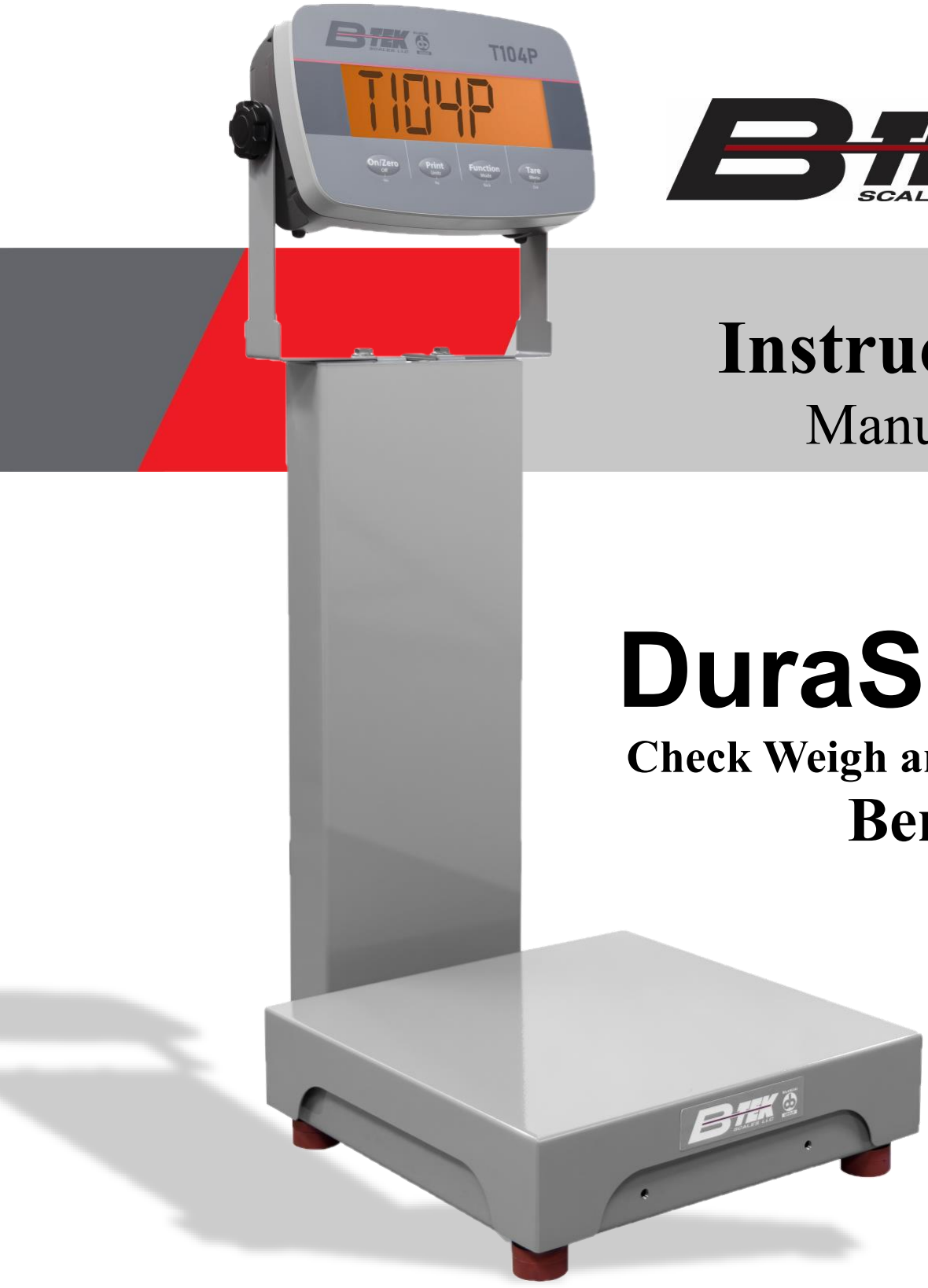


BILANCIAI GROUP

Instruction
Manual

DuraShield

Check Weigh and Counting
Bench Scale

3/15/23
V2023.1

Table of Contents

Safety First

Please call a B-TEK-authorized service provider for service or repairs.

- Ensure that the area used for this equipment is safe for this equipment.
- Allow only qualified personnel to work on electric/electronic components.
- Do not use this equipment for anything other than its intended use.
- Ensure equipment is plugged into stable power sources.
- Keep equipment away from high voltage, vibration, and high draft areas.
- Keep equipment cords and cables secured and protected.
- Perform periodic inspections to keep equipment in good working order.
- Never apply a load over the capacity of your scale.
- Keep the area around your scale free of debris.

SAFETY WARNING

Always unplug or remove power source from equipment before cleaning with water unless it has been installed by professionals that determine otherwise.

After cleaning is done always ensure equipment is completely dry before returning to or plugging into power source unless it has been installed by professionals that determine

Introduction

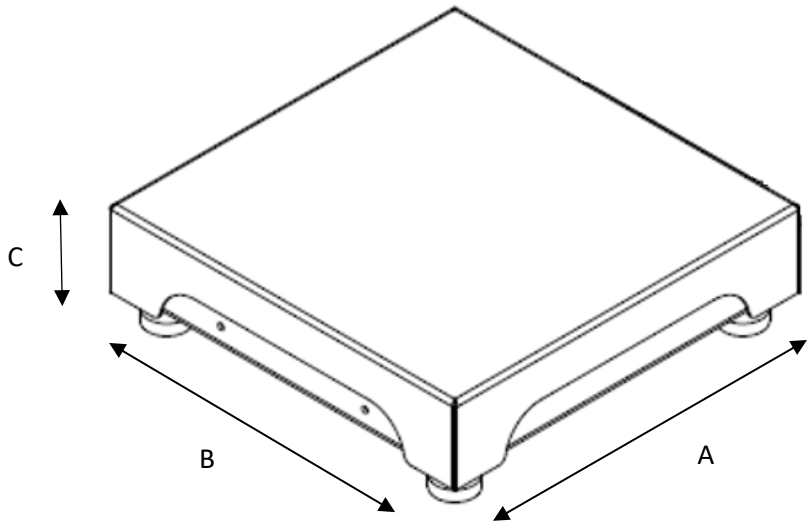
The information provided in this manual is a guide to installing the B-TEK, LLC. DuraShield series single-point bench scale. This document is intended as a guide only, and the actual installation should be performed by qualified personnel only.
All sales of goods are subject to the standard warranty and the standard terms and conditions published by B-TEK, LLC.
Should you have any questions regarding the DuraShield series single-point bench scale, contact your local B-TEK, LLC. scale representative.

- Includes T104P, column, and bench scale factory calibrated.
- Available in 12” X 12” and 18” X 18” sizes.
- Available in 100lb/50kg capacities.
- Structure powder-coated carbon steel.
- B-TEK ASP-1 single-point aluminum load cell.

B-TEK DuraShield Check Weigh and Counting Scale 12x12 and 18x18.

Specifications

MODEL	DuraShield 12”x12”	DuraShield 18”x18”
Capacities	100lb/50kg	100lb/50kg
Readability	.02lb/.01kg	.02lb/.01kg
Max. Divisions	5000e	
Weighing Units	lb, kg	
Platter sizes	12” x 12”, 18” x 18”	
Construction	Powder Coated Carbon Steel	
Load Cell Operating Temperature	14°F - 104°F / -10°C - + 40°C	
Weight Base	15.5lbs.	44.5lbs.
Weight Indicator	T104P Check Weigh and Counting App	T104P Check Weigh and Counting App
DIMENSIONS		
A	12.0 inches	18.0 inches
B	12.0 inches	18.0 inches
C	3.75 -4.25	4.0 – 4.5 in.



Assembly

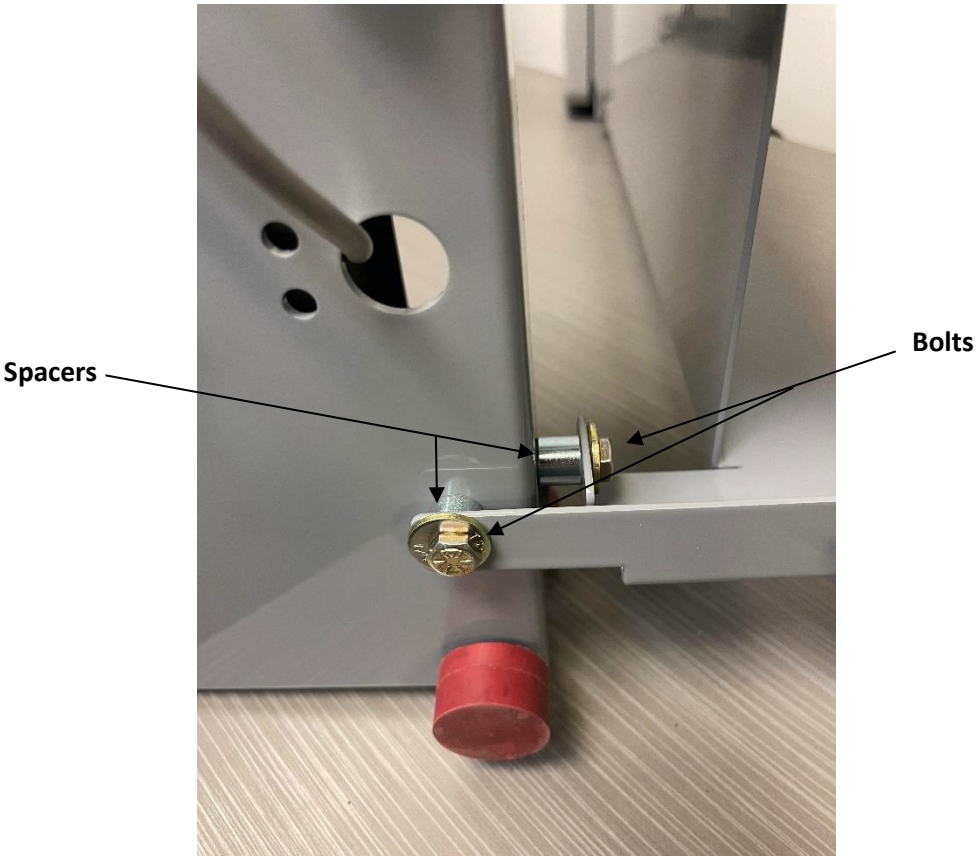
Unpacking

Carefully remove the bench scale from its box, ensure that it is not damaged, and that all the parts are included. This scale has been factory calibrated and only needs minor assembly.

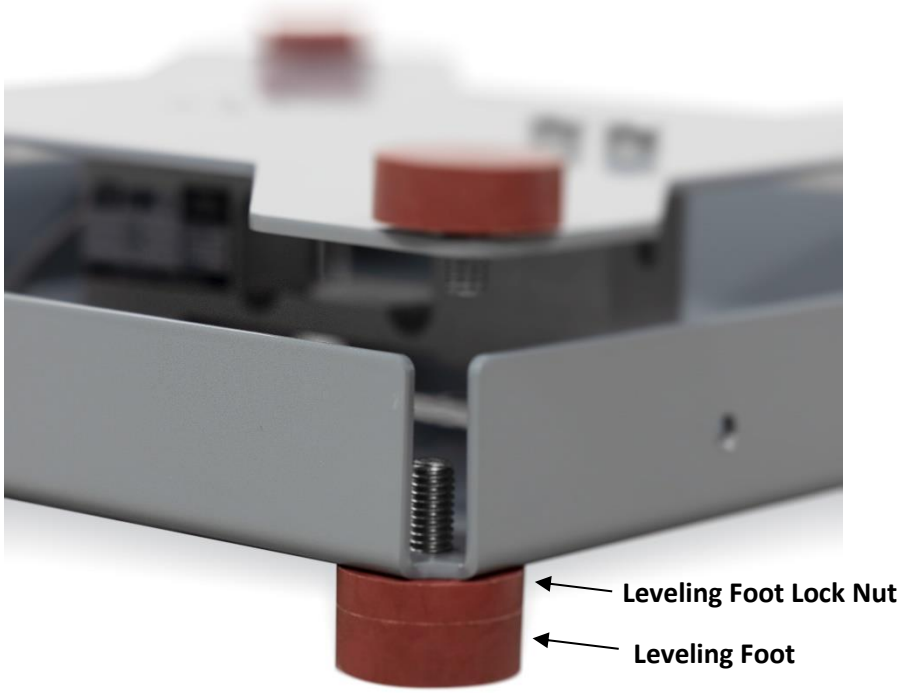
- T104P Indicator with Check Weigh and Counting
- Bench scale with load cell and spider assembly.
- Column and hardware kit, “wrench included”.
- Platter

Installing the Column

Assemble the bench scale and the column by inserting bolts into the threaded holes as shown in the image below. Put washers on the bolts then using the supplied wrench tighten the bolts until all bolts are tight.

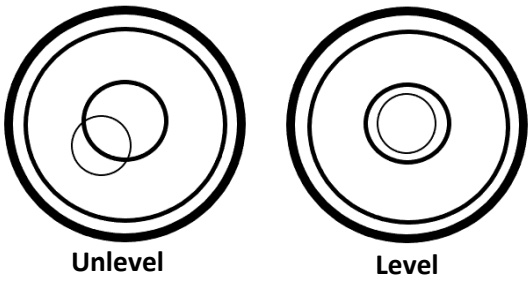


After fastening the column to the base install all the bench scale and column leveling feet as shown in the image below.



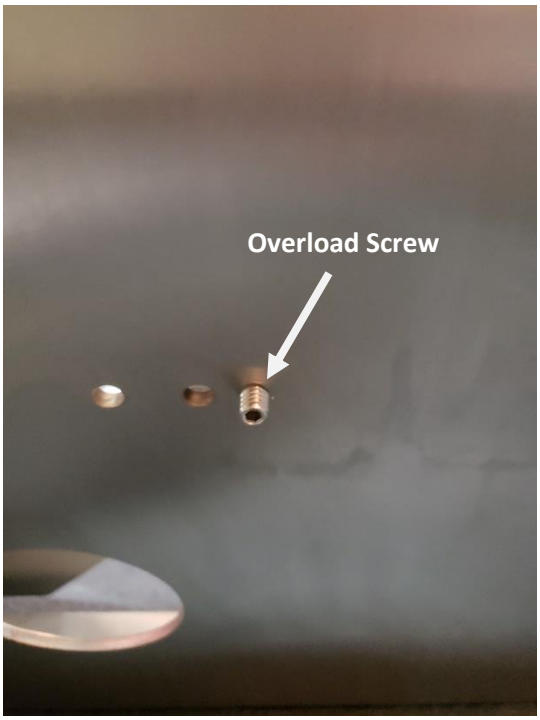
Place the bench scale on an environmentally sound level surface and adjust the feet on the bench base only. **(Do not adjust the column feet at this point)** until the bullseye level shows that it is level as shown in the image below. Once the scale is positioned and level adjust the column feet until they sit firm to the surface **(It is important to make sure that the column feet are taking the pressure off the column only).** Finally, tighten all lock nuts.

Bullseye Level Adjusting



Overload Stop

The overload stop is a set crew placed on the underside of the base and is designed so that the load cell bottoms out when more weight is applied than the scale's capacity. To adjust this screw simply apply the weight that matches the capacity of the scale plus 5% and adjust the screw in until it hits the cell. The overload stop is now set to stop at anything over 105% of the scale's capacity. **Use blue Loctite when setting the screw.**



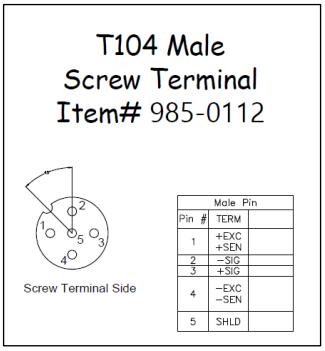
Indicator Installation

Mount the indicator on the column mounting bracket. Tighten the wing nuts to secure the indicator to the column.

Plug the load cell cable connector into the back side of the indicator load cell connector.

The load cell connector and load cell cable have been factory terminated. The diagrams below show the termination points for reference.

B-TEK BT-ASP-1 Load Cell	
+ Input	RED
- Input	BLACK
+ Sense	BLUE
- Sense	BROWN
+ Output	GREEN
- Output	WHITE
Shield	CLEAR



NOTE: Your scale has been factory calibrated, however, the scale should be tested to confirm its accuracy after shipment.

After calibrating the scale, test it at the low end, middle and high end to ensure it is working properly. Once the scale is confirmed working, the scale is now ready for use.

Control Functions

Figure 1-5 T104P Control Panel

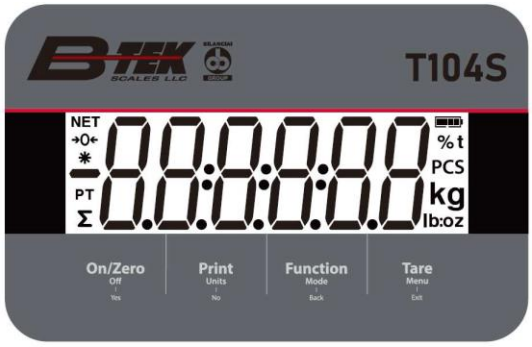


Figure 1-6 T104S Control Panel

Button	On/Zero Off Yes	Print Units No	Function Mode Back	Tare Menu Exit
Primary Function (Short Press)	**On/Zero** If the terminal is off, press to power on; If the terminal is on, press to set the zero point.	**Print** Sends the current value to the RS232 port if the ***Print Setup*** ***Assignment Demand*** menu is enabled.	**Function** Initiates an application mode.	**Tare** Performs a tare operation.
Secondary Function (Long Press)	**Off** If the terminal is on, press to power off.	**Units** Changes the weighing unit.	**Mode** Changes the application mode.	**Menu** Enters the user menu. Shows a tare value in application modes.
Menu Function (Short Press)	**Yes** Accepts the current setting on the display or selects a sub-menu or menu item.	**No** Advances to the next menu or menu item. Rejects the current setting on the display and advances to the next available one.	**Back** Moves back to the previous menu item.	**Exit** Exits the user menu. Aborts a calibration in progress. Exits when displaying totalization result or under and overvalue in check mode.

Notes:

- Short Press: press less than 1 second.
- Long Press: Press for more than 3 seconds.

Display Layout

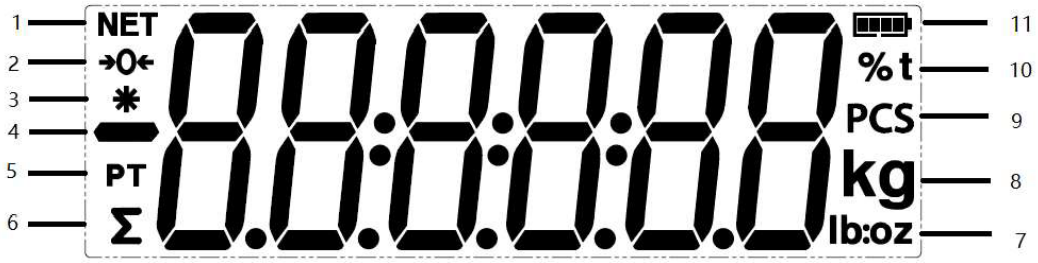


Figure 1-7 Display

Item	Description	Item	Description
1	NET symbol	7	Pound, Ounce, Pound: Ounce symbols
2	Center of Zero symbol	8	Kilogram, Gram symbols
3	Stable weight symbol	9	Pieces symbol
4	Negative symbol	10	The percent symbol, Ton symbol
5	Preset tare symbol	11	Battery symbol
6	Totalization symbol		

Operation

Turning the Scale On/Off

To turn the scale on, short press the **On/Zero Off** button. The scale performs a display test, momentarily displays the software version, the GEO value and then enters the last active weighing mode.

Note: If the hardware lock switch is enabled, **LFT ON** will also be displayed briefly.

To turn the scale off, press and hold the **On/Zero Off** button until **OFF** is displayed.

Weighing Mode

Use this application to determine the weight of items in the selected unit of measure. This mode is the default factory setting.

Enter the Mode and Start Weighing

To enter the weighing mode:

1. Press and hold the **Mode** button until **WEIGH** is displayed.

If needed, place an empty container on the pan and press the **Tare** button to tare.

Note: To check the tare weight:

a) Long press the Tare button until **t.Wt** is displayed.

b) Release the **Tare** button and the tare weight will be displayed.

2. Add the item to the pan or the container. The display shows the weight of the item.

Application Settings

The application can be customized for user preferences. To enter application settings:

1. Long press the Menu button until you see. Release the button and wait for the display to show.

2. Short press the No button several times until you see. Press the Yes button to enter the application mode settings.

3. Short press the No button several times to navigate until you see the selection you want.

4. Press the Yes button to select.

5. Repeat step 3 and 4 several times until you finish all settings.

6. Press the Exit button to exit.

The Weighing configurations are defined below (defaults in Bold).

Item	Available Settings	Comments
Weighing (WEIGH)	**On**, Off	To enable or disable Weighing

Note: You cannot disable Weighing if you are in the mode currently.

Counting Mode

Use this application to count the number of pieces on the pan based on an Average Piece Weight (APW).

Enter the Mode

1. Press and hold the **Mode** button until **COUNT** is displayed.
2. Release the **Mode** button.
a) If the skip function is turned off, the display shows **CLr.PW**.
If you need to clear the stored Average Piece Weight **(APW)** of the last time, press the **Yes** button, and then continue to the next step.
If you need to recall the stored **APW** of the last time and continue to use it, press the No button to start counting.
Note: If the display shows, remove the weight on the pan or press the Tare button to tare.
b) If the skip function is turned on, the display moves to step 3 directly.
Note: Refer to section 3.6 Skip, you can find the setting of the skip function.
3. The display shows the sample size. To change it, **short press** the No button several times until you see the value you want.
Note:
Available sample size selections are 5, 10, 20, 50 and 100 (The default is 10). When Legal for Trade is turned on, sample size selection 5 will not be available.
4. Place the specified quantity of pieces on the pan and press the Yes button to capture the current stable weight.
Note:
Make sure all pieces in the sample are the same. Different pieces and weights will result in an inaccurate piece count.
During the capture process, the display shows
If the APW is between 0.1d and 1d, the display will show for 1.5 seconds. After that the scale will start counting.
If the APW is less than 0.1d, the display will show for 1.5 seconds. After that it will go back to step 3, showing the sample size. Please replace a heavier batch of samples and press the Yes button to re-establish an APW value or change to a scale with readability suitable for your samples.

Start Counting

1. Place parts on the pan and read the number. The number of pieces and the Pcs icon are displayed.
2. Short press the Function button to temporarily display the APW. is displayed for 1 second, and then the APW value is displayed for 1 second with the weighing unit.

Application Settings

The application can be customized for user preferences. Please refer to the T104 indicator instruction manual Application Settings section in Weighing Mode for details about how to enter application settings. The Counting Configurations are defined below (defaults in Bold).

Check

Use this application to compare the weight of items to a target weight range. The display color will change according to the comparing result:

Red indicates over the target weight range
Green indicates within the target weight range.
Yellow indicates under the target weight range.

Set Check Limits

1. Press and hold the **Mode** button until CHECK is displayed.
2. Release the **Mode** button.
a) If the skip function is turned off, the display shows CLr.CHK. If you want to use the stored under and overvalue of the last time, press the **No** button, and the scale enters check mode directly. If you want to set new over and undervalues, press the **Yes** button, and continue to the next step.
b) If the skip function is turned on, the display enters the check mode directly.

Note: Refer to section 3.6 Skip, you can find the setting of the skip function.

1. The display shows UNdEr. Press the **Yes** button to edit the undervalue.

000000 is flashing on the display with the unit you set.
2. To set a new under value:
a) Short press the **No** button several times until the desired number appears.

Note:

Pressing the **Back** button can decrease the digit.

If you need to set a negative value, press the **Back** button when the first digit is zero or press the

No button when the first digit is nine.

b) Short press the **Yes** button to accept the number and move to the next digit.
c) Repeat the process until all the digits are correct.
d) Press the **Yes** button to accept the value. Then the display will show OvEr.

Note: Please refer to the **Button Navigation** section for details of setting digits.

1. Repeat step 3 to 5 to set the over value.

2. If the values you set are invalid, the display will show **–NO--** and go back to reset the Under and Overvalue.

3. If the values you set are valid, the scale will enter check mode.
Note: Short press of the **Function** button can display the over and undervalue.

Positive Check

Positive check is used to determine when the material added to the scale is within the target weight range. In this case, the under and over-values must be positive values. (The overvalue must be greater than the undervalue.)

To start, add material to the scale pan until the display turns green.

Negative Check

Negative check is used to determine when the material removed from the scale is within the target weight range. In this case, the under and over values are both negative values. The undervalue must be greater than the overvalue. (For example, the undervalue is -10; the overvalue is -15).

To start, place a package or bin of material on the scale and press the **Tare** button. Remove a portion of the package or material until the display turns green.

To continue weighing multiple portions off the scale's pan, tare the scale between each portion.

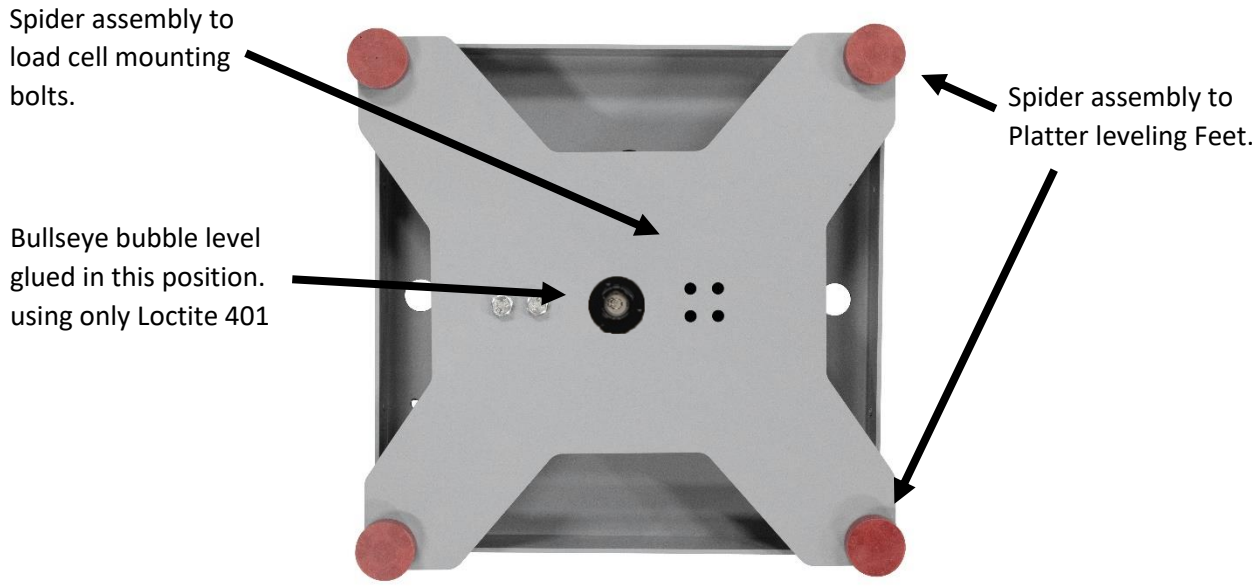
Zero Check

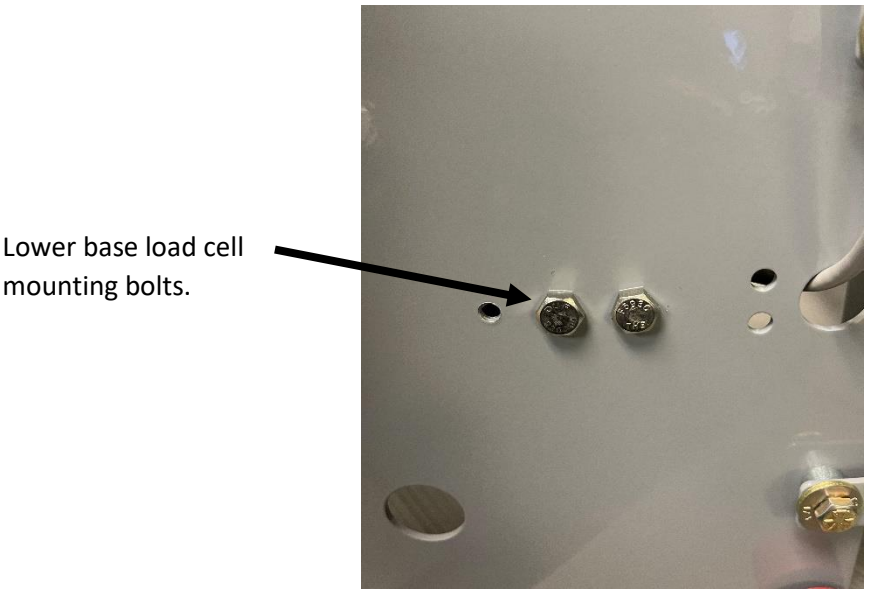
Zero check is used when comparing subsequent samples to an initial reference sample. In this case, the undervalue must be zero or a negative value and the overvalue must be zero or a positive one.

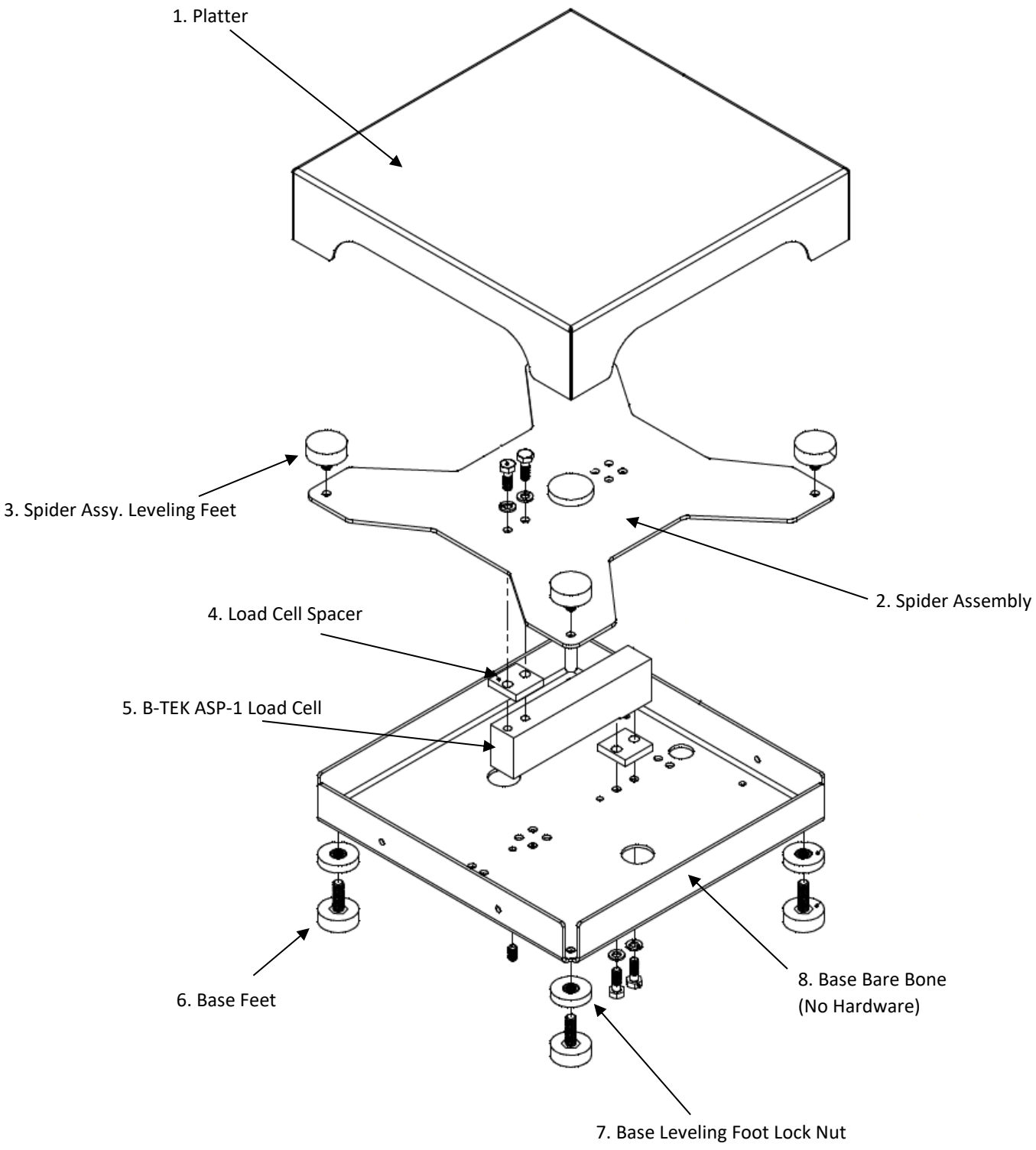
Place the reference sample on the scale and press the **Tare** button. Remove the material from the scale pan until the display turns green.

Load Cell Replacement

Install the load cell using supplied B-TEK ASP-1 load cell and shims. Torque the B-TEK ASP-1 load cells to 76 in. lbs.






1. Platter
3. Spider Assy. Leveling Feet
2. Spider Assembly
4. Load Cell Spacer
5. B-TEK ASP-1 Load Cell
6. Base Feet
8. Base Bare Bone
(No Hardware)
7. Base Leveling Foot Lock Nut

Replacement Parts

Parts List

No	B-TEK Part #	Parts Name
1	100-160857-1	12”x12” SS Replacement Platter
1	100-121246A-1	18”x18” SS Replacement Platter
2	100-160858-3	12”x12” SS Replacement Spider Assembly
2	100-121248B-1	18”x18” SS Replacement Spider Assembly
3	200-160264-1	Spider Assembly Leveling Feet
4	100-99246-1	B-TEK Load Cell Spacer Qty of 1
5	888-000005	B-TEK BT-ASP-1-30kg Replacement Load Cell
5	888-000006	B-TEK BT-ASP-1-50kg Replacement Load Cell
5	888-000007	B-TEK BT-ASP-1-75kg Replacement Load Cell
5	888-000008	B-TEK BT-ASP-1-100kg Replacement Load Cell
6	200-160264	Base Leveling Feet
7	200-160264-2	Base Leveling Feet Lock Nut
8	100-160856-1	12”x12” SS Base Assembly (Bare Bones)
8	100-160730C-1	18”x18” SS Base Assembly (Bare Bones)

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