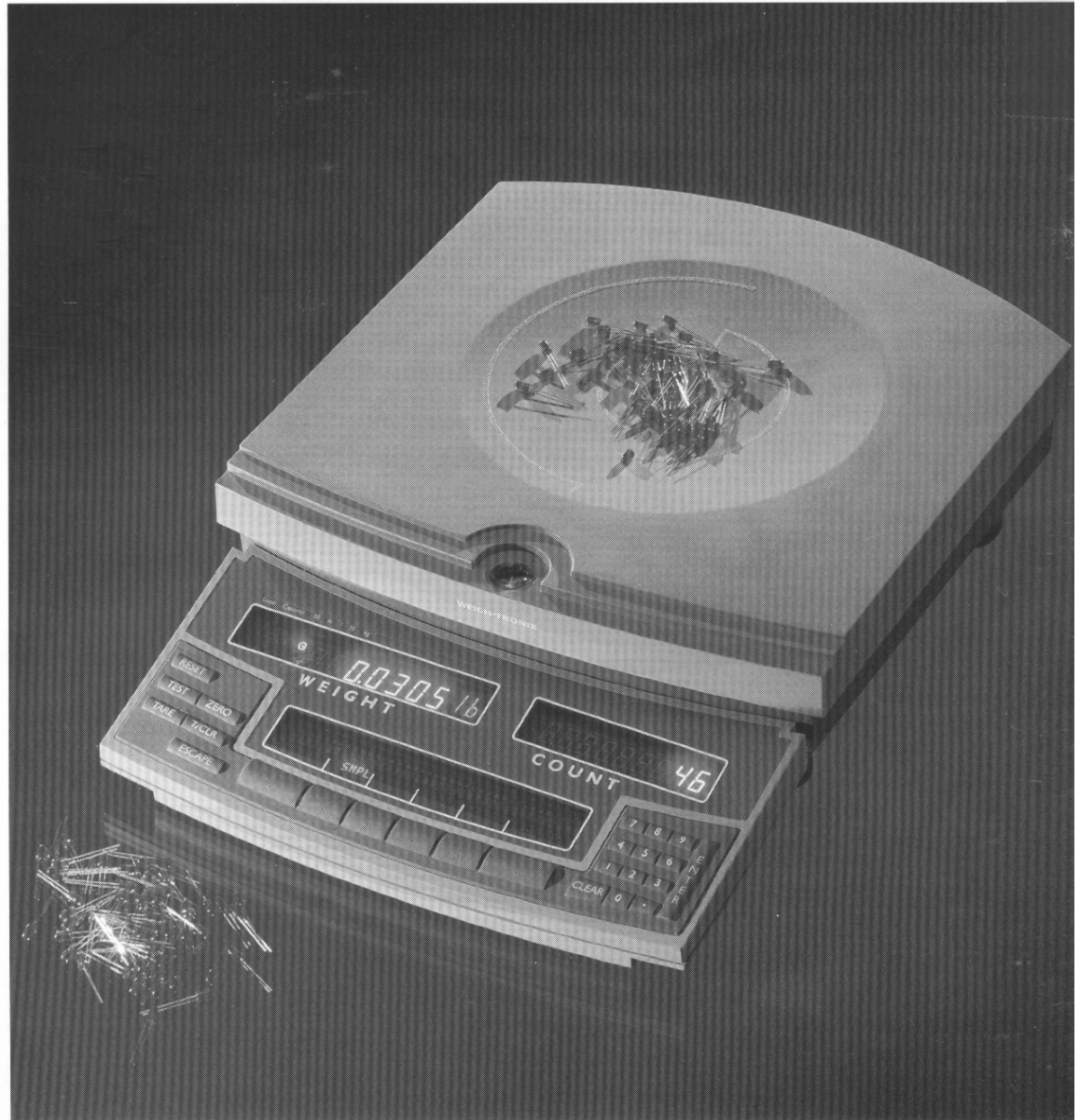


WEIGH-TRONIX



PC-810 Precision Counting Scale User's Manual

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Specifications

Resolution | Internal: Quartzell™ transducer technology has unlimited resolution.

Count: up to 10,000,000 pcs

Capacities and Resolutions: →

Capacity	Standard 100,000 d Resolution	Expanded 500,000 d Resolution	Piece Wt. Resolution
10 lb	0.0001 lb	0.00002 lb	0.000000001 lb
50 lb	0.0005 lb	0.0001 lb	0.000000001 lb
100 lb	0.001 lb	0.0002 lb	0.000000001 lb
5 kg	0.00005 kg	0.00001 kg	0.000000001 kg
25 kg	0.0002 kg	0.00005 kg	0.000000001 kg
50 kg	0.0005 kg	0.0001 kg	0.000000001 kg
5,000 g	0.05 g	0.01 g	0.000001 g
25,000 g	0.2 g	0.05 g	0.000001 g
50,000 g	0.5 g	0.1 g	0.000001 g

Standard Keys | ZERO ESCAPE
TARE 0-9 & .
TARE CLEAR ENTER
TEST CLEAR
RESET

Soft Key Selection | QUICK SAMPLE UNITS
COUNT PRINT
ACCUMULATE BASE SELECT

Capacities | 10, 50 & 100 pounds
5, 25 & 50 kg

Display | Easy to read blue-green fluorescent
Weight → Seven 7-segment digits 1/2" high
Count → Nine 7-segment digits 1/2" high
Message & soft key legends → 2 rows of 40 each dot matrix characters 1/4" high

Keypad | Durable silicon rubber with selectable keypad beeper

Dimensions | 14" x 14" platform on 50 and 100 lb models
8" diameter platform on 10 lb model
Overall 14" W x 19"D x 4.5"H

Power | 115VAC ±10%, 50/60Hz, 35VA max
230VAC ±10%, 50/60Hz optional

I/O | Formattable Bi-directional RS-232

Environment | Use 14°F to 104°F
 -10°C to +40°C
Storage -25°F to 140°F
 -32°C to 60°C
10 - 95% RH non-condensing

Options | Remote base input
2 additional RS-232 I/O's
Bar code gun or wand
Remote alphanumeric keyboard
Battery backup of time and date

What's In This Manual?

Major sections of this manual are headed by titles in a black bar like the one above. Subheadings appear in the left column. Instructions and text appear on the right side of the page. Occasionally notes, tips, and special instructions appear in the left column.

This manual contains the information you need to operate the PC-810 Counting Scale. The PC-810 uses the new and innovative QUARTZELL™ transducer for higher resolution and accuracy and a keyboard and display panel designed for easy use and understanding.

This user's manual is divided into the following sections:

- Introduction
- Keyboard and Display Panel
- PC-810 Operation
 - Weighing Operation
 - Counting Operation
- Serial Communication
- I/O Connector

Keyboard and Display Panel

There is an option available for a remote keypad/display. This allows the keypad and display to be up to eight feet from the base.

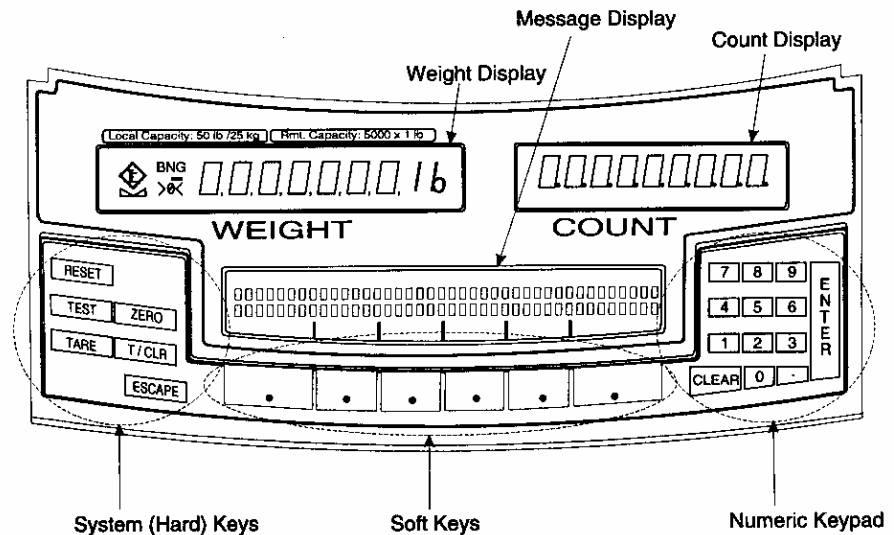


Figure 1
Keyboard and Display Panel

The keyboard, see Figure 1, is divided into three functional areas.

- System keys (hard keys) are located on the left to control scale functions
- 10 key numeric keypad on the right for numeric entries
- Six soft keys are along the bottom of the control panel. They are called soft keys because their names and functions change depending on what functions are available at the time.

This manual uses special characters to represent key labels (both hard and soft) and display messages.

Key names are always in **BOLD** letters.

When display messages are printed in text, the message will appear **BOLD** and italicized.

A two line message display is located above the soft keys. The bottom line displays the current name or function of the soft key located directly below. The top line displays messages to guide you through the operation of the scale.

Weight and count displays are located at the top of the display panel. The weight display is shown in Figure 2.

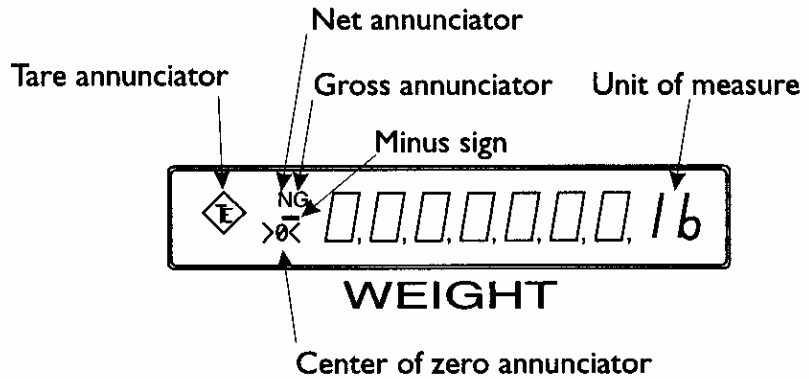


Figure 2
Weight display and annunciators

PC-810 Operation

It is very important that when you unpack the new scale, remove the weighing platform and remove the four pieces of packaging material located between the scale's corner stop screws and the loadbridge.

Save these stops for shipping the PC-810. Shipment without these stops is likely to cause damage that is not covered under warranty.

Power up the PC-810 by plugging it into an appropriate power supply. Upon power up the PC-810 will be ready for weighing and counting. You will see soft keys available to you listed on the bottom line of the message display. The following list and Figure 3 show all possible keys available upon power up. The soft keys you see depend on how your system is configured.

Soft Key Definitions

- X KEY** - Quick key for taking a sample of X number of pieces.
- COUNT** - Accesses sample counting methods.
- ACCUM** - Use for accumulating totals of weights and counts.
- PRINT** - Sends a print command if a printer is attached.
- UNITS** - Use to change units of measure if multiple units are configured.
- BASE** - Use to switch between local and remote bases.

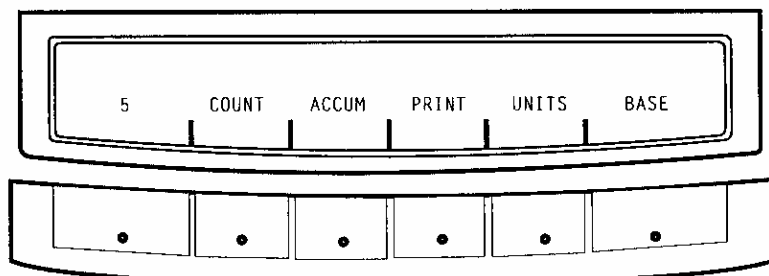
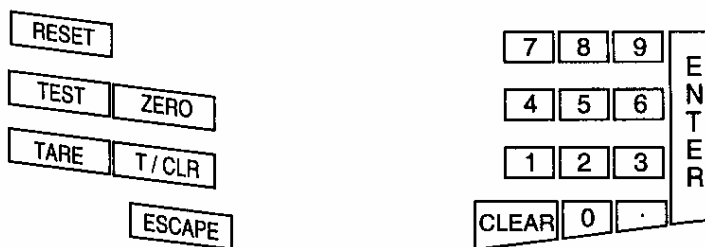


Figure 3
Soft keys available upon power up.

System (Hard) Key Definitions

The hard keys (shown below) perform the functions listed below:



- ZERO** - Zeros the scale.
- TARE** - Performs a pushbutton tare operation.
- T/CLR** - Clears stored tare weight if scale is at zero.
- ESCAPE** - Exits any menu or submenu.
- CLEAR** - Clears last keypad entry.
- 0-9, "."** - For keypad entry of piece weight, tare value, PWLU# or PART#.
- RESET** - Activates a scale reset (clears all registers and totals but not the database).
- TEST** - Activates a set of soft keys for testing, configuration and calibration. These keys are shown in Figures 4 and 5.

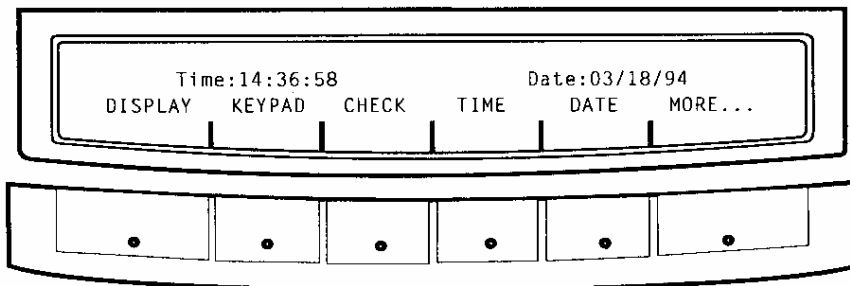


Figure 4
Soft keys accessed through TEST key

- DISPLAY** - Press this key to put the display through a cycle test.
- KEYPAD** - Press this key to perform key function tests.
- CHECK** - Press this key to start a system self-test.
- TIME** - Press this key to display or edit the time.
- DATE** - Press this key to display or edit the date.
- MORE...** - Press this key to display another set of soft keys, See Figure 5.

Time is always displayed in the 24 hour clock mode.

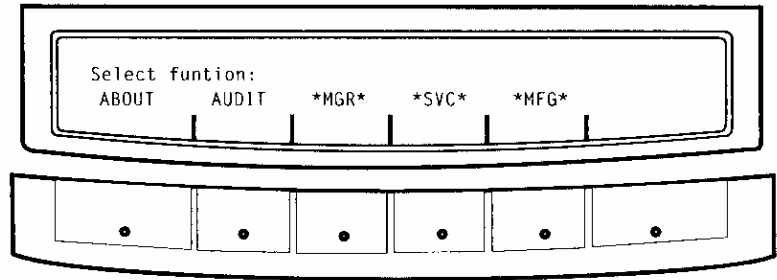


Figure 5
More soft keys available under TEST key

- ABOUT** - Press this key for information about PC-810 development software.
- AUDIT** - Press this key to display the calibration audit trail count.
- *MGR*** - This key accesses a database of part numbers. You need the manager password to gain access to this database.
- *SVC*** - This key accesses the calibration and configuration and requires a service password
- *MFG*** - This key for factory use only.

Weighing Operation

After power up, to perform a weighing operation, empty the scale platform and zero the scale by pressing the **ZERO** key. Place the item to be weighed on the scale and the weight will be displayed in the weight window. Below are the normal functions you may do if your PC-810 is so configured.

Entering a Tare Value

These instructions assume all the soft keys are active. Your configuration may not show all these keys.

There are two methods for entering a tare value.

1. Place a weight on the scale and press the **TARE** key. . . The net annunciator lights up and the weight is tared.
- OR**
2. Key in the tare weight and press the **TARE** soft key that appears. . . The weight is entered as a tare value and the net and tare annunciators light up.

Clearing a Tare Value

*When the GTN function is selected (see the Service Manual), the **T/CLR** key toggles between Gross and Net weighing modes.*

Clear a tare value by one of three methods:

1. Press the **T/CLR** key.
2. Remove all weight from the scale and press the **TARE** key.
3. Key in 0 on the numeric keypad then press the **TARE** soft key that appears.

Use of Remote Base

If you are using more than one base for weighing, switch between the bases by pressing the **BASE** soft key. If one scale is attached the word **REMOTE** appears in the message display. If more than one base is attached **REM-1** or **REM-2** is displayed.

Accumulation

A flowchart showing the normal operating mode of the PC-810 is located in the appendix of this manual.

The ACC+ and ACC- keys increment the transaction counter.

Printing

Changing Units of Measure

The accumulation function allows you to add or subtract weights and counts to and from an accumulator memory.

1. Place an object to be weighed or counted on the scale. Press the **ACCUM** soft key. . .

The message and soft keys shown in Figure 6 appear. (Numbers used in Figure 6 are just examples.)

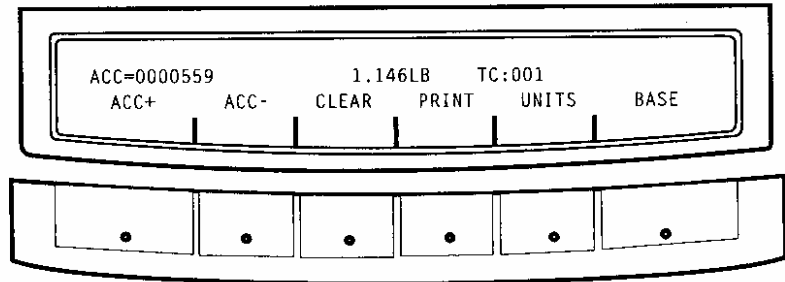


Figure 6
Accumulator soft keys and display

The message line in Figure 6 gives you the total count accumulated, the total weight accumulated, and the transaction count (TC).

The soft key functions for accumulating are listed below:

- ACC+** Press this key to add the current weight and count to the accumulator totals.
- ACC-** Press this key to subtract the current weight and count from the accumulator totals.
- CLEAR** Press this key and the scale will give you the choice to clear all the accumulators or just the last entry.
- PRINT** Press this key to print.
- UNITS** Press this key to change the unit of measure.
- BASE** Press this key to switch the scale to a remote base. This allows you to accumulate counts and weights from remote bases and the local base into the same accumulator memory.

Press the **PRINT** key to print out the format which is configured for your application. Printout formats can be changed using information in the *Service Manual*.

Press the **UNITS** key to change the unit of measure. The unit of measure annunciator in the weight display will change to reflect the active unit of measure; *lb*, *kg* or *g*.

Counting Operation

Figure 7 shows what the soft key display of a PC-810 would look like upon power up if all the soft keys are enabled and you have a printer and remote base hooked up. The first two keys, the **5** and **COUNT** soft keys, give you access to the counting mode of the PC-810. The **5** is a default sample size set during configuration. Sample sizes you can choose are 1, 2, 5, 10, 25, 50 and 100. Because your display might have a different default sample size, we will call this key the **X** key or quick sample key.

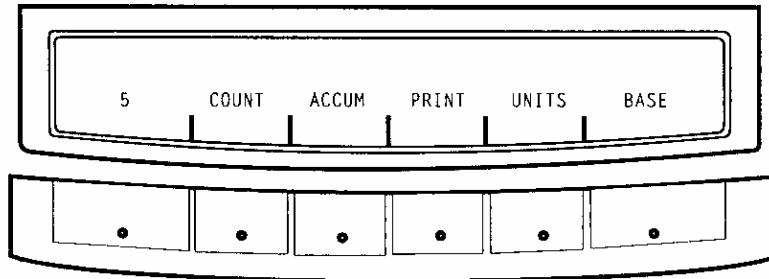


Figure 7
Display for starting a counting process

Understanding the Part Information Scrolling Feature

Piece weight always appears in part information scrolling. Accuracy appears only if piece weight was established by sampling. The other items will only appear if they contain information.

The PC-810 has a feature called Part Information Scrolling that you may find useful in counting operations. This feature is enabled or disabled during configuration of your unit so it may or may not be available.

If your unit is so configured, during regular weighing/counting operation you can access all the information on the currently active part by repeatedly pressing the **ENTER** key. You will see the following information:

- Piece weight
- Accuracy
- Part number
- PWLU#
- Three descriptions

Auto Base Switching (ABS)

The PC-810 allows you to sample on any scale base then count on another base. Most of the time the sample is taken on the local base for better accuracy, but this is not always the case. After the sample is taken, you need only press the **BASE** key to switch to your remote base.

The PC-810 has a feature called Auto Base Switching (ABS). If ABS is enabled and you press the **COUNT** or **SMPL** key, the PC-810 will automatically switch to the sampling base. After you take your sample the scale will automatically switch to the counting base. This option is set up in configuration by a technician.

Two small arrows next to the **SMPL** soft key means ABS is ON.

If your PC-810 is configured for ABS, an **ABS** soft key will be available as shown in Figure 8. Also, the switching protocol will be listed above the **ABS** key label. In Figure 8 this protocol reads **LORI** or 'Local to Remote Base 1'. This means the sample is taken on the Local (**L**) base and Remote 1 (**R1**) is the counting base. You can enable or disable ABS using the ABS soft key. ABS is enabled if there are two small arrows next to the soft key label **SMPL**, as shown in Figure 8.

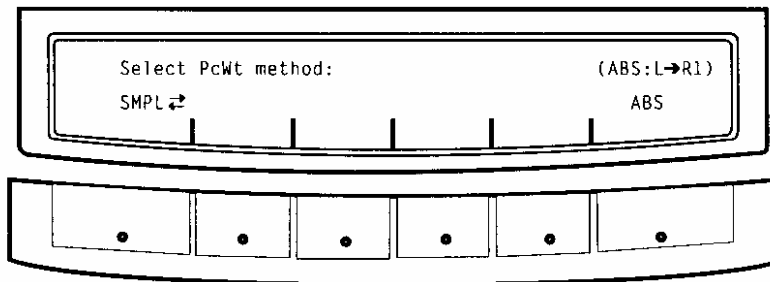


Figure 8
Sampling with auto base switching

Using the X Key to Take a Quick Sample

If your unit is so configured, the quickest way to count something is to use the **X** key. It is the left most soft key in normal operation. See Figure 3. It is called the **X** key because **X** stands for a default sample size and this can be different depending on your PC-810's configuration. With the scale at zero weight displayed, to scroll through the default sample sizes, press the **X** soft key repeatedly until the sample size you want is displayed.

Follow these steps for quick sampling.

1. Load the number of pieces displayed by the X key. . .

The scale will either calculate the average weight and give you the count or ask for a larger sample size. After the additional pieces are loaded the PC-810 will give you the count.

Choosing an Oddball Sample Size in Dribble Mode

The last sample size used will be displayed. The sample size of 18 is used as an example.

As sample is loaded the anticipated instrument accuracy will be displayed.

If you want to use a sample size that is different from the defaults, press the **COUNT** soft key. In dribble mode you will see the display in Figure 9.

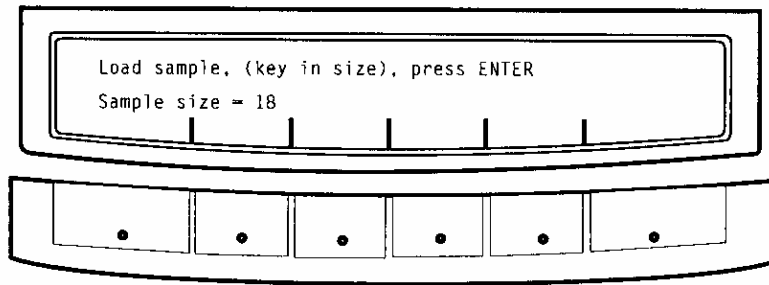


Figure 9
Choosing sample size in dribble mode

1. Load your sample, key in the sample size and press the **ENTER** key. . .

The PC-810 calculates the piece weight and displays the weight and count.

Choosing an Oddball Sample Size in Bulk Mode

If your PC-810 is in bulk sampling mode you will see the display in Figure 10.

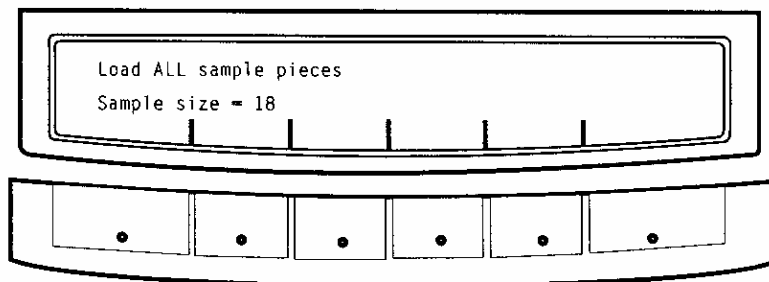


Figure 10
Choosing sample size in bulk mode

1. If the sample size is correct, load all samples onto the scale. . .
2. If the sample size is incorrect, key in the sample size you want, press the **ENTER** key, then put the parts on the scale. . .

The piece weight is calculated and the weight and count are displayed.

The piece weight is calculated and the weight and count are displayed.

Retrieving a Known Piece Weight From Scale Memory. . .

If you are searching for piece weight by part number, you will not see a PWLU #.

. . .by the Part

When recalling a record that does not have a tare value, the current tare value is not cleared.

. . .by the PWLU

Direct Piece Weight Entry

Sampling is not the only way to get a piece weight for counting operations. If your PC-810 is so configured, you can access a database in the scale memory (See the section **MGR* Menu*). This database contains information about each part number, including its piece weight. This database has seven fields or bits of information. They are .

- Piece weight look up number (PWLU)
- Part number (PART)
- Three description fields (DESC)
- Piece weight (PCWT)
- Tare

The PWLU is the number of the record in the data base. In other words, the first entry in the data base is PWLU #1, etc.

Part Number (PN) is the part number you have assigned to the part. The part number can be alphanumeric. The three description fields can be used to describe the part. You must have an alphanumeric keyboard to enter words in these fields.

The piece weight (PCWT) is the known weight of the part.

To recall a piece weight by using the part number follow these steps:

1. From normal operating mode, key in the part number and press the **PART #** soft key. . .

The display will show *SEARCHING* and when the piece weight is found in memory, the scale display returns to normal operation and the piece weight of your selected part number is used for calculating counts.

To recall a piece weight by using the PWLU number follow these steps:

1. From normal operating mode, key in the PWLU number and press the **PWLU#** soft key. . .

The display will show *SEARCHING* and when the piece weight is found in memory, the scale display returns to normal operation and the piece weight of your selected PWLU number is used for calculating counts.

There is one more method of establishing a piece weight called direct entry.

1. From normal operating mode, key in a piece weight and press the **PCWT** soft key. . .

The scale display returns to normal operation and the piece weight you keyed in is used for calculating counts.

Serial Communication

The PC-810 has an RS-232 serial communication port as a standard feature. The characteristics of this port are as follows:

BAUD RATE: Configurable for 1200*, 2400, 4800, or 9600.

DATA BITS: Configurable for 7* or 8.

PARITY: Configurable for even, odd or none*.

STOP BITS: Configurable for 1* or 2.

* DEFAULT SETTINGS

I/O Connector

The PC-810 RS-232 I/O connector is a DE-9 with the following pinouts

<u>PIN</u>	<u>SIGNAL</u>	<u>DESCRIPTION</u>	<u>DIRECTION</u>
1	SG	Signal Ground	N/A
2		No connection	
3	TXD	Transmit Data	From Scale
4	DSR	Data Set Ready	To Scale
5		No connection	
6		No connection	
7		No connection	
8	DTR	Data Terminal Ready	From Scale
9	RXD	Receive Data	To Scale
Shell	GND	Chassis (Earth) Ground	N/A

Computer and Bar Code Command Set

This section describes the command set and protocol for interfacing a personal computer (PC) or a Bar Code Scanner with the PC-810.

The computer interface for the PC-810 will support bi-directional communication in a master/slave protocol. The computer (master) will send a command code sequence to the scale (slave) which will respond by returning the requested data or by performing the specified scale function. Commands to the scale will be in uppercase and will be terminated with a carriage return character. Scale responses will begin with the lowercase equivalent of the command code.

<u>COMMAND</u>	<u>RESPONSE</u>	<u>DESCRIPTION</u>
AC<CR>	no response	Accumulate present count/weight
AR<CR>	ar_XXXXXX<CR>	Request accumulator count
AW<CR>	aw_x.xx_<CR>	Request accumulator weight with units
AT<CR>	at_XXX<CR>	Request transaction count
AZ<CR>	no response	Clear accumulator & transaction counter
CA<CR>	no response	Clear sample
CC<CR>	cc_XXXXXX<CR>	Request count value
CP<CR>	cp_x.xx_U<CR>	Request piece weight value
DB<CR>	no response	Sound beeper
DC<CR>	no response	Clear description #1
DC1<CR>	no response	Clear description #1
DC2<CR>	no response	Clear description #2
DC3<CR>	no response	Clear description #3
DD<CR>	dd_sssssss<CR>	Request description #1
DD1<CR>	dd1_sssssss<CR>	Request description #1

COMMAND	RESPONSE	DESCRIPTION
DD2<CR>	dd2_#####<CR>	Request description #2
DD3<CR>	dd3_#####<CR>	Request description #3
Dlxxxxxx<CR>	no response	Display a message (user interface)
DSxxxxxx<CR>	no response	Enter description #1
D1#####<CR>	no response	Enter description #1
D2#####<CR>	no response	Enter description #2
D3#####<CR>	no response	Enter description #3
IC<CR>	no response	Reset the scale (warm start)
ID<CR>	id_nnnnnnn<CR>	Request part number
PC<CR>	no response	Clear part number
PSnnnnnn<CR>	no response	Enter part number
PWx.xxU<CR>	no response	Enter piece weight
TR<CR>	tr_x.xx_U<CR>	Request tare value
TZ<CR>	no response	Clear current tare
Tx.xxU<CR>	no response	Enter tare value
T<CR>	no response	Tare the scale
WB<CR>	wb_x<CR>	Request base number
WCx<CR>	no response	Switch to base x
WD<CR>	wd_x.xx<CR>	Request net weight
WE<CR>	we_x.xx_U<CR>	Request net weight with units
WG<CR>	wg_x.xx_U<CR>	Request gross weight with units
WR<CR>	wr_x.xx<CR>	Request net weight (unrounded in lbs)
WS<CR>	ws_HML<CR>	Request scale status
WZ<CR>	no response	Zero the scale
W<CR>	w_x.xx+U_HML<CR>	Request net weight with units and status
ZZ<CR>	zz_HML<CR>	Perform scale self-test
UNRECOGNIZED	<LF>?<CR>	Unrecognized command response

'_' represents the ASCII space character

'U' represents the units of measure characters:

"LB" for pounds

"KG" for kilograms

"GM" for grams

<CR> represents the ASCII carriage return character

HML represents the three bytes of scale status information as described below

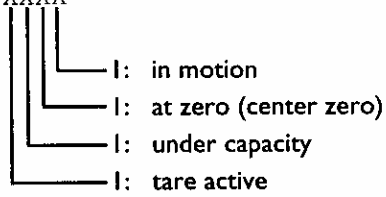
x.xx represents a floating point ASCII string value that can have a varying number of digits to the left and right of the decimal point location. Also there may be a leading '-' (minus sign) character to indicate negative polarity.

Scale Status Byte Definitions

Status Byte H:

bit: 76543210

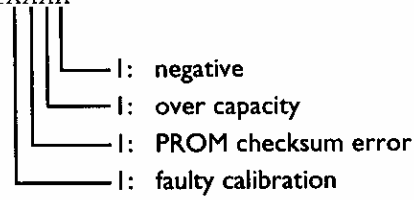
set: 0011XXXX



Status Byte M:

bit: 76543210

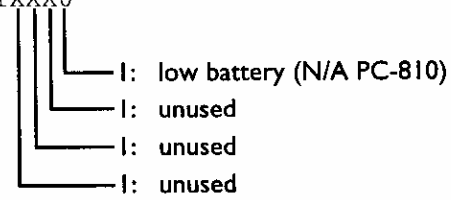
set: 0011XXXX



Status Byte L:

bit: 76543210

set: 0011XXX0



PC-810 Remote Analog Base Connector

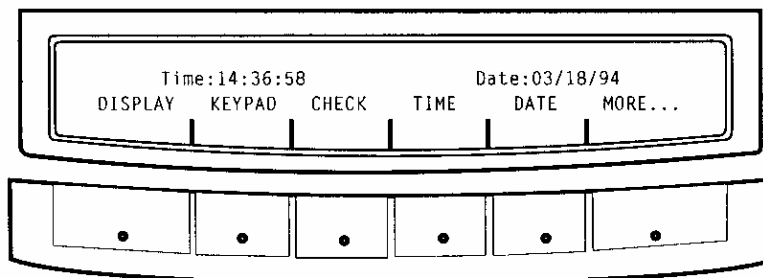
PIN #	FUNCTION
1	-Signal
2	+Signal
3	+ Excitation
4	- Excitation
5	+Sense
6	N.C.
7	N.C.
8	- Sense
Case RFI Housing/Metal	Chassis Ground

The TEST Key

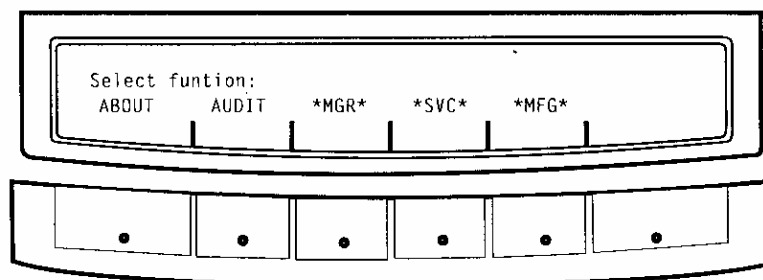
What You See When You Press the TEST Key

The **TEST** hard key is an important key because it gives you access to diagnostic tests, the database, and configuration and calibration functions. Configuration and calibration are covered in the *PC-810 Precision Counting Scale Service Manual*. This section explains the functions you can access and how they work. A flowchart of the test menu appears in the appendix of this manual.

Press the **TEST** key and the soft keys shown below appear:



Press the **MORE** key and the following soft keys appear:



Below is an explanation for each of the soft keys listed above:

- DISPLAY** - Press this key to perform a display test. The display test exercises the displays one time and then the scale returns to normal operation.
- KEYPD** - The keypad test checks each key circuit. As each key is pressed, a key reference number is displayed indicating the key is functioning. Press **ESCAPE** to stop the test.
- CHECK** - The check test is a general system test and displays a pass or fail.
- TIME** - Press this key to change the clock setting.
- DATE** - Press this key to change the date.
- ABOUT** - This key accesses a list of information about the PC-810 and the development software used in its programming at the factory.
- AUDIT** - Press this key to display the audit count. This is the number of times something has been altered in the calibration setup of the PC-810.
- *MGR*** - This key accesses a database where you can store, recall and edit part numbers, piece weight look up numbers, piece weights and part descriptions. A password is needed to access this database. Information explaining the use of this database is found in the next section. A flowchart of the MGR menu is located in the appendix of this manual.

- *SVC*** - This key accesses the configuration and calibration soft keys. A password is needed to access these functions. Information about the functions under this key are found in the service manual.
- *MFG*** - This key is for factory use only.

The *MGR* (database) Menu

The PC-810 can retrieve piece weights from a data base in the PC-810 memory which can hold up to 500 records. Each record has seven fields of information. Those fields are

- Part Number
- Piece Weight Look Up Number
- Piece Weight
- Tare
- Descriptor #1
- Descriptor #2
- Descriptor #3

Alphanumeric characters can be stored in these fields using an optional remote keyboard.

The *MGR* menu allows anyone with the MGR password to create, edit, print, or delete records from this database.

Follow these instructions for accessing the *MGR* database. A flowchart of the *MGR* menu is found in the appendix of this manual.

1. From the normal operation mode, press the **TEST** key. . . **New soft keys appear.**
2. Press the **MORE** key. . . **New soft keys appear.**
3. Press the ***MGR*** key. . . **Display prompts you for the Manager's numeric password.**
4. Key in the password and press the **ENTER** key. . . **DBASE** soft key appears.
5. Press the **DBASE** key. . . **When the database is empty you will see the display in Figure 11.**

Default manager's password is 359.

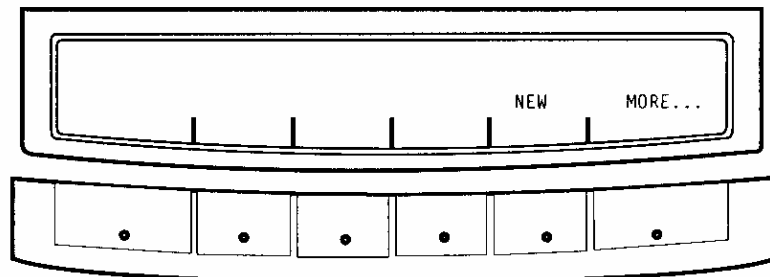


Figure 11
Soft keys to start a database

The **MORE. . .** key will only appear if you have the Piece Weight per 1000 option enabled.

6. Press the **NEW** key. . .

The display in Figure 12 appears. If your PC-810 is in PWLU mode the display will show **PWLU :001 PART :** in the upper left corner of the display. If your unit is in Part Number lookup mode you will see **PART :**. This series of instructions will assume your unit is in Part Number lookup mode. See the side note for special instructions on PWLU mode.

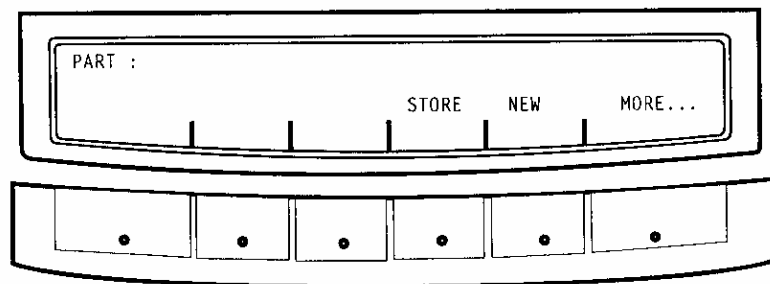


Figure 12
Creating a database

If your PC-810 is in PWLU mode, as you add records to your database the PC-810 will search the database and display the first available PWLU number. After telling the PC-810 that you are sure you want to save a record, the display will ask you to key in a PWLU number of your choice or you can accept the one displayed.

7. Key in your part number and press **ENTER. . .**

The PC-810 will prompt you to enter the other fields of information to complete the record.

8. Key in the requested data and press the **ENTER** key. . .

You must have an optional alphanumeric keypad to key in alphanumeric information.

9. When the record is complete press the **STORE** key. . .

The PC-810 will ask if you are sure.

10. Press **YES** if you want to save the record you have created or press **CANCEL** to cancel the save. . .

The PC-810 is now ready for another record entry.

A flowchart of the MGR menu appears in the appendix of this manual.

Press **ESCAPE** to exit from the MGR menu and return to normal operating mode.

11. Press **NEW** if you want to start another record or press these other keys to perform their listed function:

- **NEXT** Brings up the next PWLU# or Part Number in the database.
- **BACK** Brings up the previous PWLU# or Part Number in the database.
- **RCL** Press this key to recall a specific part number or PWLU (depending on the lookup mode your PC-810 is in).
- **STORE** Press this key to store a record you are creating.
- **NEW** Press this to create a new record.
- **MORE** Press this key to access more soft keys.
- **DELETE** Press this key to delete some or all of the records in the database.
- **LIST** Press this key to print out some or all of the records in the database.
- **PW/IK** Press this key to make all subsequent piece weight entries into "Piece Weight per 1000 Parts" style entries. Press this key again to toggle this option off. If it is active, the piece weight will be listed as weight per **1000**.

Press **ESCAPE** (you may have to press it several times) to exit the database and return to normal operating mode.

Using Bar Code Scanning with the PC-810

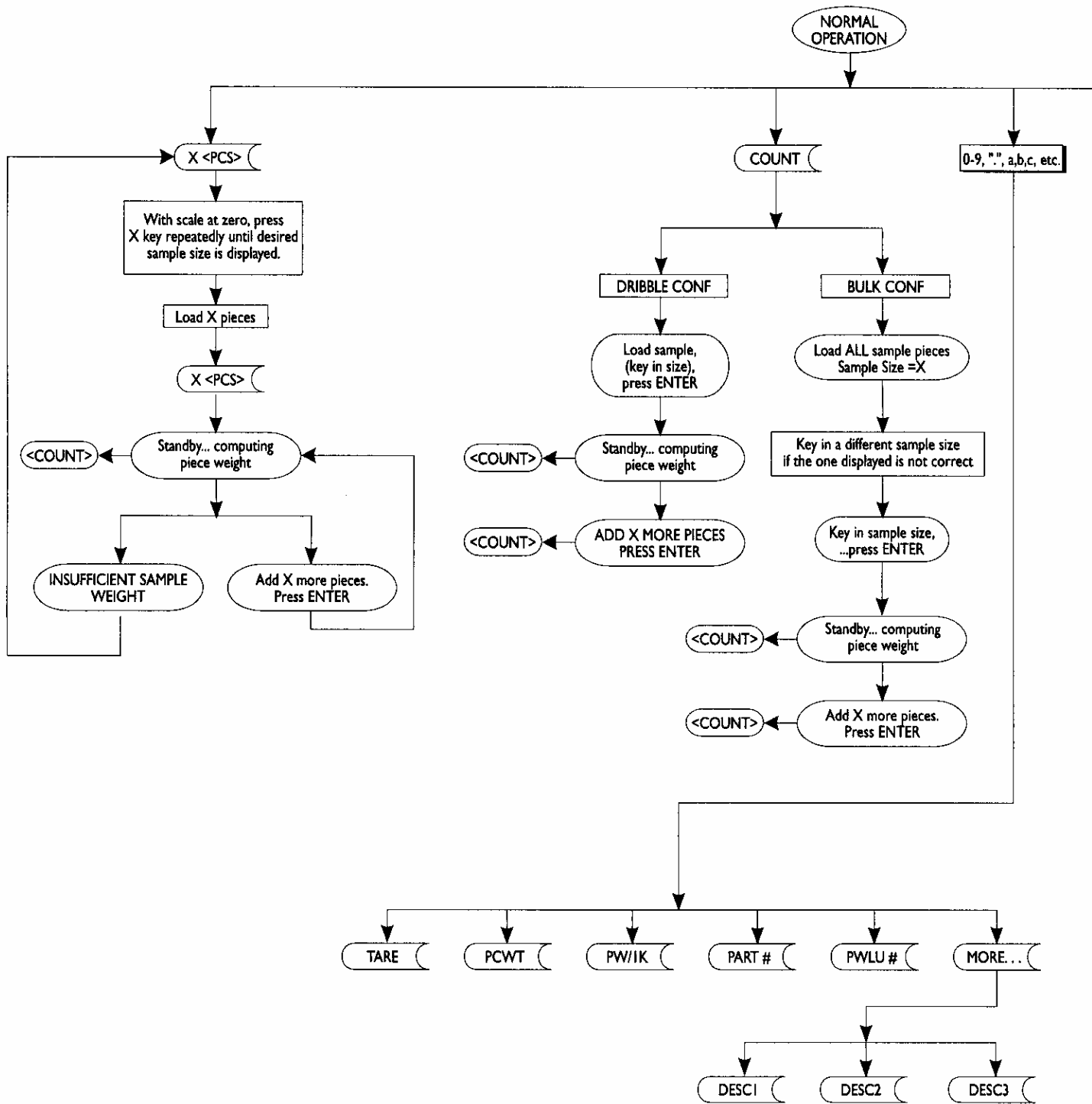
You can scan a bar code as long as your scanner translates the information to RS-232 protocol. Your scanner must be connected to the RS-232 port of a properly configured PC-810. If there are no auto-identifiers embedded in the bar code, the display will ask you what the information is you have just scanned. You can tell it the information is a tare weight, a piece weight, a piece weight per 1000 parts, a part number, PWLU#, or a description.

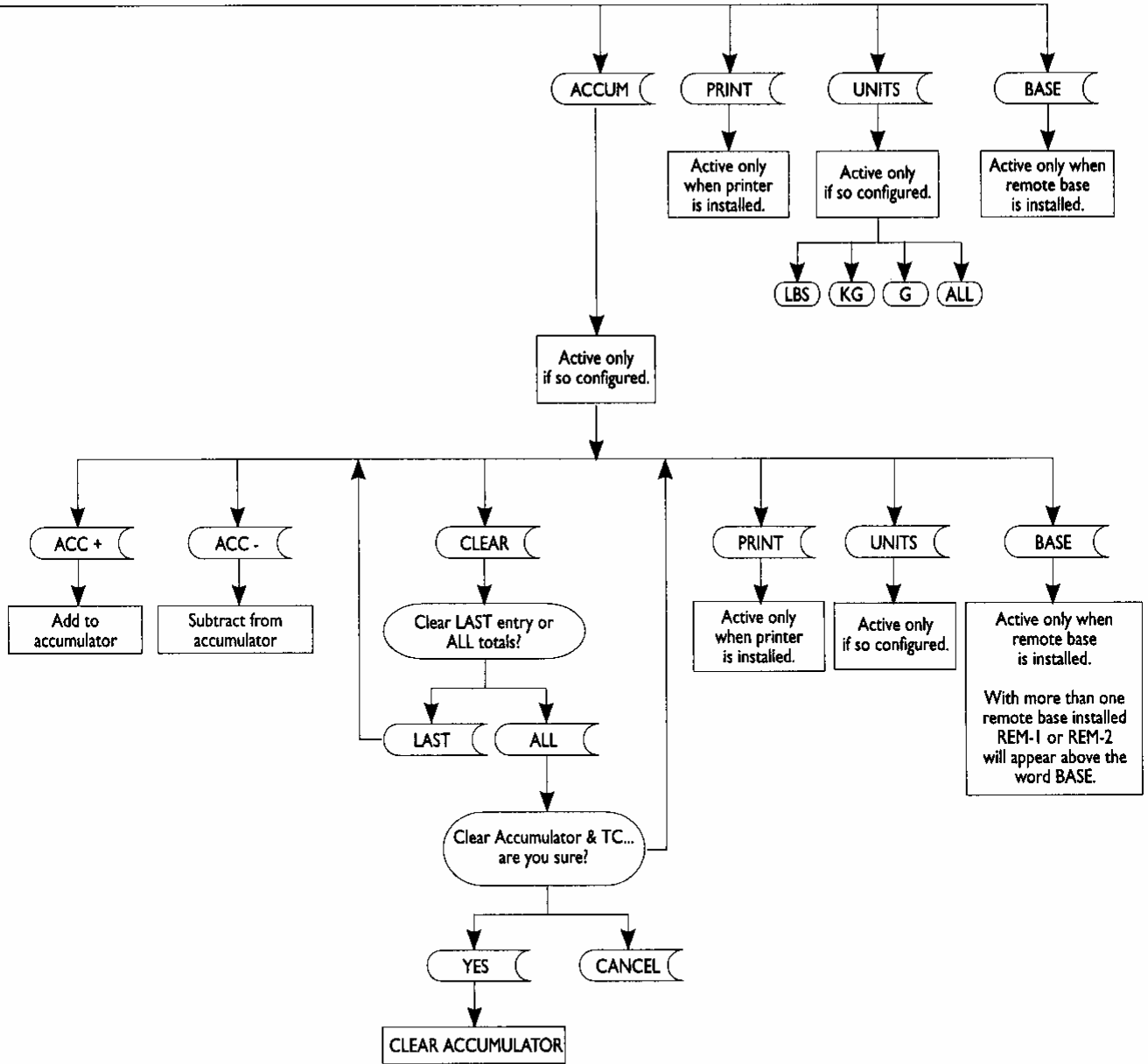
If your PC-810 is configured for the auto-identifiers in your bar codes, the information becomes active instantly .

Appendix: Flowcharts

The following pages contain flowcharts showing you how the soft key menu items are arranged. These may be helpful accessing functions you need.

Normal Operation Menu Flowchart

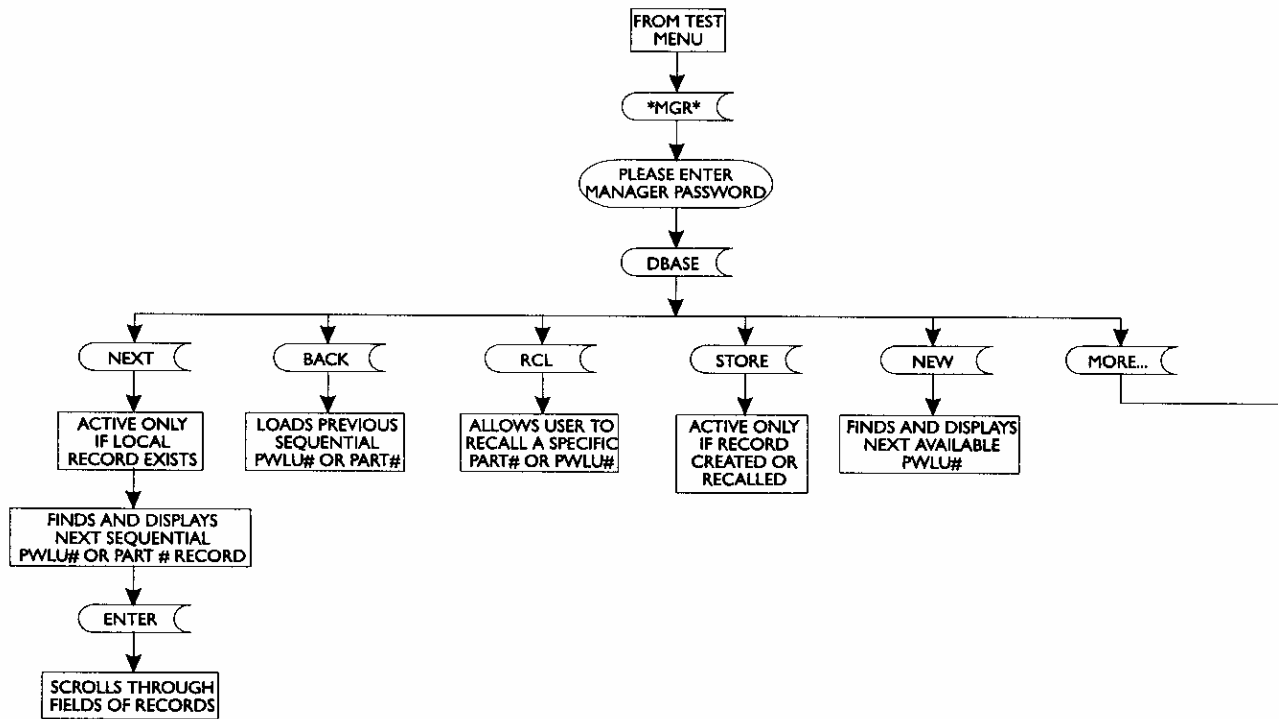




LEGEND

- HARD KEY** (rectangle)
- SOFT KEY** (capsule)
- DISPLAYED MESSAGE** (oval)
- NOTE** (rectangle)
- MODE OF OPERATION** (oval)

MGR (Database) Menu Flowchart



LEGEND

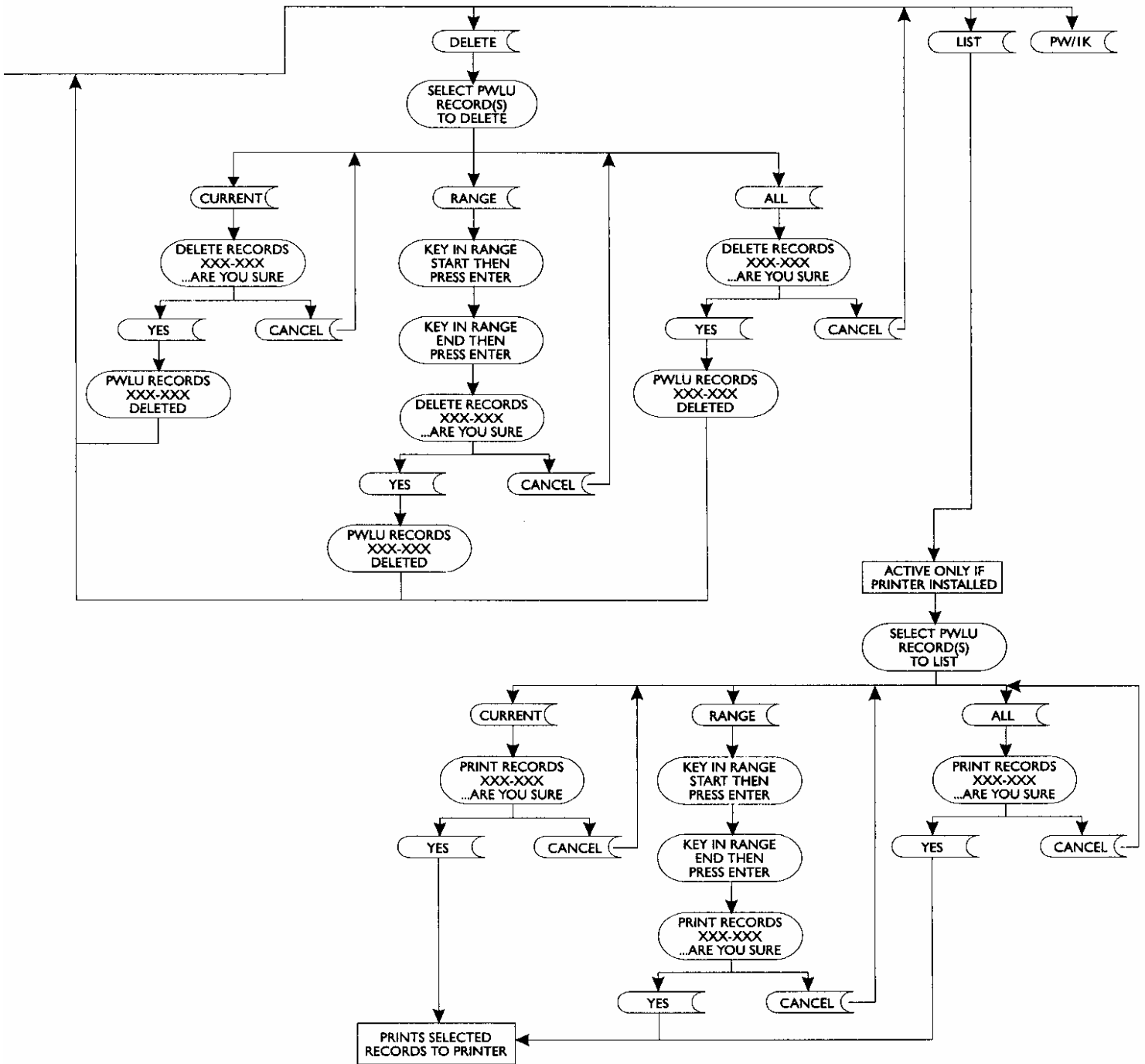
HARD KEY

SOFT KEY

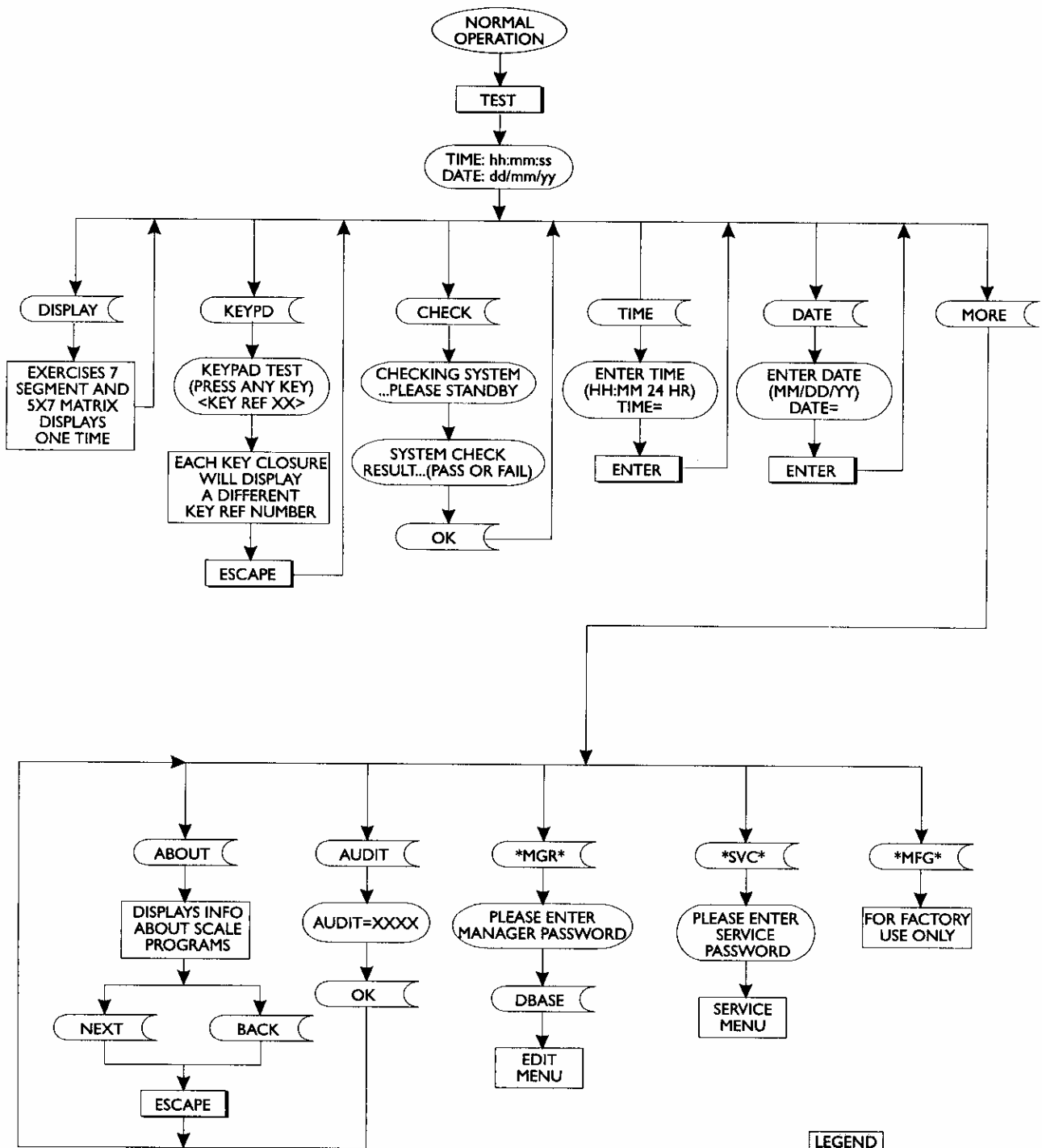
DISPLAYED MESSAGE

NOTE

MODE OF OPERATION



Test Menu Flowchart



- LEGEND**
- HARD KEY
 - SOFT KEY
 - DISPLAYED MESSAGE
 - NOTE
 - MODE OF OPERATION