

8213

DigiTOL[®] Bench Scale 8213-0025

Technical Manual
and
Parts Catalog

TM821325 I00

INTRODUCTION

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

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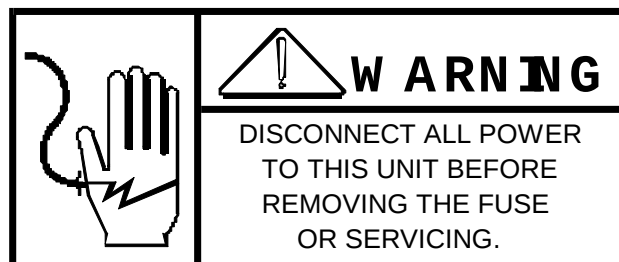
METTLER TOLEDO
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P.O. Box 1705
Columbus, Ohio 43216
(614) 438-4400

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PRECAUTIONS

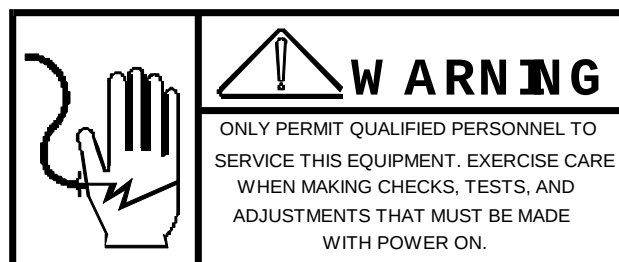
- **READ** this manual before operating or servicing this equipment.

- **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.

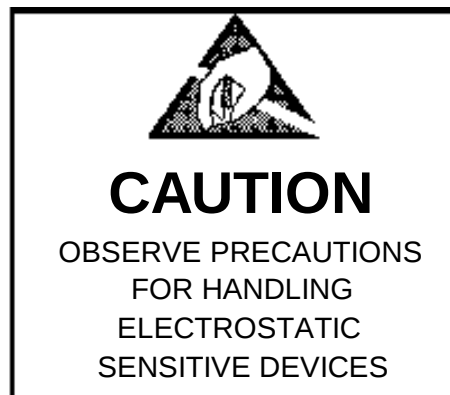


- **SAVE** this manual for future reference.

- **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.



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I. GENERAL DESCRIPTION

The Model 8213-0025 is a general purpose scale that provides weight data for light capacity industrial applications. The 8213-0025 is a 100 lb capacity, stand alone scale incorporating a DigiTOL[®] load cell, seven segment, vacuum-flourescent display and a bi-directional RS-232 port to provide weight data to a host computer.

A. MAJOR COMPONENTS

1. DIGITOL LOAD CELL

The 8213-0026 uses a 60kg capacity DigiTOL load cell. The digital load cell utilizes a moment-insensitive aluminum counterforce combines with analog and digital electronics to provide filtered digital weight indormation to the Main PCB approximately four times a second.

2. MAIN PCB

The Main PCB provides displau and interface capability, receives digital weight information from the DigiTOL load cell, and preferoms all scale functions.

A female DB-9 host interface conector is located on the bottom of the base. The host interface provides RS-232 data and handshake lines for interfacing to an external host computer by means of a user supplied interface cable. A simple host satellite protocol permits weight and status information to be read from the 8213.

3. WEIGHT DISPLAY

The weight display is a five digit, green-blue vacuum flourescent display with 0.5" (12mm) high, seven segment characters. The weight display is mounted in the scale so that it can be viewed from the front (long side) of the base.

4. BASE ASSEMBLY

The 12.13" (308 mm) deep, by 13.63" (346 mm) wide, by 3.25" (82.5 mm) high, die-cast alumninum base is painted fog white in color. Four screw-attached, top-adjustable levelihg feet are included. A power/zero switch is located on the front of the scale base beside the display.

5. SUB-PLATTER SUPPORT (SPIDER)

An alumninum spider is provided with rubber tips for friction platter mount. It mounts directly to the DigiTOL load cell with two socket head cap screws. A level bubble is located on the sub-platter casting aid in leveling the scale.

6. STAINLESS STEEL PLATTER

The 12.5" (317 mm) by 14" (356 mm), type 304 stainless steel platter is removeable for setup, calibration, cleaning, and for viewing the level indicator bubble on the spider.

II. SPECIFICATIONS

A. ENVIRONMENTAL SPECIFICATIONS

1. TEMPERATURE AND HUMIDITY

The 8213 is designed to operate and meet performance specifications over a temperature range of +50 to 104 degrees F (+10 to +40 degrees C) witha humidity range from 0 to 90% non-condensing.

The 8213 is designed to withstand, for shipping or storage, a temperature range of -4 to 140 degrees F (-20 to +60 degrees C) with a humidity range from 0 to 95% non-condensing, without damage.

2. **HAZARDOUS AREAS**
The 8213 MUST NOT be used in areas classified as HAZARDOUS by the National Electric Code (NEC) because of combustible or explosive atmospheres, or in areas that contain extreme dust, moisture or corrosive materials.
3. **WATER RESISTANCE**
The 8213 is intended for use in a general purpose atmosphere. It is intended for indoor applications where dirt, oil or water is not present. The 8213 is not designed for immersion in liquids or for "hose-Down" applications.
4. **AC POWER REQUIREMENTS**
The Model 8213 operates on 120 VAC (+10%, -15%) single phase, AC power. The line frequency must be between 49 and 62 Hz. Power consumption is 25W maximum. The 8213 requires a true earth ground for reliable operation. The AC power, neutral and ground lines for the 8213 must not be shared with equipment that generated line noise (such as motors, relays, heaters, etc.). If adverse power conditions exist, a power line conditioner may be required to ensure reliable operation.
5. **RADIO FREQUENCY INTERFERENCE SUSCEPTIBILITY**
The 8213 will operate with no more than one increment of change in the displayed weight reading when in the presence of a source of radio frequency interference of 27 Mhz, 169 Mhz or 460 Mhz, at a radiated power of 4 W, located 2 m from the scale.

B. WEIGHING PERFORMANCE SPECIFICATIONS

1. **LEGAL-FOR-TRADE APPROVAL**
The 8213 meets or exceeds NIST Handbook 44 weighing accuracy requirements for a 5000e Class III scale. The 100 x 0.02 lb 8213 has received NTEP Certificate of Conformance number 88-173.
2. **CAPACITY AND INCREMENT SIZE**
The capacity of the 8213-0025 is 100.00 lb. Normal increment size is 0.02 lb. High resolution increment size is 0.002 lb over the full range. The scale is not NTEP certified for use in high resolution mode.
3. **AUTOMATIC ZERO MAINTENANCE**
+/- 1.4 lb
2. **WARM-UP TIME**
The scale will perform within the specified accuracies within 10 min. after application of power.

NOTE: A warm-up time of 30 minutes is required prior to calibration.
--

3. **OVER-CAPACITY**
The scale will transmit an overweight indication for weights greater than scale capacity. Weight data for over-capacity loads will not be transmitted. The display will blank display minus (-----) signs for under-capacity.
4. **ZERO INCREMENTS**
The zero increment is +/- 0.0025 wide. The display's 'zero' LED is ON whenever the weight is within the zero increment.

6. EXPANDED ZERO CAPTURE

When a weight of 5.0 lb or greater is placed on the platter and a “no motion” condition is achieved, removing that weight from the scale platter, will increase the width of the zero capture zone will be from ± 0.0025 lb to ± 0.05 lb. When the Auto zero maintenance has brought the weight to within ± 0.0025 lb. The minimum weight object which can be weighed is *0.005 lb*.

7. POWER UP ZERO

When AC power is applied to the scale, zero is automatically captured as above. (Para. 6 & 7)

8. ZONE OF UNCERTAINTY

The weight range over which either of two adjacent weight increments may be displayed is 0.3 increments maximum.

9. PLATTER SHIFT

The weight indication will be within specified tolerances under these conditions.

10. DATA NOT VALID

A Data Not Valid interface signal is transmitted when any of these conditions exist:

- a.** Over-capacity **b.** Platter in motion **c.** The scale is powered up and 0 is not captured, i.e., scale is not within $\pm 2\%$ of scale capacity. **d.** Under Zero

III. SET UP AND CALIBRATION

WARNING

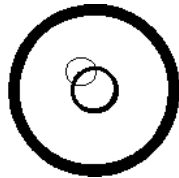
For continued protection against shock hazard,
connect to properly grounded outlet **ONLY**.
DO NOT REMOVE THE GROUND PRONG.

A. LEVELING THE SCALE

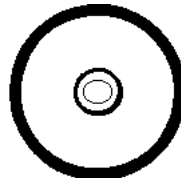
IMPORTANT NOTICE...Using the spider (see Figure 2) to lift the 8213 out of its shipping carton could permanently damage the load cell.

1. Upon removing the scale from the shipping carton, inspect the outside of the unit for any loose or damaged parts.
2. LEVEL the scale by turning adjustable scale feet in or out. Scale is in correct position when Bubble is as shown in Figure 1.

Feet should be adjusted such that scale does not ROCK.



CORRECT
BUBBLE IS NOT CENTERED



INCORRECT
BUBBLE IS CENTERED

3. Remove the access plate, located in the front center portion of the Top Cover, by removing the (1) mounting screw. See Figure 2.

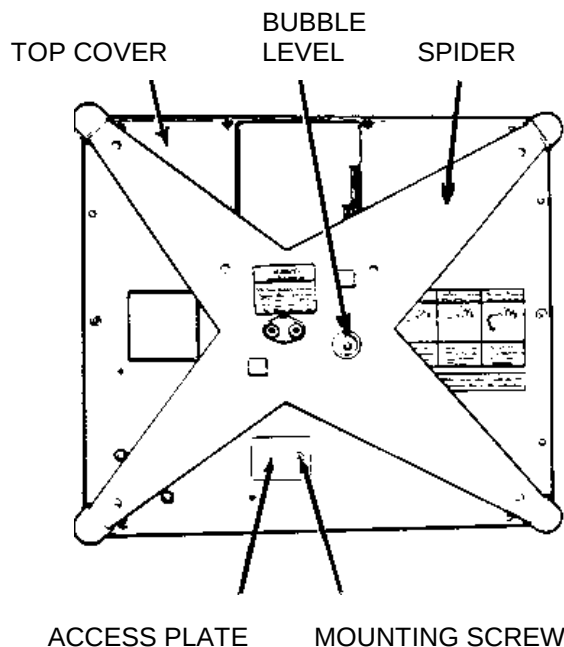


FIGURE 2

B. PROGRAM SWITCH OPTIONS

The 8213 PCB contains five program options switches. These should be set prior to applying A-C power. See Figure 3.

***SW 1-1** BAUD RATE SELECTION
***SW 1-2** BAUD RATE SELECTION

BAUD RATE	SW1	SW2
1200	OFF	OFF
2400	OFF	ON
4800	ON	OFF
9600	ON	ON

***SW 1-3** ON - Even Parity
 OFF - No Parity

SW 1-4 EXPAND ENABLE
 ON - Will display the weight x 0.0005
 OFF - Normal Operation

SW 1-5 CALIBRATE ENABLE
 ON - Calibrate mode
 OFF - Normal operation

*NOTE: Switches 1-1,2,3 are for the scale interface output only.

C. CALIBRATION

In order to calibrate the 8213 the following tools are required:

- 1 - 50 lb test weight
- 1 - Phillips Screw Driver

1. The Digital Load Cell used in the 8213 scale requires at least a 1/2 hours warm-up period with power applied, prior to final calibration. If the scale is not at room temperature at the start of warm-up, extend the warm-up time to at least one hour. This warm-up period will assure that the Load Cell has fully stabilized prior to calibration.

2. When power is applied to the scale, the display will show "----" momentarily. Then, if all diagnostic tests are passed, it will display "0.000", and calibration is possible.

The LED display, located next to the programming switches, will show a "0" indicating all power up diagnostic test have been passed. See Figure 3.

NOTE: If the weight display or LED does not respond as described prior, proceed to the trouble-shooting section of this manual.

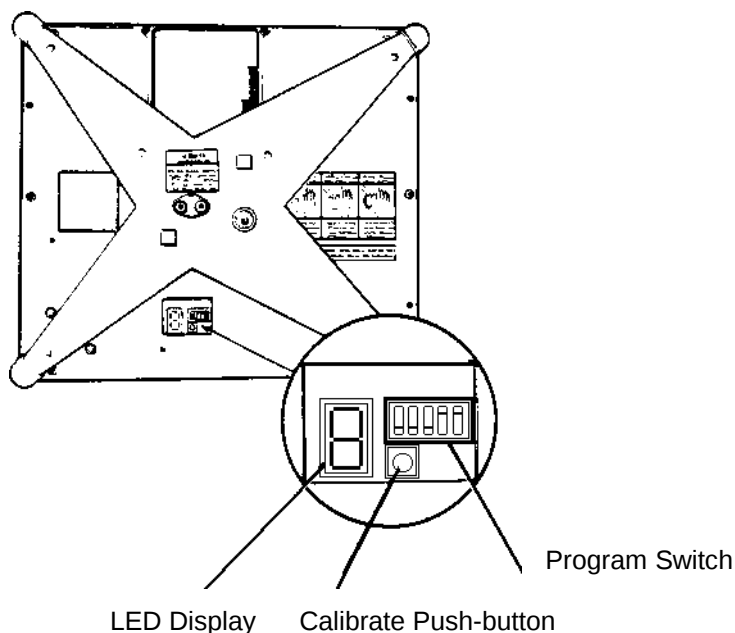


FIGURE 3

3. TOGGLE Switch 5 to the ON position using a pointed non-conductive object. Avoid using an object that can easily be dropped in to the unit. THE DISPLAY WILL SHOW AN "E".

4. PLACE the Empty Platter upside down on the spider. DEPRESS the Calibrate Push Button (Figure 3) UNTIL the "E" begins flashing.

THE "E" WILL FLASH UNTIL THE SCALE DETERMINES THE ZERO SETTING.
THE DISPLAY WILL THEN SHOW AN "F".

5. PLACE the Fifty Pound Test Weight in the platter.

6. DEPRESS the Calibrate Push-button UNTIL the "F" begins to flash.

WHEN CALIBRATION IS COMPLETE THE DISPLAY WILL SHOW A "C" . REMOVE THE TEST WEIGHT. **TOGGLE** SWITCH 5 TO THE **OFF** POSITION. **REPLACE** THE ACCESS PLATE, REPLACE THE PLATTER.

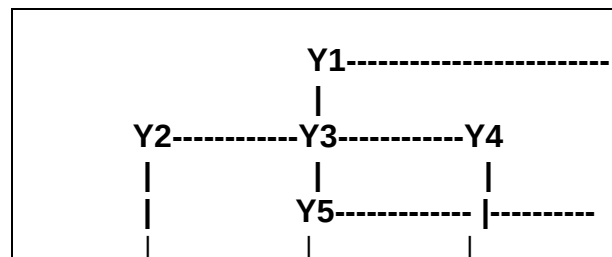
NOTE: Calibration will not be completed if there is continuous motion of these scale platters. This is indicated by interrupted or non-periodic display blanking, and may indicate mechanical interference or an internal scale problem.

ERROR CODE "6" - A display error code "6" indicates an insufficient calibration weight. The operator should make sure the test weight value is 50 pounds, press Zero and retry calibration.

ERROR CODE "8" - A displayed error code "8" indicates that the scale load cell is out of range, and is generally a fatal error. REPLACE the Load Cell.

D. SHIFT TEST

Below is a sketch of the top view of the 8213 scale. The shift test positions are indicated by the Y's. There are five positions numbered Y1-Y5. These positions are: center of platter, and half way out from the center of the platter edges. The test to be performed is to apply half of full capacity load at these positions and verify that the display reading is within .05% or one increment whichever is greater of the applied load.



IV. SCALE INTERFACE SPECIFICATION

A. PURPOSE

The scale acts as a peripheral device to a host computer. The host computer requests weight data when the scale is in a stable state or the scale status when the scale is in an unstable or invalid state. The host computer can also request a scale zero operation in which case the scale will respond with the scale status so that the host computer can determine whether the scale is in zeroing range and/or if the scale is at zero. A scale confidence test can be initiated by the host computer to cause the scale to perform memory tests on itself and put the results in status byte for later interrogation by the host computer.

B. DATA TRANSMISSION FORMAT

Data is transmitted and received by the scale via an RS-232 voltage level interface in the following format: 7 bit ASCII, even or no parity, two stop bits. Data transmission rate is either 1200, 24, 4800 or 9600 baud, switch selectable, (see section IV F SW1-1, SW1-2) asynchronous. Weight data is transmitted in displayed increments, if selected, or in expanded increments of 0.0005 lb when selected by the interface command.

When data is to be sent, request to send (RTS) is turned on and the scale will wait for 100 millisecond for clear to send (CTS) by the host. CTS is turned ON then the next byte of data will be sent. If CTS is not turned ON within the 100 millisecond then the most recent transmission will be aborted.

Between bytes of data sent by the scale there will be a 250 microsecond delay to allow the host to turn CTS OFF. When all characters in a transmission have been sent RTS will be turned OFF.

C. COMMUNICATIONS PROTOCOL

The host computer sends requests to the scale in the form of single ASCII characters to perform various tasks. The scale sends responses back to the host computer as a string of ASCII numeric digits or as an ASCII "?" followed by a status byte. The following is a list of commands that can be sent by the host computer and the scale responses.

HOST COMPUTER	SCALE	DESCRIPTION
W	<STX>XX.XXX<CR> or <STX>XXX.XX<CR> or <STX>XXXX.X<CR> <STX>?<status byte><CR>	Send normal resolution data command. Normal resolution weight data, displayed data. Weight increment is same as displayed data. Sent if the scale is in a stable valid state. Where X is an ASCII numeric digit Scale status data. Sent if the scale is in no motion, under 0 or over capacity.
H	<STXXX.XXXX><CR> <STX>?<status byte><CR>	Send high resolution weight data. High resolution weight data. Weight increment is 0.0005 lb. Sent if the scale is in a stable valid state. Where X is an ASCII numerical digit. Scale status data. Sent if the scale is in no motion, under 0 or over capacity
Z	<STX>?<status byte><CR>	Zero scale command. On the next A/D reading, the scale will attempt zeroing if it is within the zero capture range (>2.0 lbs). Scale status data.

A	<STX><CR>	Initiate a confidence test command. The scale performs test on RAM, ROM and NVRAM and places the results into a confidence test status byte for future interrogation by the host computer. A carriage return and the line feed are sent to the host by the scale to indicate that the command was received.
B	NSTX><status byte><CR>	Send confidence test status command. The scale is requested to send the results of a previously performed confidence test. These results are contained in a status byte in the scale. Confidence Test Status byte.
E	<STX>"E"<CR>	Enter echo mode command. The scale is requested to enter a mode where incoming characters (except "F") are not treated as commands. These characters are echoed back to the host computer. The scale echoes back the "E" to indicate that the command was received.
F	<STX>"F"<CR>	Exit echo mode command. The scale is requested to exit the echo mode and treat all subsequent incoming characters as commands. The scale echoes back the "F" to indicate that the command was received.

NOTE: An ASCII "?" is sent by the scale to indicate that the following byte is a non-ASCII status byte.

<> are used to indicate that the characters within are a description of the transmitted data. < and> are not part of the transmitted data string.

<STX> denotes the ASCII start of text character, <CR> denotes the ASCII carriage return.

If a confidence test results in an error, the scale will not respond to the W, H or Z command until the error condition is cleared. A confidence test error will also cause the scale weighing operation to halt until the error condition is cleared.

D. SCALE STATUS BYTE FORMAT

The scale status bits are defined as follows:

B7	B6	B5	B4	B3	B2	B1	B0
Parity Bit (Even)	Always = 1	Always = 1	Center of Zero = 1	Outside Zero Capture Range = 1	Under Zero = 1	Out of Range = 1	Motion = 1

E. CONFIDENCE TEST STATUS BYTE FORMAT

The confidence test status bits are defined as follows:

B7	B6	B5	B4	B3	B2	B1	B0
Parity Bit (Even)	Confid. Test Compl.	Not Used	ROM Test	Proc. RAM Test	Not Used	XICOR ROM Test	XICOR RAM Test

NOTE: For confidence test status bits B0 thru B4, a "1" indicates test failed and "0" indicates test passed.

Bit B6 is set after a confidence test is performed and cleared after the host computer reads the confidence test status bytes.

F. BAUD RATE SWITCHES

<u>SPEED</u>	<u>SWITCH 1</u>	<u>SWITCH 2</u>
1200	OFF	OFF
2400	OFF	ON
4800	ON	OFF
9600	ON	ON

G. PARITY

Switch 3 ON - Even Parity
OFF - No Parity

V. 262 REMOTE DISPLAY OPTION

A. ATTACHING THE CABLE

Remove the Access Plate on the bottom of the 8213 (Figure 4). Loosen the two screws on the Strain Relief Plate. Feed the cable under the Relief Plate, and plug the connector into its mating plug. Tighten the two screws for the Relief Plate **being sure** that the Cable is seated into the small groove under the Relief Plate.

B. PART NUMBER FOR THIS OPTION

262 Remote Display with 25-foot of cable - 126353 00A.

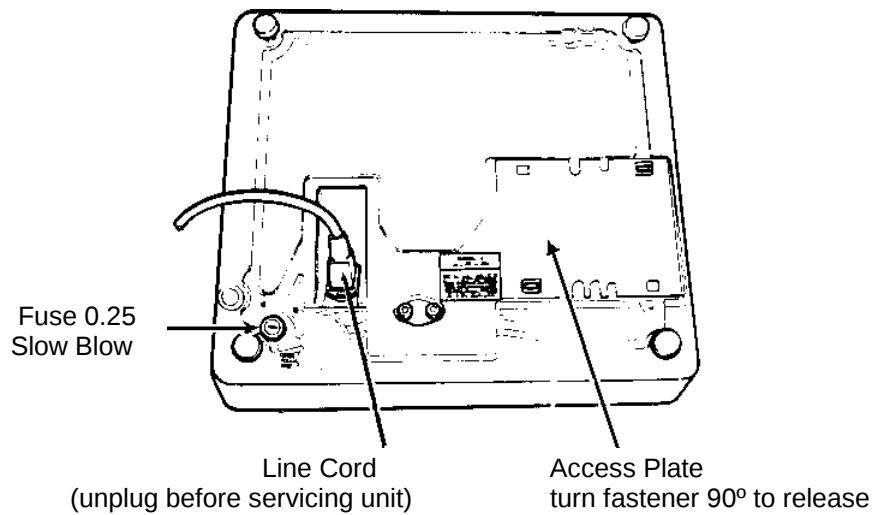


FIGURE 4

VI. TROUBLESHOOTING AND MAINTENANCE

WARNING: POWER SWITCH DOES NOT TOTALLY REMOVE POWER FROM ENTIRE SCALE. DISCONNECT LINE CORD BEFORE SERVICING.



Required Tools: 1 - 3/16" Hex Wrench
 1 - Phillips Screwdriver

A. ACCESS TO THE MAIN PCB, TRANSFORMER AND DISPLAY PCB. (See Figure 2)

1. REMOVE the Platter.
2. REMOVE the Spider. It is retained by two Hex Screws.
3. REMOVE the Top Cover. It is retained by six Phillips Head Screws.

**** IMPORTANT ****

Before connecting or disconnecting ANY harness from a printed circuit board or load cell in the Model 8213, you MUST wait at least five (5) seconds after removing line power from the unit. This will allow the Power Supply capacitors to discharge to a safe voltage level.

Failure to wait may result in damage to the printed circuit boards or the load cell.

4. Confirm that all connectors are firmly seated in the proper locations shown on the system schematic at the end of this manual.
5. Confirm that the W2 jumper (located next to component, A22 and A14, the largest components on the PCB) is in place. This should be the only jumpers required on the PCB.

B. TROUBLESHOOTING

1. JUMPER SETTINGS - MAIN

PCB
W2 - IN
W3 - OUT
W4 - OUT
J12 - OPEN

2. AC VOLTS - J2 ON THE 8213 MAIN PCB

- * Across Pins 1 and 3 9.2 VAC
- * Across Pins 6 and 4 20 VAC
- * Across Pins 6 and 5 40 VAC
- * Across Pins 4 and 5 20 VAC

NOTE: Be sure to use the J2 pin numbers on the silk screen of the Main PCB when checking the AC voltage test points. The P2 connector that plugs into the J2 has pin numbers that are in reverse order. The readings were taken with an AC input voltage of 120 VAC.

3. DC VOLTS - All Test Points Are On The Main PCB.

- a. Across J3-1 to chassis ground. +4.85 to 5.2 VDC. AC ripple at this test point 25 millivolts or less.
- b. Across J6-9 to chassis ground. +39 VDC $\pm$ 2 VDC. AC ripple at this test point 700 millivolts or less. The voltage at J6-9 can show a changing voltage $\pm$.5 volts of the measured DC and still be acceptable.

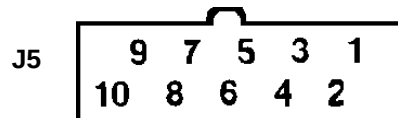
4. DIGITAL LOAD CELL TEST POINTS -

All test points are on the Main PCB.

- a. The following points measured with respect to chassis with a voltmeter should show a varying voltage changing anywhere from +4.1 to +5 VDC using a DVM.

J5-1, 3, 5, 7

TOP VIEW



NOTE: The voltage variations observed will depend on the meter being used. J5-5 and 7 may show no change with a DVM. J5-1, 3 are outputs from the Digital Load Cell. J5-5, 7 are inputs to the Load Cell.

- b. Across J5-2 to chassis ground. +23.5 VDC $\pm$ 2 VDC. AC ripple at this test point should be 250 millivolts or less. This voltage is generated on the Main PCB.

5. REMOTE DISPLAY TEST POINTS -
All test points are on the Main PCB.

J6-1 to chassis ground. +4.85 to 5.2 VDC. AC ripple should be less than 25 millivolts AC.

*J6-4 to chassis ground. +8 to 1 VDC.

J6-5 to chassis ground. +2.8 to 4 VDC. This voltage should be a changing DC within the range.

*J6-6 to chassis ground. +.26 to .32 VDC

NOTE: The voltage measured could appear as a varying DC depending on the speed of the meter being used. J6-1, 4, 5, 6 are outputs from the 8213 Main PCB.

6. ERROR CODES

<u>CODE</u>	<u>MEANING</u>
X0	Normal Operation
* X1	Eprom Checksum Error
* X2	Micro RAM Error
* X3	NVRAM Error
X4	NVRAM Checksum Error - Must recalibrate or Lb/Kg SW in wrong position for present calibration.
* X5	Data I/O Error
**X6	Gross Span Calibration Factor Error
**X7	DLC Timeout Error - Remove power and re-try
**X8	L/C Out of Range

* Codes 1, 2 3 and 5 all require Main PCB replacement if power OFF/ON doesn't clear the LED to 0.

** Codes 6, 7 and 8 all deal with a possible bad digital load cell or calibration.

C. LOAD CELL

CAUTION: You MUST wait at least 5 seconds after removing AC power before unplugging the cable assembly between the digital load cell and the Main PCB.

The Load Cell is retained to the base by two Hex Head Screws.

To remove Load Cell:

1. REMOVE the Platter. REMOVE the Spider from Load Cell.
2. REMOVE Load Cell Mounting Screws from scale base. DISCONNECT the Harness from the Load Cell.

NOTICE: WHEN RE-INSTALLING THE LOAD CELL, THE MOUNTING SCREWS AND SPIDER MOUNTING SCREWS MUST BE VERY TIGHT.

D. OVERLOAD STOP ADJUSTMENT

The Overload Stop Screws located in the Spider are pre-set at the Factory and normally require NO adjustment.

Should the spider require replacement the gaps between the screws and the overload post should be set as shown in Figure 5.

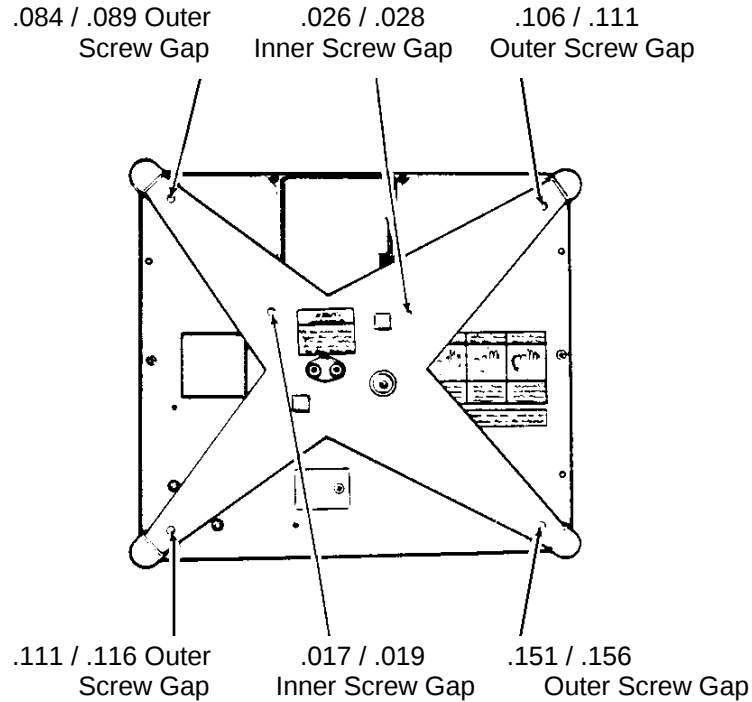
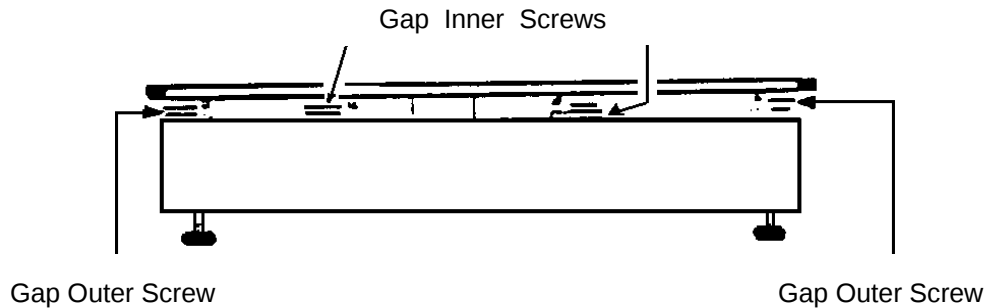


FIGURE 5

GAPS ARE MEASURED BETWEEN SET SCREWS AND THE OVERLOAD STOP POST

SIDE VIEW



E. MAINTENANCE

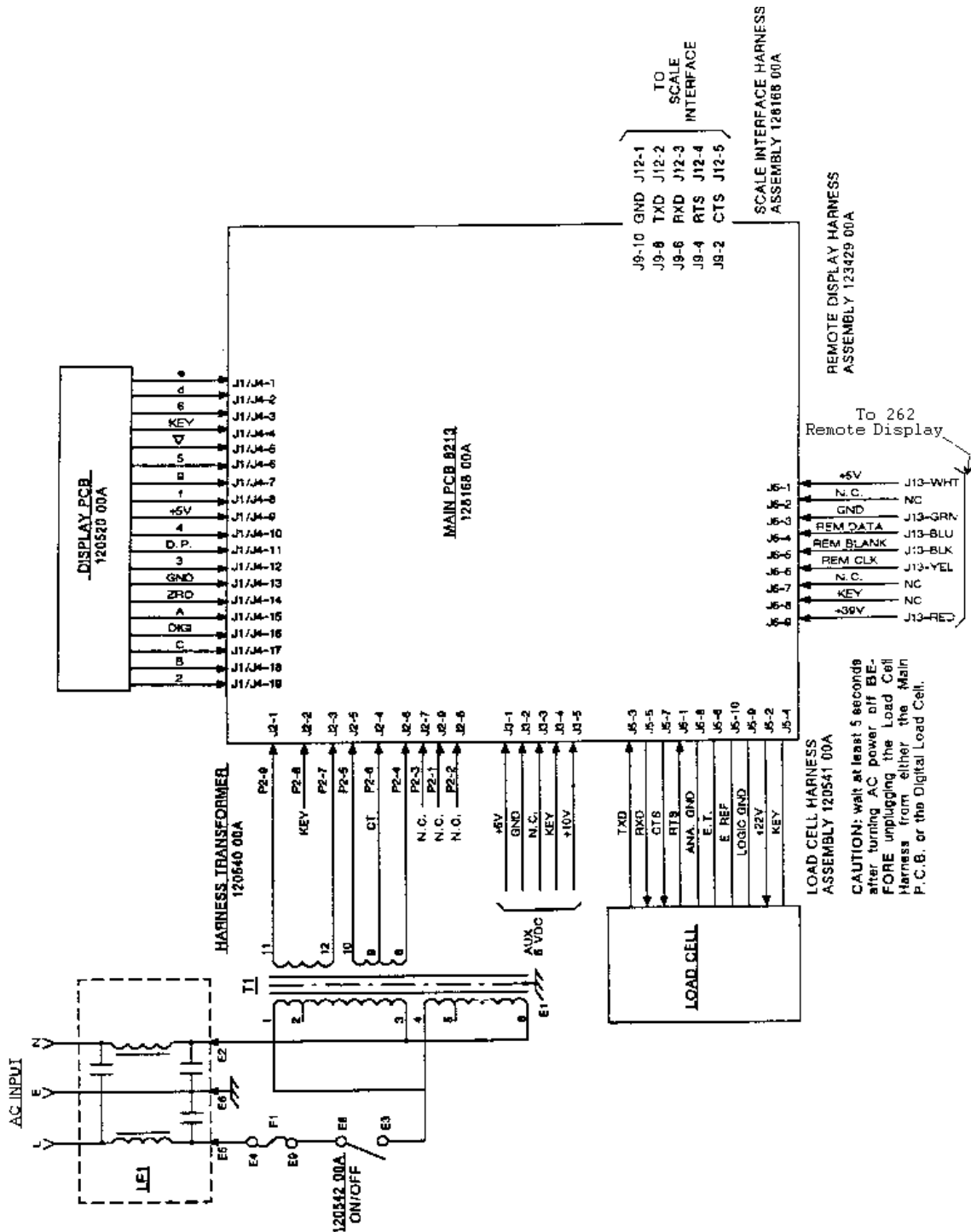
CLEANING

WARNING: DO NOT SPRAY WASH DOWN.
HAZARD OF ELECTRICAL SHOCK OR BURN.

- a. Turn OFF power.
- b. Use a clean damp cloth to wipe exterior surfaces.
- c. Display may be cleaned with a clean cloth sprayed with mild window cleaner.

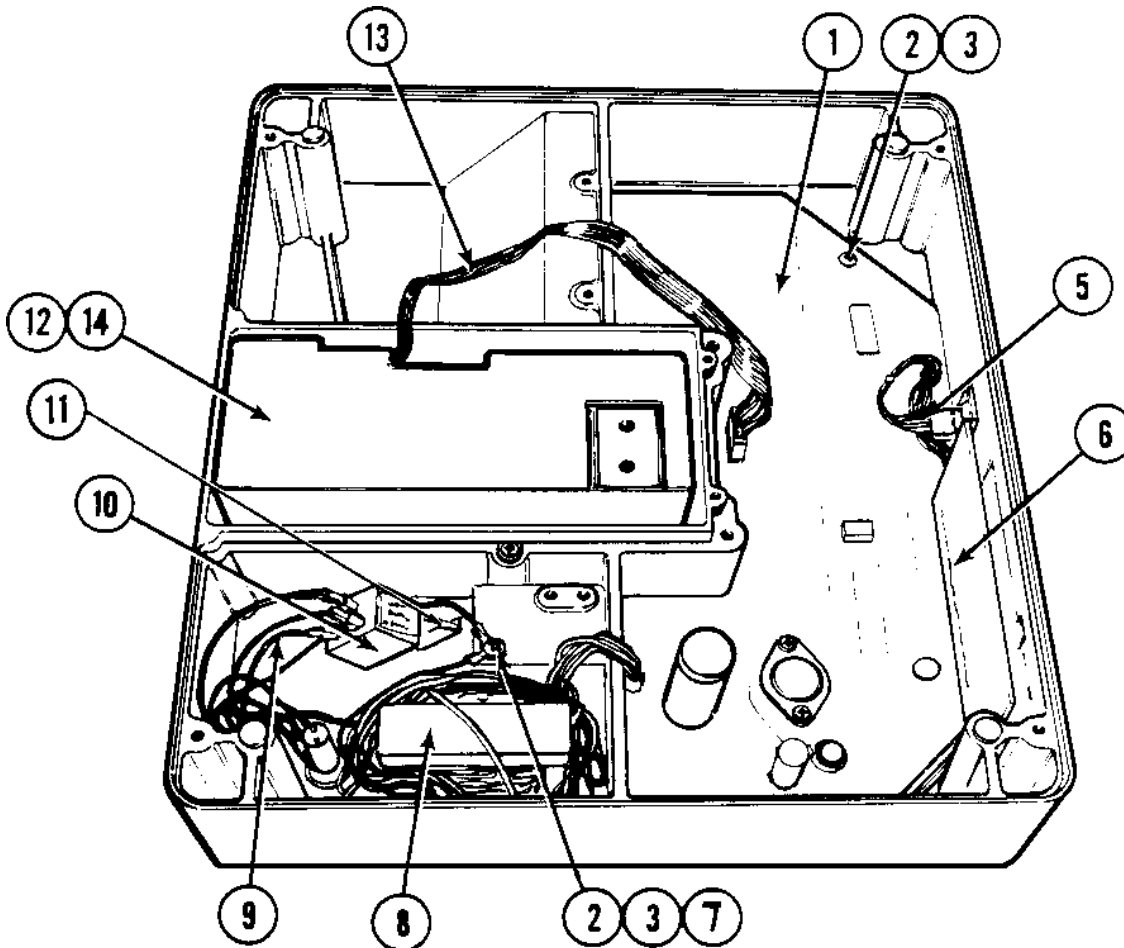
DO NOT use solvents or chemicals on the unit. These may harm the surfaces.

VII. SYSTEM SCHEMATIC



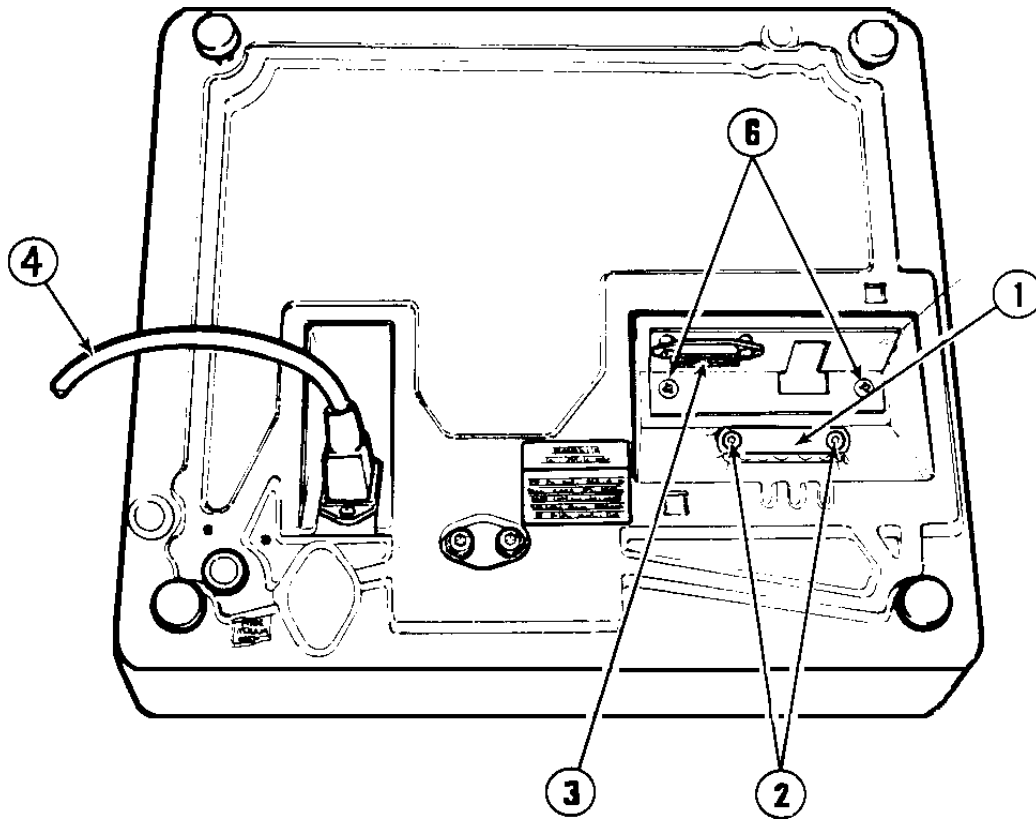
VIII. PARTS CATALOG

A. MAIN CIRCUIT BOARD, LOADCELL & TRANSFORMER



REF. NO.	PART NO.	DESCRIPTION	QTY.
1	128168 00A	Main PCB	1
2	R00589130	Washer, #8 I.T. Lock	9
3	R02180 050	Screw, #8-32 x 3/8" SI. Hex	9
4	120538 00A	Insulator PCB	NS
5	B120542 00A	Harness & On-Off-Zero Switch	1
6	120520 00A	Display PCB	2
7	120556 00A	Harness, Ground	1
8	B120540 00A	Harness & Transformer	1
9	A120557 00A	Harness, LFI to Fuse	1
10	119932 00A	Line Filter	1
11	R03187 00A	Blind Rivet	2
12	*129844 00A	Load Cell 60 kg Digital CMOS	-
13	126354 00A	Harness, Load Cell	1
14	122591 00A	Spacer Block, Load Cell	NS
15	126357 00A	Ferrite Core (1ea for digital Load Cell cable)	NS

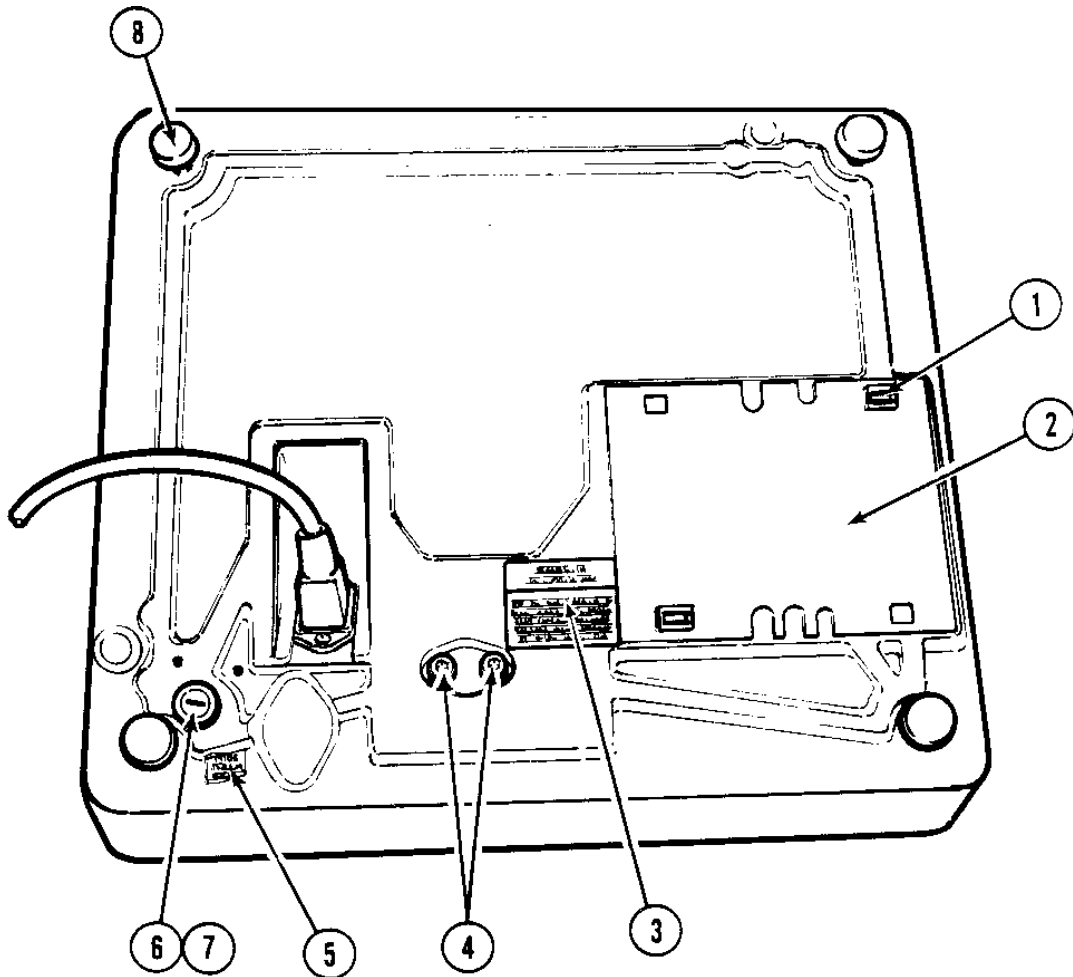
B. BASE / INVERTER HARNESS



REF. NO.	PART NO.	DESCRIPTION	QTY.
1	120512 00A	Strain Relief Plate	1
2	122603 00A	Thumb Screw	2
3	128166 00A	Serial I/O Harness Assembly	1
4	103867 00A	Line Cord	1
5	123429 00A	Remote Display Harness Assembly	NS
6	R02180 050	Screw #8-32 X 3/8 Ph. T.T.	2

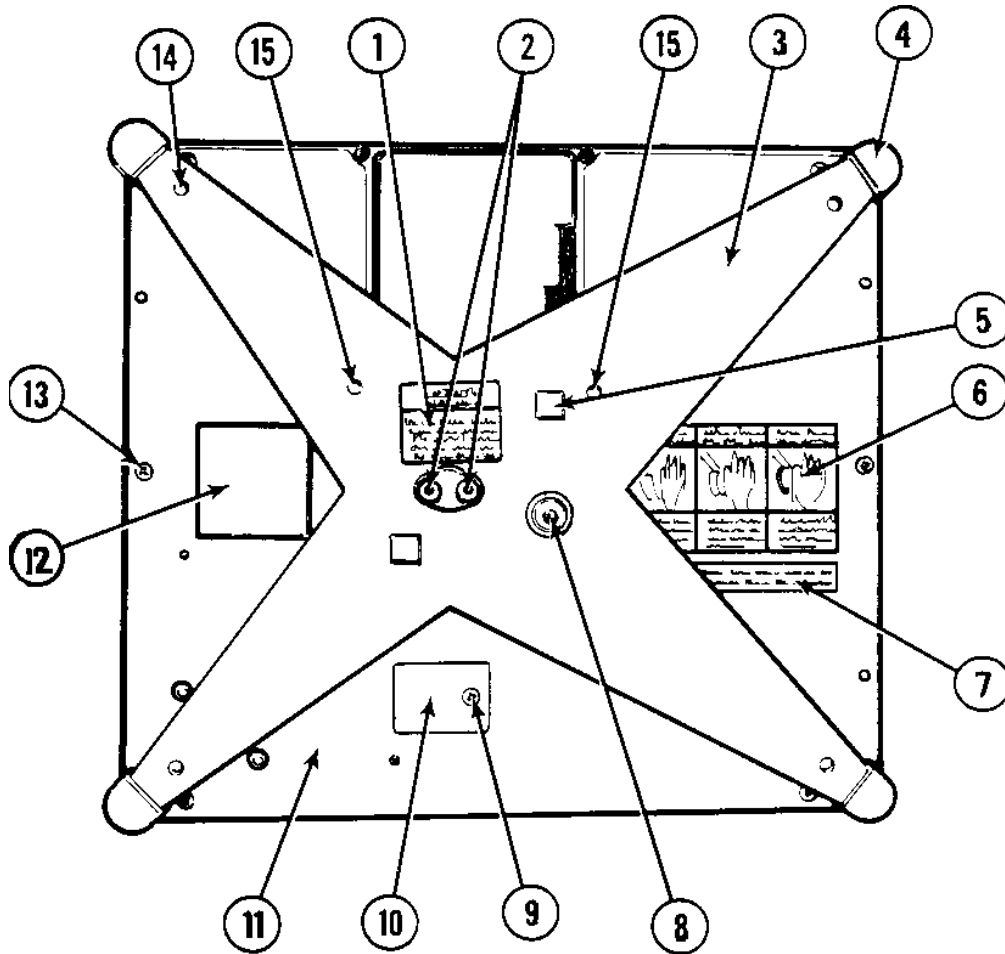
N.S. - Not Shown

C. BASE / FEET / ACCESS COVER



REF. NO.	PART NO.	DESCRIPTION	QTY.
1	120512 00A	Strain Relief Plate	1
2	122603 00A	Thumb Screw	2
3	128166 00A	Serial I/O Harness Assembly	1
4	103867 00A	Line Cord	1
5	123429 00A	Remote Display Harness Assembly	NS
6	R02180 050	Screw #8-32 X 3/8 Ph. T.T.	2

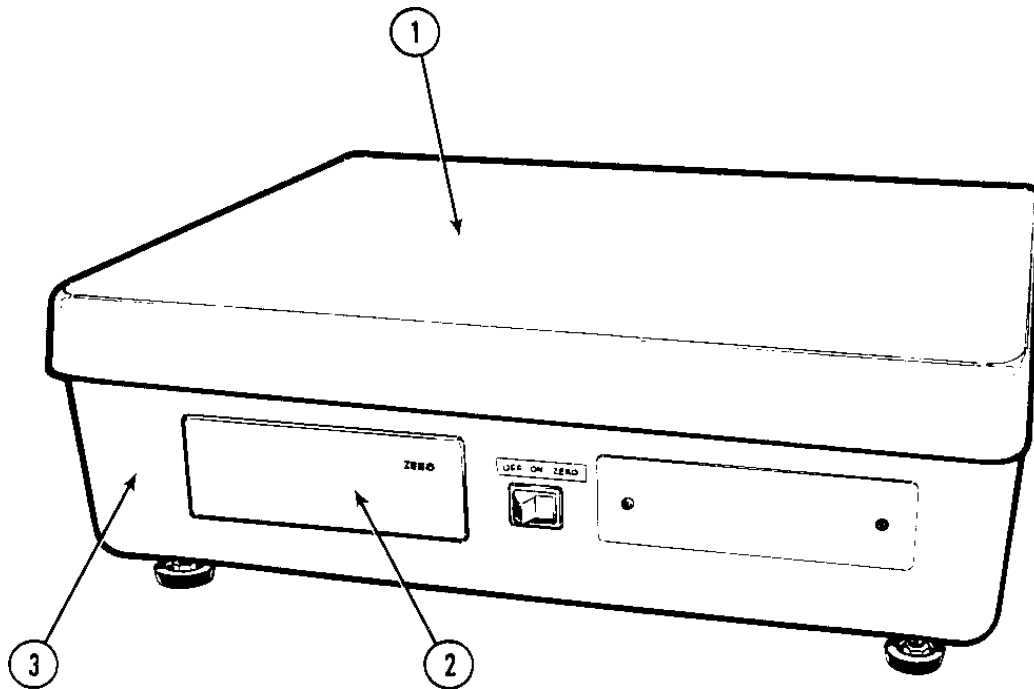
D. SPIDER & TOP COVER



REF. NO.	PART NO.	DESCRIPTION	QTY.
1	119859 00A	Label, L/C Assembly	1
2	R03507 00A	Screw, Cap #1/4-28 x 1"	2
3	D120514 00A	Spider, 60 kg	1
4	120509 00A	Bumper Tip	4
5	122587 00A	Bumper, Stick-On	2
6	A118792 00A	Decal, Warning - Service	1
7	B113971 00A	FCC Label	NS
8	102689 00A	Level	1
9	R00844130	Screw, #8-32 x 3/8"	1
10	A120503 00A	Access Plate	1
11	A120502 00A	Top Cover	1
12	116033 00A	Decal, Static (Bi-Lingual)	1
13	R02180 050	Screw, 38-32 x 3/8" Sl. Hex	6
14	R03646 00A	Screw, Set #1/4-28 x 1/2"	4
15	R03575 00A	Screw, Set #3/8-24 x 1/2"	2

N.S. - Not Shown

E. PLATTER / BASE / LENS



REF. NO.	PART NO.	DESCRIPTION	QTY.
1	A120501 00A	Platter	1
2	128165 00A	Display Lens	1
3	B120574 00B	Base Assembly w/ 1 Display	1