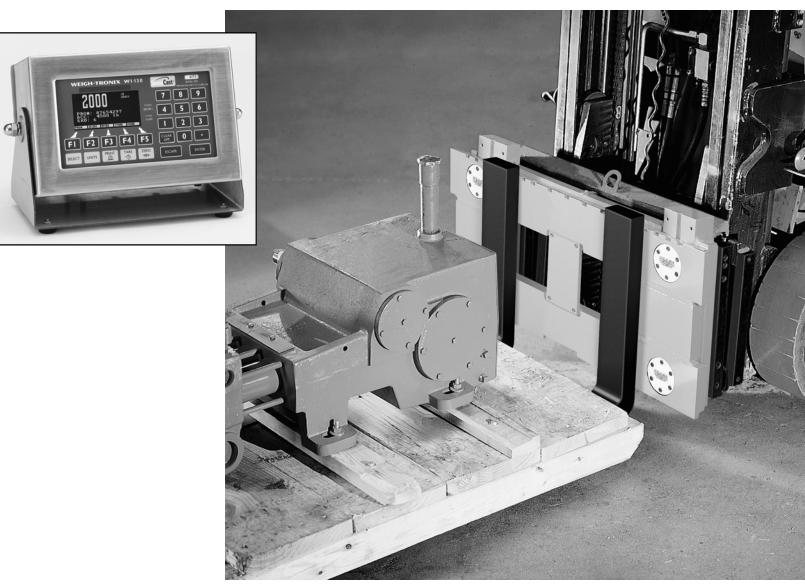
Avery Weigh-Tronix



Certified Lift Truck Scale with SimulCast™ Instrument 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.



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

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

Table of Contents

Table of Contents	3
Specifications	4
Daily Operation Quick Reference	5
Introduction	6
Front Panel	6
Daily Operation	7
Start Up and Entering Employee ID#	7
Entering the PRO# and Estimated Weight	8
Weigh Skids	10
Downloading Information	11
The MORE key	12
Overview	12
EDIT Softkey	12
CAL Softkey for Testing Accuracy	13
SETUP Softkey	14
RESET Softkey	16
EXIT Softkey	16
Report Format	17
Special characters or sequence of characters	17
Headers and/or identifiers	17
Sample Printout Format	17
Sample Printout	18
Error Messages	19
Daily Inspection Checklist for Lift Truck Scale Users	20

Specifications

Indicator Specifications

Power input

10-90 volts DC

Display

1.6" H x 3.2" W electroluminescent dot graphic display (160 x 80 dot layout) Simultaneously displays 0.6" high readings of weight, pro number, accumulated weight and accumulated number of skids

Operational keys

Zero, Tare, Print, Units, Select, Enter, Escape, Clear, 0-9, decimal point and five soft keys labeled per selected operational routine All keys provide users with audio acknowledgment upon activation

Operational annunciators

Displayed symbols indicate motion, center of zero, unit of measure and more

Time and date

Battery protected real time clock is included

Angle compensation

Detects and automatically compensates for pitch and/or roll out of level weighing

Standard interface ports

(all with quick disconnects):

- infrared communication port
- RS-232 bar code reader port
- RS-232 printer output
- scale carriage input
- power source input

Available options

- Bar code wand
- Infrared transceiver

Operating environment

14°F to 104°F - NTEP -40°F to 140°F - Operational (-10°C to +40°C) (-40°C to +60°C)

Enclosure

Stainless steel enclosure

Dimensions

10.5" H x 10.75" W x 4" D, (26.67 cm x 27.31 cm x 10.16 cm)

Weight

9 lb, 4.1 kg

Daily Operation Quick Reference



Press any key to turn the unit on.

Press and hold CLEAR to turn the unit off. Below is a brief overview of how to use this system during a work shift. Complete instructions are covered in the body of this manual.

- 1. At start of shift, enter employee ID number
- 2. Enter a PRO number in the unit using the bar code wand or keying it in on the numeric keypad of the SimulCast
- 3. Key in the weight listed on the shipping papers
- 4. Edit the number of skids if different than the default value of 1
- 5. Weigh the skid or skids contained in that PRO# and store the weights
- 6. Close the PRO#
- 7. Enter a new PRO# and repeat until the shift ends or until you are required to download the stored information.

Introduction

This manual will explain the operation of the WI-130 SimulCast[™] indicator when used with the Quik Tach Lift Truck Scale-Certified (QTLTSC).

This manual is divided into the following sections:

- Daily Operation Quick Reference
- Introduction
- Daily Operation
- The MORE Key

Front Panel

The WI-130 indicator on your lift truck will have a front panel similar to the one shown in Figure 1.



Figure 1 WI-130 SimulCast™ front panel

The F1-F5 keys correspond to the labels which appear above them in the display and are called soft keys because their function changes as the label changes. The hard keys appear below the softkeys and their function is labeled on each key.

Daily Operation

Overview



Press any key to turn the unit on.

Below is a brief overview of how you will use this system during a work shift. Exceptions to these procedures and additional functions are covered in later sections.

- At start of shift, enter employee ID number
- Enter a PRO number in the unit using the bar code wand or keying it in on the numeric keypad of the SimulCast
- Key in the weight listed on the shipping papers
- Edit the number of skids if different than the default value of 1
- Weigh the skid or skids contained in that PRO#
- Close the PRO#
- Enter a new PRO# and repeat until the shift ends or until you are required to download the stored information into the central computer.

Start Up and Entering Employee ID#

The exact steps in doing the above procedures are shown below.

1. Start the lift truck. . .

Press any key on the indicator to power up. After the brief startup message it will ask for an employee ID number (EMID#) as shown below.



The last ID number entered will be displayed.

2. If your number is displayed press the **ENTER** key to accept.

If this is not your ID number, either key in your ID number and press **ENTER**

OR

Scan the appropriate bar code for your ID number. . .

The indicator will go to the weighing mode and the display will look like this:



Press the **ESCAPE** key at any time to return to this mode.

Entering the PRO# and Estimated Weight

3. Scan in the PRO# from the bar code

OR

Press the **PRO#** (F1) softkey and key in the PRO number. . .

If this is a new PRO number, skip to step 5. If this is an active or previously entered PRO number the display will ask if you want to OPEN or CLOSE the PRO number. Choose the correct response and continue.



4. If you open a previous PRO number skip to step 9.

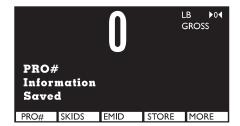
If you close a PRO number, repeat step three with a new PRO number.

5. The following is displayed:



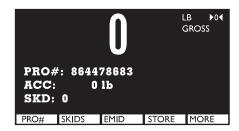
 Enter the weight recorded on the shipping papers for the entire PRO# and press the ENTER key. . .

The following is briefly displayed:



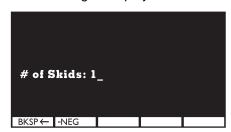
then the following information is displayed:
Current weight
PRO number
Accumulated weight
Accumulated skids
and softkey labels.

An example of the display is shown below with a fictitious PRO number.



 If you have just one skid to weigh, skip to step 9. If you have more than one skid in this PRO#, press the **SKIDS** (F2) softkey. . .

The following is displayed:



8. Key in the number of skids and press the **ENTER** key. . .

The previous screen is displayed.

Weighing Skids

When zeroing the scale or trying to store information, the display will show "ABORTED" if scale motion is detected, an overload condition is detected, or the angle detected is greater than the angle used to calibrate.

The scale weight must fall below a set weight before another transaction can be stored. You set this weight under the **SETUP** key. The display will remind you if you forget to allow the weight to go below this limit.

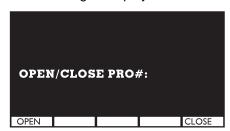
 Make sure the forks of the lift truck are off the ground and empty, then press the ZERO key. Lift the skid and when the weight reading is stable, press the STORE (F4) softkey. . .

The display will show the weight of the skid, the accumulated weight, and the number of skids weighed as shown below:



10. Remove the skid, zero the scale if necessary, and repeat step 9 if there are more skids in the PRO#. When all the skids in the PRO# have been stored, scan or key in the PRO#. . .

The following is displayed:



11. Press the **CLOSE** (F5) softkey. . . The display confirms that the PRO# is closed. Closing the PRO# indicates that all skids associated with the PRO# have been weighed.

The system is now ready to work on the next PRO#. Repeat steps 3-9 for each new PRO#.

You can open multiple PRO#s at one time. Each time you open a PRO# by scanning it or keying it in, that PRO# becomes the active PRO# and any skid weighed will be assigned to that PRO#. To activate a different PRO#, scan or key it in.

To avoid confusion it is best to close a completed PRO# before going to the next.

Downloading Information

The information stored in the SimulCast can be downloaded at any time.

1. Connect an interface cable between the SimulCast and peripheral or drive the fork lift to the area where the infrared receiver is located. Line up the transmitter and receiver. Press the **PRINT** key. . .

The following is briefly displayed:



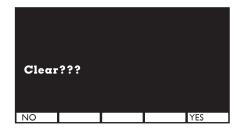
Then the following is displayed:



2. Press the appropriate softkey for the report you want to download. . . The following is briefly displayed:



Then the following is displayed:



3. Press the **YES** softkey to clear the reports from memory or **NO** to save the reports. . .

The display returns to the weigh mode.

F1 = 1 F3 = 2F5 = 3

F1 = NO F5 = YES

The MORE Key

Overview

The **MORE** key (F5) relabels the softkeys for several functions. Below is the list of softkeys and their use.

EDIT (F1) Press this key to change the skid transaction count of an

existing PRO number.

CAL (F2) Press this key to test accuracy of the WI-130 system.

SETUP (F3) Press this key to customize information included in reports.

The address information also appears during the power up sequence. The following items are available for you to

personalize:

4 lines for name and address

Towmotor ID# Min. Trans Limit

RESET (F4) Press this key to erase all variables from memory.

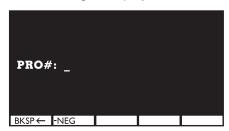
EXIT (F5) Press this key to return to the normal weigh mode display.

Below are step by step instructions for each of these softkeys.

EDIT Softkey

This key allows you to correct the recorded skid number when you pick up more than one skid at a time. Press the **EDIT** (F1) softkey to change the skid counter for an existing PRO number. . . The

The following is displayed:



2. Scan in a PRO# or key one in and press the **ENTER** key. . .

If the PRO number is valid you will see the following display. If it is not valid the display tell you so then return to the normal weighing mode.



3. Key in the number of skids for the PRO number and press the **ENTER** key. . .

The following is briefly displayed:



The display then changes to the normal weighing mode with the PRO# you edited active.

CAL Softkey for Testing Accuracy

Following these steps will produce an accuracy report which is downloaded when transmitting the Pro number data.

1. Press the **CAL** (F2) softkey. . . The following is displayed:



2. Key in the ID number of the test weight you are using and press the **ENTER** key. . .

The following is displayed:



3. Key in the test weight amount and press the **ENTER** key. . .

The following is displayed:

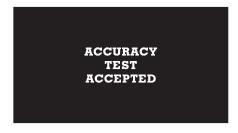


XXXXX represents the ID number of the test weight.

You can press the **ESCAPE** key to abort.

4. Place the test weight on the scale and press the **ENTER** key. . .

The following is briefly displayed:



The following is briefly displayed:

```
CAL WT ID

XXXXXX

CAL WT

XXXX LB

MEASURED WT

XXXX LB

DATE

TIME
```

The display then returns to the normal weighing mode.

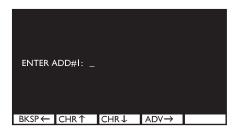
SETUP Softkey

You have four 16 character lines to enter your company and location details. (ADD#1 - ADD#4)

The next softkey is SETUP. Follow these steps to complete the setup:

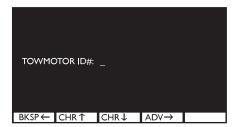
1. Press the **SETUP** (F3) key. . .

The following is displayed:



Use the softkeys to scroll in up to 16 alphanumeric characters then press the ENTER key. . .

Repeat this step for address line 2-4. The following will be displayed:



3. Key in the scale carriage serial number then press the **ENTER** key. . .

The following is displayed:



Default for MIN. TRANS LIMIT is 5% of capacity.

4. Key in the maximum weight the scale must be below before a new transaction can be stored, then press the **ENTER** key. . .

The display returns to **MORE** key default display mode with **EDIT**, **CAL**, **SETUP**, **RESET** and **EXIT** softkeys.

RESET Softkey

The next softkey is **RESET** (F4). This key gives you the option of clearing all the Pro numbers and transactions from the system's memory. All items under the **SETUP** key are retained as well as the accuracy test if one has been performed. To clear the memory follow these steps:

1. Press the **RESET** (F4) key. . .

The follow is displayed:



If an invalid password is tried, the display will return to the normal weight display mode.

 Key in your password using the numeric keypad or the softkeys if your password has letters. After the password is keyed in, press the ENTER key. . .

The following is briefly displayed:



The following is briefly displayed:



The display returns to the normal weighing mode.

EXIT Softkey

Press the **EXIT** (F5) key to return to the normal weighing mode display.

Report Format

Below are the parameters used to generate reports. This will help in designing the database used to manage the information gathered from the SimulCast system.

Special characters or sequence of characters

= Delimiter between information fields

(N) = numeric field only

(S) = string field only

(SP) =Space

CR = carriage return

LF = line feed

= The weight readings themselves will always be numeric only, but the current unit of measure will be a string, i.e. "LB", which forces the whole field to be a string.

Headers and/or identifiers

[BH] and [EH] = These characters will be sent to allow the parser you are writing to identify the header information.

[BD] and [ED] = These characters will be sent to allow the parser you are writing to identify the transaction data.

[BC] and [EC] = These characters will be sent to allow the parser you are

writing to identify the calibration data.

Sample Printout Format

Beginning of report information

[BH]

Report Type(S)CRLF Address Field #1(S)CRLF Address Field #2(S)CRLF Address Field #3(S)CRLF Address Field #4(S)CRLF Towmotor ID Number(S)CRLF Scale ID Number(S)CRLF Present Time(S)CRLF Present Date(S)CRLF [EH]

[BD]

One complete PRO# record

Pro Number(N), Pro Number Status(S), Employee Number(S), Last Transaction Time(S),Last Transaction Date(S),Actual Accumulated Weight(SP)Current Unit of Measure(S)*,Actual Number of Skids(N), Estimated Accumulated Weight(SP) Current Unit of Measure(S)*, Estimated Number of Skids(N)CRLF

One complete PRO# record

Pro Number(N), Pro Number Status(S), Employee Number(S), Last Transaction Time(S), Last Transaction Date(S), Actual Accumulated Weight(SP)Current Unit of Measure(S)*,Actual Number of Skids(N), Estimated Accumulated Weight(SP) Current Unit of Measure(S)*, Estimated Number of Skids(N)CRLF

One complete PRO# record

Pro Number(N), Pro Number Status(S), Employee Number(S), Last Transaction Time(S),Last Transaction Date(S),Actual Accumulated Weight(SP)Current Unit of Measure(S)*,Actual Number of Skids(N), Estimated Accumulated Weight(SP) Current Unit of Measure(S)*, Estimated Number of Skids(N)CRLF

[ED]

End of report information

[BC] Test Weight ID Number(S)CRLF Test Weight Value(SP)Current Unit of Measure(S)CRLF Measured Weight(SP)Current Unit of Measure(S)CRLF Calibration Date(S)CRLF Calibration Time(S)CRLF [EC]

Sample Printout

All Pro# Report Weigh-Tronix 1000 Armstrong Drive Fairmont, MN 56031

Towmotor ID Number : 111 : 222 Scale ID Number

Present Time: 12:16:31 Present Date 1-13-97

Pro Number 123456782

Pro Number Status : OPEN
Employee Number : 456
Last Transaction Time : 12:02:14
Last Transaction Date : 1-13-97 Actual Accumulated Weight : 2655 lb Actual Number of Skids : 2

Estimated Accumulated Weight: 40000 lb

Estimated Number of Skids : 4

Pro Number 975257987

Pro Number 573257567

Pro Number Status : CLOSED

Employee Number : 456

Last Transaction Time : 12:15:20

Last Transaction Date : 1-13-97 Actual Accumulated Weight : 7300 lb

Actual Number of Skids : 2

Estimated Accumulated Weight: 50000 lb

Estimated Number of Skids : 5

Pro Number 423284687

Pro Number Status : OPEN
Employee Number : 456
Last Transaction Time : 12:15:44
Last Transaction Date : 1-13-97 Actual Accumulated Weight : 5310 lb Actual Number of Skids : 2 Estimated Accumulated Weight: 6000 lb

Estimated Number of Skids : 1

CAL WT ID# : 157845 CAL WT : 500 LB MEASURED WT : 500 LB CAL Date : 1-13-97 CAL Time : 12:01:29

Error Messages

Following are the error messages you may see while using the SimulCast.

Scale Capacity Exceeded

Transaction Aborted...

The scale is in an overload or underload state

Blanking Enabled

Transaction Aborted...

The system has exceeded the maximum calibration angle.

Blanking Enabled

Zero Aborted...

The system has exceeded the maximum calibration angle.

Transaction Aborted......

Motion Detected

The scale has a motion condition, the transaction is aborted.

Zero Aborted......

Motion Detected

The scale has a motion condition, the zero is aborted.

Transaction Aborted......

Invalid Pro#

There is no active pro number in memory, transaction aborted.

Transaction Aborted......

Under Weight

The weight on the scale has not gone above the minimum weight limit defined in the <SETUP> key.

Below are service related error messages.

Check Proms The firmware chips are corrupted and need to be replaced.

Blank EE The EEPROM IC is blank. Factory defaults or the backup

copy of configuration settings will be used. Replace

EEPROM IC which will force a recalibration.

Check EE The EEPROM IC is not responding. Factory defaults or the

backup copy of configuration settings will be used. Replace

EEPROM IC which will force a recalibration.

Overload The weight on the scale has exceeded the capacity of the

system. Remove weight or troubleshoot equipment for

defects.

Underload The weight on the scale has exceeded the capacity of the

system. Add weight or troubleshoot equipment for defects.

Over Angle The angle of the fork lift has exceeded the angle used to

calibrate the system. Decrease angle of the fork lift or

troubleshoot equipment for defects.

ADC Reset The analog to digital converter is not responding and/or is

in a reset state. Cycle power, verify A/D board is plugged

into main board or replace A/D board.

Dead Display The unit may be in sleep mode. Press any key to turn the

unit on or hold the CLEAR key for five seconds then press

any key to turn the unit on.

Daily Inspection Checklist For Lift Truck Scale Users

Check scale carriage for loose, worn, bent, or broken components.
Inspect forks for damage.
Check locking pins on forks for proper function.
Inspect cables from the junction box to Weigh Bars for wear.
Inspect retractable cable for pinched, rubbed, stretched, or damaged areas.
Inspect power cable for nicks or cuts.
Make sure power cable is routed out of harms way. Fasten periodically to eliminate potential problems.
Tighten cable connections at indicator and summing box if necessary.
Inspect cable clamps and cable ties to be sure all cable attachments are secure.
Inspect digital indicator mounting bracket, isolation mounts and hardware for loose or cracked parts.
Check to make sure the junction box cover/shielf is fastened.
Tighten bottom clamps on scale carriage if necessary. Raise carriage and visually inspect.
Check and adjust the lift chain so the heel of the forks have $\frac{1}{2}$ " to 1" of clearance from the floor when the carriage is down and the mast is vertical.

Calculating New Lift Capacity

You must have the ID plate on the lift truck updated stating the new lifting capacity and center of gravity information. This requirement is per OSHA rules and regulations. A calculation formula is provided below. It is the customer's responsibility to contact their lift truck manufacturer/distributor with this information to obtain the new ID plate.

The QTLTSC lift truck scale comes in ITA Class II (16" high, 5,000 lb) and ITA Class III (20" high, 5,000 and 10,000 lb) and Class IV (25" high, 10,000 lb and 16,000 lb) models. Each class comes in several widths for cleat type carriages. Measure the height and width of the lift truck carriage. Select from the table below the appropriate width that best meets the dimensions of the lift truck carriage. Use the weights, dimensions and the following formula to calculate the net lifting capacity of your lift truck with a scale attached. Refer to Figure 2.

Net Capacity =
$$\frac{A(B+C) - D(E+F)}{E+G+H}$$

A = Truck basic capacity, pounds

B = Inches from front wheel center line to fork face

C = Inches from fork face to truck rating point (usually 24")

D = Weight of the scale in pounds

E = Inches from front wheel center line to carriage face

F = Inches from carriage face to scale center of gravity (CG)

G = J + K (Inches from carriage face to rear face of load)

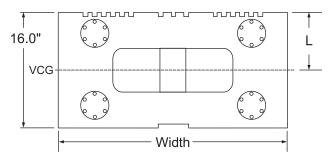
H = Inches from fork face to new truck rating point

J = Thickness of fork

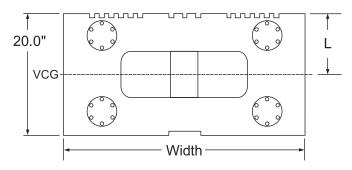
K = Thickness of scale

 $L = \frac{1}{2}$ the height of the scale or the Vertical Center of Gravity (VCG)

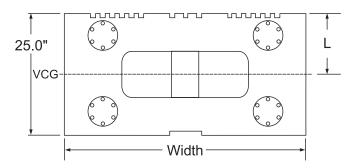
Class II



Class III



Class IV



Average loss in lifting capacity for a QuickTach lift truck scale is 12 to 14%.

Class II 5,000 lb Models

Scale P/N	Width	Weight "D"	DIM "F"	DIM "K
48196-0094	30.0"	373 lb	2.0"	4.0
48196-0011	32.0"	381 lb	2.0"	4.0
48196-0029	34.0"	389 lb	2.0"	4.0
48196-0102	36.0"	410 lb	2.0"	4.0
48196-0037	37.0"	413 lb	2.0"	4.0
48196-0110	38.0"	418 lb	2.0"	4.0
48196-0128	40.0"	438 lb	2.0"	4.0
48196-0045	42.0"	446 lb	2.0"	4.0

Class III 5,000 lb Models

Scale P/N	Width	Weight "D"	DIM "F"	DIM "K"
51856-0016	36.0"	520	2.00"	4.00"
51856-0024	37.0"	530	2.00"	4.00"
51856-0032	38.0"	540	2.00"	4.00"
51856-0057	40.0"	580	2.00"	4.00"
51856-0073	42.0"	635	2.00"	4.00"
51856-0099	44.0"	685	2.00"	4.00"
51856-0115	46.0"	700	2.00"	4.00"
51856-0131	48.0"	720	2.00"	4.00"

Class III 10,000 lb Models

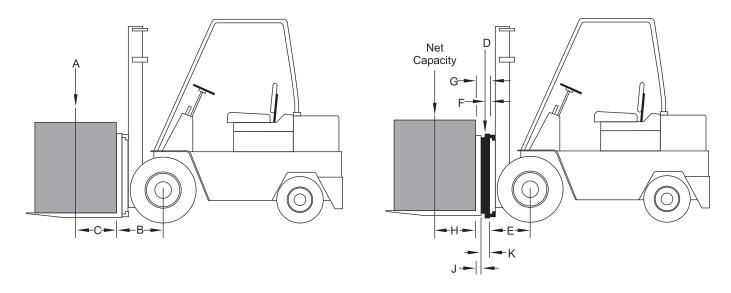
Scale P/N	Width	Weight "D"	DIM "F"	DIM "K"
51857-0031	40.0"	725	2.75"	5.50"
51857-0056	42.0"	780	2.75"	5.50"
51857-0072	44.0"	795	2.75"	5.50"
51857-0106	47.0"	855	2.75"	5.50"
51857-0114	48.0"	865	2.75"	5.50"
51857-0155	52.0"	935	2.75"	5.50"
51857-0197	56.0"	1005	2.75"	5.50"
51857-0239	60.0"	1030	2.75"	5.50"

Class IV 10,000 lb Models

Scale P/N	Width	Weight "D"	DIM "F"	DIM "K"
53924-0010	38.0"	920	2.75"	5.50"
53924-0036	40.0"	941	2.75"	5.50"
53924-0051	42.0"	1007	2.75"	5.50"
53924-0077	44.0"	1028	2.75"	5.50"
53924-0093	46.0"	1093	2.75"	5.50"
53924-0119	48.0"	1114	2.75"	5.50"
53924-0135	50.0"	1179	2.75"	5.50"
53924-0150	52.0"	1200	2.75"	5.50"
53924-0176	54.0"	1266	2.75"	5.50"
53924-0192	56.0"	1287	2.75"	5.50"
53924-0218	58.0"	1306	2.75"	5.50"
53924-0234	60.0"	1322	2.75"	5.50"

Class IV 16,000 lb Models

Scale P/N	Width	Weight "D"	DIM "F"	DIM "K"
53425-0014	38.0"	1068	3.06"	6.13"
53425-0030	40.0"	1092	3.06"	6.13"
53425-0055	42.0"	1154	3.06"	6.13"
53425-0071	44.0"	1178	3.06"	6.13"
53425-0097	46.0"	1239	3.06"	6.13"
53425-0113	48.0"	1263	3.06"	6.13"
53425-0139	50.0"	1338	3.06"	6.13"
53425-0154	52.0"	1362	3.06"	6.13"
53425-0170	54.0"	1437	3.06"	6.13"
53425-0196	56.0"	1461	3.06"	6.13"
53425-0212	58.0"	1484	3.06"	6.13"
53425-0238	60.0"	1592	3.06"	6.13"
53425-0253	62.0"	1616	3.06"	6.13"
53425-0279	64.0"	1639	3.06"	6.13"
53425-0295	66.0"	1747	3.06"	6.13"
53425-0311	68.0"	1771	3.06"	6.13"
53425-0337	70.0"	1794	3.06"	6.13"
53425-0352	72.0"	1812	3.06"	6.13"



Lift truck with no scale

Lift truck with scale

Figure 2
Recalculating Lift Truck Capacity

Avery Weigh-Tronix

Avery Weigh-Tronix USA

1000 Armstrong Dr. Fairmont MN 56031 USA Tel: 507-238-4461

Fax: 507-238-4195

 ${\bf Email: usinfo@awtxglobal.com}$

www.wtxweb.com

Avery Weigh-Tronix UK

Foundry Lane, Smethwick, West Midlands,

England B66 2LP

Tel: +44 (0) 8453 66 77 88 Fax: +44 (0)121 224 8183 Email: info@awtxglobal.com www.averyweigh-tronix.com