



DMC-782

Coin Counting Scale

Version 1.00

Operation Manual



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About This Manual

This manual contains operating procedures for the DMC-782 coin counting scale and provides the user with all the information necessary for setup and operation. It is organized based on the procedures you will likely follow when setting up and using your coin counting scale. This manual applies to Version 1.00 of the DMC-782 coin counting scale series.



This manual can be viewed or downloaded from the RLWS web site at www.Ricelake.com.

1.0 Introduction

The DMC-782 is a low cost coin counting scale that offers practical solutions for a full range of coin counting applications. Its internal counting resolution of 1/500,000 gives you maximum counting precision and accuracy. The backlit LCD display enables operators to easily see weights and quantities. The DMC-782 can also store a coin value, tare weight, and unit weight for 23 of your coins, tokens or other items and recalls nine of them by pressing a single pre-programmed key. When portability is required, choose the battery operation option of the DMC-782 for over 380 hours of continuous use in mobile workstations, outdoor applications, and rental fleets. The DMC-782 is rugged enough to operate reliably in many environments and withstand transport from one area of the plant to another or from one business to the next.

1.1 Safety

Safety Signal Definitions:



CAUTION Indicates a potentially hazardous situation that, if not avoided, may result in minor to moderate injury.



Important Indicates information about procedures that, if not observed, could result in damage to equipment.

1.2 Safety Precautions



Do not operate or work on this equipment unless you have read and understand instructions in the manual. Failure to follow the instructions or heed the warnings could result in injury or death. Contact any Rice Lake Weighing Systems dealer for replacement manuals. Proper care is your responsibility.



Failure to follow the instructions or heed the warnings could result in minor to moderate injury.

- Some procedures described in this manual require work inside the scale base. These procedures are to be performed by qualified service personnel only.
- DO NOT allow minors (children) or inexperienced persons to operate this unit.
- DO NOT use for purposes other than weight taking.
- DO NOT place fingers into slots or possible pinch points.
- DO NOT use any load-bearing component that is worn beyond 5% of the original dimension.
- DO NOT use this product if any of the components are cracked.
- DO NOT exceed the rated load limit of the unit.
- DO NOT make alterations or modifications to the unit.
- Do not drop the scale or subject it to violent shocks.
- For accurate weighing, the scale must be placed on a flat, stable surface.
- Operating voltages and frequencies other than specified could damage the equipment.
- Weight exceeding the maximum capacity may damage your scale.

1.3 Capacities and Resolutions

Table 1-1 lists the scale capacities, minimum graduations, and tare ranges for all models of the DMC-782 counting scales. The display resolution is 1/6,000 with an internal or counting resolution of 1/500,000.

Part No.	Capacity
111317	6 lb x 0.001 lb
111318	15 lb x 0.002 lb
111319	60 lb x 0.01 lb

Table 1-1. DMC-782 Capacities and Resolutions

1.4 Modes of Operation

The DMC-782 has three modes of operation:

- Weighing Mode – where all weighing, counting and outputting of data operations take place.
- Programming Mode – where item data can be programmed into the memory of the scale. The display will show *PROG* to indicate that you are the Programming Mode.
- Maintenance Mode - where your RLWS dealer can set specifications, perform scale calibration and other maintenance functions.

1.5 Keyboard and Display

Figure 1-1 shows the DMC-782 console with its indicator lamps, the function keyboard and the numeric keypad. Annunciators or indicator lamps are described in Section 1.5.2. Section 1.5.3 describes the DMC-782 keyboard and keypad.

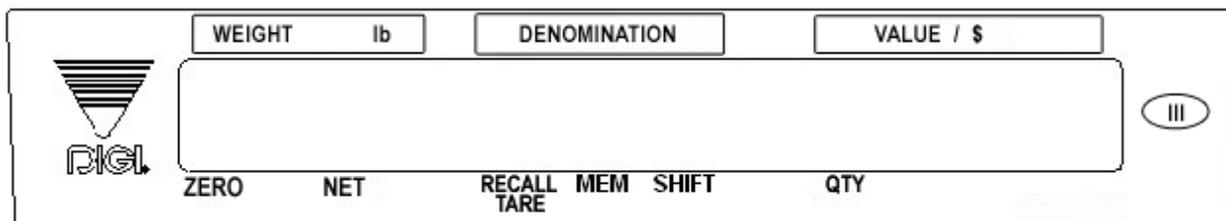


Figure 1-1. DMC-782 Display

1.5.1 Display Specifications

Weight display	5 digits
Denomination display	5 digits
Amount/PCS display	6 digits

Table 1-2. DMC-782 Display Specifications

1.5.2 Indicator Lamps

Table 1-3 shows a list of the indicator lamps that the DMC-782 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 zero point is adjusted and the weight is stable
NET	On when the display shows net weight (when a tare weight has been entered and subtracted)
RECALL TARE	On when a preset tare has been subtracted
RECOMP	On when unit weight recomputing is enabled. Also acts as a Recompute lamp in Program Mode
INSUFF	On when the net weight is below the specified percentage of scale capacity
MEM	On when carrying out accumulation and subtraction
SHIFT	On when the Shift key is pressed for numeric entry
BATT	Battery warning when weak and needs charging (blinks while charging)
QTY	On when the quantity is being displayed rather than the value

Table 1-3. DMC-782 Indicator Lamps and Function

1.5.3 Key Functions

The DMC-782 features many functions for managing inventory information and scale operation. Figure 1-2 shows the key-sheet and Table 1-4 lists the keys and key functions of the DMC-782 keyboard.

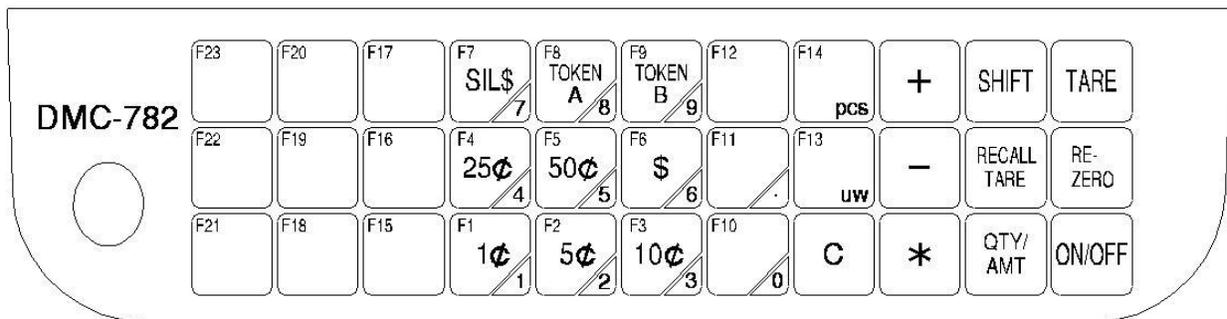


Figure 1-2. Key Sheet Layout

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
to	Numeric keys - Shared with the preset 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.
	CLEAR key. Weighing Mode - Used to clear the numerical values. Used to return to the weighing display when doing accumulation. Programming Mode - Used to delete an Item Code or associated value when programming item codes. Used to Cancel input in programming SPEC codes.

Table 1-4. DMC-782 Key Functions

Key	Description
	PCS key - Used for computing unit weight by sampling.
	TARE key. Weighing Mode - Used to set or clear the tare value. Programming Mode - Used to store SPEC changes and escape to the Weighing Mode when programming specifications. Maintenance Mode - Used to escape to the Weighing Mode from the Maintenance Mode.
	REZERO key. Weighing Mode - Used to reset the weight display to zero.
	- (Minus) key. Weighing Mode - Used to delete a character entered during operations. Used to subtract a quantity during accumulation. Also prompts outputting data to a PC if one is connected. Programming Mode - Used to navigate to the previous specification when programming SPEC codes.
	+ (Plus) key. Weighing Mode - Used to accumulate data. Also prompts outputting of data to a PC if one is connected. Programming Mode - Used to navigate to the next specification when programming SPEC codes.
	UNIT WEIGHT key - Used to set the unit weight from the numeric keypad and display all digits of the unit weight.
	CONFIRM key - Used to confirm the data to be saved or deleted. Also sends the data to the RS-232C port if the specifications are set to send data.
	PRESET keys - Used to set up and recall specific item codes and their associated data from memory.

Table 1-4. DMC-782 Key Functions

2.0 Installation

This section describes the procedure for the installation and setup of the DMC-782 coin counting scale.

2.1 Unpacking

 **Important** *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 DMC-782 coin 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 DMC-782 coin 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:

- DMC-782 coin counting scale
- Stainless steel platter
- AC power cord
- Operation manual



3. Remove the bag protecting the scale and the protective film covering the front panel and platter.
4. Seat the stainless steel platter on the platter supports.
5. After ensuring that all parts are present, store the DMC-782 scale box for possible future use.

2.2 Repacking

If the DMC-782 coin 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 DMC-782. 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.

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 in all four adjustable legs before leveling. Turn out adjustable legs to level as needed.*

Leveling Bubble



Figure 2-1. Leveling Bubble

2.4 Powering Up the DMC-782

The DMC-782 can be operated either from an AC power source or with a rechargeable battery pack (DC power). The DC power allows the unit to be completely portable. Instructions for DC operation are contained in Section 2.4.2.

2.4.1 AC Power Source



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

To power up the DMC-782 using the AC power cord:

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



Figure 2-2. AC Plug-in Location on Underside of DMC-782

2. Plug the AC power cord into a grounded 115 VAC receptacle.
3. Press the **ON/OFF** key located on the front of the scale. The scale will run through a check of the LCD display's segments. How thorough the segment check is depends on the setting of SPEC 20, Bit 2. The default is 0: Fast (For further instructions on how to set the scale's specifications, see Section 3.2.1):
 - If SPEC 20, Bit 2 is set to 0: Fast, the scale display's 888's for 1.5 seconds, then blanks for 1.5

seconds. It then displays 888's again followed by a blank display for another 1.5 seconds before going into the normal weighing mode.

- If SPEC 20, Bit 2 is set to 1: Standard, the scale's display will test the LCD segments for each numeral from 0 to 9, asterisks, decimal points and annunciators before going into the normal weighing mode.
4. Once the scale is on, the time interval before the scale will automatically power itself off, if there no key is pressed and no weight is placed on the platter, is determined by SPEC 00- Auto Power-Off Function. The default is 0000: Disabled. (For further instructions on how to set the scale's specifications, see Section 3.2.1)

2.4.2 DC Battery Pack Replacement/Installation

An optional DC battery pack (PN 108516) for the DMC-782 is available and can be purchased from RLWS to ship with the scale or retrofit in the field. The rechargeable 6V 5.0 AH battery pack allows for up to 380 hours of scale use without an AC power supply (with the backlight off). It is located in the bottom of the scale base. Use the following procedure to install or replace the battery pack.

1. Unplug the scale from power source.
2. Place scale its left side.

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

3. Unscrew the thumb screw (4 below) holding the battery compartment door (5 below) closed.
4. Unscrew the two screws (3 below) holding on the battery holding bracket (2 below) and remove the bracket.

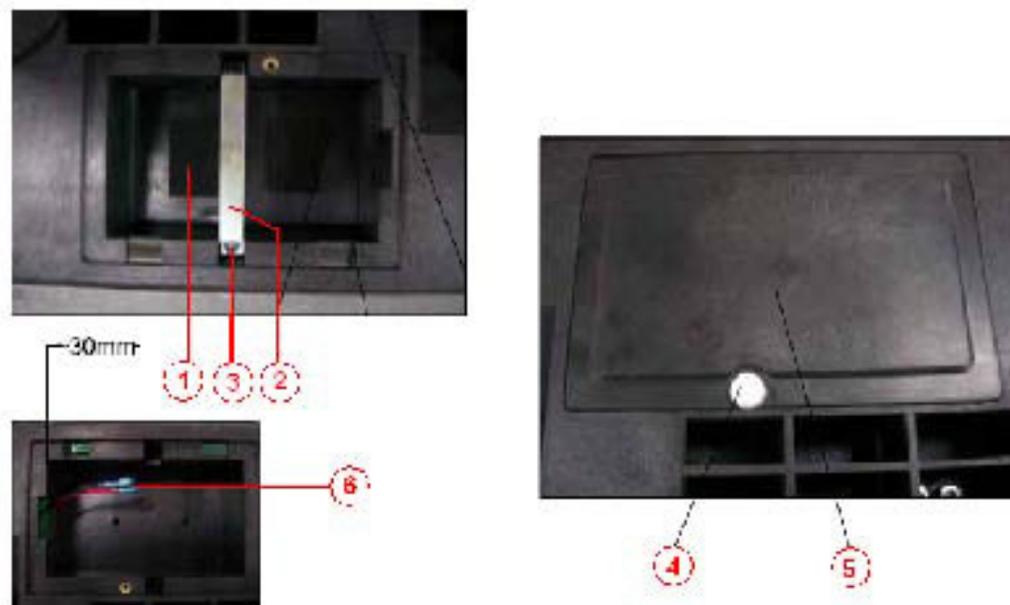


Figure 2-3. Installing the Battery

5. If you are removing a battery previously installed, remove the battery from its compartment, then disconnect the black (-) and red (+) electrical leads from the battery (6 above). If you are installing a new battery, go to step 6.
6. Attach the red lead to the positive (+) terminal of the new DC battery pack, and the black lead to the negative (-) terminal. Place new DC battery pack in battery compartment.
7. Replace the battery holding bracket (2 above) and fasten it with its two screws (3 above).
8. Replace the battery compartment door (5 above) and fasten it with its thumb screw (4 above).
9. Put the scale back upright on its feet.

10. Press the **ON/OFF** key located on the front of the scale. The scale will run through a check of the LCD display's segments. How thorough the segment check is depends on the setting of SPEC 20, Bit 2. The default is 0: Fast (For further instructions on how to set the scale's specifications, see Section 3.2.1):
 - If SPEC 20, Bit 2 is set to 0: Fast, the scale display's 888's for 1.5 seconds, then blanks for 1.5 seconds. It then displays 888's again followed by a blank display for another 1.5 seconds before going into the normal weighing mode.
 - If SPEC 20, Bit 2 is set to 1: Standard, the scale's display will test the LCD segments for each numeral from 0 to 9, asterisks, decimal points and annunciators before going into the normal weighing mode.

2.4.3 Battery Charging

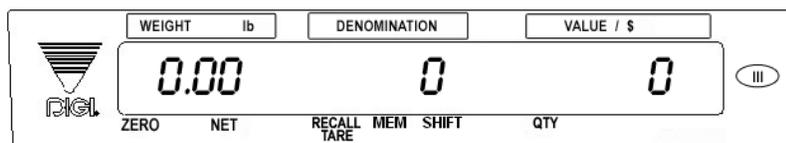
A fully charged battery allows for approximately 380 hours of continuous use (with the backlight off). When the battery is low, the battery indicator light will light up. It will take approximately 12-14 hours to fully recharge a battery that has been completely dissipated. To charge the battery, plug in the AC power cord.

2.4.4 Start-Up Screens

1. If SPEC 20, Bit 3 - Version Display When Power On is set to 0: Allow, the scale will display the current version of the firmware it is using as it powers up (For further instructions on how to set the specifications, see Section 3.2.1).



2. After a test of the different elements of the display, the scale takes you to the stand-by screen in the Weighing Mode. SPEC 20, Bit 2 - Selection of Segment-Check Style controls whether the startup test of the segments is Fast or Standard. At the stand-by screen the *WEIGHT*, *DENOMINATION*, and *VALUE* displays show zeroes.

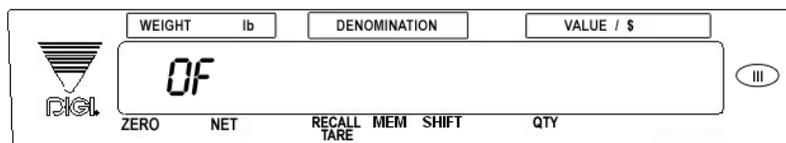


From this stand-by screen all of the basic weighing, counting and inventory operations can be performed

3. If there is anything on the platform or in the container on the platform(s) and it exceeds the scale start range, the display will show the error message *OF* indicating "weight overflow."



Note The Initial Start Range settings are controlled by SPEC 20, Bit 1. The default setting is 0: ± 10% OF FULL SCALE.



If this error appears, remove the weight from the platform and the scale will continue its startup sequence.

2.5 Replacement Parts

The following list in Table 2-1 contains the part numbers and descriptions of replacement parts available for the DMC-782 coin counting scale.

RLWS Part Number	Description
108516	Rechargeable Battery Pack, 6 V, 5.0AH
111781	Operating manual
109241	Adhesive display window overlay, DMC-782
109242	Keyboard underlay, DMC-782
73524	Weighing platter, DMC-782
112263	Overlay, display window, DMC-782
112264	Overlay, keyboard, DMC-782
109248	Platter support bracket
73438	Platter support (black)
109249	Center support (black)
109250	Foot, DMC-782
109251	Hexagonal nut T3 M6 for foot
109252	Loadcell, 6 lb (3 kg)
109253	Loadcell, 15 lb (6 kg)
109255	Loadcell, 60 lb (30 kg)
112265	Main board
109257	A/D board
109258	DC power board
15438	Power cord

Table 2-1. DMC-782 Replacement Parts

2.6 Block Diagram of Electrical Connections

The following block diagram shown in Figure 2-4 illustrates the electrical connections.

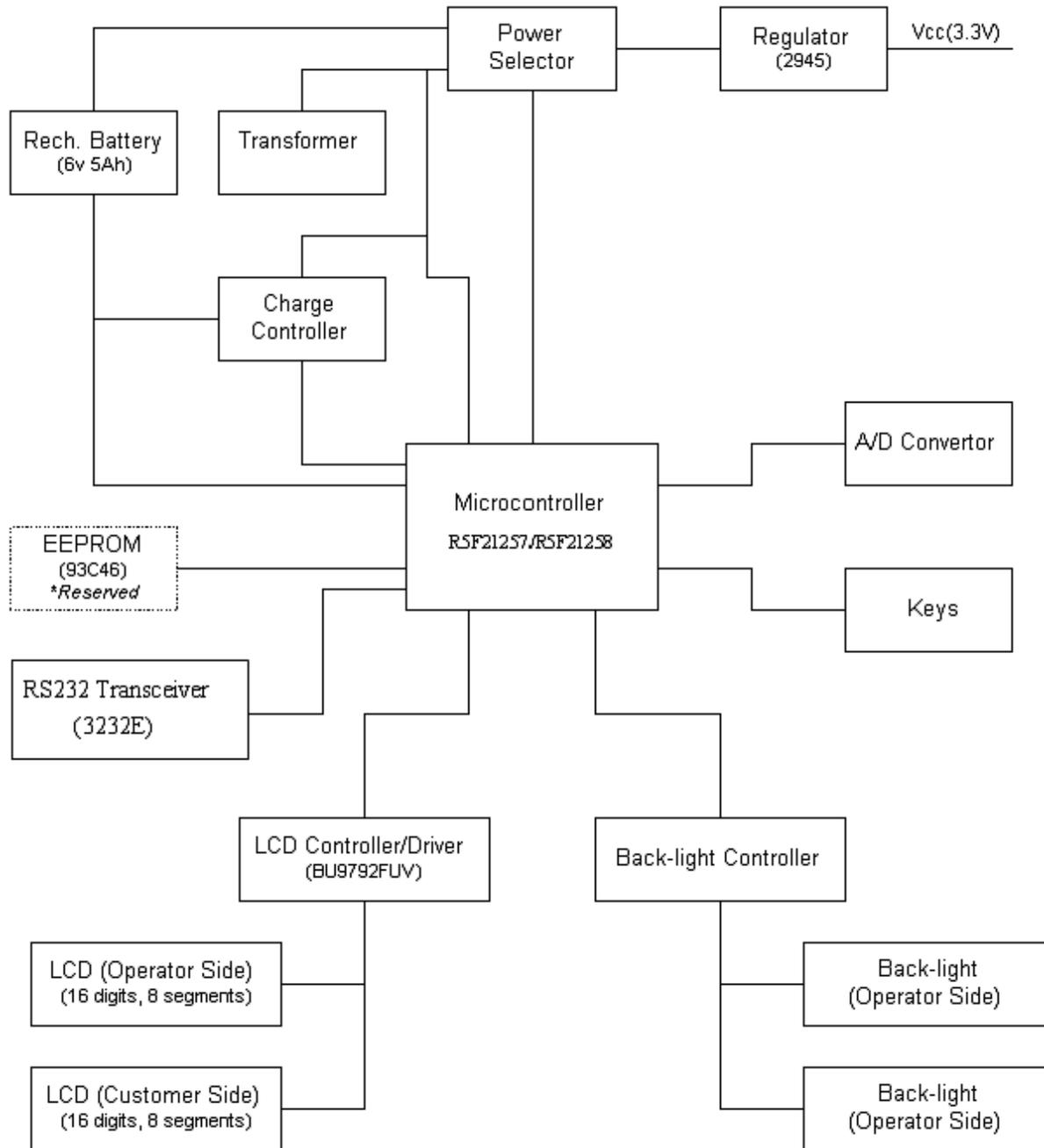


Figure 2-4. Block Diagram Illustrating Wiring Connections

2.7 Physical Layout of Electrical Connections

Figure 2-5 illustrates the actual layout of the electrical connections.

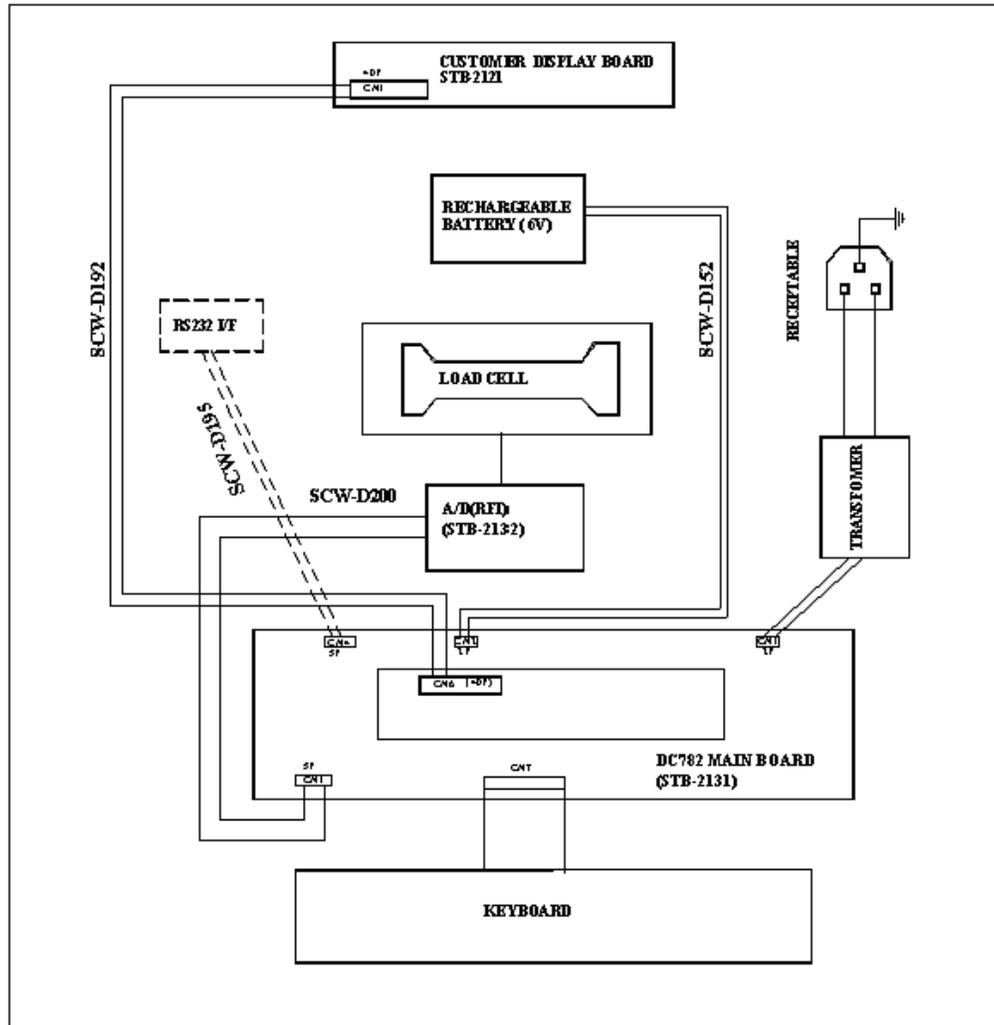


Figure 2-5. Layout of Electrical Connections

3.0 Configuration Settings

This section presents the setup and configuration of the DMC-782 coin counting scale to be used specifically by distributors and service technicians. Configuring these specifications allow you to tailor the DMC-782 to your specific applications.

Setting the specifications allows you to modify the functionality of the DMC-782. Use the tables in this section to view the options you can modify.

3.1 Putting the Scale in Maintenance Mode

Before you can configure the specification settings of the DMC-782 scale, you must first place the scale in Maintenance Mode by pressing the span switch.



Note You can exit the Maintenance Mode and return to the Weighing Mode at any time by pressing the TARE key.

Turn the scale on, then press the span switch to reset it. (See Figure 3-1)

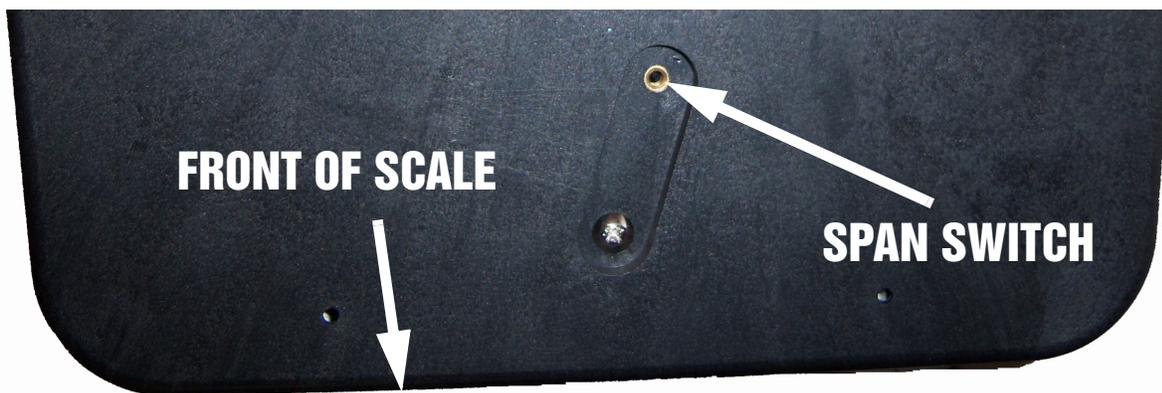


Figure 3-1. Location of Span Switch

3.2 Configuring Specification 141 and 142 Settings from the Scale Keyboard

The following tables list the DMC-782 specifications, their corresponding default values, and the other possible values to which they can be programmed. The default values are set at the factory when the scale is shipped. SPEC 0 through SPEC 04 (Table 3-1) are customer specifications and use the 141 access code, while SPEC 20 through SPEC 30 (Table 3-2) are weight and measurement specifications, and use the 142 access code

In programming specifications, the **+** (Plus) and **-** (Minus) keys allow you to move to the next or previous specification. The **CLEAR** key cancels any input you have made. The *** CONFIRM** key temporarily stores to memory any changes you have made. The **TARE** key saves to memory the changes you have made and returns you to the weighing mode. Note also that when programming specifications, only the 0 and 1 keys on the numeric keypad are enabled, since those are the only valid entries.

3.2.1 Customer Specification (141 Settings)

1. To configure customer specifications, press and hold the **REZERO** key and enter **141** using the numeric

keypad. The first SPEC code is displayed.



The *VALUE/\$* display shows what specification you are in (in this case, SPEC00). The *Denomination* display shows how this specification is currently programmed (Bit 3 = 0; Bit 2 = 0; Bit 1 = 0, and Bit 0 = 0 in this example, while the *Weight* display will show any changes you enter.

If this is the SPEC that you want to modify, enter the new setting from the numeric keypad and press the * **CONFIRM** key to enter the change into temporary memory and move to the next SPEC code.

2. Use the + (plus) and – (minus) keys to scroll through the specifications until you find the one you want. Then make your changes per the instructions in Step 1. Alternatively, you can go directly to a specific specification by entering that specification’s number and pressing the **SHIFT** key (Example: 9 + **SHIFT** will bring up SPEC 09; 11 + **SHIFT** will bring up SPEC 11).
3. To change another SPEC code before exiting, repeat Steps 1 and 2.
4. To save all the changed SPEC settings currently in temporary memory and exit to the Weighing Mode, press the **TARE** key.

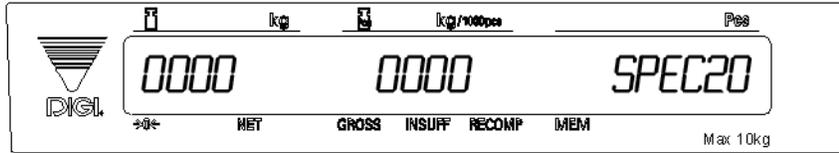
SPEC No.	Bit 3	Bit 2	Bit 1	Bit 0
00	Auto Power-off function (for no key operation and weighing operation) 0000: Auto power-off disable when scale is not in use (DEFAULT) 0001: 3 minutes 0010: 10 minutes 0011: 30 minutes 0100: 1 hour (DEFAULT) 0101: 3 hours 0110 ~ 1111 - not used			
01	Buzzer 0: On (DEFAULT) 1: Off	Error alarm 0: On (DEFAULT) 1: Off	Tare override 0: On 1: Inhibit (DEFAULT)	Not used 0: (DEFAULT)
02	Backlight function 00: Auto 01: Always on (DEFAULT) 10: Always off 11: Not used		Auto backlight interval 00: 6s (DEFAULT) 01: 15s 10: Not used 11: Not used	
03	Extent of insufficient samples 00: 0.1% (DEFAULT) 01: 0.2% 10: 0.0% 11: Not used			
04	Sampling time for unit weight calculation 0: 10 times (DEFAULT) 1: 5 times	Negative counting 0: Allow (DEFAULT) 1: Inhibit	Re-Zero function 0: Allow (DEFAULT) 1: Inhibit	
5 – 19	Not used (reserved for future use)			

Table 3-1. DMC-782 (141) Settings

3.2.2 Weight and Measurement Specifications (142 Settings)

To make changes to the Weight and Measurement Specifications, the span switch must be on. (For instructions on how to turn the span switch on, see Section 4.0.)

1. To configure customer specifications, press and hold the **REZERO** key and enter **142** using the numeric keypad. The first SPEC code is displayed.



The *VALUE/\$* display shows what specification you are in (in this case, SPEC20). The *Denomination* display shows how this specification is currently programmed (Bit 3 = 0; Bit 2 = 0; Bit 1 = 0, and Bit 0 = 0), while the *Weight* display will show any changes you enter.

If this is the SPEC that you want to modify, enter the new setting from the numeric keypad and press the * **CONFIRM** key to enter the change into temporary memory and move to the next SPEC code.

2. Use the **+** (Plus) and **-** (Minus) keys to scroll through the specifications until you find the one you want. Then make your changes per the instructions in Step 1. Alternatively, you can go directly to a specific specification by entering that specification's number and pressing the **SHIFT** key (Example: 25 + **SHIFT** will bring up SPEC 25).
3. To change another SPEC code before exiting, repeat Steps 1 and 2.
4. To save all the changed SPEC settings currently in temporary memory and exit to the Weighing Mode, press the **TARE** key.



Note Once configuration is complete, power down the unit to exit out of configuration mode.

SPEC No.	Bit 3	Bit 2	Bit 1	Bit 0
20	Version display when power on 0: Allow (DEFAULT) 1: Inhibit	Selection of segment-check style 0: Fast (DEFAULT) 1: Standard	Start range 00: ±10% of Full Scale (DEFAULT) 01: ± 5% of Full Scale 10: ± 3% of Full Scale 11: ± 2% of Full Scale	
21	Wight stability condition 00: Loose 01: Normal (DEFAULT) 10: Tight 11: Stringent		IR mode protected by span switch 0: No (DEFAULT) 1: Yes	Password setting 0: Allow 1: Inhibit (DEFAULT)
22	Decimal point position on weight display 00: No Decimal Point 01: 2nd Digit (0000.0) 10: 3rd Digit (000.00) 11: 4h Digit (00.000)		Minimum display 00: 1 01: 2 10: 5 11: 10	

Table 3-2. DMC-782 Weight and Measurement Specifications

SPEC No.	Bit 3	Bit 2	Bit 1	Bit 0
23	Weight single interval or multi-interval 0: Single Interval 1: Multi-Interval	Selection of resolution 000: 1/2,500 001: 1/5,000 010: 1/10,000 011: Not Used 100: 1/3,000 101: 1/6,000 110: 1/7,500 111: Not Used		
24	Negative weight display mask 0: Minus gross > 9e 1: Minus gross weight (DEFAULT)	Recall tare 0: Allow (DEFAULT) 1: Inhibit	Tare range 0: 50% of full scale (DEFAULT) 1: 100% of full scale	
25	Manual tare cancellation 0: Allow (DEFAULT) 1: Inhibit	Tare subtraction 0: Allow (DEFAULT) 1: Inhibit	Tare accumulation 0: Allow (DEFAULT) 1: Inhibit	Auto tare clear when re-zero 0: Allow 1: Inhibit (DEFAULT)
26	Digital tare 0: Allow (DEFAULT) 1: Tare	Accumulation when tare 0: Allow (DEFAULT) 1: Inhibit	Zero tracking when tare 0: Allow (DEFAULT) 1: Inhibit	Weight reset when tare 0: Allow (DEFAULT) 1: Inhibit
27	Tare auto clear 0: Allow 1: Inhibit (DEFAULT)	Unit weight and denomination auto clear 0: Allow 1: Inhibit (DEFAULT)	Auto clear condition 0: >=Gross 21e & >=Net 5e (DEFAULT) 1: >=Net 1e & Quantity Not 0	Net/Gross multi-interval 0: Gross 1: Net (DEFAULT)
28	Accumulation 0: Allow (DEFAULT) 1: Inhibit	Subtraction 0: Allow (DEFAULT) 1: Inhibit	Weight range of data output 0: Always (DEFAULT) 1: Over 20e	Use * key as manual key in manual mode 0: Allow (DEFAULT) 1: Inhibit
29	Exit from accumulation mode after 15 second time out 0: Allow (DEFAULT) 1: Inhibit	Exit from accumulation mode when weight change 0: Allow (DEFAULT) 1: Inhibit	Accumulation without removing weight 0: Allow 1: Inhibit (DEFAULT)	Accumulation without change weight (for >=±10e 0: Allow (DEFAULT) 1: Inhibit
30	Denomination rounding method for 3rd decimal digit 00: No rounding (DEFAULT) 01: Rounding 10: Truncation 11: Cut up		Amount rounding method for 3rd decimal digit 0: Rounding (DEFAULT) 1: Truncation	Plural denomination accumulation 0: Allow (DEFAULT) 1: Inhibit
31 ~ 47	Not Used (reserved for future use)			

Table 3-2. DMC-782 Weight and Measurement Specifications

4.0 Calibration

The DMC-782 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 it is preferable 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). 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. For instructions on how to calibrate the DMC-782 using a test weight equal to the full capacity of the scale, see Section 4.1 below. If you are calibrating the scale using a test weight of less than the full capacity, see Section 4.2 below.

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 RLWS 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 1-715-234-9171 and we will help you find someone who can provide you with on-site support.

Follow the instructions below to calibrate your DMC-782 scale to ensure its continued accuracy.

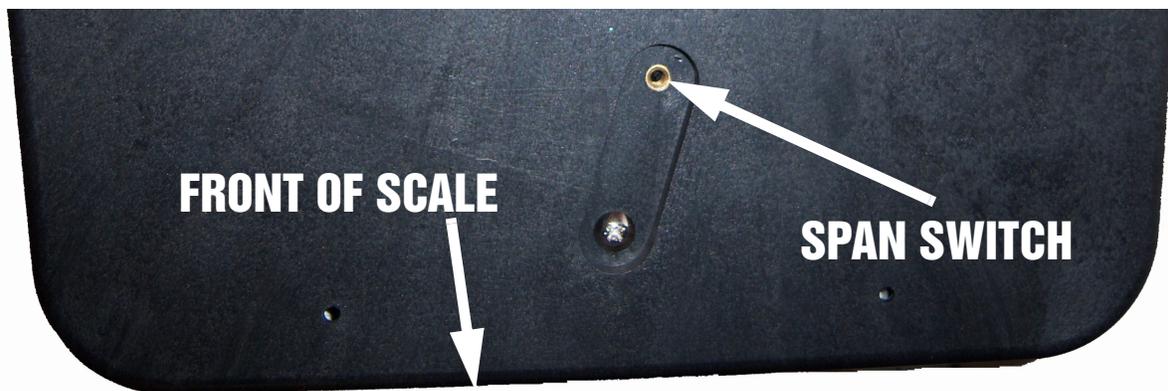


Figure 4-1. Location of Span Switch



Note

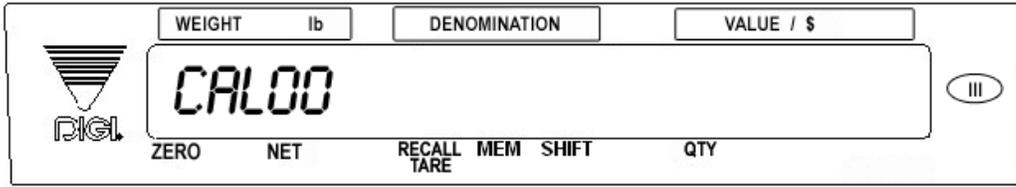
You can exit the Maintenance Mode and return to the Weighing Mode at any time by pressing the TARE key.

4.1 Calibration Using a Test Weight Equal to the Full Capacity of the Scale

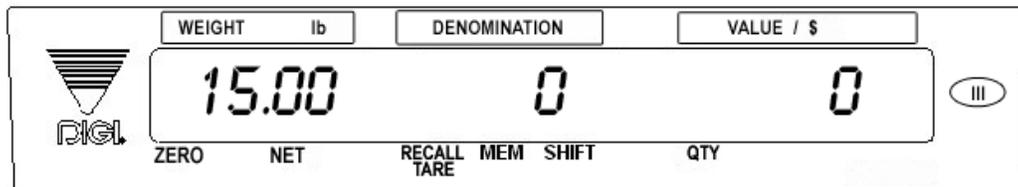
Start in the Weighing Mode.

1. Turn the scale on, then press the span switch to reset it. (See Figure 4-1 above.)
2. While pressing the **REZERO** key, enter **8715** from the numeric keypad to enter the calibration mode.

- The scale display will confirm that you are in the Calibration Mode.



- Make sure that there is no weight on the platform of the scale you are calibrating and press the * **CONFIRM** key to calibrate the zero point. The scale will flash briefly as it searches for the zero point and then will alternate between showing CALSP (Calibrate Span) and the capacity.
- 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 15 lb weight for 15 lb capacity scale, etc.). To calibrate using a test weight of less than the full capacity of the scale, go to Section 4.2 below.
- Press the * **CONFIRM** key. The display will flash briefly again as the span settings for calibration of the scale are being temporarily saved. Then the display will return to the weighing mode with the calibrated weight showing in the *Weight* window.

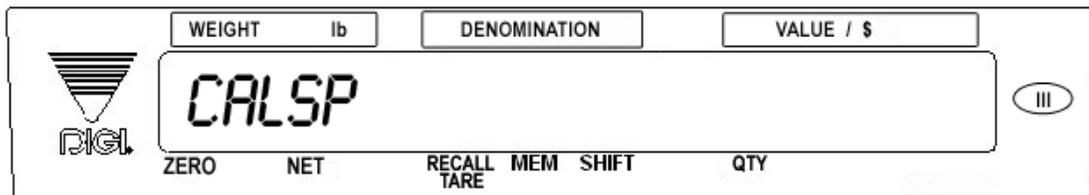


- To exit the Maintenance Mode and save your calibration, power down your DMC-782 scale. To exit the Maintenance Mode and return to the Weighing Mode without saving your calibration, press the **TARE** key.

4.2 Calibration Using a Test Weight of Less Than the Full Capacity of the Scale

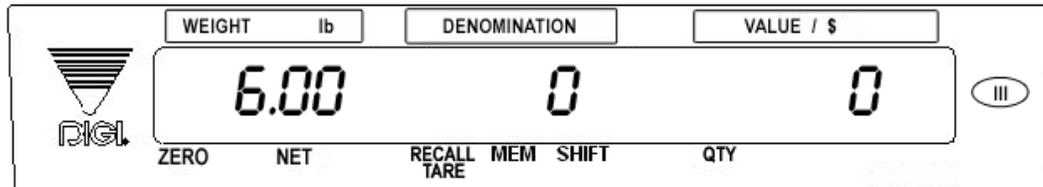
Start in the Weighing Mode.

- Turn the scale on, then press the span switch to reset it. (See Figure 4-1 above.)
- While pressing the **REZERO** key, enter **8715** from the numeric keypad to enter the calibration mode.
- The scale display will confirm that you are in the Calibration Mode.
- Make sure that there is no weight on the platform of the scale you are calibrating and press the * **CONFIRM** key. The scale will flash briefly as it searches for the zero point.



- Place the reference weight on the platform. The display will alternate between showing CALSP (Calibrate Span) and the full capacity of the scale *Weight* display.
- Press the **CLEAR** key. The weight display will go down by 10% of the capacity (i.e. if the full capacity of the scale is 15 lb, the first time you press the **CLEAR** key the weight will go down by 10% of 15 lb or 1.5 lb). Continue pressing the **CLEAR** key until the *Weight* display shows the correct weight for the test weight.

7. Once the *Weight* display shows the correct weight for the test weight, press the * **CONFIRM** key to save the calibration settings.
8. The display will flash briefly again as the span settings for calibration of the scale are being temporarily saved. Then the display will return to the weighing mode with the calibrated weight showing in the *Weight* window.



Note Once calibration is complete, power down the unit to exit out of calibration mode.

5.0 Scale Operations

The following sections contain detailed operator instructions for the DMC-782 coin counting scale (see Figure 5-1). Included are instructions on how to enter tare weights, how to enter unit weights, and how to perform counting operations.



Figure 5-1. DMC-782 Coin Counting Scale

5.1 Entering, Recalling and Adding/Subtracting Tare Weights

This section will describe the different tare-related operations you can perform from the weighing mode. The tare weight can be set by one touch tare using the **TARE** key (Section 5.1.1) or, if the value is known ahead of time, can be entered digitally using the digital tare function (Section 5.1.2). Tare addition and subtraction can also be done digitally or by using the **TARE** key. If a tare weight has previously been programmed to a preset key, that tare weight can be recalled (Section 5.1.3).



Note - The following SPEC codes must be set properly to allow these operations before continuing: SPEC 25, Bit 3 - MANUAL TARE CANCELLATION sets whether or not the tare weight can be cancelled from the keyboard. SPEC 25 also controls whether TARE SUBTRACTION (Bit 2) and TARE ACCUMULATION (Bit 1) are allowed or inhibited and whether AUTO TARE CLEAR WHEN REZERO (Bit 0) takes place or not. SPEC 26 controls whether the scale allows DIGITAL TARE entry (Bit 3), whether the scale can do ACCUMULATION WHEN TARE (Bit 2), if there will be ZERO TRACKING WHEN TARE (Bit 1) and WEIGHT RESET WHEN TARE (Bit 0). SPEC 27 sets whether or not TARE AUTO CLEAR is activated (Bit 3). (For further instructions on how to set the specifications, see Section 3.2.1)

5.1.1 One Touch Tare (When the Tare Weight is Unknown)

1. While in the weighing mode, place a cash drawer, coin bin or box to be tared out on the platform.
2. Press the **TARE** key to subtract the tare weight. The *Net* annunciator will light up and the *Weight* display should now show 0.
3. If you remove the tare weight from the platform, the tare weight will show as a negative weight in the weight window and the *Net* annunciator will remain lit.
4. To clear this tare weight and return to the Weighing Mode, press the **TARE** key again. The *Net* annunciator will no longer be lit.

5.1.2 Digital Tare (When Tare Weight is Known in Advance)

1. While at the stand-by screen, press the **SHIFT** key.
2. Enter the known tare weight by using the numeric keypad.
3. Press the **TARE** key to subtract the tare weight. The *Net* annunciator will light up and the tare weight will be displayed in the weight display.
4. To clear this tare weight and return to the Weighing Mode, press the **TARE** key again. The net annunciator will no longer be lit.



Note For digital tare entry, the decimal must be in the appropriate place as it would be displayed in the weight display. For example, .250 would be entered as 0.250, not .250. The weight display shows weight entered with a negative sign indicating that it is a tare weight.

5.1.3 Recalling a Preset Tare

The following procedure allows you to recall a tare previously programmed to a preset key. For information on how to program a preset tare, see Section 6.4 on page 26.

1. Press the **RECALL TARE** key to enter into the Recall Tare mode.
2. Press the preset key to which you previously programmed a tare weight. (Example: press the F19 key.) The alarm beeps twice and the tare that you programmed to this key appears in the *Weight* display.
3. You can now proceed to carry out a weighing operation or press the **TARE** key to clear the tare weight.

5.1.4 Tare Addition or Subtraction

Two tares can be accumulated or subtracted using the **TARE** key as well. Tare weights cannot be accumulated or subtracted by digital entry.



Note *SPEC 25, Bits 2 and 1 must be set to 00 to enable Tare Accumulation and Tare Subtraction. (For further instructions on how to set the specifications, see Section 3.2.1)*

1. Place the cash drawer, coin bin or box to be tared on the platform and press the **TARE** key. The weight display should show 0, the *Net* annunciator will illuminate and the tare weight will appear in the Tare display.
2. Place another tare weight on the platform and press the **TARE** key again. This will add the two tare weights together (Tare Addition).
3. Tare weights can be subtracted individually by removing one from the platform and pressing the **TARE** key again. To clear all the tare weights and return to the Weighing Mode, remove all the tare weights and press the **TARE** key. The *Net* annunciator will no longer be lit.

5.2 Coin Counting Operations

The following sections describe ways to carry out coin, bill or token counting.

5.2.1 Basic Coin Counting

Start with the scale in the Weighing Mode.

1. Press the key for the value of the coin or token you wish to count. (Example: To count dimes, press the 10 cents key.)
2. Place the coins or tokens on the scale platform. The display will show the weight, denomination, and total value of the coins or tokens on the scale.



To switch the display to show the number of coins or tokens rather than their total value, press the QTY/AMT key.



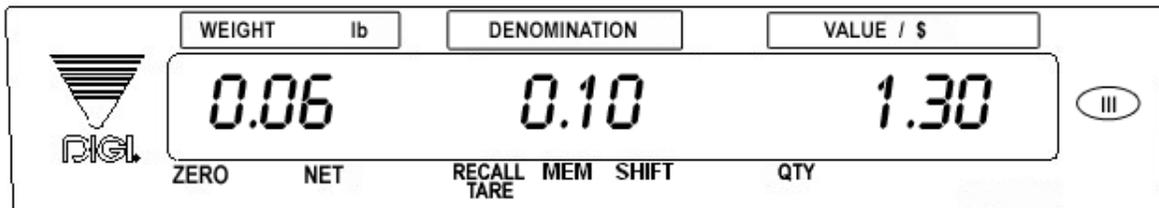
To return the display to visualize total value, press the QTY/AMT key.

3. When done with the coin counting operation, remove the coins or tokens from the scale platter. Press the **CLEAR** key to clear the data recalled.

5.2.2 Basic Coin Counting Using One-Touch Tare

Start with the scale in the Weighing Mode.

1. Press the key for the value of the coin or token you wish to count. (Example: To count dimes, press the 10 cents key.)
2. Place the empty container (cash drawer, bin, bucket, bag or tote) on the scale and press the **TARE** key
3. Place the coins or tokens in the container on the scale platform. The display will show the weight, denomination, and total value of the coins or tokens on the scale.



To switch the display to show the number of coins or tokens rather than their total value, press the QTY/AMT key.



To return the display to visualize total value, press the QTY/AMT key.

4. When done with the coin counting operation, remove the container of coins or tokens from the scale platter. Press the **CLEAR** key to clear the data recalled.

5.2.3 Coin Counting - Accumulating More Than One Denomination

When SPEC 30, Bit 0 is set to 0: Allow, you can accumulate a total of more than one denomination by sequentially putting the coins or tokens on the platform and using the accumulation **+** key and subtraction key **-** as described below. If SPEC 30, Bit 0 is set to 1: Inhibit, if you try to change the denomination of the coins or tokens the scale will emit an error beep.

Start with the scale in the Weighing Mode.

1. Press the key for the value of the coin or token you wish to count. (Example: To count dimes, press the 10 cents key.)
2. Put the coins or tokens on the scale platform. The display will show the weight, denomination, and total value of the coins or tokens on the scale.

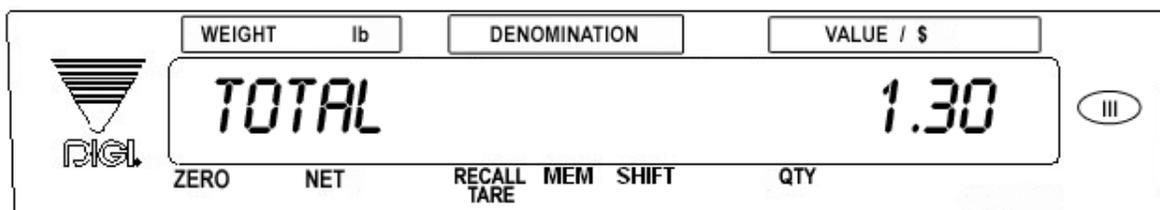


To switch the display to show the number of coins or tokens rather than their total value, press the **QTY/AMT** key.



To return the display to visualize total value, press the **QTY/AMT** key.

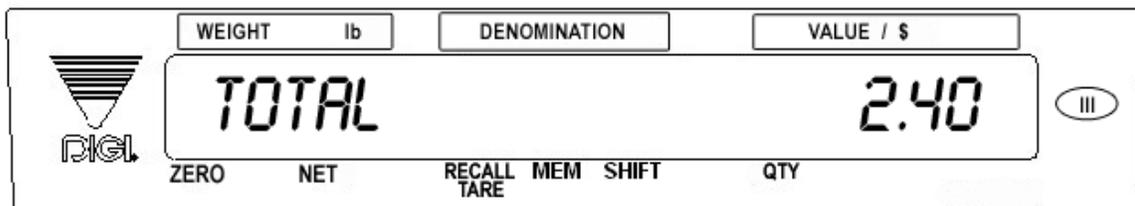
3. Press the **+** key to add the total value of the first denomination to the accumulator. The **MEM** annunciator will illuminate, indicating that there is accumulation data in memory. If the display is in Quantity mode instead of AMT mode, you will hear an error beep because a quantity cannot be accumulated. Switch the display back to visualizing total value by pressing the **QTY/AMT** key and then pressing the **+** key again. The display will show the total value accumulated so far.



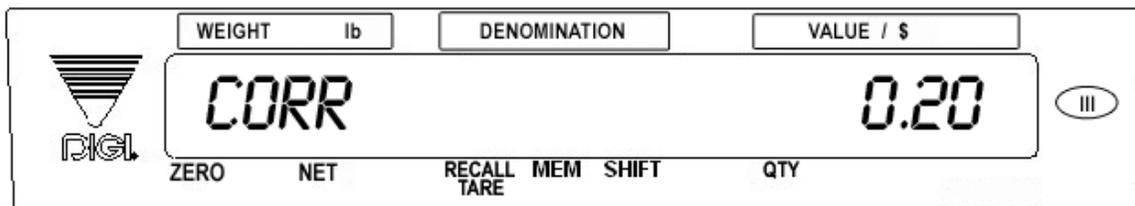
4. Remove the coins of the first denomination from the platform. Press the **CLEAR** key to clear the previous data from the display.
5. Press the preset key for the next denomination coin or token to be accumulated (Example: the 5 cent key for nickels). This can be either one of the denomination keys preprogrammed on the scale or one of the preset keys programmed for a custom coin or token by following the instructions in Section 6.0.
6. Press the **CLEAR** key to clear the coin data.
7. Place the coins to tokens of the next denomination on the scale platform. The display will show the weight, denomination, and total value of the coins or tokens now on the scale.



8. To accumulate this new amount to the total, press the **+** key. The display will now show the new total.



If instead of adding the new amount to the accumulated total you want to subtract the amount from the previous total, press the subtraction key **-**. The display will show the corrected total.



9. Remove the coins of the first denomination from the platform. Press the **CLEAR** key to clear the previous data from the display.
10. To add or subtract more coins or tokens of a different denomination, remove the coins on the platform and press the **CLEAR** key to clear the previous data from the display and repeat Steps 5-7.
11. To check the total amount accumulated so far, press the * **CONFIRM** key. The display will show the current total. If a PC is connected to the DMC-782, pressing the * **CONFIRM** key again will output the data to the PC and clear the current total. The Memory indicator will no longer be illuminated.

5.3 Counting Coins Out of a Cash Drawer

A common use for the DMC-782 coin counting scale is to get a total of the coins in cash register drawers.

1. Place the cash drawer on the scale.
2. Press the **TARE** key. The Weight, Denomination and Value displays will all show zeroes.
3. Press the preset key for the denomination of coin or dollar bill that you are going to remove from the cash drawer first.
4. Remove all of the coins or bills of that denomination from the cash drawer, then press the **+** key to accumulate the value.
5. Press the **CLEAR** key to clear the data for that denomination.
6. Press the **TARE** key to rezero the weight on the scale.
7. Press the preset key for the next denomination of coin or bill that you are going to remove from the cash drawer.

8. Remove all of the coins or bills of this next denomination from the cash drawer, then press the **+** key to accumulate the value.
9. Press the **TARE** key to rezero the weight on the scale.
10. Continue until all the coins and bills have been removed from the cash drawer. The total will be displayed in the Value window on the display.
11. When done, press the **CLEAR** key and the * **CONFIRM** key to clear the total value from the accumulator. You are now ready for the next cash drawer or to carry out another operation.

5.3.1 Delete Data Stored to a Preset Key

Deletion of a Preset Key with all of its associated information (Unit Weight, Tare Weight and Value) can only be done from the programming mode. See Section 6.5 for procedures on deleting item codes or specific items associated with item codes.

6.0 Scale Programming

The DMC-782 can store information for the coins, tokens, and other items you count most frequently, eliminating the need for re-entering data during coin counting. With each coin, token or item you can specify a Value, Tare Weight, and Unit Weight. Up to 23 items can be programmed into your DMC-782 coin counting scale, with as many as 9 of those being able to be assigned to the preset keys (F13 to F23).

6.1 Standard Weights for Coins and Dollar Bills

Table 6-2 below lists the standard weights programmed to the DMC-782's preset keys at the factory..

Coins	Standard Unit Weight
1 cent coin (penny)	5.94 unit weight/1000
5 cent coin (nickel)	11.032 unit weight/1000
10 cent coin (dime)	5.013 unit weight/1000
25 cent coin (quarter)	12.419 unit weight/1000
50 cent coin (half-dollar)	24.72 unit weight/1000
silver dollar	49.44 unit weight/1000
Susan B. Anthony dollars	17.940 unit weight/1000
Sacagawea dollar coins	17.684 unit weight/1000

Table 6-1. Standard Coin and Dollar Weights

Since coin and bill weights vary depending on the age, condition, and wear of the actual items being counted, it is recommended that you periodically recalibrate the coin unit weights using samples from the actual money being counted. The larger the sample, the more accurate the coin unit weights will be. Samples of 500 to 1000 coins produce very accurate coin unit weights using the procedure described in Section 6.2 below.

6.2 Program a Value and Unit Weight Where the Unit Weight is Known

The DMC-782 has the capacity to store information on up to 25 items (9 of which can be assigned to the preset keys F15 to F23). This section details the procedure for storing the value, tare weight, and unit weight to be associated with a coin, token or item. You can enter all of this information for each item or only the data pertinent to your application. The memory fields associated with item codes can be programmed subject to the following parameters:

Parameters	Format and Maximum Length
Tare Weight	5 digits plus the decimal point
Unit Weight	5 digits plus the decimal point
Value	5 digits plus the decimal point

Table 6-2. Format and Length of Item Code Memory Fields

Start in the Weighing Mode.

1. Enter 121 while holding the **REZERO** key to enter the Programming Mode. The display will show *PROG*.
2. Press the preset key number for the key that you want to program. The number of the key will appear on the display.
3. Enter the value of the coin to be programmed. Valid values are ≥ 0.01 . If less than a dollar, enter a leading zero, followed by the decimal point and the value. (Example: The value of a quarter should be entered as 0.25.)
4. Press the * **CONFIRM** key in order to store the value and go to the weighing mode or press the **SHIFT** key to exit the Programming Mode without storing the data.

NOTE: If you enter an Item Code that has already been stored in memory, the scale will display the Unit Weight

associated with that item code. To keep the current settings, press the * key or press the **SHIFT** key once to exit the Programming Mode. To change the previously entered data in any field, enter it from the keypad.

5. Enter the Unit Weight per 1000 pieces from the numeric keys, including the decimal point. Valid values are ≥ 0.01 . [Example: the unit weight of a dime is 5.013.] Press the **UW** key to temporarily store this number as the unit weight. Then press the * **CONFIRM** key to save the data.
6. Press the **SHIFT** key to exit the Programming Mode and return to the Weighing Mode.

6.3 Program Value and Unit Weight Where the Unit Weight is Unknown

Start in the Weighing Mode.

1. Enter 121 while holding the **REZERO** key to enter the Programming Mode. The display will show *PROG*.
2. Press the preset key number for the key that you want to program. The number of the key will appear on the display.
3. Enter the value of the coin to be programmed. Valid values are ≥ 0.01 . If less than a dollar, enter a leading zero, followed by the decimal point and the value. (Example: The value of a quarter should be entered as 0.25.)
4. Press the * **CONFIRM** key in order to store the value and go to the weighing mode or press the **SHIFT** key to exit the Programming Mode without storing the data.
5. Press the **CLEAR** key to clear any unit weight data. The unit weight of the coin or token will now be calculated by sampling.
 - If the coin or token to be sampled is in a container (bin, bucket, bag or tote), place the empty container on the scale and press the **TARE** key.
 - Place a sample quantity of the coin or token on the scale platform or in the container on the platform.
 - If the sample size is 10 pieces, press the **PCS** key to compute the unit weight. If the sample is made up of more or fewer than 10 pieces, enter the number of coins or tokens in the sample from the numeric keypad and then press the **PCS** key.
 - If the sample size is large enough to calculate an accurate unit weight, that unit weight will be displayed in the Value display and the number of coins on the platform in the Amount display. Skip to Step 7 below to save the data and exit from the Programming Mode.

If the DMC-782 software detects that the sample size is insufficient to accurately calculate a unit weight for this coin or token, the scale will request that you increase the sample size as described in Step 6 below.
6. If the sample pieces were not sufficient to accurately calculate a unit weight, place exactly 10 more pieces of the same coin or token on the platform or in the container on the platform and press the **PCS** key to compute the unit weight.

The accuracy of the unit weight can be made increased by adding a much larger sample of the coin or token. Add more pieces to the sample and press the **PCS** key to have the scale recompute the unit weight.
7. Press the * **CONFIRM** key to save the data, then press the **SHIFT** key to exit the Programming Mode and return to the Weighing Mode.

6.4 Program a Preset Tare Weight to a Key

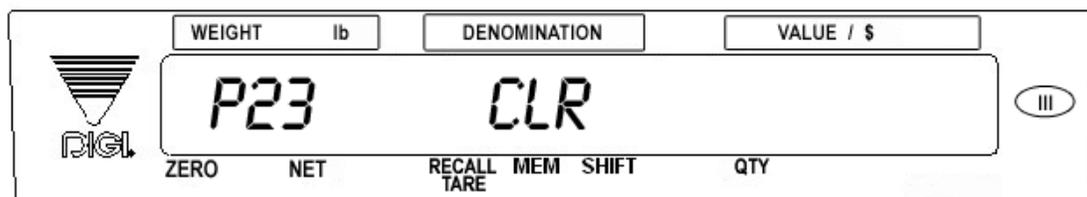
1. Enter 121 while holding the **REZERO** key to enter the Programming Mode. The display will show *PROG*.
2. Press the **RECALL TARE** button. The display will show *PT* to indicate that you are programming a preset tare.
3. Press the preset key that you want to program the tare to. The preset key will appear on the display to confirm. If there is a tare value currently programmed to the key, it will also be displayed.
4. Enter the value of the tare to be programmed. If less than one pound, enter a leading zero, followed by the decimal point and the value. (Example: A tare of 1/2 pound should be entered as 0.5.)
5. Press the * **CONFIRM** key in order to save the data or press the **CLEAR** key to clear the data if you have entered it incorrectly and want to reenter it. *PT* will appear on the display. To exit the Programming Mode without recording any data, press the **SHIFT** key.
6. To enter another preset tare, press another preset key on the keypad and repeat steps 3 to 5.

7. Press the **SHIFT** key to exit the Programming Mode and return to the Weighing Mode.

6.5 Delete Preset Coin Data from Memory

The DMC-782 allows you to delete preset coin data from memory if you no longer need the data or want to reprogram the key for another item. The following procedure describes the steps used to delete a single specific set of coin data (tare weight, unit weight, and value).

1. Enter 363 while depressing the **REZERO** key to enter the Programming Mode. The display will show *PRG*.
2. Press the preset key number for the coin data that you want to delete. The key number will appear on the display for you to confirm that it is the correct key and the preprogrammed value will appear in the Value display.
3. Once you have confirmed that you have the correct key, press the **CLEAR** key to clear the coin data.



To escape from the delete mode without clearing the data associated with this preset key, press the **SHIFT** key.

4. Press the * **CONFIRM** key to save the change to the data. The display will show *PRG* to indicate that you are still in the Programming Mode.
5. Press the **SHIFT** key to exit the Programming Mode and return to the Weighing Mode.

7.0 Appendix

7.1 DMC-782 Specifications

Operating Conditions

- Power Source - AC117/100V
- Operating Temperature- $-10^{\circ}\text{C} \sim +40^{\circ}\text{C}$
- Operating Humidity - 15 ~ 85% RH
- Power Consumption - 18W when using AC power
1.2W when using rechargeable battery

Charging Conditions (for rechargeable battery only)

- Battery Power - DC 6V 5Ah rechargeable battery (optional)
- Power Source - AC117/100V
- Charge Current - 800 mA
- Charge Time - 12-14 hours

Analog Specification

- Input Sensitivity - 1mV/V
- Zero Adjust Range - $0 \pm 5\text{mV}$
- Zero Balance Range - $0 \pm 0.5\text{mV}$
- L/C Applied Voltage - DC 3.3V
- Speed of A/D Conversion - 10 times/second
- Internal Resolution - 1,000,000

External Connectors

- AC Receptacle

7.2 DMC-782 Error Message List

The DMC-782's alphanumeric display allows for detailed error messages. Use Table 7-1 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 RLWS dealer for assistance.

Error Message	Possible Causes	Corrective Action
O F	When the displayed weight exceeded capacity+9d, or something is on the platter when the power is on.	Remove the item on the platter.
U F	When the negative weight exceeds the display limit.	Rezero the scale or power the on/off button again.
ERROR	When an error occurs in maintenance mode.	Repeat the operation
ERR 01	When the communication between the main board and the A/D board is not complete.	Contact your RLWS Distributor
ERR 02	When there's a data flash erase error	Contact your RLWS Distributor
ERR 03	When there's a data flash program error	Contact your RLWS Distributor
8 8 8 8 8	Happens when the scale is not stable when the power is on.	Place the scale on a firm, flat surface.
tOtAI FULL	When the current total overflows the register	Clear the current total.

Table 7-1. DMC-782 Error Message List

DMC-782 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.

SHOULD THE SELLER BE OTHER THAN RLWS, THE BUYER AGREES TO LOOK ONLY TO THE SELLER FOR WARRANTY CLAIMS.

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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