WEIGH-TRONIX

WI-125 (QTLTSC) Indicator
User's Manual

UNITED STATES

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

CANADA

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

Le present appareil numerique n'emet pas de bruits radioelectriques depassant les limites applicables aux appareils numeriques de la Class A prescrites dans le Reglement sur le brouillage radioelectrique que edicte par le ministere des Communications du Canada.

CAUTION

Risk of electrical shock. Do not remove cover. No user service-able parts inside. Refer servicing to qualified service personnel.

Weigh-Tronix reserves the right to change specifications at any time.

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WI-125 Specifications

Dimensions:	9.37" W x 6.75" H x 3.75" D (23.8 cm x 17.1 cm x 9.5 cm)
Power:	10 to 90 VDC, 300 mA maximum
Display:	8 digits, 7-segment LCD, 0.6 inch high with annunciators and backlighting.
Display Rate:	One, two or five times per second
Agencies:	NIST Handbook 44, Class III, IIIL, 5,000 divisions COC #95-126 Consumer and Corporate Affairs, Canada (pending) FCC Class A
Accuracy :	Class III, IIIL; 5,000 divisions Span: ±5.0 ppm/C Zero: ±.066 uV/C (-10 to 40°C) Span: ±10 ppm/C Zero: ±0.13 uV/C (-30 to 60°C)
Linearity:	±0.005% of capacity, maximum
Repeatability:	±0.005% of capacity, maximum
Hysteresis:	0.005% of capacity, maximum
Weigh bar drive capacity:	Up to eight 350 ohm weigh bars.
Environment:	-10 to 40°C (14 to 104°F) for HB-44 specs 10 to 90% relative humidity
Internal Resolution:	0.25 mV/V = 67,500 counts
A to D conversion rate:	30 times per second
Analog Range:	-0.14 to +3.5 mV/V
Capacity:	.00001 to 999999, programmable to any number between these limits.
Divisions:	.0001 to 20000, programmable to any division size between these limits.
Push Button Zero Range:	0 to ±100% of capacity; programmable independent positive and negative limits; unit will not allow zeroing beyond capacity.
Tare:	The unit may be configured to have pushbutton tare which can function as a scroll tare register. Pushbutton tare and scroll tare may tare only positive gross weights up to the capacity of the unit. Scroll tare allows numeric entry of a tare value using two keys to enter the value.
Motion Detection Window:	Programmable from 0 to 999999 divisions, decimal entries are accepted.
Automatic Zero Tracking:	Window: Programmable from 0 to 999999 divisions, decimal entries are accepted.
	Net Mode Tracking: May be enabled or disabled. Rate: 0.2 division per second Starting Delay: 2 seconds
Linearity:	Second order correction provides smooth curve fit through three points--zero, linearity, span.
Angle Compensation:	Compensates for pitch and/or roll out-of-level weighing.
VIBRATION COMPENSATION	
Analog Low Pass Filter:	Two section with .10 second time constant for low power analog and .06 second time constant for standard analog.
Software Low Pass Filter:	One section with .05 second time constant.

Introduction

The WI-125 is a weight indicator which may be used with Lift Truck Systems. The indicator is powered by a DC power source of 10 to 90 volts.

This set of instructions is divided into the following sections:

- Introduction
- Operations Mode
- Keyboard
- Indicator Operation
- Operations Menu
- Transmitting Data
- Indicator Diagnostics

Operations Mode

Operations mode contains all normal weighing operations. In this mode you can view or set the following parameters if the unit is so configured:

- pushbutton tare
- time
- date
- backlight

Time, date and backlight can be secured behind a security code. Parameters secured by the code number can be viewed but not changed unless you enter the security code.

Keyboard

The keyboard consists of 7 keys. Five keys, or buttons, provide all the basic weighing functions:

- Tare
- Gross/Net
- Zero
- Print
- Units

The other keys are used to access the menus for purposes of accessing information, testing the indicator, and configuration. The keyboard is shown in Figure 1.

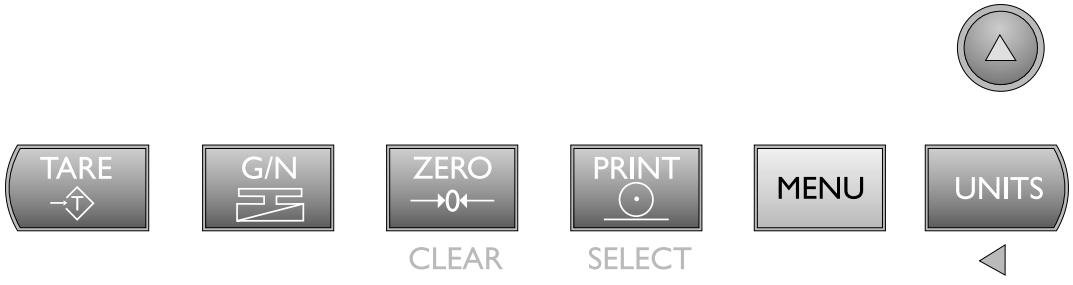
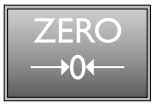


Figure 1
WI-125 Keyboard

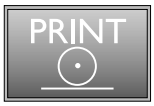
Key Functions

Enters a pushbutton tare in gross/net operation. This key's factory default is OFF and it must be enabled for use.

Accesses the gross weighing mode from any other function and activates the net weighing mode if a tare is active.

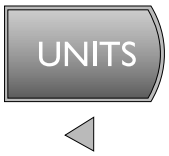


Zeros the scale in gross or net weigh mode. This button also clears scrolled digits on the display before they are accepted.



Sends a print command and is used to select menu items.

Used to access menus and move among choices in a menu.



Changes the unit of measure during operations mode and moves a digit inserted with the - key one space to the left. The factory default for this key is set for lbs only.

Lets you scroll numerical values.

Entering Numbers with Arrow Keys

*If at any time you enter an incorrect number, press **CLEAR** to delete the number, then re-key.*

The arrow keys are used to enter numbers. Refer to this section when you need to enter a number or numbers.

Example: To key in the number 603

Press the ↑ key repeatedly until the 6 appears on the display.

Press the ← key once to move the 6 one space to the left.

Press the ↑ key until the 0 appears.

Press the ← key once to move the 60 one space to the left.

Press the ↑ key until 3 appears.

The decimal appears after the 9 as you scroll through the numbers with the ↑ key. After the decimal appears, press the ← key once, then enter the next digit of your number.

Indicator Operation

Powering Up

The unit will power up in gross or net weighing mode, depending on what mode the unit was in when last turned off.

The indicator display (see figure 2) tells you the status of the indicator through the illumination of annunciators. The annunciators are small black arrows pointing to the different labels around the display face.

No annunciators are lit while motion is detected.

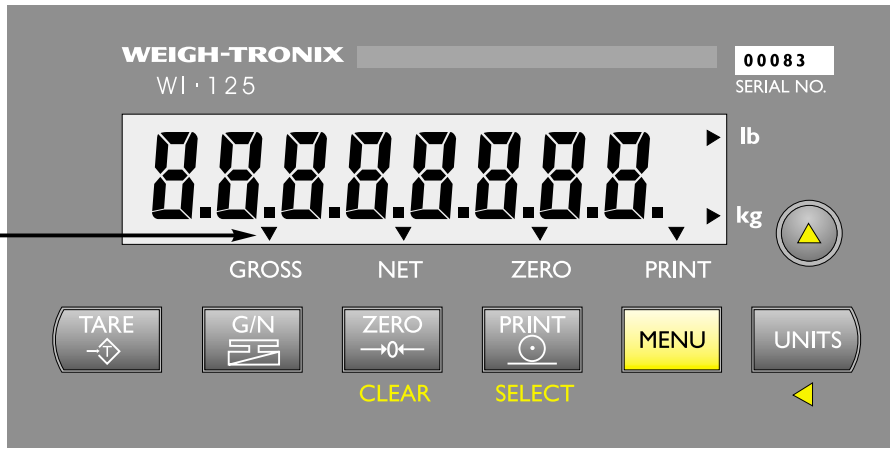


Figure 2
Indicator Display

Annunciators

Gross - Illuminates when indicator is in gross weighing mode.

Net - Illuminates when a tare is in effect and the indicator is in net weighing mode.

CZero - Illuminates when the scale is within ±1/4 division of zero.

Print - Illuminates when the print key is pressed and data is transmitted.

lb, kg - Illuminates the active unit of measure in weighing mode.

Operations Menu

Your unit is configured to display some or all of the following functions: pushbutton tare, time, and date. These can be viewed and changed if allowed by the security code. **This manual assumes the unit is configured to allow full access to all functions**. You can disable unneeded options. Instructions are in the *Service Manual*. Below is a flowchart and general instructions for moving around the operations mode menu.

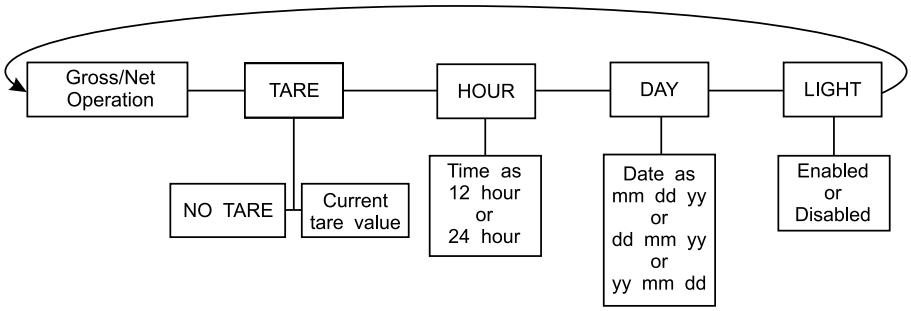


Figure 3
Operations Menu Diagram

Press **MENU** to go right in the diagram.

Press and hold **MENU** to go left in the diagram.

Press **SELECT** to select new choice and to go up and down in the diagram.

Press **G/N** at any time to save changes and return to gross/net weighing mode.

Gross/Tare/Net Weighing Operations

Gross Weighing

To perform gross/net weighing operations, follow these steps:

1.	Power up the indicator.	Indicator powers up in gross or net mode.
2.	If the unit is not in gross mode, press the **G/N** key once to get to gross mode.	The annunciator illuminates next to gross. See Figure 2
3.	Zero the scale by pressing the **ZERO** key.	No weight is displayed and the zero annunciator illuminates. See Figure 2.
4.	Select unit of measure by pressing the **UNITS** button.	The units annunciator will point to the chosen unit of measure.
5.	Place weight on the scale.	Gross weight is displayed.

Net Weighing

Pushbutton Tare

1.	With the scale empty and the indicator powered up in gross mode, zero the scale by pressing the **ZERO** key.	No weight is displayed and the zero annunciator illuminates.
2.	Place the weight to be tared on the scale.	The weight of the object is displayed.
3.	Press the **TARE** key on the indicator.	The weight is tared, the display reads zero and the net annunciator illuminates.
4.	Add more weight to the scale.	Net weight is displayed.
5.	View the gross weight by pressing the **G/N** button.	Gross weight is displayed and the gross annunciator illuminates.
6.	Press the **G/N** key again to see net weight.	Net weight is displayed and the net annunciator illuminates.

Entering a Scroll Tare

1. From gross/net weighing mode, press the **MENU** key.	**tArE** is displayed.
2. Briefly press the **SELECT** key.	***no tArE*** or the current tare value is displayed. You can toggle between ***no tArE*** and the current tare value by pressing the **MENU** key.
3. With the current tare value displayed, enter a numerical value for your tare. Refer to the section *Entering Numbers with Arrow Keys.* Then, press the **SELECT** key.	New tare value is displayed, then ***tArE*** is displayed.
4. Press **G/N** to return to gross/net weighing mode.	Display returns to gross or net mode.

*You may view the current or active tare value at any time during a weighing process. From gross or net weighing mode, press **MENU** then **SELECT**. If a tare value is in use, it will be displayed. Press **G/N** to return to gross/net weighing mode. Refer to Operations Menu on previous page.*

Clearing the Active Tare

There are two ways to remove the current or active tare weight.

1. Remove all weight from the scale and press **TARE**.	Tare register is cleared, scale returns to gross mode and no weight is displayed.
2A. With the gross or net annunciator illuminated, press **MENU**, then press **CLEAR**.	***tArE*** is displayed, then ***no tArE*** is displayed.
2B. Press the **G/N** key.	Gross weight is displayed and no tare is active.

Net Weighing Operation

1. After a tare is established, place the indicator in net mode by pressing the **G/N** key.	Net annunciator illuminates. Zero weight will be displayed with the container on the scale.
2. Place material to be weighed in the tared container on the scale.	Net weight of material is displayed.

Viewing and Setting Time (OPTION)

If you enter an incorrect digit, press the **ZERO/CLEAR** *key to clear the display one digit at a time.*

1. From gross/net weighing mode, press **MENU** repeatedly until . . .	*Hour* is displayed.
2. Press **SELECT**.	In the 12 hour clock configuration you will see time displayed as hours, minutes and ***A*** for A.M. or ***P*** for P.M. ***(09.40 A)***. In the 24 hour clock, you will see hours, minutes and seconds ***(09.40.38)***.
3. To set the 12 hour clock, press the ↑ key to delete the old time value.	***0 A*** or ***0 P*** is displayed. The ***A*** is for A.M., ***P*** for P.M. Key in the time as **hh mm ss**. Refer to the section *Entering Numbers with Arrow Keys*. Press the **TARE** key to toggle between AM & PM after entering at least one digit and before pressing **SELECT**.
4. To set the 24 hour clock, key in time as **hh mm ss**.	
5. After the clock is set, press **SELECT** to start the clock and return to operations mode menu,	***Hour*** is displayed, and the clock begins at the new time setting.
or press **G/N** to return to gross/net weighing mode.	Display returns to gross/net mode and the clock begins at the new time setting.

Viewing and Setting the Date (OPTION)

*If you enter an incorrect digit, press the **ZERO/CLEAR** key to clear the display one digit at a time.*

1. From gross/net weighing mode, press **MENU** repeatedly until. . .	***dAY*** is displayed.
2. Press **SELECT**.	Depending on the configuration of your indicator, you will see the date displayed in one of three ways: • month-day-year, • day-month-year, or • year-month-day.
3. To change the date, key in the new data. Refer to the section *Entering Numbers with Arrow Keys*.	The old date is replaced with the new date.
4. Press **SELECT** to return to the operations mode menu,	The date is accepted and ***dAY*** is displayed.
or	
press **G/N** to return to gross/net weighing mode.	The date is accepted and the display returns to gross/net mode.

Enabling or Disabling Display Backlight

1. From gross/net weighing mode, press **MENU** repeatedly until . . .	***Light*** is displayed.
2. Press **SELECT**.	***ENABLED*** or ***diSAbLEd*** is displayed.
3. Press **MENU** to toggle between enabled or disabled.	Configuration choices made during setup of this unit will determine if the backlight is on constantly or if it varies according to ambient light levels. Refer to the *Service Manual*.
4. Press **SELECT** to return to the operations mode menu	The light selection is accepted and *Light* is displayed.
or	
press **G/N** to return to gross/net weighing mode.	The light selection is accepted and the display returns to gross/net mode.

Transmitting Data

RS-232 output is available for data transmission.

The **PRINT** annunciator (See Figure 2) will illuminate while data is transmitted and sent to the printer. A default printout will list gross weight only (see Figure 4).

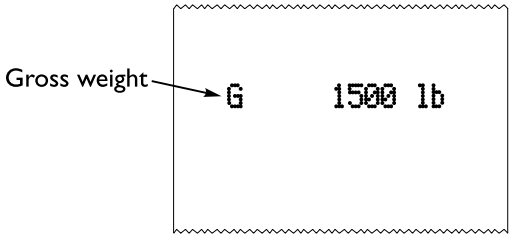


Figure 4
Sample WI-125 Default Printout

Printouts can also be configured to include a header as well as the tare and net weights. See Figure 5 as an example of a possible printout.

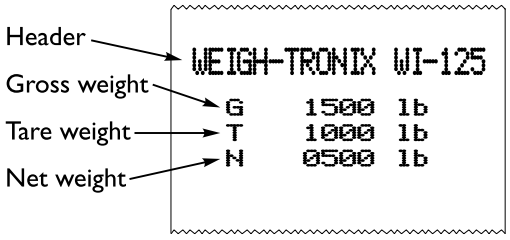


Figure 5
Possible Print Configuration

The default settings for serial output are:

Busy	Disabled
Baud	9600
Parity	Clear
Stops	1

Indicator Diagnostics

The test mode is used to test various functions of the WI-125. The test menu is shown in Figure 6. Instructions for using the test menu are found below.

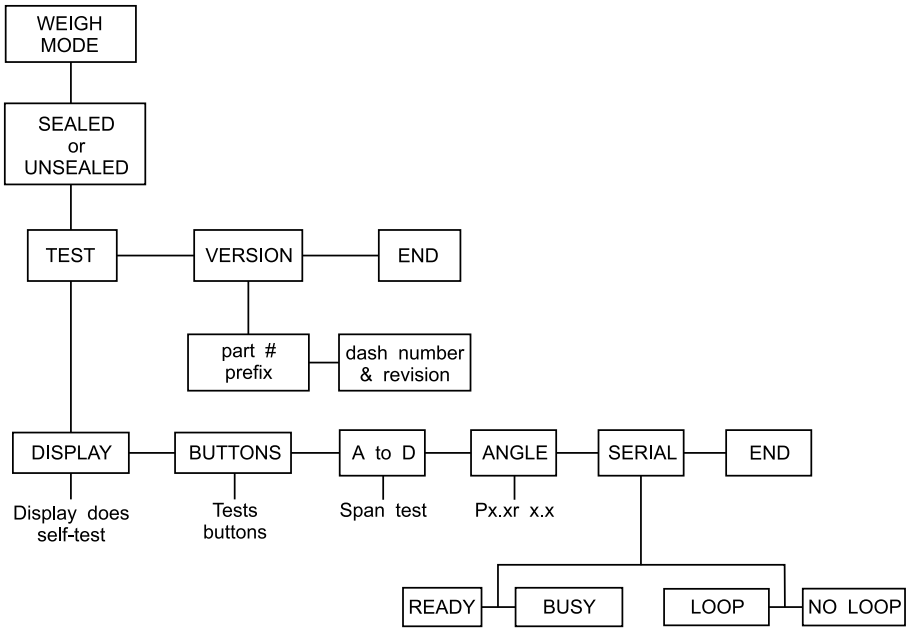


Figure 6
Test Menu

1. Enter the test mode from gross/net operation by pressing and holding the **MENU** key until *tESt* is displayed. *SEALEd* or *unSEALEd* is displayed briefly while you hold the key.
2. Move to the right through the menu selections by pressing **MENU** briefly. Move to the left through the menu selections by pressing **MENU** for 1 second or hold down for continuous scrolling.
3. To move down a level in the hierarchy, press **SELECT**. Anytime you wish to get to the next higher level in the hierarchy, press and hold **SELECT** for approximately 1.5 seconds or press **SELECT** whenever *End* is displayed.
4. Press **MENU** to toggle between choices.
5. Press **G/N** to return to gross weighing operation at any time.

Below are the specific directions and explanations for the items you see in the test menu.

VERSION — Under version are the Weigh-Tronix part number and revision number for the software found in your machine. Weigh-Tronix part numbers are divided into two parts: the prefix and the dash number.

DISPLAY — With *diSPLAY* displayed, press **SELECT** and the bottom row of annunciators turns on. Press **SELECT** again and a dynamic test is run. Press **MENU** to stop the dynamic test or consecutively press **MENU** to step through the display test routine. Press **SELECT** when the dynamic test is active to return the unit to *diSPLAY*.

BUTTONS — With *buttonS* displayed, press **SELECT** and an underscore will appear on the screen. Press any key except **MENU** to check for proper key functioning. After testing the buttons, press **MENU** to return to the display.

A to D — Displays the analog to digital counts. The span is normally 20,000 counts per millivolt per volt. With a calibrator at zero millivolts per volt, the displayed value should be between -200 and +200.

ANGLE — Displays pitch and roll confirming that the angle sensors are functional.

SERIAL — Tells you if the serial output is ready or busy. A jumper connecting pins 4 and 8 of the serial port will cause *rEAdY* to be displayed. Pressing the **MENU** key puts *LOOP* or *no LOOP* on the display. With pins 2 and 3 connected, *LOOP* is displayed. With them disconnected, *no LOOP* is displayed.

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