Avery Weigh-Tronix

SCALES FOR AGRIBUSINESS

Model 915 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.

06/02/03 915_U.P65 PN 29591-0012F e1 Printed in USA

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Specifications

Indicator Enclosure	Impact, dust, and water resistant - structural polycarbonate enclosure stands up to inclement weather and high vibration mobile farm applications. Standard Weigh-Tronix mounting bracket. (Dimensions: 8.75 high x 10.5 wide x 6.5 deep)
Display	8 digit, seven segment LCD, 1.0 inch high characters, 10 annunciators*, and fiber optic back-lighting. * annunciators- GROSS, TARE, NET, ID, MEMORY, MOTION, TOTAL, AUTO, LB, and KG
Display Rate	One, two, or five times per second
Accuracy	+/- 0.1% of applied load or +/- one division, whichever is greater
Linearity	+/- .01 % of capacity
Repeatability	+/- .01% of capacity, +/- one division, whichever is greater
Power Requirements	Typical: 12 VDC @ 95 mA (1.14 watts) 12VDC @ 180 mA (2.16 watts) for 5-pin 4 weigh-bars Range: 10 DVC @ 89 mA (0.9 watts) to 18 VDC @ 555 mA (10 watts). Negative ground system.
Environment	-20° F to 140° F (-29° C to 60° C) to 95% non-condensing humidity
Weigh-bar® Drive Capacity	Ten 350 ohm Weigh-bars
Calibration	Front panel calibration and spanning for all types of weigh bars and load cell applications up to 999999 lb. or kg.
Divisions	.01, .02, .05, .1, .2, .5, 1, 2, 5, 10, 50, 100, 200, 500 lb. or kg.
Zero Balance Range	+/- 1 mV/V via front panel push button
Analog Span	0.20 mV/V to 1.0 mV/V (full scale)
Automatic Zero Tracking	OFF, +/-0.5, 1.0, 2.0, 3.0, 5.0, 10.0 divisions
Motion Detection Window	OFF, +/-0.5, 1.0, 2.0, 3.0, 5.0, 10.0 divisions
Motion Filtering	Normal, intermediate, and high
Auto Axle Accumulate Timer	0(Off), or programmable from +/- 1 to 99 sec.
Auto Accumulate Weight Threshold	Weight threshold that the weight must drop below 80% of the applied weight and >= 500 lb. to trigger the next weight to be added to the accumulator.
Alarm Output	Comes on standard in the Auto Accumulate/Print mode when Auto-Accumulating takes place. Stays on until weight drops below 80% of the applied weight to let user know it has accumulated the axle weight and it is all right to advance forward to the next axle.

Options

RS232 serial output

Includes battery backed up time and date
Baud rate selectable: 9600, 4800, 2400, 1200, 600 and 300
xon/xoff, 8 data bits, one stop bit, no parity
Initiate serial transmission through- print button, enquire characters, and auto print after accumulate and after motion ceases.
Two format selectable printouts along with single line programmable (40)ASCII characters.

Remote Display Output

To be used with the RD912 remote display.

Remote (XM710-L, XM910)

Includes optional remote radio receiver, and transmitter.
Two separate inputs on the M915 will each be programmable to function as Zero, Tare, G/N, RM, M+, M-, or Print.
Frequency: 303 MHz
Frequency on by key switch, causes activation of Input-1 or Input-2

Optional: XM910 allows 4 frequency channels of transmitter/receiver with the following remote capabilities: ZERO,TARE, G/N, RT (Tare register, each push of RT scrolls through the Tare Registers)
Frequency Base: 310 MHz

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Introduction

The Model 915 is a general purpose weight indicator designed to operate at 12VDC. It has a companion remote display called the RD912. This indicator has Gross, Tare, Net (GTN) weighing, 0-9 tare registers, remote control of the GTN weighing functions, 8 digit ID entry, and 100 memory channels. The indicator can be configured for IN or IN/OUT operations. It can also print the in/out weighing sequences automatically.

Front Panel

Figure 1 shows the Model 915 front panel.

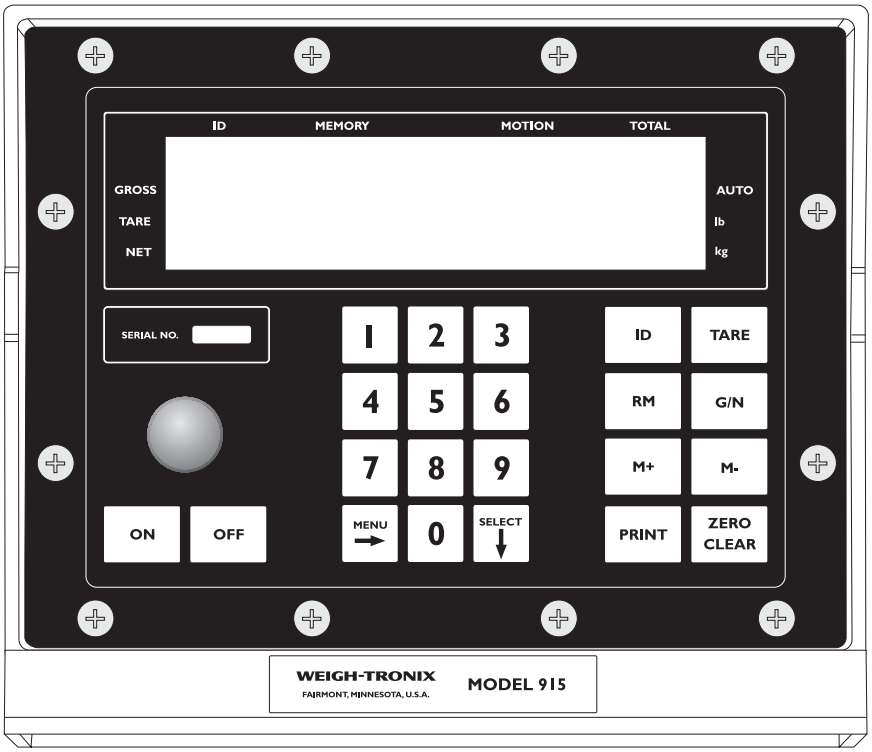

Figure 1
Model 915 indicator

Keys

The front panel consists of the digital display window with annunciators, numeric keypad and the following keys:

ON	Use this key to power up the 915 indicator
OFF	Use this key to power down the 915 indicator
MENU	Use this key to access the menus and scroll right in the menu structure
SELECT	Use this key to make selections in the menus and to scroll down in the menu structure
ID	Use this key to access the ID function
TARE	Use this key to tare a weight value

RM	Use this key to recall a weight stored in memory
G/N	Use this key to switch between gross and net weight displays
M+	Use this key to add a displayed weight to the current memory channel
M-	Use this key to subtract a displayed weight from the current memory channel
PRINT	Use this key to output displayed information to a peripheral device
ZERO/CLEAR	Use this key to zero the scale or clear a keyed in value from the display.

Cable Connections and Power Requirements

Make sure all cables are connected as shown in Figures 2 & 3.

Voltage to the Model 915 must be 10-18 volts DC, negative ground only. If voltage is between 8-10 volts, ***Lo-bAt*** is displayed on the indicator. Dropping below eight volts will cause the Model 915 to automatically shut itself off, protecting the battery from being completely drained. Consult the *Model 915 Service Manual* for instructions on disabling the automatic shut-off.

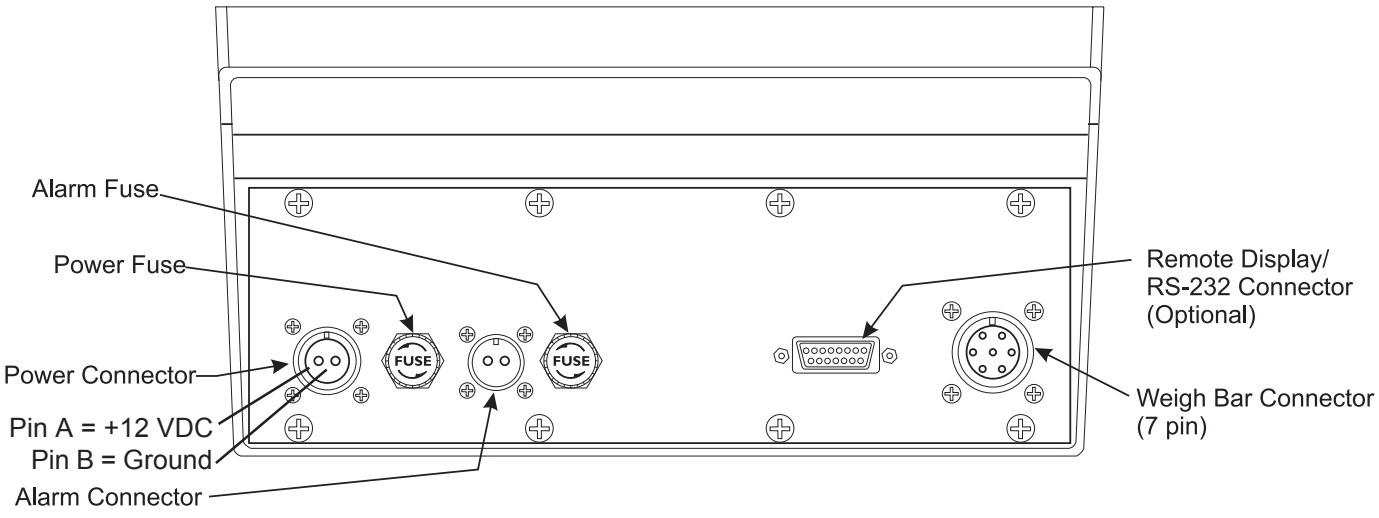

Figure 2
Indicator with One Weigh Bar connector

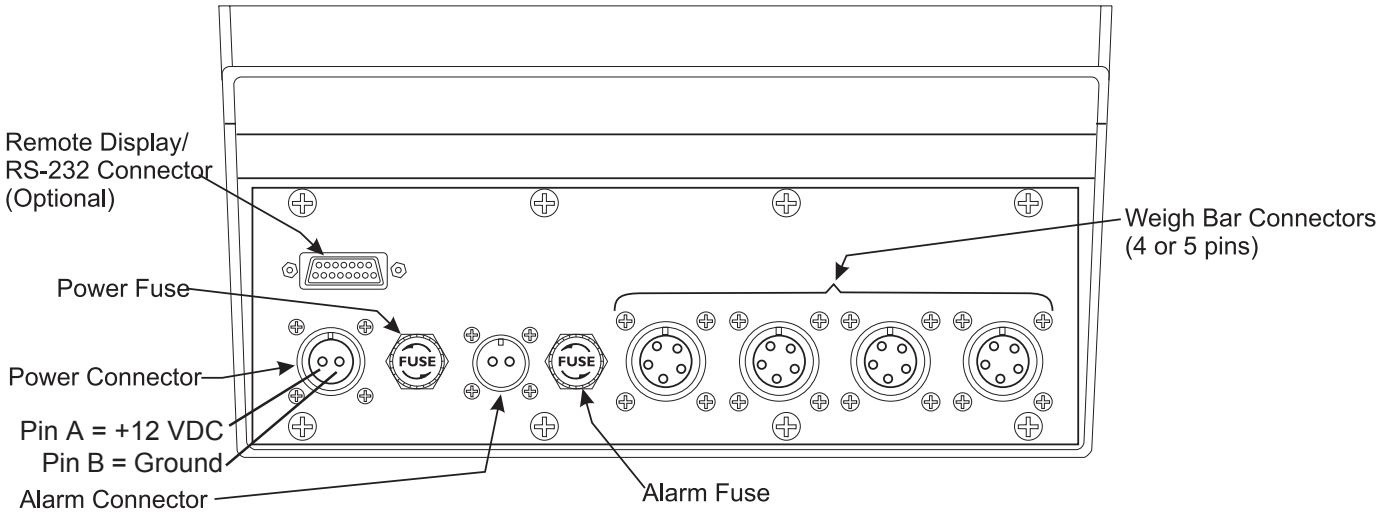

Figure 3
Indicator with four Weigh Bar connectors

Indicator Operation

Gross Weighing

Key names are in **"BOLD UPPER CASE"** *letters.*
Dispayed characters are ***"Bold Italicized"****.*
*Annunciator labels are "*UPPER CASE*".*

1.	Power up the indicator by pressing **ON**.	Indicator powers up in mode that was active prior to turning off.
2.	If the unit is not in the gross mode, press **G/N** to access the gross mode.	The annunciator illuminates next to GROSS.
3.	Verify the scale is empty and zero the scale by pressing **ZERO**.	**0** is displayed. Zeroing can only occur if there is no motion on the scale.
4.	Place weight on the scale.	Gross weight is displayed.

Net Weighing

For net weighing operations a tare needs to be entered. A tare can be entered by three methods:

- Using the push-button **TARE** key
- Using quick keypad tare entry
- Selecting a tare from the 0-99 memory registers. See *User's Menu* section.

Working with Tares

Push-button Tare

1. With the scale empty and the indicator powered up in the gross mode, zero the scale by pressing **ZERO**.

   No weight is displayed. Zeroing can only occur if there is no motion on the scale.

2. Place tare weight on the system

   Weight is displayed.

3. Press **TARE**.

   The weight is tared, the display reads zero and the NET annunciator illuminates.

*Displays **CAn't** when weight display shows upper or lower dashes, and when there is motion on the scale.*

4. Add more weight to the scale.

   Net weight is displayed.

5. View gross weight by pressing **G/N**.

   Gross weight is displayed and the GROSS annunciator illuminates.

6. Press **G/N** again to see the net weight.

   Net weight is displayed and the NET annunciator illuminates.

Quick Keypad Tare Entry

1. From the Gross/Net mode, enter a tare value using the numeric keys.

   Value is displayed as it is entered.

2 Push **TARE**.

   Net weight is displayed and the NET annunciator illuminates.

Selecting a Tare Register

Tare Values must be entered in the Tare Registers before they can be used in weighing operations. Refer to the section *Entering and/or Changing Values in Tare Registers 0-9*.

1. From the gross/net mode, press **MENU**.

   tArE is displayed

2. Using the keypad, enter the number of the tare register you wish to use. (Numbers 0-9 are allowed).

   That register with its tare value is displayed.

   If you wish to scroll through all the tare registers, continue pushing **MENU**. Stop when the register you wish to use is displayed.

3. With the correct tare register displayed, press **G/N**.

   Tare value is displayed in net mode.

Entering and/or Changing Values in Tare Registers 0-9

Entering or changing a tare in a tare register is done through the User's Menu. The following instructions lead you through the tare section of the User's Menu. To see the complete User's Menu turn to the *User's Menu* section of this manual.

1. With the gross or net annunicator illuminated, press **MENU**.

   tArE is displayed. This is the first item in the User's Menu.

2. Using the keypad, enter the number of the tare register you wish to view. (Numbers 0-9 are allowed.)

   The TARE annunicator illuminates and the display show ***_x: 0*** , indicating that register x has no value entered.

Key names are in **"BOLD UPPER CASE"** *letters. Dispayed characters are* ***"Bold Italicized"****. Annunciator labels are "*UPPER CASE*".*

3. You can enter/change a tare value in a register in two ways:

   3A. Key in a Tare value: With the desired register number displayed, key in tare value, and press **SELECT**.

   The value is accepted and ***tArE*** is displayed.

   OR

   3B. Use the push button Tare: With the desired register # displayed and the tare weight on the scale, press **TARE**.

   The register number and the new tare weight are displayed.

If you want to enter tares in some or all of the registers, you can quickly advance to the next tare by pressing **MENU**.

4. Press **MENU** to proceed to the next tare register.

5. Press **G/N** to return to the weighing mode.

   The value is accepted, net weight is displayed, and the NET annunciator illuminates.

Clearing the Active Tare

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

A. Remove all weight from the scale and press **TARE**. — Tare register is cleared, scale returns to Gross mode and no weight is displayed.

OR

B. 1. With the GROSS or NET annunciator illuminated, press **MENU,** — ***tArE*** is displayed,

then press **ZERO/CLEAR**. — ***no tArE*** is displayed.

2. Press **G/N**. — Gross weight is displayed and no tare is active.

Net Weighing Operation

Make sure the proper active tare is still selected, or use the 4 channel remote transmitter to reassure the proper tare register is still active, to avoid any confusion that someone else had changed to a different tare register while you were away.

1. After a tare is established, place the indicator in the net mode by pressing **G/N** or remote transmitter **G/N.** — NET annunicator illuminates. Zero weight will be displayed with the tare weight (truck) on the scale.

2. Return later with a full truck and drive on the scale. — Net weight of material is displayed.

ID Number Entry

You may enter an 8 digit numerical ID number to be included in the Gross/Tare/Net printouts

1. From the gross/net weighing mode use the keypad and enter the ID number. — ID number is shown on the display.

2. Press **ID**. — The ID annunciator is turned on. ID number is displayed for 2 seconds, then returns to the gross mode.

View Current ID

If no ID is currently programmed, then ID key displays "no Id" for 2 sec., and returns to the Gross mode.

1. Press **ID**.

Current ID is shown for two seconds and then returns to the gross mode.

Clear Current ID

1. Press **ID** to display current ID.

Current ID is displayed.

2. Press **ZERO/CLEAR** while ID is displayed.

ID is cleared, and returns to gross mode.

Printing a GTN Report

A Gross/Tare/Net report can be printed three ways:

1. By pressing **PRINT** during GTN displays
2. When auto-printing occurs (after Acc-Sec timer runs out **or** when motion ceases)
3. When an enquire character is received (default is HEX 05)

The printout will contain the following information:

Line 1: Optional User defined 40 ASCII characters (See *Appendix A: Customizing Printouts*)
Line 2: Optional ID number printout
Line 3: Layout 1 or Layout 2 (See *Appendix A: Customizing Printouts*)

Layout 1 will show:

Date Time
G weight
T weight
N weight

Layout 2 will show:

Date Time
Displayed weight (G, T, or N)

Below are samples of printouts with Layout 1 and Layout 2.

```
MODEL 915
ID 12345678
03/20/02 09:04:03
 G   15140 lb
 T    4320 lb
 N   10820 lb
```

Layout 1 with optional ASCII line and optional ID number included

```
MODEL 915
ID 12345678
03/20/02 09:04:03
 G   15140 lb
```

Layout 2 with optional ASCII line and optional ID number included

Storing Data In The 0-99 Memory Registers

The Model 915 has 100 memory channels that can be used to accumulate weight values. Total accumulations of each channel must be between -19999 to 999,999 lb or kg. These memory channels can store and accumulate active displayed weights, or user entered starting weights.

Storing Numeric Data in a Specific Memory Channel

1. Use the keypad to enter a memory channel (0-99).

   The number is displayed on the screen.

2. Press **RM** to access the selected memory channel.

   The selected memory channel will appear with the current amount in memory displayed. ***RR:WWWWWW***

Once the current memory channel is displayed, to clear that channel press ZERO/CLEAR and the stored value will immediately be cleared to "0".

3. To scroll through the memory channels, use the **MENU** key. Press and hold **MENU** to cause the display to scroll through the channels. The longer you hold down the key the faster the scrolling occurs.

   The selected memory channel with its stored weight value will be displayed.

4. Now using the keypad, enter in over the current amount in the displayed channel, then press **SELECT**. . .

   The new amount is displayed next to the channel number. The TOTAL annunciator turns on.

5. Press **G/N**. . .

   Returns to the gross/net weighing mode.

Storing Numeric Data in the Current Memory Channel

1. Press **RM** to access the last selected memory channel.

   The last selected memory channel will appear with the current amount in memory displayed ***RR:WWWWWW***

2. Now using the keypad, enter in over the current amount in the displayed channel, then press **SELECT**. . .

   The new amount is displayed next to the channel number.

3. Press **G/N**. . .

   Returns to the gross/net weighing mode.

Storing a Gross or Net Value in a Specific Memory Channel

1. Use the keypad to enter the desired memory channel (0-99).

   The number is displayed on the screen. If you try to enter a number greater than 99 the display will show ***rEdO***. Press **ZERO/CLEAR** and enter a valid memory channel.

2. Press **RM** to access the desired memory channel.

   The selected memory channel will appear with the current amount in memory displayed. ***RR:WWWWWW***

3. To scroll through the memory channels, use the **MENU** key.

   The selected memory channel with its stored weight value will be displayed.

   Once the desired memory channel is displayed, to clear that channel press **ZERO/CLEAR** and the stored value will immediately be cleared to "0".

4. Press **G/N** to display the data to be stored.

   The mode annunciator should point to the desired mode type and the appropriate value should appear on the display.

5. Press **M+** to add or **M-** to subtract to the activiated memory channel.

   The new total is displayed next to the activated memory channel, and will return to the previous mode within a second.

If a negative number is displayed and you press **M-***, the indicator will store this as a positive number.*

Adding or Subtracting an Entered Weight Value To/From a Specific Memory Channel

1. From gross/net mode, use the keypad to enter a memory channel (0-99). . .

   The number is displayed on the screen.

2. Press **RM** to access the selected memory channel. . .

   The selected memory channel will appear with the current amount in memory is displayed.

   To scroll through the memory channels, press **MENU**.

3. Press **G/N**.

   Current gross or net weight is displayed.

4. Use the numeric keys to enter the weight value to be added or subtracted, then press **M+** or **M-**. . .

   The new total is displayed next to the activiated memory channel, and will return to the previous mode within one second.

Storing a Gross or Net Value in the Current Memory Channel

1. Press **RM** to access the current memory channel.

   The current memory channel will appear with the current amount in memory displayed. ***RR:WWWWWW***

2. Press **G/N** to display the data to be stored.

   The mode annunciator should point to the desired mode type and the appropriate value should appear on the display.

If continual M+/M- will be stored into the current memory channel, just continue to Press M+/ M-.

3. Press **M+** to add or **M-** to subtract to the selected memory channel.

   The new total is displayed next to the activated memory channel, and returns to the gross/net mode within a second.

Adding or Subtracting an Entered Weight Value To/From the Current Memory Channel

1. From gross/net mode, press **G/N**. . .

   Current gross/net weight is displayed.

2. Use the numeric keys to enter the weight value to be added or subtracted, and press **M+** or **M-**. . .

   The new total is displayed next to the current memory channel, and will return to the previous mode within one second.

Viewing Memory Channel Accumulators

1. From gross/net mode, use the keypad to enter a memory channel (0-99). . .
   The number is displayed on the screen.
2. Press **RM** to access the selected memory channel. . .
   The selected memory channel will appear with the current amount in memory is displayed.

   To scroll through the memory channels, press **MENU**.
3. Press **G/N**.
   Current gross or net weight is displayed.

Viewing Total Accumulator of All Memory Channels

1. From gross/net mode, press **SELECT**. . .
   ALL Ch'S is displayed.
2. Press **RM**. . .
   Total accumulator of all memory channels is shown. Pressing **PRINT** here prints the following:

```
TOTAL:   30000 lb
```

Clearing All the Accumulator Channels

Clearing all the accumulator channels is accomplished through the User's Menu. The steps to clear accumulators are below. See the *User's Menu* section of this manual to view the entire menu.

1. From gross/net mode repeatedly press **MENU** until ***CLr Ch'S*** is displayed.
   CLr Ch'S stands for Clear Channels.
2. Press **SELECT**. . .
   no is displayed.
3. Press **MENU** to toggle between ***YES*** and ***no***. Press **SELECT** when ***YES*** is displayed to clear the memory channels or press **SELECT** when ***no*** is displayed if you change your mind and do not want to delete the accumulated data in the memory channels.
   CLr Ch'S is displayed.
4. Press **G/N** to return to gross/net mode.

Printing Data Stored in Memory Channels

To print the data stored in a particular data channel, display that channel and press **PRINT**. Below is a sample printout:

```
03/20/02 09:04:03
MEM CH     WEIGHT
   03      15140 lb
```

To print the data stored in all the channels, press and hold the **PRINT** until ***Pr-ALL*** is displayed and the report will print.

```
07/11/02   09:04:03
MEM CH      WEIGHT
   01       10000 lb
   02       10000 lb
   03       10000 lb

Total:      30000 lb
```

AUTO Function

The 915 has an annunciator called AUTO. When the AUTO function is enabled this annunciator lights up. You enable the AUTO function by setting the Acc-Sec parameter in the User's Menu. (See the *User's Menu* section of this manual.) Enabling the AUTO function enables these functions:

- auto accumulating of multiple (split) axle weights
- the use of the 915 indicator for IN or IN/OUT weighing.

Setting up the Acc-Sec parameter

While following these instructions, refer to the User's menu shown in the *User's Menu* section of this manual.

1. From the normal operating mode, press and hold the **MENU** key until ***Tare*** is displayed.

2. Press **MENU** repeatedly until ***Acc-Sec*** is displayed. Press the **SELECT** key. . .

   Seconds is displayed. You can set this parameter from 0-99 seconds. If you set it to 0, the Acc-Sec parameter is disabled. If you set it to another value between 1 and 99 you are enabling the Acc-Sec parameter. The time you set is the maximum time you have after one axle leaves the scale till the next axle must be on the scale. The timer does not begin until the weight drops below 80% (default) of its previous value.

   After the Acc-Sec delay time expires the 915 will print a weight report.

To disable the ACC-SEC timer, set the value to 0.

Attention

Weight must be over 1% of the Over Capacity parameter for auto accumulate to occur.

3. Press **SELECT** to view the current value in seconds. Press **SELECT** to accept the current value or key in the seconds you want and press **SELECT** to accept the value. . .

   Display shows ***Seconds***.

4. Press the **MENU** key. . .

   in-out is displayed.

5. Press the **SELECT** key. . .

   on or ***off*** is displayed. If you choose ***on*** the IN/OUT function is enabled. See description of this function in the section *Performing an Auto Accumulate Weighment ("IN/OUT" Operation)*. If you choose ***off***, the IN function is enabled. See a description of this function in the section *"IN" Operation with Tare*.

6. Use the **MENU** key to toggle the choices. Press **SELECT** when your choice is displayed. . .

   in-out is displayed.

7. Press the **MENU** key. . .

   PErcEnt is displayed.

8. Press **SELECT**. . .

   The current value is displayed. The weight on the scale must drop to this percentage of the current weight before the delay timer starts.

9. Key in a number and press the **SELECT** key to accept it. . . The display shows ***PErcEnt***.

10. Press **G/N** to return to normal weighing mode.

"IN" Operation with Tare

You can use any of the nine tare registers (not push button tares) available to tare weight of the vehicle and get an automatic printout when using the IN operation described below.

You can do an auto-accumulate of axle weights with one pass over the scale. We call this an "IN" operation. An IN operation works as follows:

1. Pull first axle onto the scale and stop. . . After weight stablizes, the alarm comes on and the accumulated weight and channel flash on the display for three seconds, then returns to live gross weight display

2. Pull next axle onto the scale. You have the length of time set in the delay timer to get the next axle onto the scale.

3. Repeat this until all axles are weighed. . . Once the timer has elapsed, an automatic printout will occur with the following format: (up to 99 axles)

Line 1: User optional 40 ASCII characters
Line 2: User optional ID printout without leading zeroes
Line 3: 01/01/01^^09:00:00<CRLF>
Line 4: ^1-^^^^WWWWWW^lb<CRLF>
Line 5: ^2-^^^^WWWWWW^lb<CRLF>
Line 6: ^3-^^^^WWWWWW^lb<CRLF>
Line 7: Total^^TTTTTTT^lb<CRLFLF>
Line 8:

Shows the following if configured for layout 1:
Line 9: ^^^^^G^WWWWWW^lb<CRLF>
Line 10: ^^^^^1T^WWWWWW^lb<CRLF>
Line 11: ^^^^^N^WWWWWW^lb<CRLF>

Shows the following if configured for layout 2:
Line 9: ^^^^^G^WWWWWW^lb<CRLF>
Always displays Gross "G".

See sample below.

```
04/04/01  08:13:17
  1 -   10005 lb
  2 -   12005 lb
  3 -   14010 lb
Total   36020 lb

    G   36020 lb
   1T   10000 lb
    N   26020 lb
```

Performing an Auto Accumulate Weighment ("IN/OUT" Operation)

When configured for Auto Accumulating, Tare/Net mode is disabled. This can be used for split axle weighing on a single platform scale.

Attention

While your second axle is coming onto the scale, the weight of the first axle will be displayed. ***DO NOT CLEAR THIS DISPLAY****.*

Key names are in **"BOLD UPPER CASE"** *letters. Dispayed characters are* ***"Bold Italicized"****. Annunciator labels are "*UPPER CASE*".*

When the AUTO function is enabled you can use the 915 to print incoming (IN) weights for trucks or wagons and outgoing (OUT) weights for the same vehicles. The 915 will determine the low weight value is a tare and will print out a GTN report for that vehicle. You can handle up to 99 IN/OUT vehicles just by using one of the memory channels for each vehicle.

1. Before pulling the vehicle onto the scale, press **RM**, then press and hold **MENU** until the memory channel (0-99) for your truck is displayed.

   If you are using just one truck this step can be omitted since it will always be the same memory channel.

   Assume memory channel one is selected for this example.

   Current memory channel with its current stored weight value is displayed, ***01:WWWWWW***

2. For the IN weighment only, the stored weight must be 0. If not, press **ZERO/CLEAR** to clear the register. Do not do this for the second axle weighment.

3. Press **G/N** to access the gross mode.

   Gross mode is displayed indicating zero gross weight.

4. Drive the first axle onto the scale, and stop. Truck can be empty or full.

   Weight will increase and once it stops and motion ceases, ***01: WWWWWW*** will be displayed momentarily indicating axle #1 weight has been accumulated and stored in memory channel 1. The front panel red light will illuminate and the actual gross weight is displayed.

5. Drive forward to the next axle.

   When the weight falls below 80% of the axle weight the acc- sec timer begins counting. Gross weight is displayed.

6. Drive forward within the programmed time-out period and position the next axle on the scale.

   Weight will increase and once it stops and motion ceases, ***01:WWWWWW*** will be displayed momentarily indicating axle # 2 weight has been accumulated and stored in memory, the front panel red light will illuminate and the actual gross weight is displayed.

7. Drive off the scale completely or position the next axle on the scale.

When the weight falls below 80% of the accumulated weight, the acc-sec timer will begin counting. Gross weight is displayed.

It doesn't matter if the first weighment from step 8 was of a full or empty truck, the indicator automatically calculates the smaller weight as the tare weight.

8. Repeat steps 6-7 until all axles have been accumulated. After the last axle, pull the truck off the scale and, after the time-out period elapses, an automatic printout will be printed similar to this example:

```
03/20/02 09:10:00
MEM CH 01
45000 lb
```

This example shows the date, time, memory channel where the information is stored, and the gross weight. Other print formats are available. See the *Service Manual*.

9. Return to the scale with the empty or full truck, and repeat steps 1-7.

10. After you pull the last axle off the scale and the programmed timeout expires, a G/T/N printout similar to this example will be printed.

```
03/20/02 09:31:10
MEM CH 01
G 45000 lb
T 15000 lb
N 30000 lb
```

Viewing and Setting the Time

Refer to User's Menu *section of this manual.*

1. From gross/net mode repeatedly press **MENU** until. . .	***Hour*** is displayed.
2. Press **SELECT**. . .	The time will be displayed in hours, minutes and seconds.
3. Enter the correct time allowing spaces for hours, minutes and seconds. For example, 1:59 would be entered as 15900.	
4. Press **SELECT**. . .	***Hour*** is redisplayed.
5. Press **G/N** to return to gross weighing mode.	

Viewing and Setting the Date

Refer to User's Menu *section of this manual.*

1. From gross/net mode repeatedly press **MENU** until. . .	***Date*** is displayed.
2. Press **SELECT**. . .	The date is displayed in month, day, year. (For kg: day, month, year)
3. To change the date, key in the new numbers.	
4. Press **SELECT**. . .	***Date*** is redisplayed.
5. Press **G/N** to return to gross weighing mode.	

Checking Battery Voltage

Refer to User's Menu *section of this manual.*

1. From gross/net mode repeatedly press **MENU** until. . .	***battErY*** is displayed.
2. Press **SELECT**. . .	The input voltage of the battery or power source will be displayed. Voltage to the Model 915 must be 10-18 volts DC. If voltage is between 8-10 volts, ***Lo-bAt*** is displayed on the indicator. Dropping below eight volts will cause the Model 915 to automatically shut itself off, protecting the battery from being completely drained.

Diagnostic Tests

There are four tests available to assist troubleshooting in these areas:

- display
- buttons
- serial
- relay

1. From gross/net mode repeatedly press **MENU** until. . .	***tESt*** is displayed.
2. Press **SELECT**. . .	***diSPlAY*** is displayed. This is the display test.
3. Press **SELECT** to perform a test of the display segments and annunciators. . .	The display alternately lights all the display segments and annunciators. Press **SELECT** to end the test
or	
Press **MENU** twice to go to the next test. . .	***buttonS*** is displayed. This is the buttons test.
4. Press **SELECT** to perform a test of the front panel buttons. . .	When you press any key, that key name will appear in the display. Press **MENU** to stop the test. Display will show ***SEriAl***.
or	
Press **MENU** to go to the next test. . .	***SEriAl*** is displayed.
5. ***SEriAl*** is the serial test. This will tell you if pins 2 and 3 are connected. If they are connected ***loop*** is displayed when you press **SELECT.**	
no loop is displayed when you press **SELECT** if pins 2 and 3 are not connected.	
6. Press **MENU** to go to the next test. . .	***rELAY*** is displayed. Use this test to check alarm light function.
7. Press **SELECT**. . .	***OFF*** is displayed.

You can press **SELECT** *at any time to return to the* ***rELAY*** *display.*

8. Press **MENU** once to cause the light to flash on and off. . .	***FLASH*** is displayed.
press **MENU** again to cause the light to stay on. . .	***on*** is displayed.
press **MENU** again to shut off the light. . .	***OFF*** is displayed.
9. Press **SELECT**. . .	***rELAY*** is displayed.
10. Press **MENU**. . .	***tESt*** is displayed.
11. Press **MENU**. . .	***SoFt*** is displayed. This lets you see the part number and revision level of the software.
12. Press **SELECT**. . .	First part of the software number is displayed.
13. Repeatedly press **MENU** to scroll through the part number and revision level and return to the ***SoFt*** display.	
14. Press **MENU** one more time and you are back in the gross/net mode.	

Troubleshooting

If you experience problems in the operation of your system, read through these troubleshooting steps and perform those which are appropriate. This information may help you to correct the following operational difficulties without calling your supplier or sending your equipment in for repair:

- Power-on
- Stalled Display Following Power-on
- Indicator Lock-up
- Inaccurate Weight Readings
- Alarm Light Malfunction
- Measuring the Supply Battery Voltage

Instructions for sending an indicator in for repair are provided in the last section under *Service Repairs*.

Power-On Failure

If your indicator doesn't power-on, check the following possible problem sources in the order given. Attempt to power-on after trying each of these four troubleshooting steps:

1. **Check Battery Voltage.** Required voltage is 10-18 volts DC negative ground. If the voltage is between 8-10 volts, the indicator will display *Lo-bAt*. The indicator will automatically turn off if the incoming voltage drops below 8 volts or rises above 18 volts.
2. **Disconnect and Check Power Cable Connector** at the vehicle or AC to DC converter, clean if necessary, and reconnect.
3. **Replace Fuses.** Sometimes, a bad fuse can be recognized by an obvious break in the wire filament. However, such a break is not always observable, and getting a successful power-on after changing a fuse is often the only way of knowing that the fuse was indeed defective.

   Make sure new fuses are the proper size and have a current rating of five amperes. Using a fuse with too high a current rating can cause costly damage to the indicator and will void your warranty. The same is true for substituting wire, a nail, or any other object in place of a fuse.

   Place nothing in the fuse connector except a proper fuse.

   Change one fuse at a time (see instructions below). Try to power-on after changing the first fuse; if unsuccessful, change the second fuse and try to power on again. If changing the second fuse fails to allow successful power-on, proceed to the next trouble shooting step.

   To replace a fuse, first locate fuse caps on the bottom panel of the indicator. Then:

   1. Turn cap counterclockwise and lift out fuse & cap assembly.
   2. Remove old fuse from cap and insert new fuse.
   3. Replace fuse & cap assembly in fuse connector.

4. **Test Indicator and Cables** to isolate the source of the problem.

   a. Disconnect all cables on bottom panel of Indicator except for power cable. Do disconnect Weigh Bar® cables, and, if present, alarm cable and printer/remote display cable.

   b. Now try powering-on. If this is not successful, your problem is in the indicator and you should contact your supplier.

   c. If you are able to power-on with only the power cable connected, your problem is most likely not in the indicator; continue troubleshooting.

   d. With power still on, plug in cables, one at a time — Weigh Bar® cables first, then alarm cable, then printer/remote display cable — until plugging in one of the cables causes the indicator to shut off. That cable is the bad one and needs to be repaired or replaced.

Stalled Display Following Power-On

This category of problems can exhibit any one of the following symptoms:

- An **illegible display** that cannot be zeroed and from which you cannot exit;
- A **legible display,** such as *HELLO,* that cannot be zeroed and from which you cannot exit;
- An **illuminated backlight** with no characters displayed and allowing no exit.
- If the red illumination on the display is visible, telling you the indicator has power (on a sunny day you may have to shade the display), you can possibly restore the display function by doing a **Reinitialization** (explained below).

To Reinitialize a Stalled Indicator:

1. Press **OFF**.
2. Press **ZERO/CLEAR** and hold in, while you
3. Press and release **ON**.
4. Then release **ZERO/CLEAR**.

If the display says *HI* instead of *HELLO* following a reinitialization power-on, your indicator has a potential problem and should be checked. Contact your supplier.

Indicator Lock-Up

A locked up indicator is represented by an illuminated alarm light and a display *of **Error***.

1. Shut off the alarm by pressing any key.
2. Test the Weigh Bar®cables to isolate the source of the lock up problem, as follows:

   a. Disconnect all Weigh Bars®.

   b. Try to zero the indicator by pressing **GROSS** and **ZERO/CLEAR**.

   - If you are **unable** to zero the indicator with the Weigh Bars disconnected, the problem is in the indicator and you should contact your supplier.
   - If you are **able** to zero your indicator with the Weigh Bars disconnected, then the problem is probably in the cabling or the Weigh Bars and you should continue troubleshooting.

3. Reconnect all Weigh Bars. You will see ***Error*** displayed again.
4. If your Weigh Barconnectors have the four-pin configuration, disconnect one Weigh Bar and connect an adapter plug in its place.

   If your Weigh Bar connectors have the five-pin configuration, disconnect one Weigh Bar. No adapter plug is necessary.
5. Try to zero the indicator.

   Repeat Steps 4 and 5 with each Weigh Bar cable, making sure each time that all cables are connected except the one you removed (for five-pin connector) or replaced with an adapter plug (for four-pin connector).

   A defective Weigh Bar may be easily recognized with this method — when a defective bar is replaced with an adapter plug (for four-pin connector), or removed (for five-pin connector), the indicator will zero properly.

Inaccurate Weight Readings

First: Visually inspect the scale system for apparent problems and improper installation:

1. Check each cable, from source to indicator, for stress, cuts, breaks, or abrasions.
2. Unplug and reconnect each connector at the indicator to verify that it is tight and making good contact.
3. Check between supporting structure and weighing structure for debris that might restrict Weigh Bar® movement.
4. Make sure the supporting structure and weighing structure do not touch each other at any point except at the Weigh Bars®.

Next: Compare weight readings for all Weigh Bars:

Position a person or heavy object on the platform above each Weigh Bar, one bar at a time, and compare weight readings for the same person or same object.

For each weighing, the weight itself will be off-center, favoring a single Weigh Bar; therefore, none of the readings will be accurate.

However, your readings obtained by weighing the same person or object above each Weigh Bar should be nearly identical to each other. A single Weigh Bar reading that is significantly different from the others is probably defective.

Alarm Light Function

If your external alarm works properly but the alarm light fails to illuminate when it should, a problem exists with the alarm light. Please send in the indicator for repair.

Measuring Supply Battery Voltage

To check input voltage to indicator (battery voltage):

1.	Press **MENU**. . .	***tArE*** is displayed.
2.	Press **MENU** repeatedly until ***battErY*** is displayed.	
3.	Press ***SELECT***. . .	Incoming battery voltage is displayed.
4.	Press **SELECT**. . .	***battErY*** is displayed.
5.	Press **G/N** to return to weighing mode.	

Service Repairs

If you find the indicator or one or more of the Weigh Bars to be defective, contact your supplier, or send your equipment back to the factory for repair, postage prepaid.

Include the following information:

1. Your name and address
2. Supplier name and address
3. Date of purchase
4. **IMPORTANT**: An informal note describing symptoms of the problem.

Display Messages

H E L L O	Indicator is being reinitialized. Message is displayed briefly at time of power-on.
– – – –	Indicator is in state of over-capacity.
_ _ _ _	Indicator is in state of under-capacity.
E r r o r	System is not functioning properly. Weight is not being calculated because scale weight is too high or too low. (Refer to information on “Indicator Lockup” in **Troubleshooting** section of manual.)
P r i n t	Indicator is transmitting data. Appears after pressing the **PRINT** key when printing all memory channels.
Pr-All	Indicator is transmitting data. Appears after pressing and holding **PRINT** key.
Lo-bAt	Displayed when input voltage to indicator is between 8 and 10 volts.
rEdO	User attempted to enter in too large a value for the memory channel. 0-99 are the only valid numbers.
CAn’t	Displayed when attempting to tare when a gross weight is negative or when motion is occurring.
ALL Ch’S	Dispayed when accessing total accumulator channel.

Miscellaneous Information

Mounting the Model 915

The Model 915 mounts on a quick-detach bracket. Weld or bolt the quick-detach bracket into place, as follows:

1. Choose a mounting location that is
   - convenient for operation of the indicator, and
   - protected from moving parts or from other moving machinery.
2. Hold the indicator at the proposed mounting location, and verify that the display is legible and the controls accessible.
3. Positioning the quick-detach bracket with the wider end at the top, mark the desired mounting location. If bolting, use the quick-detach bracket as a template and mark and drill holes.
4. Weld or bolt the quick-detach bracket at the appropriate location. If bolting, use double nuts or self-locking nuts to protect both indicator and machinery.
5. Insert the indicator bracket into the quick-detach bracket and push it down into place.
6. For mobile applications, wrap and twist a strong wire around the indicator bracket and the quick-detach bracket to stabilize the mounting.

RD 912 Remote Display

The RD912 is a remote display that is compatible with the Model 915. (An RD912 output option is required on the Model 915 for interfacing.) The interface cable plugs directly into the bottom of the Model 915 (refer back to Figure 2). When using the remote display, any data displayed on the Model 915 is also displayed on the RD912.

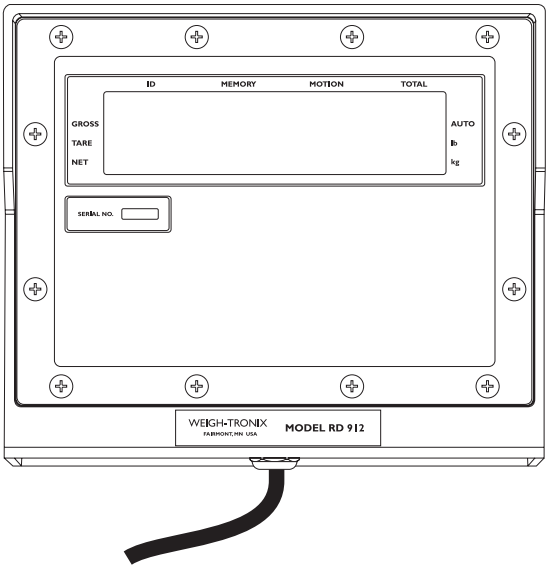

Figure 4
Model 912 Remote Display

Optional Radio Remote Transmitters (XM710-L and XM910) and Receiver

An optional radio remote transmitter and receiver can be installed

This option lets the user configure the XM710 to act as a **ZERO**, **PRINT**, **M+**, **M-**, **RM**, **TARE** or **G/N** key and work at up to 100 feet away, It can be installed in either the Model 915 or the RD912.

The XM910 option can be installed in the Model 915 only, and has remote control of **ZERO**, **TARE**, **G/N**, and **RT**. Every push of the **RT** button scrolls through the tare registers.

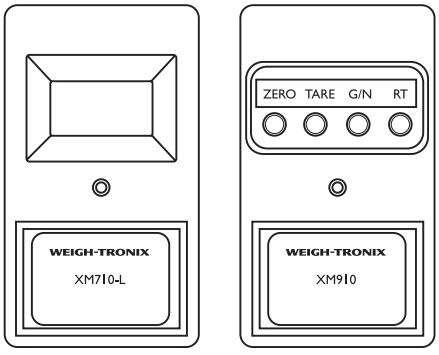

Figure 5
Radio Remotes

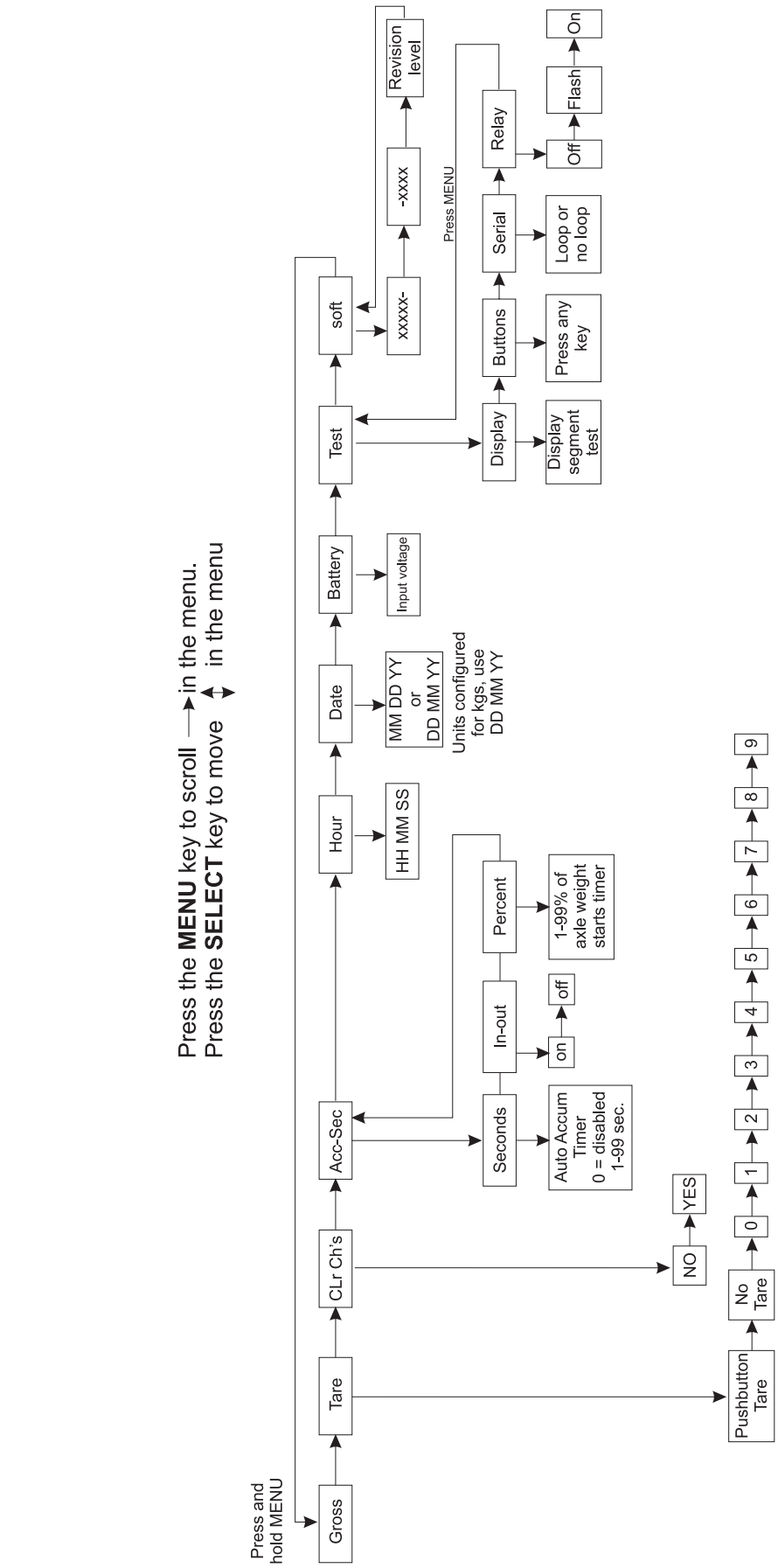

Figure 6
User's Menu

Appendix A: Customizing Printouts

Layout 1 and 2

The hidden E key is between the **9** *and the* **M+** *keys on the indicator*

Below are the steps to choosing Layout 1 or 2.

1. Key in **915**.	***915*** is displayed.
2. Press hidden **E** key and hold for two seconds.	***915 E*** is displayed.
3. Press **SELECT**.	***ConF*** is displayed.
4. Press **MENU** repeatedly until ***SEriAl*** is displayed.	
5. Press **SELECT**.	***bAUd*** is displayed.
6. Press **MENU** repeatedly until ***LAYoUt*** is displayed.	
7. Press **SELECT**.	***1*** or ***2*** is displayed.
8. Press **MENU** until the layout you want is displayed, then press **SELECT**.	That layout is now active.
9. Press **MENU** to scroll to next desired option or **G/N** to exit.	

ASCII

The hidden E key is between the **9** *and the* **M+** *keys on the indicator*

The ASCII parameter lets you customize the first line of any printout. You key in the ASCII code number for the character you want to print. You can use up to 40 characters in the line. The ASCII codes are shown in Table 1.

1. Key in **915**.	***915*** is displayed.
2. Press hidden **E** key and hold for two seconds.	***915 E*** is displayed.
3. Press **SELECT**.	***ConF*** is displayed.
4. Press **MENU** repeatedly until ***SEriAl*** is displayed.	
5. Press **SELECT**.	***bAUd*** is displayed.
6. Press **MENU** repeatedly until ***ASCII*** is displayed	
7. Press **SELECT**.	***1*** _ is displayed. The ***1*** refers to the first of the 40 characters you can insert.

8. Key in the control code from Table 6 and press **MENU**. ***2*** **_** is displayed.

Following is an example of how to enter **Model 915, <CR><LF>**:

Enter the following control codes.

Sequence #	Control Code #	Control Character
01	#77	M
02	#79	O
03	#68	D
04	#69	E
05	#76	L
06	#32	SPACE
07	#57	9
08	#49	1
09	#53	5
10	#13	Carriage Return
11	#10	Line Feed

To edit an existing sequence, display the sequence number you want to change, key in the new ASCII code number and press **SELECT** *to return to the* ***ASCII*** *display. Press the* **G/N** *key when you are done.*

9. Repeat step 8 until all control codes are entered, and press **SELECT**. . . ***ASCII*** is displayed.

10. Press **G/N** key to exit programming mode and return to the gross/net weighing mode.

To Delete All ASCII Characters

1. Access ***Serial-ASCII*** in the configuration menu. . . ***ASCII*** is displayed.

2. Press the **ZERO/CLEAR** key. . . ***ASCII*** blinks and all the control codes are cleared.

Table 1 ASCII Control Codes

Code #	Control Character	Code #	Control Character	Code #	Control Character	Code #	Control Character
0	NUL	33	!	66	B	99	c
1	SOH	34	"	67	C	100	d
2	STX	35	#	68	D	101	e
3	ETX	36	$	69	E	102	f
4	EOT	37	%	70	F	103	g
5	ENQ	38	&	71	G	104	h
6	ACK	39	'	72	H	105	i
7	BEL	40	(	73	I	106	j
8	BS	41	)	74	J	107	k
9	HT	42	*	75	K	108	l
10	Line Feed	43	+	76	L	109	m
11	VT	44	,	77	M	110	n
12	Form Feed	45	_	78	N	111	o
13	Carriage Return	46	.	79	O	112	p
14	S0	47	/	80	P	113	q
15	S1	48	0	81	Q	114	r
16	DLE	49	1	82	R	115	s
17	DC1	50	2	83	S	116	t
18	DC2	51	3	84	T	117	u
19	DC3	52	4	85	U	118	v
20	DC4	53	5	86	V	119	w
21	NAK	54	6	87	W	120	x
22	SYN	55	7	88	X	121	y
23	ETB	56	8	89	Y	122	z
24	CAN	57	9	90	Z	123	{
25	EM	58	:	91	[	124	|
26	SUB	59	;	92	\	125	}
27	ESC	60	<	93	]	126	~
28	FS	61	=	94	^	127	Delete
29	GS	62	>	95	-		
30	RS	63	?	96	`		
31	US	64	@	97	a		
32	Space	65	A	98	b		

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