MODELS 160310 and 160330

Electronic Counting Scales

1. INTRODUCTION

Congratulations on your purchase of the Extech Model 160310 or 160330 Counting Scale, these are easy to use, high resolution counting scales featuring keyboard tare and unit weight entry, as well as a memory accumulator and check function. Housed in a durable ivory-colored plastic enclosure, the unit displays its bright numerals on a 16-digit VFD type display. A 20-key membrane panel contains all of the scale's functions and allows entry of numerical data. A removable 8" x 9" stainless steel platform allows for easy cleaning.

1.1 Getting Started

After unpacking the scale, a small amount of assembly is required: Locate the sub-platform, four (4) Hex screws, and enclosed Allen wrench. Place the sub-platform onto the scale's load point with all rubber parts facing up. Install and tighten the four Hex screws. Please place the scale on a firm and stable floor or table and plug the line cord into an AC outlet. Leave the scale on for at least 30 minutes before using. You will find the ON/OFF switch at the bottom of the scale on the right, towards the front. You may leave the scale on at all times, if you wish. Press the ZERO key before operating the scale.

1.2 Important Startup Precautions:

- **DO NOT** Share an AC outlet with other noise producing products (devices with electrical motors or relays).
- **DO NOT** turn the scale ON with an object already on the platform. You will not be able to Zero the scale.
- **DO NOT** operate the Scale in an area with changing ambient temperature, direct sunlight, high humidity, wind, or vibration.

2. SPECIFICATIONS

Measurement system	Strain gauge load cell
Display	7 segment, 16 digit vacuum fluorescent display
Capacity (resolution)	160310 = [12 lbs. (0.002lbs)] : 160330 = [30 lbs. (0.005 lbs.)]
Accuracy	± 0.02% full scale
Overload display	Displays indicates dashes ' - - - - - ' to 103% of capacity
Overload limit	300% of capacity maximum static overload
Zero adjust	Automatic zero via keypress
Digital Tare	Known sample quantity or unit weight entered via keypad
Count Accumulation	999,999 pieces maximum. 99,999 separate count operations
Measurement modes	COUNT, TOTAL, UNIT WEIGHT, and WEIGHT
Power Supply	117VAC ±10%, 50/60Hz (Fuse: 5 x 20mm, 0.5A QuickBlow)
Power consumption	Approx. 10 Watts
Weight	Approx. 10.2 lbs. (4.6 kg)
Dimensions	9x12.3x3" (240x315x85mm); Pan: 8.25x9" (210x238mm)

3. BASICS OF OPERATION

3.1 Keypad Overview

1	2	3	4	5	6	7	8	9	0
●	CE	M+	MR	CM	WT SET	SAMPLE	Check	Zero	Tare

3.1.1 Keypad Function Explanation

KEY	FUNCTION
ZERO	Sets the scale in the correct zero position for accurate operation.
TARE	Establishes either the weight currently on the platform or the current keyed-in value as the tare weight.
Numeric Keys (0-9)	Allows entry of numeric data.
.	Allows entry of decimal point position when entering numeric data.
WT. SET	Establishes the current keyed-in value as the piece count of items currently on the platform.
SAMPL	Establishes the current keyed-in value as the piece count of items currently on platform
CE	Clears the current keyed-in value or the unit weight.
CHECK	Toggles between present indication and the check limit setting. Also allows programming of check limit.
M+	Ads the current number displayed in the PIECES window to the accumulator. (Memory +)
MR	Toggles the scale between current indication and the contents of the accumulator. (Memory Recall)
CM	Clears the contents of the accumulator. (Memory Clear)

3.2 Display Modes

In the COUNTING mode, the 16 digit display simultaneously indicates WEIGHT, PIECE WEIGHT, and QUANTITY. In the TOTALS mode, the display simultaneously indicates the number of counting operations totaled and the accumulated total quantity.

- **ZERO Indicator:** Indicates that the scale is within 1/4 of a graduation

- **WEIGHT Display**: Indicates the gross or net (when Tare is activated) presently on the platform.

- **PIECE WEIGHT Display**: Indicates the averaged or user-programmed sample piece weight.

- **QUANTITY Display**: Indicates the accumulated total number of pieces weighed

3.3 Indicators and Warnings

The scale's keypad incorporates 'tactile feedback' meaning that when a key is pressed an audible tone is heard to confirm that a keypad command has been accepted. In addition, the following status indicators advise the operator:

- **ZERO Indicator:** Indicates that the scale is within 1/4 of a graduation of zero.

- **TARE Indicator:** Warns that a Tare value has been stored in memory.

- **'Light Sample':** Indicates that the unit piece weight is too light for accurate counting. This warning permits counting operations to continue however.

- **'More Samples Needed':** The total number of the samples on the platform is below the limit necessary for accurate counting.

3.4 Tare Operation

In order to subtract the weight of the container or vessel from the scale's reading, it is necessary to enter that weight as the tare weight. This value can be entered into the 160310

Counting Scale by either the **push button tare method** or the **keyboard tare method.** A tare weight may be entered up to and including the scale's full capacity, however the maximum negative weight that the scale can show is –9.9999 lbs. It is recommended that the push button tare method be used.

3.4.1 To use the push button tare method (Recommended for better accuracy):
1. Place the empty container on the platform.
2. Press the TARE key. The TARE indicator comes on and the WEIGHT display window shows zero.

3.4.2 To use the keyboard method:
1. Enter the known tare weight in pounds into the scale using the numeric and decimal point keys. NOTE: You must enter all three decimal places if the tare weight is not in whole pounds, i.e. enter 1.2 lbs. as 1.2000 lbs. This value will be blinking in the UNIT WEIGHT display window.
2. Press the TARE key. The TARE indicator comes on and the WEIGHT display window shows the keyed-in weight as a negative value

3.4.3 To clear the tare weight from the scale:
Remove all weight from the platform and press the TARE key. The TARE indicator goes off and the WEIGHT display window again shows zero.

3.4.4 Possible Tare Operation Errors:
You cannot enter a tare weight that is greater than the scale's full capacity. For example, for the 12 lbs., you cannot enter, say, 13.000 lbs. Also, you cannot key in a decimal point value higher than the resolution if the scale. For example, for the 12 lbs., you cannot enter 0.001 lbs., since the resolution is 0.002 lbs. In both cases, the scale will automatically reset itself after three seconds, or you can press the CE key to key in a new value.

3.5 Piece Counting Operation
There are two ways to use the piece counting operation. A unit weight value can be keyed into the Counting Scale by using the keyboard entry method. Alternatively, the sampling method may be used. For greater accuracy, the sampling method should be used. The accuracy of the operation depends upon part consistency and sample weight. When using the sampling method, always count the parts in your hand and place them on the platform all at once. Both the sample weight and the unit weigh have limits to assure accuracy. The limits for these are found at the bottom of the page.

3.5.1 To use the sampling method:
1. Place a pre-determined number of pieces on the platform. The WEIGHT display window shows the total weight.
2. Key in the number of pieces you have placed on the platform. This value will be blinking

in the UNIT WEIGHT display window.

3. Press the SAMPLE key. The UNIT WEIGHT display window now shows the calculated unit weight, while the PIECES display window shows the actual number of pieces on the platform.

3.5.2 To use the keyboard entry method:

1. Key in the pre-determined unit weight in thousandths of a pound; i.e. enter 0.010 lbs. as 10. This value will be blinking in the UNIT WEIGHT display window.
2. Press the SET key. The UNIT WEIGHT display window now shows the keyed-in unit weight value.

3.5.3 To clear the unit weight from the scale:

1. Press the CE key. The UNIT WEIGHT display window now zero.

3.6 Accumulator Function Operation

The 160310 Counting Scale comes equipped with a handy accumulator function which works in conjunction with the piece counting operation. The accumulator uses a memory to store piece counts. Much like a pocket calculator, this memory can be added to, displayed, and cleared at any time.

3.6.1 To use the accumulator function:

1. Enter the Unit Weight of the objects you wish to count by one of the methods listed under "Piece Counting Operation."
2. Press the CM key to clear the accumulator memory.
3. Place the objects to count on the platform. The number of pieces will be shown in the PIECES display window.
4. Press the M+ key to add this value to the accumulator.
5. Repeat steps 3 & 4 until all pieces are counted.
6. Press the MR to view the contents of the accumulator.   The display shows the information in the following format. The WEIGHT display window shows the number of times the M+ key was pressed.
   The PIECES display window shows the accumulator total.
7. To return to piece count mode, press the MR key again.

3.7 Check Limit Function Operation

The Counting Scale comes equipped with a handy check limit function which works in conjunction with the piece counting operation. The check limit uses a memory to store a piece count limit, which is entered using the numeric keys. Once set, the scale sounds an alarm when the current piece count is equal to or greater than the stored limit. This function was designed for packing and filling applications.

3.7.1 To set the check limit value:

1. Press the CHECK key.
2. Key in the number of pieces you wish to set as the check limit value. This value will be blinking in the UNIT WEIGHT display window.
3. Press the SET key. The display now shows the information in the following format:
    The UNIT WEIGHT display window shows the number entered for check limit.
4. Press the CHECK key again to return to previous operation.

3.7.2 To use the check limit function:

1. Enter the Unit Weight of the objects you wish to count by one of the methods listed under "Piece Counting Operation."
2. Add pieces to the container until the scale "beeps" repeatedly and the value in the PIECES display window blinks on and off.

3.7.3 To clear the check limit value:

1. Press the CHECK key.
2. Press the CE key. The value in the UNIT WEIGHT display window becomes zero.
3. Press the SET key to clear the value from memory.
4. Press the CHECK key to return to previous operation.

4. Repair and Calibration Services

Extech offers complete repair and calibration services for all of the products we sell. For periodic calibration, NIST certification or repair of any Extech product, call customer service for details on services available. Extech recommends that calibration be performed on an annual basis to insure calibration integrity.

5. Warranty