2266

EZ-Lift™ Scale

Installation and
Service Manual

15348200A
(3/98).00

Declaration of conformity
Konformitätserklärung
Déclaration de conformité
Declaración de Conformidad
Verklaring de overeenstemming
Dichiarazione di conformitá

We/Wir/Nous/WIJ/Noi: Mettler-Toledo, Inc.
1150 Dearborn Drive
Worthington, Ohio 43085 USA

declare under our sole responsibility that the product,
erklären, in alleiniger Verantwortung, daß dieses Produkt,
déclarons sous notre seule responsabilité que le produit,
declaramos, bajo nuestra sola responsabilidad, que el producto,
verklaren onder onze verantwoordelijkheid, dat het product,
dichiariamo sotto nostra unica responsabilitá, che il prodotto,

Type: Analog Load Cells
Models: 744 and 745 (when used within the technical requirements listed in Test certificate TC2154 and installed as a Load receptor as listed in Type approval certificate T2206, Table 4.)

to which this declaration relates is in conformity with the following standard(s) or other normative document(s).
auf das sich diese Erklärung bezieht, mitder/den folgenden Norm(en) oder Richtlinie(n) übereinstimmt.
Auquel se réfère cette déclaration est conforme à la (aux) norme(s) ou au(x) document(s) normatif(s).
Al que se refiere esta declaración es conforme a la(s) norma(s) u otro(s) documento(s) normativo(s).
Waarnaar deze verklaring verwijst, aan de volende norm(en) of richtlijn(en) beantwoordt.
A cui si riferisce questa dichiarazione è conforme alla/e sequente/i norma/e o documento/i normativo/i.

CE Conformity / CE-Konformität / Conformité CE
90/384/EU Nonautomatic Balances and Scales / Nichteselbsttätige Waagen / Balances Fonctionnement non automatique
Article 1.2.a.
Other Directives and Standards / Andere Richtlinien und Normen / Autres documents
corresponding to local requirements / entsprechend lokalen Anforderungen / correspondant aux exigences locales
R60 OIML International Recommendation , Metrological regulation for load cells
EEX ib IIC T4 el. Safety / el. Sicherheit / securite el. (PTB Nr. Ex-95.D.2051)

Darrell Flocken, Manager - Weights & Measures
Office of Weights and Measures
Worthington, Ohio USA
September, 1996 according to EN45014

INTRODUCTION

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

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

METTLER TOLEDO
350 W. Wilson Bridge Rd.
Worthington, Ohio USA 43085
(614) 438-4511

WARNING!

This equipment generates, uses, and can radiate radio frequency energy and if not installed and used properly, i.e., in accordance with the instructions manual, may cause harmful interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference to radio communications, in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

METTLER TOLEDO RESERVES THE RIGHT TO MAKE REFINEMENTS OR CHANGES WITHOUT NOTICE.

PROPRIETARY NOTICE

STANDARD WARRANTY:

Model 2266 EZ-Lift™ Scale

Mettler Toledo warrants that the equipment covered by this warranty will be free from defects in workmanship and materials for a period of two years from date of installation or twenty-six (26) months from date of shipment to the buyer, whichever comes first.

Should any such defects be found and reported during the first thirty (30) days after installation (if installation occurs during the warranty period), Mettler Toledo (herein referred to as the "Company") will, at its option, refund the purchase price or correct such defects furnishing replacement parts and service free of charge to the buyer. For the remainder of the first 12 months of the warranty term, the Company will furnish necessary replacement parts and on-site technician's service free of charge, provided the Buyer agrees to pay reasonable technician's travel time, vehicle mileage, and associated travel expenses to and from the nearest authorized Company service location. For last 12 months or remaining balance of the warranty period, whichever comes first, the Company will furnish the necessary replacement parts to the Buyer free of charge provided that the Buyer agrees to pay reasonable technician's on-site labor services, travel time, mileage, and expenses to and from the nearest authorized Company service location. The following are NOT covered under any of these warranties:

1) Initial installation and ongoing scale calibration.

2) Damage to scale components by gross abuse, fire, flooding, explosion, water, voltage surges, or civil disturbance.

3) Normal maintenance or consumable items.

This warranty covers only the Model 2266 EZ-Lift™ floor scale understructure. Refer to Mettler Toledo Standard Product Warranty for coverage of other scale system components, including scale instrument, printer, and/or other accessories.

THE COMPANY EXPRESSLY WARRANTS THE EQUIPMENT MANUFACTURED BY IT AS SET FORTH HEREIN. THE COMPANY MAKES NO OTHER WARRANTIES EITHER EXPRESSED OR IMPLIED (INCLUDING WITHOUT LIMITATION WARRANTIES AS TO MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE). IN ADDITION, THIS DOCUMENT SHALL CONSTITUTE THE SOLE AND EXCLUSIVE REMEDIES OF THE BUYER FOR ANY BREACH BY THE COMPANY OF ITS WARRANTIES HEREIN.

COMPANY LIABILITY UNDER THIS WARRANTY OR ANOTHER WARRANTY WHETHER EXPRESSED OR IMPLIED IN LAW OR FACT SHALL BE LIMITED TO THE REPAIR OR REPLACEMENT OF DEFECTIVE MATERIAL AND WORKMANSHIP, AND IN NO EVENT SHALL IT BE LIABLE FOR CONSEQUENTIAL OR INDIRECT DAMAGES.

This warranty coverage is only applicable to the United States of America. Consult Mettler Toledo for Export Warranty Terms and Conditions.

APPLICATION GUIDES

The only warranty of Mettler Toledo is for the product it supplies under the Product Warranty Statement listed above. Weighing application guidelines pertain to Mettler Toledo products.

Precautions

READ this manual BEFORE operating or servicing this equipment.

WARNING

PERMIT ONLY QUALIFIED PERSONNEL TO SERVICE THIS EQUIPMENT. EXERCISE CARE WHEN MAKING CHECKS, TESTS, AND ADJUSTMENTS THAT MUST BE MADE WITH POWER ON. FAILING TO OBSERVE THESE PRECAUTIONS CAN RESULT IN BODILY HARM.

FOLLOW these instructions carefully.

WARNING

FOR CONTINUED PROTECTION AGAINST SHOCK HAZARD, CONNECT TO PROPERLY GROUNDED OUTLET ONLY.

DO NOT REMOVE THE GROUND PRONG.

SAVE this manual for future reference.

WARNING

DISCONNECT ALL POWER TO THIS UNIT BEFORE REMOVING THE FUSE OR SERVICING.

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

CAUTION

BEFORE CONNECTING/DISCONNECTING ANY INTERNAL ELECTRONIC COMPONENTS OR INTERCONNECTING WIRING BETWEEN ELECTRONIC EQUIPMENT, ALWAYS REMOVE POWER AND WAIT AT LEAST 30 SECONDS BEFORE ANY CONNECTIONS OR DISCONNECTIONS ARE MADE. FAILURE TO OBSERVE THESE PRECAUTIONS COULD RESULT IN DAMAGE TO, OR DESTRUCTION OF, THE EQUIPMENT OR BODILY HARM.

ALWAYS DISCONNECT this equipment from the power source before cleaning or performing maintenance.

CAUTION

OBSERVE PRECAUTIONS FOR HANDLING ELECTROSTATIC SENSITIVE DEVICES.

CALL METTLER TOLEDO for parts, information, and service.

Contents

1 Specifications

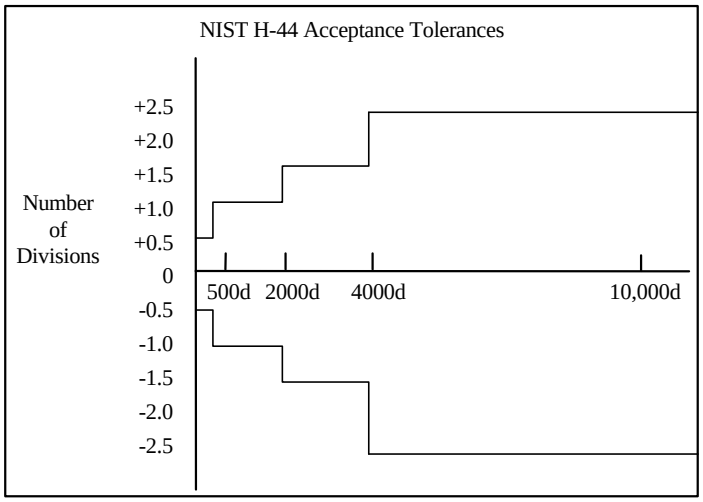
Power Supply Requirements

The METTLER TOLEDO Digital Indicator powers the 2266 EZ-Lift scale. The digital indicator used determines the type of junction box required for the scale. Analog, DigiTOL, and IDNet junction boxes can be used with EZ-Lift scales.

Refer to the METTLER TOLEDO Digital Indicator Service Manual for indicator power requirements.

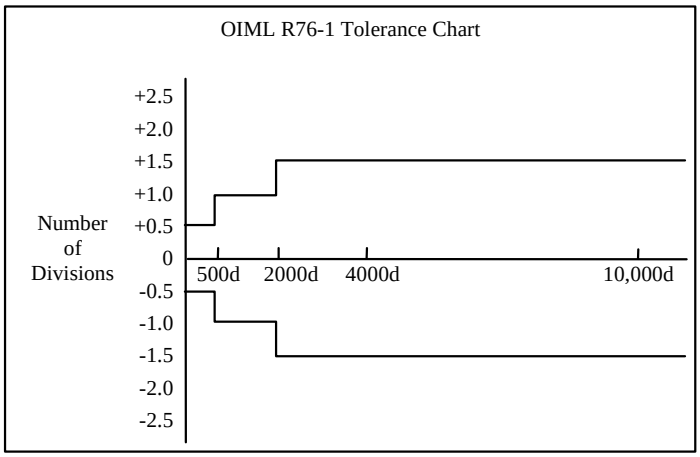
Accuracy

The Model 2266 EZ-Lift scale meets or exceeds the National Institute of Standards and Technology (NIST) Handbook 44 requirements for Class III scales (see Figure 1-a). Standard EZ-Lift scales meet 5,000-division accuracy. Certificate of conformance No. 97-153 was issued under the National Type Evaluation Program (NTEP) of the National Conference of Weights and Measures for the analog version of the EZ-Lift scale. DigiTOL and IDNet versions are not covered under certificate of conformance No. 97-153.



Applied Weight	Allowable Error
0 - 500 Divisions	±1/2 Division
501 - 2,000 Divisions	±1 Division
2,001 - 4,000 Divisions	±1 1/2 Divisions
4,001 - 10,000 Divisions	±2 1/2 Divisions

Figure 1-a NIST Class III Weighing Tolerances



Applied Weight	Allowable Error
0 - 500 Divisions	±1/2 Division
501 - 2,000 Divisions	±1 Division
2,001 - 10,000 Divisions	±1 1/2 Divisions

Figure 1-b OIML Class C Weighing Tolerances

Model Numbers

Model	Revision	J-Box	Dimension	Capacity
2266	0	0 = Analog 1= Enhanced DigiTOL 3 = IDNet	1 = 3x3 2 = 4x4 3 = 5x5 4 = 4x6	1 = 1,000 lb 2 = 2,500 lb 3 = 5,000 lb A = 600 kg B = 1,500 kg C = 3,000 kg

Load Cells

Note: Standard length for load cell cables is 30 ft; 15 ft is an option.

Stainless steel cantilever beam load cells are provided in all 2266 EZ-Lift scales with integral four-conductor, shielded, color-coded cable. All load cells have a built-in overload stop to prevent damage due to accidental overloads. The load cell suspension uses a rocker pin inserted between the cells and a fixed receiver in the frame (see Figure 1-c). Individual load cell capacities used in Model 2266 include:

Scale Platform Capacity (lb)	Capacity of Each Load Cell (lb)	Minimum Scale Approved Graduation Size (lb)
1,000	500	0.2
2,500	1,250	0.5
5,000	2,500	1.0

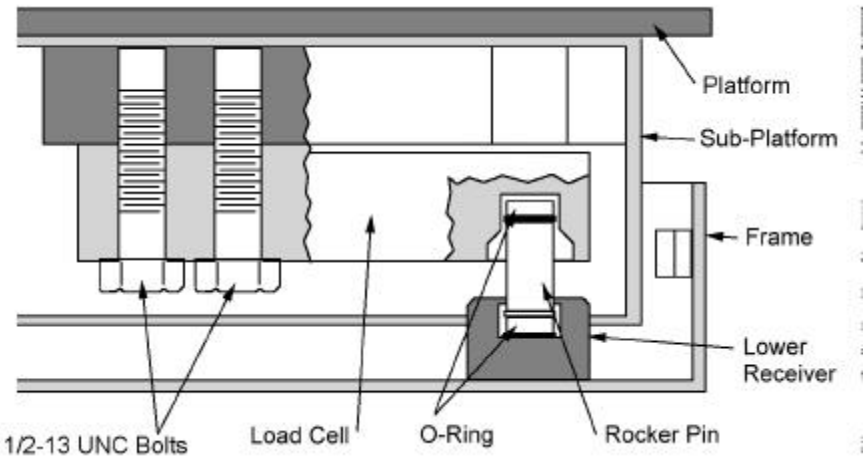


Figure 1-c Load Cell/Suspension Details

End Loading

Model 2266 may be loaded up to 100% of the platform's full-rated capacity or two times the individual load cell rating (whichever is less) across any end of the scale.

Platform Assembly

The weighbridge structure of the EZ-Lift scale is constructed of 304 stainless steel tubing in a lattice design, allowing for easy cleaning under the platform. The inner tubing is welded completely around the connecting seams to prevent moisture from entering. The outer tubing has openings for the load cell mounting and for cleaning the inside of the tube. EZ-Lift stainless steel units have a smooth deck surface with a glass bead blast finish. Threaded holes are provided in all platform structures for lifting eye bolts to ease platform installation and removal.

Support Frames

"Standard" Above-Floor Frame

EZ-Lift platforms use a formed angle frame with all sides turned under the scale for a fully captured assembly (see Figure 1-e). EZ-Lift scales are primarily used for top-of-floor or shallow-pit installations and can be used with optional ramps with access to all four sides of the scale. In addition, optional scale guards can be mounted around the perimeter of the standard frame to provide protection in high-traffic areas. EZ-Lift frames can be used for in-floor applications; however, a Quick-Pit frame is recommended.

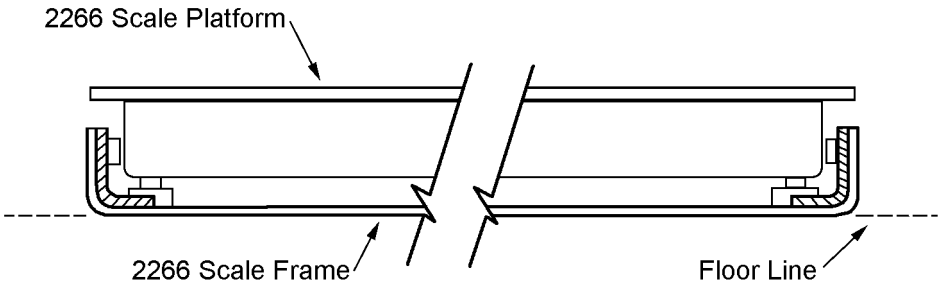


Figure 1-d 2266 EZ-Lift Frame

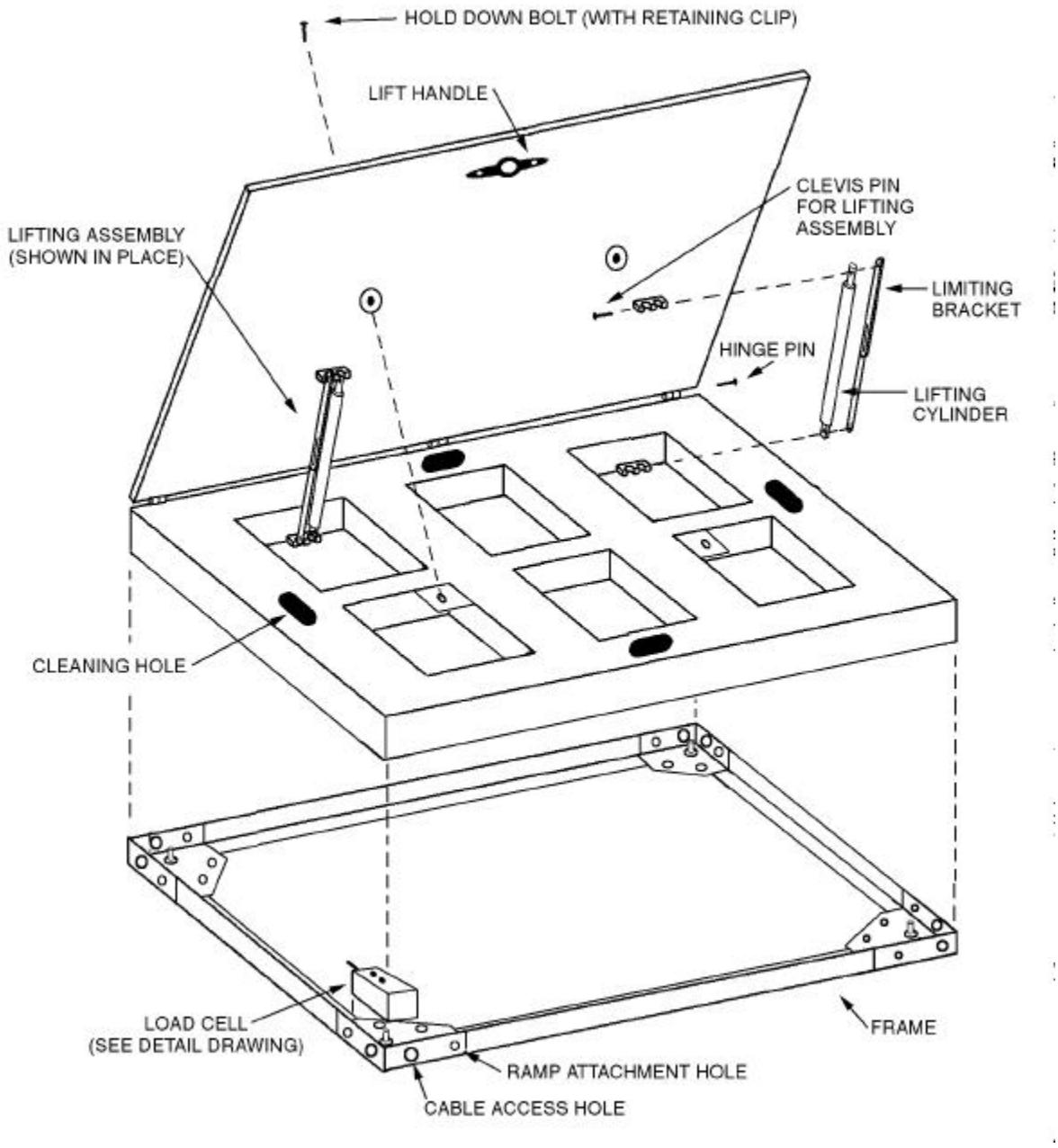


Figure 1-e EZ-Lift Frame

Note: Remote J-Box not shown.

"Quick Pit" In-Floor Frame

The Quick-Pit frame option provides a unitized scale assembly, eliminating the need for additional pit coping when in-floor installations are required. The upper flange of the rugged C-channel frame acts as the pit coping around the perimeter of the weigh platform. See Figure 1-f.

Quick-Pit installation is recommended for the following reasons:

- Pits are correct depth
- Pits are always square
- Field assembly and coping welding are not needed
- Construction is easier as there is no pit forming required
- The scale can be moved

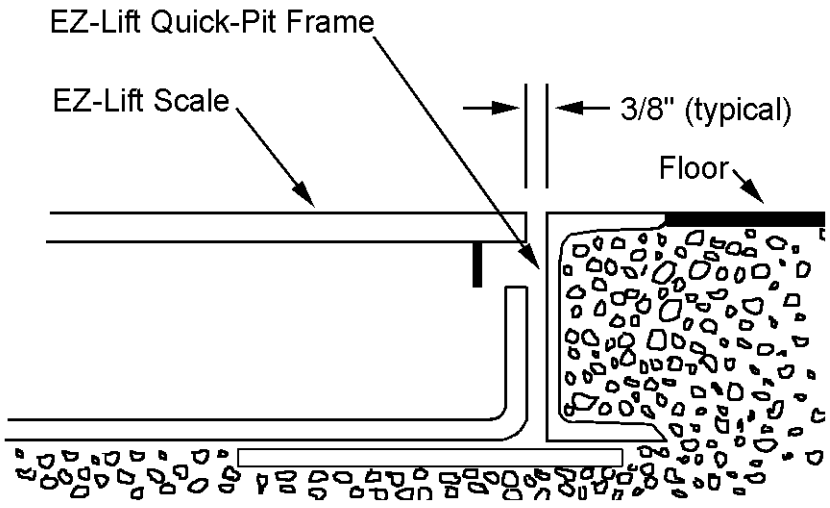


Figure 1-f Quick-Pit Frame

Access Ramps

Access ramps are available for all styles of the 2266 EZ-Lift scale. EZ-Lift ramps can accommodate single or multi-directional traffic. Ramps are available in 36-inch or 60-inch lengths by the width of the scale. Maximum ramp angles are:

Capacity	Ramp Length	Ramp Angle
1K - 5K	36 inches	4.4^{o}
1K - 5K	60 inches	2.6^{o}

2 Inspection and Site Selection

Inspection

When you receive your 2266 EZ-Lift scale, visually inspect the packing containers and scale for freight damage:

- Frame assembly (for any warpage or bent angles)
- Load cell and suspension assemblies
- Load cell cables
- Load cell summing junction box
- Overall platform assembly

If you find damage, contact your freight carrier immediately. Fill out the enclosed warranty card and return the scale to the address noted.

Site Selection

Many problems associated with floor scale installations are caused by improper site conditions. Before installing the scale, check the site:

- Is the area level to within 1/4 inch, highest-to-lowest corner?
- Is the floor/support at each corner of the scale area able to maintain support throughout the entire weighing capacity of the scale?
- Is there proper drainage away from the scale area?
- Are there any heavy vibrations or wind currents present at or near the scale?
- Will the scale be subjected to excessive or unusual loading due to the location or type of equipment used?

If the site is appropriate based on the above criteria, proceed with the installation. If the site is not appropriate, select another location for scale installation.

3 Installation (Top-of-Floor)

Locate

Place the 2266 EZ-Lift scale in the desired location after inspecting the site (see Chapter 2).

Remove Platform

Before removing the platform, you must install the lifting eye bolts in the holes provided in the deck (two 3/4-10 UNC eye bolts are required).

To install lifting eye bolts:

1. Completely loosen the hold-down screws.
2. Raise the deck-plate to the up position.
3. Remove the E-clips from the hold-down screws and remove the screws.
4. Lower the deck-plate to the closed position.
5. Install the eye bolts through the deck-plate and into the platform.

Remove the scale platform from the frame using the lifting eye bolts. Ensure that the eye bolts are snug and fully threaded into the deck before lifting.

Anchor Frame

To anchor the frame:

1. Locate the anchor holes in all four corners of the frame. There are eight anchor holes (two per corner). See Figure 3-a.
2. Drill the anchor holes using the frame as a guide. Eight flat-head socket cap screws 1/2-13 UNC x 1 1/2 inch long are provided with each EZ-Lift scale for securing the frame to the floor. The 1/2-inch anchors can be purchased from METTLER TOLEDO. Drill anchor holes to a diameter and depth per supplier instructions.
3. All corners of the frame must be in contact with the floor and be level within ±1/16 inch If the scale is out-of-level or if gaps exist between the frame and the floor, shimming is required. Corner shims (1/16 inch thick) can be purchased from METTLER TOLEDO (Part No. 58-030025) or fabricated using Figure 3-b as a guide.
4. Secure the frame to the floor using the eight flat-head anchor bolts provided.

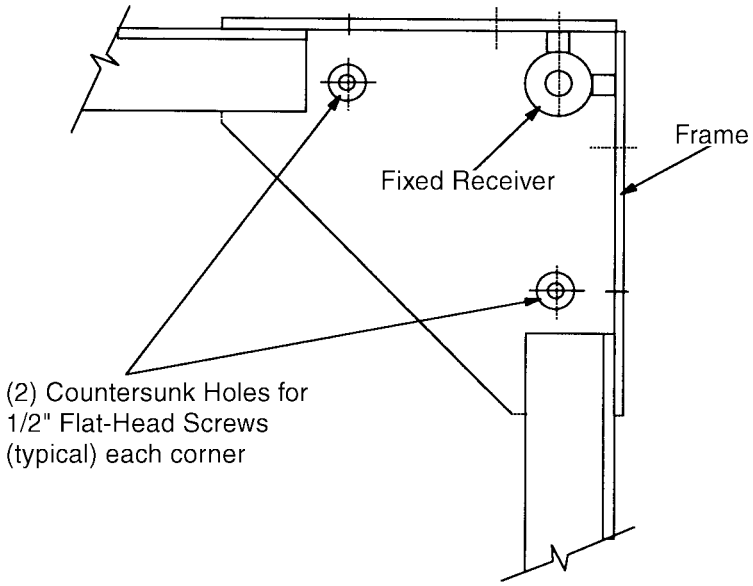


Figure 3-a Frame Corner Detail (top view)

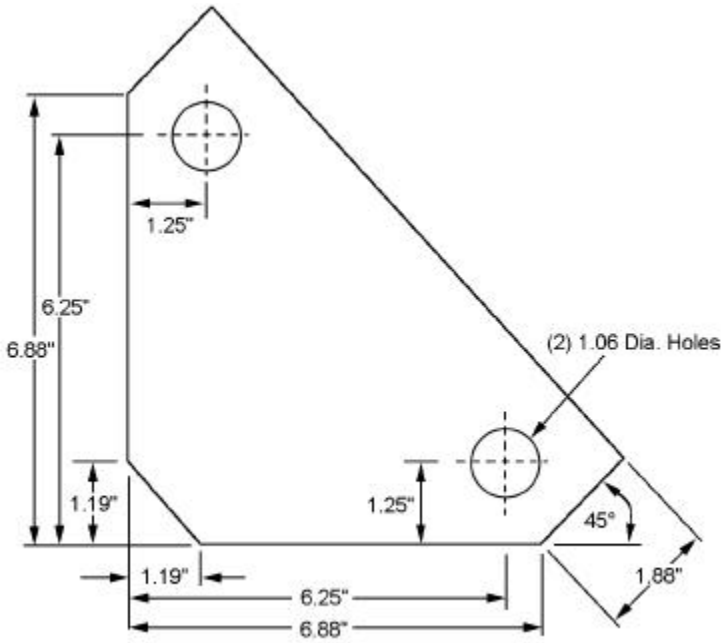


Figure 3-b Leveling Shim Detail

Route/Attach Instrument Cable

To route/attach the instrument cable:

1. Remove the junction box lid.
2. Loosen the instrument cable connector.
3. Thread the cable through the connector, pulling enough cable to reach the input terminal.
4. Wire the instrument cable to the terminal marked “INPUT” (see Modes of Operation).
5. Place the desiccant bag inside the junction box.
6. Reinstall the junction box lid. Make sure that the rubber gasket is clean and correctly located. Tighten all screws and check that all cord grip caps are tight (see Figure 3-f).

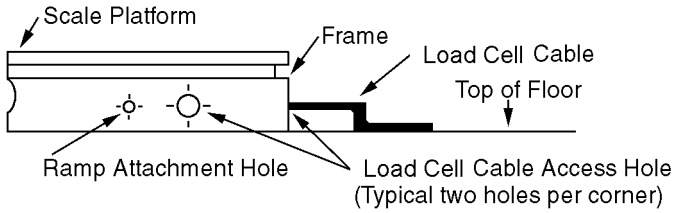


Figure 3-c EZ-Lift (without ramp) Load Cell Cable Access Locations

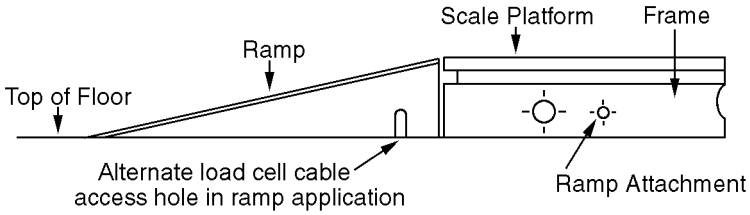


Figure 3-d EZ-Lift (with ramp) Load Cell Cable Access Locations

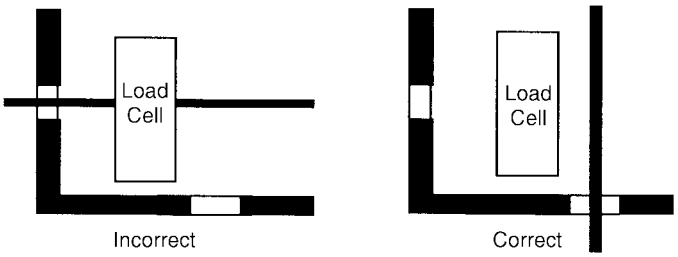


Figure 3-e Incorrect and Correct Cable

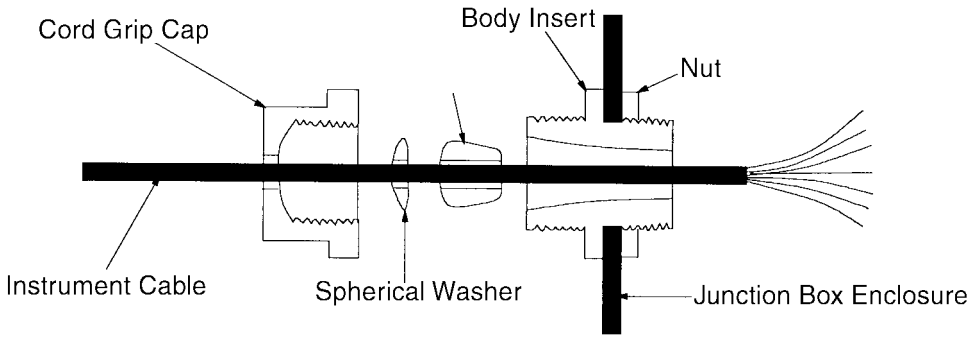


Figure 3-f Cord Connector Details

Modes of Operation

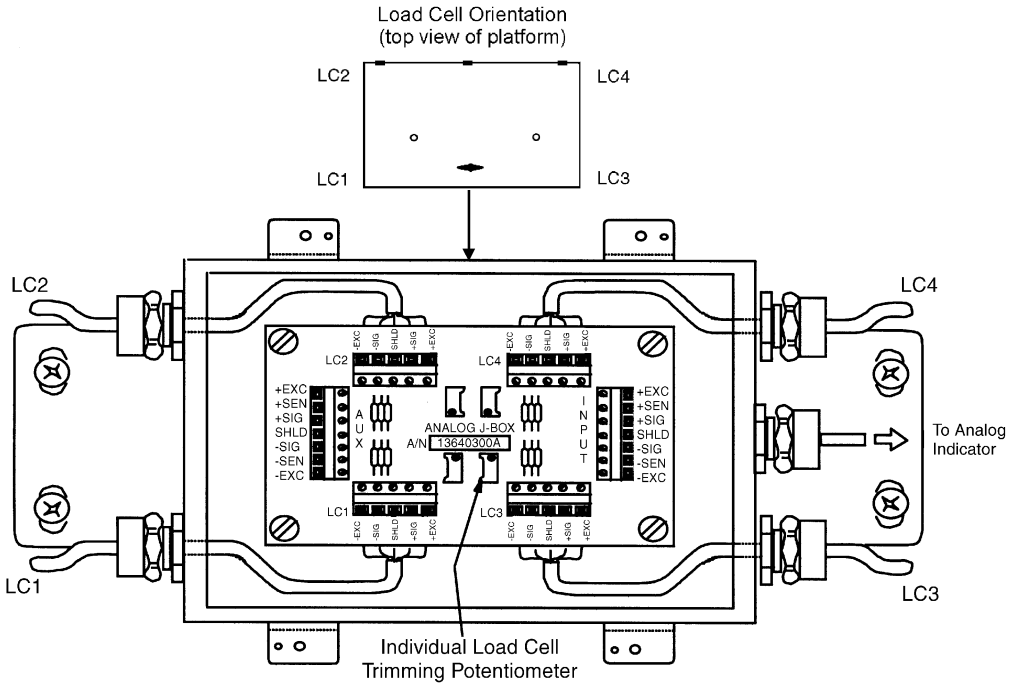
There are four modes of operation, depending on the junction box used:

- Analog mode (see page 3-5)
- DigiTOL DLC mode (see page 3-6)
- DigiTOL smart mode (see page 3-7)
- IDNet (see page 3-8)

2266 EZ-Lift Analog Mode

Note: Turn all potentiometers fully clockwise prior to calibration

In this configuration, the 2266 EZ-Lift uses an analog junction box for summing the load cell outputs. Only analog-compatible indicators work with the 2266 EZ-Lift. See Figure 3-g for the cable connections.



Load Cell Wiring		Instrument Cable Wiring	
Function	Color	Function	Color
+Excitation	Green	+Excitation	White
		+Sense	Yellow
+Signal	White	+Signal	Green
Shield	Yellow	Shield	Orange
–Signal	Red	–Signal	Black
		–Sense	Red
–Excitation	Black	–Excitation	Blue
		Based on METTLER TOLEDO cable no. 510624370	

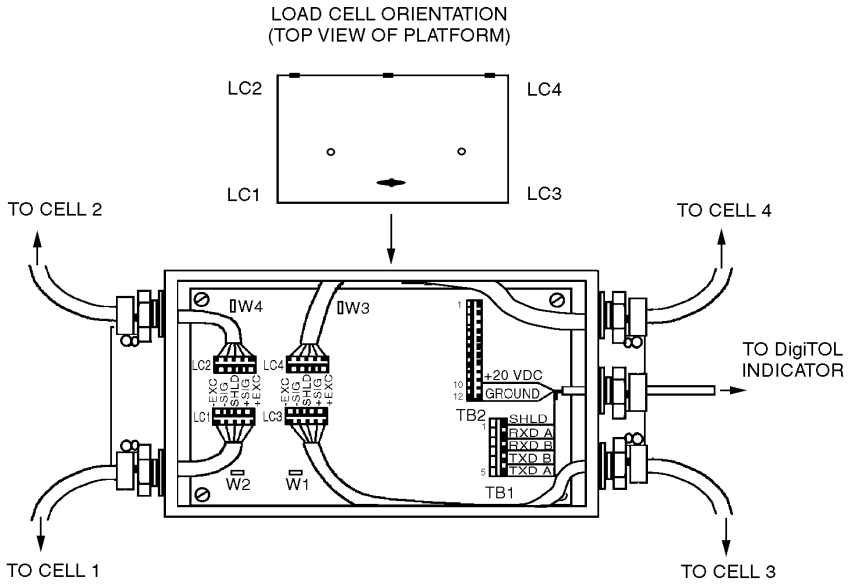
Figure 3-g 2266 EZ-Lift Analog Junction Box Details and Wiring Codes

2266 EZ-Lift DigiTOL DLC Mode

In this configuration, the 2266 EZ-Lift uses a DigiTOL junction box for summing load cell output. Only DigiTOL indicators work with the 2266 EZ-Lift. In DLC mode, the indicator acts as the hold for the DigiTOL junction box, allowing the scale parameters to be adjusted via the indicator keypad. Refer to the indicator manual to verify compatibility with the DigiTOL junction box. See Figure 3-h for cabling.

WARNING

DO NOT USE THE 2266 DigiTOL JUNCTION BOX IN LOCATIONS CLASSIFIED HAZARDOUS BY THE NATIONAL ELECTRICAL CODE (NED) ARTICLE 500.



Note: Jumpers W1, W2, W3, and W4 must be "IN" shorting pins (for 2 mV/V Load Cells).

Note: DigiTOL junction box is not compatible with Models 8510 Panel Mount and 8530VS DigiTOL indicators or with Models 8572, 8582, BC, and SC Counting Scales.

Terminal No.	Position	Function	Wire Color
TB2	10	+20 VDC	Green
TB2	12	Ground	Blue
TB1	1	Shield	Orange
TB1	2	RXD A	Red
TB1	3	RXD B	White
TB1	4	TXD B	Yellow
TB1	5	TXD A	Black

Figure 3-h Model 2266 DigiTOL Junction Box Wiring DLC Mode

2266 EZ-Lift DigiTOL Smart Mode

In this configuration, the 2266 EZ-Lift is used with the 8505 weight display. The junction box provides the “brains” for the operation and becomes the host for the indicator. See Figure 3-i for the cable connections.

Note: For detailed information regarding indicator capabilities and operating instructions, consult the appropriate METTLER TOLEDO technical manual.

CAUTION

DO NOT USE THE 2266 DigiTOL JUNCTION BOX IN LOCATIONS CLASSIFIED HAZARDOUS BY THE NATIONAL ELECTRICAL CODE (NED) ARTICLE 500.

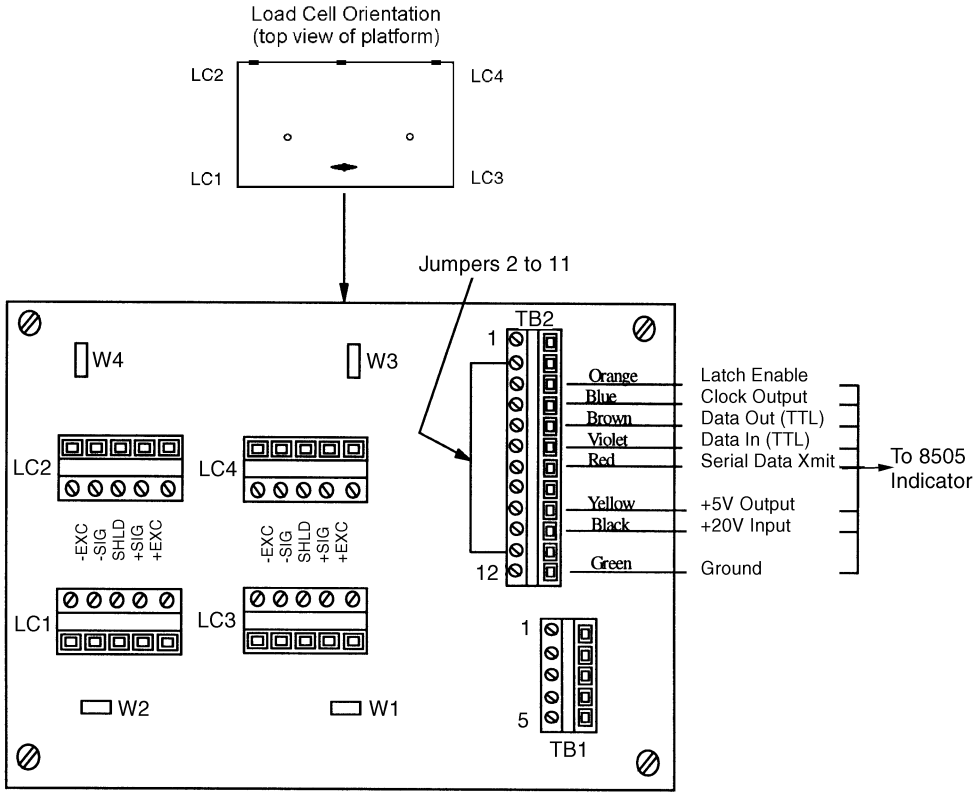


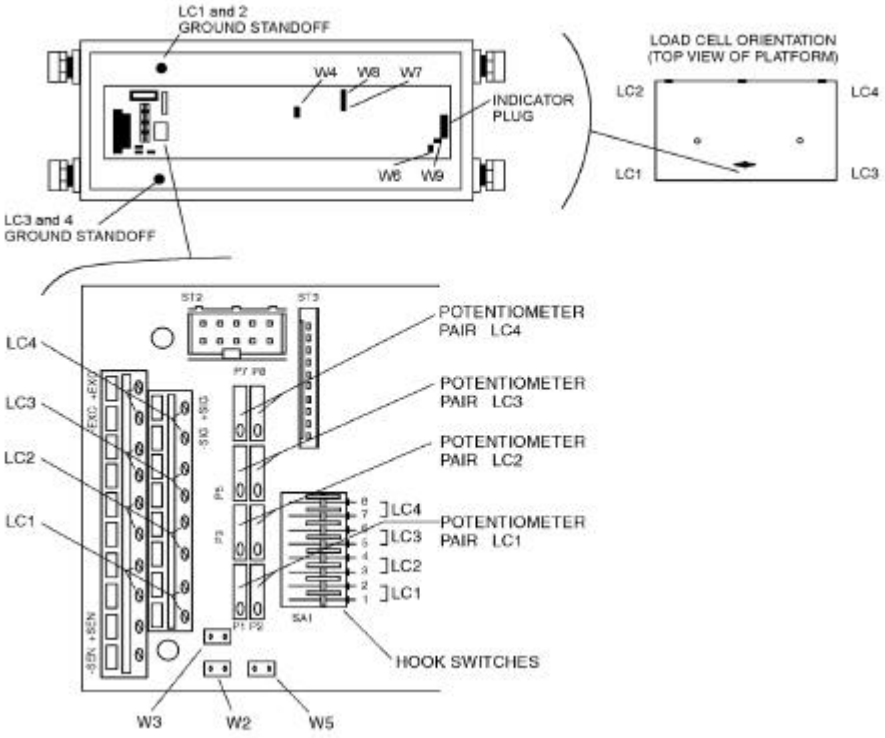
Figure 3-i Model 2266 DigiTOL Junction Box Wiring Smart Mode with Model 8505 DigiTOL indicator

2266 EZ-Lift IDNet Mode

In this configuration, the 2266 EZ-Lift uses an IDNet junction box to output an IDNet Data Format compatible with Mettler Toledo ID1 and ID5 weight display or Jaguar Industrial Terminal. Cable connections can be seen in Figure 3-j.

CAUTION

DO NOT USE THE 2266 IDNet JUNCTION BOX IN LOCATIONS CLASSIFIED HAZARDOUS BY THE NATIONAL ELECTRICAL CODE (NED) ARTICLE 500.



Cell	Terminal			
	+EXC Green	-EXC Black	+SIG White	-SIG Red
1	4	4	9	9
2	3	3	8	8
3	2	2	7	7
4	1	1	6	6

Jumper	Status	Description
W1	Closed	Matching the gain at 2 mV/V load cells
W2	Closed	No external sensing (–SEN)
W3	Closed	No external sensing (+SEN)
W4	Closed	Internal reference voltage = 3.5 V
W5	Open	Excitation voltage for load cells = 4.0 V
W6	Closed	Internal supply voltage = 7.1 V
W7	2-3	Protocol IDNet
W8	1-2	Interface 20 mA
W9	Open	Supply voltage IDNet
SA1	Closed	Trim potentiometers circuit disabled

Figure 3-j Model 2266 IDNet Junction Box Wiring and Default Factory Setting

Reinstall Platform

To reinstall the platform:

1. Clear all debris from the scale area. Ensure that all four load pin receivers in the frame are clean and free of all foreign material.
2. Replace the platform into the frame. Make sure there is slack in the cable between the frame and the platform and that no cable pinching occurs.
3. Oscillate the platform to ensure that the rocker load pins are seated in the receivers and there is no binding.
4. Remove the eye bolts from the deck-plate.
5. Raise the deck-plate to the up position.
6. Replace the hold-down screws.
7. Replace the E-clips on the hold-down screws.
8. Lower the deck-plate to the closed position.
9. Tighten hold-down screws.
10. Calibrate the scale per the METTLER TOLEDO Indicator Manual.

4

Optional Ramp Installation

All standard Model 2266 EZ-Lift scales are ramp-accessible from all four sides. Select which side of the scale platform is to have a ramp attachment.

Before installing the platform and after anchoring the frame to the floor, locate the two holes on the side of the scale frame where the ramp is to be attached (see Figure 3-d).

Each ramp is shipped with an attachment kit including two ramp attachment lugs and two 3/8-16 UNC x 1-inch-long hex-head cap screws with lockwashers for securing the lugs to the frame.

1. From the inside of the frame, insert the 3/8-16 UNC x 1-inch-long screws with lockwashers into the ramp attachment holes.
2. Thread the ramp attachment lugs onto the screws until the lugs contact the outside surface of the frame.
3. The front plate of the ramp contains two slots that provide a friction-type fit when slid over the attachment lugs. Lift the ramp and align the front plate slots with the attachment lugs.
4. Lower the ramp until the slots are fully engaged in the attachment lug grooves. Check to make sure that the ramp is stable.
5. Shim under the corners of the ramp if needed.
6. Proceed with installation of the platform (see Figure 3-d for instrument cable access through the ramp).

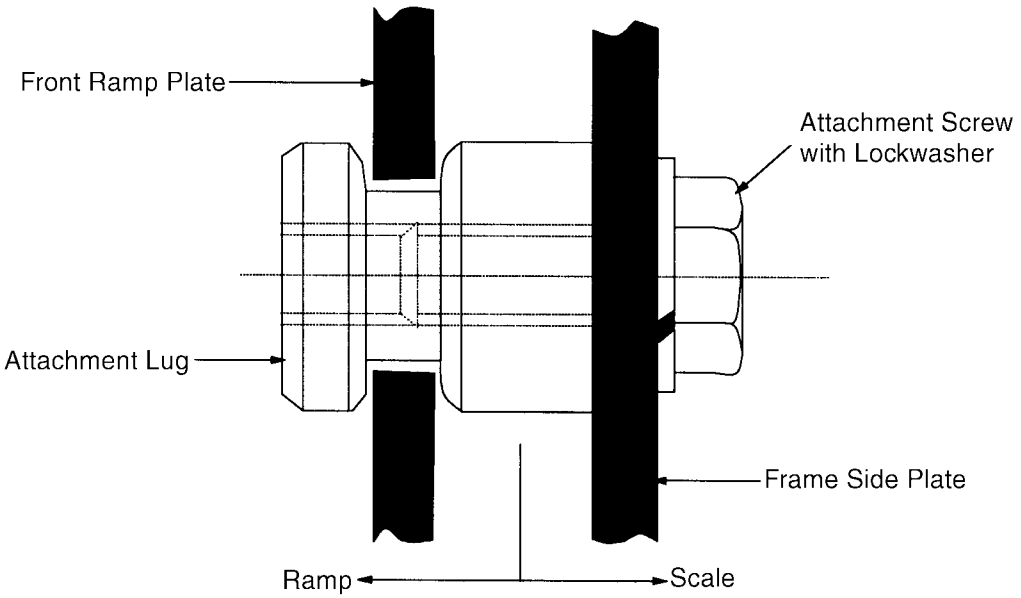


Figure 4-a Ramp Attachment Detail

5

Optional Scale Guard Installation

Scale guards are used with the standard top-of-floor EZ-Lift frame to provide protection against accidental scale damage from forklift hits, etc. Scale guards are available for all sizes and capacities of standard EZ-Lift scales.

1. Locate the Scale Guard a minimum of 3/8 inch from the side of the frame. All EZ-Lift scales use a 4-inch-tall guard. It is important that the Scale Guard not contact the scale platform.
2. Two 9/16-inch diameter holes are provided for anchoring the Scale Guards to the floor. Using the holes as a drill template, install 1/2-inch anchors into the floor (anchors and anchor bolts not supplied).
3. Insert the 1/2-inch anchor bolts and tighten to secure the Scale Guard to the floor (see Figure 5-a).

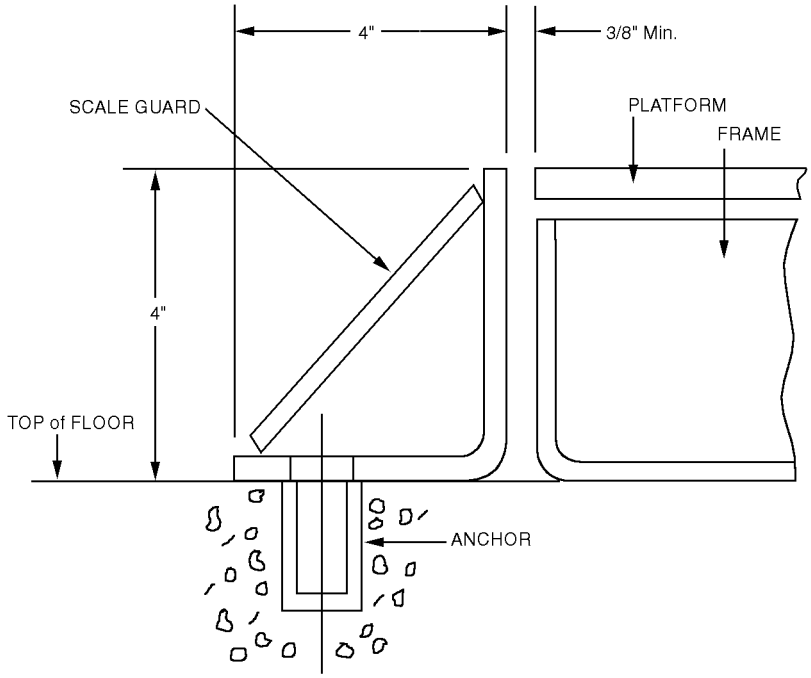


Figure 5-a Scale Guard Installation Details

6

Quick-Pit Installation (In-Floor)

Note: Prior to pit construction, contact METTLER TOLEDO or an authorized METTLER TOLEDO distributor to obtain the latest applicable pit construction drawings.

The Quick-Pit frame provides a means of placing a standard above-floor 2266 EZ-Lift scale in a pit for flush-mount applications. The Quick-Pit frame can be installed in the floor prior to receiving your EZ-Lift scale assembly. When the EZ-Lift assembly is received, lower the standard frame into the Quick-Pit and anchor. Insert the EZ-Lift weighing platform to complete the installation.

The Quick-Pit frame requires an opening that allows a 3 5/8 inch gap around the perimeter of the frame. The pit depth is 10 inches. Remove the existing floor to meet the dimensional requirements for your specific frame.

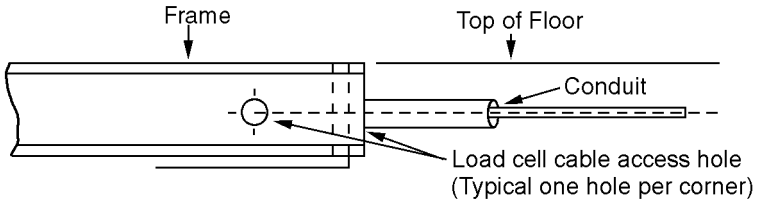


Figure 6-a Quick-Pit Load Cell Cable Access Locations

To install a quick-pit frame (refer to Figure 6-a):

1. Position the instrument cable conduit. Use a high-grade steel conduit (3/4 inch EMT thin wall conduit minimum, not provided). Do not secure until the frame is in the correct position.
2. Reverse the shipping brackets on the Quick-Pit frame so they extend outward from the frame.
3. Remove the EZ-Lift scale assembly at this time (if assembly was shipped within the Quick-Pit frame).
4. Place the frame into the pit, with the shipping brackets resting on the existing floor.
5. Center the frame in the pit opening. Check that the frame is level. If the frame is not level, shim between the shipping brackets and the existing floor, as needed.
6. Secure the instrument cable conduit to the frame.

CAUTION

USE A MINIMUM OF 3,000 PSI STRENGTH CONCRETE AT 28 DAYS WITH 5 TO 7% AIR ENTRAINMENT.

The next task is to cement-in the frame:

1. Mask off the four corner plates and the top flange of the frame to prevent concrete from adhering to these surfaces.
2. Pour concrete around the perimeter of the frame.
3. Work the concrete until it is level with the top frame flange, and ensure that the underside of all corner base plates are completely covered.
4. Slope the floor at least 1/2 inch per foot to a suitable drain at the center of the pit.

Once the concrete has properly cured, the standard EZ-Lift frame can be mounted within the Quick-Pit frame.

1. Lower the standard frame into the Quick-Pit frame.
2. Center it and locate the eight anchor holes in the corners. METTLER TOLEDO supplies eight flat-head socket cap screws 1/2-13 UNC x 1 1/2 inches long with each EZ-Lift for securing the frame. The 1/2-inch anchors can be purchased separately.
3. Using the frame as a guide, drill anchor holes to the diameter and depth indicated by the supplier.
4. Install the anchors into the concrete, then secure the frame using the eight flat-head screws provided. See Figure 6-b.
5. Install the EZ-Lift platform (see Chapter 3) and have the scale calibrated by an authorized METTLER TOLEDO service technician.

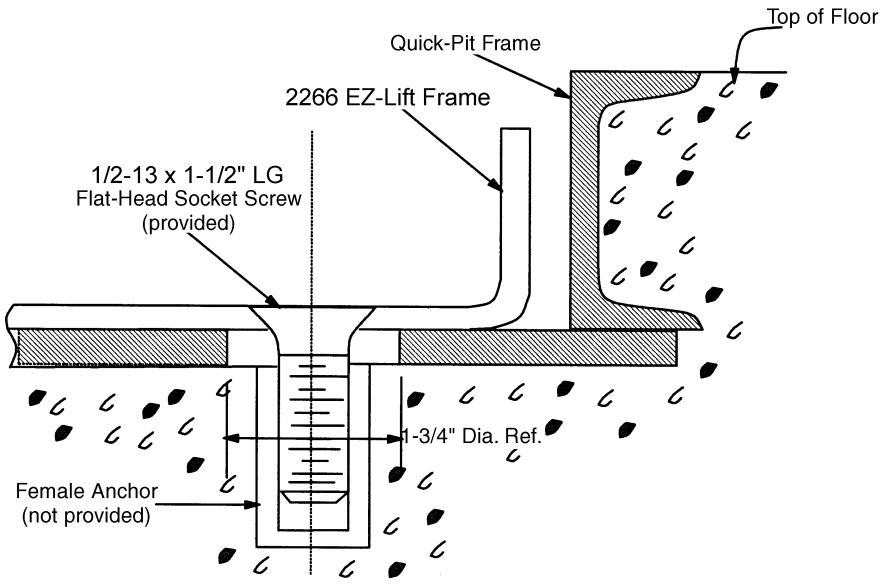


Figure 6-b Frame Anchoring Detail

7 Calibration

Shift Adjust

Note: The scale has been shift-adjusted at the factory. Before proceeding, check the shift characteristics to determine if any shift trimming is required. In a new installation, shift adjustment to a properly shimmed scale should be minor.

WARNING

PERMIT ONLY QUALIFIED PERSONNEL TO SERVICE THIS EQUIPMENT. EXERCISE CARE WHEN MAKING CHECKS, TESTS, AND ADJUSTMENTS THAT MUST BE MADE WITH POWER ON. FAILING TO OBSERVE THESE PRECAUTIONS CAN RESULT IN BODILY HARM.

Calibration adjustments should be made only after checking all mechanical parts and after proving that the scale activity is repeatable. To check repeatability, repeatedly place a test weight on the same position of the platform and check for repeatable weight readings.

Shift adjust to make the weight reading for each corner of the platform the same for the same test weight.

The amount of test weight used for the shift test should equal 1/2 of the rated scale capacity. Test weights should be concentrated at the center of each quadrant of the scale platform.

Shift Adjust for Model 2266

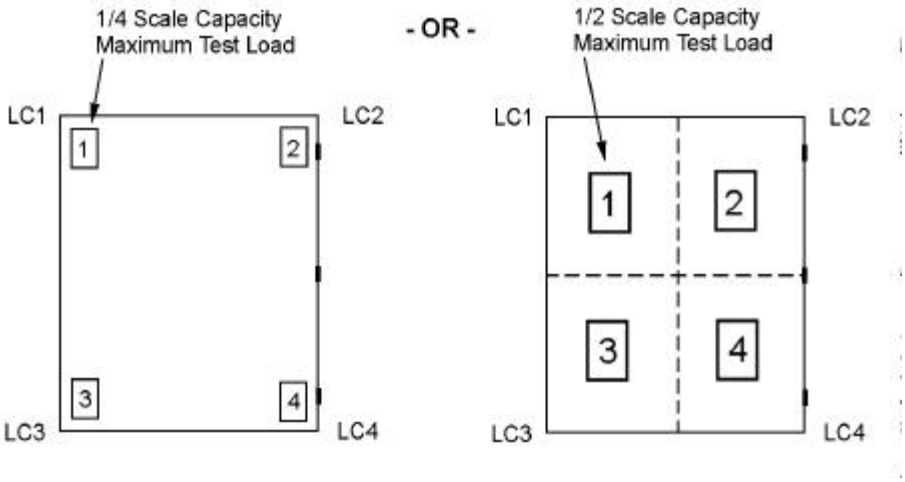


Figure 7-a Test Load Recommendations

Perform a shift adjust using load cell trim potentiometers on the junction box PCB (refer to Figure 7-a).

Note: Because of the trim potentiometers' interaction with each other, any adjustment affects all corner indications.

1. Successively place the test weight at each of the four designated locations (center of each scale quadrant). Record the displayed weight readings.
2. Determine the location with the lowest weight reading. The corresponding load cell is NOT trimmed.
3. Place the test weight at the location with the lowest weight reading. Record the weight reading.
4. Proceeding clockwise, place the test weight at each designated location. If necessary, adjust the trimming potentiometer corresponding to that location to obtain the weight reading recorded in step 3.
5. Repeat this procedure until all weight readings at the designated locations are the same or within the specified National Institute of Standards and Technology (NIST) Handbook 44 Digital Scale Accuracy Requirements.
6. Reinstall the junction box lid and platform access plate.

Shift Adjust for Model 2266 DigiTOL

Perform a shift adjust at the indicator, with the indicator in the setup mode. For the shift adjust procedure, refer to the weight indicator manual.

Shift Adjust for Model 2266 IDNet

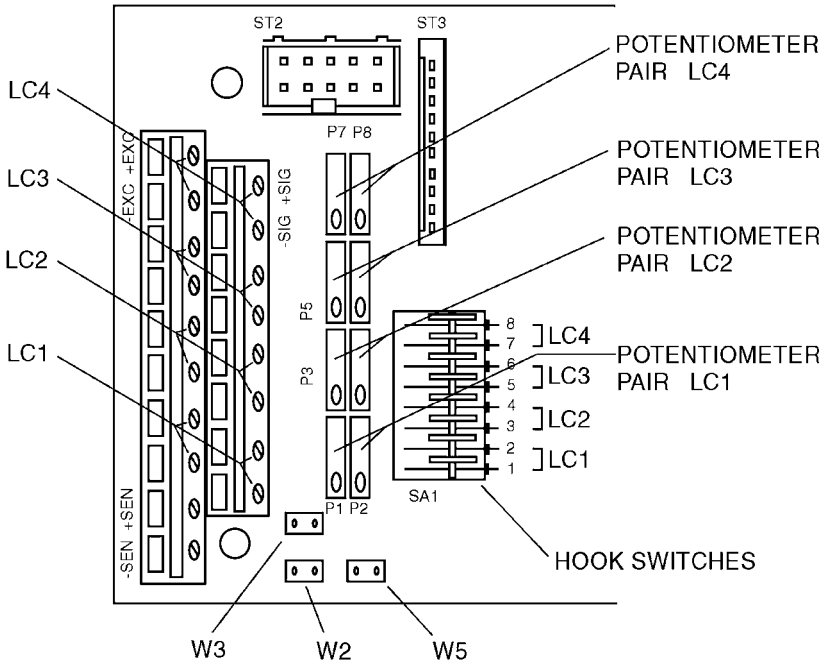


Figure 7-b IDNet Potentiometer Adjust

Perform the shift adjust using the load cell trim potentiometers mounted on the IDNet junction box PCB.

1. Successively place the test weight(s) at the designated locations and record each weight reading. If the readings are within desired tolerance, shift adjust is not required. If the readings are not within desired tolerance, perform Steps 2 through 7.
2. Activate the trim potentiometers by opening the eight hook switches (if not already open) on the PCB. Once activated, the switches remain open. *Do not* close the latches, even after completing the shift adjustment.
3. Start the adjustment at the load cell having the highest positive reading. This process trims the load cells to match the value of the lowest recorded value.
4. To make minor adjustments, turn the trim potentiometers (each load cell has two) clockwise for an increase or counterclockwise for a decrease.
5. If the scale needs further adjustment, turn all potentiometers counterclockwise. Stop turning the potentiometers when the indication on the instrument or meter stabilizes.
6. Reapply the test weight(s) to the location having the highest recorded weight reading. Then, adjust the load cell potentiometers to match the reading of the location having the lowest recorded value. Repeat this step until all location readings are the same or within the specified scale tolerances. Repeat Step 1 to verify shift tolerances.
7. Confirm that all cable connectors and cord grip caps are tight. Then place the desiccant bag in the box, leave all hook latches open, and reinstall the junction box lid.

Scale Calibration

Calibrate the scale using a test weight equal to the scale capacity. With the proper test weight, continue calibrating the scale according to the instructions provided in the digital indicator manual.

WARNING

PERMIT ONLY QUALIFIED PERSONNEL TO SERVICE THIS EQUIPMENT. EXERCISE CARE WHEN MAKING CHECKS, TESTS, AND ADJUSTMENTS THAT MUST BE MADE WITH POWER ON. FAILING TO OBSERVE THESE PRECAUTIONS CAN RESULT IN BODILY HARM.

8 Routine Care and Maintenance

General

Once you have installed your equipment, you should have an authorized METTLER TOLEDO representative periodically inspect and calibrate it. If the scale is used for legal-for-trade purposes, consult the local weights and measures authorities for minimum inspection requirements. Contact your local authorized METTLER TOLEDO service representative for information on periodic inspection and calibration services.

Site Inspection

Ensure that the scale site remains in good condition. Check for alterations in the dead-to-live connections, alterations in support for the weigh modules, overloading and excessive vibration conditions, and debris or material build-up under or around the scale that could inhibit freedom of movement.

Platform Inspection

During periodic inspections of the scale assembly, check:

- Weighing surface: Are there any unusual wear points, paths, or marks?
- Scale frame: Is it bent or damaged?
- Junction box lid: Is it properly sealed and all cable connectors tight against the enclosure?
- Junction box assembly: Is there any moisture or foreign material present around or inside?
- Instrument cable: Is it free from damage? Does it bind the scale?
- Platform: Is there any debris or material build-up under or around the platform that could inhibit freedom of movement?
- Lift strut operation: Does the lid raise and lower smoothly without binding? Are the clevis pin retaining rings secure?
- For pit installations: Is the floor drain clear and providing adequate drainage?
- Load cells, rocker pins, and fixed bumpers: Are there any signs of unusual wear?

Also check the repeatability and shift of the scale.

CAUTION

REPLACE LIFT STRUTS EVERY 2 YEARS OR 2,000 CYCLES OR IF A NOTICEABLE LOSS OF LIFTING FORCE IS EXPERIENCED.

9 Troubleshooting

General

WARNING

PERMIT ONLY QUALIFIED PERSONNEL TO SERVICE THIS EQUIPMENT. EXERCISE CARE WHEN MAKING CHECKS, TESTS, AND ADJUSTMENTS THAT MUST BE MADE WITH POWER ON. FAILING TO OBSERVE THESE PRECAUTIONS CAN RESULT IN BODILY HARM.

If you encounter operating problems, collect as much information about the problem as possible. Try to determine whether the problem is constant or intermittent. Mechanical and electrical influences can cause malfunctions.

When troubleshooting a 2266 EZ-Lift scale, examine the physical location of the scale, checking for:

- Water
- Corrosive materials
- Unlevel floors
- High vibrations
- Air currents
- Physical damage to the scale platform or frame

Also, check the instrument cable for damage and check all connections for any loose/incorrect wiring.

CAUTION

BEFORE CONNECTING/DISCONNECTING ANY INTERNAL ELECTRONIC COMPONENTS OR INTERCONNECTING WIRING BETWEEN ELECTRONIC EQUIPMENT, ALWAYS REMOVE POWER AND WAIT AT LEAST 30 SECONDS BEFORE ANY CONNECTIONS OR DISCONNECTIONS ARE MADE. FAILURE TO OBSERVE THESE PRECAUTIONS COULD RESULT IN DAMAGE TO OR DESTRUCTION OF THE EQUIPMENT OR BODILY HARM.

Isolate the Problem

Note: For the 2266 DigiTOL EZ-Lift scale, the analog simulator can only be connected to the load cell terminal of the junction box PCB to determine if the problem is a bad load cell.

To determine if the problem is in the scale platform or the digital indicator:

1. Remove power from the system.
2. Disconnect the digital indicator from the 2266 EZ-Lift scale assembly and connect a load cell simulator to the indicator (analog simulator available from METTLER TOLEDO).
3. Reapply power. If the problem is still present, consult the digital indicator manual for further troubleshooting assistance.
4. If the problem is NOT present with the load cell simulator attached to the indicator, remove power. Disconnect the simulator and reconnect the 2266 platform. If the problem reoccurs, further troubleshooting is required.

Check Wiring

The wiring color code is:

Load Cell Wiring		Instrument Cable Wiring	
Function	Color	Function	Color
+Excitation	Green	+Excitation	White
		+Sense	Yellow
+Signal	White	+Signal	Green
Shield	Yellow	Shield	Orange
–Signal	Red	–Signal	Black
		–Sense	Red
–Excitation	Black	–Excitation	Blue
		Based on METTLER TOLEDO cable no. 510624370	

To check the wiring:

1. Remove power from the system.
2. Remove the lid from the junction box and check the interior for moisture or any foreign material.
3. Ensure that all wiring connections are tight and that no insulation material is touching the terminal contacts.
4. Check all cable connections for correct wiring.
5. Check all cable connectors on the junction box. Tighten any loose connectors.

Note: See Figure 3-i for the model 2266 DigiTOL instrument cable wiring color code.

Check Load Cells

Check each load cell for proper bridge resistances:

Measuring Points	Resistance
Any lead to shield or ground	Infinity
+Excitation (green) to –Excitation (black)	380 ohm minimum
+Signal (white) to –Signal (red)	348 - 352 ohms

Table 9.1 Load Cell Measuring Points

If bridge resistances are within specification, perform a “shorted signal” symmetry check.

1. Short the signal leads together and place one multimeter lead on the shorted signal and one lead on the +Excitation wire.
2. Note the resistance value.
3. Remove the lead from the +Excitation wire and place it on the –Excitation wire.
4. Both resistance values should be approximately the same.

If the cells pass the above test:

1. Reapply power to the scale platform.
2. Confirm that proper excitation voltage is reaching the load cells by placing multimeter leads on the excitation positions of each load cell terminal. Excitation voltage can vary from 5 VDC to 15 VDC, depending on the application and digital indicator.

Note: Remove signal leads from terminals to measure output.

3. If proper excitation voltage is reaching the load cells, check the output signal from each cell.
4. If one cell has a particularly high or low dead-load output, it is suspect. The maximum output from any cell is 30 mV at 15 VDC excitation and loaded to gross capacity.
5. If any cell has an unusual signal, remove all load from that cell by raising the platform.
6. With the power still on, measure the output from the suspect load cell. The “no load” zero output should be ±1.5% of the full scale output. For example, if the excitation voltage is 15 VDC, then the full scale output is 30 mV and the load zero output should be within ±0.45 mV.
7. If the load cell is out of specification, replace it.

If a load cell fails any of the above tests, replace it.

Check Mechanical Components

Because the 2266 EZ-Lift design is so simple, there are few mechanical components to troubleshoot.

Ensure that the platform has freedom of movement and that the load cells are not resting against the fixed bumpers. Then:

- Is the platform rocking? Reshimming may be required.
- Replace any rocker pins that are unevenly worn or have flattened bearing surfaces.
- Examine the rocker pin receivers in the frame. If the bearing surface is sunken, depressed, or unevenly worn, replace the frame.
- If the fixed bumpers on the frame are excessively worn or damaged, the entire frame will need to be replaced.
- Inspect the platform and frame for any apparent physical damage. Replace any platform or frame that is bent or contains broken welds.
- Verify that the load cell overload gap is proper:

Load Cell Capacity	Overload Gap
500 lb	0.009 - 0.015 inch
1,250 lb	0.012 - 0.018 inch
2,500 lb	0.017 - 0.023 inch

Table 9.2 Load Cell Overload Gap

Load Cell Replacement Procedures

Remove Load Cell

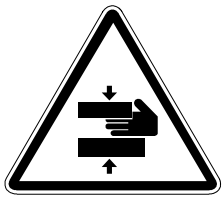
1. Remove power to the digital indicator.
2. Remove the junction box cover and locate the defective load cell cable.
3. Disconnect the defective load cell cable from its terminal on the summing PCB.
4. Loosen the watertight cable connector on the junction box and remove the cable from the enclosure.
5. Carefully remove the platform from the frame assembly using the eye bolts in the holes provided. Position the platform onto a stable supporting surface that allows access to the defective cell and cable and offers protection to the other cells during disassembly.
6. Attach a string to the end of the defective load cell cable. The string should be of sufficient strength and length to pull the new load cell cable through the platform structure.
7. Remove the two load cell mounting screws and keep for reinstallation. Lift the load cell from the mounting surface.
8. Carefully pull the defective load cell cable through the platform while feeding in the string. Once the string is at the load cell location, disconnect it from the load cell cable.
9. Remove the rocker pin with O-rings from the defective load cell.

Install New Load Cell

1. Reinstall the rocker pin with O-rings to the new load cell.
2. Attach the new load cell cable to the pulling string and carefully thread the new cable through the platform.
3. Secure the new load cell to the platform. Apply an anti-seize compound such as “Never-Seez” to the threads of the mounting screws and tighten with a calibrated torque wrench to 75 ft-lb.
4. Verify that the load cell has proper overload gap (see Table 9.2)
5. Thread the load cell cable through the connector on the junction box. When the cable length inside the box is sufficient, tighten the box connector.
6. Reinstall the platform into the frame. Ensure that the rocker pins are properly seated and aligned with the receivers in the frame.
7. Wire the new load cell cable to the proper terminal on the PCB per the wiring code.
8. Power-up the indicator. Shift adjust and recalibrate the scale.

Note: Make sure the load cell and platform mounting surfaces are free of grease and other foreign materials.

Lift Strut Replacement Procedures



WARNING

MAKE SURE THAT THE DECK PLATE IS FULLY SECURED BEFORE REMOVING THE RETAINING PINS FROM THE LIFT STRUT. FAILURE TO DO SO COULD RESULT IN BODILY HARM.

Remove Lift Strut

1. Raise the deck plate to a full open position and secure the plate with a lifting chain or overhead hoist.
2. Remove the retaining rings from the lift strut clevis pins.
3. Using a drift pin or equivalent, slowly drive the top clevis pin out past the limiting bracket. Once the clevis pin clears the limiting bracket, the lift strut extends another 1/4 inch.
4. Raise the deck plate slightly to reduce side pressure on the clevis pin, then remove the pin completely.
5. Remove the lower clevis pin and remove the lift strut and the limiting bracket.

Install Lift Strut

1. Position the lift strut and limiting bracket into the lower clevis and install the lower clevis pin. The cylinder end of the strut mounts to the deck plate clevis. The rod end of the cylinder mounts to the platform clevis.
2. Insert the top clevis pin through the cylinder end of the strut about 3/16 inch into the limiting bracket opening.
3. Lower the deck plate slightly until the clevis pin lines up with the limiting bracket mounting hole, then drive the clevis pin through.
4. Install the new retaining rings to the top and bottom clevis pins.

10 Service Parts

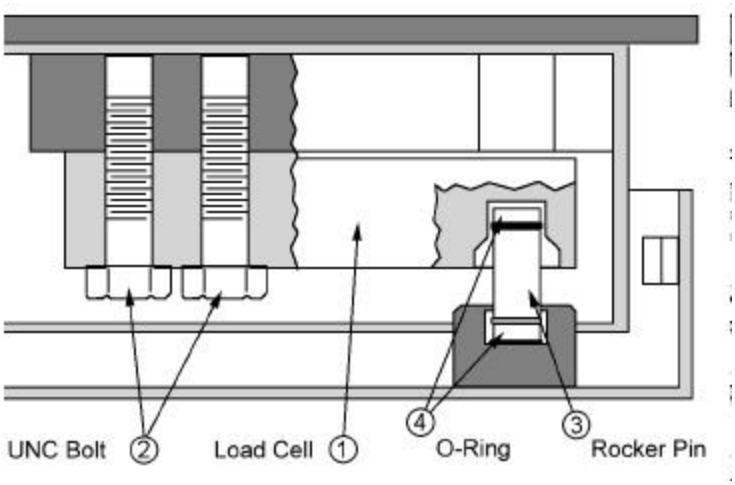


Figure 10-a Load Cell and Rocker Pin Assembly

Note: Proper overload gap:
500 lb cell - 0.009 to 0.015 inch
1,250 lb cell - 0.012 to 0.018 inch
2,500 lb cell - 0.017 to 0.023 inch

Note: Torque load cell bolts to 75 ft-lb.

Note: All load cells have 30 ft cables; 15 ft cables are an option.

Ref No.	Part No.	Description	Qty.
1	TB600529-4 TB600529-3 TB600363-2 TB600363 TB600342-2 TB600342	Load cell, 500 lb, (5,000d), 30-ft cable Load cell, 500 lb, (5,000d), 15-ft cable Load cell, 1,250 lb, (5,000d), 30-ft cable Load cell, 1,250 lb, (5,000d), 15-ft cable Load cell, 2,500 lb, (5,000d), 30-ft cable Load cell, 2,500 lb, (5,000d), 15-ft cable	4
2	TN800646	1/2-13 UNC bolt x 1 3/4-inch long	8
3	MN21018	Rocker pin (0.5 - 2.5k load cell)	4
4	MZ0909000005	O-ring (0.5 - 2.5k load cell)	8

Table 10.1 Load Cell and Rocker Pin Hardware

Part No.	Description	Qty.
TB100395	Analog junction box assembly (model 2266) REF: *13640300A analog PCB (may have alphabetical prefix) TA800218 desiccant bag	1
TB100515-5	DigiTOL junction box assembly (model 2266 DigiTOL) REF: *13839900A DigiTOL PCB (may have alphabetical prefix) TA800218 desiccant bag	
TB100569-4	IDNet junction box assembly (model 2266 IDNet) REF: ME504235 Cable, IDNet x 5m long ME207751 IDNet PCB ME200308 Lock Nut ME209911 Washer TA800218 Desiccant Bag	
MZ0901010298	1/2-13 UNC x 1 1/2-inch long (for bolting frame to floor)	8

Table 10.2 Junction Box and Option Hardware

Part No.	Description	Qty.
TA201611	Lug, ramp (per ramp)	2
MZ0901030076	3/8-inch lock washer (per ramp)	2
MZ0901010124	3/8-16 UNC x 1-inch-long hex-head screw (per ramp)	2

Table 10.3 Ramp Option Hardware

Part No.	Description	Qty.
TN202623	Shipping angle	4
MZ0901010033	3/8-16 UNC x 3/4-inch-long hex-head screw	8
MZ0901103001	3/8-inch zinc washer	8

Table 10.4 Quick-Pit Option Hardware

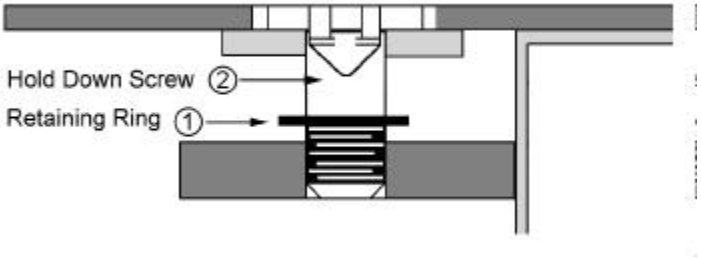


Figure 10-b Hold-Down Bolt

Ref. No.	Part No.	Description	Qty.
1	MZ0908000016	Retaining-Ring, EXT, E, 3/4, SS	2
2	TN203485	2266, DK-PL-Hold-Down-Screws, SS	2

Table 10.5 Spare Parts

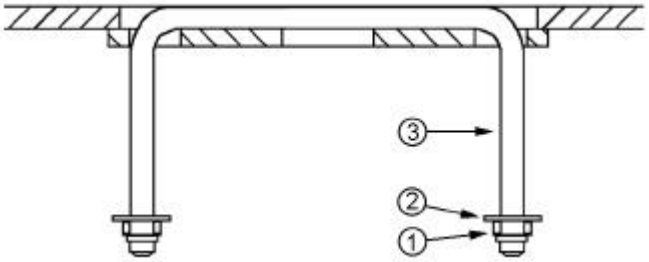


Figure 10-c Lift Handle

Ref. No.	Part No.	Description	Qty.
1	MZ0901020102	Nut, Hex, 1/4-20, SS, Nylon-Insert	2
2	MZ0901030044	Washer, Plain, 1/4, SS	2
3	TN203306	2266, Lift-Handle, SS, 1/4 inch	1

Table 10.6 Spare Parts

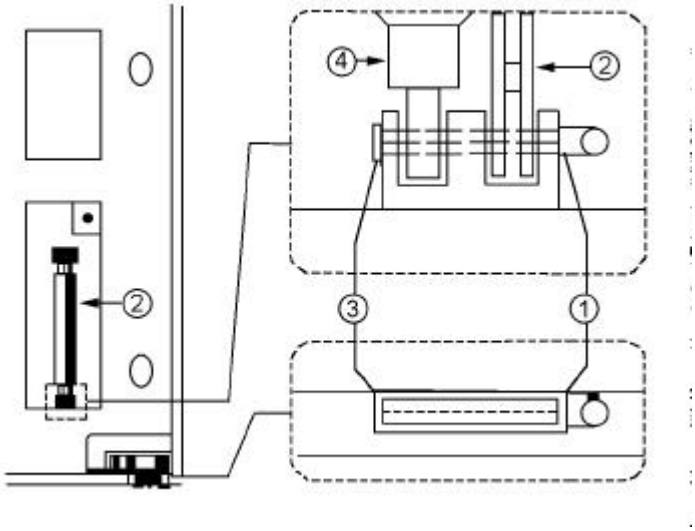


Figure 10-d Lift Strut Assembly Detail

Ref. No.	Part No.	Description	Qty.
1	MZ0908000014	Retaining-Ring, EXT, SH, 5/16, SS	7
2	TA203303	2266, Limiting-Bracket-Assembly	2
3	TN203291	Clevis-Pin, 5/16	7
4	TA203304-33 TA203304-44 TA203304-46 TA203304-55	2266, Gas-Spring, SS, 3X3, 120LB 2266, Gas-Spring, SS, 4X4, 280LB 2266, Gas-Spring, SS, 4X6, 530LB 2266, Gas-Spring, SS, 5X5, 515LB	2

Table 10.7 Spare Parts

11 Reference Material

Reference Drawings

Scale	General Dimensions	Quick-Pit Assembly
1,000 - 5,000 lb	TB203317	TB203474

Table 11.1 Reference Drawings

Recommended Spare Parts

For part numbers, refer to Service Parts (Chapter 10).

Qty.	Description
1	Load cell (capacity of cell required is per scale capacity)
1	Junction box circuit board (type of board is per model of scale)
1	Junction box desiccant bag
1	Rocker pin (by capacity of load cell)
2	Rocker pin O-ring (by capacity of load cell)
1	Lift-strut
1	Limiting bracket
2	Clevis pin
2	Retaining ring

Table 11.2 Recommended Spare Parts

Load Cell Data

Model number	745
NTEP certificate of conformance number	92-108
Maximum excitation voltage	15 VDC or VAC rms
Recommended excitation voltage	15 VDC
Full scale output	2 mV/V
Input terminal resistance	380 ohm minimum
Output terminal resistance	350 ± 2 ohms
Temperature range compensation	–10°C to +40°C (+14°F to 104°F)
Safe side load	100% of full load cell rating
Safe overload	150% of full load cell rating

METTLER TOLEDO

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Publication Part Number: 15348200A **Publication Date: 3/98**

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☐ **Technical Accuracy**	☐ Text ☐ Illustration	
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