WP92029AC Hydraulic System Manual For front-end loaders

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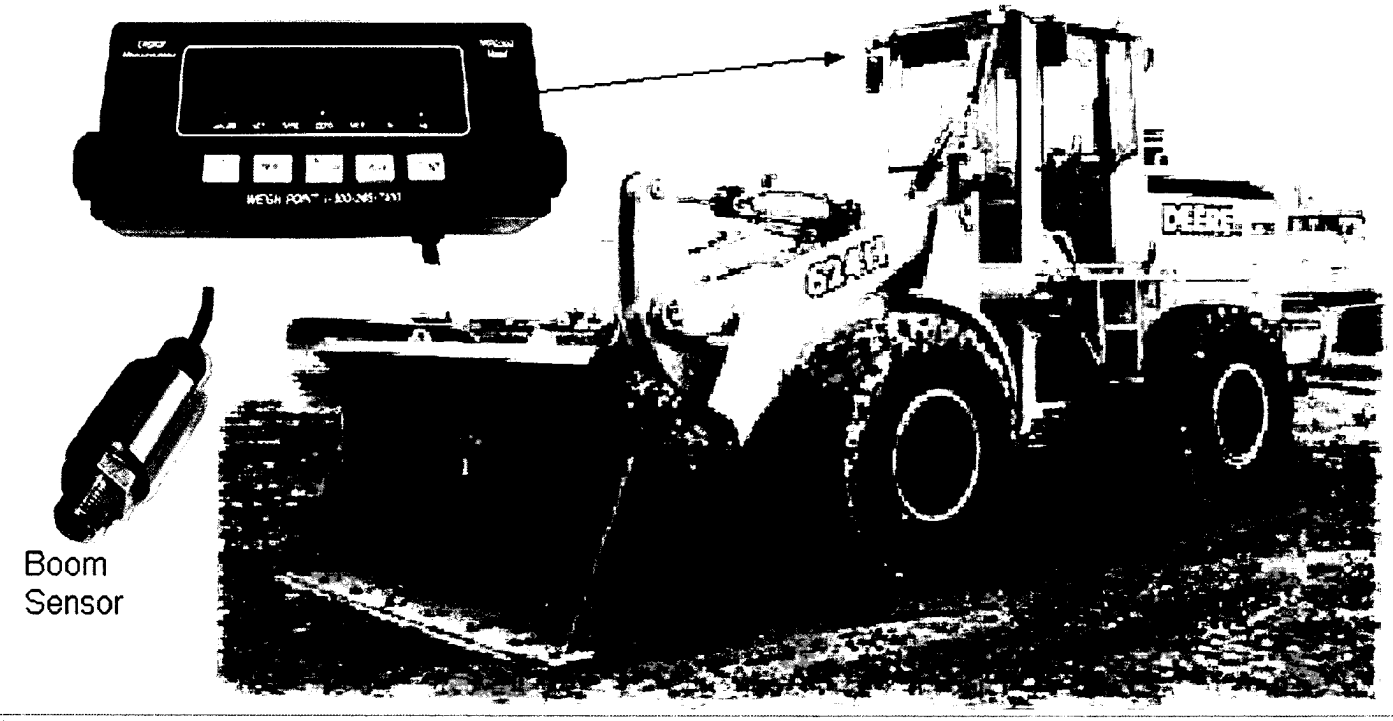
ONBOARD WEIGH SCALE (Semi-Automatic)
Model WP92029A
Front End Loaders

An economical weigh scale for hydraulic equipment from Canada's foremost loadcell and scale manufacturer now direct to you.
Applications: Front end loaders, forklifts, cranes & hydraulic equipment

Don't waste time guessing load weights and carrying more or less than the legal limit.
Perform weigh checks with your front end loader without waiting around, and then reloading.
Stop hauling for free. Know that you re only providing contracted weight and material.

- Easy to install
- Weigh-on-the-move
- No alterations to truck required
- Semi-Automatic Operation with Joystick Button



Boom Sensor

Ergonomics in loader cabs is taken seriously at Weigh Point

First we provide a space saving display to mount anywhere convenient. The joystick button feature provides semi automatic operation.

Full function too!

Set the display to read your lingo such as cubic feet, cubic yards, lbs, kgs, tons or tonnes (you can programme your choice in the systems setup mode).

On the job the display can accumulate loads for providing the right delivery of product.

Data transmission or printer options are available.

Job identification numbers can be recorded by selecting an appropriate (optional) Weigh Point display indicator.

Reliability

There's little chance of failure with Weigh Point quality and service help is just "1-800-268-7400" away.

Weigh Point handles erratic hydraulic signals using digital technology built into the microprocessor. Our programmers were successful in tackling problem hydraulics found in several loaders. No longer will operator guess which reading is correct, the system now interprets the fluctuating signal, does the math and reports the correct weight.

Operation

Raise bucket to weight position, thumb press joystick button, see displayed weight and accumulated weight.

WEIGH POINT 1-800-268-7400

www.weighpoint.com

WP92029AC Parts List

Qty	Description
1	Indicator model WP9202AC-24VDC s/n 15460102
1	Hydraulic modular sensor (pressure transducer)10K model 105- -10K s/n 0114161680
1	4 position connection strip for junctioning
2	display mounting plates with nuts and bolts
1	15 feet power cable
1	PRINTER, SRP-275, SAMSUNG, 24VDC,
1	package tie-wraps for cable tie down
1	joystick mounted pushbutton controller
1	Noise Filter

Installation instructions

NOTE: It is recommended that a certified mechanic perform the installation or an individual that knows the hydraulic system well. You may need to contact the manufacturer for the proper sizing of the hydraulic fittings.

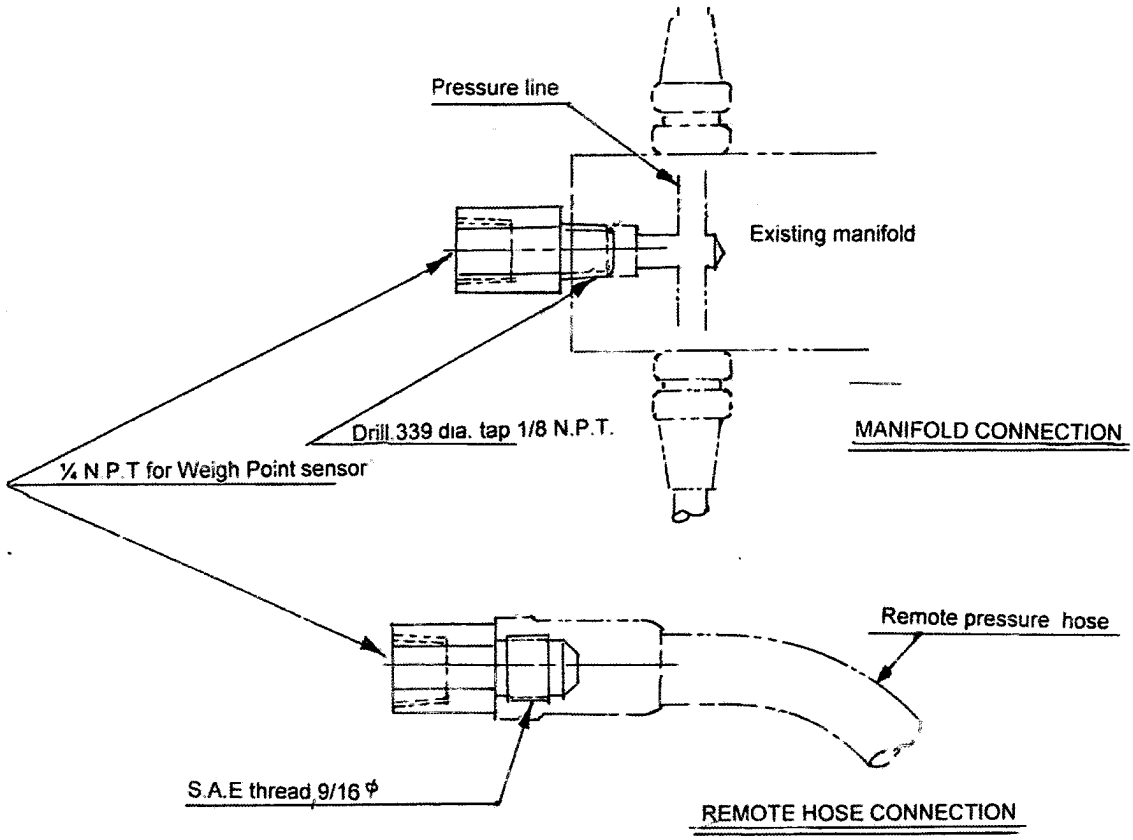
The bucket must be on the ground prior to starting installation.

The transducer supplied must be installed between the hydraulic lift valve and the pressure input line to the boom cylinder. Dual cylinders only require a single sensor because both cylinders see the same pressure. This can be done by Tee-ing off from the hydraulic system. Some systems may already have a tee junction. Consult your loader manufacturer for the best area of installation. If a Tee is not available the fittings will need to be purchased in order to complete the installation. An extension hose with the proper fittings may need to be used with the ¼ NPT to 3/8 J.I.C, to keep the transducer from impeding surroundings.

An alternative, if practical, the manifold can be drilled and tapped for either an 1/8 NPT adapter to ¼ NPT or a ¼ NPT. The sensor is ¼ NPT

Install the fittings to accommodate the transducer. Make sure the fittings are in a position that does not interfere with the arms or impede any movement once the transducer is installed.

When the transducer is tightened to the fittings, clamps should be applied to secure the extra hose if utilised.



There are several ways to incorporate the Weigh Point Sensor into your truck's systems.

These are described below:

1/Tap a 1/8 NPT Hole into the manifold or other access to the lift cylinder or boom cylinder input pressure side.

2/Install the 3/8 JIC adapter into the sensor and provide a remote hose.

3/ TEE the sensor between cylinder input port and hydraulic line.

Hydraulic System- Weigh Point Sensor Connection

AUG. 9/06 BF

The Model WP92029AC Semi-Automatic System has an additional time saving feature.

This feature provides an automatic weight lock and weight accumulation activated by pressing the boom switch upon reaching the weighing height.

WP92029AC Only

Install the joystick button alongside the Boom Lift Lever; the WP9202AC microprocessor is equipped with an auxiliary circuit. The microprocessor cable output connects via a 15 cable to the push button.

Weighing sequence

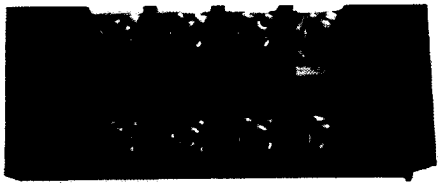
If your loader is equipped with a boom cut-out switch, then use the cut-out point when raising bucket then press the joystick button or raise loaded bucket to weigh height then press the joystick button. This action caused the system to re-evaluate the weight, and then display the bucket s load. This is followed by the system automatically printing the accumulated weight.

Periodic scale checks are desirable.

Wiring

Connect the sensor cable (grey) to the rear indicator s terminal strip.

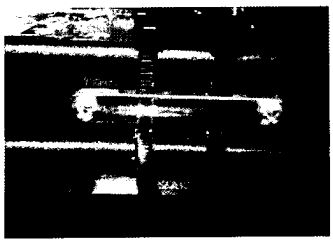
The cable wire matches terminal colour code

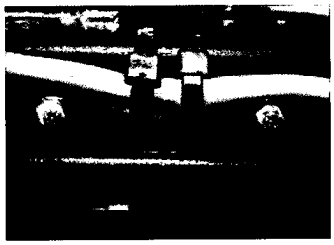


Grey cable from sensor

Terminal (Rear Side of Indicator)

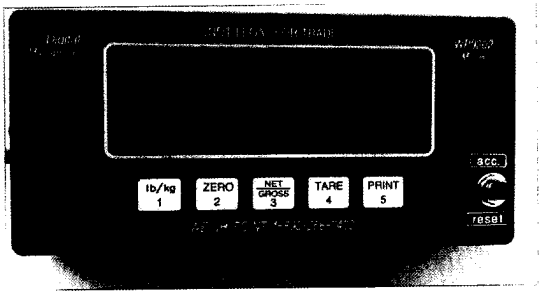
+ Excitation	= Red
- Excitation	= Black
+ Signal	= Green
- ´Signal	= White





Strain Relief the sensor cable utilizing the dual wraps provided next to the indicator's communication Port.

Calibration



Button Position for Calibrating

Calibration weight

A known weight is required. The higher the better, with 1000 kg. plus preferred, although a lower weight will work if necessary.

If available consider filling a couple of 55 gal drums with water as the test weight.

Calibration procedure

Warm up Hydraulics by running loader for several minutes in extreme cold weather run longer.

A. With WP9202AC indicator powered off, first slide switch [6] (at side of indicator) to calibration mode.

B. Next hold in button [1] whilst turning on indicator with rocker switch and observe F1 displayed.

C. Press button [4] once and observe F18 displayed. Press button [2] and record the F18 number displayed (write number for later reference).

D. Press button 3 and F18 will be displayed.

E. Press button [4] until F15 is displayed

F. With the F15 number displayed, raise and curl bucket at the typical weighing height, (use boom cut-out feature if available on loader), press button [2] followed immediately by pressing button [3].

G. Slide calibration switch [6] to operating mode and observe number counting down to zero.

H. Raise known weight to the weigh height, curl bucket then press joystick button, write down result displayed weight.

I. Repeat step six times and calculate average weight.

J. Compare average weight to known weight and figure % to change either plus or minus.

K. Repeat steps A, B, & C to observe the F18 number. Calculate change to F18 by raising or lowering number by the % required. Use buttons [4] (shift key) and button [5] ramp key to arrive at new F18 number. Save this number (F18) by pressing button [3].

L. Return slide switch from CAL mode to operating mode and observe number count down.

M. Repeat H to J and if satisfied then calibration is complete.

N. If fine-tuning is still required then repeat steps commencing with J.

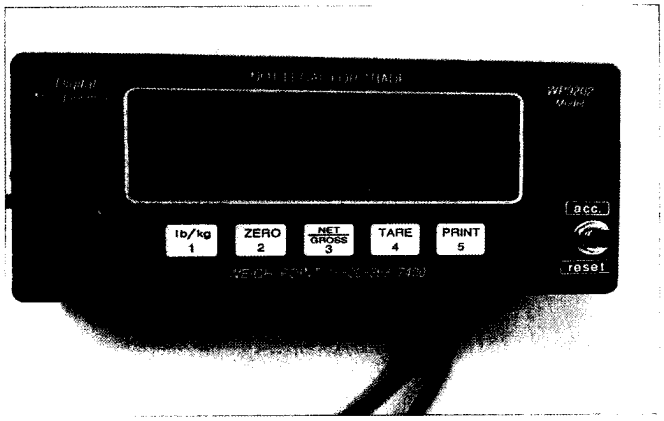
<u>Tips for achieving accuracy</u>

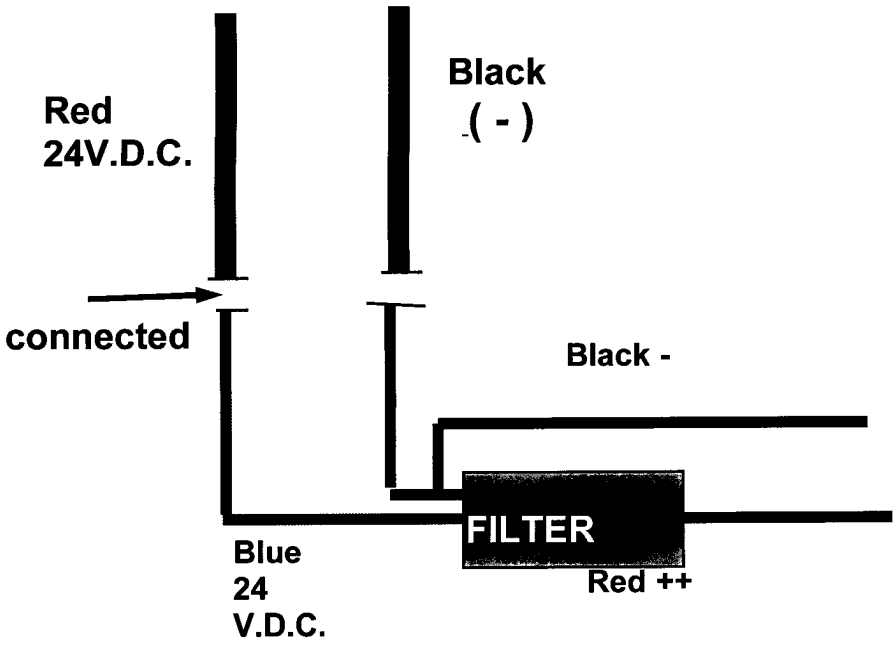
1. Operator error can occur such as inadvertently pressing the zero switch, thus causing a weight error in subsequent weighments.

   To avoid this improper zeroing, it is suggested that periodically raise the empty bucket to the weigh height and press the zero key to reset the empty bucket weight to zero.

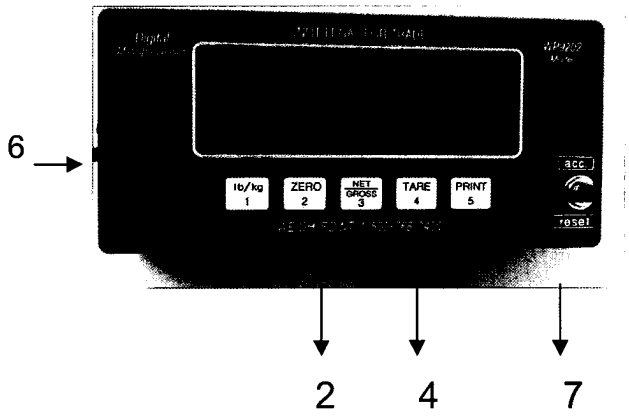
2. Always press the joystick button about 1 second after raising load to weigh height.

Noise Filter Installation





Easy Operation – WP9202AC



For best accuracy warm hydraulics by running loader prior to weighing.
Periodically raise empty bucket to weigh height then press button [2]

Operating scale

- Raise loaded bucket to weigh height
- Press joystick button to set weight, accumulation and printer
- Reset accumulation to zero by pressing [7]
- Check accumulation at anytime by pressing button [4]

Resetting printer program

Optional printer requires the WP9202AC be programmed on the A scale and F scale.
The following instructions are also located in calibration guide.
The following procedure applies to put the WP9202AC into the A scale, change settings only if necessary as the following settings have been factory installed.

With WP9202AC powered on, depress button [1] whilst sliding switch [6] up to CAL mode observe A1.
(See page 13)

Set A1 to 9600 by pressing button 2 followed by buttons 4 & 5
When 9600 achieved press 3 to set.
A2 = C (use buttons 2,4 + 5 then 3)
A3 = 8n (use buttons 2,4 + 5 then 3)
A4 = 0 (use buttons 2,4 + 5 then 3)
A5 = 0 (use buttons 2,4 + 5 then 3)
A6 = * (use buttons 2,4 + 5 then 3) * This is the ID number setting and can be changed for each job.
A9 = 01 or 02 (feed line spacing) (use buttons 2,4 + 5 then 3)
Now go to F scale (See page 8)
F10 is set to 1 - F12 is set to 1

WP9202AC Parameters, "F" scale

Code:	Name:	Description:	Code/Value:
F1	Full Scale	Full Scale Number of Division x Value of Division	5000 1000 1500 2000 2500 (3000) 4000 5000 6000 8000 10000 15000 20000 30000
F2	Division	Minimum difference between two weighing reading	1 2 5 10 (20) 50
F3	Decimal Pt.	Decimal point position	(0), 0.0, 0.00, 0.000, 0.0000, 0.00000
F4	Overload Limit	Display will show __OL__ if the reading is greater than the value	(100%F.S) 110%FsS
F5	Zero Tracking	Display maintain zero while the reading is less than this selection and stable	0.5d 1d 3d 5d (OFF)
F6	Zero Range	The range of zero-setting operation is enabled	(2%F.S) 100%F.S
F7	Motion Band	The MOT LED light out and the weighting operation (I.e. zero, tare) is enable while motive reading, is not exceeded the limit of this selection	(1d) 3d 5d 10d
F8	Digital Filter	L light, M-middle, H-heavy. Select heavier, the reading is stable but slower	(L) M H
F9	Calibration Unit	Select unit at calibration. You should use lb. weights if you select lb. . Select unit at calibration. You should use kg. weights if you select kg. .	Ø
F10	Communication Mode	0-standard RS-232 output 1-printout	0 (1)
F12	Print Ticket	Print ticket Mode: 0-Print GROSS, NET,TARE 1-Print displayed weight	0 (1)
F15	Zero Calibration	Show internal codes at zero (no load on platform) and wait for MOT LED light out, press SET key to save zero calibration value.	
F16	Span Calibration	Enter the value of current test weights on platform via direction keys and wait for MOT LED light out, press SET key to save span calibration value. See appendix A if display show EER 1	
F17	Manual Zero Calibration	Check or re-establish zero calibration value.	
F18	Manual Span Calibration	Check or re-establish span calibration value.	200,000

To change these settings, place in calibration mode F (see page 8)

System Serial No. 015658 Indicator s/n 15460102

Hydraulic sensor 105 — 10K s/n 0114161680

Typical settings "A" scale

1. When the power is **ON**, press button [1] and hold, then slide switch [6] down. The display shows A1.
2. Ramp A1 to A8 with button [5] to go forward, or button]4] to go backwards.
3. Press button [2] to show value, to change value press button [4] or [5]
4. To save/accept displayed data press button [3]

Parameter "A" Scale

Code	Name	Description	Code/Value
A1	Baud Rate	Set baud rate of the RS-232 serial communication when F10 is 0	1200 2400 4800 (9600)
A2	Communication Mode	c = continuous mode d = command mode	(C) d
A3	Data bits and parity	8N: 8 data bits with no parity bit and 1 stop bit 7O: 7 data bits with odd parity bit and 1 stop bit 7E: 7 data bits with even parity bit and 1 stop bit	(8N) 7O 7E
A4	Disable the lb/kg	0 enable the lb/kg key 1 = disable the lb/kg key	(0) 1
A5	ID No. enable	0 = enable the ID no. 1 = disable the ID no.	(0) 1
A6	ID No. entry	Pressing [4]and [5] key to input ID no. and pressing the [3] key to store and return to A6. Displaying Axxxxx. Prints ID flashing. No. column after ID no. being set. (see APPe) 6-bit ID no . can be inputted at most when	
A7	Additional features	0 typical 1 counting feature 2 peakhold 3 accumulation 4 accumulation and peakhold	0 1 2 3 (4)
A8	Weight threshold	Typically 100 For lbs threshold	100

Note: Factory values for A7 = 4 accumulation and peakhold
A8=100 peak detect threshold is 100 lbs.

Error Codes

ERROR CODE	PROBLEM	SOLUTION
Err1	Input signal of the load cell is too low or open circuit	Examine whether there are items on the scale.
Err2	EEPROM Error	Change EEPROM
Err3	Key-in weight value in calibration mode is larger than full scale capacity	Reduce weight value in calibration mode or accrete full-scale capacity.
Err4	Calibration yard is too large	Reduce calibration divisions.
Err5	Unit selected is wrong	Change F9 or F11
Err6	Decimal position selected is wrong	Change decimal position in F3
Err7	The weight of one sample is too light	Check a greater sample item until display is 1
_ _OL_ _	Overload	Materials too much
=====	A/D not working	Examine the wire of the load cell, if well, change the print panel.

TROUBLESHOOTING

Diagnostics

Your scale requires minimal maintenance. If the system appears to not function properly please try to locate the problem and solution from the following diagnostics.

PROBLEM	DIAGNOSTICS AND CURE
Display doesn t light up	- Check for power (24VDC) - Assure toggle switch at ON position - Connect power to indicator only (with sensor cable disconnected). If still not lit, indicator likely faulty or internal fuse blown.
Readings non-repeatable	If the readings vary, check if raised height is always the same, mark raised position if necessary. Always press joystick button switch approximately the same time after bucket raised.
Readings consistently too low or consistently too high	Determine percentage too high or too low, then adjust setting F18 either up or down by the same percentage

Warranty

The Weigh Point warranty for front-end loader scale kits provides specified customer rights based upon conditions herein stated.

Weigh Point Inc. provides a one-year free replacement of faulty material and/or workmanship of the scale system. Exception hydraulic sensor is warranted two years, cabling and batteries are not warranted. No other warranty liability is expressed or implied.

The faulty goods are to be returned freight prepaid to our Cambridge facility. After repair or replacement, the goods will be returned collect to the customer.

An option is for Weigh Point personnel or their agent to effect repairs at the customer s facility. Travel expenses and other associated expenses are the customer s responsibility.

Precautionary procedures: To prevent voiding warranty

- Weigh scales are measuring devices and require reasonable handling and care
- Inspect cabling to ensure no snagging will occur. Note that damaged cables are not covered by warranty.
- Static build-up can easily destroy the microprocessor display. If static build up is suspected then take precautions such as use of grounding straps or chains, anti marring tires are particularly responsible for static build-up.
- Periodic inspection and adjustment of the scale components is required for scale longevity and safety.

Please note the precautionary notes are mandated as a condition of the product warranty.