8422
8423

Master/Satellite

Technical
Manual
and
Parts Catalog

B12893200A

INTRODUCTION

This publication is provided solely as a guide for individuals who have received METTLER TOLEDO Technical Training in servicing the METTLER TOLEDO product.

Information regarding METTLER TOLEDO Technical Training may be obtained by writing to:

METTLER TOLEDO
Training Center
P.O. Box 1705
Columbus, Ohio 43216
(614) 438-4400

PRECAUTIONS

* **READ** this manual before operating or servicing this equipment.

* **ALWAYS REMOVE POWER** and wait at least 30 seconds **BEFORE** connecting or disconnecting any internal harnesses. Failure to observe these precautions may result in damage to, or destruction of the equipment.

* **ALWAYS** take proper precautions when handling static sensitive devices.

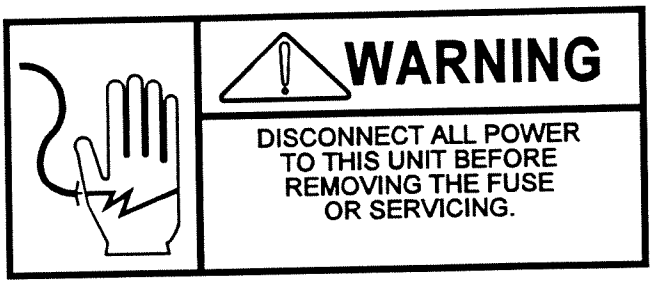
* **DO NOT** connect or disconnect a load cell scale base to the equipment with power connected or damage will result.

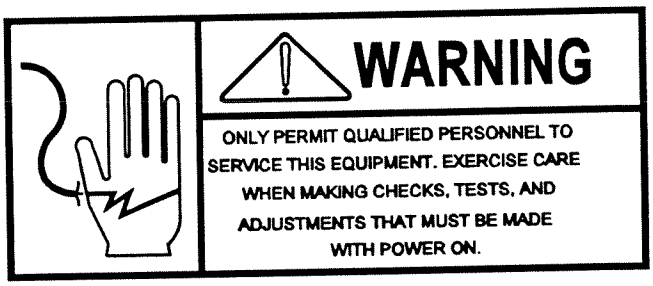
* **SAVE** this manual for future reference.

* **DO NOT** allow untrained personnel to operate, clean, inspect, maintain, service, or tamper with this equipment.

* **ALWAYS DISCONNECT** this equipment from the power source before servicing.

* **CALL** METTLER TOLEDO for parts, information, and service.





CONTENTS

1. SPECIFICATIONS

1.1 GENERAL DESCRIPTION

The 8422 and 8423 are components in system using a centralized file server (the master) connected to satellites through a wired network. The Mettler Toledo Master/Satellite system offers centralized price control for all the scales in a store. Both 8422 and 8423 are available as either a satellite or a master version. The Model 8422 (Figure 1.1) contains a built-in load cell for weight input, and is designed to be connected to the Mettler Toledo 325 Printer. The Model 8423 (Figure 1.2) uses the Mettler Toledo Model 8213-0101 Remote Scale Base for weight data input, and is designed to be connected to the Mettler Toledo 325 or 315 Thermal Printers. The Model 8423 can be installed in an automatic labeling system or a step-saver configuration.

Master units are satellites with the addition of a Master Memory PCB and a Connector PCB. The Master Memory PCB contains a standard 512k of RAM. An additional Memory Expansion Kit can expand the memory 1 meg for a total of 1.5 meg of RAM. Communication between the internal Master Memory PCB and the Satellite Logic PCB is through the TNET. The *TNET* is the wired network that connects all of the satellites to the Master Memory PCB. The master stores the PLU and Extra Text information and accumulates totals for all of the scales. The Master Memory PCB uses the internal satellite Logic PCB and 63 Character Display as a means to display information on the satellite while programming. All programming for the master is accomplished using an optional programming PC-Type keyboard. The master can be connected to a host computer either directly or remote using a modem allowing further centralized file control for multiple stores. A printer can be connected to the Master for report printing using the built-in RS232 printer port.

Up to 24 satellites can be connected to a single master. The Logic PCB (the satellite) controls all of the scale and label printer functions. The satellites access records in the master through the TNET, a high speed 345k baud two-wire RS485 network. The maximum total cable length for the TNET is 1500 feet. The satellites do not store any PLU or Extra Text records locally except for up to 200 backup records in case the master goes off line. A small amount of RAM memory on the satellite Logic PCB allows local storage of Action Messages, Grades, Department Name and UPC Code, and a two line Store Address. Starting at 2:00 AM, each satellite will request updated backup data from the master automatically.

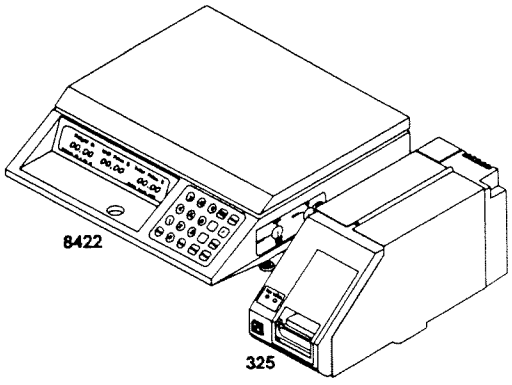


Figure 1.1 8422 With 325 Printer

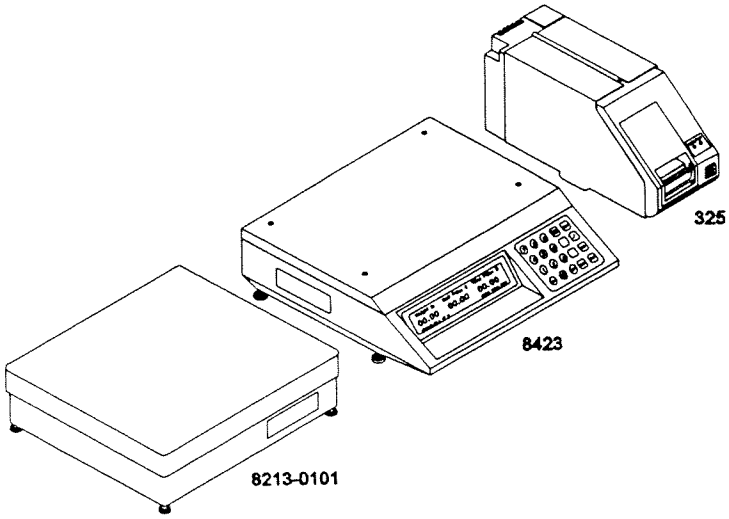


Figure 1.2 8423 W/8213 and 325 Printer

1.2 EXTERNAL COMPONENT MAPS

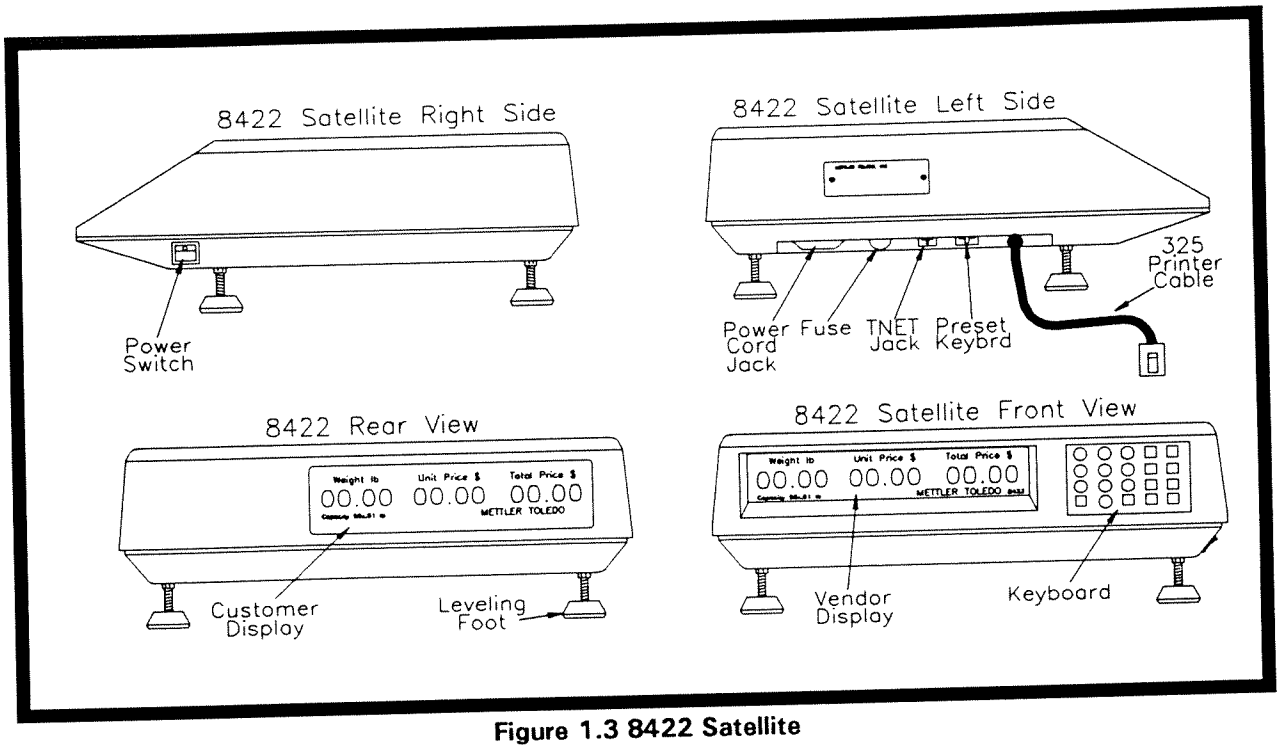


Figure 1.3 8422 Satellite

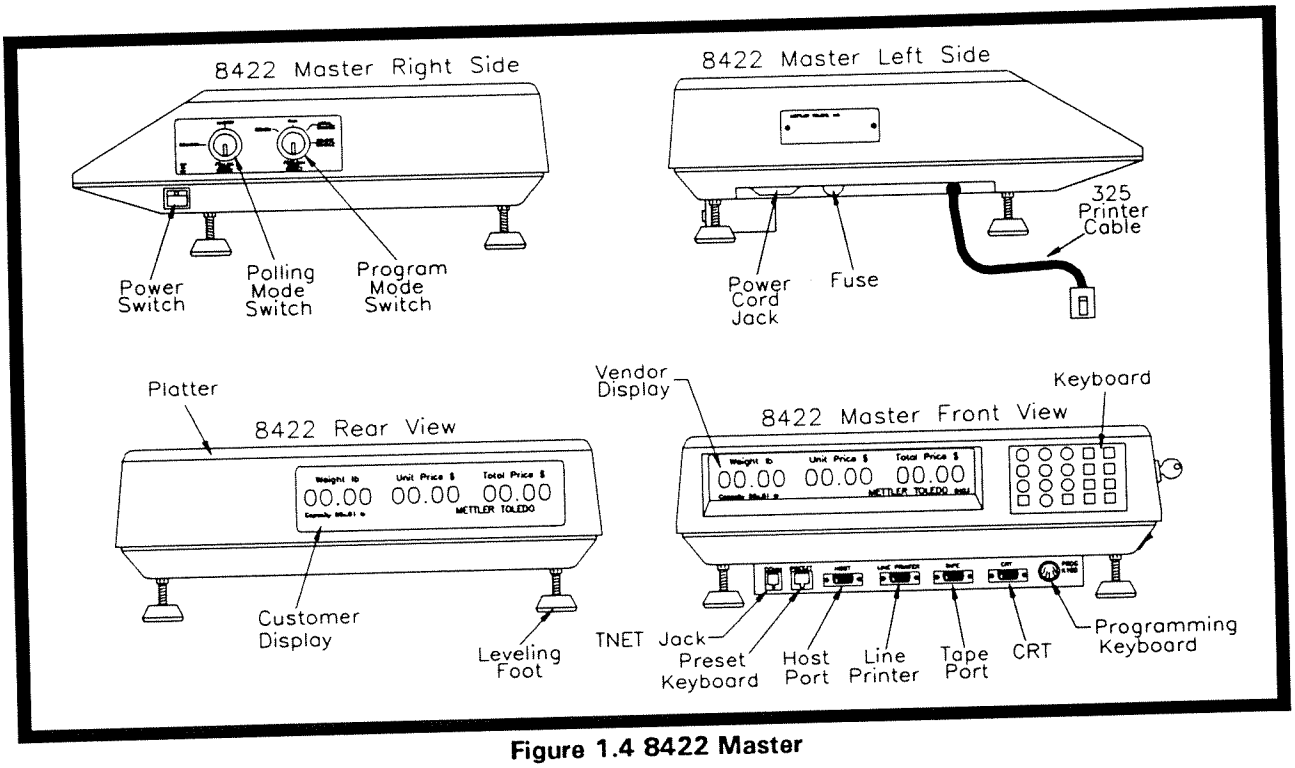


Figure 1.4 8422 Master

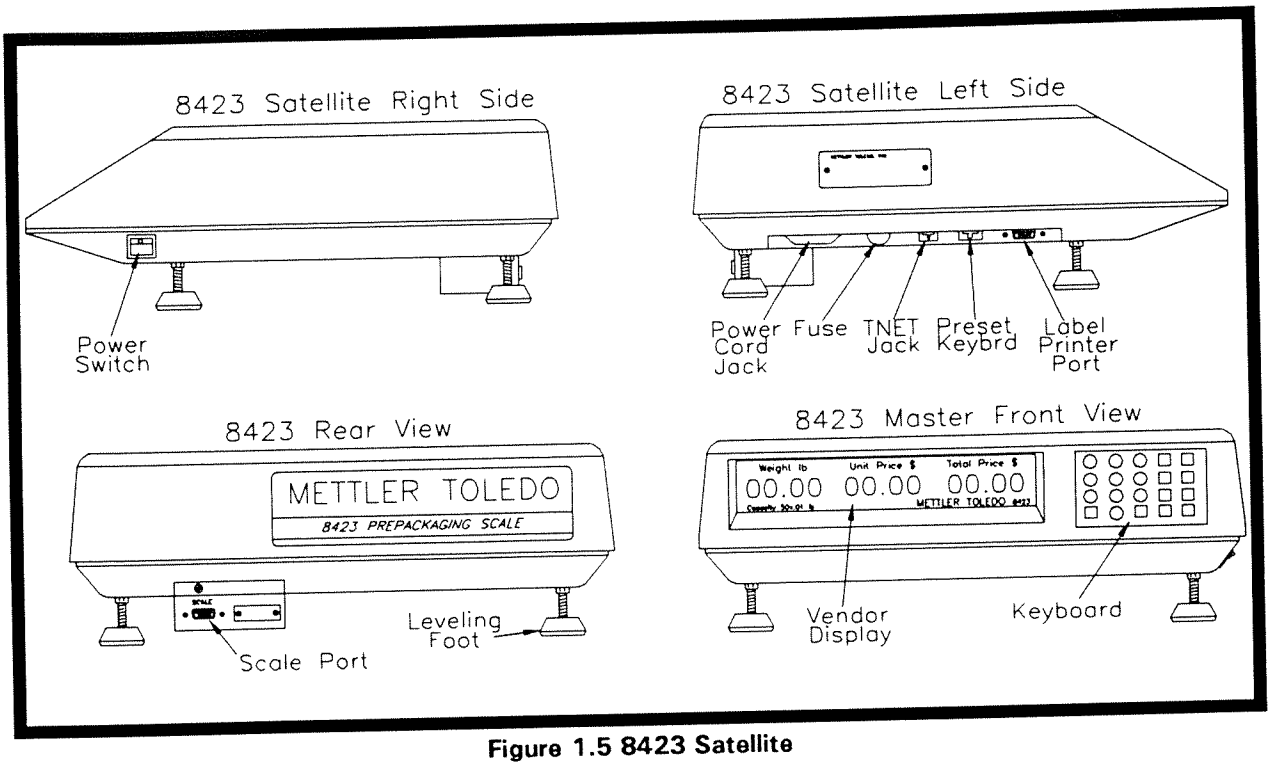


Figure 1.5 8423 Satellite

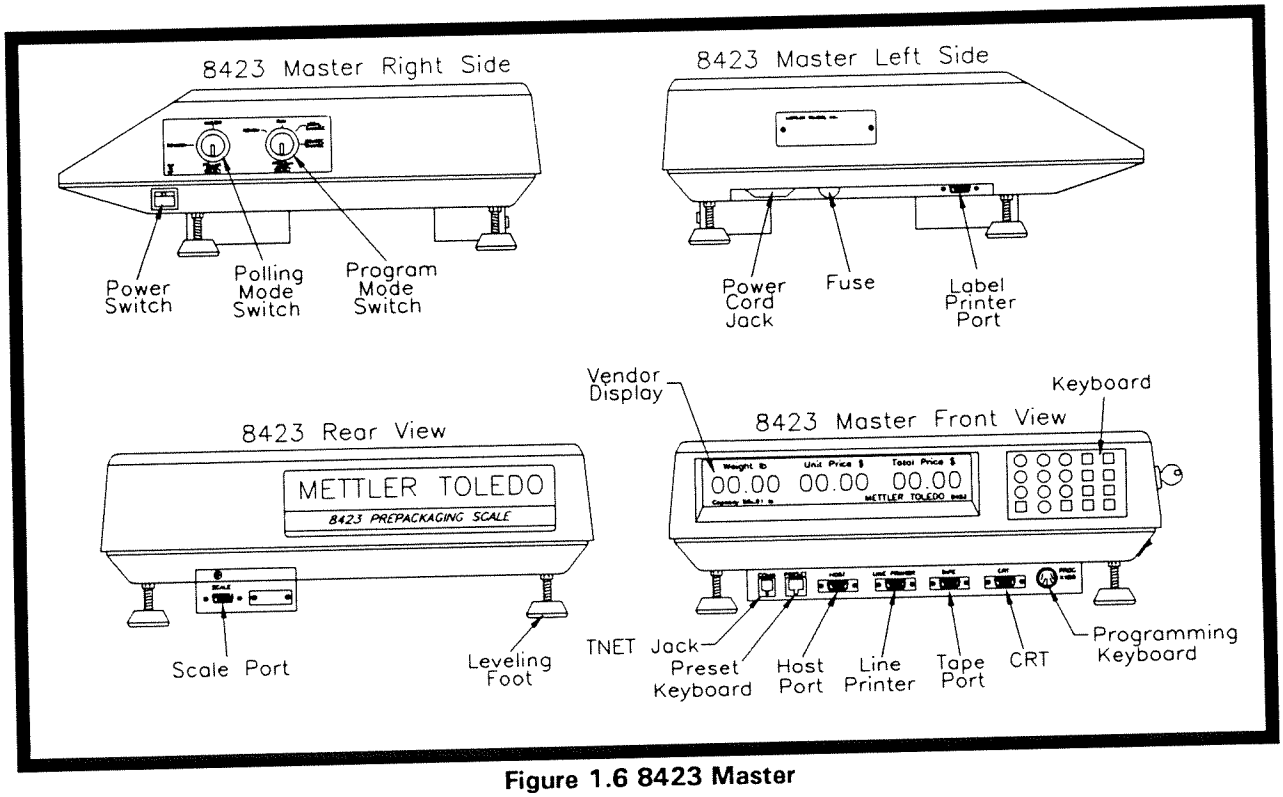


Figure 1.6 8423 Master

1.3 FACTORY CONFIGURATION AND ACCESSORIES TABLE 1-1

Factory #	Description	Service #
8422-2003	Master Scale 512k, 120 VAC, ET Ready, 50 X .01 lb	N/A
8422-2103	Satellite Scale 512k, 120 VAC, ET Ready, 50 X .01 lb	N/A
8422-2013	Master Scale 512k, 120 VAC, ET Ready, 20 X .005 kg	N/A
8422-2113	Satellite Scale 512k, 120 VAC, ET Ready, 20 X .005 kg	N/A
8423-2003	Master Controller 512k, 120 VAC, ET, 50 X .01 lb w/8213-1010	N/A
8423-2103	Satellite Controller 512k, 120 VAC, ET, 50 X .01 lb w/8213-0101	N/A
8423-2013	Master Controller 512k, 120 VAC, ET, 20 X .005 kg w/8213-0101	N/A
8423-2113	Satellite Controller 512k, 120 VAC, ET, 20 X .005 kg w/8213-0101	N/A
0952-0024	Programming Keyboard	14132300A
0901-0201	Preset Keyboard Kit	N/A
0901-0271	Dual Preset Keyboard Kit	N/A
0901-0241	Preset Keyboard Overlay Kit (10 clear, 10 Graphic)	N/A
0952-0019	Tower Display Kit (0952-0030 Lens Required, Cannot be used with Fish and Lobster Pans.)	N/A
0952-0030	Lens, 50 lb for 0952-0019 Tower	N/A
8845-0001	80 Column Dot Matrix Report Printer	N/A
0900-0209	Cable, 8845 to 8422/8423 10 ft	N/A
0900-0213	Cable, 8845 to 8422/8423 25 ft	N/A
0900-0252	Cable, 8423 to 315/325 Printer	N/A
8213-0101	Scale Base for 8423 50 X .01 lb or 20 X .005 kg	N/A
0900-0229	Cable, 8213-0101 to 8423	N/A
0901-0278	Extra Text Conversion Kit for 315/325	N/A
0901-0267	Extra Text Conversion Kit for 8422/23-2001 & 8422/23-2100 and 315/325.	D13429900A
0901-0368	Memory Expansion Master Software Only Upgrade Kit (Upgrades to current version of Master Software.)	B14051300A
0901-0313	4-Digit Master Memory Expansion Kit (Includes 1 Meg Exp PCB and SW.)	B13781600A
0906-0111	Stainless Steel Platter w/Backsplash	A12438300A
0906-0112	Stainless Steel Platter w/Rear Tower Guard	A12416800A
0906-0113	Stainless Steel Platter w/Side Tower Guard	A12416900A
0906-0114	Stainless Steel Produce Pan	12438000A
0906-0129	Stainless Steel Fish Pan	12894300A
0906-0130	Stainless Steel Lobster Pan	12894400A
N/A	Keypad Label Set (¼/M, ½/M, Mem, PM, Void, ReWrap)	13105800A
N/A	Keypad Label Set Metric (½, ¼, 100g, Kg-For)	A13084200A

Table 1-1 Factory Numbers

1.4 CONSTRUCTION

Base:	Die cast aluminum alloy with a white painted finish.
Covers:	Fog white injection molded textured finish plastic.
Platter:	Stainless Steel.

1.5 WEIGHING CAPACITY

The Model 8422/8423 is available in a 50 x .01 lb or 20 X .005 kg version. When the weight is greater than 5 increments over full capacity, OVER will display in the weight field and the total price field will blank.

1.6 TARE

Tare is limited to full capacity in pounds mode, or 9.995 kg metric mode. Tare can be taken three ways:

Keyboard Tare	At gross zero, the tare value can be entered at the keyboard after the PLU is called up.
Pushbutton Tare	While at gross zero, the tare key can be pressed to subtract the weight of the item on the platter after the PLU is called up.
PLU Tare -	Known tare values can be programmed into PLU records which will be automatically recalled when the PLU record is selected. When the manual tare override feature is enabled, the PLU programmed tare can be overridden.

1.7 OPERATING/STORAGE TEMPERATURE

Operating temperature range is -10°C to +40°C with non-condensing relative humidity between 5% and 95%. Storage temperature range (excluding label stock) is 0°C to +70°C. ***The Model 8422/8423 is not designed for a hose down area!***

1.8 ELECTRICAL POWER

A rocker switch controls AC power input to the scale. When set to OFF, power is removed from the internal components, but is present at the line filter and fuse. The 8422/23 is designed to operate within a voltage range between 102 VAC to 132 VAC and 50 to 60 Hz (±2%). The AC line should be dedicated, properly grounded, and not shared with other types of electrical devices including: electric motors, compressors, thermostats, florescent lights, heating elements, etc. The 8422 current rating is 1.0 amp and the 8423 is 0.5 amp. (Rating is without printer and remote scale base.)

1.9 POWER SUPPLY

The main power supply consists of a transformer and harnesses assembly. The 120 VAC line voltage is connected to the primary windings of the transformer through the main fuse, line filter and power switch. The power switch is wired between the line filter and the transformer and removes power to all components after the line filter and fuse. Power remains connected at all times to the line filter and fuse while the power cord is connected to AC power.

WARNING!

ELECTRICAL SHOCK HAZARD. THE POWER SWITCH DOES NOT REMOVE POWER FROM THE LINE FILTER, FUSE, AND POWER SWITCH. DISCONNECT POWER CORD FROM THE AC OUTLET BEFORE REMOVING THE FUSE OR SERVICING THE UNIT.

Raw AC voltage is then supplied from the transformer secondary windings to the Main Logic PCB, where it is rectified and regulated for distribution to other components. The transformer supplies the following AC voltages: 18 VAC, 10 VAC, 20 VAC, and 30 VAC.

1.10 AGENCY APPROVALS

The Model 8422/8423 meets or exceeds the requirements of the regulatory agencies within the countries in which it is sold. In the U.S., Handbook NTEP-44 shall apply. In addition, the model 8422/8423 meets requirements of UL, CSA, and FCC.

1.11 MASTER/SATELLITE TNET COMMUNICATIONS

The TNET master/satellite communication uses an RS422 half-duplex, two wire, Synchronous Data Link Communication (SDLC) specification at 345K baud. Maximum total line length is 1500 feet. Each unit is shipped with a 25 foot connection cable a one modular phone J-Box. Standard four-conductor unshielded telephone cable is required to connect the J-Boxes which are wired in series to form the network. A four position telephone jack is used for the connection at the controller and a six position telephone jack is used at the J-Box. Using standard unshielded color-coded phone cable, the wiring is as follows: Pin 2 - Data A (Red), Pin 3 - Data B (Green). Terminating resistors (113 ohm) supplied with each master must be installed at both ends of the main cable to terminate and balance the line.

1.12 DIGITAL LOAD CELL

In the model 8422 the load cell is built into the unit. The model 8423 uses a remote scale base. Both load cells are Mettler Toledo Digital Load Cells (DLC) which are moment insensitive counterforce types with built in A/D and digital electronics. Overload stops in the spider protect the load cell from damage from static overloading.

1.13 DLC BUFFER PCB (8423 Only)

In the Model 8423 controller, communication between the controller and the scale base is buffered at both ends by transceiver on the Buffer PCB. The Buffer PCB in the 8423 is the transmitter, and the Buffer PCB in the base is the receiver. A jumper on the PCB determines whether it is a transmitter or receiver. In the 8423 Jumper W1 shorts pins 1-2, and in the 8213-0101, Jumper W1 shorts pins 2 and 3.

1.14 DATABASE RECORDS

The PLU database file consists of:

- **PLU Number:** Number (Price Look Up) used for database indexing and to call up a record.
- **Group Number:** Any two digit number between 0 and 99.
- **Tare:** Up to 30.00 pounds or 9.995 kg.
- **Grade:** Two digit number linking preprogrammed grade descriptions to the PLU record.
- **Shelf Life:** 0 to 255 days. Entering 255 will blank the date printed on the label.
- **Price:** By weight pricing range is 000.00 to 999.99. By-count pricing range is limited to 99/99.99 or 9/999.99.
- **Item Number:** The product number that is encoded in the UPC symbol. Bar Code Types 2 or 4, six digits maximum (five digits with price check digit enabled), between 0 and 999999. Bar Code Type 2, ten digits including a four digit manufacturer code.
- **Description:** Two lines of 32 characters maximum.
- **Action Code:** Two digit number from 1 to 46 used to link an Action Message to the PLU record.
- **Extra Text:** A four digit number between 1 and 9999 used to link a separate preprogrammed Extra Text Record to the PLU record. The text can be either 32 (2.3mm) or 42 (1.67mm) characters per line. Up to 22 lines of text (704 characters) can be programmed when using 32 characters per line, or up to 30 lines (1260 characters) when using 42 characters per line. Standard characters can be used with the exception of the following, which can cause printer errors: [ ] \ ~ ^ { } | _ `
- **NutriFacts:** A four digit number between 1 and 9999 used to link a separate preprogrammed Nutrifact Record to the PLU record. (NF Master Only. NF printing on 8460 V4+ & 8427NF only.)

1.15 PLU TOTALS

After each transaction, the satellite totals are sent to the master controller. Each master controller/scale has three departmental accumulators. These accumulators store the grand totals, hourly totals, and the void totals. The contents of these accumulators may be printed by the report printer upon command at the master scale or controller. Each PLU file also contains four totals accumulators for tracking the total weight, total price, package count, and the number of runs In the automatic, manual, rewrap, and combination (manual-rewrap) modes. The data in these accumulators is used to generate various managerial reports.

1.16 LOGIC PCB

The Logic PCB acts as the satellite on the network and performs the following functions:

- Converts raw AC voltage from the transformer to regulated DC voltages for use on the Logic PCB, the Master Memory PCB, and the Digital Load Cell.
- Process weight information from the Digital Load Cell.
- On-board clock retains time and date.
- Receive and process data from the scale keyboard.
- Communicates with the Master Memory PCB via the TNET (Toledo Network).
- Provide battery backed RAM for storage of label sizes, department name, UPC, store address, grade table, action messages, and backup PLU files.
- Sends formatted data to the label printer for label printing.
- Drives the displays.

1.17 MASTER MEMORY PCB

The Master Memory PCB is the ***Master*** in the network and can be located in a model 8305, 8422, or 8423 controller. All communication with the Memory PCB is through the wired TNET Master/Satellite Scale Network. The Master Memory PCB acts as the *file server* in the network to provide a central database for all records that can be accessed by the satellites on the network. The Master Memory PCB also retains accumulator totals data sent by the satellites. The Master Memory PCB uses the internal Satellite Logic PCB (through the TNET port) to display data while programming. The internal Satellite Logic PCB Scale ID Number is recorded by the Memory PCB through a series of keystrokes on the Programming Keyboard. This number is then used by the Memory PCB when in the programming mode to display data on the unit's display. The Master Memory PCB does not contain an on-board clock, but polls for the time from the Logic PCB using the preprogrammed scale ID number. The master can be put into a ***Standby Mode*** that is a listen-only mode. Only one master on the network can be active at the same time. The main functions of the Master Memory PCB are as follows:

- Receives regulated DC voltage from the Logic PCB.
- Stores all database records in a battery backed RAM.
- Processes record requests from the satellites.
- Receive and process data from the scale keyboard, (remote mode) and from the Programming Keyboard (local mode).
- Communicates with the satellites in a host mode via the RS485 TNET (Toledo Network).
- Stores accumulator totals from the satellites.
- Contains the hardware and software for host communications with a computer via RS232.
- Process data for reports for transmission to host or printer.

1.18 MASTER MEMORY CAPACITY

The standard master RAM memory is 512k. This memory is battery backed RAM memory. The battery backed memory is supported when AC power is disconnected from the unit for up to 8 days. The 512k will allow programming up to 4000 PLU (only) records. If extra text is used this maximum will be lower depending on the number of characters used in the extra text record. An optional 1 meg Memory Expansion PCB is available that will increase the total memory to 1.5 meg. The approximate capacity using a combination of PLU and extra text can be computed as follows:

- Each PLU record uses 128 bytes.
- The extra text formula is: (Lines x #characters per line) + 9 = # bytes required. For example: 10 lines x 42 char/line + 9 = 429 bytes per record.
- NutriFacts records use 383 bytes per record. (Units with Nutrifact upgrade only.)

With 429 bytes per ET record, 100 records would use 42,900 bytes. If the total memory capacity is 512k, subtracting 42.9k from 512k would leave 469.1k free for the PLU records. The 469.1k would allow for 3664 PLU records.

1.19 MASTER HOST COMMUNICATION

The 8422/23 master host port uses an RS232 I/F and can be connected directly to a host computer or modem for full asynchronous communication. The master is multi-tasking and can perform complete host communication in the background while servicing requests from the satellite scales. With the latest software, baud rates from 300 to 19,200 baud can be selected. The data string is fixed at 7 data bits and 1 stop bit. Parity is selectable (even is recommended and used for Mettler Toledo software). A Host ID number is used as part of the communication string and is programmable in the master ***Edit Configuration*** menu.

1.20 MESSAGE TABLES

Message Tables include the Grade Table and Action Message Table. The satellite downloads these tables from the master and stores them locally on the Logic PCB. Up to 16 Grades can be programmed in the Grade Table. Each Grade description can be up to 23 characters. These grades can then be linked to a PLU record using the grade number. The Action Message Table consists of up to 46 63-character messages. Any one of the messages can be linked to a PLU record by entering the message number in the Action Code field. The Action Messages can be used to replace the PLU description, replace the Store Address Line, or as a marquee message that will scroll across the scale display. The Action Code Types shown in Table 1-2.

TYPE	DESCRIPTION
1	Replaces the Store Address Line with Action Message.
2	Displays a message on the scale display when the PLU is called up.
3	Will be used as a scrolling marquee message on the scale display.

Table 1-2 Action Code Types

1.21 KEYBOARD

The keyboard is a dome-type sealed unit which generates an audible tone to verify key contact closure. Different keyboard configurations are available by choosing different options in the softswitch setup. The keyboard layout is shown in Figure 1.7, and a description of the key functions is shown in Table 1-3.

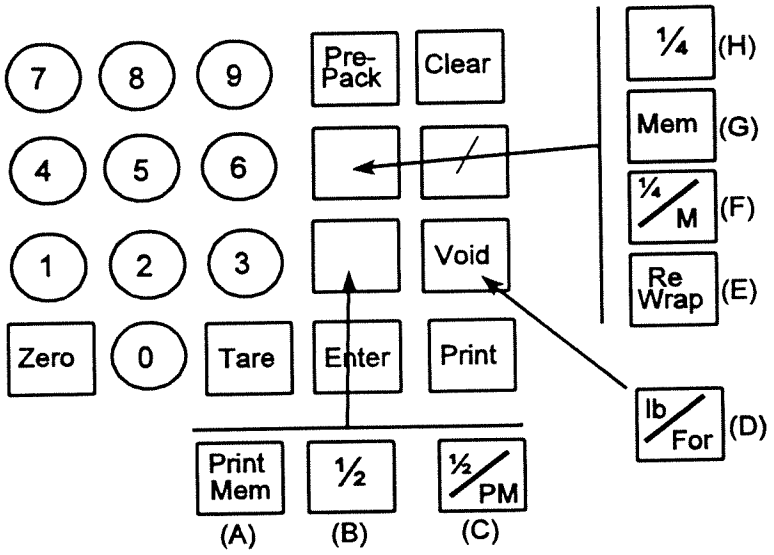


Figure 1.7 Keyboard Layout

KEY	KEY FUNCTION
0 thru 9	Used for numeric data entry.
Pre-Pack	Toggles Prepack mode on/off. Prepack provides retention of unit price and tare (defeats automatic clear) for consecutive transactions.
Clear	Clears entered digits from display.
Mem or ¼ /M	If Memory Mode is enabled, this key will store the transaction in memory for a totals label. If ¼ Pricing is enabled, this is a dual function key.
/	Slash indicates "FOR" in by-count pricing and toggles SSW selections.
¼ or ¼ /M	Refer to 1.7 F and H. Changes Unit Price to a By-Quarter Pricing Mode. If Memory Mode is enabled this is a dual function key.
Print Mem or ½ /PM	Refer to Figure 1.7 A and C. If Memory is enabled and Fractional Pricing is disabled, this key is used to print a label with the contents of the memory. If ½ Unit Pricing is enabled, this is a dual function key.
½ or ½ /PM	Refer to Figure 1.7 B and C. If ½ Fractional Pricing is enabled , this key selects unit pricing by half a unit (either lb or kg).
Re-Wrap	(Figure 1.7 E.) If the Prepack softswitch is ON, this key overrides the Fractional Pricing and Memory softswitches and enables the Re-Wrap Accumulator and symbol that prints on the label.
Void	Used to void a transaction.
lb For	Refer to Figure 1.7 D. When the lb/For softswitch is on, this key is used to enter/override a lb/For price. At the Ready mode is the Void key.
Zero	Returns scale to a gross zero condition and functions as an Escape key.
Tare	Used to enter or override a programmed tare enter tare.
Enter	Used as a Return Key to enter data.
Print	Initiates label printing.

Table 1-3 Key Functions

1.22 DISPLAYS

The 8422 customer and 8422/23 vendor displays are identical. The display is a 5x7 dot matrix vacuum florescent display with 19 character positions. Each position has a 5x7 matrix, a decimal point, a comma, and a cursor. The 5x7 matrix measures 0.413 inches high by 0.236 inches wide. The display is shown in Figure 1.8. The status cursors above the legends on the lens, will illuminate to indicate the status of the functions listed in Table 1-4.

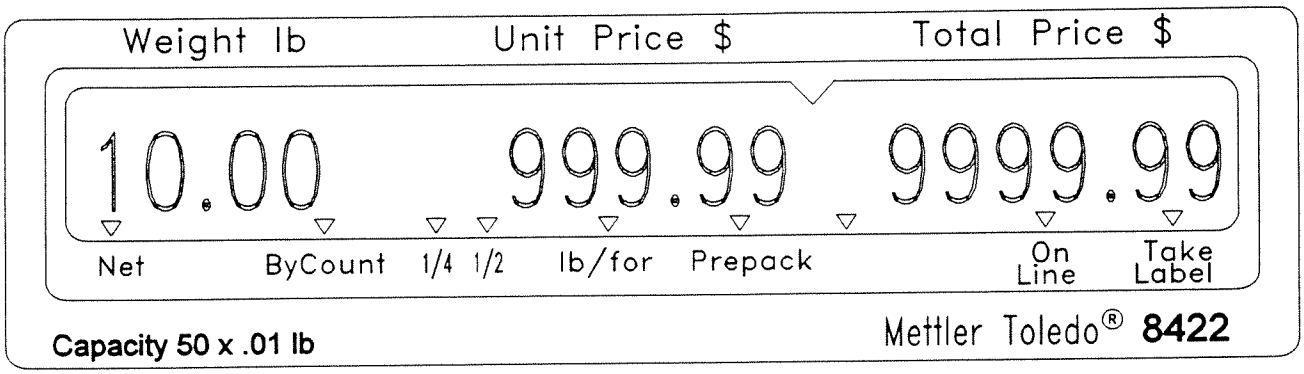


Figure 1.8 Vendor/Customer Display

Legend	Definition
Net	Indicates a tare has been taken and the weight is NET.
ByCount	ByCount pricing in use.
1/4	Pricing is per 1/4 lb.
1/2	Pricing is per 1/2 lb.
lb/for	Pricing is lb/for (X amount of pounds for a set amount).
Prepack	Prepack mode selected.
On Line	When illuminated, indicates the scale is on line with the master. Off-line is indicated by a blank cursor and there is no communication with the master.
Take Label	When illuminated, this indicates a label is present at the printer. No further labels will print until the label is removed.

Table 1-4 Display Legend Definitions

1.23 LABEL SIZES

Table 1-5 shows label sizes that can be used in the 325/315, or Extra Text V1 printers when connected to the 8422 or 8423. When the Extra Text V1 Printer is selected, the label size and delivery method is set at the scale using /0. When using the standard 325 or 315, the label size is setup using program switches in the printer.

Standard Labels	Extra Text Labels**	Bar Code Labels***	Label Width	UPC Symbol	# Lines of Text	#Char/Line
1.5 in			2.63 in	No	N/A	N/A
1.7 in			2.63 in	No	N/A	N/A
1.9 in	1.9 in		2.63 in	Yes	N/A	N/A
2.1 in	2.1 in		2.63 in	Yes	N/A	N/A
	2.4 in		2.63 in	Yes	*5	42
	3.3 in		2.63 in	Yes	7 10	32 42
	3.7 in		2.63 in	Yes	11 15	32 42
	4.2 in		2.63 in	Yes	15 20	32 42
	5.1 in		2.63 in	Yes	22 30	32 42
	Roll Stock		2.63 in	Yes	30 Max.	32/42
		0.9 in	1.56 in	Yes	N/A	N/A
		1.5 in	1.56 in	Yes	N/A	24 x 2
		2.1 in	1.56 in	Yes	7	24
		3.7 in	1.56 in	Yes	25	24
		Roll Stock	1.56 in	Yes	25 Max.	24

Table 1-5 Label Size Specifications

* 5 Lines of Extra Text with Package Code 0 Only.
** Extra Text Label printing requires a conversion kit.
*** Bar Code Label Printing is available as an optional kit for the 8423 in by-count mode only.

1.24 DIMENSIONS

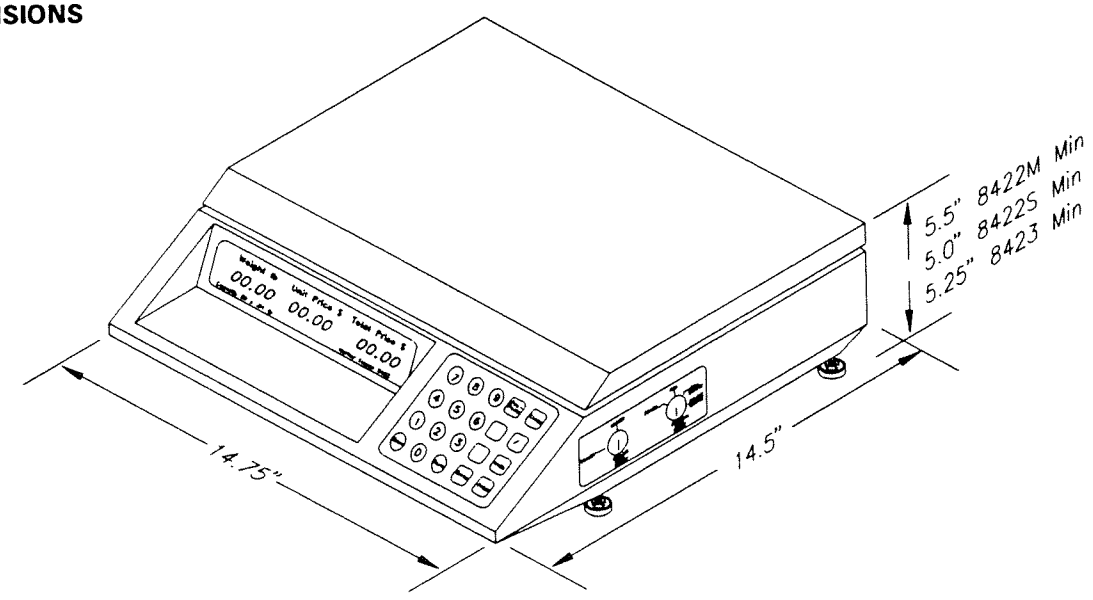


Figure 1.9 DIMENSIONS

1.25 BAR CODE TYPES

The bar code must be setup correctly to work with the store's scanner. In addition to the bar code type, other options include a price check digit for type-2 bar codes. Type-0 and Type-2 bar code examples are shown below.

Standard Type 0 Bar Code

The Standard Type 0 Bar Code is used for general grocery, drug, or other prepackaged items. The Bar Code provides the register with a 10 digit Item Number. This number is used for a lookup to retrieve the item's description and price. The symbol contains 12 digits. The first position from the left is always the Bar Code Type. Positions 2 through 11 (from left to right) are reserved for data, depending on the Bar Code Type that is in use for the PLU. Position 12, the last position on the right, is exclusively reserved for the Bar Code Check Digit. An example Type 0 Bar Code is shown in Figure 1.10.

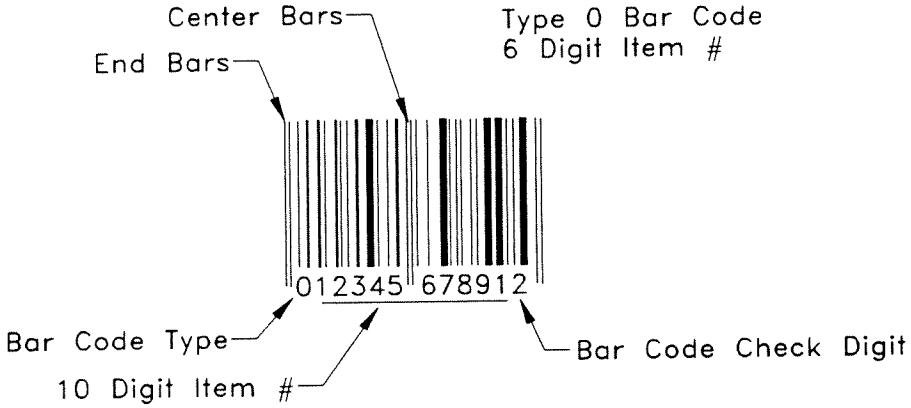


Figure 1.10 - Standard Type 0 Bar Code

Type 2 Bar Codes

The Type 2 Bar Code is used when the product's total price may vary package-to-package, such as products sold by quantity, weight, etc. Since no standard total price can be set, the total price is encoded in the bar code symbol, along with the Item Number. When a Type 2 Bar Code is scanned, the Item Number is used to retrieve the product description. The Type 2 Bar Code allows for a six digit Item Number (with no price check digit) and a four digit total price to be encoded in the bar code symbol, as shown in Figure 1.11.

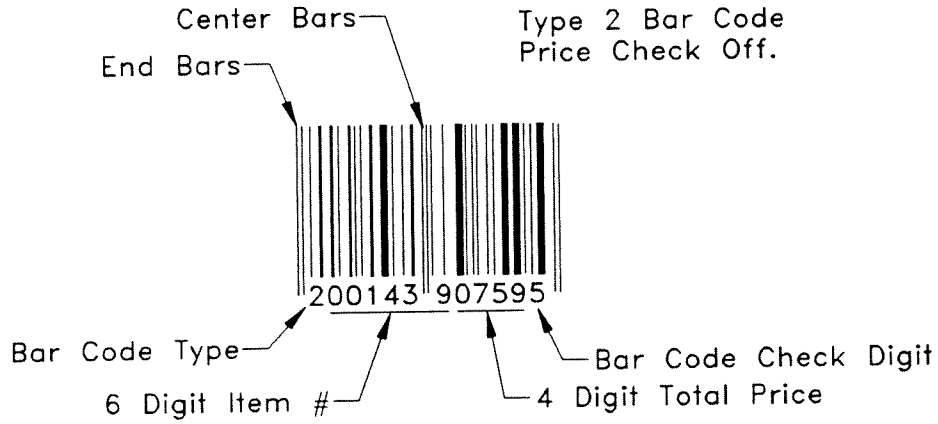


Figure 1.11 Type 2 Bar Code - No Price Check Digit

A price check digit is also available as an option in the Type 2 Bar Code. The price check digit is used as a secondary check for the total price. When the Price Check Digit is enabled, it takes the place of the last position of the Item Number, limiting the Item Number to five digits. The Price Check Digit will be positioned the first position to the right of the center bars, as shown in Figure 1.12. When the Price Check Digit is enabled, the Item Number will shift one position to the left.

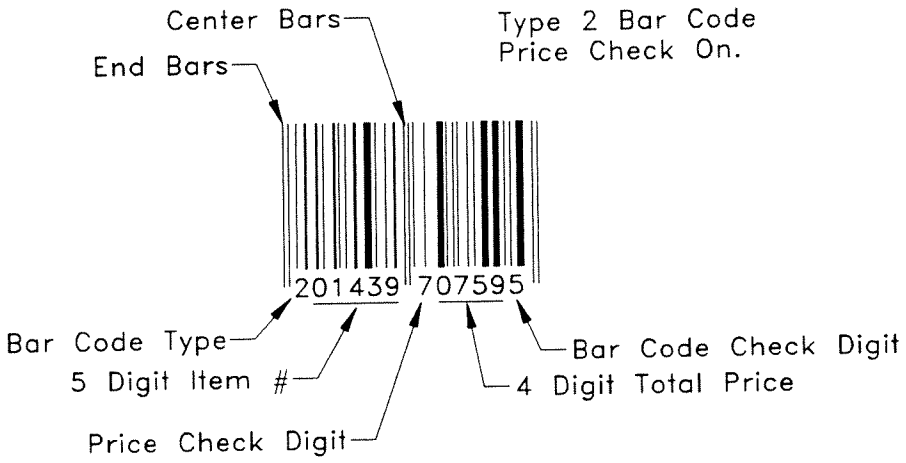


Figure 1.12 Type 2 Bar Code Price Check Digit Enabled

2. SETUP

2.1 UNPACKING SCALE AND ACCESSORIES

2.1.1 Unpack the 8422 or 8423 and inspect for visual damage. Report any shipping damage to your carrier immediately. Unpack all accessories. Refer to Figure 2.1 through 2.4 for detail of accessories packed with each unit.

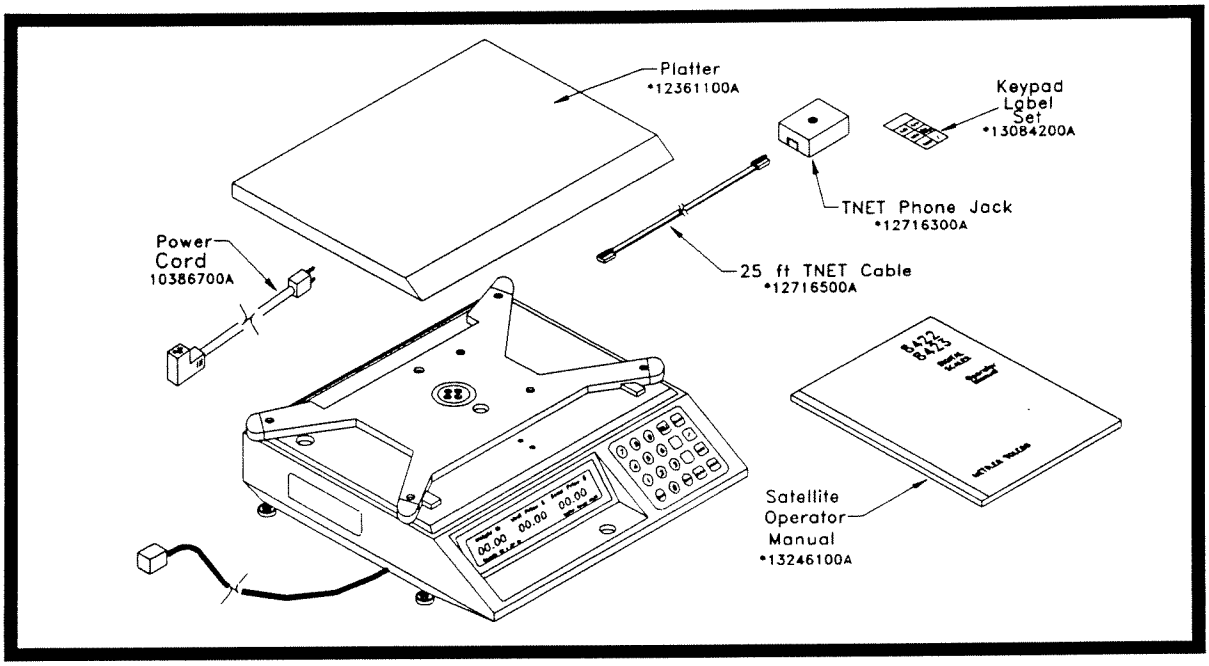


Figure 2.1 8422 Satellite and Accessories

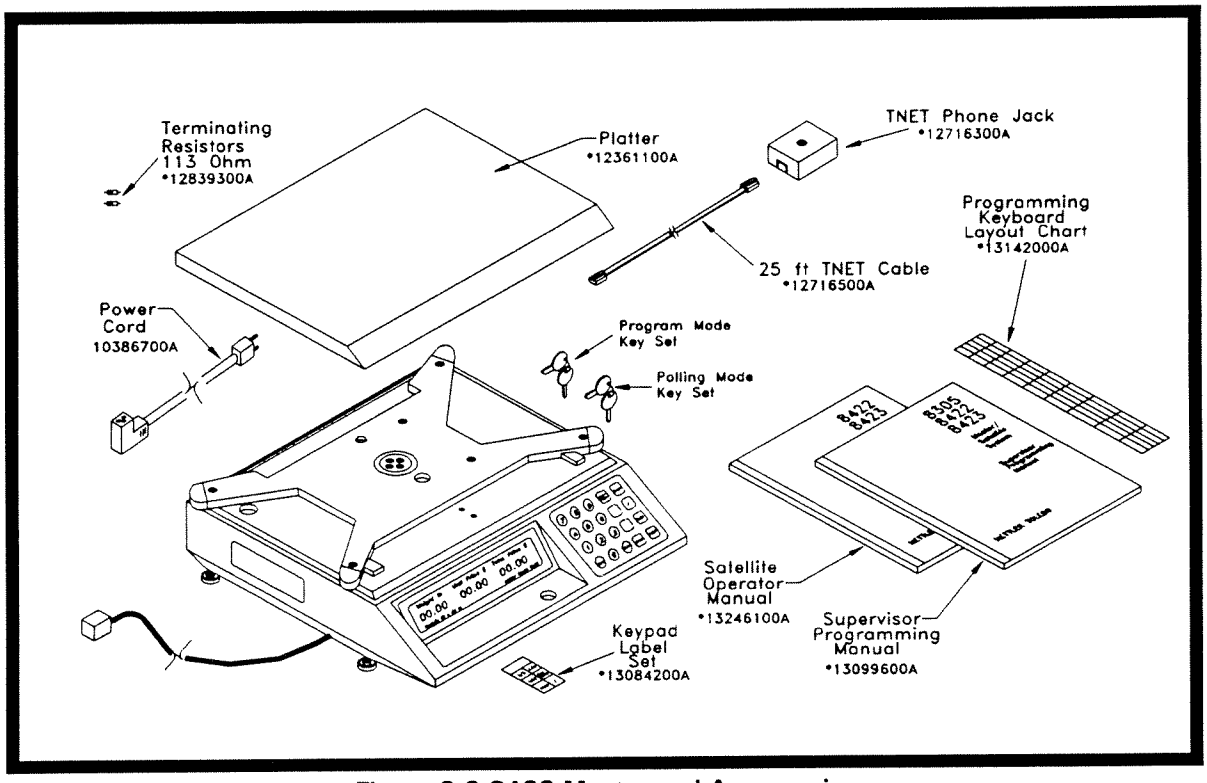


Figure 2.2 8422 Master and Accessories

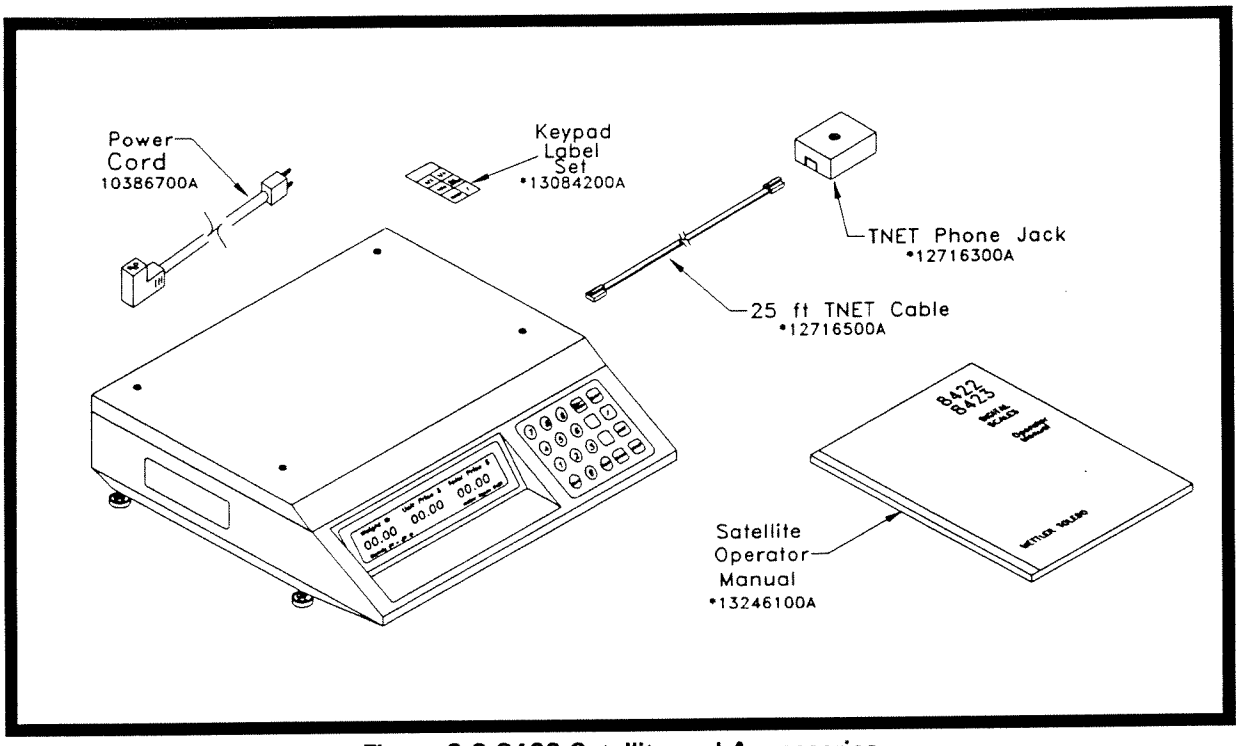


Figure 2.3 8423 Satellite and Accessories

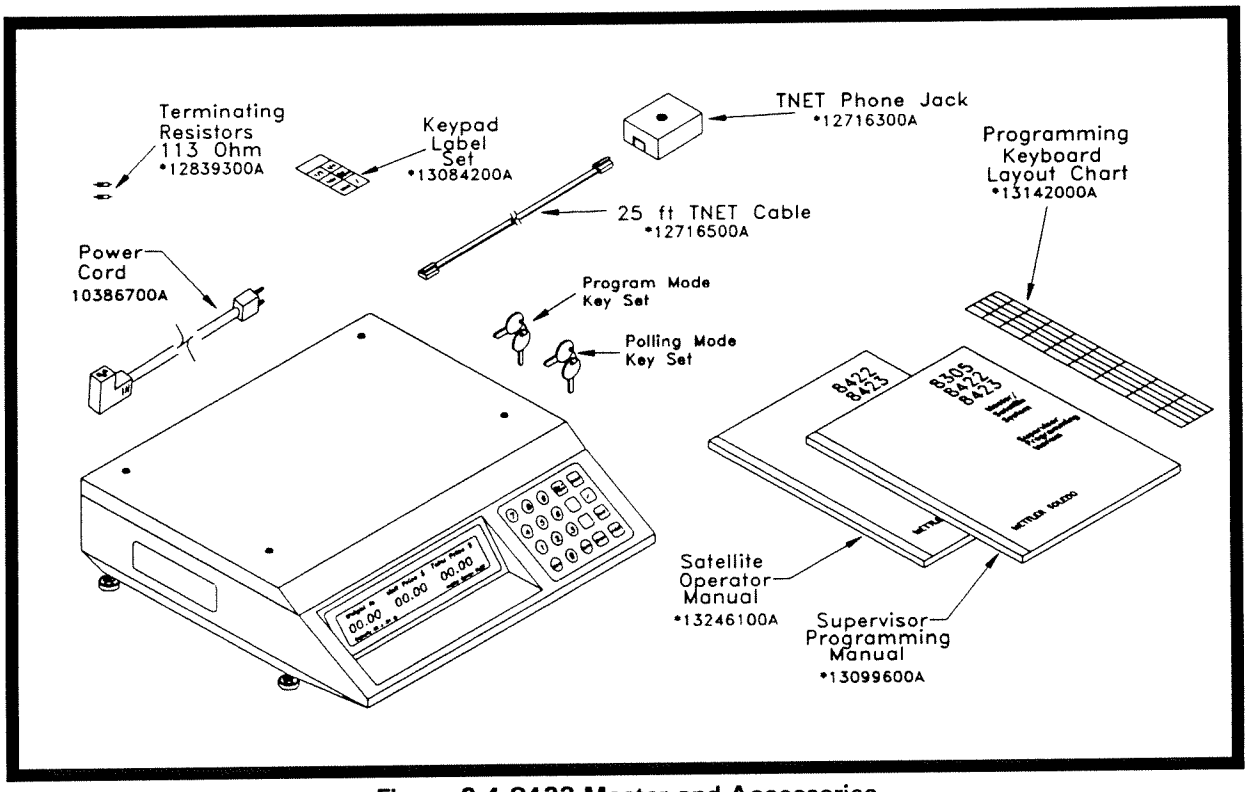


Figure 2.4 8423 Master and Accessories

2.2 8422 SETUP

WARNING!

DO NOT CONNECT AC POWER AT THIS TIME. ELECTRICAL SHOCK HAZARD. AC POWER IS CONNECTED TO THE LINE FILTER FUSE, AND POWER SWITCH WITH THE POWER SWITCH IN THE OFF POSITION. ALWAYS DISCONNECT THE POWER CORD FROM THE AC OUTLET BEFORE SERVICING!

2.2.1 After unpacking the unit, first install any optional kits at this time.

2.2.2 Place the scale on the area it will be used. The area must be a flat solid surface that is relatively level. Adjust the scale level using the adjustable feet on the base and the level bubble as a guide, as shown in Figure 2.5.

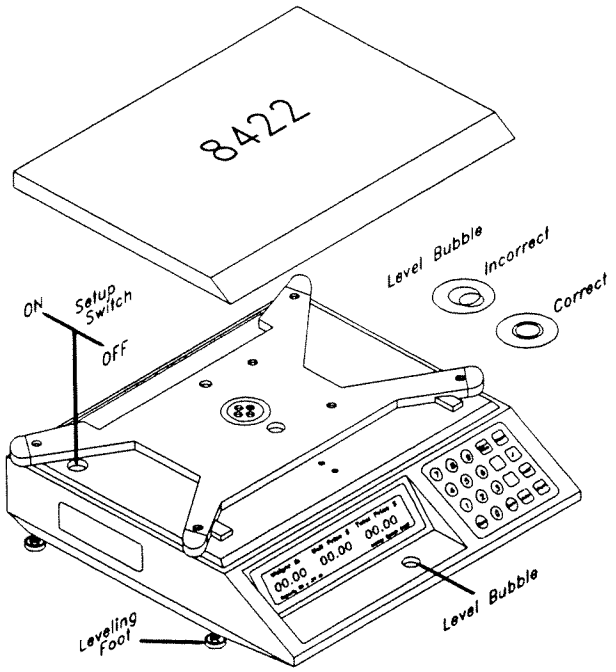


Figure 2.5 8422 Setup

2.2.3 Connect the 325 printer cable to the 325 printer. Turn the 325 power switch on the rear of the printer to ON. Install labels in the printer.

2.2.3 Satellite units should next be connected to the master satellite network using the supplied 25-foot communication cable connecting the scale's TNET port to the phone jack. Refer to the Network Wiring Section for connection of remote satellites to the master.

2.2.4 Install the Power Cord into the Power Cord Jack (Figure 1.3 and 1.4). Plug the line cord into a properly grounded 120VAC dedicated outlet. Place the power switch on the scale to ON.

NOTE: THE BATTERIES IN NEW UNITS MAY NOT BE FULLY CHARGED AND MUST BE CONNECTED TO AC POWER WITH THE POWER SWITCH ON FOR A MINIMUM OF 8 HOURS TO ALLOW THE BATTERY TO FULLY CHARGE.

2.2.5 A power-up routine includes a test pattern and a display of the software part number of EPROM A15 on the Logic PCB. The time will then display. Wait on this screen until the *On-Line* cursor is illuminated to indicate the Logic PCB is on-line with the Master. When the cursor is on, press ***Enter*** to accept the time, or press ***Clear*** to change the time. (Note: The time must be entered in a twenty-four-hour format. Ex: Enter 3:00 P.M. as 15:00.) Next, press enter to accept the displayed date, or press ***Clear*** to enter a new date, then press ***Enter*** to accept the date.

2.2.6 When the display shows ***Download PLU Files?*** press ***Enter***. (Note: If the *On-Line* cursor is not illuminated, ***Download Error*** will display indicating the Satellite Logic PCB was unable to communicate with the Master. Refer to Section 1.22 for an illustration of the display.) When the satellite Downloads from the Master the Logic PCB's RAM memory is initialized and certain data is requested from the master. The Action Message Table, Grade Table, Backup PLU Files, Store Address, and Marquees will be downloaded to the satellite. (Note: On master units, the internal Logic PCB functions the same as a remote satellite on the network. All communication between the Logic PCB and Master Memory PCB in a master unit is through the TNET port. The Logic PCB is the satellite portion of the master controller and performs all the scale functions.)

2.2.7 After downloading, the display should show ***0.00 READY***, indicating it is ready for operation. Next the satellite softswitches must be setup and calibration performed. Refer to the Satellite Softswitch Section and the Calibration section.

2.2.8 After the SSW (softswitches) have been setup and calibration performed the satellite is ready for operation. If the Extra Text V1 Printer has been selected, the label size must be set by pressing ***/0*** on the keyboard. Select *Set Stripped* for labels stripped off the backing paper or *Set Not Stripped* to eject both the label and backing paper. To toggle the selection, press the / (slash) key, then press ***Enter*** to accept the selection. Next press / to toggle through the label sizes and press ***Enter*** to accept the selection. Refer to Table 1-4 in Section 1.23 for a listing of label sizes.

Note: If the standard 325 or 315 printers are selected, the label size must be set by program switches on the Printer Logic PCB. Refer to the appropriate manual or installation instructions for the printer.

2.2.9 If the 8422 is a master, refer to the Master Setup Section to complete the unit setup.

2.3 8423 SETUP

WARNING!
DO NOT CONNECT AC POWER AT THIS TIME. ELECTRICAL SHOCK HAZARD. AC POWER IS CONNECTED TO THE LINE FILTER FUSE, AND POWER SWITCH WITH THE POWER SWITCH IN THE OFF POSITION. ALWAYS DISCONNECT THE POWER CORD FROM THE AC OUTLET BEFORE SERVICING!

2.3.1 After unpacking the unit, first install any optional kits at this time.

2.3.2 ***8213-0101*** Skip this step if the 8213-0101 will not be used. Place the 8213 scale on the area it will be used. The area must be a flat solid surface which is relatively level. Install Interface Cable 0900-0229 (ordered separately) in the jack as shown in Figure 2.6. Connect the other end of the cable to the jack marked ***Scale*** as shown in Figure 1.5 and 1.6. Adjust the scale level using the adjustable feet (Figure 2.6) on the base and the level bubble as a guide, as shown in Figure 2.7.

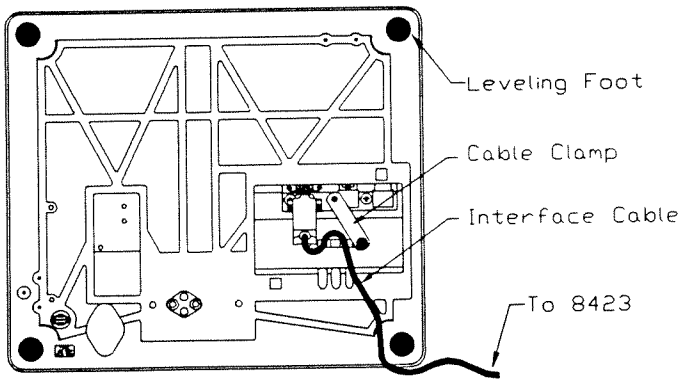


Figure 2.6 8213 Bottom View

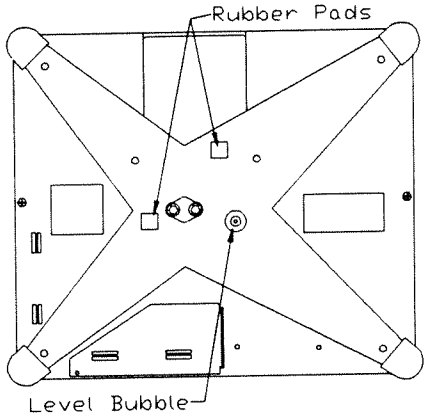


Figure 2.7 8213 Top View

2.3.4 Install the rubber pads (shipped with the 8213) on the spider, as shown in Figure 2.7.

2.3.5 ***315 Printer***
Connect the 315 printer data cable to the 8423 Label Printer Jack (Figure 1.5 and 1.6). Turn the 315 power switch on inside of the printer to ON. Install labels in the printer. (Refer to the 315 Technical Manual for addition information.)

325 Printer
Install the 325 Cable 0900-0235 (*12951700A) on the rear of the printer. Connect the data harness to the Label Printer Jack on the 8423 (Figure 1.5 and 1.6). Install labels in the printer. Turn the 325 power switch on the rear of the printer to ON.

2.3.6 Satellite units should next be connected to the master satellite network using the supplied 25 foot communication cable connecting the scale's TNET port to the phone jack. Refer to the Network Wiring Section for connection of remote satellites to the master.

2.3.7 Install the Power Cord into the 8423 Power Cord Jack (Figure 1.3 and 1.4). Plug the line cord into a properly grounded 120VAC dedicated outlet. Place the power switch on the scale to ON (press the circle on the switch).

NOTE: THE BATTERY IN NEW UNITS MAY NOT BE FULLY CHARGED AND MUST BE CONNECTED TO AC POWER WITH THE POWER SWITCH ON FOR A MINIMUM OF 8 HOURS TO ALLOW THE BATTERY TO FULLY CHARGE.

2.3.8 The unit should power up displaying a checkerboard test pattern momentarily then briefly display the software part number of EPROM A15 on the Logic PCB. The time will then display. Wait on this screen until the *On-Line* cursor is **ON** to indicate the Logic PCB is on-line with the Master. When the cursor is **ON**, press ***Enter*** to accept the time, or press ***Clear*** to change the time. (Note: The time must be entered in a twenty-four hour format. Ex: 3:00 P.M. is entered as 15:00.) Next, press enter to accept the displayed date, or press ***Clear*** to enter a new date, then press ***Enter*** to accept the new date.

2.3.9 When the display shows ***Download PLU Files?*** press ***Enter***. (Note: If the *On-Line* cursor is not illuminated, ***Download Error*** will display indicating the Satellite Logic PCB was unable to communicate with the Master. Refer to Section 1.22 for an illustration of the display.) When the satellite Downloads from the Master the Logic PCB's RAM memory is initialized and certain data is requested from the master. The Action Message Table, Grade Table, Backup PLU Files, Store Address, and Marquees will be downloaded to the satellite. (Note: On master units, the internal Logic PCB functions the same as a remote satellite on the network. All communication between the Logic PCB and Master Memory PCB in a master unit is through the TNET port. The Logic PCB is the satellite portion of a master and performs all the scale functions.)

2.3.10 After downloading, the display should show ***0.00 READY*** (units with 8213), or ***READY*** (units w/o 8213) indicating it is ready for operation. Next the satellite softswitches must be setup and calibration performed. Refer to the Satellite Softswitch Section and the Calibration section.

2.3.11 After the SSW (softswitches) have been setup and calibration performed the satellite is ready for operation. If the Extra Text V1 Printer has been selected, the label size must be set by pressing ***/0*** on the keyboard. Select *Set Stripped* for labels stripped off the backing paper or *Set Not Stripped* to eject both the label and backing paper. To toggle the selection, press the / (slash) key, then press ***Enter*** to accept the selection. Next press / to toggle through the label sizes and press ***Enter*** to accept the selection. Refer to Table 1-4 in Section 1.23 for a listing of label sizes.

Note: If the standard 325 or 315 printers are selected, the label size must be set by program switches on the Printer Logic PCB. Refer to the appropriate manual or installation instructions for the printer.

2.2.9 If the 8423 is a master, refer to the Master Setup Section to complete the unit setup.

2.4 SATELLITE SOFTSWITCH SETUP

The Satellite SSW (SoftSwitches) are options that can be configured in software and permanently stored in the scale configuration file on the Logic PCB. To change the displayed setting, press the / (Slash) key to toggle the selection and the **ENTER** key to accept the change and advance to the next softswitch. When asked for a numeric value, key in the value then press **ENTER** to accept the entry and advance.

The satellite softswitches are accessed using a sliding switch accessible through a hole in the top cover. To gain access to the setup switch, remove the scale platter on the 8422, or the dead deck cover on the 8423 as shown in Figure 2.8. The switch access hole is shown in Figure 2.8. Slide the switch to the ON position. The softswitches are shown in Table 2-1 in the order they are presented in the SSW Menu.

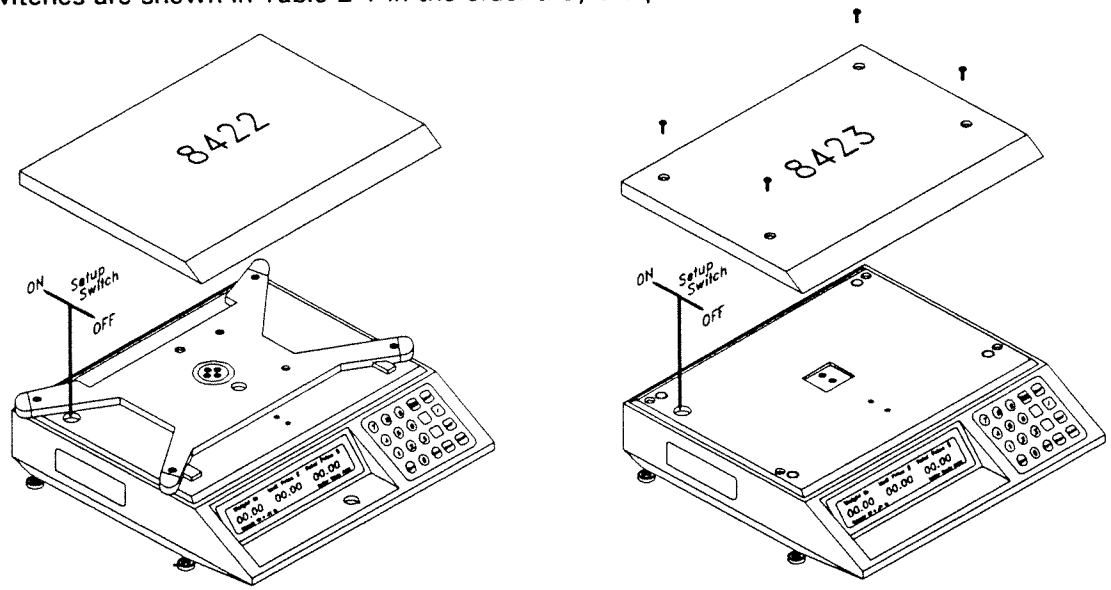


Figure 2.8 Setup Switch Locations

NOTE: The factory default setting under option will appear in bold. The listed SSW are valid only for software part number *13246900A and later revisions.

Satellite Softswitch	Option	Function
EXPANDED WGT?	YES	Display will show weight in minor increments (normal displayed weight times ten) in the total price field on the right side of display. Normal weight will display on the left. This can be used for testing purposes only. The scale will not function otherwise.
	NO	Normal weight will display.
SCALE PRESENT?	**YES**	Internal or external load cell installed.
	NO	No load cell. For By-count or Standard Pack applications not requiring weight input.
ENABLE BEEPER?	**YES**	Beeper will sound when keys are pressed.
	NO	Beeper is disabled.
ENABLE VOIDS?	**YES**	The last transaction can be voided. If **Enable lb/for?** softswitch is set to NO the void key can be used in the transaction mode to void the last transaction. If set to YES, the operator must press / 5 to make a void.
	NO	Void key is disabled.
ENABLE MEMORY?	YES	The Label Feed/Memory key will be active (Refer to Section 1.21 for key location). The memory function will allow totaling multiple items for one customer on a single label.
	NO	Memory function is disabled.
ENABLE BY QTR?	YES	Pricing per ¼ pound is allowed. (Refer to Section 2.6.1 for key location).
	NO	Pricing per ¼ pound is disabled.

Satellite Softswitch	Option	Function
ENABLE BY HALF?	YES	Pricing per ½ pound is allowed (Refer to Section 2.6.1 for key location.)
	NO	Pricing per ½ pound is disabled.
IN METRIC MODE?	YES	Weight will be in kg (kilograms). Capacity will be 20 x .005 kg.
	NO	Weight will be in pounds. Capacity will be 50 x .01 lb.
ENABLE PREPACK?	**YES**	Prepack key is enabled to toggle prepack on/off. Prepack will allow retaining a current PLU when the item is removed from the scale platter until the **Clear** key is pressed.
	NO	Prepack key is disabled.
TARE OVERRIDE?	**YES**	A new tare value can be entered to override the programmed tare.
	NO	Manual override is not allowed. (PLU record with a forced tare will be allowed.)
PRICE OVERRIDE?	**YES**	A new unit price can be entered overriding the programmed price.
	NO	Manual override is not allowed. (PLU record with a forced price will be allowed.)
COUNT OVERRIDE?	**YES**	An new count can be entered for a By-count PLU overriding the programmed count.
	NO	Manual override is not allowed.
ENABLE LB/FOR?	YES	Manual entry of lb/for pricing is allowed and lb/for key is enabled.
	NO	lb/for pricing is not allowed.
SET TARE LIMIT?	YES	Tare is limited to 3.99 lb or 0.995 kg.
	NO	Tare is allowed to capacity of scale.
SET 100 G DEFAULT?	YES	(Metric mode only.) Pricing will default to kg. Fractional key selects per 100 grams.
	NO	(Metric mode only.) Pricing will default to 100 grams. Fractional key selects per kg.
DISPLAY DESCR?	**YES**	PLU description will display momentarily when the PLU is called up.
	NO	PLU description will not display.
DESCR DSPL TIMR?		If Display Descr? is set to Yes, this entry adjusts the amount of time the PLU description will display when called up.
	0	.5 seconds
	1	1 second
	2	1.5 seconds
	3	2 seconds
ASK DEPT NUMBER?	**YES**	Allows entry of scale department on power-up.
	NO	Department 0 is the only valid department.
SCALE ID #?	0-99	Enter the satellite scale ID number used for master/satellite communications. This number must be unique on the network and not duplicated by other satellite scales.
CALL BY ITEM #?	YES	The PLU record will be called up by using the Item number.
	NO	The PLU number will be used for call up.
PGM BY ITEM #?	YES	Program Master in Item Entry Mode.
	NO	Program Master in Dept/PLU Entry Mode.
CALIF OPTION?	YES	Fractional pricing will display as per pound price (required in California.)
	NO	Fractional pricing displays as normal.
BLANK UNDER 0?	YES	Weight display field will blank when the weight is behind zero, or a tare is in use.
	NO	Weight field will display a negative weight when scale is behind zero or tare is in use.
ENABLE DEMAND?	**YES**	Demand mode is allowed.
	NO	Demand is not allowed.
ENABLE BYCOUNT?	**YES**	By Count pricing is allowed. (Ex: 10 for $1.99).
	NO	By Count pricing is not allowed.
PRINT/CLR RTOT?	**YES**	Run Totals will clear after printing Run Totals Label.
	NO	Run Totals will continue to accumulate after printing label.
CANADA 0-TARE? (Valid only in Metric Mode)	YES	Tare cannot be cleared manually in non-prepack mode entering 0-Tare.
	NO	Tare can be cleared by pressing the 0 and TARE keys.

Satellite Softswitch	Option	Function
ONE RUN PRINT INH?	YES	One Run Print Inhibit. If any fields have been inhibited, pressing **Clear** will automatically reset any inhibited fields. (By setting Print Inhibit to **NO**).
	NO	Any inhibited fields must be manually reset. **Clear** key will not affect the print inhibits.
324 PRINTER?	YES	324 Printer selected. Menu will skip the rest of the printer prompts to Print 6D UPC.
	NO	Advance to next printer.
325 PRINTER?	YES	325 Printer selected. Menu will skip the rest of the printer prompts to Print 6D UPC.
	NO	Advance to next printer.
314 PRINTER?	YES	314/315 Printer selected. Menu will skip to Print 6D UPC.
	NO	Advance to next printer.
315 PRINTER?	YES	315 Printer selected. Advance to Fields Selection.
	NO	Advance to next printer.
(IF 315 = YES THE FIELD PROMPTS WILL DISPLAY NEXT.)		The Left/Mid/Right Fields will print on line three of the label. Grade and Tare are only valid in left field non-extra text labels. On extra text labels, Left Field will not printed.
LBL LEFT FIELD? **LBL MID FIELD?** **LBL RIGHT FIELD?**	0	Blank
	1	Pack Date
	2	Sell By Date
	3	Use By Date
	4	Grade (non-extra text labels only)
	5	Tare Weight
	6	Julian Pack Date
	7	Time (Hour 1-24)
EX TEXT V1 PTR?	YES	Extra Text Version 1 printer selected. INH prompts will display.
	NO	No printer in use.
INH P.D. LEGEND? **(IF EX TXT V1 PTR = YES.)**	YES	The legend will print above the Pack Date.
	NO	The Pack Date legend will not print. (Affects only ET label sizes greater than 2.4").
INH S.B. LEGEND? **(IF EX TXT V1 PTR = YES.)**	YES	The legend will print above the Sell-By Date
	NO	The Sell-By legend will not print. (Affects only ET label sizes greater than 2.4").
INH U.B. LEGEND? **(IF EX TXT V1 PTR = YES.)**	YES	The legend will print above the Use By Date.
	NO	The Use By legend will not print. (Affects only ET label sizes greater than 2.4").
INH T.P. LEGEND? **(IF EX TXT V1 PTR = YES.)**	YES	The legend will print above the Total Price.
	NO	The Total Price legend will not print. (Affects only ET label sizes greater than 2.4").
INH W.T. LEGEND? **(IF EX TXT V1 PTR = YES.)**	YES	The legend will print above the Weight.
	NO	The Weight legend will not print. (Affects only ET label sizes greater than 2.4").
INH U.P. LEGEND? **(IF EX TXT V1 PTR = YES.)**	YES	The legend will print above the Unit Price.
	NO	The Unit Price legend will not print. (Affects only ET Label sizes greater than 2.4").
PRT 6 DIGIT UPC?	**YES**	Six digits are allowed for the Item number field for type 2 bar codes.
	NO	Five digits allowed for the Item number field. Aa hard zero prints in the first position to the right of the center bars in UPC for type 2 UPC. (Won't affect type 0 bar codes.)
PRICE CHECK ON?	**YES**	A price check digit will print in the UPC symbol in the first position to the right of the center bars on Type 2 bar codes. The Item Number will be limited to 5 digits. (Does not affect type 0 bar codes.)
	NO	Price check is disabled.
S.P. TYPE 0 UPC? **(IF EX TXT V1 PTR = YES.)**	YES	Standard Pack PLU's (Pack Code 3) will use bar code type 0. (10 Digit Item number, no encoded price.)
	NO	Standard Pack PLU's will use bar code type 2 (five or six digit Item number with price encoded in UPC symbol).
B.C. TYPE 0 UPC?	YES	By Count PLU's (Pack Code 1) will use bar code type 0. (10 Digit Item number, no encoded price.)
	NO	By Count PLU's will use bar code type 2 (five or six digit Item number with price encoded in UPC symbol).
8423 SCALE?	YES	Scale will power up in prepack mode and Rewrap key will function.
	NO	Prepack mode can be selected by pressing the **Prepack** key. Rewrap key is disabled.

Satellite Softswitch	Option	Function
B.C. TYPE 0 UPC?	YES	By Count PLU's (Pack Code 1) will use bar code type 0. (10 Digit Item number, no encoded price.)
	NO	By Count PLU's will use bar code type 2 (five or six digit Item number with price encoded in UPC symbol).
8423 SCALE?	YES	Scale will power up in prepack mode and Rewrap key will function.
	NO	Prepack mode can be selected by pressing the **Prepack** key. Rewrap key is disabled.
ENABLE WRAPPER?	**NO**	Set to NO. For future use only.
ACCM A-MODE ONLY?	YES	Only Automatic mode accumulators are used (must use with Bubble Master.)
	NO	Normal setting with current master. All accumulators are enabled.
RAM MASTER PCB?	**YES**	Normal setting with current RAM master.
	NO	For use with older bubble master only.
DATE FORMAT?	**0**	mm/dd/yy (12-10-95)
	1	mmm/dd (DEC 10)
	2	yy/mm/dd (95-DC-10)
	3	yy/dd/mm (95-10-DC)
	4	dd/mm/yy (10-DC-95)
	5	dd/mm/yy (10-12-95)
CHG DATE BY DAYS?	**YES**	Scale will prompt for the number of days when overriding shelf life/Use By date.
	NO	Scale will prompt for the month, day, and year when overriding shelf life/Use By date.
LBL LINE 3 FMT? **(IF PTR SELECTED IS OTHER THAN 315 THIS PROMPT WILL DISPLAY.)**		Label Line three format. This selection will print on the third line of the label.
	0	Blank
	1	Grade Only (23 Characters max. Valid only with 1.9 and 2.4" labels.)
	2	Grade (23 Characters) and Pack Date (1.9" & 2.1" labels only.)
	3	Grade (23 Characters) and Sell-By Date (1.9" & 2.1" labels only.)
	4	Grade (23 Characters) and Eat-By Date (1.9" & 2.1" labels only.)
	5	Grade (14 Characters), Pack Date, and Sell-By Date (1.9" & 2.1" labels only.)
	6	Grade (14 Characters), Pack Date, and Eat-By Date (1.9" & 2.1" labels only.)
	7	Grade (14 Characters), Sell-By Date, and Eat-By Date (1.9" & 2.1" labels only.)
	8	Pack Date and Sell-By Date
	9	Pack Date and Eat-By Date
	10	Sell-By Date and Eat-By Date
	11	Pack Date Only (1.9" & 2.1" labels only.)
	12	Sell-By Date only.
	13	Eat-By Date only. (1.9" & 2.1" labels only.)
NO MOTION COUNTS	7	Default value is 7. Valid values are 0-99. If premature label printing exists, decrease the value of the count.
MOTION COUNTS	25	Default value is 25. Valid values are 0-99. If an extra label is printed, increase the value of the count.
CALIBRATE SCALE?	YES	Enter Calibration Mode. Refer to Section 2.5.
	NO	Bypass Calibration.
****SETUP DONE****		End of setup mode. Turn setup switch off to exit setup.

Table 2-1 Satellite Softswitch Functions

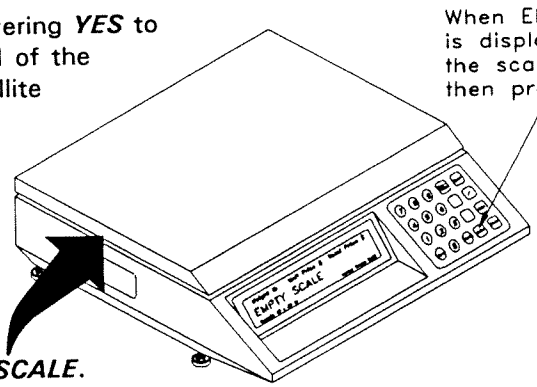
2.5 CALIBRATION

Calibration should be performed only after the scale has been powered-up for at least 30 minutes and is at normal operating temperature. Calibration is required in the following cases:

- New scale setup
- After Logic PCB replacement
- After Load Cell replacement
- If unit displays **Set Zero** and scale won't zero using the ***ZERO*** key.

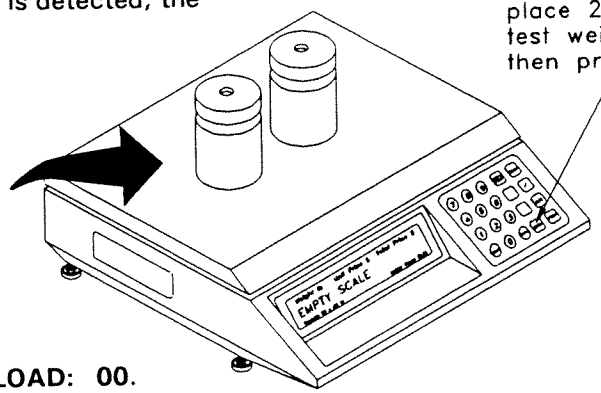
Before attempting calibration, setup and level the scale on a stable surface free from vibration and away from excessive air currents.

2.5.1 The calibration mode is enabled by answering ***YES*** to the ***CALIBRATE SCL?*** prompt at the end of the satellite softswitches. First slide the Satellite Setup Switch to the ON position, as shown in Figure 2.8. Advance through the softswitches until the prompt ***CALIBRATE SCL?*** is displayed. Press the / key to toggle to ***YES***, then press ***ENTER***.

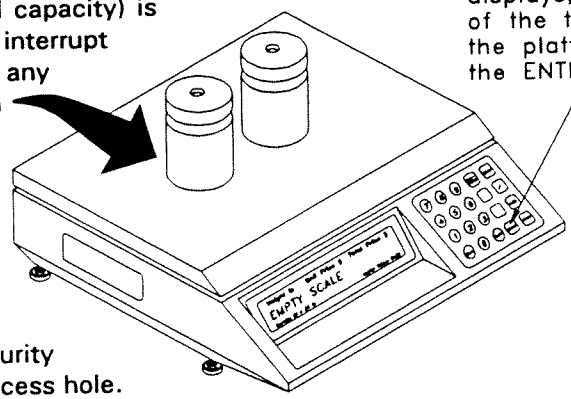


2.5.2 The display will next prompt ***EMPTY SCALE***. Make sure the scale platter is in place and empty, then press ***ENTER*** to start the calibration procedure. The display will count down from 60 to 0 while zero is established. If vibration or interference is detected, the count will reset to 60.

2.5.3 When zero has been established, the display will show ***ADD LOAD***. (20 to 50 pounds or 5 to 20 kg of test weight is recommended.) Place the test weights on the platter, then press ***ENTER***.



2.5.4 The display will now show **ENTER LOAD: 00**. This is a prompt to enter the value of test weight you have placed on the platter. Key in the value of the test weight on the platter and press **ENTER**. The display will count down from 60 while the span (full capacity) is determined. (Note: Vibration can interrupt calibration and cause the count to reset.) If any errors are detected during the calibration procedure, refer to the troubleshooting section.



2.5.5 When calibration is completed, the display will show **** SETUP DONE ****. Slide the **Setup Switch** back to the OFF position. If required locally, apply a Security Seal (p\n A12363300A) over the switch access hole.

2.6 INITIALIZING THE MASTER

To initialize the master, the optional 0952-0024 Programming Keyboard is required. On Honeywell® keyboards, program SW1 must be ON for the 8422/8423 Masters. Switch 1 is located on the bottom of the keyboard.

WARNING! THIS PROCEDURE WILL CLEAR ALL DATA FROM THE MASTER MEMORY.

Initializing the master will clear the RAM memory on the Master Memory PCB. This must be performed when installing a new master controller or when replacing the Memory PCB. To initialize the memory follow this procedure.

✓ Connect the 0952-0024 Programming Keyboard to the jack marked ***PROG KYBD*** on the Master I/O Connector PCB on the front on the unit. (Figure 1.4 or 1.6.)

✓ Turn the Program Mode keyswitch to ***Local Change***. (Figure 2.9)

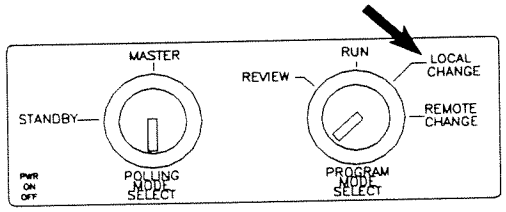


Figure 2.9 Program Mode

✓ If the display shows ***SELECT FUNCTION*** skip to the next step. If ***SELECT FUNCTION*** does not display check status of the ***On-Line*** cursor. If it is not illuminated, the Master Memory PCB and Satellite Logic PCB are not communicating. If the cursor is illuminated, first disconnect any remote satellites from the master's TNET port marked ***COMM***. Next with the program keyboard connected and the Program Mode keyswitch in the ***LOCAL CHANGE*** position, press and hold the ***Shift, Ctrl,*** and ***2*** keys for a count of five, then press ***ESC.*** The prompt ***SELECT FUNCTION*** should then display. (Figure 2.10). If not, turn the scale power off and on. This procedure forces the Memory PCB to retrieve the Scale Address Number of the Logic PCB and writes it to RAM. This ID number is then used whenever the keyswitch is turned to ***LOCAL CHANGE***.

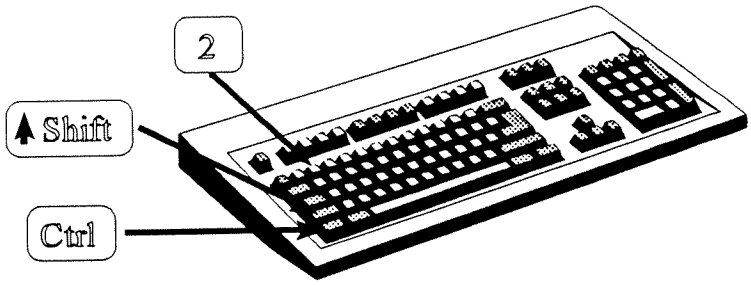


Figure 2.10 Resetting ID Number

✓ When ***SELECT FUNCTION*** displays, press the following keys:

F10	*System/Dept Setup*
3	*Initialize System*
Y	Yes to continue

✓ When asked for the password, enter ***8305***. Software numbers *139482/138483 4D (or later) and 140478/140480 6D (or later) will prompt to ***ENTER # RAM BANK***. This corresponds to whether the 1 Meg Memory Expansion PCB is installed in the master. For the standard 512k master enter ***15***, and for units with the optional 1 Meg Expansion PCB installed, enter ***47***. The display will show --- ***PLEASE WAIT*** --- while the memory is initialized.

✓ After initialization is complete the master will enter into the ***EDIT CONFIGURATION*** menu. Refer to the next section for detailed descriptions of the master softswitches.

2.7 MASTER CONFIGURATION

The master configuration is used to setup the master softswitches. The softswitches include enable/disable prompts, method of calling files, line printer setup, host port setup, etc. After initialization, the master automatically enters into the ***EDIT CONFIGURATION*** menu. To enter into the configuration menu the 0952-0024 Programming Keyboard is required. To enter the configuration menu:

✓ Connect the 0952-0024 Programming Keyboard to the jack marked ***PROG KYBD*** on the Master I/O Connector PCB on the front on the unit. (Figure 1.4 or 1.6.)

✓ Turn the Program Mode keyswitch to ***Local Change***. (Figure 2.9)

✓ If the display shows ***SELECT FUNCTION*** skip to the next step. If ***SELECT FUNCTION*** does not display, check the status of the ***On-Line*** cursor. If it is not illuminated, the Master Memory PCB and Satellite Logic PCB are not communicating. If the cursor is illuminated, first disconnect any remote satellites from the master's TNET port marked ***COMM***. Next plug in the program keyboard and turn Program Mode keyswitch to the ***LOCAL CHANGE*** position. Press and hold the ***Shift, Ctrl,*** and ***2*** keys for a count of five, then press ***ESC.*** The prompt ***SELECT FUNCTION*** should display. (Figure 2.10). If not, turn the power off, then on. This procedure retrieves the Scale Address Number of the Logic PCB and writes it to RAM. This ID number is used whenever the keyswitch is turned to ***LOCAL CHANGE***.

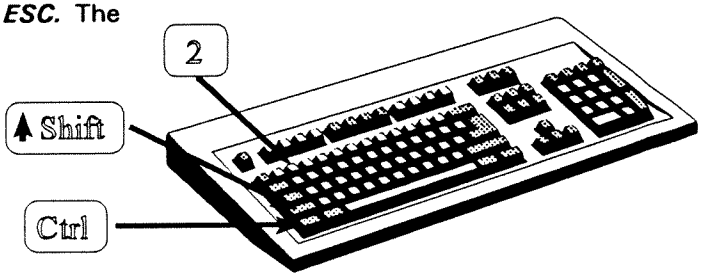


Figure 2.11 Resetting ID Number

✓ When ***SELECT FUNCTION*** displays, press the following keys: ***F10*** *System/Dept Setup*
2 *Edit Configuration*
Y Yes to continue

✓ When asked for the password, enter ***8305***. The number of RAM Banks will display briefly, before the first softswitch. When asked Yes/No questions, press the ***Y/N*** keys or press the ***Space Bar*** to toggle selections.

Master Softswitch	Option	Function
CHG MAST PASSWORD?	YES	Change the master access password. The master password allows access to all master functions.
	NO	No change, or no master password required.
CHG DEPT PASSWORD?	YES	Change the Department password. The Dept password allows access only to a specific department.
	NO	No change, or no Department password required.
DEPT # ALWAYS 0?	YES	Only Department 0 will be used.
	NO	Multiple departments will be used.
GRADE # ALWAYS 0?	YES	Grade entry prompt will not display while editing PLU record.
	NO	Grade will be used.
SHELF LF ALWYS 0?	YES	Shelf Life prompt will not display while editing PLU records.
	NO	Shelf Life will be used.
EATBYDAY ALWYS 0?	YES	Eat-By Days prompt will not display while editing PLU records.
	NO	Eat-By days will be used.
ASK EXTRA TEXT?	YES	Extra Text Code prompt will not display while editing PLU records.
	NO	Extra Text will be used.
ACTION # ALWYS 0?	YES	Action Number Code prompt will not display while editing PLU records.
	NO	Action Number will be used.
BYWGT-NO FRAC PR?	YES	Only By-Weight pricing is allowed. Prompt for Count/Modifier and Package Code are disabled.
	NO	By-Weight, By-Count, Standard Pack, and Fractional pricing modes are allowed.

Master Softswitch	Option	Function
ASK VLABEL PRICE? (Only with SW 13386300A & earlier.)	YES	Master will display PLU's unit price and allow used to enter a price that will be encoded in the verification UPC symbol.
	NO	PLU's unit price will be encoded in the verification label's UPC symbol.
PROGRAM BY ITEM?	YES	Master will prompt for Item Number when editing records. When programming by Item Number, no duplicate Item Numbers are allowed.
	NO	Master will prompt for PLU number when editing records. Duplicate Item Numbers are allowed.
MASTER ID NO:	1-99	Enter ID number that will be used for Standby Master in standby mode and when using the Download 2nd Master function. This number must not be duplicated with any Scale ID numbers on the network.
PRTR BAUD RATE	300 To 19200	Press the ***Space Bar*** key to toggle through the available baud rates for the optional report printer. Selections include: 300, 1200, 2400, 4800, 9600, & 19200 baud. Press ***Enter*** to accept the displayed baud and advance to next SSW.
PRINTER BUSY HI?	YES	Yes = Hi for the input polarity of the printer's RTS (Ready To Send) that connects to the CTS line at the Master. Use this setting for an 8840 Printer, or for no printer attached. (Note: if no printer is connected and this setting is not used, the master may appear to be locked up when attempting to make price changes.
	NO	No = Low for the input polarity of the printer's RTS line to the Master CTS line. Use this setting when using the 8842, 8843, and 8844 printers.
PTR COMPRESS PRINT		This selection is used to enter hex codes for the report printer to switch to compressed print mode. Certain reports printer over 80 characters per line. The compressed print mode allows printing up to 132 characters per line. Press ***Enter*** to continue. When **COMMAND CODE IN HEX** displays press ***Enter***. To completely clear any previous codes, press the ***Tab*** key, then enter the following: 8840-0001 = 1B37 8840-0002 = 1B5B3477 8842-0001 = ØF 8843-0001 = ØF 8844-0001 = ØF 8845-0001 = ØF (Note: Entries must be in uppercase letters. The Ø is a zero.)
PTR NORMAL PRINT		This selection is used to enter hex codes for the report printer to switch to normal print mode. Press ***Enter*** to continue. When **COMMAND CODE IN HEX** displays press ***Enter***. To completely clear any previous codes, press the ***Tab*** key, then enter the following: 8840-0001 = 1B36 8840-0002 = 12 8842-0001 = 12 8843-0001 = 12 8844-0001 = 12 8845-0001 = 12 (Note: Entries must be in capital letters.)
HOST ID NO:	01-99	Enter the Host ID number that will be used by a host computer to communicate with the master.
HOST BAUD RATE	300 to 19200	Press the ***Space Bar*** to toggle through the baud rate selections to be used on the RS232 Host Port on the Master. Available selections are: 300, 1200, 2400, 9600, and 19200 baud. Press ***Enter*** to accept displayed baud rate and advance to next SSW. (Note: SW *13386300A and earlier has a max baud of 9600.)
HOST PARITY	EVEN	This selection sets the Parity Bit for the Host Port. Available selections are: Even, Odd, Mark, and None. Use Even parity when using DataBack, PCS, or Intelli-Net (all Mettler Toledo Host Software unless specified otherwise.)
INH HST VD T > 9?	YES	Inhibit Host Void Totals Greater than 9. This SSW is provided for compatibility with older host software. If the master is connected to a host that does not support 16 departments, select YES.
	NO	Allows up to 16 departments.
INH RECS VERIFY?	YES	Inhibit Records Verification. Power up records verification is disabled.
	NO	The master will perform records verification on power-up.
AUTO COMPRESS @2?	N/A	This function disabled in NF and Exp Master SW.
REM PRICE CHG?	YES	Allows remote price change from 8427 (non-NF only.)
	NO	Disables remote price change.
STORE NAME:		This entry is used only for report headings. Up to two lines of 32 characters can be entered. Always first press the ***TAB*** key to completely clear the line when programming a new Store Name.
SELECT FUNCTION		End of master Edit Configuration will redisplay this prompt.

Table 2-2 Master Softswitch Functions In Edit Configuration

3. NETWORK INSTALLATION

3.1 OVERVIEW

The 8422/8423 satellite must be connected to a master scale in order to access the master PLU file. When a PLU number is called up, it is retrieved from the Master and added to a local backup PLU table, if Backup PLU's have been programmed. On power-up, or at 2:00 A.M. backup PLU register will be automatically updated. The satellite will also download the action code table, grade table, and department information. If the master controller goes "off-line," the satellite can continue to operate with this backup information until the master goes back "on-line".

The scale network (TNET) connects all the satellite scales to the master scale. Each satellite is shipped with a modular phone jack box and a 25-foot communication cable that connects the box to the TNET connector on the bottom of the scale, as shown in Figure 3.1. The 25-foot communication cable has a 4-position modular phone plug on one end, and a 6 position modular plug on the other. Connect the 4-position end to the TNET Jack marked ***COMM*** on the side of the 8422/8423, and the 6-position end to the supplied phone jack.

3.2 MATERIALS REQUIRED (Table 3-1)

MATERIAL	APPROVED VENDOR	PART #	QUANTITY
Wall mount phone jack	Allen Tel. Prod. #AT468-4	12716300A	1 per scale
113 ohm resister		12839300A	2 - one resistor at each end of main data line. Refer to Figure 3.1.
Telephone Cable 4-Conductor color coded (B/Y/G/R) or equivalent. **(NOTE: USE ONLY UNSHIELDED SOLID-CORE 22-24 GAUGE.)**	*Belden 1227A *AT&T 1005 002A W1000 Cable Specs: 24 AWG Solid Copper/4 Conductor PVC Insulation/60 deg C 300 Volts N.E.C. type CM Nom. Capacitance 16-18 pf/ft Attenuation (Max): @1 MHz. 7.8 dB/1000ft @4 MHz. 17 dB/1000ft @10 MHz. 30 dB/1000 ft @16 MHz. 49 dB/1000 ft	N/A	As required (1500 feet max. cable length)

Table 3-1 TNET Materials

***NOTE: IF CABLE IS TO BE RUN THROUGH A PLENUM AREA, OR IN CEILINGS CHECK YOUR LOCAL ELECTRICAL/FIRE CODES. SPECIAL NON-FLAMMABLE/NON-SMOKING PLENUM CABLE MAY BE REQUIRED.**

☞ IMPORTANT NOTE! ☜

MAXIMUM RECOMMENDED CABLE LENGTH, INCLUDING THE MAIN CABLE AND 25 FOOT SCALE DROPS, IS LIMITED TO 1500 FEET. USE ONLY APPROVED OR EQUIVALENT UNSHIELDED TELEPHONE TYPE CABLE. THE USE OF SHIELDED OR UNAPPROVED CABLE MAY RESULT IN DATA COMMUNICATIONS ERRORS.

3.3 NETWORK WIRING

A sufficient amount of telephone cable must be available to run between all scales in the network. This cable is referred to as the main data cable and must be located near each scale. Once the cable is routed, a modular

phone jack (P\N 12716300A) must be attached to the main data cable at each scale location. The phone jack must be located within 25 feet of the scale to allow connecting the 25-foot communication cable between the phone jack and the scale. Each scale is shipped with a 25-foot communication cable (P/N 12716500A) which connects the scale communication port to the phone jack. Refer to Figure 4.3 which gives an example of the scale network wiring in detail. The main data line must be terminated at the ends by connecting the supplied 113 ohm resister (p\n 12839300A) between the Green and Red terminals in the phone jacks. The terminating resistors are supplied with each master scale.

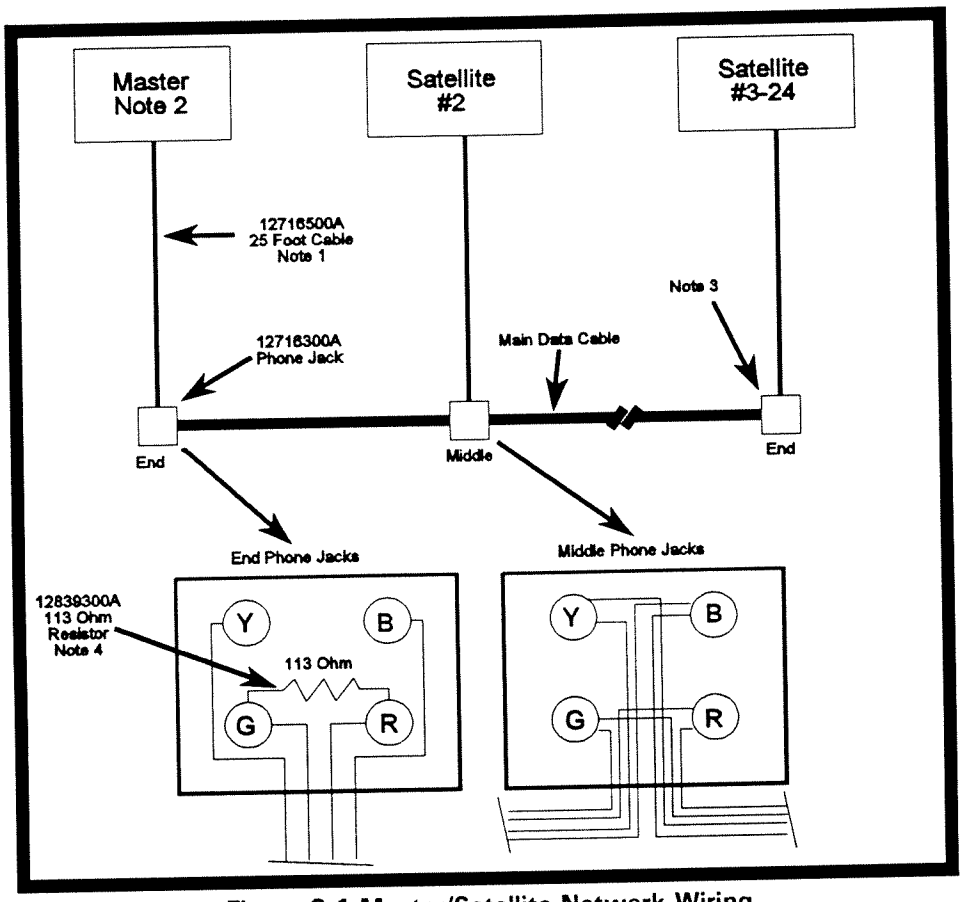


Figure 3.1 Master/Satellite Network Wiring

NOTE 1: The 25' Communication Cable, P/N 12716500A, and the Phone Jack, P/N 12716300A, is supplied with each scale. The four-position modular phone connector plugs in the scale TNET connector identified as "COMM", and the six-position modular phone connector plugs into the phone jack.

NOTE 2: The Master can be installed at any location on the network. In this example, the Master is installed at one end of the main cable. When the cable length approaches near maximum, it is recommended the master be located in the middle of the network. Up to 24 satellites are supported.

NOTE 3: All phone jacks must be installed on the main data line which runs to each location. This main data line must not branch off into multiple sub-networks from one phone jack. The total cable length, including the 25' scale communication cables must not exceed 1500 feet. Standard 4-wire color-coded telephone cable can be used, however, it must meet the local building code requirements and meet NFPA requirements.

NOTE 4: The 12839300A 113 ohm Terminating Resistor **MUST BE INSTALLED BETWEEN THE GREEN AND RED TERMINALS OF THE PHONE JACK AT BOTH ENDS OF THE MAIN DATA CABLE.**

4. OPTIONAL KITS

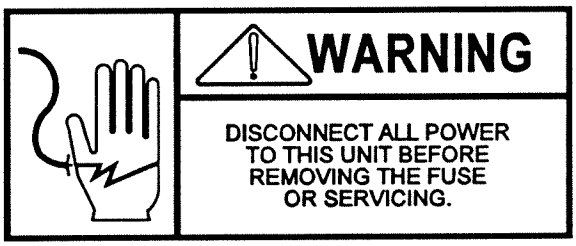
4.1 EXTRA TEXT KITS

When installing an Extra Text Kit in the 8422-2003/2103 or 8423-2003/2103, the software supporting extra text printing is standard in the scale (or if an older unit was updated with new software). However, the 13247000A Scale Adapter Harness supplied in all ET kits must be installed in the scale. When connecting to the 8422-2001/2100 or 8423-2001/2100, the scale software must be upgraded. To use the extra text capability, the Master Memory PCB EPROM's A24/A37 must be A13386300A/13386400A (Obsolete 4-D PLU Master), B13948200A/B13948300A (Current 4-Digit PLU EXP Master), 14047800A/14048000A (Current 6-Digit PLU EXP Master), or later versions that support extra text. The Satellite (Logic PCB) software should be B13246900A or later for the 8422/8423 4-Digit PLU, or 13546900A or later for the 6-Digit PLU versions.

The 0901-0267 Kit will convert a non-extra text 4-Digit Master/Satellite and a 315/325 Printer to use extra text. If the Master/Satellite already has the later software supporting extra text, the 0901-0278 Printer Conversion Kit will convert the printer to extra text capability.

The 0901-0267 or 0901-0278 Extra Text Kit will convert the standard 315/325 printer to allow printing the longer ET (Extra Text) type labels. When this kit is installed, the printer is referred to as an ***ET V1 Printer.*** (Note: when this kit is installed, the type H 1.5" and type HR 1.7" labels cannot be used.) When this kit is installed the printer can print the following label sizes:

1.9 in x 2.63 in (U, Bar Code)
2.1 in x 2.63 in (UL, Bar Code)
2.4 in x 2.63 in (5 lines ET with Package Code 0 only.)
3.3 in x 2.63 in
3.7 in x 2.63 in
4.2 in x 2.63 in
5.1 in x 2.63 in
Roll Stock x 2.63 in (Continuous Strip)



4.1.1 **FIRST, DISCONNECT POWER TO THE SCALE BY DISCONNECTING THE SCALE POWER CORD FROM THE AC OUTLET.** To gain access to the Logic PCB:

8422 Remove the scale platter and the two 1/8 inch socket head hex screws securing the spider. Remove the top cover screws.

8423 Remove the four Phillips head screws securing the top dead deck cover. Remove the dead cover.

Carefully lift the top cover from the base. Disconnect the top cover ground lug from the base. Disconnect the Load Cell harness and transformer harness from the Logic PCB, mounted to the top cover. The cover can then be placed upside-down on the counter. On master scales, the Memory PCB must be removed to allow access to the Logic PCB. To remove the Memory PCB, remove the four Phillips head screws securing the PCB's to the cover. (Figure 4.1).

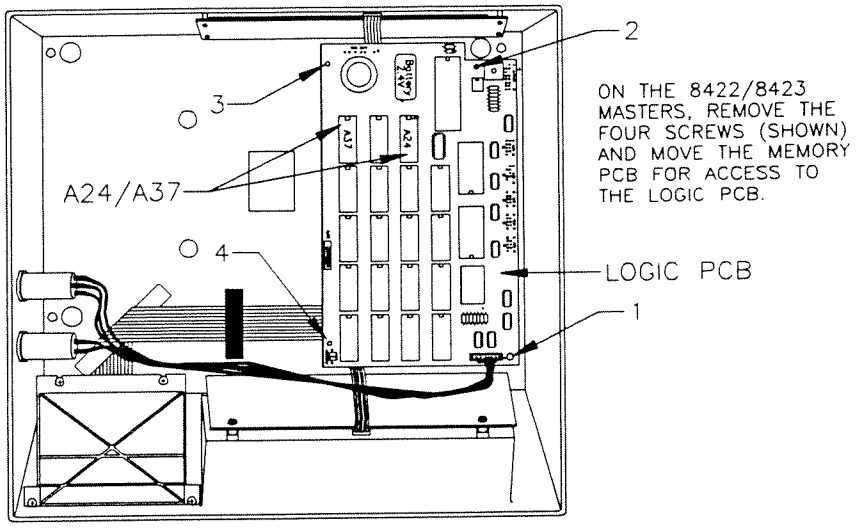


Figure 4.1 8422/8423 Master Memory PCB

4.1.2 If installing the 0901-0267 kit, install the new EPROM's at A24 and A37 on the Memory PCB. (A24 = *13948200A 4-D or *14047800A 6-D. A37 = *13948300A 4-D or *14048000A 6-D PLU.)

4.1.3 Disconnect the printer harness at connector J4 on the Logic PCB. (Figure 4.2)

4.1.4 Install the scale adapter harness, p\n 13247000A on the pins connector J4 on the Logic PCB. Connect the printer harness into the other end of the adapter, using the tie wrap to secure the connectors. (Figure 4.2).

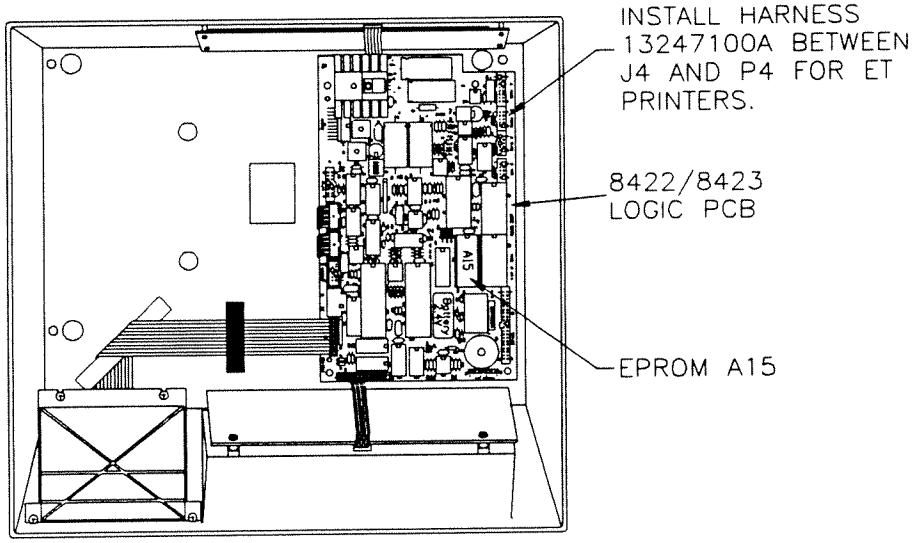


Figure 4.2 8422/8423 Logic PCB

4.1.5 If the 0901-0267 kit is being installed, replace the EPROM at A15 on the Logic PCB with the EPROM *13246900A from the kit.

4.1.6 Re-install the Memory PCB's (on Master Units), then reconnect all harnesses.

4.1.7 Re-install the top cover, spider, and platter on the 8422. Install the top cover but not the dead deck cover at this time on the 8423.

4.1.8 Refer to the installation instructions or the 325 Technical Manual TM000325R02 for printer conversion instructions. After installing the extra text kit in the 315/325, the printer now is referred to as an "Extra Text Version 1 Printer". When selecting the printer in the softswitch setup, answer **NO** the standard printers to display the new softswitch **EX TEXT V1 PTR**. If you answer **YES** to any standard printer, the new selection will not be shown in the softswitch setup. **(Note: When the extra text kit has been installed in the printer, and the EX TEXT V1 PTR has been selected in setup, the label size is set using the scale keyboard. The program switches in the printer no longer function to set the label size).**

4.1.9 Install the new extra text labels in the printer. **(NOTE: The H-1.5 and HR-1.7 inch labels cannot be used after installing the ET kit.)**

4.1.10 Reconnect AC power to the scale and printer.

4.1.11 Enter the Softswitch Setup mode. On the 8422/8423 place the setup switch (accessible through the hole in the left rear of the top cover) to **ON**.

4.1.12 Advance through the softswitches until you see the prompt for the first printer. Answer **NO** to all printers (314, 315, 314, 324, 325) until you see the prompt **"Ex Text V1 Ptr? No"** Answer **Y** to this selection. (Press **Yes** key on 8305 or press the slash "/" key on the 8422/8423 to toggle Y/N). Advance through the softswitches until the prompt **"Lbl Line 3 FMT?** is displayed. This is what will be printed on line three of the label. The selections are shown in Table 4-1. Enter the correct code, then advance to the end of the softswitches.

Format Code	Description
0	Line 3 blank.
1	Grade Only (23 characters max. 1.9 & 2.1 Labels Only)
2	Grade (23 Characters) and Pack Date (1.9 & 2.1 Labels Only)
3	Grade (23 Characters) and Sell-By Date (1.9 & 2.1 Labels Only)
4	Grade (23 Characters) and Eat-By Date (1.9 & 2.1 Labels Only)
5	Grade (14 Characters), Pack Date, and Sell-By Date (1.9 & 2.1 Labels Only)
6	Grade (14 Characters), Pack Date, and Eat-By Date (1.9 & 2.1 Labels Only)
7	Grade (14 Characters), Sell-By Date, and Eat-By Date (1.9 & 2.1 Labels Only)
8	Pack Date and Sell-By Date
9	Pack Date and Eat-By Date
10	Sell-By Date and Eat-By Date
11	Pack Date Only (1.9 & 2.1 Labels Only)
12	Sell-By Date Only
13	Eat-By Date Only

Table 4-1 Label Line 3 Format Codes

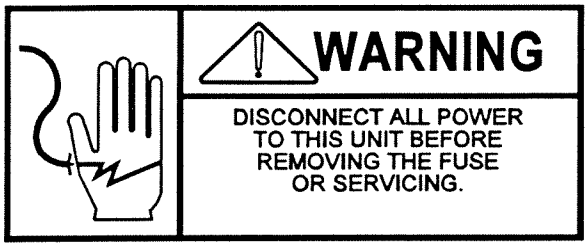
4.1.13 When the softswitch setup is complete, place the setup switch back to the **OFF** position. Next set the label size and delivery method.(Note: When the ET Printer is selected, the label size is now setup at the scale, not the printer.) At the READY mode (***Ready*** on scale display), press / **0** (slash then the zero digit key). When the prompt **CHANGE LBL SIZE?** displays, press **ENTER**. Select the delivery method (SET STRIPPED? and SET NOT STRIPPED?) by pressing the / (slash key) to toggle the selection, then press enter to accept the selection and advance. Press the / key to toggle through the label sizes, then press **ENTER** to accept the selection displayed. The scale will then return to **READY** mode. The scale and printer are then ready to operate.

4.2 EXPANDED MASTER MEMORY PCB KIT

The standard master 512k memory can be expanded to 1.5 Meg by installing the 1Meg Memory Expansion PCB Kit 0901-0313 for 4-Digit PLU's. To convert to a 6-Digit PLU master, the 0901-0313 kit, plus the 0901-0324 6-Digit PLU Software Conversion Kit is required. The 0901-0313 Kit consists of the following:

*13780500A	PCB, Expanded Memory PCB
*13781100A	External Battery
*13948200A	Eprom, A24 Master Memory PCB, 4-Digit PLU
*13948300A	Eprom, A37 Master Memory PCB, 4-Digit PLU
*13781500A	Installation Instructions

* = May have letter prefix



NOTE: IF THE MASTER CONTAINS A DATA FILE, FIRST BACKUP THE FILE USING DATABACK OR INTELLI-NET BEFORE PROCEEDING.

4.2.1 **FIRST, DISCONNECT POWER TO THE SCALE BY DISCONNECTING THE SCALE POWER CORD FROM THE AC OUTLET.** On the 8422, remove the scale platter and the two 1/8 inch socket head hex screws securing the spider then remove the top cover screws. On the 8423, remove the four top cover screws. Carefully lift the top cover from the base. Disconnect the top cover ground lug from the base. Disconnect the Load Cell harness and transformer harness from the Logic PCB, mounted to the top cover. The cover can then be placed upside-down on the counter.

4.2.2 Remove the EPROM's on the Master Memory PCB at locations A24 and A37. (Refer to Figure 4.3.) Install the new 4-D Memory Expansion EPROM *13948200A in A24, and the new *13948300A in A37.

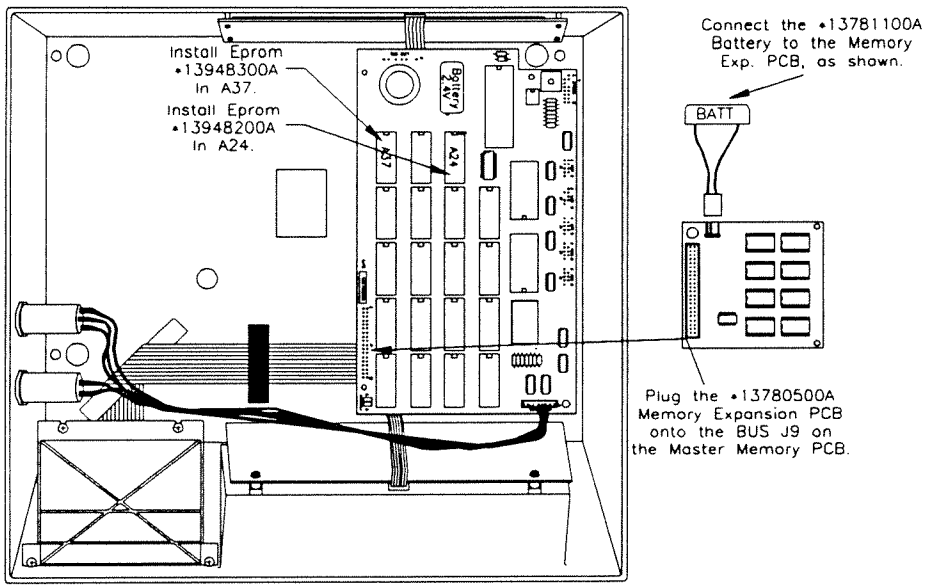


Figure 4.3 Installing Memory Expansion Kit

4.2.3 Install the *13781100A External Battery on the Memory Expansion PCB as shown in Figure 4.3.

4.2.4 Install the *13780500A Memory Expansion PCB on the Master Memory PCB BUS J9. (Figure 4.3).

4.2.5 Remove the backing paper from the tape attached to the battery. Mount the battery onto the top cover.

4.2.6 Reconnect all harnesses removed in the first step, then re-assemble the top cover, and spider/platter on the 8422.

4.2.7 Reconnect AC power, then turn the power switch to on. Allow the unit's On-Line indicator to illuminate before proceeding.

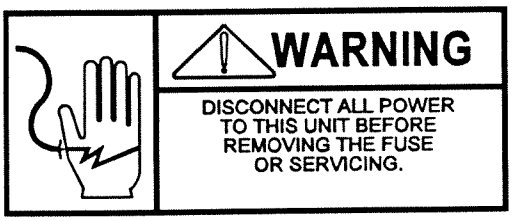
4.2.8 When the On-Line cursor is illuminated, enter the time/date and press ***Enter*** when asked to *Download PLUs?*. The unit must next be initialized as described in Section 2.6.

4.3 MASTER 6-DIGIT PLU UPGRADE KIT

The 0901-0324 Software Upgrade Kit will convert the standard 4-Digit PLU master to use 6-digit PLU numbers. The kit contains:

PART NUMBER	DESCRIPTION	QTY
*14047800A	EPROM A24	1
*14048000A	EPROM A37	1

To install the kit, follow these steps.



4.3.1 If the master does not currently contain a data file, skip to step 4.3.2. If the master contains a file that needs to be converted to the 6-digit database, first upload the PLU and ET files as a type-4 scale into Intelli-Net. Intelli-Net is required to convert the file from a 4-digit to a 6-digit PLU file.

4.3.2 After uploading the file, initialize the master (press ***F10-3*** or see Section 2.6.)

4.3.3 Disconnect power to the unit by unplugging the power cord from the outlet.

4.3.4 Remove the platter, spider, and top cover on the 8422, or the dead deck cover and top cover on the 8423 to gain access to the PCB's.

4.3.5 Using an IC extraction tool, remove the EPROM's from A24 and A37 on the Memory PCB. (See Figure 4.4)

4.3.6 Install the new EPROM's in the PCB. EPROM *14047800A at A24 and EPROM *14048000A at A37 (Figure 4.4)

4.3.7 Install the top cover, spider, and platter on the 8422, or the top cover and dead deck cover on the 8423.

4.3.8 Apply power to the unit by plugging the power cord into a properly grounded outlet, then switch the power switch to ON.

4.3.9 Initialize and configure the master. When asked for the number of RAM Banks, enter ***15*** for a standard master, or ***47*** if the optional 1 Meg Expansion PCB is installed. (Refer to Section 2.6 for additional information.) Download the files (if previously uploaded) from Intelli-Net as a type-6 scale.

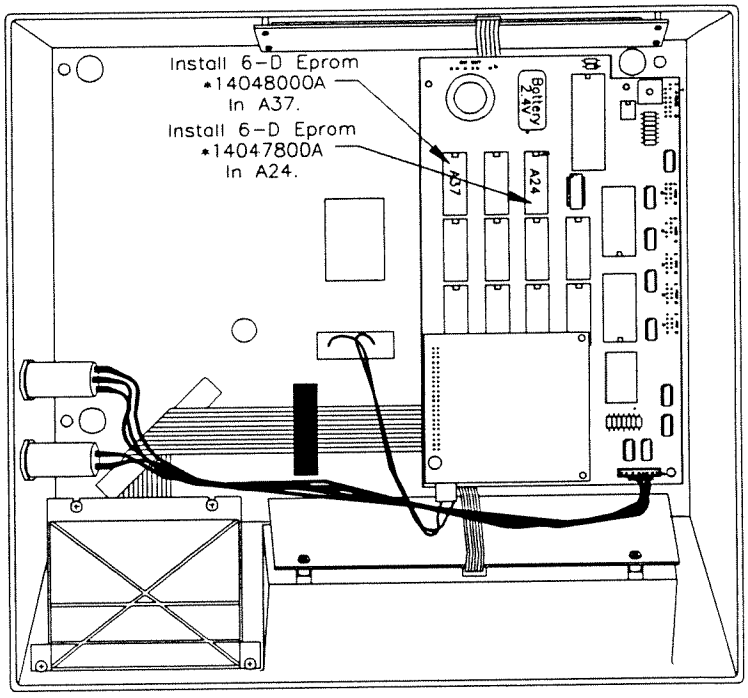


Figure 4.4 Installing 6-Digit PLU Master Software

4.4 MASTER NUTRIFACT UPGRADE

The Master Nutrifact Upgrade kit contains software to upgrade the 8422, 8423, or 8305 Masters to add nutrifact information. The upgraded master will support the standard 8422/8423/8305 satellites plus the 8427NF and 8460 Satellites. Nutrifact labels can be printed only by the 8427NF or 8460 V4/5 + Satellites. The kit contents are shown in Table 4-1 for the 0901-0369 4-Digit NF kit, and Table 4-2 for the 0901-0370 6-Digit NF kit.

PART NUMBER	DESCRIPTION	QTY
14443000A	Operator Instructions	1
14442200A	EPROM, A24	1
14442300A	EPROM, A37	1

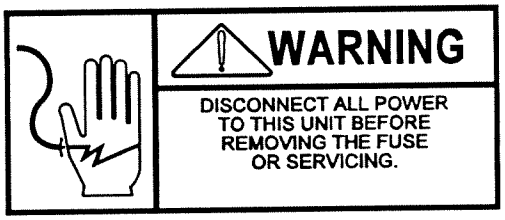
Table 4-1 0901-0369 4-Digit Master Kit Contents

PART NUMBER	DESCRIPTION	QTY
14443000A	Operator Instructions	1
14442800A	EPROM, A24	1
14442900A	EPROM, A37	1

Table 4-2 0901-0370 6-Digit Master Kit Contents

4.4.1 First Backup existing PLU/ET files (if any) using Databack or Intelli-Net. (Note: If converting from a 4-Digit PLU to 6-Digit PLU file, Intelli-Net must be used. After uploading the file into Intelli-Net, the master must be initialized.)

4.4.2 Disconnect AC power by removing the power cord from the outlet.



4.4.3 **8422** Remove the platter, spider, and top cover screws. Carefully lift the top cover off the base. The Memory PCB is the PCB visable on the inside top cover.

8423 Remove the dead deck cover and top cover screws. Carefully lift the top cover off the base. The Memory PCB is the PCB visable on the inside top cover.

4.4.4 Using an IC extraction tool, remove the EPROM's from locations A24 and A37 on the Memory PCB P/N *12895400A (Figure 4.5).

4.4.5 **4-Digit PLU Kit 0901-0369** - Install EPROM P/N *14442200A in socket A24, and EPROM P/N *14442300A in socket A37. (Figure 4.5) Make sure the orientation notches in the socket and the EPROM's are facing the same direction.

6-Digit PLU Kit 0901-0370 - Install EPROM P/N *14442800A in socket A24, and EPROM P/N *14442900A in socket A37. (Figure 4.5) Make sure the orientation notches in the socket and the EPROM's are facing the same direction.

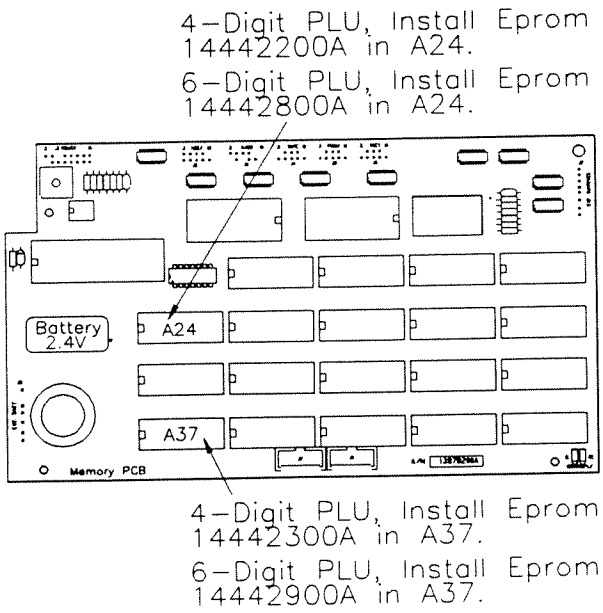


Figure 4.5 - Master Memory PCB

4.4.5 Re-install the cover, spider, and platter on the 8422 or the cover and dead deck on the 8423.

4.4.6 Connect the power cord to the AC outlet and turn the unit power on.

4.4.7 Initialize the master using the programming keyboard. (turn key to ***Local Change*** Position, then Press ***F10-3***. Initialization Password is now 8305. Refer to Section 2.6 for additional information.) When asked for number of RAM Banks, enter ***15*** for the standard 512k memory, or ***47*** if the optional 1 meg expansion is installed.

4.4.8 When initialization is complete, you will automatically enter into the ***Edit Configuration*** menu. Set the options as required and setup the host baud rate and ID to match Databack or Intelli-Net (refer to Section 2.7.) Restore any previously backed-up files using Databack or Intelli-Net.

4.4.9 The Nutrifact Master adds a new selection in the Edit Configuration to enable or disable remote 8427 price changes. In order to make room in the program for the nutrifacts capability, all reports have been removed. Nutrifacts cannot be created or edited at the master. Nutrifacts must be downloaded using Intelli-Net V4+. The nutrifact labels can be printed only with the 8427 satellites upgraded to nutrifact capability, or the 8460 V4/V5+ satellites. Refer to the Operator Instruction Sheet 144430 for additional information. The Nutrifact number is the same as the ET number. Both are 4-Digit.

4.5 PRESET KEYBOARD INSTALLATION

The 0901-0201 Preset Keyboard Kit contains the following parts:

PART NUMBER	DESCRIPTION	QTY
*12837900A	Hex Post	2
*12838400A	Clear Overlay	3
*12838500A	Graphic Overlay	3
*12839700A	Preset Keyboard	1
*12893900A	Front Foot	2
*11845600A	Rear Foot	2
*R0373100A	Lockwasher	2

4.5.1 To install the kit, first disconnect the power cord from the AC outlet.

4.5.2 Remove all four scale feet. (Note: On masters, the rear feet do not have to be changed.)

4.5.3 Install the new *11845600A Rear Feet on the satellite units. (Figure 4.6)

4.5.4 Mount the *12839700A keyboard assembly on the front of the scale using the two *12837900A hex posts and lockwashers where the front feet were removed. (Figure 4.6). Tighten the hex posts so the lockwashers make grounding contact with the scale base.

4.5.5 Install the new *12893900A Front Feet on the hex posts.

4.5.6 Connect the keyboard harness to the jack on the scale marked ***PRESET***.

4.5.7 Level the scale and adjust the angle of the keyboard. Tighten the hex screws to secure the keyboard.

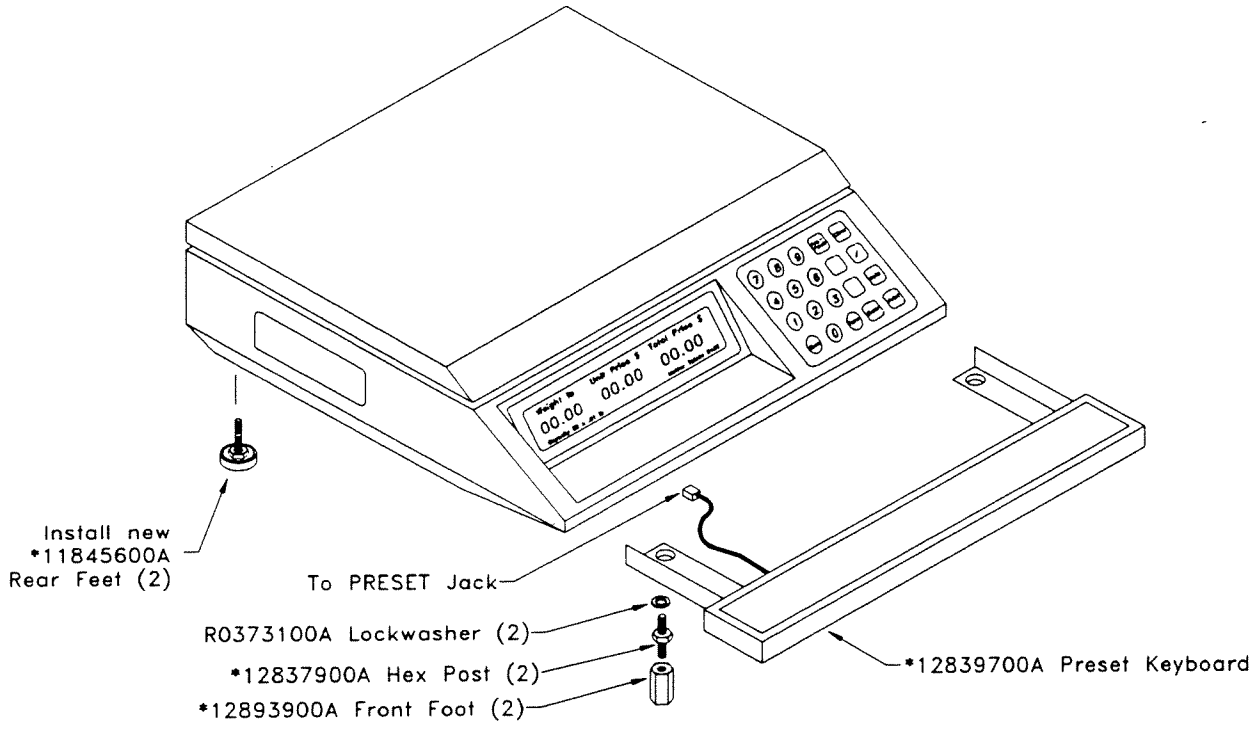


Figure 4.6 Preset Keyboard Installation

5. MASTER HOST COMMUNICATION & DATA BACKUP/RESTORE

5.1 OVERVIEW

The Mettler Toledo programmable scale line uses two types of interfaces for host communications: RS232, or Multidrop RS422. The RS232 interface is designed for communicating with a single device, up to 100 feet maximum cable length. If distances over 100 feet are required, an RS232 line driver can be used (available from various third party vendors), or the RS422 Interface can be used. Communicating to more than one device on the line requires Multidrop RS422. The RS422 interface allows communicating with up to 24 devices on a network, with a maximum recommended cable length of 1200 feet

5.2 RS232 INTERFACE

Single 8422M/8423M master scales can connect directly to the PC's RS232 serial port without the use of a converter (Figure 5.1). These scales use standard RS232 for host communications. The maximum recommended cable length between the scale and PC is 100 feet. If a distance greater than 100 feet is required, the Mettler Toledo RS232/RS422 Converter can be used to increase the maximum distance. Two converters will be required: one at the PC and one at the scale. By converting to RS422, cable lengths of up to 1200 feet are possible between the PC and scale. An alternative method when cable lengths over 100 feet are used is to use an RS232 Line Driver or line booster. Modules of this type are available from various electronics vendors.

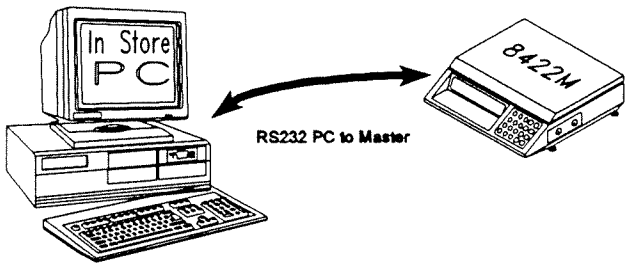


Figure 5.1 Single Master to PC

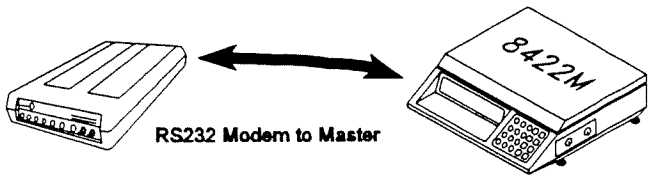


Figure 5.2 Remote Store Master Host Network

When a master scale is used at a remote store, modems are used at the PC and at the master scale at the remote store. ***Single*** 8422/8423 master scales can connect directly to a modem, as shown in Figure 5.2.

5.3 RS422 MULTIPLE SCALE INTERFACE

When more than one scale will be connected to a scale network, conversion from the PC's single device RS232 interface to an RS422 multidrop interface is required. In this case, the Mettler Toledo RS232/RS422 Converter will be required at the PC and at each 8422M or 8423M on the host network. Figure 5.3 shows an example local scale network with the different scale types connected on the network.

In an RS422 multidrop configuration, all of the scale host ports are wired to the common four-wire data cable that connects to the converter at the PC. The scales are identified by the host through the use of scale address numbers. The PC is always in direct control of communications by using the scale address to talk to a particular scale. In remote store applications, the modem is connected to the converter at the Remote Store instead of the PC, as shown in Figure 5.4. Up to 24 scales can be connected to a network in any one location. Maximum recommended cable length for the scale network is limited to 1200 feet including the scale drops.

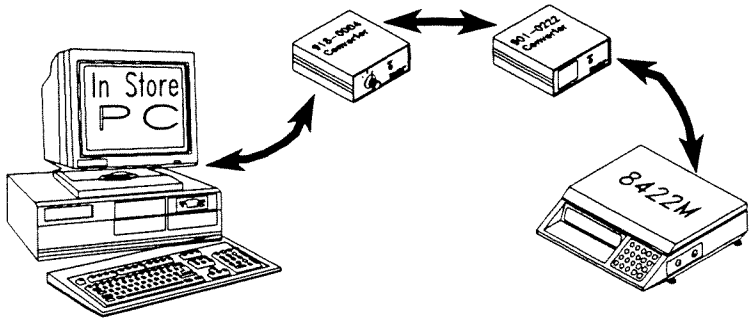


Figure 5.3 RS422 Host Network

5.4 0901-0222 MASTER SCALE CONVERTER KIT

The 0901-0222 kit is used to connect master scales to an RS422 multidrop scale network. The kit contents are shown in Table 5-1. (Note: This converter can be used at a PC or Modem by changing the internal jumper, as shown in Table 5-2.)

PART NUMBER	DESCRIPTION	QTY
13065600A	Cable, Converter to Master Scale (8422/84223/8305)	1
13065700A	Cable, J-Box to Converter	1
13065900A	J-Box Assembly	1
13554100A	RS232/RS422 Converter w/wall transformer	1

Table 5-1 Master Scale Converter Kit

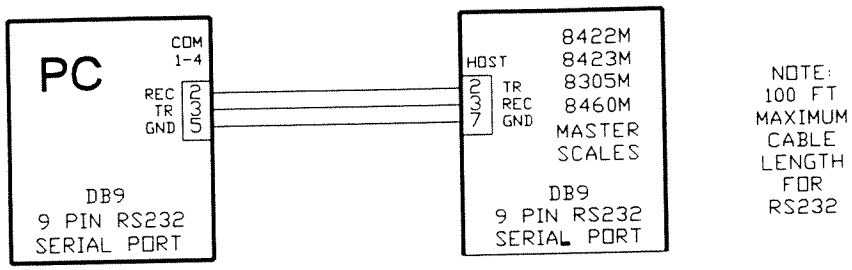
5.5 CONVERTER JUMPER SETTINGS

The Mettler Toledo RS232/RS422 Intelli-Net converter is sent from the factory with the internal jumper controlling the transmit line set for the intended application (based on the factory number.) If the converter is used for a different application, the internal configuration may need to be changed. The current converter uses a four position jumper to select the transmitter control status as shown in Table 5-2.

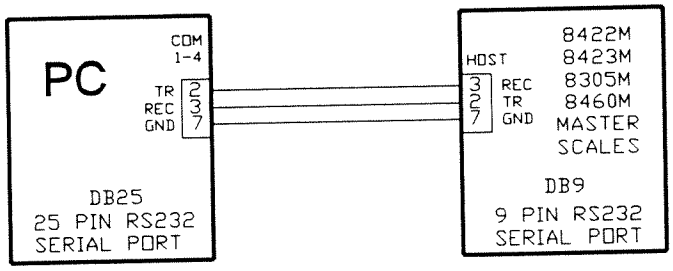
FACTORY #	CONFIGURATION	APPLICATION	JUMPER W1
0918-0004	Transmit Always ON	Host Computer	3 & 4 Shorted
0918-0006	Transmit Always ON	Modem	3 & 4 Shorted
0901-0222	RTS Controls Transmit	Master Scale	2 & 4 Shorted

Table 5-2 Converter Jumper Settings

5.6 SINGLE MASTER SCALE TO PC WIRING (Figure 5.5)



CABLE 0900-0241 (P/N 13065400A) 9 PIN SERIAL PORT TO MASTER 100 FT
CABLE 0900-0298 (P/N 14102700A) 9 PIN SERIAL PORT TO MASTER 25 FT
CABLE 0900-0285 (P/N 13816200A) 9 PIN SERIAL PORT TO MASTER 10 FT



CABLE 0900-0240 (P/N 13065500A) 25 PIN SERIAL PORT TO MASTER 100 FT
CABLE 0900-0297 (P/N 14102500A) 25 PIN SERIAL PORT TO MASTER 25 FT
CABLE 0900-0286 (P/N 13816300A) 25 PIN SERIAL PORT TO MASTER 10 FT

Figure 5.5 Master to PC RS232 Wiring

5.7 SINGLE MASTER SCALE TO MODEM WIRING (Figure 5.6)

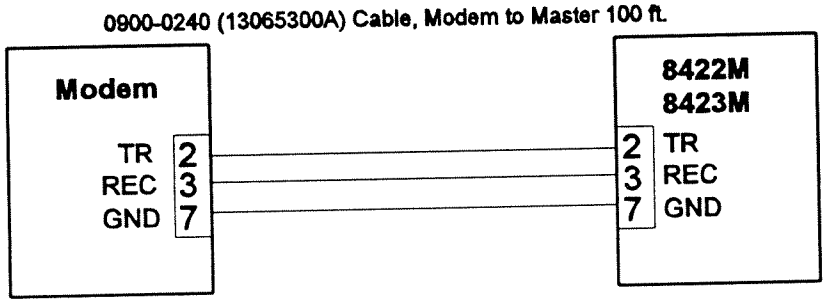


Figure 5.6 Master to Modem Wiring

5.8 HOST RS422 NETWORK WIRING (Figure 5.7)

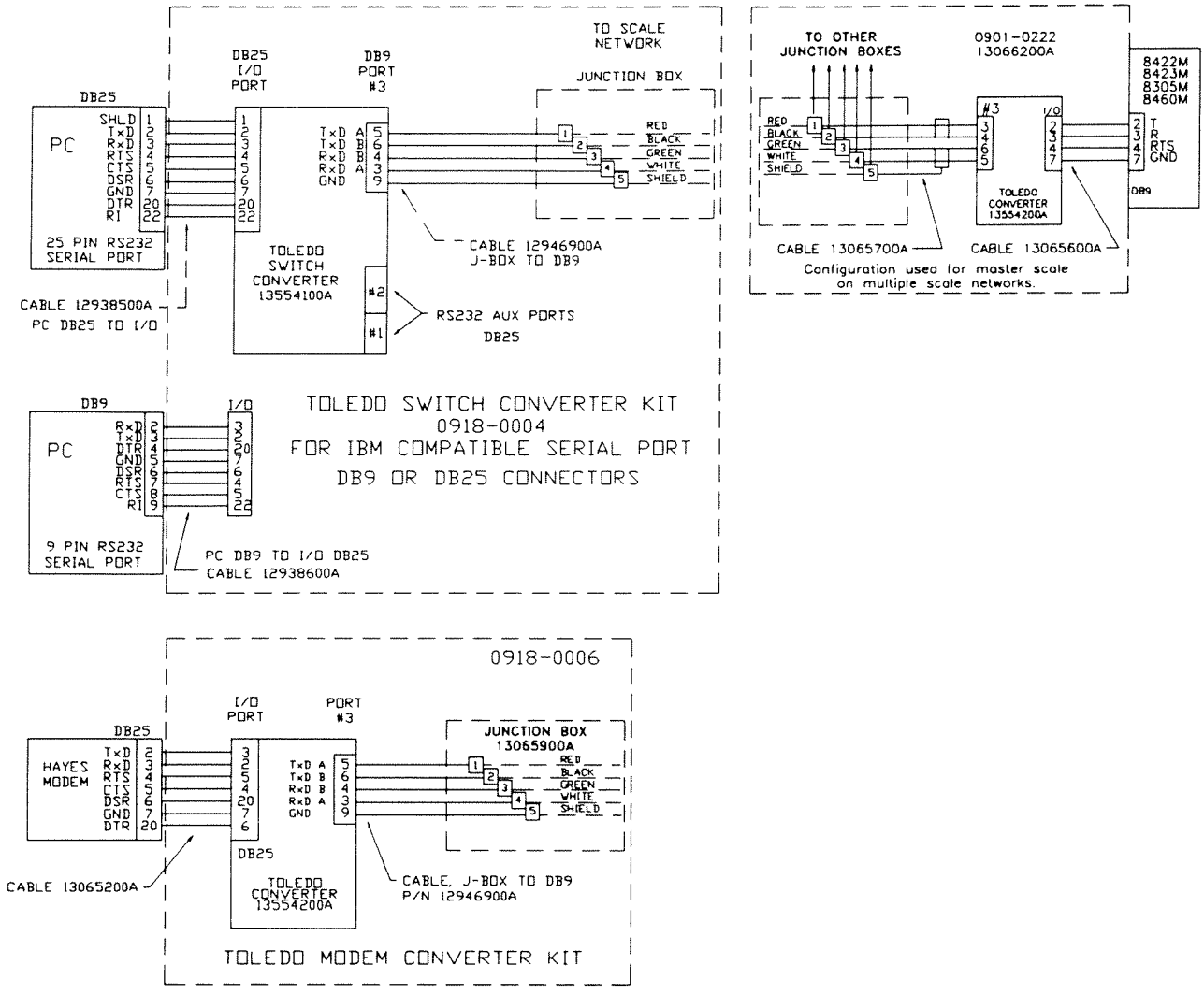


Figure 5.7 RS422 Host Network Wiring

5.9 MASTER SETUP

The following configuration must be performed on master scales when interfacing to **Intelli-Net**. Using the programming keyboard, turn the master keyswitch to Local Change. When ***SELECT FUNCTION*** is displayed, press **F10**, then **2** for ***EDIT CONFIGURATION***. Set the following softswitches in the master. (Note: If the On-Line Cursor is illuminated, but Select Function does not display, refer to Section 2.7.)

- **HOST I.D. NO.** The Host I.D. number must match the number used for the scale address number in **Intelli-Net** or **DataBack.**
- **HOST BAUD RATE XXXX** The baud rate must match the baud rate configured in **Intelli-Net** or **DataBack.** Valid selections are 1200, 2400, 4800, 9600, and 19200 baud. (Note: with the 1.5 Meg Master Software 13948200A/13948300A, 19,200 baud can be selected.)
- **HOST PARITY? EVEN** This is the default setting for use with **Intelli-Net** or **DataBack.**
- **HOST BUSY HI? NO** This is the default setting for use with **Intelli-Net** or **DataBack.**

5.10 MASTER BACKUP/RESTORE

The master PLU, Extra Text, and Nutrifacts files can be backed-up or restored using ***DataBack*** or ***Intelli-Net*** through the master's host port, or to a data cassette through the tape port. The preferred method is through the host port which can provide data checking while backup/restore is in progress. The tape method is not recommended with the 1.5 meg masters due to the time the tape takes to backup/restore the complete file and Nutrifact backup is not supported with tape. Intelli-Net Version 4 is required to support Nutrifacts in the NF Master Upgrade.

5.10.1 DATABACK

DataBack is a Mettler Toledo program desiged to run on an IBM PC or compatible computer. DataBack stores backup files on the PC's hard disk as DOS files. DataBack cannot be used to transfer files between different scale types. Files backed-up from an 8422/8423/8305 master can only be used to restore to the same scale types. DataBack uses the master's RS232 host port for communication. The Backup/Restore functions in the master operate in the background and do not take the master off-line with the satellites. Refer to the DataBack User's Guide for details on operation and setup.

5.10.2 INTELLI-NET

Intelli-Net is a Mettler Toledo program used for central file control. Intelli-Net requires an IBM PC or compatible computer running MS-DOS . Intelli-Net files are generic and can be uploaded or downloaded to different scale types by selecting the correct scale driver. The Type-4 Driver is used for 4-Digit PLU masters and Type-6 for 6-Digit PLU masters. Upload/Download functions in the master operate in the background and do not take the master off-line with the satellites. Refer to the Intelli-Net User's Guide for details on operation and setup.

5.10.3 TAPE RECORDER

Data files can be backed-up or restored from tape using the Mettler Toledo Data Cassette Recorder. Using the tape recorder with the 1.5 meg masters is not recommended due to the number of tapes and time required. With the standard 512k master, this procedure can take 30 minutes or more. No error checking is performed when transferring to tape. DataBack is the recommended method for a replacement for the tape recorder. While the tape recorder is backing-up or restoring, the master will be off-line with any connected satellites. (Note: the Data Recorder is obsolete and is no longer supported by Mettler Toledo.)

5.10.3.1 TRANSFERRING PLU FILES TO TAPE

When transferring files to the tape recorder, the master will be off-line with any satellites or host. The transfer can take over 30 minutes or more and use multiple tapes, depending on the number of files. Use a high bias 60 minute tape for recording. If the transfer is not complete after 27 minutes, the master will interrupt the transfer and prompt you to insert a new tape (or turn the tape over to record on side B.)

First, connect the tape recorder data plug to the master port marked ***TAPE*** on the connector bracket. (Refer to Section 1.2 for location of the ports.) Place the keyswitch on the master to the ***Local Change*** position. When ***SELECT FUNCTION*** displays, press ***F10-6***. The display will show ***DUMP PLU TO TAPE?*** Press ***Y*** to continue or ***N*** to abort. Next press ***Y*** to select ***ALL DEPARTMENTS,*** or ***N*** to select one department to transfer to tape. If ***N*** was selected, next enter the department number you wish to transfer to tape. When ***START RECORDER Y/N?*** displays, insert a high bias 60 minute cassette in the recorder and start record (press the ***Play & Record*** buttons.) Allow enough time for the tape to advance past the tape leader, then press ***Y*** on the programming keyboard, then ***ENTER*** to start the data transfer to tape. At this point, the display will show ***TRANSMITTING > TAPE*** while the data is transfered to the recorder. When the transfer is complete, the scale display will show ***TOTAL # PLU: ####***, indicating the number of PLU's transferred.

5.10.3.2 TRANSFERRING EXTRA TEXT FILES TO TAPE

When transferring files to the tape recorder, the master will be off-line with any satellites or host. The transfer can take over 30 minutes or more and use multiple tapes, depending on the number of files. Use a high bias 60 minute tape for recording. If the transfer is not complete after 27 minutes, the master will interrupt the transfer and prompt you to insert a new tape (or turn the tape over to record on side B.)

First, connect the tape recorder data plug to the master port marked ***TAPE*** on the connector bracket. (Refer to Section 1.2 for location of the ports.) Place the keyswitch on the master to the ***Local Change*** position. When ***SELECT FUNCTION*** displays, press ***F9-6***. The display will show ***DUMP TEXT TO TAPE?*** Press ***Y*** to continue or ***N*** to abort. (Note: Software 13386300A will ask ***EXPAND CHAIN TEXT?*** This is for compatibility with older fixed length ET software. Answer ***N*** if backup will be used with current variable length extra text software.) When ***START RECORDER Y/N?*** displays, insert a high bias 60 minute cassette in the recorder and start record (press the ***Play & Record*** buttons.) Allow enough time for the tape to advance past the tape leader, then press ***Y*** on the programming keyboard, then ***ENTER*** to start the data transfer to tape. At this point, the display will show ***TRANSMITTING > TAPE*** while the data is transfered to the recorder. When the transfer is complete, the scale display will show ***TOTAL # TEXT: ####,*** indicating the number of Extra Text Records transferred.

5.10.3.3 LOADING THE PLU FILE FROM TAPE

When loading files from the tape recorder, the master will be off-line with any satellites or host. The upload can take over 30 minutes or more and use multiple tapes, depending on the number of files.

First, connect the tape recorder data plug to the master port marked ***TAPE*** on the connector bracket. (Refer to Section 1.2 for location of the ports.) Place the keyswitch on the master to the ***Local Change*** position. When ***SELECT FUNCTION*** displays, press ***F10-7***. The display will show ***LOAD PLU FROM TAPE?*** Press ***Y*** to continue or ***N*** to abort. Next press ***Y*** to select ***ALL DEPARTMENTS,*** or ***N*** to select one department to transfer to tape. If ***N*** was selected, next enter the department number you wish to transfer to tape. When ***START RECORDER Y/N?*** displays, start the recordor (press the ***Play*** button.), then press ***Y*** on the programming keyboard, then ***ENTER*** to start the upload. At this point, the display will show ***RECEIVING FROM TAPE*** while the data is uploaded from the recorder. When the upload is complete, the scale display will show ***TOTAL # ET: ####,*** indicating the number of records received.

5.10.3.4 LOADING EXTRA TEXT FILES FROM TAPE

When loading files from the tape recorder, the master will be off-line with any satellites or host. The upload can take over 30 minutes or more and use multiple tapes, depending on the number of files.

First, connect the tape recorder data plug to the master port marked ***TAPE*** on the connector bracket. (Refer to Section 1.2 for location of the ports.) Place the keyswitch on the master to the ***Local Change*** position. When ***SELECT FUNCTION*** displays, press ***F9-7***. The display will show ***LOAD TEXT FRM TAPE?*** Press ***Y*** to continue or ***N*** to abort. When ***START RECORDER Y/N?*** displays, start the recorder (press the ***Play*** button), then press ***Y*** on the programming keyboard, then ***ENTER*** to start the upload. At this point, the display will show ***RECEIVING FROM TAPE*** while the data is uploaded from the recorder. When the upload is complete, the scale display will show ***TOTAL # TEXT: ####,*** indicating the number of Extra Text Records received.

6. ERROR MESSAGES & DIAGNOSTICS

6.1 SATELLITE ERROR MESSAGES

The satellite Logic PCB will display error messages on the unit's display under most conditions when an error occurs. Following is a list of possible error messages.

2681 DUART ERROR Bad 2681 (IC) Integrated Circuit. This IC is used during communications to the master scale. A failure of this type could cause loss of communications with the master scale. Cycle power. Replace Logic PCB if error continues.

BAD PTR COMM Data sent to the printer is invalid. A bad or invalid character may have been programmed into the PLU, or corrupt data sent to the printer. Cycle power to the scale. Download the satellite scale and retry the operation. Clear the store address line in the master and reenter. (Note: press TAB to completely clear the line before retyping data. If no store address is used, just press TAB on both lines to clear. After retyping information, download scale and retry printing.)

BELOW (Displayed in weight field.) Scale weight reading is below zero. Press the ***ZERO*** key. Cycle power, recalibrate. If error persists, suspect Digital Load Cell or Logic PCB.

CODE XX NOT FOUND The action code number entered for the marquee is not found in the master or is not the proper type for the scrolling marquee.

CONFIG FILE ERR Redo satellite setup and calibration. If problem persists, Replace Logic PCB.

COMMUNICATION ERROR Communications with the master has failed. Check other satellites. If all of the other satellites are working, perform the Power Supply tests and the Logic PCB test. If the problem persists, replace the Logic PCB. If other satellites are experiencing this problem, check the master and wiring.

DOWNLOAD ERROR An error occurred during the download of backup PLU information either at power up or at 2:00 AM (if scales are left on.) Master is off-line while attempting a download. When powering up master there is a few seconds delay when SSW INH RECORDS VRFY is set to NO. Wait until ON-LINE cursor is illuminated before attempting download. If master is off-line and error persists, check other satellites for on/off line conditions. If all other satellites are off-line, check master Memory PCB. If other satellites are on-line, check the satellite Logic PCB. Check TNET wiring and terminating resistors.

E2 Displayed while calibrating. Indicates insufficient test weight. Use a larger test load during calibration.

E3 Displayed while calibrating. Indicates load cell behind zero. Load cell may be damaged or defective. If recalibration does not correct the condition, replace either the Load Cell or the Logic PCB

INVALID TARE Tare value entered is too large. Use a smaller tare.

INVALID PRICE MODE Invalid data in modifier or package code fields during price change.

ITEM NOT FOUND Requested record for item number entered is not found in the master scale. If all files are suddenly not found check to see if your scale is setup for the correct department number (cycle power and reenter the correct department number). If the department number is correct and all files are still not found, disconnect communications line from

	scale and cycle power to scale to allow for use of the backup PLU information or manual mode operation. Check the other satellites. If all other satellites are working, replace the Logic PCB.
KBD/DSP ERROR	This error indicates the microprocessor did not reset the interface chip to the display and keyboard. Cycle power to the unit. If the problem persists, perform Power Supply tests and Logic PCB tests in the Troubleshooting Section, then replace the Logic PCB.
LOCAL PLU BCC ERR	Satellite Backup PLU contains bad data. If the problem persists, enter a PLU number that does not exist. This will allow manual entry method to be used. If manual operation works, cycle power and redo download. If problem persists, perform Power Supply tests and the Logic PCB tests. Check the backup battery voltage. If the battery is good and the problem persists, replace the Logic PCB.
PLU NOT FOUND	Requested record for PLU number entered is not found in the master scale. If no files are found, check the unit department number (cycle power and reenter the correct department number). If department number is correct and all files are still not found, disconnect communications line from scale and cycle power to scale to allow for use of the backup PLU information or manual mode operation. Check the other satellites. If all other satellites are working, replace the Logic PCB.
RECEIVE INVALID PLU	PLU received from master contains invalid data for this scale. Check PLU in master er for invalid data. Make sure master and satellite have correct 4-digit or 6-digit PLU software. This error will also show up if the satellite is set up in metric mode, and an invalid tare is programmed. Metric tare must end in either 0 or 5. If the problem persists and other satellites are working correctly, replace the Logic PCB.
TOO MANY NUM	Too many digits entered for a count entry. Enter a smaller number for the count.
LOADCELL ERROR	Load cell failure or bad connection. After performing the Power Supply and Load Cell output tests, and recalibration does not correct the condition replace either the Load Cell or Logic PCB. On the 8423, also check the Buffer PCB's, the interconnecting cables, and internal harnesses.
NO PTR COMM	Printer is not communicating to the scale. Verify the correct printer is selected in setup. Refer to the printer manual for troubleshooting printer.
NO EX TXT FOUND	The extra text number specified in the PLU called from the satellite scale was not found in the master. Check the programmed PLU to insure it is correct and that the extra text is programmed.
NVRAM ERROR	Non-volatile RAM error. This error indicates that the setup of the scale has changed. This error can sometimes be corrected by checking the setup of the scale or by recalibrating the scale. If errors persist after performing the Power Supply tests and the Logic PCB tests, replace the logic PCB.
NVROM SUM ERR	XICOR NVMEM checksum error. Cycle power. Replace Logic PCB if error continues.
OVER	Displayed in weight field. Weight on scale exceeds full capacity. Remove weight from scale platter. If error displays with no weight on platter, cycle power, recalibrate. If error persists, suspect Digital Load Cell or Logic PCB.
PROM SUM ERR	EPROM checksum error. This message is displayed when the checksum calculated by the microprocessor does not match the checksum programmed in the EPROM. This could be caused by an incorrect EPROM, incorrectly programmed EPROM, or an incorrectly installed EPROM. Perform a visual inspection of the EPROM looking for a

misaligned EPROM or a possible bent pin. If a visual inspection confirms the EPROM is correctly installed and the EPROM part number is correct, replace the EPROM.

RAM 1 ERR External RAM 1 failure. This error indicates that an external RAM IC has failed. After performing the Power Supply tests and the Logic PCB tests, replace the Logic PCB.

SCALE REQUEST ERR The master is not responding during programming with the scale keyboard. Check master on-line status. If master is otherwise functioning, replace Logic PCB for test.

TOTALS$>999.99 Total dollar value is too large to be printed in space allowed on label. It has been noted that the take label sensor can cause this error. Clear off-line totals (/1, ENTER, then CLEAR.)

WRONG PLU REC Invalid PLU record received from the master. Clear and retry operation. If the satellite is Off-line, backup table may be corrupt, or department number may have changed. Cycle power, download, and retry. This error can also be caused by a mismatched setup or software such as mixing a 4-Digit PLU master with a 6-Digit PLU satellite. Additionally, if a master is setup in KG mode and the satellite in LB mode, this error can occur.

WRONG ITEM REC The wrong Item record was received from the master. Clear and retry operation. If satellite is Off-line, backup table may be corrupt, or department number may have changed. Cycle power, download, and retry.

6.2 MASTER DISPLAYED ERROR MESSAGES

The following error messages may display on the scale while in the master editor only. (Keyswitch in Local Change Position or Remote Change Position.)

ADD REC ERR Master is unable to add a record. Check for bad records in Diagnostics. If no bad records are found and the problem still exists, reinitialize and reload data files.

DELETE REC ERR Master is unable to delete requested record. Check for bad records in Diagnostics. If no bad records are found and the problem still exists, reinitialize and reload data files.

FILE READ ERROR Master is unable to retrieve data. RAM may be corrupt, or bad records may exist. Check for bad records and run diagnostics if needed. If no bad records are found and the problem still exists, reinitialize and reload data files.

FILE WRITE ERROR Master is unable to accept entered data. RAM may be corrupt, or bad records may exist. Check for bad records and run diagnostics if needed. If no bad records are found and the problem still exists, reinitialize and reload data files.

INVALID ENTRY Incorrect value entered for data field type.

INVALID PRICE MODE Incorrect value entered for modifier or package code fields. Valid values for modifier in By-Count/Lb-For/Std Pack are 1-99. Valid value for Fraction Package Code 2 are 2 or 4. Valid values for package code are 0-3.

MEMORY FULL Check memory space by using specifications in Section 1. If deleting/modifying Extra Text or NutriFacts, you must periodically compress the memory to free up space. Refer to Section 65 for Compress Memory Function. If using a standard 512k master, a 1 meg expansion can be added to the memory.

PLU NOT FOUND	PLU does not exist in the current department. Check department number. If correct, check the master. If no files exist, check master battery. Download file to the master. If the master Memory PCB does not hold the data, replace the Memory PCB.
DUPLICATE ITEM NO	When in item entry mode, duplicate item numbers are not allowed.
DUPLICATE PLU NO	PLU numbers cannot be duplicated in the same department.
DUMP PLU REC ERR	Error found in RAM memory when loading/transferring PLU file to/from tape. Possible defective recorder, tape, or Memory PCB.
DUMP TEXT REC ERR	Error found in RAM memory when loading/transferring Extra Text file to/from tape. Possible defective recorder, tape, or Memory PCB.

6.3 MASTER PRINTED ERROR MESSAGES

On power-up, the master will output status information to the report printer port. The information shows the EPROM part numbers and checksum for A24/A37 on the Master Memory PCB, and will show records verification for the various data file tables in memory. In the event of a problem (if the master is able), it may print out the following error messages on the master report printer during the POST (Power On Self Test). The messages print out on the report printer rather than the scale display because the satellite Logic PCB is in control of the displays at power up. The POST status report should be checked if there is a suspected problem with the master. If a printer is not available, a PC can be used in place of the printer. Use a communication program such as ComTool to capture and display the POST information.

SYSTEM CONFIGURATION ERROR	Master configuration data is corrupt. Redo setup by starting the master editor and selecting ***F10-2***. If the problem still exists, reinitialize master and reload data files.
ROM CHECK ERROR	EPROM checksum error. Cycle power again. If problem persists EPROM A24 or A37 may have failed.
INTERNAL RAM CHECK ERROR	Memory PCB RAM verification failed. Cycle power again. If the problem persists try initializing master memory if entry into the master editor is possible. Check backup battery voltage on Memory PCB. Replace Master Memory PCB if the problem persists.
EXTERNAL RAM CHECK ERROR	Memory PCB RAM verification failed. Cycle power again. If problem persists try initializing master memory if entry into the master editor is possible. Check backup battery voltage on Memory PCB. Replace Master Memory PCB if problem persists.
UART ERROR	TNET Transmitter/Receiver IC failure. Cycle power again. If problem persists, replace Memory PCB.
BAD RAM A*XX*	Error in RAM IC at location ***XX***. Cycle power again. If problem persists, replace Memory PCB.
BAD RECORD NO: *XXXX*	Checksum error at memory location ***XXXX***. Corrupt PLU/ET records refer to Section 6.4 on Bad Records. If this error comes up, note under which caption it is printed. Corrupt PLU record reports will be printed under the cation *Verifying PLU Records*, etc.

6.4 BAD RECORDS

Bad records are locations in the RAM memory that contain invalid data. On power-up, the RAM Master Memory PCB performs a POST (power on self test, when enabled) which verifies data programmed in the RAM memory. If a corruption in the PLU file is detected, a **Bad Record No: XXXX** will be printed on the master's line printer.

You may see the following symptoms when performing various file maintenance functions that can be related to bad records.

1. Inability to clear PLU totals.
2. Host interface problems uploading/downloading files or totals.
3. Lockup or errors when adding new records.
4. File Read/Write Errors
5. Transmit to tape errors.
6. COMM ERROR downloading to second master.
7. Reporting incorrect totals data.

The following procedures can be used to clear bad records based on the software version.

* **EPROM A24 P/N *139482** or later (w/1.5 meg support) use the Clear Function in Diagnostic Mode. If there are problems with the Clear Bad Recorders Function, use the DataBack or Tape Recorder methods.

* **EPROM A24 P/N *13386300A** or earlier, use DataBack, Tape Recorder, or Diagnostic Calculation mode.

6.4.1 CLEAR BAD RECORDS/RECORDS CHECK FUNCTIONS

With the release of the 1.5 meg memory PCB, a new function has been added in the Diagnostic Menu to clean up bad records. To use this new function, turn the master keyswitch to ***Local Change***. When ***SELECT FUNCTION*** displays, press ***F10*** then ***5***. When ***DIAGNOSTIC SYSTEM?*** displays, press ***Y*** to enter the Diagnostic System Menu, or ***N*** to exit. The following prompts will display:

DELETE BAD RECRD? This function allows for deletion of bad records either one at a time, or to delete all bad records. Press ***Y*** to continue and present the next prompt, or ***N*** to exit.

DELETE ALL BAD R? If you answer ***Y*** to this prompt, the scale will proceed to delete all bad records. Answer ***Y*** to clean up the entire database under most conditions. If you answer ***N*** to this prompt, the scale will present the next prompt.

DELETE REC NO? If you answer ***Y*** to this prompt, the scale will delete the current bad record. This gives you the opportunity to selectively delete bad records.

RECORDS CHECK? Answer ***Y*** to force records check immediately. Answer ***N*** to bypass records check.

COMPRESS MEMORY? Answer ***Y*** to force memory compression to occur immediately. Answer ***N*** to bypass memory compress. When deleting and modifying Extra Text records, this function should be performed periodically to free up memory.

DEL ALL EXT TEXT? Answer ***Y*** to delete all of the extra text contained in the scale. Answer ***N*** to bypass extra text deletion.

6.4.2 DIAGNOSTIC CALCULATION MODE

This procedure can be performed to clear bad PLU records (only) on units without the Clear Bad Records Feature on software *13386300A and earlier. (Note: A master report printer and Programming Keyboard are required to perform this procedure.)

✓ Power up the master and observe the status messages printed on the report printer. Corruptions in the memory will be indicated by **BAD RECORD NO: XXXX** on the printed status report.

✓ Multiply the Bad Record Number by two, then add 192. (Example: Bad record # 1185. (1185 x 2) + 192 = 2562). Compute this value for each bad record number reported. (Bankram# = (BadRec# x 2) + 192)

✓ Set the master keyswitch to ***Local Change***, and press ***F10*** then ***5*** on the programming keyboard. Answer the prompts as follows:

```
DIAGNOSTIC SYSTEM?  Y
COMPRESS MEMORY?    N
RECORDS CHECK ?     N
H/W RAMS CHECK?     N
DUMP BANKRAM?       Y
STARTING PG#:       (Enter Bankram# value computed in step 2.)
# OF PAGES?        2 (Always enter 2)
```

✓ The record will then print on the line printer in the following format:

```
        BNKRAM PAGE # = 0A02
  37 09 00 B1 32 00 20 29 01 00 03 00 03 06 00   7..2.).........
  00 00   00 00 00 00 00 00 00 00 00 00 00 00   ..............
  00 00   00 00 00 00 00 00 00 00 00 00 00 00   ..............
  00 00   00 00 00 00 00 00 00 00 00 00 00 00   ..............
          DEPT# 00
          PLU# 0937
```

The PLU number is shown in the first two columns in reverse order.(37 = tens and units, and 09 = thousands and hundreds position) The department is show in column three. In the above example, the PLU number is **0937** in department **00**. Perform step 3 for each Bankram# you computed in step 2.

✓ Once the PLU number(s) are known, delete the PLU's using function ***F3-2***. If an invalid PLU number is printed on the report, (ex: FF FF or 00 00), the bad record cannot be deleted using this method. In this case, transfer the file to DataBack (or to the tape recorder) which will strip out invalid records. Then load the data file back into the master.

6.5 MASTER COMPRESS MEMORY

On units with software *13948300A or later, (supporting the 1.5 meg memory PCB), a new function has been added in the Diagnostic Menu to compress memory. This function must be performed periodically to free up allocated memory space held by deleted and modified Extra Text, NutriFacts, and Graphics files. To use this new function, turn the master keyswitch to ***Local Change***. When ***SELECT FUNCTION*** displays, press ***F10*** then ***5***. When ***DIAGNOSTIC SYSTEM?*** displays, press ***Y*** to enter the Diagnostic System Menu, or ***N*** to exit. Answer ***N*** to the prompts until ***COMPRESS MEMORY?*** is displayed. Answer***Y*** to compress memory.

During memory compression, if an extra text record is detected as bad, the report printer will print a message similar to: **[BAD RECORD NO: 00001]**. This is the actual extra text number of the bad record and can be deleted using function ***F9-2 Delete Extra Text***. If the extra text area of memory is more extensively damaged all of the bad extra text records will be merged into a "dummy" but valid extra text record. The error message printed on the report printer is: **BAD EXTRA TEXT MEMORY AT ADDRESS FF1E, PERFORMING FIX UP...** This "dummy" extra text record should be deleted.

7. TROUBLESHOOTING

7.1 TROUBLESHOOTING GUIDE

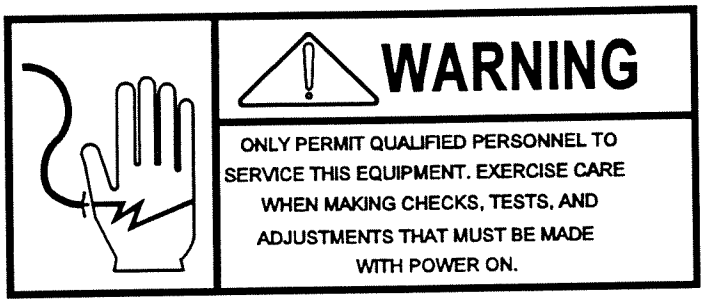
SYMPTOM	CORRECTIVE ACTION
Losing Time/Date & Backup PLU's when power switch is turned off.	Logic PCB On-board battery may be defective. Add an external battery kit #13394300A for Logic PCB.
Master locks up when making price changes.	Report printer is off-line, turned off, out of paper, etc. If no report printer is connected, the printer busy softswitch in Edit Configuration must be set to ***PRINTER BUSY HIGH? YES***.
NO PTR COMM error.	Label printer is not responding. Check satellite setup for correct printer. Check printer cable and printer. If an ET/SH kit was just installed, ensure jumpers are set correctly and adapter harnesses have been installed in both scale and printer. Check printer and verify test label can be printed. Connect printer to another scale. If problem moves with printer, refer to printer technical manual for troubleshooting. If printer works with another scale, check scale Logic PCB and internal harnesses.
BAD PTR COMM error.	Label Printer error in data received from scale. Cycle scale and printer power and press *ENTER* when *DOWNLOAD PLU?* displays. Retry printing. If problem persists, first clear both lines of the store address in the master editor by pressing the *TAB* key on line one and line two. Redo download. If problem persists, redo grades and retry. Add a new PLU (and ET) and retry. Unprintable characters in description or ET can also cause this symptom.
Scale won't zero. ***SET ZERO*** displays.	Check scale platter for obstructions. Recalibrate scale. If scale cannot be calibrated, check power supply voltages, and +20VDC supply to DLC. Replace Power Supply or Logic PCB if required. If ok, check load cell, interconnecting harnesses, and Buffer PCB's on 8423.
Scale won't calibrate or displays errors when calibrating.	On 8423, check the interconnecting cable and Buffer PCB's. Check +20 VDC supply to load cell on the Logic PCB. Replace load cell or Logic PCB.
PLU NOT FOUND displays when calling up a PLU record.	Check satellite department setting (on power-up). Reset to correct department. Otherwise, check Master Memory PCB for data loss. Check Master Memory PCB backup battery. Replace with 13393700A External Battery if voltage is low. Initialize, reload program and retry. If memory is lost again, replace Master Memory PCB.
DOWNLOAD ERROR when attempting to download at power up.	Make sure the on-line cursor is on before pressing *ENTER*. There is a delay on power up while master performs a records check (unless disabled in Edit Configuration.) If On-line cursor does not turn on, cycle power and retry. Are other satellites On-line? Check for duplicate Scale ID's. If master does not come On-line, check Master Memory PCB.
Satellite goes On-line/Off-line or one or more units at a certain location is off line.	Check for duplicate Scale ID numbers. Check TNET wiring and terminating resistors. See Section 3 on Wiring Specifications. Make sure only ***Unshielded phone cable*** is used for the master/satellite wiring. See TNET Wiring under Section 7.

SELECT FUNCTION does not display when keyswitch is in Local Change position.	Is On-line cursor on? If the cursor is not illuminated, there is no communication between Logic PCB and Master Memory PCB. Are other satellites On-line? Check for duplicate Scale ID numbers. If On-line cursor is on, the Scale ID may have been changed or lost on Master Memory PCB. This may also happen when replacing a new Logic PCB before resetting the ID number. Disconnect master from TNET, turn keylock switch to *LOCAL CHANGE,* then press and hold *CTRL-SHIFT-2* for a few seconds, then press *ESC* to reset (Refer to Section 2.7.)
Master responds slowly during price editing (no report printer is connected.)	Even when no report printer is connected, the master still outputs data to the line printer port. If the printer baud rate is set to 300, change to 9600 baud.
Master goes Off-line when connecting tape recorder or host.	Problems with AC power wiring, or TNET wiring can affect network operation. (EX: reversed AC H or N, bad ground, short in TNET, etc.)
A high weight prints on the label intermittently.	Check DLC to Buffer PCB connections and interconnecting cable for bad connections.
Blank display with power switch ON.	Are both displays blank on 8422? Check AC outlet power. Check main fuse on scale. Check interconnecting harnesses. Check power supply voltages. If ok, replace Logic PCB.
Dim display segments.	Check AC power and scale transformer voltages. If ok, replace Display PCB or Logic PCB.
Specific dots on display blank or dim.	Check interconnecting harnesses. Replace Display PCB.
Keyboard inoperative.	Check keyboard to Logic PCB connections. If ok, replace keyboard.
Master Memory is lost when power switch is turned off.	Check Master Memory PCB battery voltage. Add 13781100A battery if necessary. Initialize and reload data files. Cycle power. If memory is lost again, replace Master Memory PCB. (Note: When first installing a new scale or Master Memory PCB, allow a minimum of 8 hours to recharge the onboard battery before turning power switch off.)
Memory Full errors.	Run Compress Memory first (Section 6.5), then run Records Check (Section 6.4.1) to determine the amount of free memory left.
Inconsistant upload/download from host computer. Inability to clear totals or file read errors relating to totals.	Run Records Check function (section 6.4.1). If bad records are reported, refer to Section 6.4.

7.2 TESTING TRANSFORMER VOLTAGE

The AC transformer supplies voltage to the Logic PCB that converts the voltage to regulated DC voltages for distribution to other components.

To check the voltage at the transformer, first disconnect the line cord from AC power, then remove the top cover. Next unplug the connector from the transformer to the Logic PCB at J2.



Connect the power cord to AC power, then turn the power switch to ON. Check the voltage on connector P2 at the following test points. Figure 7.1 shows the location of pins on connector P2.

VOLTAGE	TEST POINT	ACCEPTABLE RANGE
18 VAC	PJ2-5 to PJ2-7	15.3 to 19.8 VAC
10 VAC	PJ2-3 to PJ2-8	8.5 to 11.0 VAC
10 VAC	PJ2-13 to PJ2-8	8.5 to 11.0 VAC
20 VAC	PJ2-12 to PJ2-14	17.0 to 22.0 VAC
30 VAC	PJ2-10 to PJ2-14	25.5 to 33.0 VAC

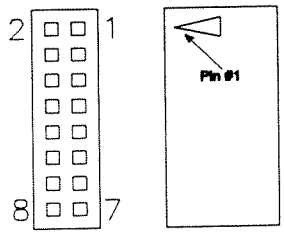
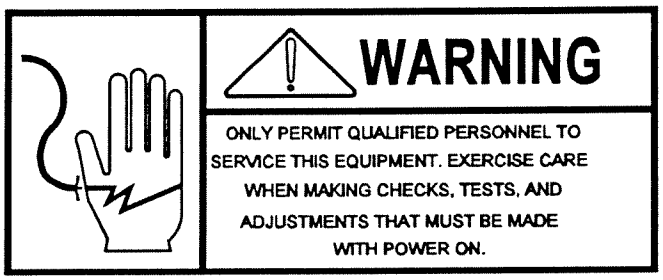


Figure 7.1 Connector P2

If all transformer voltages are zero, check the main fuse and AC power to the outlet. The AC power must be in the acceptable tolerance range between 102 and 132 VAC for transformer secondary outputs to be in the acceptable range. The AC input can affect the output voltages. If any secondary outputs are out of the acceptable range (and the input AC voltage is in the acceptable range) replace the transformer.

7.3 LOGIC PCB VOLTAGES

Figure 7.2 illustrates the voltage test points on the Master Memory PCB. If transformer voltages are within the acceptable range, but the voltages on the Logic PCB are not within the acceptable range, replace the Logic PCB.



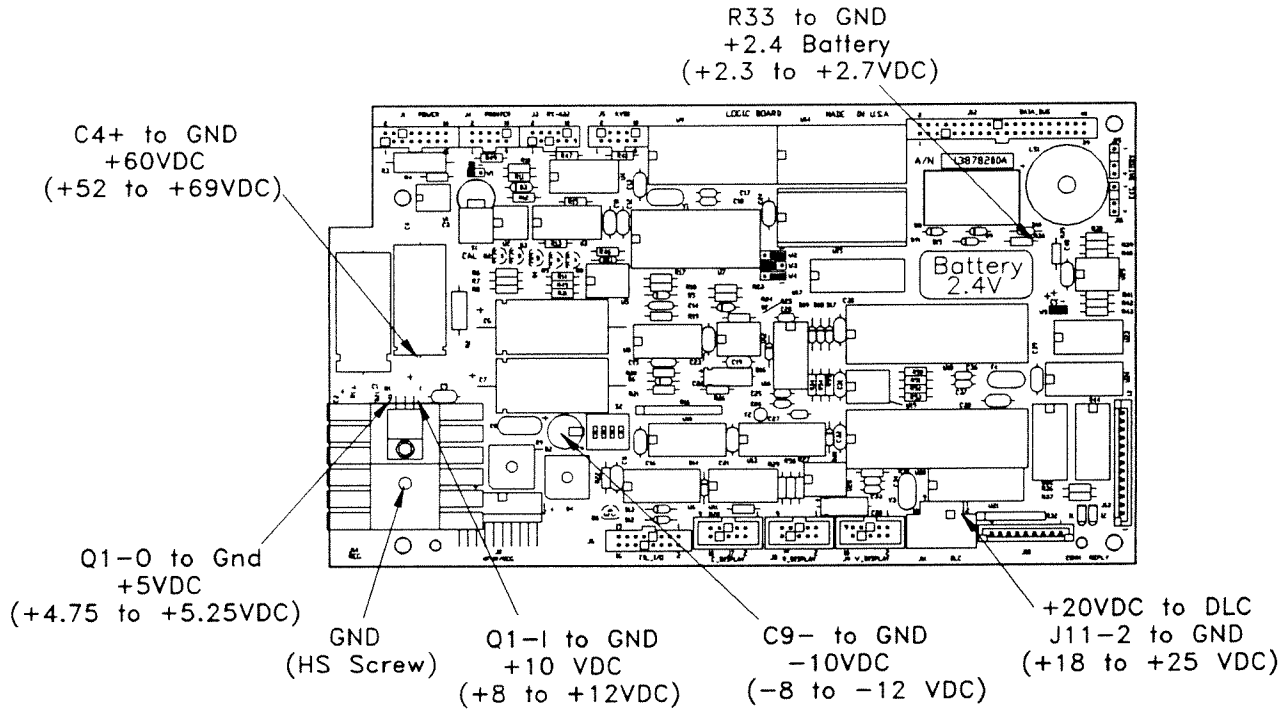
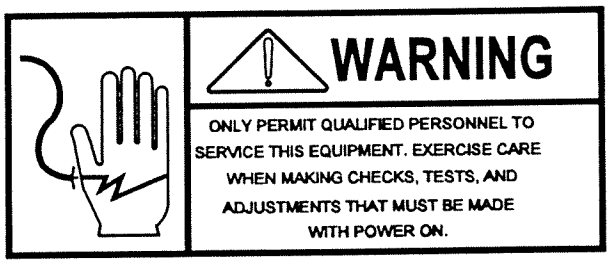


Figure 7.2 Logic PCB Voltage Test Points

7.4 MASTER MEMORY PCB VOLTAGES

Figure 7.3 illustrates voltage test points on the Master Memory PCB. The Logic PCB supplies power to the Master Memory PCB. If the 10VAC or +10VDC is not within acceptable range, check the voltage on the Logic PCB. If the voltages on the Logic PCB are within acceptable range, but are not within the acceptable range on the Master Memory PCB, replace the Master Memory PCB.



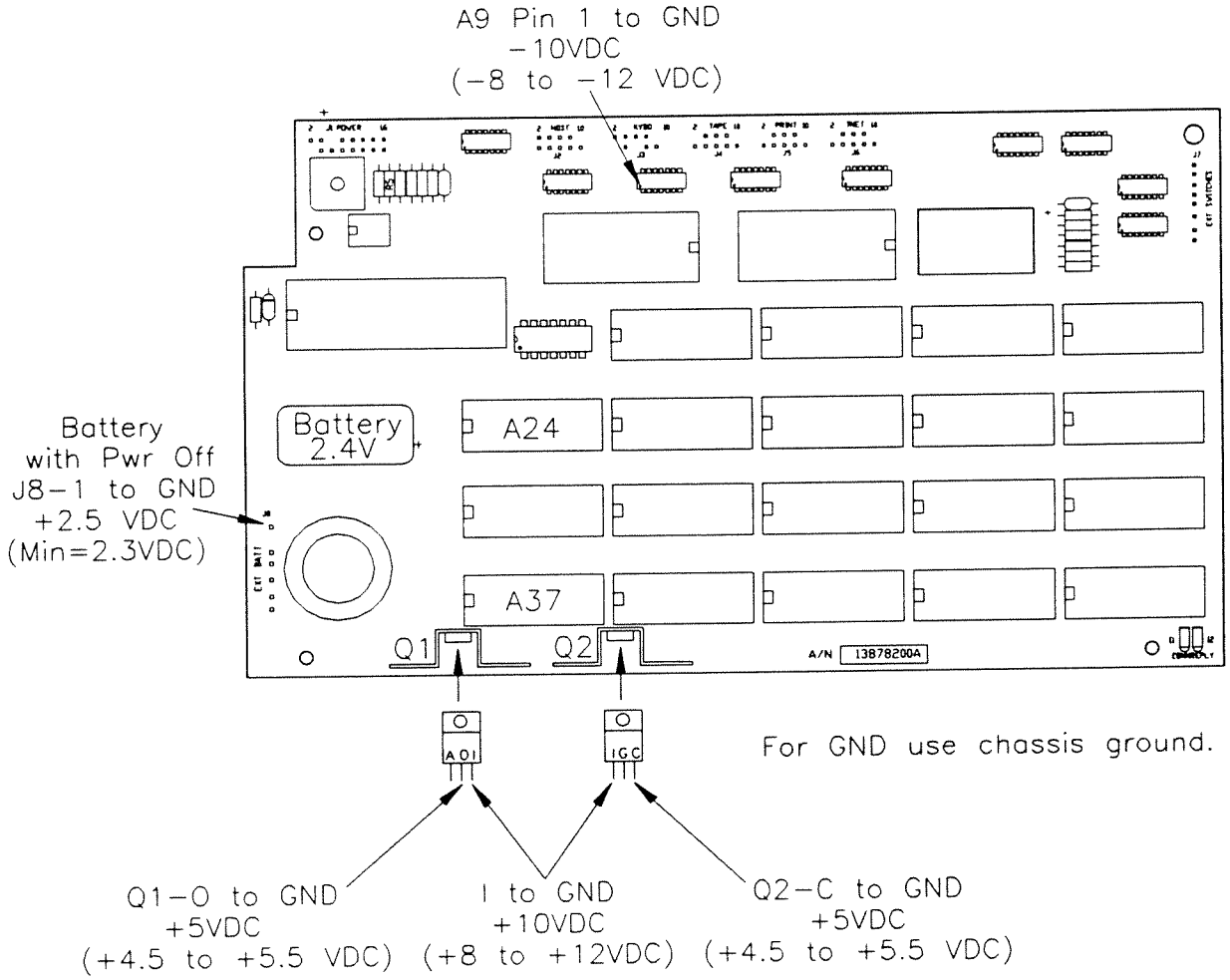


Figure 7.3 Master Memory PCB Voltage Test Points

7.5 INTERCONNECTING DIAGRAM 8422 SATELLITE

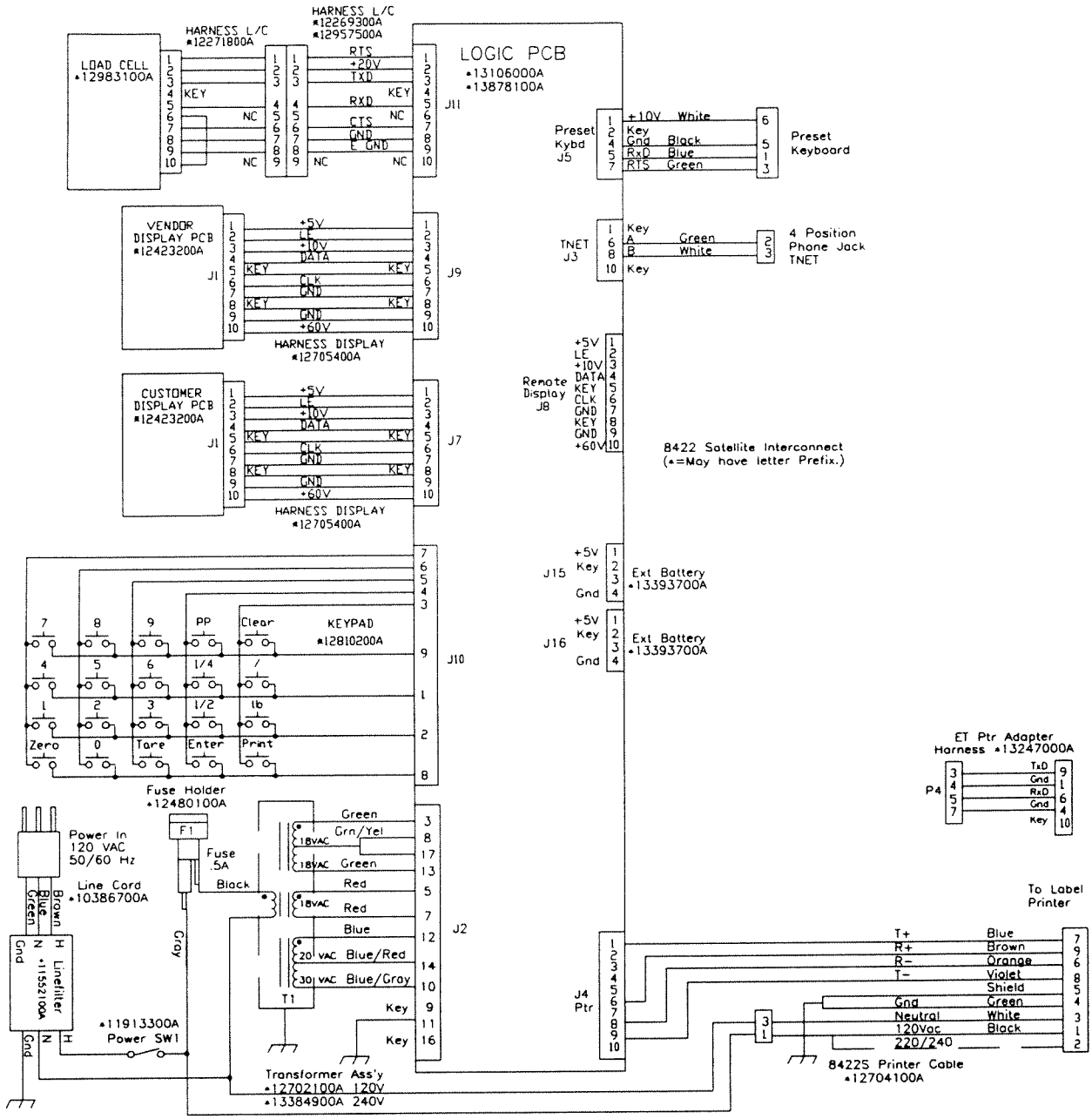


Figure 7.4 8422 Satellite Interconnecting Diagram

7.6 INTERCONNECTING DIAGRAM 8422 MASTER

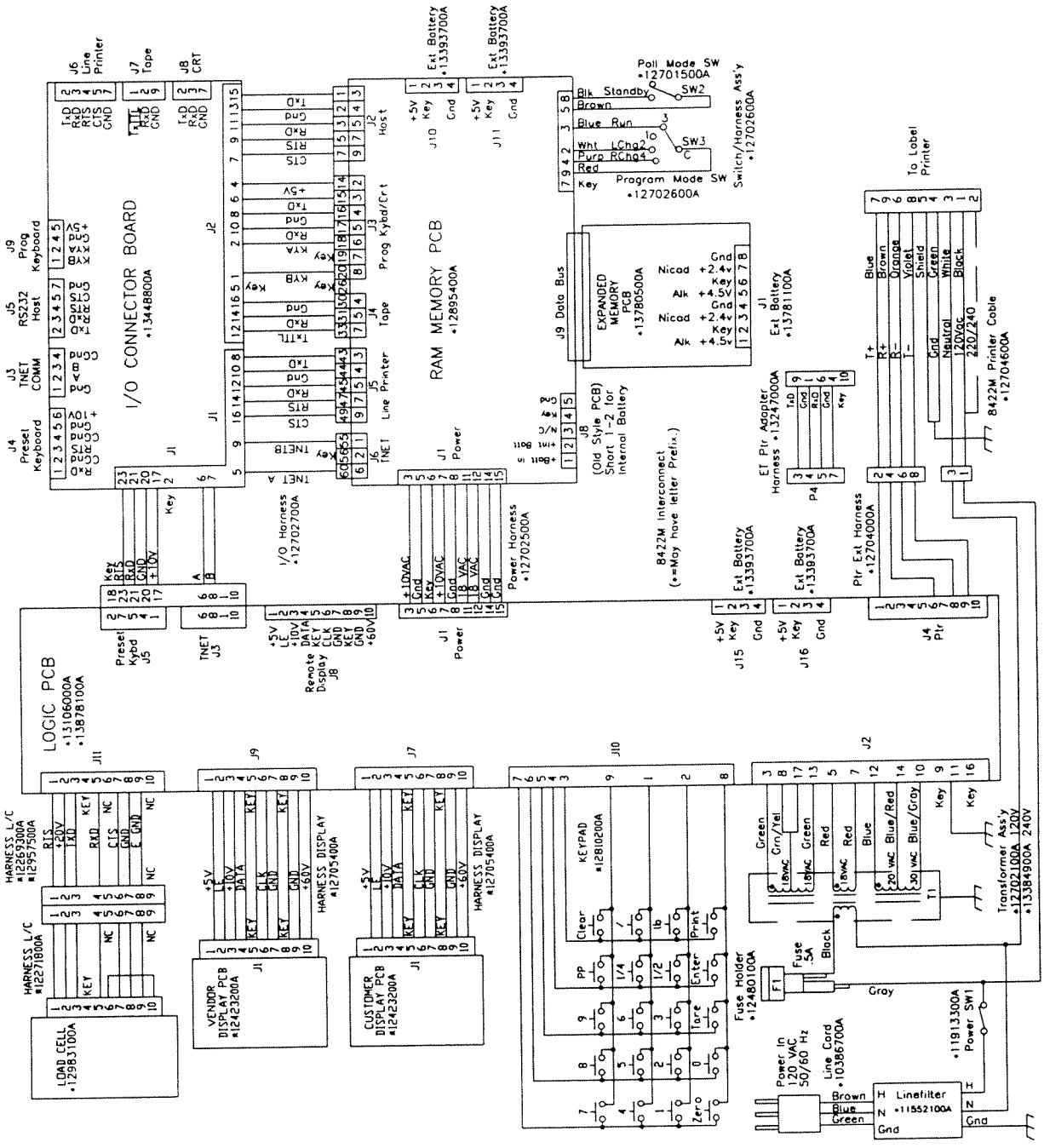


Figure 7.5 8422 Master Interconnecting Diagram

7.7 INTERCONNECTING DIAGRAM 8423 SATELLITE

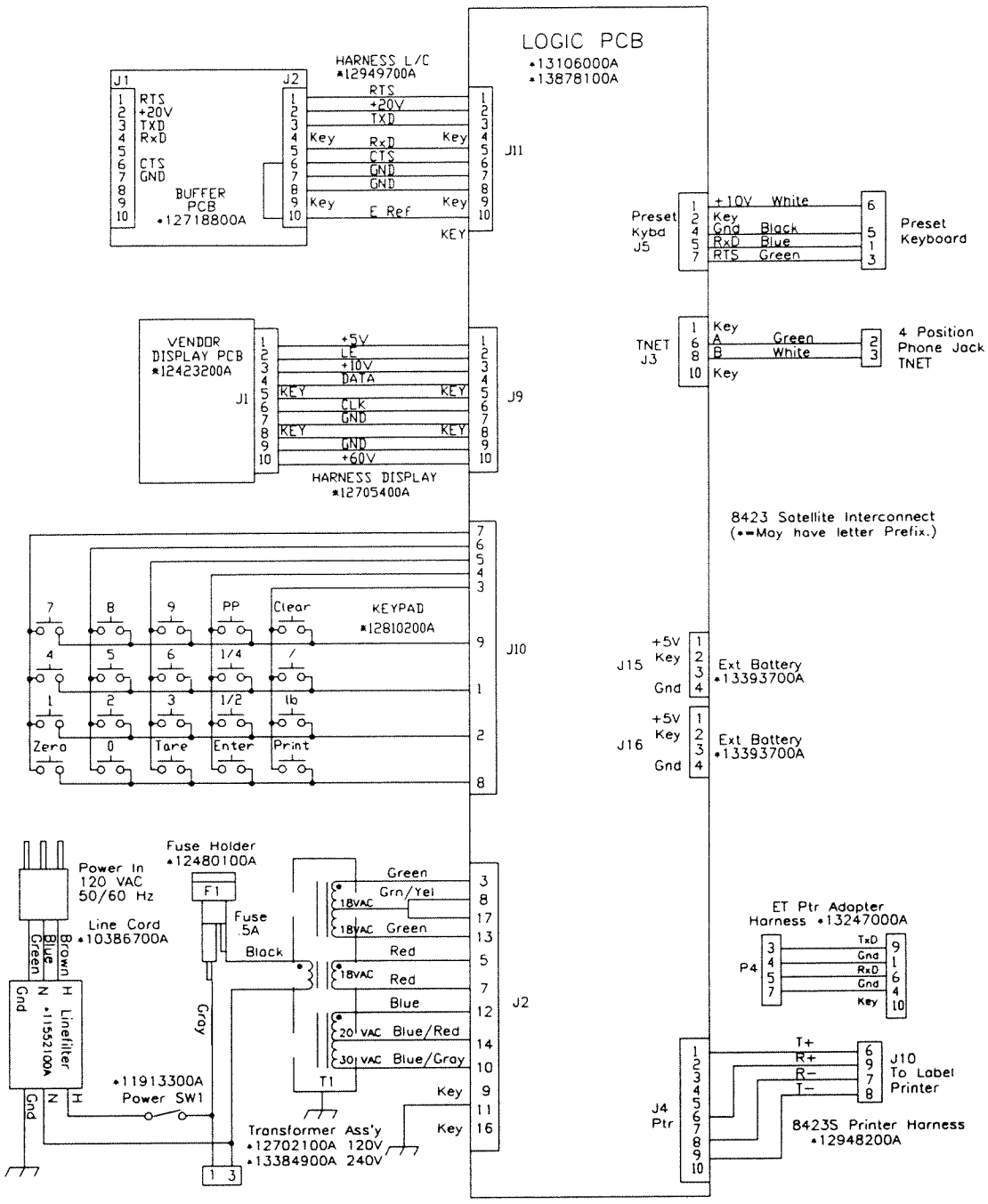


Figure 7.6 8423 Satellite Interconnecting Diagram

7.8 INTERCONNECTING DIAGRAM 8423 MASTER

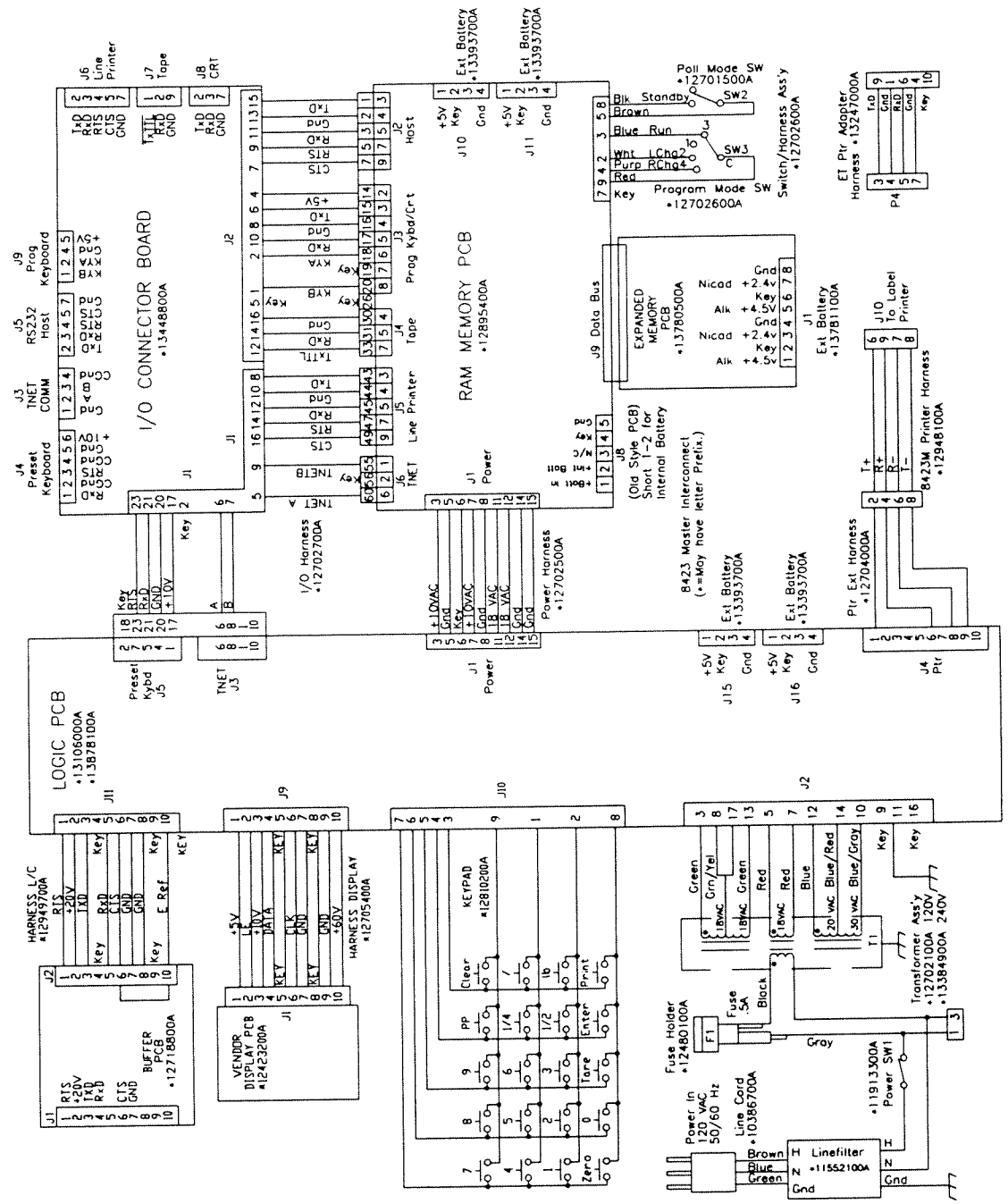


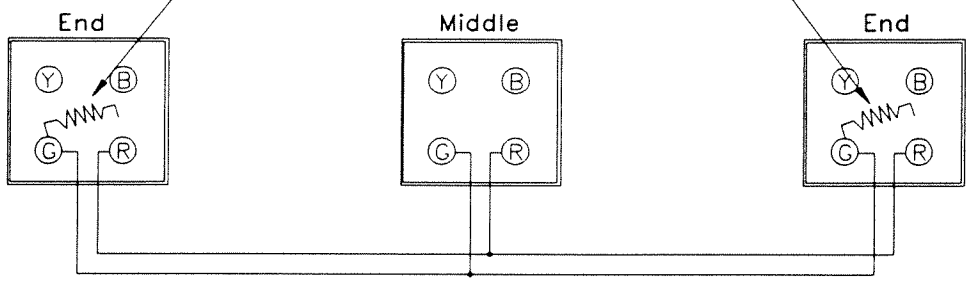
Figure 7.7 8423 Master Interconnecting Diagram

7.9 TESTING THE MASTER SATELLITE NETWORK WIRING

When troubleshooting on/off line symptoms, the TNET wiring should be tested as shown in the following Test 1, Test 2, and Test 3. All scales must be disconnected from the phone jacks before making the tests. (Note: verify the cable is unshielded phone cable as specified in Section 3.

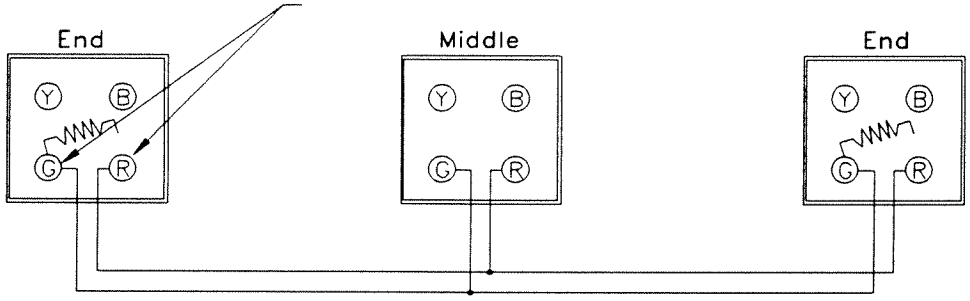
TEST 1

Check both resistors with a meter. Remove from one terminal before testing. The resistor should measure 113 ohms.



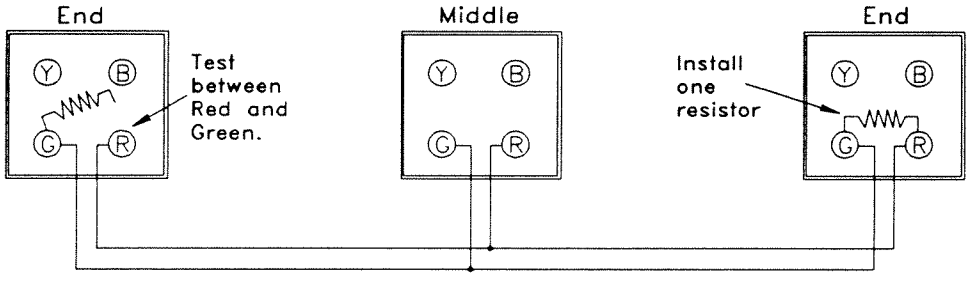
TEST 2

While resistors are off, check the Red and Green terminals for shorts. If there is continuity or low resistance between Red and Green, the cable is shorted.



TEST 3

Install one resistor and leave the other off. Check the ohms between the Red and Green terminals at the end where the resistor is off. You should read between 113 and 180 ohms (depending on the length of the cable. Zero indicates a short in the cable or the resistor. Infinity indicates a defective resistor or a break in the cable.



8. PARTS REPLACEMENT AND ADJUSTMENTS

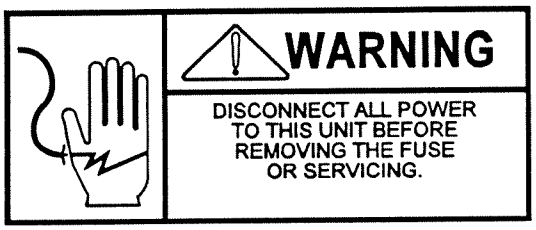
8.1 LOGIC PCB AND MEMORY PCB REPLACEMENT

NOTE: BEFORE REPLACING THE LOGIC OR MEMORY PCB'S, FIRST BACKUP ANY DATA FROM THE MASTER THAT MAY NEED TO BE RESTORED.

When replacing the Logic PCB or Master Memory PCB on the 8422, the following tools will be required for cover, PCB, and spider removal:

#2 Phillips Screwdriver
1-3/16" Allen Hex Wrench
Torque Wrench
1-3/16" Allen Hex Bit for Torque Wrench
Hex bit adapter for Torque Wrench

The 8423 will require a #2 Phillips Screwdriver and 1/4" Hex Driver.



8.1.1 Disconnect the power cord on the 8422/8423 from the AC outlet.

8.1.2 **8422** Remove the Platter. Using the 1-3/16" Allen Wrench, remove the spider hex screws, then remove the sealing screw and the four top cover screws as shown in Figure 8.1.

8423 Remove the four ¼" Hex Screws as shown in Figure 8.2.

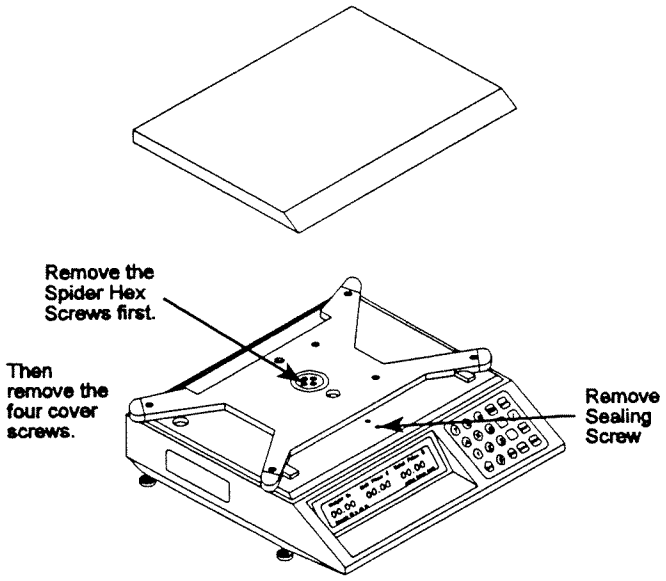


Figure 8.1 8422 Spider/Cover Removal

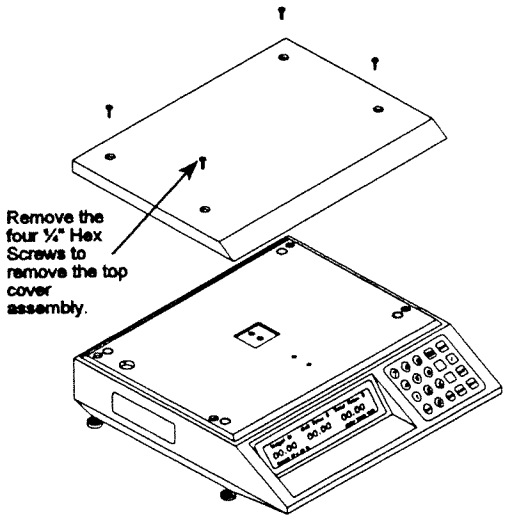


Figure 8.2 8423 Cover Removal

8.1.3 Carefully lift the top cover from the base. Disconnect the ground wire from the base, then lift the top cover and lay it on the left side. On master units, the Master Memory PCB is on top of the Logic PCB. Both are mounted to the top cover with four Phillips head screws.

WARNING! BEFORE CONNECTING OR DISCONNECTING ANY HARNESS FROM PCB'S OR THE LOAD CELL, YOU MUST WAIT AT LEAST 30 SECONDS AFTER REMOVING POWER FROM THE UNIT. FAILURE TO WAIT MAY RESULT IN DAMAGE TO THE PCB'S OR LOAD CELL.

8.1.4 **Masters:** To replace the Master Memory PCB, disconnect any harnesses to the Master Memory PCB and remove the four Phillips screws. The Master Memory PCB can then be removed. Move the EPROM's from locations A24/A37 on the old PCB to the new PCB. (Figure 8.3.)

After the Memory PCB is removed, the Logic PCB can then be replaced. Disconnect harnesses to the Logic PCB, then remove. Move EPROM A15 on the old PCB to the new PCB. (Figure 8.4).

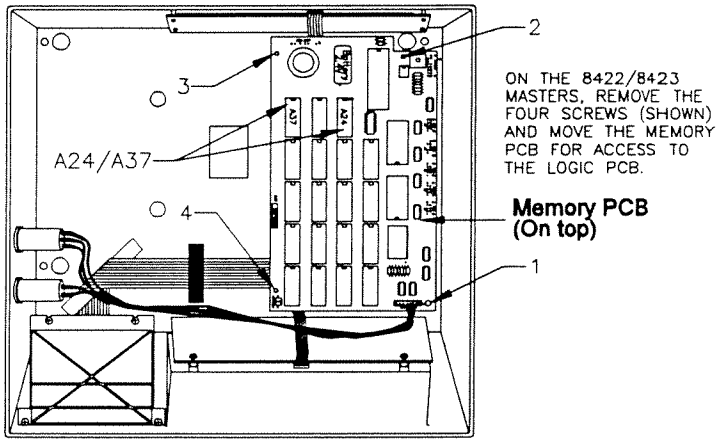


Figure 8.3 Master Top Cover

8.1.5 **Satellites:** To replace the Logic PCB on a satellite, disconnect all harnesses to the Logic PCB, then remove the four Phillips screws. The Logic PCB can then be removed. Move the EPROM on the old Logic PCB at A15 to the new PCB. (Figure 8.4).

8.1.6 After Logic PCB replacement, or Memory PCB replacement, power must be left on for a minimum of eight hours to fully recharge the onboard batteries. After replacing Logic PCB, the Scale ID and Softswitches must be configured as described in Section 2.4.

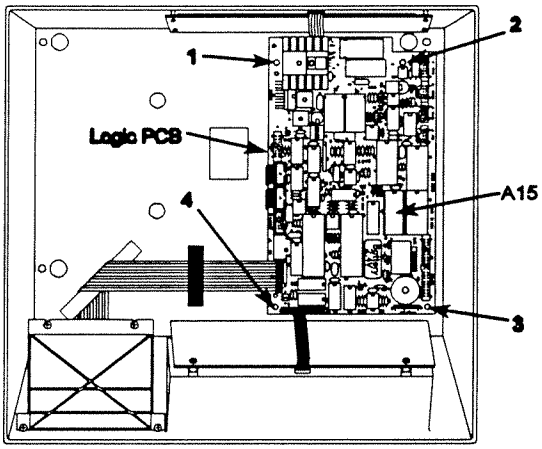


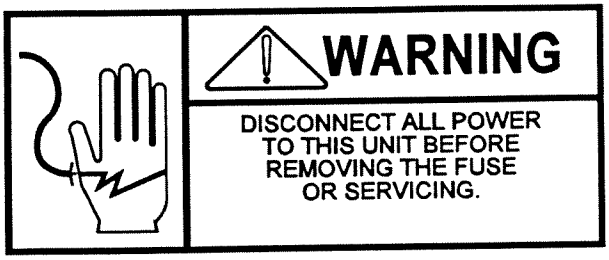
Figure 8.4 Satellite Logic PCB

If the Memory PCB was replaced, it must be initialized and configured, as described in Section 2.6.

8.2 8422 LOAD CELL REPLACEMENT

When replacing the Digital Load Cell on the 8422, the following tools will be required:

#2 Phillips Screwdriver
1-3/16" Allen Hex Wrench
Torque Wrench w/1-3/16" Allen Hex Bit & Hex bit adapter



8.2.1 Disconnect the power cord on the 8422 from the AC outlet.

8.2.2 Remove the Platter. Using the 1-3/16" Allen Wrench, remove the spider hex screws, then remove the sealing screw and the four top cover screws as shown in Figure 8.5.

8.2.3 Next, disconnect the Load Cell Harness from the Logic PCB at connector J11. Remove the four screws securing the top load cell cover. Lift the cover and disconnect the internal load cell harness. Remove the top load cell spacer and top cover. (Figure 8.5.)

8.2.4 Remove the two bottom load cell screws using the Allen wrench. The load cell can then be removed from the base.

8.2.5 Install the new load cell in the scale base. Do not forget to install the lower load cell spacer between the base and the load cell. The load cell must be installed square to the base. Torque the load cell mounting screws to 75-85 in lbs.

8.2.6 Re-connect the internal load cell harness on the load cell cover. Install the load cell cover with the four Phillips-head screws.

8.2.7 Connect the load cell harness at J11 on the Logic PCB. Connect any other harnesses that were previously removed, then install the top cover.

8.2.8 Re-install the spider. Using the torque wrench, torque the spider screws at 75-85 in lbs.

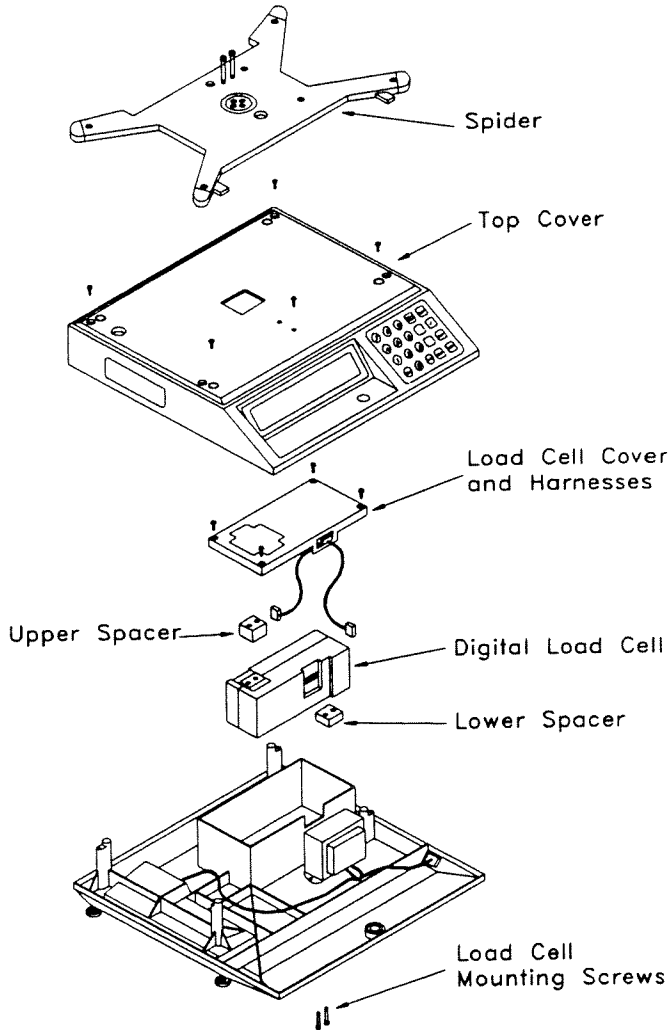
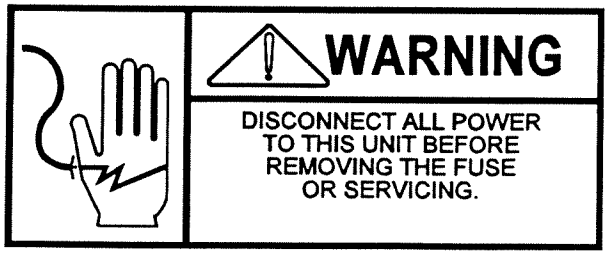


Figure 8.5 Load Cell Replacement 8422

8.3 8213-0101 LOAD CELL REPLACEMENT

When replacing the Digital Load Cell on the 8213-0101, the following tools will be required:

#2 Phillips Screwdriver
1-3/16" Allen Hex Wrench
Torque Wrench w/1-3/16" Allen Hex Bit and Hex bit adapter.



8.3.1 Disconnect the power cord on the 8423 from the AC outlet.

8.3.2 Remove the Platter. Using the 1-3/16" Allen Wrench, remove the spider hex screws, then remove the top cover screws as shown in Figure 8.6. Remove the top cover.

8.3.3 Next, disconnect the Load Cell Harness from the Load Cell.

8.3.4 Remove the two bottom load cell screws using the Allen wrench. The load cell can then be removed from the base.

8.3.5 Install the new load cell in the scale base. Do not forget to install the lower load cell spacer between the base and the load cell. The load cell must be installed square to the base. Torque the load cell mounting screws to 75-85 in lbs.

8.3.6 Re-connect the load cell harness.

8.3.7 Install the top cover.

8.3.8 Re-install the spider. Using the torque wrench, torque the spider screws at 75-85 in lbs.

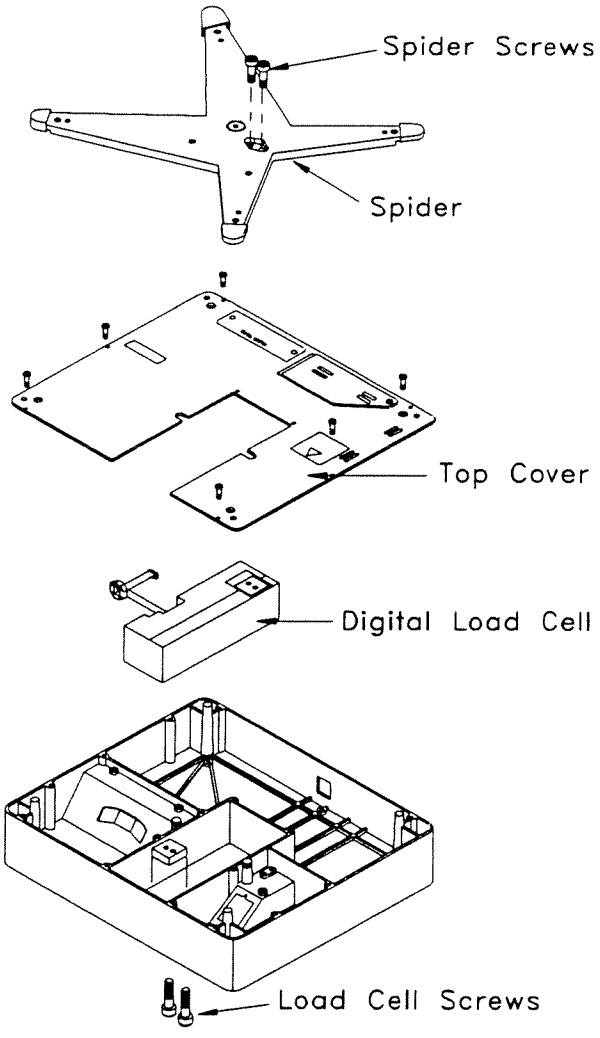


Figure 8.6 8213 Load Cell Replacement

8.4 8422 OVERLOAD STOP ADJUSTMENTS

The overload stop gaps are preset at the factory to provide protection to the load cell in the event of a static overload. If the spider is replaced, the overload stop gaps must be set to factory specifications as shown in Figure 8.7. The overload stop gaps should be measured with a round wire gauge. Flat gauges may give inaccurate results that can result in damage to the load cell.

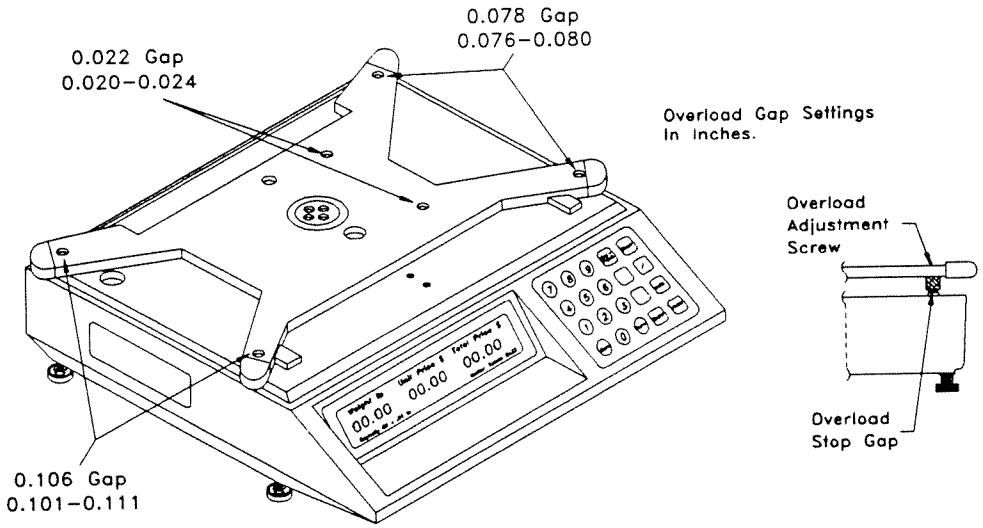


Figure 8.7 8422 Overload Stop Gap Specifications

8.5 8213 OVERLOAD STOP ADJUSTMENTS

The 8213-0101 overload stop gaps are preset at the factory to provide protection to the load cell in the event of a static overload. If the spider is replaced, the overload stop gaps must be set to factory specifications as shown in Figure 8.8. The overload stop gaps should be measured with a round wire gauge. Flat gauges may give inaccurate results that can result in damage to the load cell.

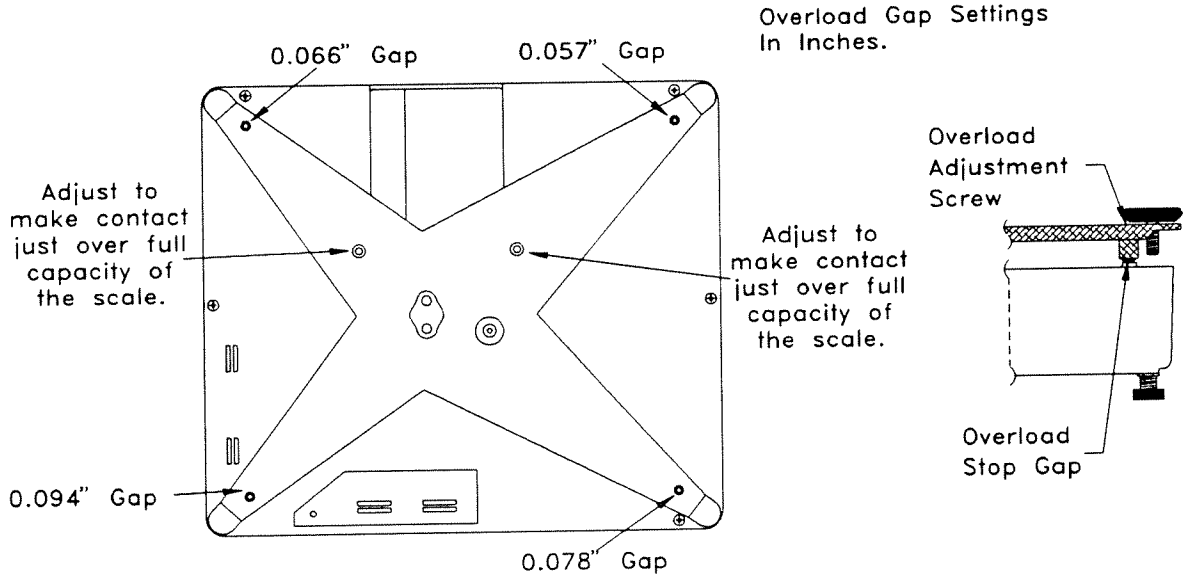


Figure 8.8 8213-0101 Overload Stop Gap Specifications

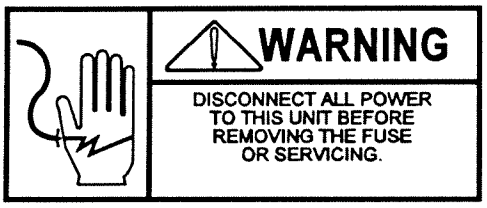
8.6 KEYBOARD REPLACEMENT

A kit is available for keyboard replacement on the 8422 and 8423. The A12810200A includes the following parts shown in Table 8-1.

PART NUMBER	DESCRIPTION	QTY
*12810200A	Keyboard Assembly	1
*13663500A	RTV Sealant	1
*13084200A	Keypad Label Set	1
*13105800A	Keyboard Label Set	1
*12566200A	Gasket, Keyboard	1

Table 8-1 A12810200A Keyboard Replacement Kit Contents

8.6.1 Disconnect the power cord from the AC outlet.



8.6.2 Remove the top cover and lay it on the side.

8.6.3 Remove the four screws securing the keyboard to the top cover, as shown in Figure 8.9.

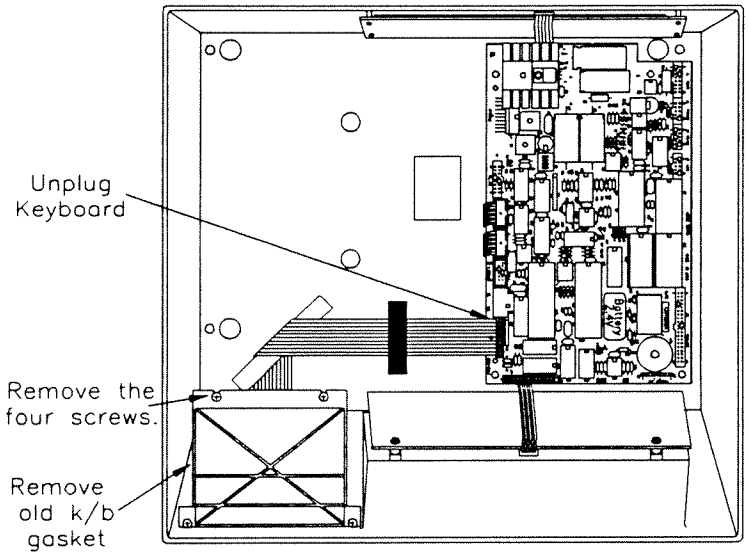


Figure 8.9 Removing Old Keyboard

8.6.4 Thoroughly remove the old gasket and old adhesive from the top cover keyboard recess. THE NEW GASKET MUST BE APPLIED TO A CLEAN, DRY SURFACE.

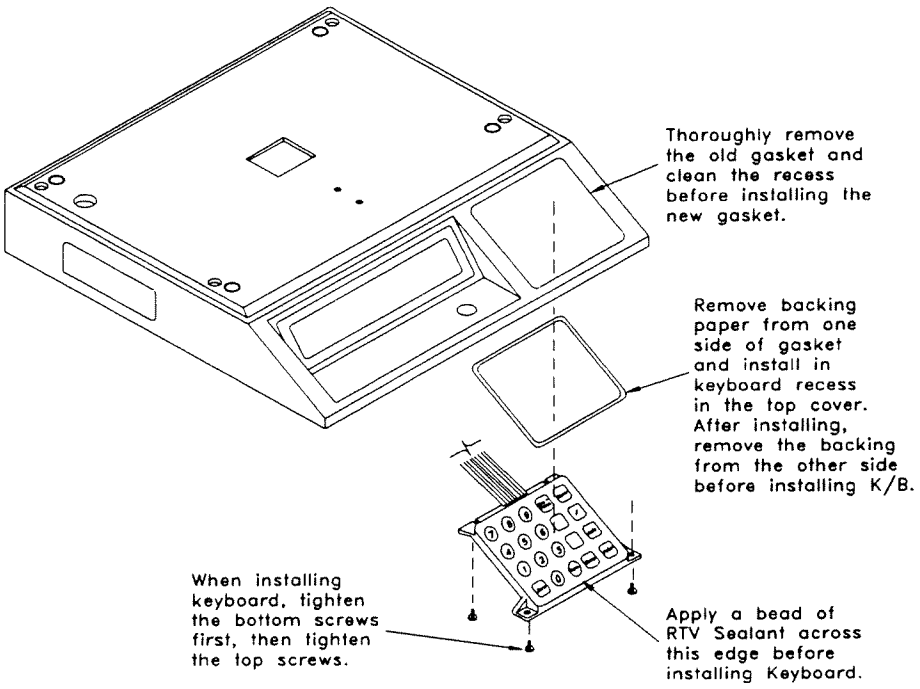


Figure 8.10 Installing New Keyboard

8.6.5 Remove the backing paper from one side of the gasket and apply the gasket squarely in the recessed area of the top cover. After the gasket is installed, remove the backing paper.

8.6.6 Install the nozzle on the RTV Sealant tube (P/N 13663500A) and trim the tube to the smallest dispensing size. Apply a small bead of sealant (approximately 1/8") to the bottom edge of the keyboard, as shown in Figure 8.10.

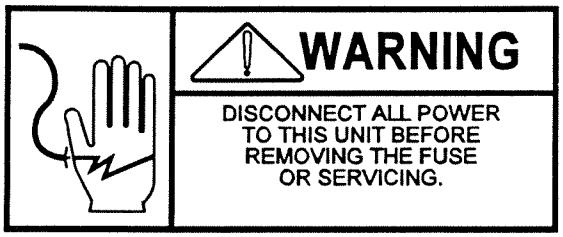
8.6.7 Install the keyboard squarely in the recessed area of the top cover over the gasket and press into place. Install the keyboard screws. Tighten the bottom screws first, then the top.

8.6.8 Plug the keyboard harness into the jack on the Logic PCB.

8.6.9 Re-assemble the top cover.

8.6.10 Install the appropriate keypad labels from the *13084200A and *13105800A label sets.

8.7 MASTER CONNECTOR BRACKET REPLACEMENT



Refer to Figure 8.11 to replace the Master Connector Bracket PCB.

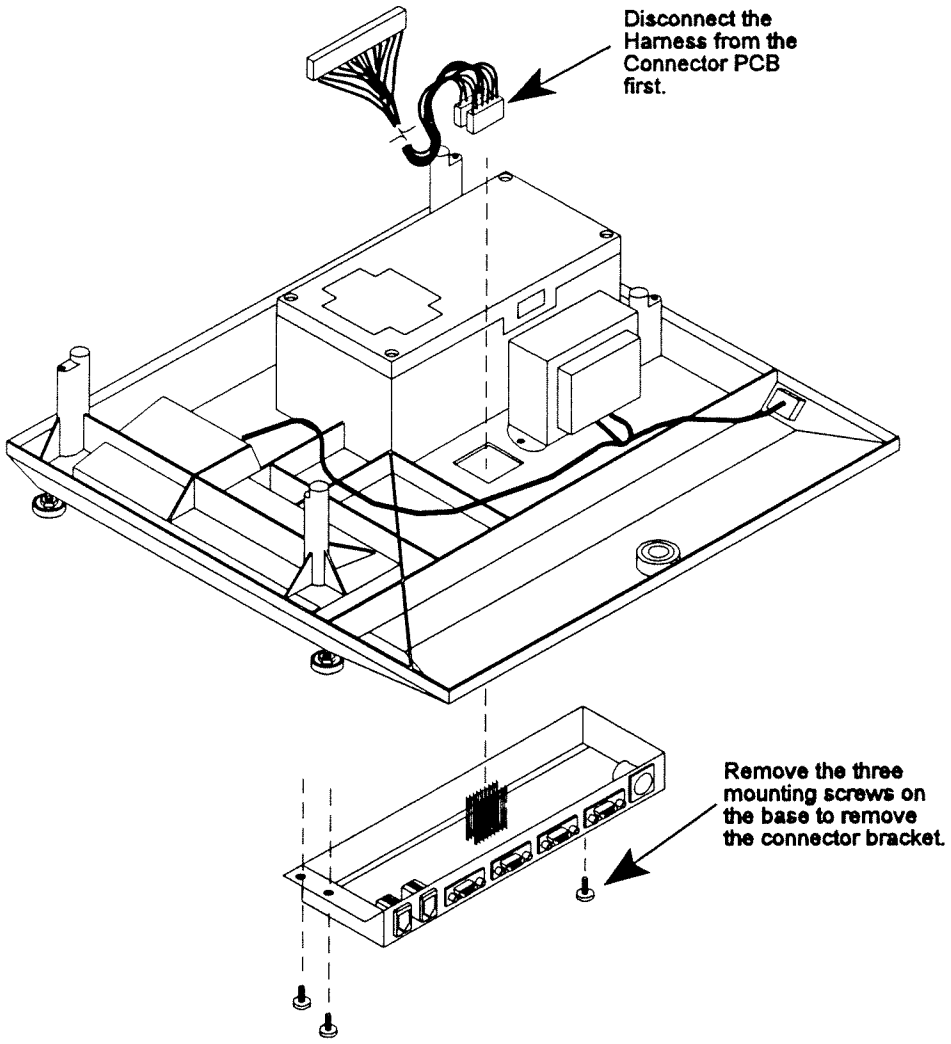
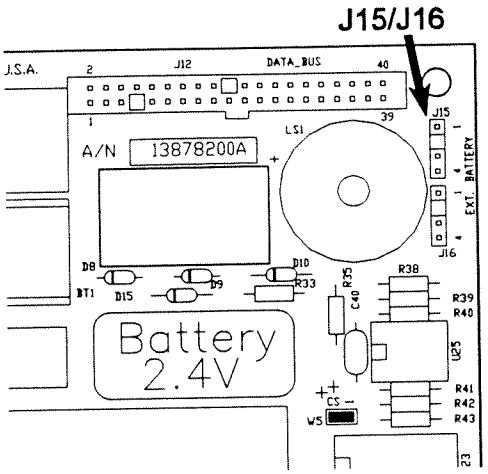


Figure 8.11 Master Connector Bracket

8.8 BATTERY REPLACEMENT

8.8.1 NEW STYLE LOGIC PCB EXTERNAL BATTERY

If the scale is losing setup data or time/date, the onboard battery may be defective. An External Battery can be installed by ordering the External Battery Kit *13394300A. On current Logic PCB's, just plug the battery into the Logic PCB at J15 or J16 EXT BATT jacks as shown in Figure 8.12.



External Battery on current Logic PCB
Figure 8.12

8.8.2 OLD STYLE LOGIC PCB EXTERNAL BATTERY

If the 8422/8423 loses setup data or time/date, the onboard battery may be defective. An External Battery can be installed by ordering the External Battery Kit *13394300A. On units with the older style Logic PCB without the external battery jacks, the 13394300A kit contains leads which are installed as shown in Figure 8.13 after removing resistor R33.

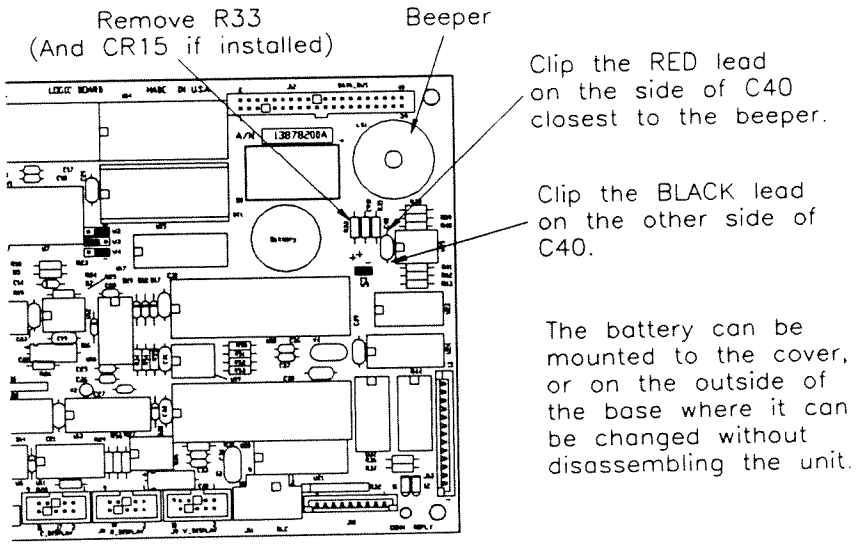


Figure 8.13 Old style Logic PCB Modification for external Battery

8.8.3 MASTER MEMORY PCB EXTERNAL BATTERY

If there is data loss or corruption of files in the master, the onboard battery on the Master Memory PCB may be defective. An external battery can be installed to take the place of the onboard battery by installing the External Battery *13393700A. There are currently two *types* of Master Memory PCB's (p/n A12895400A) in use and can be classified as *New Style* and *Old Style*. Figure 8.14 shows how to connect the battery 13393700A to J8 on the Old Style Memory PCB by removing the connector sockets from the plug shell. Figure 8.15 shows connecting the 13393700A to the New Style Master Memory PCB. The New Style Memory PCB has connectors J10 and J11 for the external battery. Either one can be used. A new battery can be installed on the other connector before removing the old battery to prevent data loss.

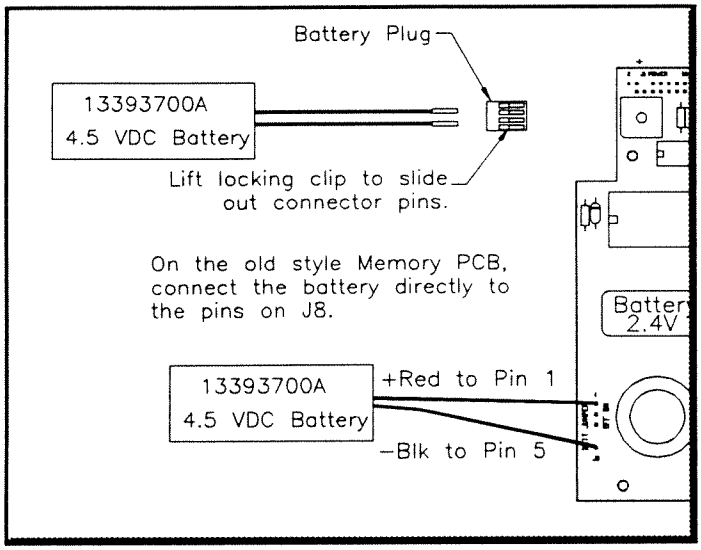


Figure 8.14 Old Style Memory PCB Ext Battery

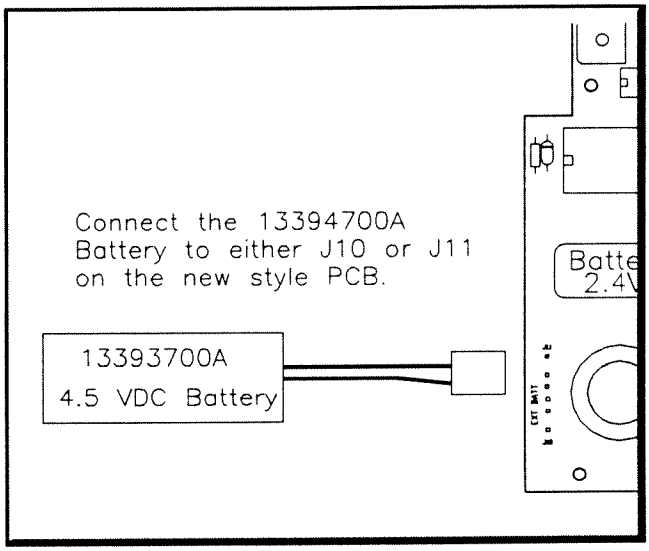


Figure 8.15 New Style Memory PCB Ext Battery

8.8.4 MASTER MEMORY EXPANSION PCB EXTERNAL BATTERY

If there is extra text/nutrifact data loss or corruption of files in the master, the Memory Expansion PCB battery may be defective. The replacement battery for this PCB is *13781100A. Replacement is as shown in Figure 8.16.

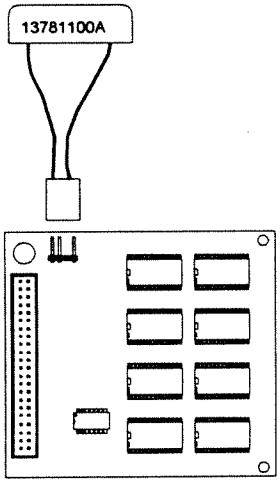


Figure 8.16 Memory Expansion PCB Battery

9.1 8422 SATELLITE FIGURE 9.1

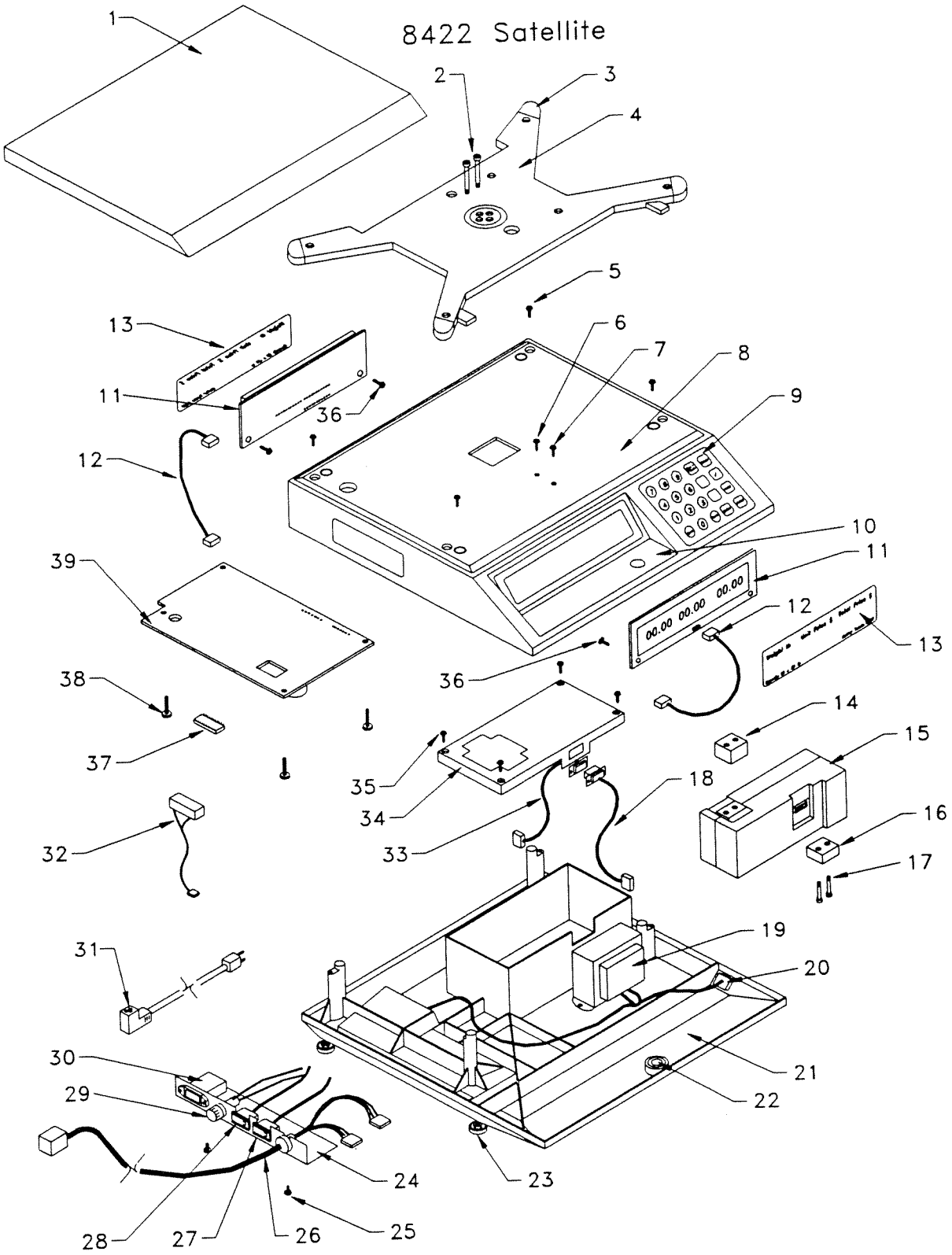


Figure 9.1 8422 Satellite

9.1 8422 SATELLITE REPLACEMENT PARTS FIGURE 9.1

REF#	PART NUMBER	DESCRIPTION	QTY
1	*12361100A	Platter, Stainless Steel	1
2	R0350800A	Screw, ¼-28 x 1½" Hex Socket Head	2
3	12050900A	Rubber Tips	4
4	12234300A	Spider Assembly, 30kg	1
5	R0349800A	Screw, 8-32 x 3/8" PH Taptite	4
6	R0259600A	Screw, 8-32 x 3/8" PH Drilled	1
7	R0357300A	Screw, 8-32 X 1/2" PH Drilled	1
8	A12238800A	Cover, Top 8422 Satellite	1
9	A12810200A	Keyboard Replacement Kit	1
10	12513400A	Bezel	1
11	A12423200A	Display PCB	2
12	12705400A	Harness, Display	1
13	12703100A 12703400A	Lens, Display English 50# Lens, Display French/English	1
14	12739500A	Spacer, Upper Load Cell .75"	1
15	B12983100A	Load Cell, Digital 30kg	1
16	A12233900A	Spacer, Lower Load Cell .25"	1
17	R0350700A	Screw, ¼--28 x 1" Hex Socket Head Cap	2
18	A12269300A	Harness, Load Cell (RFI Outer)	1
19	12702100A	Transformer & Harness Assembly, 120VAC	1
20	11913300A 11615400A	Switch, Power Label, On/Off (Not shown)	1 1
21	12422400A	Base	1
22	10268900A	Level	1
23	12241000A	Foot, Leveling 5/16-18 x 1"	4
24	A12715300A	Line Filter/Bracket Assembly (Includes fuse/com & preset jacks, & printer harness)	1
25	R0309000A	Screw, 6-32 x 3/8" Taptite	3
26	A12704100A	Harness, Printer	1
27	12702300A	Harness and Jack, Preset K/B 6-Pos	1
28	B12702400A	Harness and Jack, TNET 4-Pos	1
29	12480100A 11214500A	Fuse Holder Fuse, ½A Slo Blo (Not shown)	1 1
30	11552100A	Line Filter	1
31	10386700A	Power Cord	1
32	13394300A	Battery Kit, External Replacement	1
33	12957500A	Harness, Internal Load Cell	1
34	B12313200A	Cover, Load Cell	1
35	R02180050	Screw, 8-32 x 3/8	4
36	R0349500A	Screw, #6 X 5/8" Plastite	4
37	C13246200A	Eprom Kit, 8422/8423 Logic PCB	1
38	R0322500A	Screw, #6 x 1/4" Plastite	4
39	13878200A *13106000A	PCB, Logic w/o EPROM or PCB, Logic w/o EPROM	1

9.2 8422 MASTER REPLACEMENT PARTS FIGURE 9.2

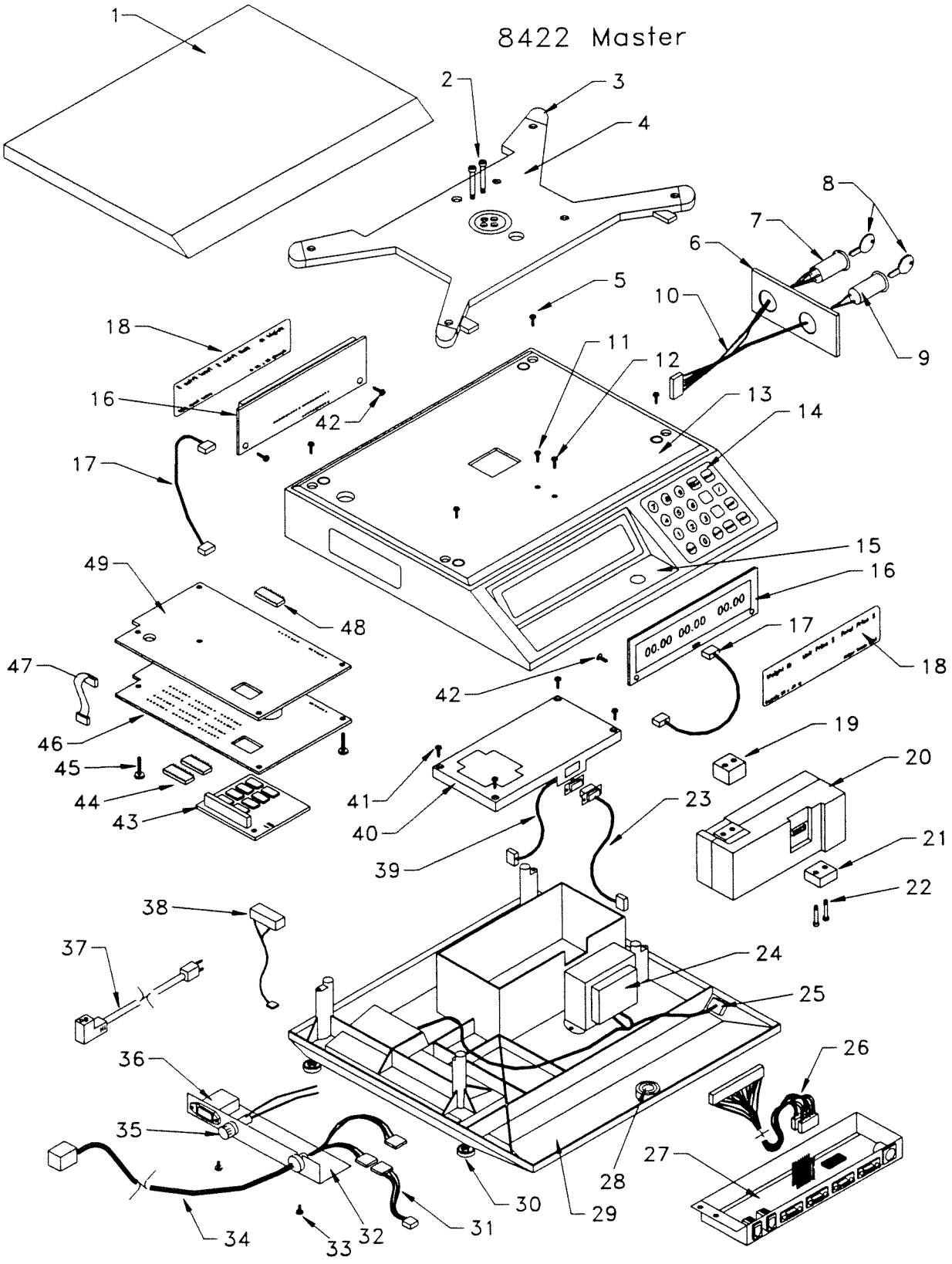


Figure 9.2 8422 Master

9.2 8422 MASTER REPLACEMENT PARTS FIGURE 9.2

REF#	PART NUMBER	DESCRIPTION	QTY
1	*12361100A	Platter, Stainless Steel	1
2	R0350800A	Screw, ¼-28 x 1½" Hex Socket Head	2
3	12050900A	Rubber Tips	4
4	12234300A	Spider Assembly, 30kg	1
5	R0349800A	Screw, 8-32 x 3/8" PH Taptite	4
6	12701700A	Plate, Keylock Switch Cover	1
7	12701600A	Switch, Programming Mode 4-Position	1
8	082373020	Key Set, Spare	1
9	12701500A	Switch, Master/Standby Switch 2-Position	1
10	A12702600A	Keyswitch Harness Assembly (Includes switches 7 & 9)	1
11	R0259600A	Screw, 8-32 x 3/8" PH Drilled	1
12	R0357300A	Screw, 8-32 X 1/2" PH Drilled	1
13	A12238800A	Cover, Top 8422 Satellite	1
14	A12810200A	Keyboard Replacement Kit	1
15	12513400A	Bezel	1
16	A12423200A	Display PCB	2
17	12705400A	Harness, Display	1
18	12703100A 12703400A	Lens, Display English 50 lb Lens, Display French/English 20kg	1
19	12739500A	Spacer, Upper Load Cell .75"	1
20	B12983100A	Load Cell, Digital 30kg	1
21	A12233900A	Spacer, Lower Load Cell .25"	1
22	R0350700A	Screw, ¼--28 x 1" Hex Socket Head Cap	2
23	A12269300A	Harness, Load Cell (RFI Outer)	1
24	12702100A	Transformer & Harness Assembly, 120VAC	1
25	11913300A	Switch, Power	1
26	12702700A	I/O Harness	1
27	A13448800A	I/O Connector PCB (Bracket Ass'y 12715500A)	1
28	10268900A	Level	1
29	12422400A	Base	1
30	13235500A	Foot, Master Leveling 5/16-18 x 1"	4
31	12704000A	Printer Extension Harness	1
32	A12715400A	Line Filter/Ptr Harness/Bracket Assembly, Master	1
33	R0309000A	Screw, 6-32 x 3/8" Taptite	3
34	12948100A	Harness, 8422 Master Printer	1
35	12480100A 11214500A	Fuse Holder Fuse, ½A Slo Blo (Not shown)	1 1
36	11552100A	Line Filter	1
37	10386700A	Power Cord	1
38	13394300A	Battery Kit, Logic PCB External Replacement	1
39	12957500A	Harness, Internal Load Cell	1
40	B12313200A	Cover, Load Cell	1
41	R02180050	Screw, 8-32 x 3/8	4
42	R0349500A	Screw, #6 X 5/8" Plastite	4
43	*13780500A	PCB, Master Expanded Memory 1 meg	1
44	*14051300A	EPROM Kit, Master Expanded Memory (0901-0368)	1
45	R0318400A 12715900A	Screw, #6 x 1-1/8" Plastite Spacer, PCB .75" (Not shown)	4 4
46	A12895400A	PCB, Master RAM Memory PCB 512k	1
47	12702500A	Harness, Logic to Master Power	1
48	C13246200A	Eprom Kit, 8422/8423 Logic PCB	1
49	13878200A *13106000A	PCB, Logic w/o EPROM or PCB, Logic w/o EPROM	1

9.3 8423 SATELLITE REPLACEMENT PARTS FIGURE 9.3

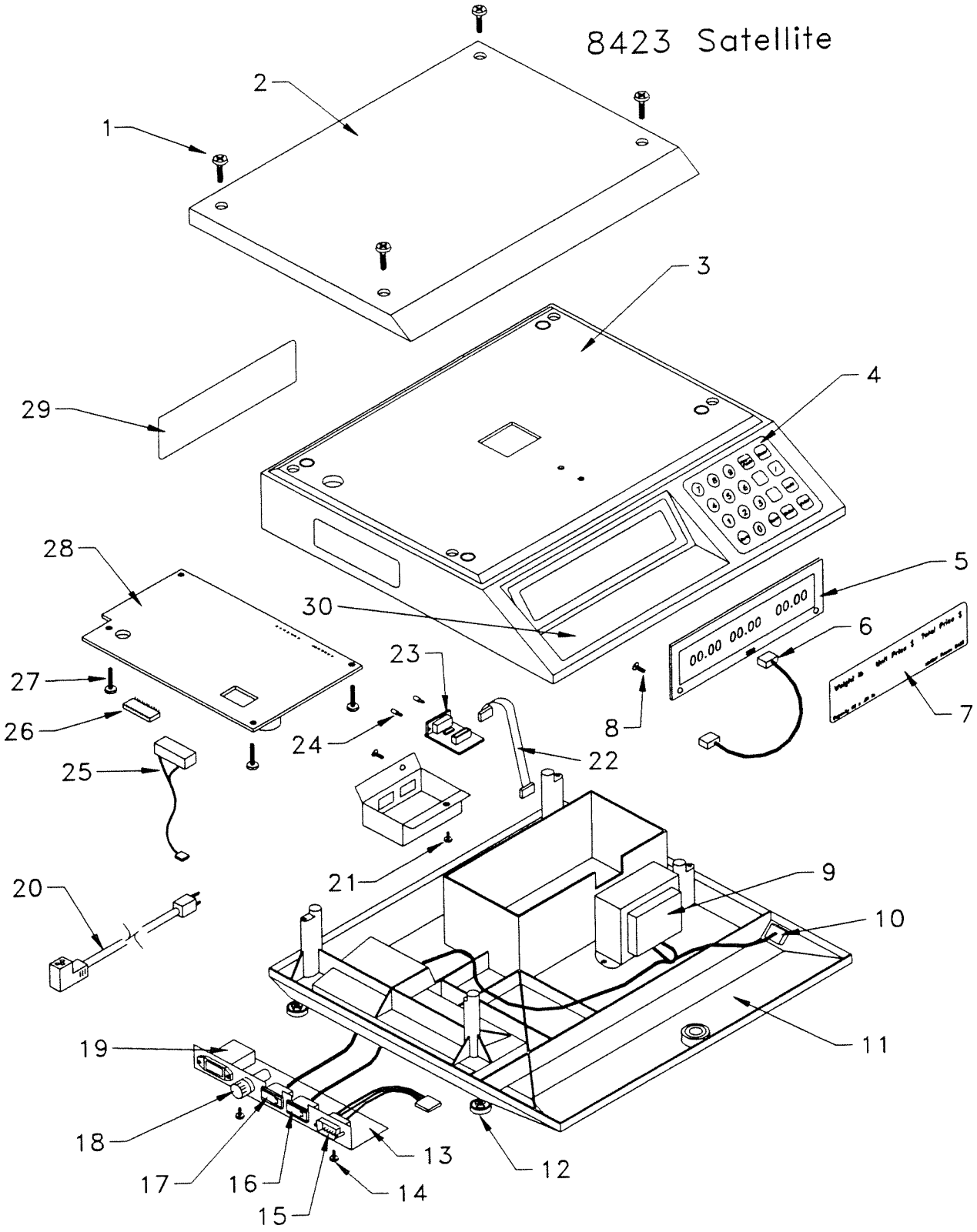


Figure 9.3 8423 Satellite

9.4 8423 MASTER REPLACEMENT PARTS FIGURE 9.4

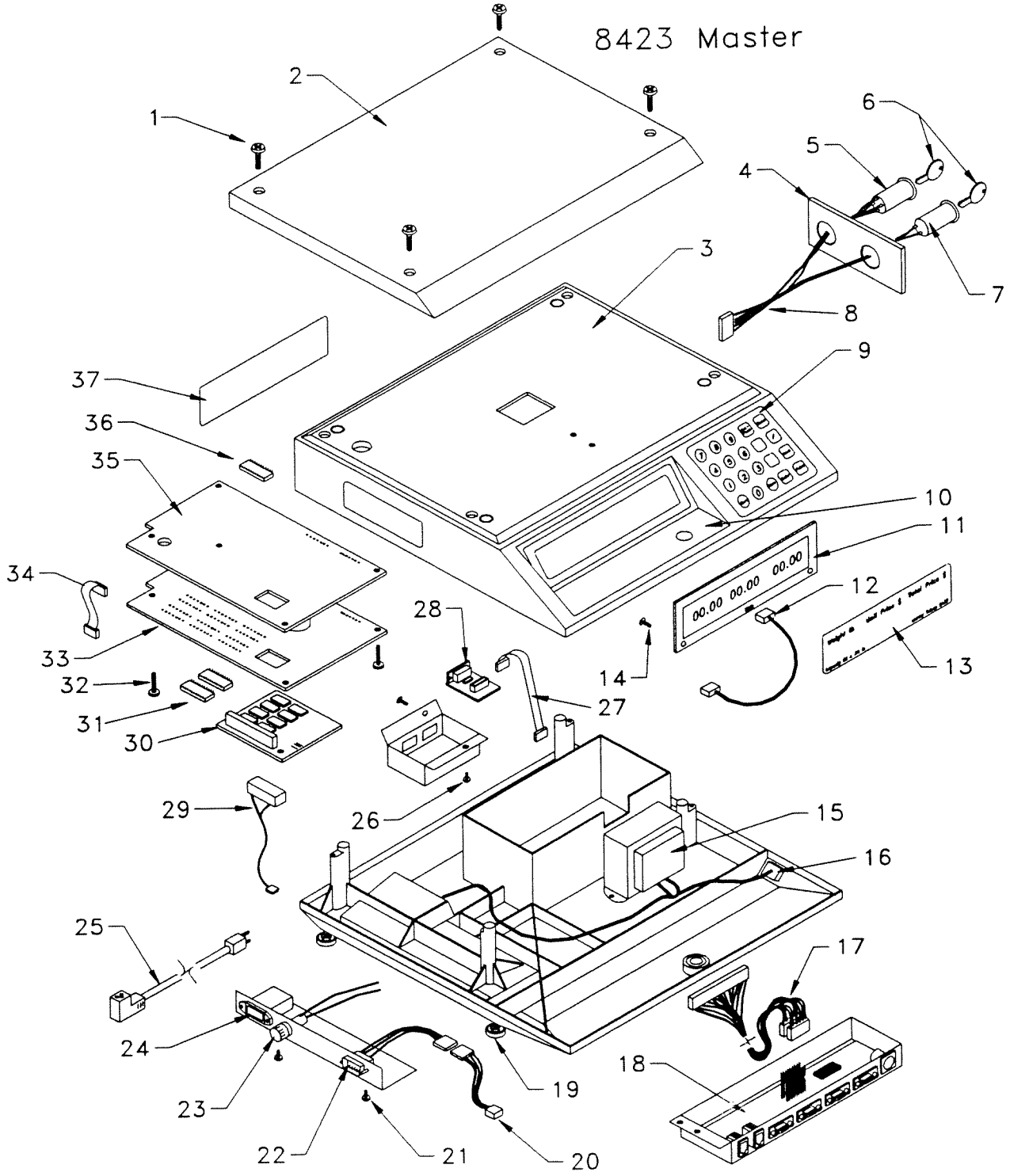
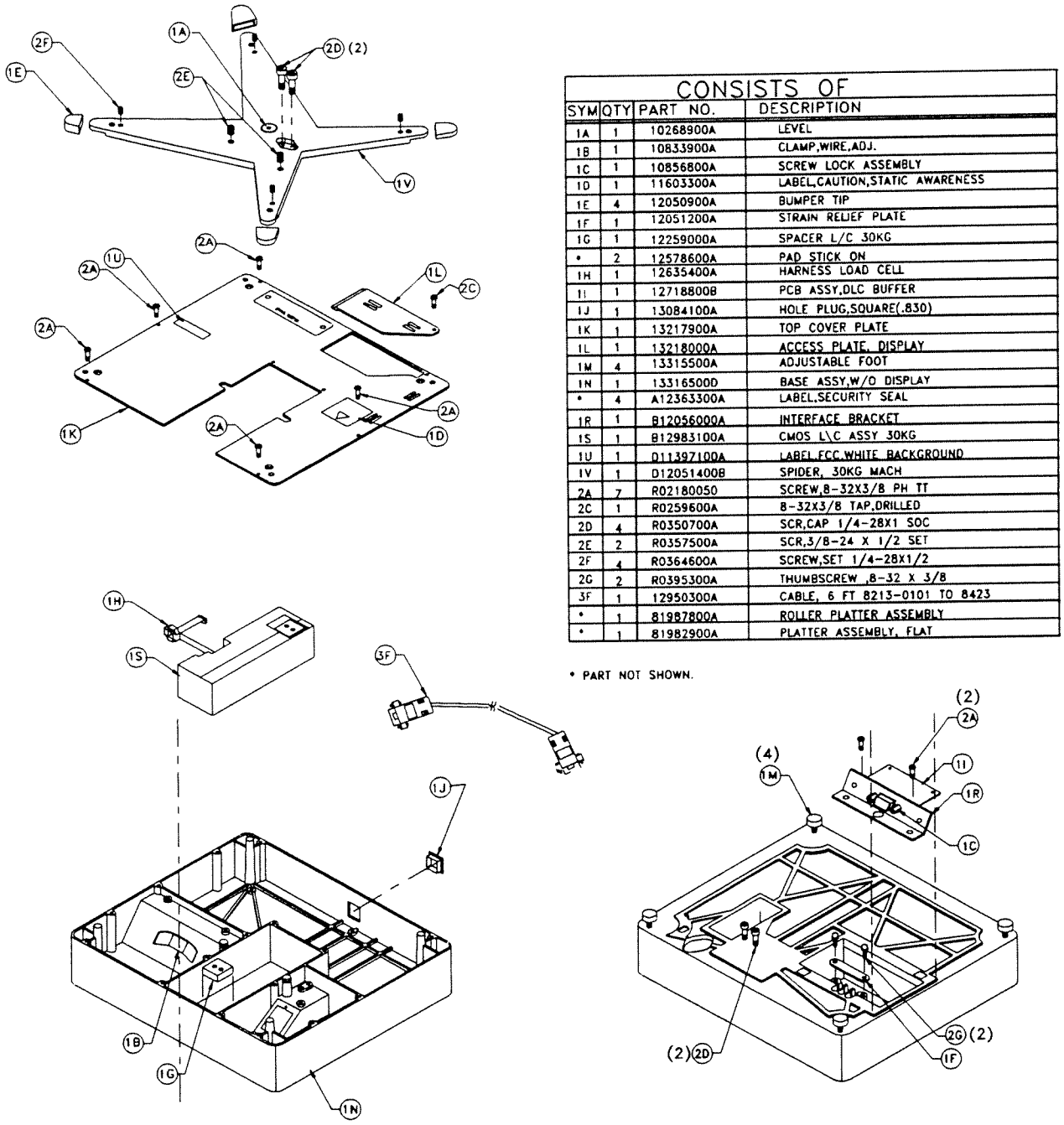


Figure 9.4 8423 Master

9.4 8423 MASTER REPLACEMENT PARTS FIGURE 9.4

REF#	PART NUMBER	DESCRIPTION	QTY
1	R0357200A	Screw, 8-32 x ½" PH	4
2	12950800A	Dead Deck Cover	1
3	A12697300A	Cover, Top 8422/8423	1
4	12701700A	Plate, Keylock Switch Cover	1
5	12701600A	Switch, Programming Mode 4-Position	1
6	082373020	Key Set, Spare	1
7	12701500A	Switch, Master/Standby Switch 2-Position	1
8	A12702600A	Keyswitch & Harness Assembly (Includes switches 5 & 7)	1
9	A12810200A	Keyboard Replacement Kit	1
10	12513400B	Bezel	1
11	A12423200A	Display PCB	1
12	12705400A	Harness, Display	1
13	12949900A 12951900A	Lens, Display (U.S. 50 lb) Lens, Display (Canada Eng/Fr 20kg)	1
14	R0349500A	Screw, #6 x 5/8" Plastite	4
15	12702100A	Transformer & Harness Assembly, 120VAC	1
16	11913300A 11615400A	Switch, Power Label, On/Off (Not shown)	1
17	12422400A	Base, Scale	1
18	12702700A	I/O Harness	1
19	A13448800A	I/O Connector PCB	1
20	13235500A	Foot, Adjustable Foot 5/16-18 x 1½"	4
21	12704000A	Printer Extension Harness	1
22	12948800A	Line Filter Bracket Assembly	1
23	R0309000A	Screw 6-32 x 3/8	1
24	12948100A	Harness, Printer	1
25	12480100A 11214500A	Fuse Holder Fuse ½A Slo Blo	1 1
26	11552100A	Line Filter	1
27	10386700A	Power Cord	1
28	13394300A	Battery Replacement Kit, Logic PCB External	
29	R0361200A	Screw, 8-32 x 3/8"	3
30	12949700A	Harness, Load Cell to Buffer PCB	1
31	12718800A	Buffer PCB, DLC	1
32	13780500A	PCB, Master Expanded Memory, 1 meg	1
33	*14051300A	Eprom Kit, Master Expanded Memory (0901-0368)	1
34	R0322500A	Screw, #6 x ¼" Plastite`	4
35	A12895400A	Memory PCB, Master 512k	
36	12702500A	Harness, Logic to Master Power	1
37	13878200A *13106000A	Logic PCB, w/o Eprom or Logic PCB, w/o Eprom	1
38	C13246200A	Eprom Kit, 8422/8423 Logic PCB A15	1
39	13142900A	Bezel, Decorative	1

9.5 8213-0101 REPLACEMENT PARTS FIGURE 9.5



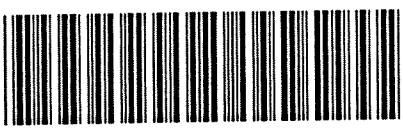
CONSISTS OF			
SYM	QTY	PART NO.	DESCRIPTION
1A	1	10268900A	LEVEL
1B	1	10833900A	CLAMP,WIRE,ADJ.
1C	1	10856800A	SCREW LOCK ASSEMBLY
1D	1	11603300A	LABEL,CAUTION,STATIC AWARENESS
1E	4	12050900A	BUMPER TIP
1F	1	12051200A	STRAIN RELIEF PLATE
1G	1	12259000A	SPACER L/C 30KG
•	2	12578600A	PAD STICK ON
1H	1	12635400A	HARNESS LOAD CELL
1I	1	12718800B	PCB ASSY,DLC BUFFER
1J	1	13084100A	HOLE PLUG,SQUARE(.830)
1K	1	13217900A	TOP COVER PLATE
1L	1	13218000A	ACCESS PLATE, DISPLAY
1M	4	13315500A	ADJUSTABLE FOOT
1N	1	13316500D	BASE ASSY,W/O DISPLAY
•	4	A12363300A	LABEL,SECURITY SEAL
1R	1	B12056000A	INTERFACE BRACKET
1S	1	B12983100A	CMOS L\C ASSY 30KG
1U	1	D11397100A	LABEL,FCC,WHITE BACKGROUND
1V	1	D12051400B	SPIDER, 30KG MACH
2A	7	R02180050	SCREW,8-32X3/8 PH TT
2C	1	R0259600A	8-32X3/8 TAP,DRILLED
2D	4	R0350700A	SCR,CAP 1/4-28X1 SOC
2E	2	R0357500A	SCR,3/8-24 X 1/2 SET
2F	4	R0364600A	SCREW,SET 1/4-28X1/2
2G	2	R0395300A	THUMBSCREW ,8-32 X 3/8
3F	1	12950300A	CABLE, 6 FT 8213-0101 TO 8423
•	1	81987800A	ROLLER PLATTER ASSEMBLY
•	1	81982900A	PLATTER ASSEMBLY, FLAT

• PART NOT SHOWN.

Figure 9.5 8213-0101

METTLER TOLEDO
Scales & Systems
350 West Wilson Bridge Road
Worthington, Ohio 43085-2273

P/N: B12893200A



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