08 1001(9 H): 1.84 1010(A H): 1.60 1011(B H): 1.36 1100(C H): 1.12 [DEFAULT] 1101(D H): 0.88 1110(E H): 0.64 1111(F H): 0.40			
42	Scale 4 Connection 0: Not Connected [DEFAULT] 1: Connected	Scale 3 Connection 0: Not Connected [DEFAULT] 1: Connected	Scale 2 Connection 0: Not Connected [DEFAULT] 1: Connected	Scale 1 Connection 0: Not Connected 1: Connected [DEFAULT]
43	SCALE 1 00: UniBloc [DEFAULT] 01: Load Cell 1 10: Force Balance 11: Load Cell 2		SCALE 2 00: UniBloc 01: Load Cell 1 [DEFAULT] 10: Force Balance 11: Load Cell 2	
44	SCALE 3 00: UniBloc 01: Load Cell 1 10: Force Balance 11: Load Cell 2 [DEFAULT]		SCALE 4 00: UniBloc 01: Load Cell 1 10: Force Balance [DEFAULT] 11: Load Cell 2	
45	Tare Decrease 0: No 1: Yes [DEFAULT]	Item Tare Subtraction 0: No 1: Yes [DEFAULT]	Clear Tare on Scale Change 0: No 1: Yes [DEFAULT] NOTE: Even if this SPEC is set to 0: No to keep the tare value, the tare value will be changed when changing scales if SPEC 36 Bit 0 - Zero Reset When Scale Change and SPEC 37 Bit 1 - Clear Tare When Re-Zero Operation are both set to 1: Yes	Do Tare Operation When No Stability 0: No 1: Yes [DEFAULT]

Table 3-2. DC-530 Weight and Measurement Specifications

SPEC No	Bit 3	Bit 2	Bit 1	Bit 0
46	Tare Increase 0: No 1: Yes [DEFAULT]	Weight Unit 0: kg 1: g [DEFAULT] NOTE: This SPEC does not affect the units displayed unless SPEC 49 Bit 1 - Weight Base is set to 0: Kg/g.	Overwrite the Tare Value 0: No 1: Yes [DEFAULT]	Do Tare Operation When No Stability 0: No [DEFAULT] 1: Yes
47	Minus Mask Limit 0: Gross Weight [DEFAULT] 1: Net Weight	Minus Display 0: Mask 1: Minus [DEFAULT]	Zero Lamp Condition 0: Gross [DEFAULT] 1: Net	Keep Tare When Changing Scale 0: No [DEFAULT] 1: Yes NOTE: Even if this SPEC is set to 1: Yes to keep the tare value, the tare value will be changed when changing scales if SPEC 36 Bit 0 - Zero Reset When Scale Change and SPEC 37 Bit 1 - Clear Tare When Re-Zero Operation are both set to 1: Yes
48	Rezero Operation Range 00: 100% of Full Scale [DEFAULT] 01: 10% of Full Scale 10: 2% of Full Scale		Scale Start Range 00: 100% of Full Scale [DEFAULT] 01: 10% of Full Scale 10: 2% of Full Scale	
49	Disable Scale Connection Check 0: No [DEFAULT] 1: Yes	Too Light Range for Sampling 0: No [DEFAULT] 1: Yes	Weight Base 0: kg/g 1: lb [DEFAULT]	Mask Condition at Overflow 0: 1d 1: 9d [DEFAULT]
50	not currently in use			

Table 3-2. DC-530 Weight and Measurement Specifications
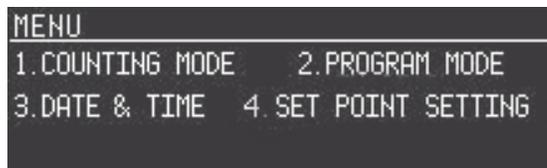
4.0   Calibration

The DC-530 Counting Scale is a high-precision instrument. Although the scale needs very little maintenance, you may want to check the calibration after every month or so of normal usage. To do this you will need to have a test weight of approximately the total capacity of the scale (i.e. a 10 lb weight if you have a 10 lb capacity scale). After the scale is initially installed, put the weight on the platform and record the weight displayed. Then every month or so put the same weight on the scale and verify that it still reads the same.

Many facilities have a technician come in and check their units with certified test weights four times a year. If you are ISO certified, you will want to check to see if your certification specifies more stringent requirements in order to stay in compliance. Your Rice Lake Weighing Systems scale dealer has the calibrated test weights, expertise and experience to perform this task for you as well as to check other operating parameters of your scale and help you effectively integrate scales into your operations. If you do not know who your local Rice Lake Weighing Systems dealer is, call us at 1-715-736-0002 and we will help you find someone who can provide you with on-site support.

Follow the instructions below to calibrate your DC-530 scale to ensure its continued accuracy.

NOTE: *You can exit the Maintenance Mode and return to the Counting Mode at any time by pressing the* **TARE** *key.*

1. Ensure that there is no weight on the platter and turn the scale on. It will display the model number and current firmware version number.

2. With the scale in the Counting Mode, press the **MODE** key to go to the Mode Menu.

```
MENU
1.COUNTING MODE    2.PROGRAM MODE
3.DATE & TIME   4.SET POINT SETTING
```

3. While at the Mode Menu, press and hold the **REZERO** key while entering **8715** from the numeric keypad to enter the calibration mode.

4. You can select which scale you are calibrating, Scale 1 or Scale 2, by pressing the **SCALE** key. (If a 2nd scale is not installed and set in the specifications, pressing the **SCALE** key has no effect.)

5. The scale display will ask you to make sure that there is no weight on the platter then press the **#** **[CODE]** key to set the zero point..

```
PLEASE REMOVE WEIGHT AND PRESS
[CODE] KEY, THEN PRESS [*] KEY

AD COUNT 137779
```

6. The scale will briefly flash the message *ZERO POINT SETTING, PLEASE WAIT…*Once the zero point is set, the display returns to the Calibration Screen.. Press the *** PRINT** key to move to the span weight calibration. The display will change to the following:

```
PLACE SPAN WEIGHT & ENTER SPAN
WEIGHT VALUE AND PRESS [CODE] KEY

AD COUNT 137779
```

7. Place a reference weight on the platform. It is preferable to calibrate the scale using a weight equal to the

full capacity of the scale (i.e. a 10 lb weight for 10 lb capacity scale, etc.) If the reference weight is not equal to the full capacity of the scale, it must at least be greater than 10% of the full scale capacity.

Enter the value of the weight placed on the platter using the numeric keys before pressing the **# [CODE]** key. The weight you enter will appear at the bottom of the display. Press the **# [CODE]** key.

8. The display will flash briefly again as the span settings for calibration of the scale are being saved, then the display will return to Mode Menu.

```
MENU
1.COUNTING MODE    2.PROGRAM MODE
3.DATE & TIME   4.SET POINT SETTING
```
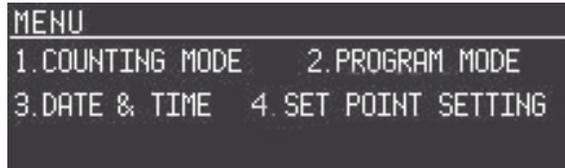
9. Press **1** exit the Mode Menu and return to the Counting Mode.

5.0   Scale Operations

The following sections contain detailed operator instructions for the DC-530 counting scale. Included are instructions on how to enter tare weights, accumulate tare weights, establish unit weights, accumulate item counts, perform negative counting, and count parts in both Normal Counting Mode and TEP (Teraoka Error Prediction) Mode.

When performing all weighing and counting operations, the scale must be stable before it will accept an entry. The scale will indicate that the weight reading or count is stable by illuminating the Stable indicator lamp. If you press a function key when the scale is not stable you will hear a double beep indicating that the function cannot be performed yet. Once the Stable indicator lamp is lit, then perform the function.

Figure 5-1. DC-530 Counting Scale

5.1   Factors Affecting Counting Scale Accuracy

Counting scale accuracy is primarily determined by the following factors:

- Sample size (number of pieces)
- Total sample size as a percentage of full scale capacity
- Piece-to-piece weight variation

As a general rule, when determining sample size of fairly uniform pieces, the larger the sample size the greater the total sample weight and therefore the better the counting accuracy. Selecting the smallest capacity scale that can obtain the highest counting resolution should be considered, but should not sacrifice the capacity required for the heaviest container of parts. For some applications, a dual-platform scale utilizing the DC-530's optional capability to connect a second scale may be the best selection.

There is a direct relationship between piece-to-piece weight variation (non-uniformity) and counting accuracy. Therefore, elimination of the piece-to-piece weight variations will greatly improve accuracy. This can be accomplished by:

- Isolating the sample used to calculate the unit weight and use the same sample to re-check the scale.
- Recalculating the unit weight from lot to lot of parts. Parts manufactured on one machine may vary slightly from another machine relative to weight.
- Tightening the manufacturing tolerances on the parts reduces piece weight variations and increases count accuracy.

5.2   Teraoka Error Prediction (TEP) Function

The DC-530 counting scale includes the DIGI TEP (Teraoka Error Prediction) Function which detects weight variances in sample quantities and calculates the maximum quantity of that piece that can be counted without introducing error. To make the operator's job easier, the scale's display will change from green to yellow or red when the maximum safe quantity has been exceeded. This function works by performing a series of sampling operations which the scale uses to plot the weight variances of the pieces being weighed. By then accumulating counting results within the calculated safe quantity, the counting operation can be completed without a counting error. Although the TEP Function can be used at any time the scale owner or operator deems it appropriate, the extra sampling involved to derive the plot make it most logical for high-value items.

Coupled with the DC-530's internal counting resolution of 1/1,000,000, the TEP Function assures your precise counting of high-value items.

5.3   The Mode Menu Screen

The starting point for using the DC-530 scale is the Mode Menu Screen. From this screen you have four options to choose from:

1. Counting Mode -   to enter the Counting Mode Screen on which weights and counts are displayed;

2 - Program Mode -   to enter the Program Mode Screen where you will be able to further choose between editing and deleting items in memory;

3 - Date and Time -   to enter the Date and Time Setting Screen; and

4 - Set Point Settings - to enter the General Set Point Setting Screen in which you can establish set points not associated with specific items in memory.
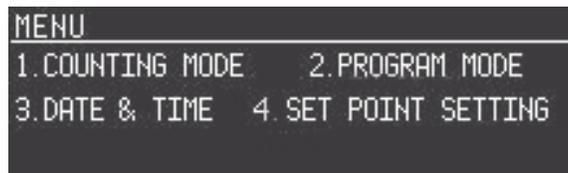
```
MENU
1.COUNTING MODE     2.PROGRAM MODE
3.DATE & TIME   4.SET POINT SETTING
```

Figure 5-2. Mode Menu Screen

To select the option desired, simply press the number key for the corresponding number on the numeric keypad. The display will change to the screen for that option.

5.4   Tare Operation

Tare weights can be entered in the scale by one of two methods: one-touch tare or digital tare. Digital tare is used when the tare weight is already known, while one-touch tare is used when the tare weight is unknown. If you call up an Item Code already programmed into the DC-530's memory and you have a Tare Weight stored for that Item Code, the Tare Weight stored with the Item Code will override one entered digitally or by using the **TARE** key. The procedures illustrated below are the same for the Normal Counting Mode and the TEP Counting Mode although only Normal Counting Mode displays are shown in the examples.

NOTES:

• *SPEC 35, Bit 2 DIGITAL TARE SETTING must be a "1: YES" to allow digital tare.*

• *SPEC 35, Bits 1 and 0 TARE RANGE must be set to the appropriate tare range value. The default is "00: 100 PERCENT OF FULL SCALE".*

• *SPEC 37, Bits 3 an 2 DIGITAL TARE ROUNDING determines if a digital tare is stored as entered or rounded to the nearest increment. The default is "01: Round to Nearest Increment."*

• *SPEC 47, Bit 1 ZERO LAMP CONDITION determines whether the zero indicator lamp lights when a gross weight is being displayed or a net weight. The default is "0: GROSS".*

5.4.1   One-Touch Tare, Tare Unknown

1.   Press the **REZERO** key to zero the scale.

2.   If the tare weight value is not known, place the container, box, or item to be tared on the scale and press

the **TARE** key. The weight display will now show *0* and the Net and Zero indicator lamps will illuminate.
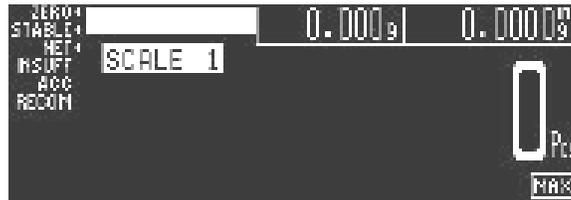
3. Remove the container, box, or item from the scale. The weight display should show a negative weight value (weight of the tared container, box, or item).

4. To clear the tare weight, press the **TARE** key**.** The Net indicator lamp will no longer be illuminated.

5.4.2   Digital Tare, Tare Weight Known

1. Press the **REZERO** key to zero the scale.
2. If the tare weight value is known, use the numeric keypad to key in the value and then press the **TARE** key. The Tare Weight value must be entered without a decimal point. The Weight field is 5 digits long and the placement of the decimal point is determined by Bits 2, 1, and 0 of Specification 21 - Weight Decimal Point Position. The digits you enter for the tare weight will fill the field starting from the right. (Example: if the decimal point is set as 0.0000 and you enter the digits 125, the net weight will show as 0.0125.) The Net indicator lamp will illuminate.

3. To reset the tare to zero, press the **TARE** key again.

5.4.3   Tare Value Accumulation and Subtraction

Tare weights can be accumulated or subtracted using the **TARE** key by the One Touch Tare method. Tare weights can also be accumulated using the Digital Tare method, but not subtracted.

NOTES:

• *SPEC 35, Bit 2 DIGITAL TARE SETTING must be a "1: YES" to allow digital tare.*

• *SPEC 35, Bits 1 and 0 TARE RANGE must be set to the appropriate tare range value. The default is "00: 100 PERCENT OF FULL SCALE".*

• *SPEC 37, Bits 3 an 2 DIGITAL TARE ROUNDING determines if a digital tare is stored as entered or rounded to the nearest increment. The default is "01: Round to Nearest Increment."*

• *SPEC 38, Bit 3 DIGITAL TARE WHEN LOADED must be set to "1: YES" in order for both One Touch Tare and Digital Tare functions to be used at the same time.*

• *SPEC 46, Bit 3 TARE INCREASE and SPEC 46, Bit 1 OVERWRITE THE TARE must both be set to "1: YES" to allow*

accumulation of tare values. To allow Tare Subtraction, SPEC 45, Bit 3 TARE DECREASE must be set to "1: YES".

5.4.4   Tare Accumulation

1. Press the **REZERO** key to zero the scale.
2. At the Counting Mode Screen, place the container, box or item to be tared on the platform and press the **TARE** key. The Weight Display should now show *0* and the NET indicator lamp will illuminate. If you enter the Tare Weight digitally and press the **TARE** key, the Tare Weight will show in the Weight Display with a minus sign in front of it and the NET indicator lamp will illuminate.
3. Place another item to be tared on the platform and press the **TARE** key again. This will add the two tare weights together (Tare Accumulation). When using Digital Tare entry, the next tare weight value should not be lower than the previous one. If you enter another tare weight digitally and press the **TARE** key, the Weight Display will show the accumulated Tare Weight.
4. Repeat Step 2 until you have accumulated all the tare weights necessary for your weighing and counting operation.
5. If you remove all the tare weights from the platter, the Weight Display will show the accumulated Tare Weight.
6. To clear the accumulated tare weights, press the **TARE** key after removing all the tare weights from the platter. The NET indicator lamp will no longer be illuminated.

5.4.5   Tare Subtraction

1. Press the **REZERO** key to zero the scale.
2. At the Counting Mode Screen, place the container, box or item to be tared on the platform and press the **TARE** key. The weight display should now show *0* and the NET indicator lamp will illuminate. Tare subtraction cannot be done digitally.
3. Remove the amount of the tare that you want to subtract and press the **TARE** key to subtract it.
4. Repeat Step 3 to subtract more tare weights until you have the desired tare weight.
5. To clear all the tare weight, remove all tare weights from the platter and press the **TARE** key. The NET indicator lamp will no longer be illuminated

5.5   Operations in Normal Counting Mode

Unit Weight Entry, Counting Operations, and Accumulation and Subtraction can be done either in Normal Counting Mode or in TEP (Teraoka Error Prediction) Mode. This section (Section 5.5) will cover operations in the Normal Counting Mode. For operations under TEP Mode, see Section 5.6.

5.5.1   Normal Counting Mode - Unit Weight Operation by Sampling

Entering unit weights can be done either by sampling, as presented in Section 5.5.1, or by manual key entry as described in Section 5.5.2.

NOTE: *SPEC 53, Bit 2 NORMAL COUNTING MODE AUTO-RECOMPUTING controls whether or not you have to push the PCS key to recompute the Unit Weight after resampling. The default is "1: Auto" which means that you do not have to press the PCS key except after placing the very first sample in the sampling process.*

Unit Weight operation by sampling is accomplished by placing a 10 piece sample on the scale and then pressing the **PCS** key. The scale calculates a Unit Weight based on the capacity of the scale compared to the weight of the sample.

1. Press **REZERO** to zero the scale.
2. Place a number of pieces of the item to be sampled on the scale. The DC-530 assumes that you are using a 10 piece sample unless you indicate otherwise in the next step. For maximum accuracy, count the sample into your hand and then add the entire sample to the bin at one time, instead of adding them one or two at a time.
3. If you are using a 10 piece sample, simply press the **PCS** key. The scale will display the total Weight, Unit Weight, and number of Pieces. If you are using a sample size other than 10 pieces, enter the sample

quantity using the numeric keypad before pressing the **PCS** key.

4. To improve the accuracy of the Unit Weight calculation, add another sample of the same pieces. This second sample should be of a number of pieces equal to or fewer than the first one. Press the **PCS** key.

    (**NOTE:** *If Specification 53, Bit 2 is set to the default setting of 1: Automatic, the scale will automatically begin recomputing.*)

    The scale display will display RECOMPUTING for a few seconds, then automatically display the new total Weight, Unit Weight, and number of Pieces.

NOTE: *If you place too large a second sample on the platform, the error message OUT OF RECOMPUTE RANGE, PLEASE REDUCE SAMPLES will appear. You can also tell if you are under the maximum recomputing sample size by observing the bar graph along the bottom of the display. When it reaches all the way to the MAX marker on the bottom right-hand side of the display, you have reached the maximum. Remove some of the pieces in the second sample until the number of pieces is below that of the first sample.*

If you place too small a sample on the platform for the scale to accurately calculate a Unit Weight, the INSUFF indicator lamp will illuminate and the display will indicate how many more pieces have to be added to the sample in order to be able to calculate the Unit Weight. Add the necessary pieces to the sample until the scale returns you to the Normal Counting Mode screen. The screen will then show RECOMPUTING before showing the Unit Weight.

5. If you wish to continue to refine the Unit Weight, repeat Step 4, adding another sample.

6. When done with calculating the Unit Weight you can begin counting operations by placing a quantity of the pieces to be counted on the platform. The scale will display the number of pieces as well as the Total Weight, based on the Unit Weight established by the sampling process. To store this Unit Weight in the DC-530's memory associated with an Item Code so that you can recall it in the future, see Section 6.2.

7. To clear the Unit Weight, remove all weight from the scale platter and press the **C (Clear)** key.

5.5.2   Normal Counting Mode - Unit Weight Operation by Key Entry

Unit weight operation by key entry is accomplished by using the numeric keypad to enter the known value of the Unit Weight and then pressing the **UNIT WEIGHT** key. An example of Unit Weight operation by key entry is shown below:

1. Press the **REZERO** key to zero the scale.

2. With the display in the Normal Counting Mode, enter the known Unit Weight using the keyboard, for example, 200.00.

    (**NOTE:** *the Unit Weight is entered and displayed per 1000 pieces. To enter a Unit Weight of 0.0125 lbs, for example, multiply 0.0125 x 1000 = 12.5. For a Unit Weight of 0.0125, therefore, you would enter 12.5 on the numeric keypad. When entering Unit Weights you must enter the decimal point where appropriate.*)

3. Press **UNIT WEIGHT** key to enter the Unit Weight.

4. You can now begin counting operations by placing a quantity of the pieces to be counted on the platform. The scale will display the number of pieces as well as the Total Weight, based on the Unit Weight you keyed in. To store this Unit Weight in the DC-530's memory associated with an Item Code so that you can recall it in the future, see Section 6.2.1.

5. To clear the Unit Weight, remove all weight from the scale platter and press the **C (Clear)** key.

5.5.3 Normal Counting Mode - Part Accumulation and Part Subtraction

Once a Unit Weight has been established for an part, the DC-530 Counting Scale has the capability to accumulate and subtract total item quantities by using its accumulation memory.

5.5.4 Normal Counting Mode - Part Accumulation

To find the total accumulated quantity of similar containers filled with parts, use the accumulation procedure detailed below.

1. Conduct a sampling process (Section 5.5.1) to determine the Unit Weight of the pieces and enter a known tare weight, or place the empty container on the scale to perform the tare function (). Alternatively, you can enter the Item Code of an item previously programmed into memory and press the **# [CODE]** key to recall the data. If you enter an Item Code that is not currently programmed into the scale's memory, the message *ITEM NOT FOUND* will appear at the bottom of the display. For more information on how to program item data into the DC-530's memory, see Section 6.1.

2. Place Container 1 (full of parts) on the scale.

3. Press the **+ (Plus)** key to store the total in Container 1. The Acc (Accumulation) indicator lamp will now be illuminated. The display will show the total quantity of pieces accumulated for 3 seconds, then return to the Counting Mode screen.

4. Remove Container 1 and place Container 2 (full of parts) on the scale.

5. Press the **+ (Plus)** key (the total displayed is equal to Container 1 plus Container 2, etc).

6. Continue with the remainder of the containers to be counted. The total number of parts stored in all the containers will be stored in the accumulation register.

7. To print a label showing the total, press the *** PRINT** key.

TTL QTY
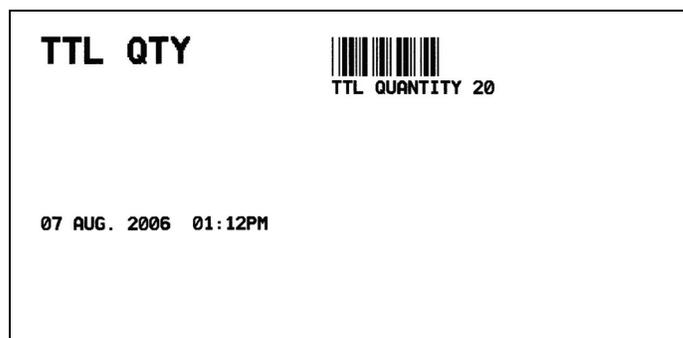
TTL QUANTITY 20

07 AUG. 2006   01:12PM

Figure 5-1. Total Accumulation Label Sample

8. This will also clear the accumulation register. The ACC (Accumulation) indicator lamp will no longer be illuminated.

9. To clear the Unit Weight, remove all weight from the scale platter and press the **C (Clear)** key.

5.5.5   Normal Counting Mode - Part Subtraction

Just as you can accumulate total quantities by adding parts to the scale, you can also count by removing parts from the scale, subtracting them from the total you began with.

1. Conduct a sampling process (Section 5.5.1) to determine the Unit Weight of the pieces and enter a known tare weight, or place the empty container on the scale to perform the tare function (Section 5.4). Alternatively, you can enter the Item Code of an item previously programmed into memory and press the **# [CODE]** key to recall the data. If you enter an Item Code that is not currently programmed into the scale's memory, the message *ITEM NOT FOUND* will appear at the bottom of the display. For more information on how to program item data into the DC-530's memory, see Section 6.1.

2. Place Container 1 (full of parts) on the scale and press the **+ (Plus)** key to store the total in Container 1. The Acc (Accumulation) indicator lamp will now be illuminated. The display will show the total quantity of pieces accumulated for 3 seconds, then return to the Normal Counting Mode screen..

3. Remove Container 1 from the platform.
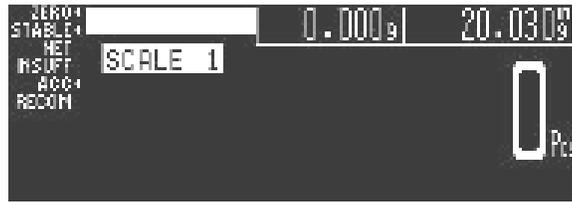
4. Place Container 2 (full of parts) on the scale.

5. Press the **- (Minus)** key to subtract the new quantity from the total. The display will show the total which will be the difference between Container 1 and Container 2, then return to the Normal Counting Mode screen.

6. Repeat steps 4 and 5 for all the containers to be subtracted from the total.
7. To print a label showing the total after all the subtractions, press the *** PRINT** key.
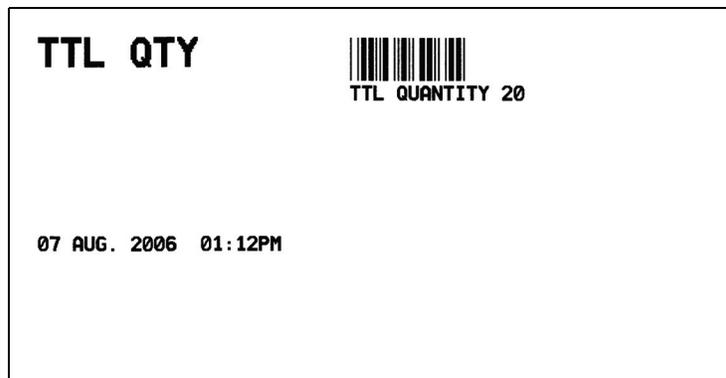
Figure 5-2. Total After Subtraction Sample Label

This will also clear the accumulation register. The ACC (Accumulation) indicator lamp will no longer be illuminated.

8. To clear the Unit Weight, remove all weight from the scale platter and press the **C (Clear)** key.

5.5.6   Normal Counting Mode - Negative Counting

There are two ways to do this depending on whether at the end you want to see the total amount remaining in the container or the total amount removed from the container.

NOTE: *To perform Negative Counting, SPEC 52, Bit 1 must be set to 1: Yes. This is the default setting.*

5.5.7   Counting Out of a Full Container - See Total Amount Remaining in the Container

To carry out this operation you must know the tare weight ahead of time.

1. Press the **REZERO** key to zero the scale.

2. Place the full container on the scale. Press the **TARE** key.

3. Remove a 10 piece sample from the container and press the **PCS** key. After the Unit Weight has been calculated, return the 10 piece sample to the container.

4. Remove a number of parts from the container and press the **+ (Plus)** key. The memory indicator lamp (ACC) is illuminated and the display shows the quantity of parts taken out.

5. Remove a number of parts from the container and press the **+ (Plus)** key again. The memory indicator lamp (ACC) will be illuminated and the display shows the quantity of parts removed.

6. If at the end of the procedure, if you want to see how many parts are still in the bin you first have to know the tare weight of the bin or container. After removing the parts you want to take out of the bin, simply digitally enter the tare weight of the bin and press the **TARE** key. The scale will display how many parts were left in the bin. To print a label to put on the bin showing the new, lower, total quantity in the bin , press the **+ (Plus)** key.

5.5.8   Negative Counting - Total Removed Displayed at the End

With this procedure you can count accurately out of a full container for kitting, shipping, etc. without having to know the tare weight of the container.

1. Press the **REZERO** key to zero the scale.

2. Place a full container on the scale and press the **TARE** key.

3. Remove a 10 piece sample from the container and press the **PCS** key. After the Unit Weight has been calculated, return the 10 piece sample to the container.

4. Remove the number of pieces you need for kitting, shipping, etc.   The amount removed will be displayed. If you need a label for each kit or container, press the **+ (Plus)** key after removing each batch of pieces. Then press the **TARE** key.

5. When you have removed the last batch of pieces, press the *** PRINT** key to show the total number of pieces you have counted out of the full container.

5.5.9   Normal Counting Mode - Clearing Accumulated Data

To clear accumulated data, press the *** PRINT** key.

5.6   Operations in TEP (Teraoka Error Prediction) Mode

Unit Weight Entry, Counting Operations, Accumulation and Subtraction can be done either in Normal Counting Mode or in TEP (Teraoka Error Prediction) Mode. This section (Section 5.6) will cover operations in TEP Mode. For operations under Normal Counting Mode, see Section 5.5.

The TEP Counting Mode is generally used for high-value parts for which you want to avoid even the generally very small counting errors introduced by sample variances. A repeated sampling procedure allows the DC-530 scale to develop weight variance plots and thereby calculate a maximum safe quantity that can be counted without error. The extra sampling effort required has to be balanced against the need for the greatest possible accuracy.

5.6.1   TEP Mode - Unit Weight Operation by Sampling

Entering unit weights can be done either by sampling, as presented in Section 5.6.1, or by manual key entry as described in Section 5.6.2.

NOTE: *SPEC 53, Bit 0 TEP SAMPLING METHOD controls whether or not you have to push the PCS key to recompute the Unit Weight after resampling. The default is "1: Automatic" which means that you do not have to press the PCS key except after placing the very first sample in the sampling process.*

Unit Weight operation by sampling is accomplished by placing a sample on the scale, entering the sample quantity, and then pressing the **PCS** key. The scale calculates a Unit Weight based on the capacity of the scale compared to the weight of the sample.

1. Press **REZERO** to zero the scale.
2. Press the **TEP** key to enter the Teraoka Error Prediction Mode.

3. Count out a number of parts to be sampled and place them on the scale (for example 10 pieces). For maximum accuracy, count the 10 piece sample into your hand and then add the entire sample to the bin at one time, instead of adding them one or two at a time.
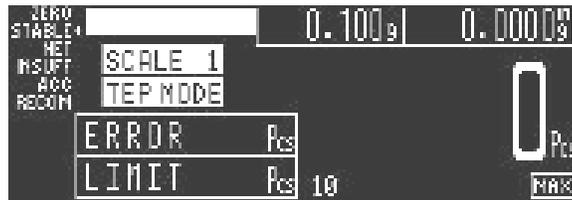
4. Enter the sample quantity using the numeric keypad, then press the **PCS** key. (Unlike in Normal Counting Mode, the scale does not assume that the sample size is 10 pieces. You must enter the sample quantity.) The scale will display the total Weight, Unit Weight, and number of Pieces and will indicate that you have performed *SAMPLING 1 TIMES*.

5. To improve the accuracy of the Unit Weight calculation, add another sample of the same pieces according to the number indicated on the display (10 Pcs and below in the example above). Press the **PCS** key. (If the Auto-Recomputing SPEC is set to *1: Auto*, the scale will automatically begin recomputing.)

   As you add parts for the next sample, the scale display will indicate how many more pieces can be added before reaching the maximum allowable for the resampling. If you add more pieces in the next sample than the scale requests for its resampling, the scale display will turn red and the message *PLEASE REDUCE ITEMS* will appear, along with the number of items it suggests that you remove from the sample.

   If you add too few items for the scale to recompute the Unit Weight, the display will not change. Once you add enough parts for another sample, the recomputing will take place. You can also gauge whether your sample size is too small or too large by watching the bar graph at the bottom of the scale display. If you add a sample and it does not register on the graph, it is too small. If you add a sample and the bar graph goes all the way to the *MAX* marker on the bottom right-hand side of the display you have exceeded the maximum and need to remove some parts.

6. When the sample weight is within the required range, the scale will recompute the Unit Weight and return to the TEP Sampling screen. The scale display will show the new total Weight, Unit Weight, and number of Pieces. It will also now indicate that you have been *SAMPLING 2 TIMES*.

7. Continue resampling by repeating Step 5, adding another sample below the amount shown on the TEP Mode display. If the Auto-Recomputing SPEC is not set to *1: Auto*, you will need to press the **PCS** key to recompute the Unit Weight after each sample is added. Repeat the procedure until the scale reads *SAMPLING 9 TIMES*.

8. As you continue sampling, at the bottom of the display the DC-530 will show a bar graph of the Unit Weight curve it is developing. After the ninth sample, the scale's display will turn red indicating that the sampling operation is complete.

9. Remove all the sample parts from the platter. The DC-530 will now calculate and display the maximum Safe Quantity Limit that can be counted without error in the Limit field.

10. You can now begin counting operations by placing a quantity of the pieces to be counted on the

platform. The scale will display the number of pieces as well as the Total Weight, based on the Unit Weight established by the sampling process. To store this Unit Weight in the DC-530's memory associated with an Item Code so that you can recall it in the future, see Section 6.2.1.

If you press the **TEP** key to exit the TEP Mode after having established a Unit Weight and Safe Limit Quantity, the scale will display the following message:

Enter 1 to clear the Safe Limit Quantity that you have established and go to Normal Counting Mode. Enter 9 to keep the Safe Limit Quantity and stay in TEP Mode.

11. To clear the Unit Weight, remove all weight from the scale platter and press the **C (Clear)** key.

5.6.2   TEP Mode - Unit Weight Operation by Key Entry

Unit Weight operation by key entry is accomplished by using the numeric keypad to enter the known value of the Unit Weight and then pressing the **UNIT WEIGHT** key. An example of Unit Weight operation by key entry is shown below:

1. Press the **REZERO** key to zero the scale.
2. With the display in the weighing mode, enter the known Unit Weight using the keyboard, for example, 200.00.
3. Press **UNIT WEIGHT** key to enter the Unit Weight.
4. You can now begin counting operations by placing a quantity of the pieces to be counted on the platform. The scale will display the number of pieces as well as the Total Weight, based on the Unit Weight you keyed in. To store this Unit Weight in the DC-530's memory associated with an Item Code so that you can recall it in the future, see Section 6.2.1.
5. To clear the Unit Weight, remove all weight from the scale platter and press the **C (Clear)** key.

5.6.3   TEP Mode - Parts Counting

After you have established the Unit Weight of the part to be counted either by sampling (See Section 5.6.1 above) or by digital entry (See Section 5.6.2 above) and have entered a Tare Weight, you are ready to carry out counting operations for that part. Alternatively, you can call up the data for an Item Code previously programmed into the DC-530's memory by entering the Item Code number and pressing the **# [CODE]** key. If you enter an Item Code for which the Safe Quantity Limit has not yet been established, you will see the following error message.
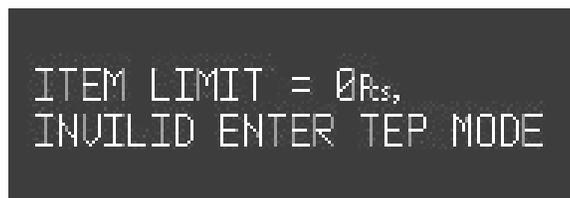
If you receive this error message, you must use the scale to calculate the Safe Quantity Limit and edit the Item Code record to include it. For more on how to establish the Safe Quantity Limit, see Section 5.6.1.

1. The TEP Counting Mode display will show the maximum safe quantity of the part that can be counted

without error.

2. Press the **REZERO** key to zero the scale.
3. Place on the platter a quantity of parts to be counted.
4. If the quantity is less than the accuracy limit, the scale will display the count of the number of pieces and reduce the maximum limit to how many more can be counted under the limit.

Add pieces up until the quantity limit is reached, then remove the parts from the platter and begin counting again.

5. If the quantity you place on the platter exceeds the maximum safety quantity by 1-9 pieces, the display will show the total count but will change to yellow. If you have exceeded the maximum safety quantity by more than nine pieces, the display will turn red. In both cases the Limit field will go blank to indicate that no more pieces can be added without error.

Remove pieces from the platter until you are at or below the maximum safety quantity again. When the scale is stable, the Limit field on the display will reset back to the maximum safe quantity and the characters will change back to white.
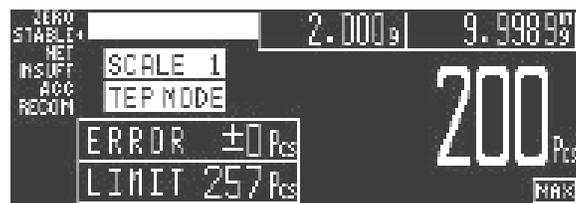
6. When done counting this part, remove all weight from the platter and press the **C (Clear)** key to clear the Unit Weight.

5.6.4   TEP Mode - Part Accumulation and Part Subtraction

Part accumulation and part subtraction in TEP Mode follow the same procedures as in Normal Counting Mode. Please see Section 5.5.3

5.6.5   TEP Mode - Negative Counting

Negative Counting in TEP Mode follows the same procedure as in Normal Counting Mode but you must first establish a Unit Weight by sampling in the TEP Mode. For more information on establishing TEP unit weights, please see Section 5.6.1. For information on negative counting procedures, please see Section 5.5.6

5.6.6   TEP Mode - Clearing Accumulated Data

To clear accumulated data, press the * PRINT key.

5.7   Toggle Between Scales

The external scale option for the DC-530 Counting Scale can be ordered by ordering Part #94911 at the time you purchase your scale. To toggle between Scales 1 and 2, press the **SCALE** key. The display will show the platform being used for weighing. Only scales present will be selected (i.e. A two-scale system switches between Scale A and Scale B only.) If no external scales are connected, this function will not work. If you press the **SCALE** key when no other scale is connected, the error message *NO SCALE CHANGED* will appear.

5.8   Recalling Item Codes in Counting Mode

The DC-530's 200 item memory allows you to store the Unit Weight, Tare Weight, preferred Scale, and Setpoints for up to 200 Item Codes for quick retrieval. This greatly speeds your weighing and counting operations.

1. Enter the three digit Item Code number using the numeric keypad and press the **# [CODE]** key to call up the data.

2. If an Item Code is entered which is not stored in memory, the scale will beep and display the error message *ITEM NOT FOUND* at the bottom of the screen. Enter a different three digit Item Code.

    If you are in TEP Counting Mode, you can only recall an Item Code which has had the Safety Quantity Limit calculated. If you enter an Item Code for which the Safety Quantity Limit has not yet been calculated, the following error message will appear.
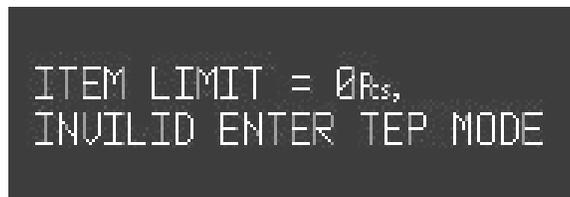
    You must enter the TEP Mode, perform a TEP sampling process to establish a Unit Weight and Safe Quantity Limit (see Section 5.6.1), and then save the Item Code in memory.

    If an item code existing in memory is entered, the stored settings will be displayed after the **# [CODE]** key is pressed.

    You can now begin to carry out weighing and counting operations.

3. To clear the recalled Item Code and its data, remove all weight from the platform and press the **C (Clear)** key.

5.9   Sample, Count and Print a Label

NOTE: *For this function to be used on the DC-530, an external printer must be connected to the scale. For more information on how to connect an external printer, see Section 7.1.*

1.   Press the **REZERO** key to zero the scale.

2.   Place the empty bin on the scale and press the **TARE** key.

3.   Place a 10 piece sample of the item in the bin and press the **PCS** key. (For maximum accuracy, count the 10 piece sample into your hand and then add the entire sample to the bin at one time, instead of adding them one or two at a time.) If 10 pieces are not enough for the scale to get an accurate sample, the scale will prompt you to add a specific additional number of pieces. Add these pieces and press the **PCS** key again.

4.   Add the remaining pieces to be counted into the bin.

5.   Press the *** PRINT** key. The scale will print a label in the default label format.
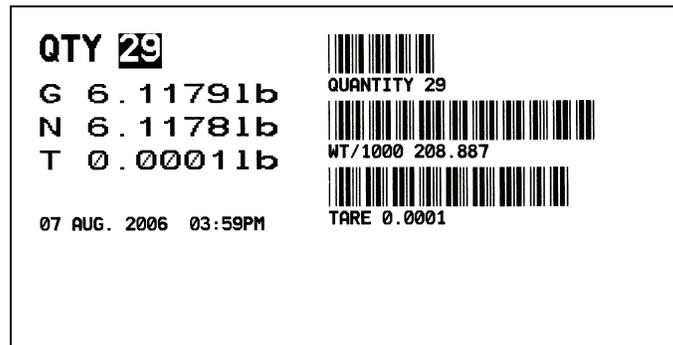
Figure 5-3. Weight Label Without Entering or Recalling an Item Code

5.10   Scan ID Bar Code, Count and Print a Label

NOTE: *For this function to be used on the DC-530, an external printer and a barcode scanner must be connected to the scale. For more information on how to connect an external printer, see Section 7.1 . For information on connecting a barcode scanner, see Section 7.5.*

1.   Enter the ID Code by scanning the ID Bar Code.

1.   Press the **REZERO** key to zero the scale.

2.   Place the container of the product on the scale platter.

3.   Press the *** PRINT** key. The scale will print a label in the default label format.
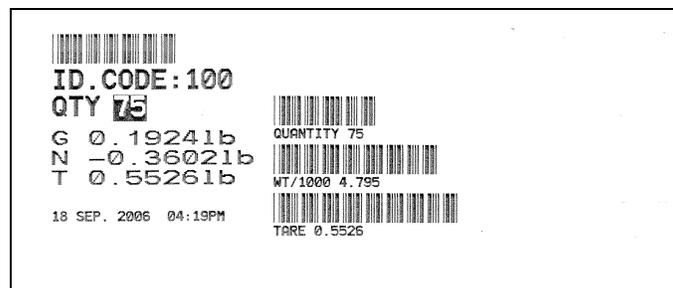

Figure 5-4. Weight Label with Item Code

6.0   Scale Programming

The DC-530 can store information for up to 200 of the parts you count most frequently, eliminating the need for re-entering data during parts counting and greatly speeding up your counting operations.

6.1   Programming a New Item Code (Item Registration)

Before beginning to enter data about an item, you need to know the Tare Weight and the Setpoints you want to set for this Item Code. If you are going to store a Tare Weight, it must be known in advance because it cannot be established from the scale platform during Item Registration mode, it must be entered digitally.

When programming the DC-530, you can use the following functions of its keyboard.

Key	Function
+	To move the cursor to the next field without changing the value of the current field or to move to the next field in Edit Item Mode after entering new data.
−	To move the cursor back to the previous field without changing the value of the current field.
∗	To save the data entered and exit the Programming Mode. You will be prompted to confirm whether or not you want to save any changes you have made to the data.
TARE	To exit the Programming Mode without saving the data entered.

This section details the procedure for storing the Unit Weight, Tare Weight, and Set Points to be associated with an Item Code. You can enter all of this information for each Item Code or only the data pertinent to your application. You can enter the Programming mode from either the Normal Counting Mode or the TEP Mode.

1. First establish a Unit Weight for the item by either a sampling process or manual entry and press the **UNIT WEIGHT** key. (See Section 5.5 or Section 5.6). This will bring you to the Item Programming screen. The upper right hand corner of the screen will show you how many of the 200 Item Codes the DC-530's can store have already been programmed.

```
ITEM:           █ MEMORY   : 25/200
UNIT WT          g    LIMIT     Pcs
TARE             g
SCALE
SP  S1          S2          S3
```

2. Enter the three-digit Item Code for the item you want to store in memory and press the **#** key. The Item Code will appear in the upper left of the Item Screen. The cursor will then move to the next field which is entering the Tare Weight (The Unit Weight will have been already recorded by the scale from the sampling operation or digital entry of the Unit Weight. If you started from the TEP Mode, the Limit field will also have been automatically filled in).

```
ITEM:        128 MEMORY   :  0/200
UNIT WT 20.03000g    LIMIT    0 Pcs
TARE        0.0000g
SCALE 1
SP  S1  0.0000 S2  0.0000 S3  0.0000
```

If you enter an Item Code that has already been programmed, the display will flash red and the error message *ITEM XXX. EXISTING ITEM* will appear. Then the screen will ask you if you are trying to update the data associated with this item already existing in memory.

```
ITEM:          123|MEMORY   :  1/200
ITEM  123
UPDATE DATA?
    YES:1    NO:9
```

If you enter a **1** from the numeric keypad the screen will flash red and show the message:

```
ITEM:          123|MEMORY   :  1/200
ITEM  123
DATA UPDATING...
```

You will then be returned to whichever Counting Mode screen you began with - Normal Counting Mode or TEP Mode.

If you enter a **9** from the numeric keypad to indicate you do not want to take the data you are entering and associate it with the Item Code already in memory, you will be returned to the Item Registration screen where you can enter a new Item Code to save the data under.

3. Enter the tare digitally using the numeric keypad. The Tare Weight value must be entered without a decimal point. The Weight field is 5 digits long and the placement of the decimal point is determined by Bits 2, 1, and 0 of Specification 21 - Weight Decimal Point Position. The digits you enter for the tare weight will fill the field starting from the right. (Example: if the decimal point is set as 0.0000 and you enter the digits 125, the net weight will show as 0.0125.) Note that you cannot establish the Tare Weight from the scale during Item Registration mode, it must be entered manually.

    Press the **+ (Plus)** key. The cursor will move to the field for Set Point 1.

4. You cannot edit the Scale Number field in Item Registration mode. The DC-530 will automatically set the Scale Number field to the scale the item sample was taken on. The Scale Number field can be edited in the Edit Item mode (See Section 6.2.3).

5. If Specification 01 Bits 3 and 2 are set to 00:No Operation or 01:Common Set Point then setpoints cannot be entered for an individual Item Code here. If Bits 3 and 2 are set to 10: Item Set Point, then the cursor will move to the field for Setpoint 1. Remember that Specification 02, Bit 2 - Setpoint Selection sets whether the setpoint is programmed on the basis of pieces or weight. The default is 0: Pieces. Enter a quantity for Setpoint 1 and press the **+ (Plus)** key to move to Setpoint 2. Repeat for Setpoints 2 and 3.

6. When you have finished entering the data for this Item Code, press the *** PRINT** key to save it. The display will confirm that the scale is saving the new Item Code to memory and then return you to whichever Counting Mode screen you began with - Normal Counting Mode or TEP Mode..

```
ITEM:          123|MEMORY   :  1/200
ITEM  123
SAVING...
```

6.2　Updating the Record of an Existing Item

There are two ways to edit or update the data in the record of an Item Code already programmed in memory: from the Counting Mode screen or from the Programming Mode menu. If you want to update an existing item's Unit Weight from a sampling operation, use the process from the Counting Mode in Section 6.2.1. To update the Tare Weight associated with an existing Item Code, use the process from the Counting Mode in Section 6.2.2. If you want to change any other data in the existing record and/or want to enter a new Unit Weight digitally, use the process from the Programming Mode in Section 6.2.3.

6.2.1　Update the Unit Weight of an Existing Item From the Counting Mode

1. After completing a sampling operation in either the Normal Counting Mode or the TEP Mode, press the **UNIT WEIGHT** key to go to the Item Programming screen.

```
ITEM:          ▌MEMORY  :  0/ 200
UNIT WT 20.03000%    LIMIT    0 Pcs
TARE       0.0000g
SCALE 1
SP S1  0.0000 S2   0.0000 S3   0.0000
```

2. Enter existing three digit Item Code for the item to be updated and press the DC-530 key. The screen will flash red and then indicate that the Item Code you have entered already exists in memory.

```
ITEM:       123 MEMORY  :  1/ 200

ITEM  123
EXISTING ITEM
```

After a moment, the screen will ask you to confirm that you want to update the data for this existing Item Number.

```
ITEM:       123 MEMORY  :  1/ 200

ITEM  123
UPDATE DATA?
   YES:1    NO:9
```

3. To exit back to the Item Registration screen without updating the Unit Weight of the existing Item Code, press **9**. To change the Unit Weight associated with this Item Code from the weight previously programmed in memory to the new Unit Weight from your sampling operation, press **1**. The scale will confirm that it is updating before returning you to whichever Counting Mode screen you began at, either Normal Counting Mode or TEP Mode.

```
ITEM:       123 MEMORY  :  1/ 200

ITEM  123
DATA UPDATING...
```

6.2.2　Update the Tare Weight of an Existing Item From the Counting Mode

1. Press the REZERO key to zero the scale.

2. Enter the three digit Item Code for an item you have previously programmed into the DC-530's item memory and press the **#** key. The scale will recall the Unit Weight and Tare Weight (if any) previously programmed for ths item.

3. Place the container, box, or item to be tared on the scale platform and press the **TARE** key. The weight display will now show *0* and the Net and Zero indicator lamps will illuminate.

4. Press the **UNIT WEIGHT** key. The screen will flash red and then indicate that the Item Code you have entered already exists in memory.

```
ITEM:        123|MEMORY  :  1/200
ITEM  123
EXISTING ITEM
```

After a moment, the screen will ask you to confirm that you want to update the data for this existing Item Number.

```
ITEM:        123|MEMORY  :  1/200
ITEM  123
UPDATE DATA?
   YES:1    NO:9
```

5. To exit back to the Item Registration screen without updating the Tare Weight of the existing Item Code, press **9**. To change the Tare Weight associated with this Item Code from the weight previously programmed in memory to the new Tare Weight from the platform, press **1**. The scale will confirm that it is updating before returning you to whichever Counting Mode screen you began at, either Normal Counting Mode or TEP Mode.

```
ITEM:        123|MEMORY  :  1/200
ITEM  123
DATA UPDATING...
```

6.2.3   Update an Existing Item From the Programming Mode

1. From the Counting Mode screen (either Normal Counting Mode or TEP Mode) press the **MODE** key to move to the Mode Menu.

```
MENU
1.COUNTING MODE    2.PROGRAM MODE
3.DATE & TIME   4.SET POINT SETTING
```

2. In the Mode Menu Screen, press the **2** key to enter the Item Programming Mode. The upper right hand part of this screen will show much of the 200 item memory is currently programmed. In the example

below, 25 items have already been entered, 175 can still be entered

```
ITEM PROGRAMMING      : 25/200
1.EDIT ITEM
2.DELETE ITEM
3.DELETE ALL ITEMS
```

3. In the Item Programming Screen press the **1** key to enter Edit Item Screen. .

```
ITEM:          ▌MEMORY   : 25/200
UNIT WT        g    LIMIT     Pcs
TARE           g
SCALE
SP  S1       S2        S3
```

4. At the flashing cursor enter the three digit Item Code for the existing item to be updated and press the **#** key. The DC-530 will retrieve the data already programmed into memory for this Item Code and display it, moving the cursor to the Unit Weight field

```
ITEM:        123 MEMORY   : 25/200
UNIT WT   19.98█g    LIMIT    ☐ Pcs
TARE       0.0000g
SCALE 1
SP  S1  0.0000 S2  0.0000 S3  0.0000
```

5. Enter the new Unit Weight using the numeric keypad and press the **+ (Plus)** key to move to the next editable field. To leave the Unit Weight unchanged and move to the next editable field, just press the **+ (Plus)** key.

6. Modify any other data for this Item Code that you want to edit. Note that the Scale Number field, not editable in Item Registration Mode, can be edited here if you want to establish an external platform as the primary for this item. Use the **+ (Plus)** key to move to the next editable field or the **- (Minus)** key to move to the previous editable field. To exit the Item Edit mode without making any changes, press the **TARE** key at any time.

7. When done making changes, press the *** PRINT** key to update the record for this Item Code. The display will first ask you to confirm that you want to update this record.

```
ITEM:        123 MEMORY   : 25/200
ITEM   123
UPDATE DATA?
    YES:1    NO:9
```

8. If you press **9**, the scale will return you to the Edit Item Code screen without saving the changes (i.e. takes you back to step 4 above). You can then enter another Item Code to be edited or go to step 9 below to exit the Programming Mode.

If you press the **1** key to save the changes to the Item Code record the display will turn red and confirm that the record's data is updating.

```
ITEM:        123 MEMORY  : 25/200
ITEM  123
DATA UPDATING...
```

9. When the update is done, the display will return to the Edit Item Code Screen. You can enter another three digit Item Code to edit or press the **TARE** key twice to exit the Program Mode and return to the Mode Menu.

10. Press the **1** key to return to the Weigh Mode.

6.3   Deleting Item Codes

6.3.1   Clearing an Individual Field

To just clear an individual field associated with an Item Code, follow the programming instructions in Section 6.2.3 above and enter zeroes in the fields you want to clear. Be sure to save your changes at the end of the programming mode by pressing the *** PRINT** key.

6.3.2   Deleting a Single Item Code

The following procedure describes the steps used to delete *ALL* information stored for a specific Item Code (unit weight, tare weight, and setpoints).

1. At the Counting Mode screen, press the **MODE** key to enter the Mode Menu.

```
MENU
1.COUNTING MODE    2.PROGRAM MODE
3.DATE & TIME   4.SET POINT SETTING
```

2. In the Menu Menu Screen, press the **2** key to enter the Program Mode screen. The upper right hand corner of this screen will show how much of the 200 item memory is currently programmed. (In the example below, 25 items have already been programmed and 175 can still be entered.)

```
ITEM PROGRAMMING       : 25/200
1.EDIT ITEM
2.DELETE ITEM
3.DELETE ALL ITEMS
```

3. In the Item Programming Screen, press the **2** key to enter the Delete Item Screen.

```
ITEM:          DEL ITEM : 25/200
UNIT WT      g     LIMIT    Pcs
TARE         g
SCALE
SP  S1      S2         S3
```

4. Enter the three digit Item Code of the item to be deleted, then press the **#** key to call up that item. The scale will display the information stored for that Item Code.

```
ITEM:          2 DEL ITEM : 25/200
UNIT WT 3500.0000g      LIMIT    0 Pcs
TARE       0.0200g
SCALE 1
SP S1  0.0000 S2  0.0000 S3  0.0000
```

5. Press the **C (Clear)** key to delete this Item Code. The display will ask the operator to confirm that he really wants to delete this item.

```
ITEM:          2 DEL ITEM : 25/200
ITEM  2
DELETE?
   YES:1    NO:9
```

6. To cancel the deletion of this Item Code, press **9**. To complete the deletion of this Item Code, press **1**. The display turn red and will read *PLEASE WAIT* while carrying out the deletion, then return to the Item Delete Screen.

```
ITEM:          2 DEL ITEM : 24/200
ITEM  2
PLEASE WAIT...
```

7. To exit the Program Mode, press the **TARE** key twice.
8. Press the **1** key to return to the Weigh Mode.

6.3.3   Deleting All Item Codes

The following procedure describes the steps used to delete *ALL* of the Item Codes stored in memory.

1. From the Counting Mode screen (either Normal Counting Mode or TEP Mode) press the **MODE** key to move to the Mode Menu.

```
MENU
1.COUNTING MODE    2.PROGRAM MODE
3.DATE & TIME   4.SET POINT SETTING
```

2. In the Mode Menu Screen, press the **2** key to enter the Item Programming Mode. The upper right hand part of this screen will show how much of the 200 item memory is currently programmed. (In the example below, 25 items have already been entered, 175 can still be entered.) The procedure below will

delete all data associated with the 25 items in memory.

```
ITEM PROGRAMMING      : 25/200
1.EDIT ITEM
2.DELETE ITEM
3.DELETE ALL ITEMS
```

3. In the Item Programming menu, press the **3** key to enter the Delete All Items mode. The scale will prompt you to confirm that you want to delete all items in memory.

```
ITEM PROGRAMMING      : 24/200
DELETE ALL ITEMS?
   YES:1    NO:9
```

4. To exit without deleting all Item Codes in memory, press **9** and you will be returned to the Item Programming Menu. To confirm the deletion of all Item Codes in memory, press **1**. The display will turn red and confirm that the deletion is in process, then return you to the Item Programming Menu.

```
ITEM PROGRAMMING      :  0/200
DELETE ALL ITEMS...
```

5. To exit the Program Mode, press the **TARE** key twice.
6. Press the **1** key to return to the Weigh Mode.

6.4   Setting a General Setpoint

User Specifications 01 and 02 set the parameters of the DC-530's use of any setpoints that are programmed.
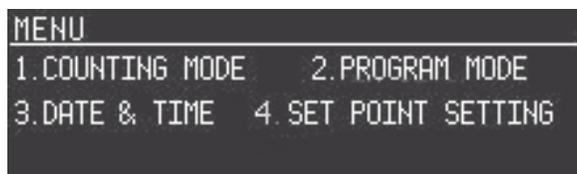
User Specification 01, Bits 3 and 2 - Set Point Operation, establish whether setpoints will be associated with individual Item Codes or be general or common setpoints applied to all items. The specification can also be set to not allow any setpoints to be programmed.

*   If Specification 01, Bits 3 and 2 are set to 10: Item Set Point, the setpoints must be programmed in the Item Registration or Item Edit procedures (See Section 6.1 or Section 6.2). In this case Option 4 on the Mode Menu - Set Point Setting is disabled.
*   If Specification 01, Bits 3 and 2 are set to 01: Common Set Point, the setpoints must be programmed in the Set Point Setting screen as described below and the cursor will not move to the Setpoint fields in the Item Registration and Edit Item modes.
*   If Specification 01, Bits 3 and 2 are set to 00: No Operation, Option 4 on the Mode Menu - Set Point Setting, is disabled and the cursor will not move to the Setpoint fields in the Item Registration and Edit Item modes.

User Specification 02 sets the rest of the parameters of the DC-530's use of the setpoints programmed:

*   Specification 02, Bit 0 - Setpoint Range, sets whether the range is negative or positive. The default is 1: Positive. If set to 0: Negative, the buzzer only sounds on negative numbers.
*   Specification 02, Bit 1 - Setpoint Buzzer Output, sets whether the scale sounds an audible buzzer when a setpoint is reached. The default is 1: Yes.

- Specification 02, Bit 2 - Setpoint Selection, sets whether the setpoint is programmed on the basis of pieces or weight. The default is 0: Pieces.
- Specification 02, Bit 3 - Buzzer Output Type, sets whether the buzzer sounds as "Proper" or "Scare/Over". The default is 0: Proper. (Example: If the Buzzer Output Type is set to 0: Proper and you have set point values of 50, 75, and 100, a fast beep will sound at 75 and turn off when you reach 100. If Buzzer Output Type is set to 1:Scare/Over, and you have the same set point values of 50, 75, and 100, a slow beep will begin at 50 and stop when you reach 75. When you reach 100 there will be a fast beep.)

1. While in the Counting Mode screen (either Normal Counting Mode or TEP Mode) press the **MODE** key to go to the Mode Menu screen.

```
MENU
1.COUNTING MODE    2.PROGRAM MODE
3.DATE & TIME  4.SET POINT SETTING
```

2. In the Mode Menu screen, press **4** to enter the Set Point Setting screen.

(**NOTE:** *If Specification 01 Bits 3 and 2 are set to 10: Item Set Point or 00: No Operation, this menu option is disabled.*)

```
SET POINT SETTING


SP S1  0.0000 S2   0.0000 S3   0.0000
```
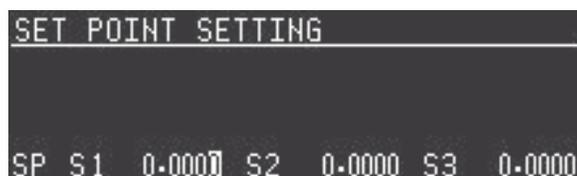
3. Enter the data for Set Point 1 (Example: 500.000). Even though the cursor appears at the rightmost digit of the field, the digits you enter will be filled in from the left of the field. (i.e. to enter a set point of 50, enter 50; to enter 500, enter 500, etc.) Remember that Specification 02, Bit 2 determines whether the setpoints are by pieces or by weight.

4. Press the **+ (Plus)** key to temporarily store Set Point 1 in memory and move to Set Point 2 and then to Set Point 3. You can press the **- (Minus)** key at any time to move to a previous setpoint or press the **TARE** key at any time to exit the Set Point Setting screen without saving any data.

5. When you are done programming the setpoints, press the *** PRINT** key to save your setpoints. The scale will return you to the Mode Menu. Press the **TARE** key twice to return to whichever Counting Mode screen you started in - Normal Counting Mode or TEP Mode.

7.0 External Devices: Printers, PCs, Scanners and Scales

The DC-530 Counting Scale is equipped with three RS-232C ports that allow the scale to communicate with an external printer, a PC, or a barcode scanner plus an additional port for the setpoint output. The DC-530 also offers an option (Part No. 94911) for a second scale channel that will allow you to connect a second platform with up to four 350 ohm load cells.
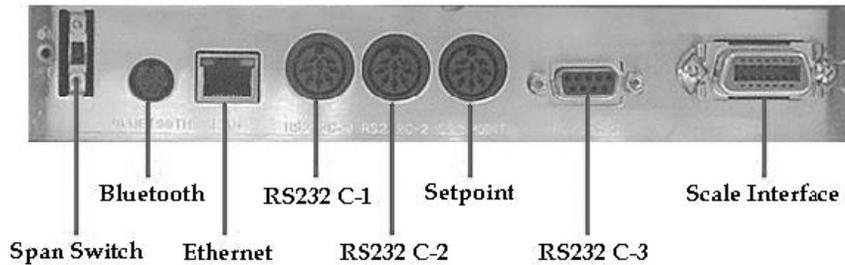

Figure 7-1. DC-530 Ports

7.1 Printer Connection

External printers are connected to the RS232C-2 port on the DC-530 (see Figure 7-1). Because the DC-530 downloads label formats to external printers in some circumstances (see Section 7.2 below) external printers should be connected to the DC-530 and powered on before powering up the DC-530. The type and configuration of the printer cable needed will vary by printer. Below are the pin assignments for the connectors to the external printers that can be specified in SPEC 09 - External Printer Type.

7.1.1 Zebra LP2824

To use the Zebra LP2824 Printer with your DC-530 (or a printer that emulates the LP2824), set the scale's specifications as follows:

- SPEC 03 - Printer Model to 0100
- SPEC 09 - RS232C1 Baud Rate to 0010
- SPEC 10 - RS232C2 Parity Bit/Stop Bit/Data Length to 1001
- SPEC 55 - Download Print Format to 0001

The DC-530 can be connected to an external printer using the RS-232C-2 port on the scale. You can order a printer cable from the DC-530 to the LP2824 by ordering Rice Lake Part No. **64661**.
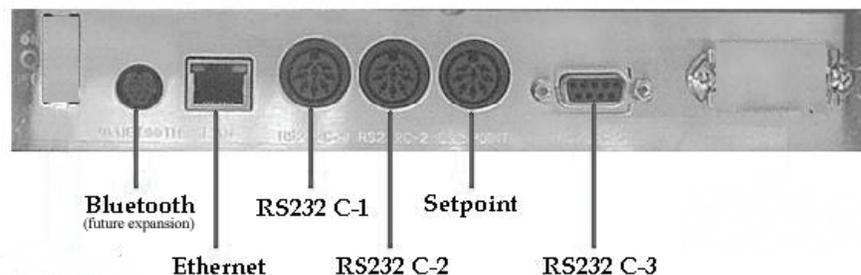

Figure 7-2. Connection from Scale to Printer

<table>
<tr><td colspan="2">Printer Side
9 PIN D-SUB MALE</td></tr>
</table>

Printer Side
9 PIN D-SUB MALE

Pin	Function
3	RXD
5	GND
7	RTS
8	CTS

DC-530 Side
8 PIN DIN MALE

Pin	Function
TXD	5
GND	2
RTS	7
CTS	6

7.1.2   Epson TM-U220 Tape Printer or Epson TM-U295 Ticket Printer

To use the Epson TM-U220 Tape Printer or TM-U295 Ticket Printer with your DC-530 (or printers that emulates them or are compatible), set the scale's specifications as follows:

- SPEC 03 - Printer Model to 1000
- SPEC 06 - Header Type to 1010
- SPEC 09 - RS232C1 Baud Rate to 0010
- SPEC 10 - RS232C2 Parity Bit/Stop Bit/Data Length to 1001
- SPEC 55 - Download Print Format to 0000

You can order a printer cable from the DC-530 to the Epson printers by ordering Rice Lake Part No. **32810**.

Printer Side
25 PIN D-SUB MALE

PIN	SIGNAL
2	TXD
3	RXD
7	GND

DC-530 Side
8 PIN DIN MALE

PIN	SIGNAL
RXD	4
TXD	5
GND	2

The following pins are shorted: on the 25-pin D-SUB - Pin 6 (DSR) to 20 (DTR); and Pin 4 (RTS) to 5 (CTS).

The following pins are shorted on the 8-pin DIN - Pin 1 (DTR) to 3 (DSR); and Pin 6 (CTS) to 7 (RTS).

7.2   Printer Label Formats

SPEC09 - External Printer Type sets the type of printer that is connected to the scale. This determines the format and content of the data that is transmitted to the printer. You have the following options:

7.2.1   No Printer

Set SPEC09 to 0000, meaning that no printer is connected. No data will be output.

7.2.2 ZEBRA LP2844 Barcode Printer

Set SPEC09 to 0010. The Zebra LP2844 Barcode Printer offers three default label formats for a 60 x 120 mm labels with Code 39 standard barcodes, one for an label without entering or recalling an Item Code, one for an Item Label, and the other for a Total Accumulation Label.
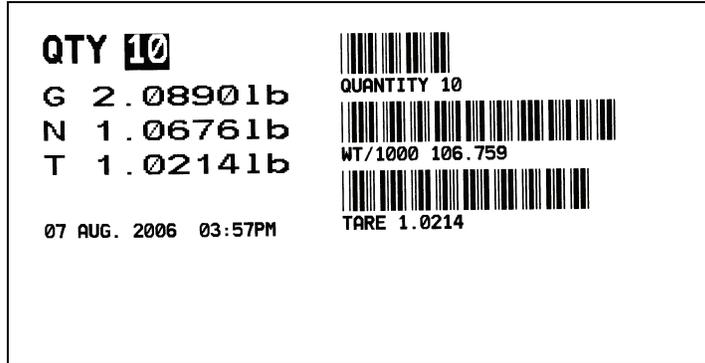

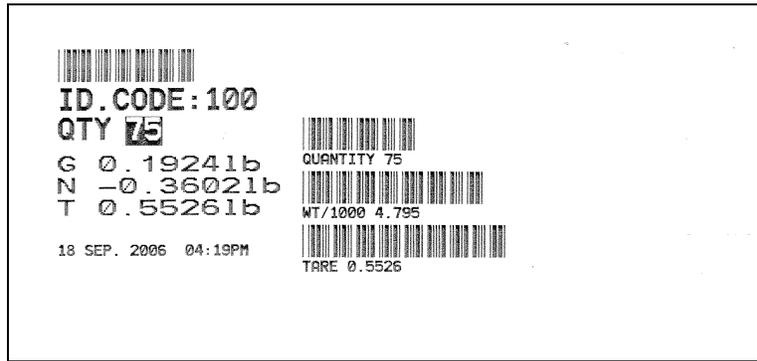*Figure 7-3. Zebra Sample Weight and Count Label Without Entering or Recalling an Item Code*
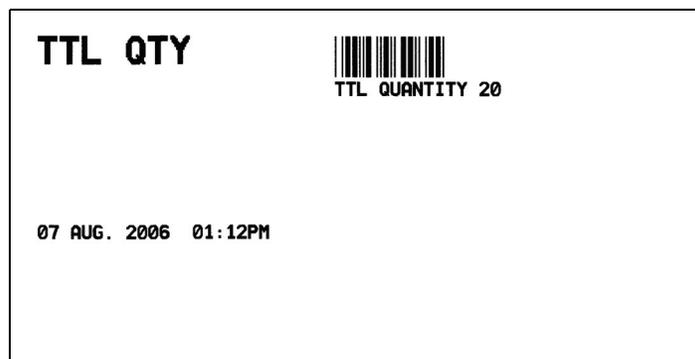

Figure 7-4. Zebra Sample Item Label

Figure 7-5. Zebra Sample Total Label When Not Entering or Recalling an Item Code

7.2.3   Epson TM-U220 Tape Printer

Set SPEC09 to 0011. This tape printer uses a default format which is downloaded to the printer when powering up The default format looks like the following:.

```
ID_CODE:
QUANTITY:                 338
GROSS WEIGHT:             1.5625
NET WEIGHT:              1.4411
TARE WEIGHT:             0.1214
UNIT WEIGHT:              4.26
TOTAL QUANTITY:           0
UNIT:                     lb
SET P1(Q):              1000.00
SET P2:                20000.0
SET P3:                 300.000
DATE:      11 AUG. 2006  01:45PM
```

```
ID_CODE:                  100
QUANTITY:                 19
GROSS WEIGHT:            1.5625
NET WEIGHT:             1.0625
TARE WEIGHT:            0.5000
UNIT WEIGHT:            56.2130
TOTAL QUANTITY:           0
UNIT:                     lb
SET P1(Q):                0
SET P2:                   0
SET P3:                   0
DATE:      11 AUG. 2006  01:47PM
```

Figure 7-6. Sample Report Formats for Epson TM-U200 orTM-U295

7.2.4   Epson TM-U295 Ticket Printer

Set SPEC09 to 0100. This ticket printer uses the same default format as the Epson TM-U220 tape printer in Section 7.2.3. See Figure 7-6 for a sample of the format.

7.3   Connecting to a PC

7.3.1   Setting the Scale Specifications for Communication to a PC

The DC-530's RS-232C-3 port (see Figure 7-1) can be used to connect the scale to a PC and output the data string to the computer. The following specifications must be set for the data transfer to take place. (For more information on setting specifications, see Section 3.0.):

- SPEC05, Bits 2 and 1-Connection Type, must be set to 01: PC.
- SPEC06, Bits 3 and 2-Output Procedure for RS-232C can be set to 01:Continuous or 10:* Key depending on the application receiving the data.
- SPEC06, Bits 1 and 0-Head Type can be set to 00:No Header or 01:Code or 10:Title.
- SPEC07, Bits 3, 2 and 1 are used to set the Baud Rate for your application.
- SPEC08, Bits 3 and 2 are used to set the Parity Bit for your application.
- SPEC08, Bit 1 is used to set the Stop Bit for your application.
- SPEC09, Bits 3, 2 and 1 are used to set the Baud Rate for your for your application.

7.3.2   Communication Method

SPEC06-RS232C Output Protocol configures whether the data transfer to the computer is shut off (00: No Output); is transmitted continuously at a fixed interval to the computer (01:Continuous) or is transmitted when pressing the **+ (Plus)**, **- (Minus)**, or *** PRINT** keys (10: Manual).

7.3.3   Pin Assignments
The DC-530 counting scale is connected to a PC using a 9 pin D-SUB connector configured as follows:
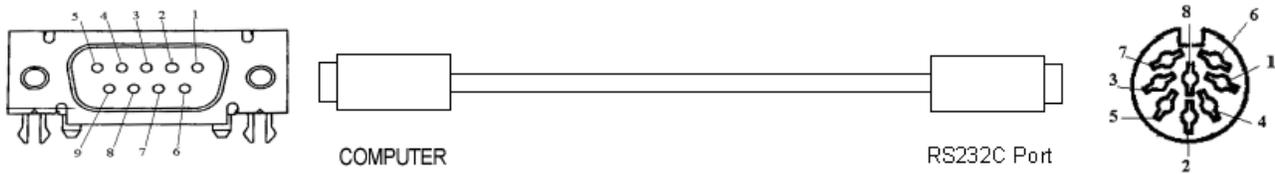
PC Side
9 PIN D-SUB (female)

DC-530 Side
DIN8 Connector

PIN	SIGNAL
2	RXD
3	TXD
5	GND
7	RTS
8	CTS

PIN	SIGNAL
TXD	5
RXD	4
GND	2
CTS	6
RTS	7

7.3.4   Data Formats

General Data Format
All data values are in ASCII format.

ID Code
The ID Code data string is 12 digits.

Set Points
Item Set Points are transmitted when an Item Code is recalled from memory. When no Item Code has been recalled from memory, General Set Point data is transmitted. The type of setpoint is determined by the header code of Setpoint 1. When the output is set to include Header Codes, an "F" header indicates a weight setpoint while a "G" header indicates a quantity setpoint. When the output is set to include Titles instead of Header Codes, a "Q" title will indicate a quantity setpoint and a "W" title will indicate a weight setpoint. Setpoint data can consist of either 7 digits or 6 digits plus a decimal point.

Weight Variables
Gross Weight, Unit Weight, Tare Weight, and Net Weight data can be either 7 digits or 6 digits plus a decimal point.

Quantity Variables
Total Quantity and Quantity data can consist of up to 6 digits, with a range between -99999 and 999999.

Date and Time Variables
The data string for Date and Time variables is ordered as follows:

HEADER (C)	DATE (3 digits)	MONTH (5 digits)	YEAR (6 digits)	HOUR (3 digits)	MINUTE (2 digits)	PM (AM) (2 digits)	CR

The specified number of digits for the data lengths include any blanks and colons.

7.3.5   Output Data Formats With Headers

The DC-530 can output two types of headers - Header Codes and Titles.

The data transmission string format when output with Header Codes is as follows:

HEADER	DATA	CR	HEADER	....	CR	LF

One data block consists of a header, the data, and a carriage return. A carriage return ("CR") must appear at the end of the data. A line feed ("LF") must be added as a transmission termination code.

The data transmission string format when output with Titles is as follows:

TITLE	DATA	CR	LF	Title	....	CR	LF

One data block consists of a title, the data, a carriage return, and a line feed. A carriage return ("CR") must appear at the end of the data. A line feed ("LF") must be added as a transmission termination code.

Table 7-1 shows the codes, headers, fields, and commands that can be transmitted from the RS-232C port.

Header Code		Title	Data	Maximum Data Length (bytes)
Header Code	ASCII Code			
0	0 x 30	NET WEIGHT	Net Weight	9
1	0 x 31	UNIT WEIGHT	Unit Weight	7
2	0 x 32	QUANTITY	Quantity	6
3	0 x 33	ID CODE	ID Code	12
4	0 x 34	TARE WEIGHT	Tare Weight	9
A	0 x 41	GROSS WEIGHT	Gross Weight	9
J	0 x 4A	UNIT	Weight Base	2
C	0 x 43	DATE	Date & Time	21
F	0 x 46	SET P1 (W)	Set Point 1 (Weight)	7
G	0 x 47	SET P1 (Q)	Set Point 1 (Quantity)	7
H	0 x 48	SET P2	Set Point 2	7
I	0 x 49	TOTAL QUANTITY	Total Quantity	6
Q	0 x 51	SET P3	Set Point 3	7
T	0 x 54	PIECE	Total Pieces	6

Table 7-1. Data Sent in RS-232 Communications

7.3.6   Output Data Formats Without Headers

The data transmission string format when output without Header Codes is as follows:

DATA	CR	DATA	CR	....	CR	LF

One data string consists of the data and a carriage return. A carriage return ("CR") must appear at the end of the data. A line feed ("LF") must be added as a transmission termination code.

7.4   Setpoint Connector

Your DC-530 has a setpoint output that can be attached to output relays for setpoint control of external equipment when setpoint conditions are satisfied. The device receiving the signal is connected to the DC-530's Setpoint Connector (see Figure 7-1).

To set up the DC-530 to output when the setpoint conditions are satisfied, program the customer specifications as detailed in Section 6.4.

Pin	Signal
1	Set Point 1
2	Set Point 3
3	+24V Ext
4	Set Point 2
5	Set Point 4
6	FRAME Ground
7	Short to Pin 3
8	Short to Pin 6

Table 7-2. Setpoint Connector Pin Assignments

7.5   Bar Code Scanner

A laser scanner allows for instantaneous and accurate input of basic data for an item. The DC-530 has bar code scanning capabilities by plugging the optional QS-6000 Bar Code Scanner (Part No. 65619) into the RS232C-1 port on the scale (see Figure 7-1). In the Counting Mode the scanner can be used to enter the Unit Weight, the Tare Weight, and the Item Code. In the Programming Mode you can scan in the Part Code, Unit Weight, Tare Weight, and Setpoints.

To setup the necessary specifications for bar code scanning, set the DC-530's specifications as follows:

- •   SPEC 04 - Bar Code Scanner to 0010
- •   SPEC 06 - RS232C Output to 1001
- •   SPEC 07 - RS232C1 Baud Rate to 0100
- •   SPEC 08 - RS232C2 Parity/Bit/Stop Bit/Data Length to 0000
- •   SPEC 55 - Scan Quantity Type must be set for either Item Quantity (the default) or Accumulation Quantity.

8 PIN DIN TO RJ

RJ CONNECTOR	8 PIN DIN
RED	8
WHITE	7
YELLOW	6
ORANGE	5
BLUE	4
(no connection)	3
BROWN and BLACK	2
(no connection)	1

Table 7-3. DC-530 Barcode Scanner Pin Configuration

7.6   Remote Scale Channel

The Remote Scale option for the DC-530 can be ordered as Rice Lake Part No. 9491. When this option is installed, a remote scale platform can be connected at the right-hand side of the ports and connectors strip on the back of the DC-530.
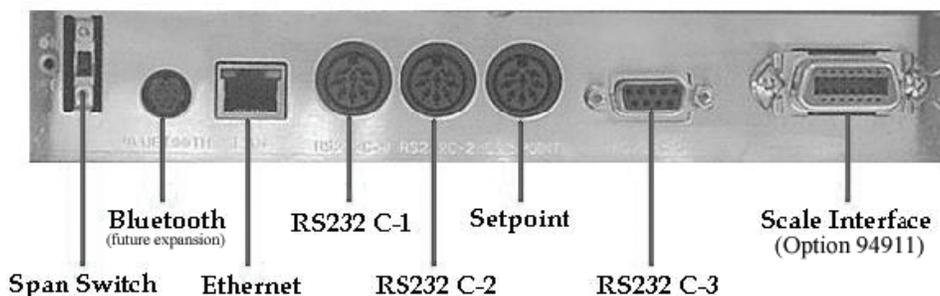

Figure 7-7. DC-530 Ports and Connectors with Remote Scale Channel Connector Installed

Pin (Color)	Signal
BRN	RS+
BLU	RS-
GRN	IN+
YEL	IN-
WHT	VEX+
RED	VEX-
BLK	FRAME GND

Table 7-4. Remote Scale Channel Pin Configuration

7.6.1   Setting the Specifications for Scale 2

A scale connected to the Remote Scale Channel will be recognized by the DC-530 as Scale 2. The specifications that need to be set to configure the communication with the second scale are as follows:

- SPEC 14, Bit 1 - Auto Scale Switching sets whether or not a Unit Weight established on the built-in platform is automatically transferred to Scale 2. When Auto Scale Switching is enabled, the scale also automatically switches to Scale 2 once a stable Unit Weight is calculated.

- SPEC 14, Bit 2 - Rezero When Swap Scale sets whether the scale is rezeroed automatically when the SCALE key is pressed to move from weighing on one scale to weighing on the other

- SPEC 14, Bit 3 - Clear Unit Weight When Swap Scale sets whether the Unit Weight is cleared automatically when the **SCALE** key is pressed to move from weighing on one scale to weighing on the other.

- SPEC 21, Bits 1 and 0 - Minimum Display (Scale 2) sets the display divisions displayed for Scale 2.

- SPEC 24 - Selection of Resolution of 2nd Scale (Scale 2) sets the display resolution for Scale 2.

- SPEC 25, Bits 2 through 0 - Weight Decimal Point Position of 2nd Scale (Scale 2) sets which digit the decimal point appears after in the Weight display.

- SPEC 26, Bit 1 - 2nd Scale sets whether or not the Remote Scale Channel is enabled. Please note that the scale switch is not activated until the 2nd scale has been calibrated.

- SPEC 30 - Set the Tare and Unit Weight Auto Clear conditions.

- SPEC 34 - Loadcell Sensitivities Selection mV/V (2nd Scale) sets the loadcell sensitivity range for Scale 2.

- SPEC 35, Bit 2 - 2nd Scale Weight Unit sets whether the basic weight units for Scale 2 will be lbs or kgs.

For information on how to set the above User and Weight and Measurement specifications, see Section 3.0.

7.6.2   Remote Platforms Available

Platform Capacity	Platform Dimensions
100.00 lbs	13" x 17" (DIGI S-SL Platform)
250.00 lbs	17" x 21" (DIGI S-TL Platform)
500.00 lbs	17" x 21" (DIGI S-TL Platform)
1500.0 lbs	24" x 28" (DIGI S-UL Platform)
2500.0 lbs	36" x 36” or 48" x 48" (DIGI Summit 3000 Platform)
5000.0 lbs	48" x 48" (DIGI Summit 3000 Platform)
10000.0 lbs	48" x 48" or 60" x 60" (DIGI Summit 3000 Platform)
25000.0 lbs	42" x 72" or 60" x 84" (DIGI Summit 3000 Platform)
50000.0 lbs	60" x 84" (DIGI Summit 3000 Platform)
NOTE: *Other platform sizes are available; consult the factory or your dealer for more information.*	

Table 7-5. DC-530 External Platform Capacities

8.0   Appendices

8.1   Error Message List

The DC-530's alphanumeric display allows for detailed error messages. Use Table 8-1 below to find the error message, possible causes for the error and ways to correct the problem. If these suggestions fail to correct the situation, please contact your DIGI dealer for assistance.

Error Message	Possible Causes	Corrective Action
TEP SAMPLING ERR INVALID MAX LIMIT PLEASE RESAMPLE	There is too big a weight variance between pieces for an accurate counting operation to take place	Redo the sampling operation and increase the sampling times.
LOAD CELL 1 OUT OF START RANGE	The scale was started while something was on the platter and the weight was unstable.	Remove all items from the platter and restart the scale.
OUT OF ZERO RANGE PLEASE REDUCE WEIGHT	The REZERO key was pressed while something was on the platter and and the weight was unstable.	Remove all items from the platter and restart the scale.
UNIT WEIGHT BELOW LIGHT RANGE, PLEASE RESAMPLE	The Unit Weight in use is too light (smaller than the light range) for an accurate counting operation.	Use a larger Unit Weight.
ITEM LIMIT = 0 PCS, INVALID ENTER TEP MODE	You are trying to recall an Item Code from memory in TEP Counting Mode that has not had its Safe Quantity Limit established yet.	Use the scale in TEP Counting Mode to calculate the Safe Quantity Limit and edit the Item Code Record to add that limit to the data stored for that Item Code.

Table 8-1. DC-530 Error Message List

8.2   Troubleshooting

Table 8-2 shows some potential problems that might arise while using your scale, their possible causes, and the corrective action that can be taken to resolve them.

Error Message	Possible Causes	Corrective Action
The scale does not power on.	The main switch on the bottom of the scale is off.	Turn on the main switch.
	The AC cord is not completely plugged in.	Push the connector for the AC cord firmly into its socket.
	The fuse is burned out.	Replace the fuse.
When pressing the TARE key a beep sounds indicating an error and the entry is refused.	The scale is unstable.	Check that the Stable indicator lamp is on before pressing the TARE key. If the scale is having difficulty maintaining a stable weight reading, check to see whether it is in a place where it is being affected by air movements. Also make sure that the scale is on a stable sureface. Move the scale to another location if necessary.
When pressing the PCS key while carrying out a sampling operation, a beep sounds indicating an error and the operation terminates.	The scale is unstable.	Check that the Stable indicator lamp is on before pressing the PCS key. The scale will reject the sampling operation if the scale is unstable for 3 seconds after pressing the PCS key. If the scale is having difficulty maintaining a stable weight reading, check to see whether it is in a place where it is being affected by air movements. Also make sure that the scale is on a stable surface. Move the scale to another location if necessary.

Table 8-2. Solutions in Troubleshooting

8.3   Specifications

Operating Conditions
- Operating Temperature-   -10°C ~ +40°C (OIML)
- Operating Humidity -   15%~ 85% RH

Electrical Specifications
- Power Source -   AC117/100V
- Charge Current -   800 mA
- Main Board Backup Battery-Lithium rechargeable battery for data protection
- Clock -   Built-In Real-Time Clock
- Memory -   200 Items

Unibloc Force Cell Specifications
- Input Sensitivity -   0.5mV/V~4mV/V
- Minimum Impedance -   4 x 350 ohm

Resolution Specifications
- Display Device -   Dot Matrix Three Color LCD Backlit Display
- Internal Resolution -   1/1,000,000
- Display Resolution -   25,000/50,000/100,000

Communications/External Devices Specifications
- Number of Scales -   1 internal and 2 external
- RS-232C Interface-   RS232C-1 for connection to a laser barcode scanner

          RS232C-2 for connection to a printer

          RS232C-3 for connection to a personal computer
- 14 pin female amphenol for external loadcells

9.0   DC-530 Limited Warranty

Rice Lake Weighing Systems (RLWS) warrants that all RLWS equipment and systems properly installed by a Distributor or Original Equipment Manufacturer (OEM) will operate per written specifications as confirmed by the Distributor/OEM and accepted by RLWS. All systems and components are warranted against defects in materials and workmanship for one year.

RLWS warrants that the equipment sold hereunder will conform to the current written specifications authorized by RLWS. RLWS warrants the equipment against faulty workmanship and defective materials. If any equipment fails to conform to these warranties, RLWS will, at its option, repair or replace such goods returned within the warranty period subject to the following conditions:

- Upon discovery by Buyer of such nonconformity, RLWS will be given prompt written notice with a detailed explanation of the alleged deficiencies.
- Individual electronic components returned to RLWS for warranty purposes must be packaged to prevent electrostatic discharge (ESD) damage in shipment. Packaging requirements are listed in a publication, *Protecting Your Components From Static Damage in Shipment*, available from RLWS Equipment Return Department.
- Examination of such equipment by RLWS confirms that the nonconformity actually exists, and was not caused by accident, misuse, neglect, alteration, improper installation, improper repair or improper testing; RLWS shall be the sole judge of all alleged non-conformities.
- Such equipment has not been modified, altered, or changed by any person other than RLWS or its duly authorized repair agents.
- RLWS will have a reasonable time to repair or replace the defective equipment. Buyer is responsible for shipping charges both ways.
- In no event will RLWS be responsible for travel time or on-location repairs, including assembly or disassembly of equipment, nor will RLWS be liable for the cost of any repairs made by others.

THESE WARRANTIES EXCLUDE ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING WITHOUT LIMITATION WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. NEITHER RLWS NOR DISTRIBUTOR WILL, IN ANY EVENT, BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES.

RLWS AND BUYER AGREE THAT RLWS'S SOLE AND EXCLUSIVE LIABILITY HEREUNDER IS LIMITED TO REPAIR OR REPLACEMENT OF SUCH GOODS. IN ACCEPTING THIS WARRANTY, THE BUYER WAIVES ANY AND ALL OTHER CLAIMS TO WARRANTY.

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NO TERMS, CONDITIONS, UNDERSTANDING, OR AGREEMENTS PURPORTING TO MODIFY THE TERMS OF THIS WARRANTY SHALL HAVE ANY LEGAL EFFECT UNLESS MADE IN WRITING AND SIGNED BY A CORPORATE OFFICER OF RLWS AND THE BUYER.

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