2096
2196

DigiTOL
SCALE
BASE

Technical Manual
and
Parts Catalog

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:

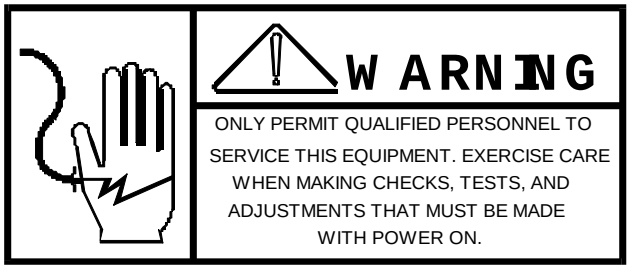
METTLER TOLEDO
Training Center
P.O. Box 1705
Columbus, Ohio 43216
(614) 438-4400

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.

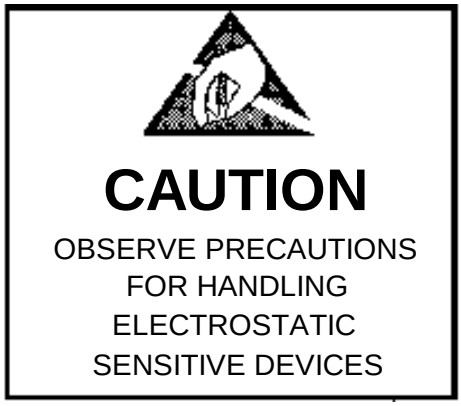
- **ALWAYS** take proper precautions when handling static sensitive devices.



- **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.

1.0 GENERAL DESCRIPTION

The Models 2096 and 2196 are digital scale bases for general purpose industrial applications ranging form 100 lb. to 400 lb. (50 to 200 kg) capacity in the Model 2096 and 250 lb. to 1000 lb. (100 to 500 kg) in the Model 2196. The 2096 and 2196 bases are intended for use with the Models 8510, 8520 and 8530 DigiTOL® Indicators. The unit is also compatible with the Model 8572 and 8582 parts counter as a remote scale for sampling or bulk counting.

The Model 2096 is available in a 100 lb (59kg), 250 lb (100 kg) or 400 lb (200 kg) capacity, while the 2196 is available in 250 lb (100 kg), 500 lb (200 kg) and 1000 lb (500 kg) capacities.

2.0 SPECIFICATIONS

2.1 PHYSICAL DESCRIPTION - MODEL 2096

The 2096 scale is comprised of the following major components.

2.1.1. FABRICATED STEEL BASE ASSEMBLY
The 17.63 in. (450 mm) X 23.50 in. (600 mm) X 5.56 in. (141 mm) welded steel frame, is charcoal black in color. Four screw adjustable mounting feet are included.

2.1.2. DIGITAL LOAD CELL
The weight sensor is a 140 kg or 300 kg digital load cell. The digital load cell module utilizes a moment insensitive counter-force combined with analog and digital electronics to provide weight information to the indicator at a fixed rate of 8.8 times per second.

2.1.3. PAINTED CARBON STEEL PLATTER
The 17.63 in. (450 mm) X 23.50 in. (600 mm) platter is removable for cleaning and viewing the level bubble.

2.1.4. WEIGHT
The actual weight of the Model 2096 is 57 lb. (26 kg). This shipping weight of the 2096 is 67 lb (30 kg).

2.2 PHYSICAL DESCRIPTION - MODEL 2196

The 2196 scale is comprised of the following major components:

2.2.1. FABRICATED STEEL BASE ASSEMBLY
The 23.57 in (600 mm) X 31.44 in. (800 mm) X 6.56 in. (167 mm) welded steel frame, is charcoal black in color. Four adjustable mounting feet are included.

2.2.2. DIGITAL LOAD CELL
The weight sensor is a 500 kg or 1000 kg digital load cell. The digital load cell module utilizes a moment insensitive counter-force combined with analog and digital electronics to provide weight information to the indicator at a fixed rate of 8.8 times per second.

2.2.3. PAINTED CARBON STEEL PLATTER
The 23.57 in. (600 mm) X 31.44 in. (800 mm) platter is removable for cleaning and viewing the level bubble.

2.2.4. WEIGHT
The actual weight of the Model 2196 is 126 lb (57 kg). The shipping weight of the 2196 is 158 lb (72 kg).

2.3 ELECTRICAL SPECIFICATIONS

The power to operate the digital load cell is provided by the digital indicator or parts counter connected to the Model 2096 or 2196 base. The power requirement is 18 VDC maximum at 30 mA maximum.

2.4 ENVIRONMENTAL SPECIFICATIONS

2.4.1. TEMPERATURE AND HUMIDITY

a. Operating Range
The scale is designed to meet specifications over a temperature range 14º F to 104º F (-10 to 40º C) with a humidity range from 5 to 90% non-condensing.

b. Shipping Range
The scale is designed to withstand a temperature range of -40C to +70C with a humidity range from 5 to 95% non-condensing without damage.

2.4.2. APPLICATION

a. The Models 2096 and 2196 are intended for indoor applications where conductive dust, oil or moisture are not present.

b. Do not hose-down the Model 2096 and 2196 scales. Typical examples of misapplication of the scale include, but are not limited to:

1. Immersions
2. Hose-down
3. Splashing liquids
4. Corrosive chemical environments

Toledo Scale manufactures other scales that are suitable for “hose-down” applications.

2.4.3. HAZARDOUS AREAS

WARNING
In locations classified as hazardous by the National Electrical Code (NEC) because of combustible or explosive atmospheres, special precautions are required. DO NOT USE THE MODEL 2096 OR 2196 IN THESE LOCATIONS.

2.5 FACTORY NUMBER GUIDE

Factory Number	Load Cell Capacity	Allowable Backweight	Maximum Capacity	Recommended Scale Indication
2096-0001	140 kg	76 lb / 30 kg	176 lb / 80 kg	100 lb x 0.02 lb / 50 kg x 0.01
2096-0002	300 kg	250 lb / 126 kg 100 lb / 26 kg	500 lb / 226	250 lb x 0.05 lb / 100 kg x 0.02 400 lb x 0.1lb / 200 kg x 0.05
2096-0003*	100 kg	76 lb / 30 kg	176 lb / 80 kg	100 lb x 0.02 lb / 50 kg x 0.01
2096-0004*	300 kg	250 lb / 126 kg 100 lb / 26 kg	500 lb / 226 kg	250 lb x 0.05 lb / 100 kg x 0.02 400 lb x 0.1 lb / 200 kg x 0.05
2196-0001	500 kg	475 lb / 230 kg 225 lb / 130 kg	725 lb / 330 kg	250 lb x 0.05 lb / 100 kg x 0.02 500 lb x 0.1 lb / 200 kg x 0.05
2196-0002	1000 kg	397 lb / 135 kg	1397 lb / 635 kg	1000 lb x 0.2 lb / 500 kg x 0.01
2196-0003*	500 kg	475 lb / 230 kg 225 lb / 130 kg	725 lb / 330 kg	250 lb x 0.05 lb / 100 kg x 0.02 500 lb x 0.1 lb / 200 kg x 0.05
2196-0004*	1000 kg	397 lb / 135 kg	1397 lb / 635 kg	1000 lb x 0.2 lb / 500 kg x 0.01

* These versions utilize a dust tight DigiTOL® Cell.

Table 2.1 Factory Number Guide

3.0 INSTALLATION PROCEDURE

3.1 UNPACKING

3.1.1. Examine the shipping box for any signs of damage. **IF SHIPPING DAMAGE IS FOUND, MAKE A CLAIM WITH THE CARRIER IMMEDIATELY.**

3.1.2. Open the shipping carton and remove the platter from the top of the scale.

3.1.3. Lift the Model 2096 or Model 2196 from the box.

3.1.4. Remove and retain the ten foot interconnecting cable (#13011500A) packed with the unit.

3.1.5. Place the Model 2096 or Model 2196 on a level, stable surface. Save the packing material for future transport of the scale.

3.2 CONNECTIONS

The only external connection required to the Model 2096 or the Model 2196 base is the interconnecting cable to the indicator or parts counting scale. This cable is used to provide power to the digital load cell and also to transmit the weight information from the digital load cell. The Model 2096 and the Model 2196 utilizes a 9-pin plug in the base for this connection. A 10 foot (3 meters) cable (#13011500A) is packed with the digital base for this purpose. For attaching the cable, follow these instructions:

3.2.1. Remove the platform.

3.2.2. Attach the 9-pin connector end of the enclosed cable (PN 13011500A) to the 9-pin plug shown in Figure 3.1. Secure with the two screws included with the connector. See Section 5.0 of this manual for the pin configuration of the 9-pin connector (J3). If a cable longer than 10 feet (3M) is required, see Section 5.0.

NOTE: The maximum allowable cable length between the Model 2096 or Model 2196 base and parts counter or indicator is 50 ft. (16M). The cable specified for use is the Toledo Scale 20 gauge, 6 conductor, load cell cable, PN 510620370.

3.2.3. Attach the other end of the interconnecting cable to the indicator or parts counter with which the Model 2096 or Model 2196 base will be used. Refer to the interconnecting instructions in the technical manual of the indicator or parts manual

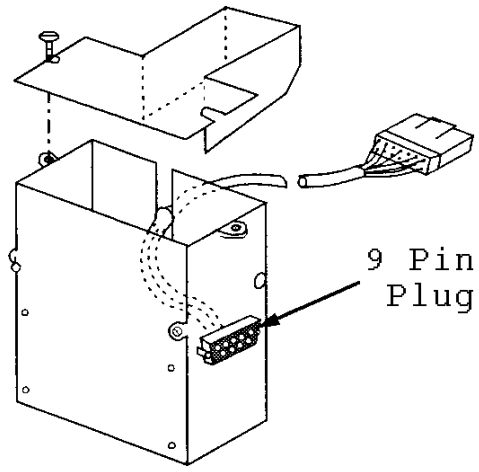


Figure 3.1 Interconnection Cable

3.3 SETUP

3.3.1. Place the Model 2096 or Model 2196 base in the location where it will be used.

3.3.2. Level the scale by turning in or out the adjustable feet on the bottom of the base. The feet should be adjusted so the scale does not rock. The Model 2096 or Model 2196 is level when the bubble is centered in the target area of the level indicator (located on the sub-platter). Refer to Figure 3.2. Tighten the jam nuts to the frame to secure the legs in position.

WARNING
EACH ADJUSTABLE FOOT MUST HAVE A MINIMUM OF 3/8" (9 THREADS) ENGAGED.

INCORRECT
BUBBLE IS NOT CENTERED

CORRECT
BUBBLE IS CENTERED

Figure 3.2 Level Indicator

3.3.3. Re-install the platter on top of the sub-platter. Apply power to the indicator or parts counter being used with the 2096 or 2196, the base will be ready for calibration after a 30-minute warm-up period.

3.3.4. Refer to the indicator technical manual for operating instructions.

4.0 MECHANICAL ADJUSTMENTS

Before making any adjustments to the Model 2096 or 2196, exercise the scale two times by placing a full-capacity test-weight load on the platform.

4.1 OVERLOAD ADJUSTMENT

The overload stop gaps must be checked & reset if the top frame, bottom frame, or load cell is replaced.

4.1.1. To set the gaps, remove the platter and four platter supports from the top frame. (Refer to Figures 4.1 and 4.2). Apply sufficient weight to the frame to zero the scale.

4.1.2. Loosen the jam nuts, then using the proper size feeler gauge in the gap, turn the set screws until a slight drag on the feeler gauge is felt. Refer to the gap shown Table 4.1.

4.1.3. Tighten the jam nut and re-check the gap. Re-adjust if necessary.

4.1.4. Re-install the platter supports and platter and check for full capacity.

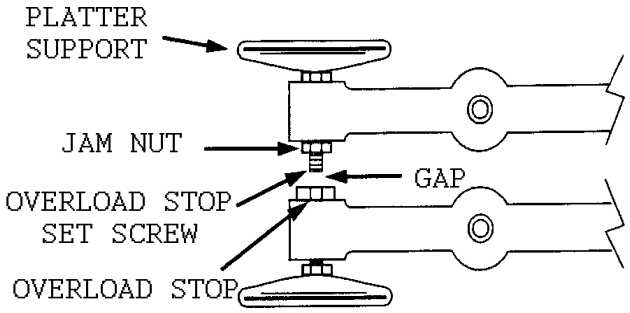


Figure 4.1 View of B Position Gaps

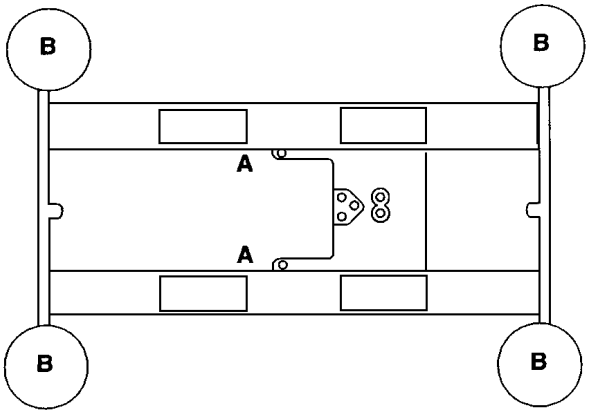


Figure 4.2 Platter Support and Overload Stop Location

Scale Factory Number	Position A		Position B	
	Inches	mm	Inches	mm
2096-0001	0.036	0.91	0.198	5.03
2096-0002, -0004	0.043	1.09	0.247	6.27
2096-0003	0.016	0.41	0.0852	2.08
2196-0001, -0003	0.033	0.84	0.222	5.64
2196-0002, -0004	0.043	1.09	0.319	8.10
Tolerance	± 0.001	± 0.03	± 0.005	± 0.13

Table 4.1 Overload Gap Specifications for Figure 4.1

4.2 SHIFT TEST

A shift test verifies that all sections of the platter weigh within tolerance prior to the scale in service. If the 2096 or 2196 does not pass the shift test, verify overload stop settings before replacing the load cell. No adjustment for shift is possible.

Set the indicator in expanded mode. (Refer to the technical manual of the indicator or parts counter.) Place test weights equal to one-half scale capacity sequentially at each of the positions A, B, C and D, as shown in Figure 4.3. Note the indicator reading at each position.

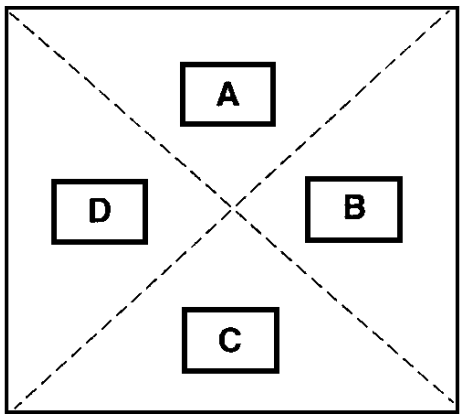


Figure 4.3 Platter Diagram For Shift Test

Positions A, B, C and D are centered halfway between the center and the edges of the platter. The following table shows the Handbook 44 tolerances in d (divisions) for the shift test.

Scale Capacity	Test Weight	Acceptance Tolerance (New Scale Adjustment)	Maintenance* Tolerance (Scale in Service)
5,000 d	2,500 d	± 1.5 d	± 3 d
3,000 d	1,500 d	± 1.0 d	± 2 d

Table 4.2 Tolerance Table For Shift Test

* In addition to meeting tolerance, the range of error in a shift test (A, B, C and D in Figure 4.3) must not exceed the maintenance tolerance value (3d, 2d). Ref. H-44, T.N.4.4.

5.0 INPUT / OUTPUT CONNECTIONS

The 9-pin connector (J3) under the platter of the Model 2096 or 2196 base is used as the input and output connector. Communications to and from the Model 2096 or 2196 are via RS-422. This 9-pin connector has the following pin assignments.

CAUTION
The Model 2096 or 2196 must be connected exactly as shown below in Table 5.1. Failure to do so may cause damage to the equipment.

2096 / 2196 J3 Pin	Signal Description	Cable Wire Color	*8510 Panel Mount - 20XX DB-9	**8510 SS - RAM 10XX		*8520 J2	8572, 8582 Desk / Wall, 8530 Desk / Rack	8530 Wall
				4-Pos. Term. Block TB1	6-Pos. Term. Block TB1			
1	RxD A	Red	1	2	3	RxD A	1	A
4	****BATT IN	White	NC	NC	NC	NC	NC	NC
5	+20 VDC IN	Green	5	1	6	+18 V	5	E
6	TxD B	Yellow	NC	NC	2	TxD B	6	F
7	GND	Blue	7	4	5	GND	7	G
8	TxD A	Black	8	3	1	TxD A	8	H

(NC = Not Connected)

Table 5.1 2096/2196 Load Cell Cable Wiring Guide

NOTES:

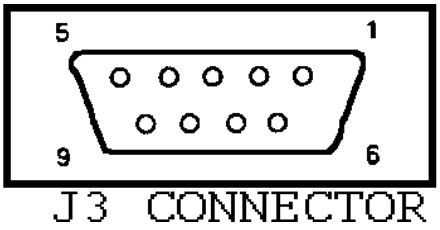
*The Model 8510-20XX is the Panel Mount version of the 8510 which must have the internal digital load cell harness, PN 13356700A, installed to operate the Model 2096/2196 base. The 8510-20XX is shipped with a DB-9 connector which must be soldered onto the 2096/2196 load cell cable.

** The Model 8510-10XX is the stainless steel version of the 8510 which includes the over/under feature. The 8510-10XX SS Indicator uses a terminal strip, TB1 on the Power Supply PCB, for load cell connections. The old-style version uses a 4-position terminal block, and the new-style version uses a 6-position terminal block. Verify whether the 8510 SS has the 4 or 6 position terminal block, and use the correct wiring termination as listed in Table 5.1.

*** The 8520 Digital Indicator has screw terminal blocks for connecting the digital load cell. The terminal blocks are located inside of the 8520 and are labeled with the same terminology as the 2096/2196 signal description as shown above. To connect the 2096/2196 to the 8520, match the signal descriptions. For example, RxD A at the 8520 terminal block would be connected to RxD A on the 2096/2196 cable.

**** The white wire is not used for this application. Tape the wire end back with insulating tape to prevent shorting on other components.

CAUTION
The WHITE WIRE in the load cell cable MUST NOT BE CONNECTED. DAMAGE TO THE LOAD CELL IN THESE BASES MAY RESULT IF THIS WHITE WIRE IS CONNECTED. Fold back and tape this wire to prevent shorting.

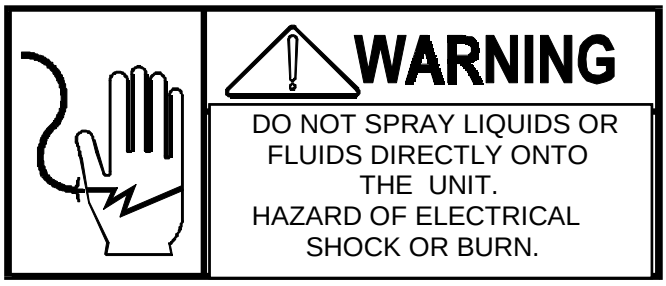


J3 PIN	SIGNAL DESCRIPTION
1	RxD A
4	BATT IN
5	+ 20 V
6	TxD B
7	GND
8	TxD A

Figure 5.1 J3 Connector

6.0 MAINTENANCE AND TROUBLESHOOTING

6.1 CLEANING



6.1.1. Unplug power cord from the digital indicator to remove power to the scale base.

6.1.2. Spray a mild cleaner, such as a kitchen cleaner onto a cloth and wipe all exterior surfaces.

CAUTION
DO NOT USE SOLVENTS OR CHEMICALS ON THE PAINTED SURFACES. THESE MAY HARM THE SURFACES.

6.1.3. Re-apply AC power.

6.2 TROUBLESHOOTING

6.2.1. GENERAL

a. If operational difficulties are encountered, obtain as much information as possible regarding the particular trouble, as this may eliminate a lengthy, detailed checkout procedure.

b. Knowledge of the functions different part perform will aid in isolating the specific part causing the problem.

1. The 2096 receives a “raw” DC voltage and serial transmissions from the digital display or parts counter. In return the 2096 or 2196 supplies the digital indicator or parts counter with transmissions that represent the weight on the scale. Troubleshooting in this case is determining if the 2096 or 2196 is receiving what it needs to function. If the needed DC voltage and transmissions are being supplied, the scale has a problem internally.

2. Internally, the 2096 or 2196 consists of a digital load cell and an inter-connecting harness. The digital load cell converts the weight to an analog voltage then to serial digital information (A to D cycle) that the digital indicator or parts counter can receive and convert to a valid weight display.

6.2.2. SEQUENCE OF COMMUNICATION

The following is a short summary of the sequence of communication between the Model 2096 or 2196 base and a Toledo Scale digital indicator or parts counter. This sequence may help in diagnosing a problem.

a. When power is applied, the digital indicator or parts counter provides +20 VDC to the digital load cell of the 2096 or 2196.

b. The digital load cell regulates a +5 VDC supply from the +20 VDC voltage.

c. The digital indicator or parts counter transmits information to the digital load cell. This will occur after applying power to the digital indicator or parts counter.

d. The digital load cell performs an A to D cycle then checks for approximately +5 VDC on the CTS line before sending the data.

6.2.3. ERROR CODES

Refer tot he technical manual of the indicator used with the Model 2096/2196 for definition of any error codes that appear on the display. Some error codes may be generated by the 2096/2196. These are documented in the indicator technical manual.

6.2.4. VOLTAGE MEASUREMENTS

a. Table 6.1 shows the voltages that should be observed with a DVM when using the 2096 or 2196 with the 8510, 8520 and 8530 Indicators and the 8572 and 8582 Parts Counter.

	8520	**8530**	**8572 / 8582**	**8510 Panel**	**8510 SS**
+20 VDC MIN	17.5 VDC (25 mV)	17.5 VDC (25 mV)	20.7 VDC (75 mV)	18.0 VDC (100 mV)	18.0 VDC (100 mV)
+20 VDC MAX	22.1 VDC (25 mV)	19.9 VDC (25 mV)	24.9 VDC (75 mV)	25.7 VDC (100 mV)	25.7 VDC (100 mV)
RxD (See Note)	+4.5 to 5 VDC	+4.5 to 5 VDC	+4.5 to 5 VDC	5 VDC	5 VDC
TxDA	+4.1 to 4.7 VDC	+4.1 to 4.7 VDC	+4.1 to 4.7 VDC	4.6 to 4.9 VDC	4.6 to 4.9 VDC

Table 6.1 Load Cell Voltages

NOTE: If the voltages are within the parameters of Table 6.1, measure RxD to logic ground again, but this time while turning power on to the digital indicator or parts counter. The voltage should start at 0.0 VC then climb to between 3.4 and 3.6 VDC and plateau there for about half a second. This will confirm that the indicator or parts counter is transmitting necessary information to the load cell.

b. To get maximum benefit from Table 6.1 read the following:

i. For the 8530, 8572 and 8582, the point of easiest access for measuring the voltages in Table 6.1 is at the connector on the load cell cable assembly that was soldered on at installation. The metal body of the connector must be removed to access the pins.

ii. For the 8520, the point of easiest access for measuring the voltages in Table 6.1 is the TB1 terminal strip that is on the Logic PCB.

iii. The 20 VDC MIN is the voltage measured with the minimum acceptable AC input (102 VAC) applied to the digital display or parts counter. The 20 VDC MAx is the voltage measured with the maximum acceptable AC input (132 VAC) applied. The voltage measured when checking 20 VDC should be between the MIN and MAX values. The voltages in parenthesis are maximum acceptable AC ripple voltages.

iv. The RxD voltage is measured with respect to logic ground.

v. TxD A voltages are measured with the plus meter lead on TxD A and the minus lead on ground. This voltage should be fluctuating between the voltages recorded in Table 6.1.

c. Table 6.2 shows potential problem areas for voltages out of range with the information given in Table 6.1.

20 VDC -	20 VDC is generated by the Logic PCB in both the 8520 and 8530. The 20 VDC in the 8572 and 8582 is generated by the Digital Scale PCB. The 20 VDC in the 8510 is generated by the Power Supply PCB.
RxD -	RxD is generated by the Logic PCB in both the 8520 and 8530. The RxD in the 8572 and 8582 is generated by the Digital Scale PCB. The RxD in the 8510 is generated by the Power Supply PCB.
TxD -	TxD is generated by the Digital Load Cell in the 2096 or 2196.

Table 6.2 Out Of Range Voltages

6.3 DIGITAL LOAD CELL REPLACEMENT

CAUTION
BEFORE CONNECTING OR DISCONNECTING THE LOAD CELL HARNESS, REMOVE POWER AND WAIT A MINIMUM OF 30 SECONDS. FAILURE TO OBSERVE THIS PRECAUTION MAY RESULT IN DAMAGE TO THE LOAD CELL.

The digital load cell is secured to the top and bottom frame by two hex head bolts on the 2096-0001, or by three hex head bolts on the 2096-0002, -0003, -0004 and all versions of the Model 2196. To remove the load cell follow these steps:

6.3.1. Remove the scale platter and remove power to the unit. After waiting a minimum of 30 seconds, disconnect the load cell harness from the load cell.

6.3.2. Remove the load cell mounting bolts that secure the top frame to the load cell. Set aside the top frame and load cell spacer, if used.

CAUTION
ON 2096-0001 SCALES, BE CAREFUL WHEN LIFTING THE TOP FRAME TAKING CARE NOT TO TEAR THE THIN FOIL ON THE TOP OF THE LOAD CELL.

6.3.3. Remove the bottom load cell mounting bolts. The load cell assembly can now be removed from the lower base.

6.3.4. When re-installing a digital load cell, reverse the preceding steps. Lubricate the threads and under the head of the hex bolts before re-installing. Using a torque wrench, tighten the hex bolts to the following torque specifications.

2096-0001 - 18 ft-lb	2196-0001 - 90 ft-lb
2096-0002 - 35 ft-lb	2196-0002 - 90 ft-lb
2096-003 - 35 ft-lb	2196-0003 - 90 ft-lb
2096-0004 - 35 ft-lb	2196-0004 - 90 ft-lb

6.3.5. After replacing a load cell, the overload stop settings must be checked and adjusted if needed. Refer to Section 4.1 for overload stop adjustments.

6.3.6. Before applying power to the indicator, first connect the load cell harness to the load cell connector. If the load cell assembly was replaced, calibration with test weights will be required.

6.3.7. Programming and calibration of the unit may now be performed. Verify correct operation of the new load cell after calibration has been performed.

7.0 GENERAL INFORMATION

7.1 SPARE PARTS LISTING

It is recommended that a spare digital load cell be kept in stock to keep potential "down time" to a minimum. The cells are available through your local Authorized Toledo Scale Service representative.

Part Number	Description	Qty.
(*) 132589 00A	140 kg, DigiTOL® (2096-0001)	AR
(*) 130682 00A	300 kg, DigiTOL® (2096-0002)	AR
(*) 136345 00A	100 kg, DigiTOL® (2096-0003)	AR
(*) 136342 00A	300 kg, DigiTOL® (2096-0004)	AR
(*) 133336 00A	500 kg, DigiTOL® (2196-0001)	AR
(*) 130683 00A	1000 kg, DigiTOL® (2196-0002)	AR
(*) 136339 00A	500 kg, DigiTOL® (2296-0003)	AR
(*) 136336 00A	1000 kg, DigiTOL® (2296-0004)	AR

(*) May have a letter prefix.

AR - As required, depending upon number of scales at the site.

7.2 ACCESSORIES

7.2.1. Interconnecting Cable - 10 feet (3M) open ended one end.
Part Number - 13011500A
Factory Number - 0900-0245
An interconnecting cable is supplied standard with the 2096 and 2196.

7.2.2. 9-PIN MATING CONNECTOR
Part Number - 12581900A
Factory Number - 0917-0117

7.2.3. MODEL 2096 ACCESSORIES

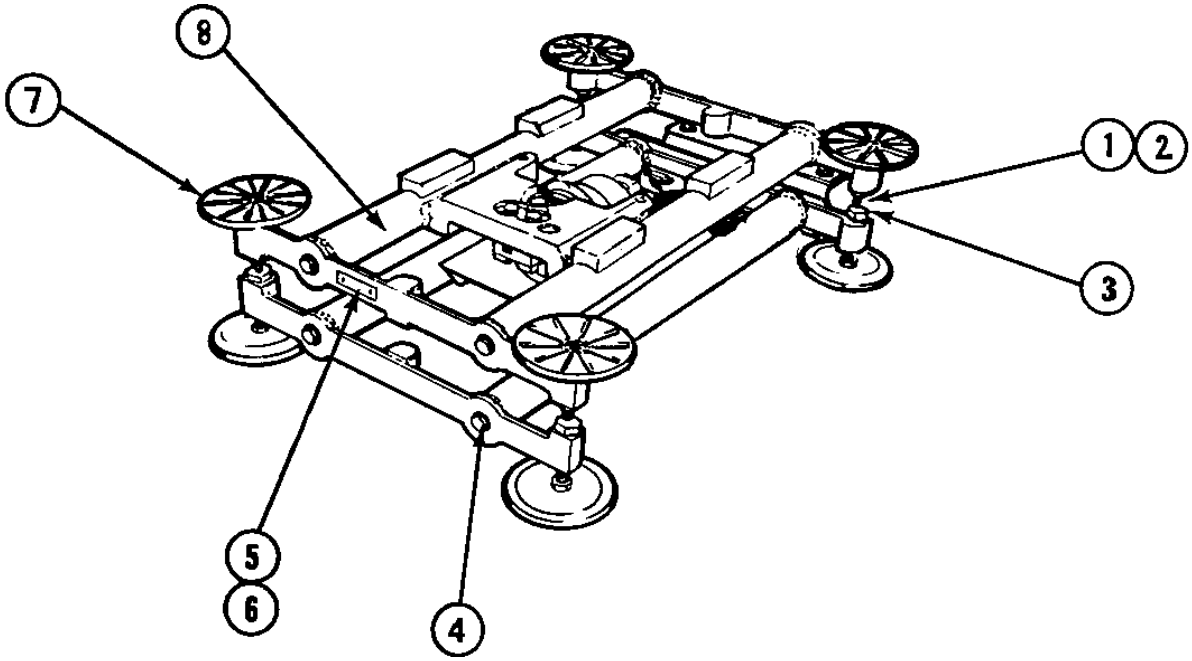
Part Number	Description	Factory Number
135510 00A	Carbon Steel Adjustable Height Stand	0924-0044
A134238 00A	Stainless Steel Adjustable Height Stand	0924-0036
133047 00A	19 in Aluminum Column for 8520 and 8530 Desk and Wall Indicators	0924-0037
135562 00A	Column Mount KOP	0924-0045
A136483 00A	18 in Stainless Steel Column to Mount 8510-10XX Indicators	0924-0047

7.2.4. MODEL 2196 ACCESSORIES

Part Number	Description	Factory Number
134999 00A	Wheel Kit of Parts	0924-0041
133049 00A	39 in Aluminum Column for 8520 and 8530 Desk and Wall Indicators	0924-0039
135562 00A	Column Mount KOP	0924-0045
133047 00A	19 in Aluminum Column for 8520 and 8530 Desk and Wall Indicators	0924-0037

8.0 MODEL 2096 PARTS CATALOG

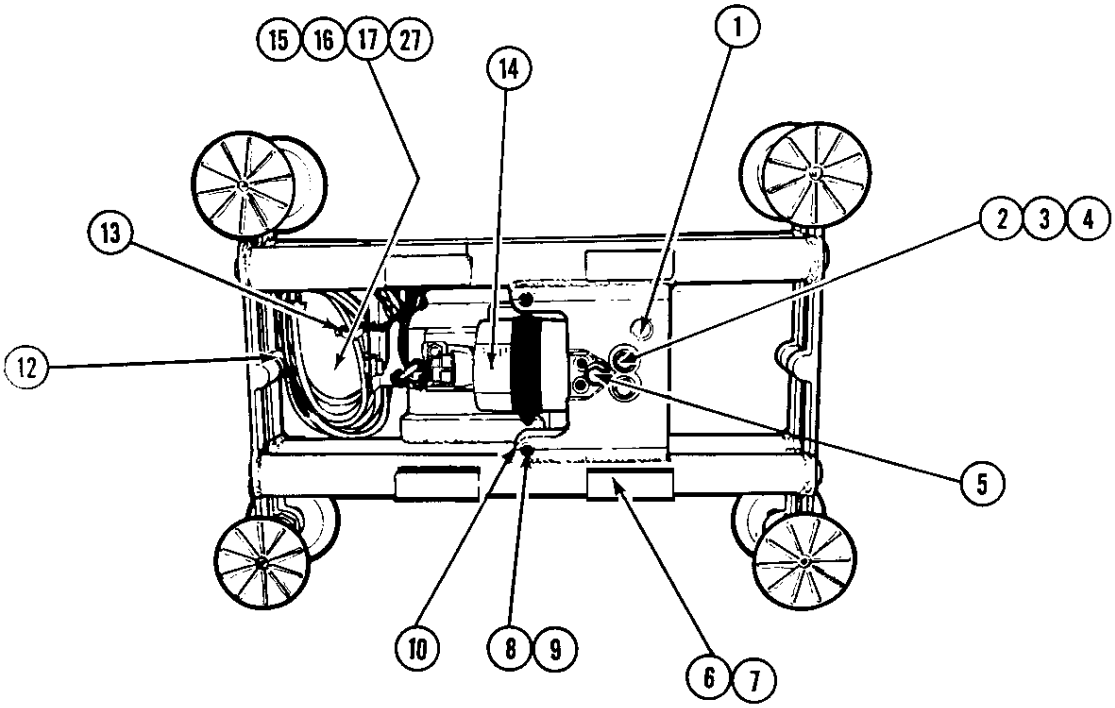
8.1 MODEL 2096 WEIGH PLATFORM SUPPORT AND SPIDER COMPONENTS



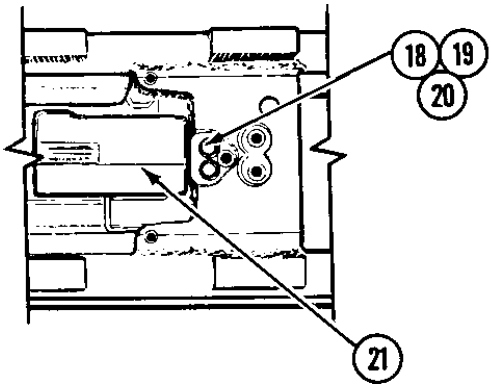
REF.	PART NUMBER	DESCRIPTION	QTY.
1	009131 050	3/8-24 C.S. Nut	12
2	132586 00A	Setscrew, Outside	4
3	132578 00A	Outside Overload Stop	4
4	R03927 00A	3/8-16 X 1/2 Cap Screw	8
5	N / A	Data Plate	1
6	R03957 00A	.188 - .250 Blind Rivet	2
7	A132541 00A	Foot / Platter Pad	8
8	135550 00A	Machined Frame	2
N / S	132548 00A	Platter (Removed)	1

N / A = Not Available
N / S = Not Shown

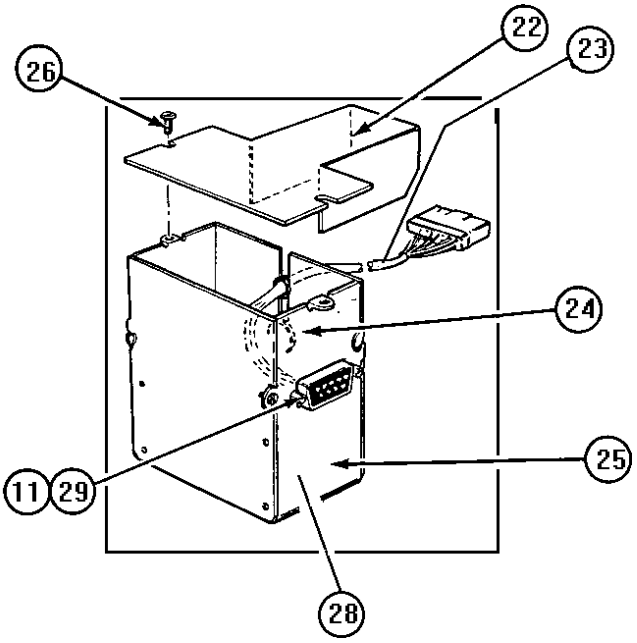
8.2 MODEL 2096 LOAD CELL ASSEMBLY AND JUNCTION BOX



LOAD CELL ASSEMBLY
2096-0001



JUNCTION BOX

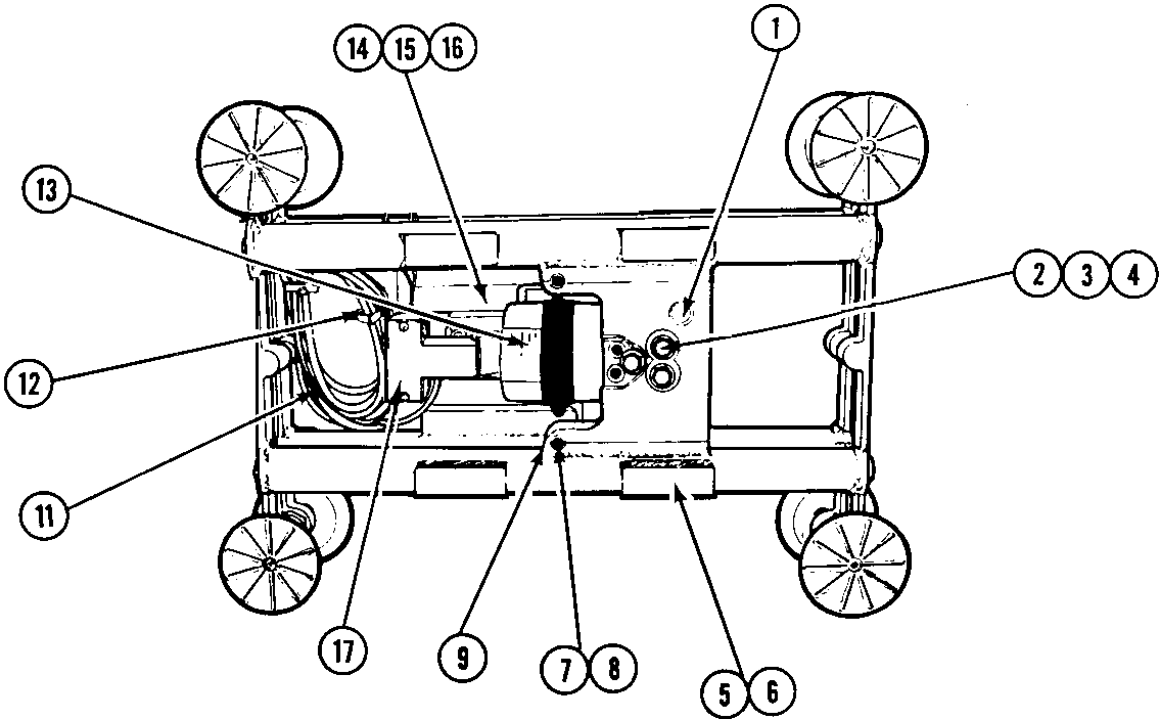


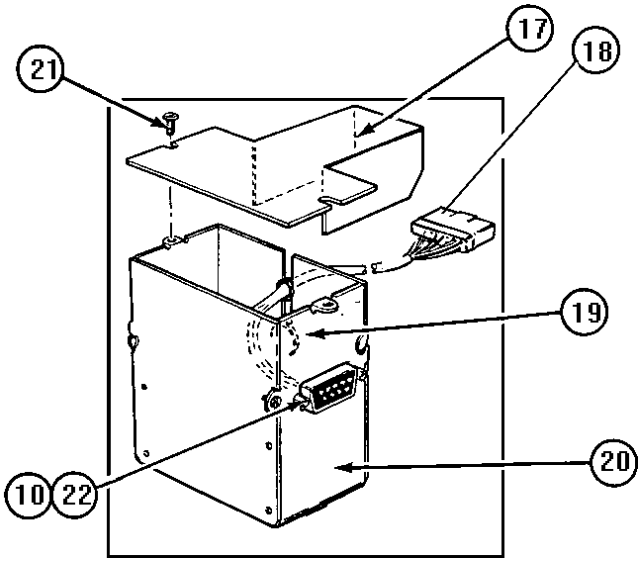
8.2 MODEL 2096 LOAD CELL ASSEMBLY AND JUNCTION BOX (Continued)

REF.	PART NUMBER	DESCRIPTION	QTY.
1	102689 00A	Level	1
2	R03896 00A	3/8-24 C.S. Hex Nut (2096-0002, -0003, -0004)	6
3	R03898 00A	.406 ID C.S. Flat Washer (2096-0002, -0003, -0004)	6
4	R03902 00A	3/8-24 X 2 C.S. Hex Screw (2096-0002, -0003, -0004)	6
5	132994 00A	Load Cell Spacer (2096-0002, -0003, -0004)	2
6	132539 00A	Platter Pad	4
7	759070	Adhesive	Suff.
8	A133055 00A	Inside Set Screw	2
9	0091313 050	Nut	2
10	A132990 00A	Inside Overload Stop	2
11	135865 00A	Standoff Screw	2
12	130115 00A	Indicator Cable	1
13	133429 00A	Snap-in Wire Clip	2
14	A130682 00A	300 kg Load Cell Assembly (2096-0002)	1
	A136345 00A	100 kg Load Cell Assembly (2096-0003)	1
	A136342 00A	300 kg Load Cell Assembly (2096-0004)	1
15	C133052 00A	Bottom Panel Assembly	1
16	R03880 00A	Rivet	5
17	R03090 00A	6-32 x 3-8 PH. Screw	1
18	A132993 00A	Spacer (2096-0001)	2
19	R03909 00A	.344 ID Flat Washer (2096-0001)	4
20	R03922 00A	5/16-18 x 1/25 Cap Screw (2096-0001)	4
21	A135499 00A	140 kg Load Cell Assembly (2096-0001)	1
22	135853 00A	Junction Box Cover	1
23	A133040 00A	Load Cell Harness	1
24	125623 00A	Plug	1
25	135854 00A	Junction Box	1
26	R0402900A	6-32 x 3/8 PH RD HD Screw	2
27	R02543 00A	#6 Lock Washer	1
28	R03612 00A	8-32 x 3/8 Screw	2
29	R02542 00A	#4 Lock Washer	2

9.0 MODEL 2196 PARTS CATALOG

9.1 MODEL 2196 LOAD CELL ASSEMBLY AND JUNCTION BOX

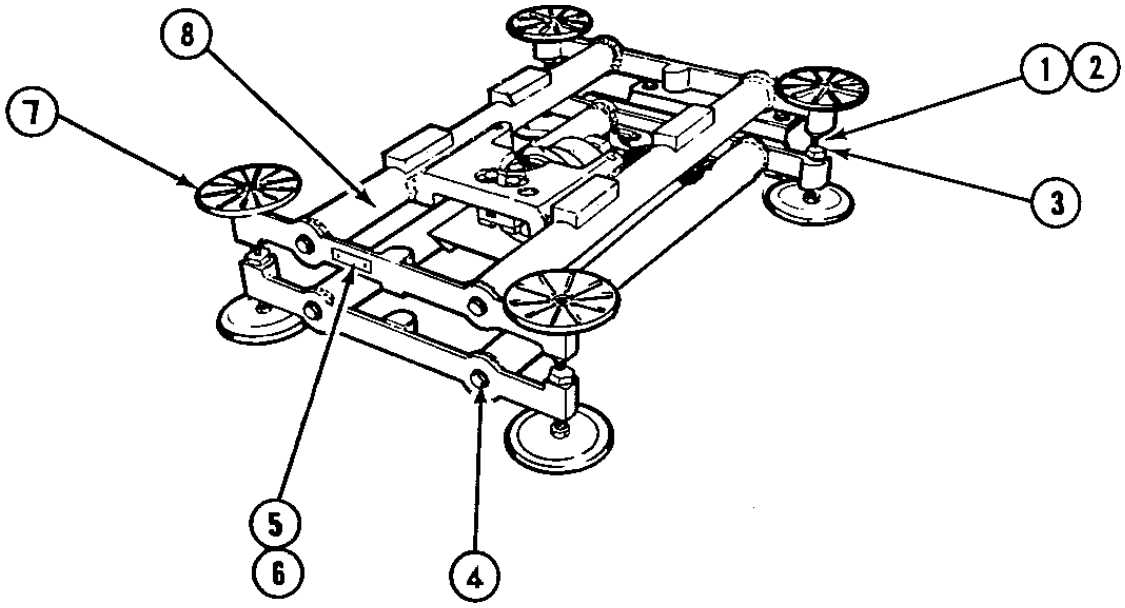




9.1 MODEL 2196 LOAD CELL ASSEMBLY AND JUNCTION BOX (Continued)

REF.	PART NUMBER	DESCRIPTION	QTY.
1	102689 00A	Level	1
2	R03894 00A	1/2-20 UNC C.S. Nut	6
3	R03900 00A	.531 ID C. S. Flat Washer	6
4	R03904 00A	1/2-20 x 2-1/2 Hex Screw	6
5	132540 00A	Platter Pad	4
6	759070	Adhesive	
7	133054 00A	Inside Set Screw	2
8	0091313 050	Nut	2
9	A132990 00A	Inside Overload Stop	2
10	135865 00A	Screw Standoff	2
11	130115 00A	Indicator Cable	1
12	133429 00A	Snap in Wire Clip	2
13	133336 00A	GP SS, 500 kg (2196-0001) Load Cell Assembly	1
	130683 00A	GP SS, 1000 kg (2196-0002) Load Cell Assembly	
	A136339 00A	500 kg Load Cell Assembly (2196-0003)	1
	A136336 00A	1000 kg Load Cell Assembly (2196-0004)	1
14	D132562 00A	Bottom Panel Assembly	1
15	R03880 00A	Rivet	5
16	R03090 00A	6-32 x 3/8 Tap Screw	1
17	135853 00A	Junction Box Cover	1
18	A133040 00A	Load Cell Harness	1
19	125623 00A	Plug	1
20	135854 00A	Junction Box	1
21	R04029 00A	6-32 x 3/8 Screw	4
22	R02542 00A	#4 Lockwasher	2

9.2 MODEL 2196 WEIGH PLATFORM SUPPORT AND SPIDER COMPONENTS



REF.	PART NUMBER	DESCRIPTION	QTY.
1	009131 050	3/8-24 C.S. Nut	12
2	132580 00A	Set Screw	4
3	132587 00A	Outside Overload Stop	4
4	R03927 00A	3/8-16 x 1/2 Cap Screw (2196-0001)	8
5	N/A	Data Plate	1
6	R03954 00A	Rivet Blind 3.76-.500 Blind Rivet	2
7	A132541 00A	Foot/Platter Pad	8
8	135518 00A	Frame Machined	2
N/S	132552 00A	Platter (Removed)	1

N/S = Not Available
N/S = Not Shown

10.0 INDEX