

# ATLAS WEIGHING PTY LTD

COMPULOAD 3000 Series MANUAL  
(includes installation of the 4060 series printer)  
Software Version 1.16

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Section 1  
**WARRANTY COMPULOAD 3000**

**THE COMPULOAD 3000 HAS NO USER SERVICEABLE COMPONENTS  
INSIDE THE UNIT DO NOT DISMANTLE THE UNIT**

ATLAS WEIGHING Pty. Ltd. warrants the COMPULOAD Series 3000 load weighing gauge and any optional equipment to be free of defects in workmanship and material for a period of twelve (12) months from date of dispatch or installation, (whichever is applicable)

This Warranty only applies provided the COMPULOAD 3000 and accessories are used in accordance with the recommendations of ATLAS WEIGHING Pty. Ltd. under normal use and reasonable care.

The warranty does not cover damage in any way whatsoever including transit damage. The warranty does not cover malfunction or failure resulting from misuse, neglect or abuse.

The warranty immediately becomes void should any repairs, alterations or modifications are carried out or attempted to be carried out by other than ATLAS WEIGHING Pty. Ltd.

The warranty is not transferable and applies only to the original purchaser unless authorised by ATLAS WEIGHING Pty. Ltd.

The warranty does not include travel expenses should a factory engineer or representative be required to preform repairs on site.

At the option of ATLAS WEIGHING Pty. Ltd. any faulty units or components will be repaired or replaced free of charge whilst within the warranty period providing the unit or component is returned to our premises with freight pre-paid.

Our factory engineers will offer all possible assistance to rectify any difficulties experienced in the field. The larger majority of problems can be overcome by telephone. Please contact our office prior to forwarding any units or components for attention

NOTE Our carrier does not accept responsibility for loss or damage in transit. Should transit or freight loss or damage insurance be required it must be indicated on your order and the cost of such insurance will be charged accordingly.

Section 2  
AN INTRODUCTION TO THE COMPULOAD 3000 WEIGHING  
SYSTEM

**2.1 MANUFACTURE**

Wholly made in Australia the COMPULOAD 3000 is a state of the art computerised stand alone on board instrument designed for measuring the weight of loads lifted by forklifts, front end loaders, log loaders or other hydraulically operated machinery.

**2.2 STANDARD FEATURES**

Accurate weighing in the following ways

- a On the move. (as the load is raised ) (recommended for loaders)
- b. Static (stationary) (recommended for forklifts)

Automatic or manual totalising (operator selected)

Target weight shows amount required to reach truck capacity as well as progressive total.

Can be calibrated to suit up to two machines.

Fully illuminated display.

Overload warning.

**2.3 OPTIONAL FEATURES AND EQUIPMENT**

COMPULOAD 4060 printer allows hard-copy printout showing company header, date and time together with individual lift weight, progressive total and total weight loaded.

### Section 3

#### **OPERATOR USEABLE FUNCTIONS (unprotected)**

- 3.1 Determine the remote trigger task.
    - a. Hold reading only.
    - b. Holds reading and adds into Total
    - c. Does nothing.
  - 3.2 Set Target weight to be loaded
  - 3.3 Enter tare weight to be deducted from real weight.
  - 3.4 Turn printer on/off.
  - 3.5 Print progressive total on each printout if required.
  - 3.6 View progressive total of all weights accumulated .
  - 3.7 Print calibration data. (required for diagnosis)
- 

### Section 4

#### **OPERATOR USEABLE FUNCTIONS (code protected)**

- 4.1 Determine an amount (%) to be allowed over target weight.
  - 4.2 Alter channel (when refitted to another machine)
  - 4.3 Set time
  - 4.4 Set date
  - 4.5 Carry out fine adjustment of span
  - 4.6 Show FSD & speed readings (required for diagnosis)
- 

### Section 5

#### **OPERATION PRINCIPAL**

The COMPULOAD 3000 is designed to determine the weights being lifted by front-end loaders, forklifts, log loaders and other hydraulically operated lifting machinery. The load being lifted causes an increase in the hydraulic lifting pressure. This increase in pressure is converted to an electronic signal which in turn is converted into a weight reading. Because the pressure varies as the load is raised it is critical to determine an exact point to read the pressure every lift. This is done by either mounting a magnetically operated switch onto the machine frame and a magnet onto the moving lifting arms. When the switch is activated by the passing magnet the COMPULOAD 3000 reads the pressure and then converts the reading to a weight reading. To allow for lift speed variation the COMPULOAD 3000 system is lift speed compensated. Alternatively a reading is taken by raising the load to a given point and then lowering the load slightly. (Static mode). A third method of obtaining a weight reading is using the weight threshold method (forklifts only) whereas then load is lifted from the ground and as the pressure goes above a pre-set threshold a pre-determined delay occurs (lift time) prior to the pressure being read (average time) and a weight being displayed.

The displayed weight is then added to a total either automatically or manually.

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## Section 6

### **OPERATORS CONTROL PANEL AND LAYOUT**

- 6.1 The user is provided with the following displays and control keys.
- a. A two line sixteen character per line illuminated display which indicates weight, totals and other messages and prompts.
  - b. One LOAD key to allow manual addition of weights and confirmation of data entry.
  - c. One CLEAR key to clear totalised weights, exit programming modes and quit functions without saving.
  - d. One ZERO key to allow the offset of unwanted weights. ie. Build up in bucket or attachment changeover etc.
  - e. Three blue function keys to allow function settings to be accessed and altered
- 

## Section 7

### **METHODS OF WEIGHING**

- 7.1 **LIFT SPEED COMPENSATED** (used in most loader applications)  
Allows the load to be weighed as it is lifted and compensates for the pressure differences due to different lifting speeds. The weight can be added into the total either manually or automatically .
- 7.2 **TRIGGER MODE**  
Allows the load to be weighed as it is lifted similar to above but does not allow for variations in the lift speed. The weight can be added into the total either manually or automatically.
- 7.3 **STATIC MODE**  
A simple form of weighing suitable for forklift applications and loader applications whereas the load is lifted to a pre-determined point and a weight reading is taken.
- 7.4 **THRESHOLD MODE**  
Similar to 7.2 whereas a weight reading is obtained as the load is lifted (without lift speed compensation) however a pre-set pressure (FSD) instead of a switch is used to cause the COMPULOAD 3000 to begin taking weight sample readings. The weight can be added into the total either manually or automatically.

## INSTALLATION PROCEDURE FOR THE COMPULOAD 3000

### 8.1 FITTING THE COMPULOAD TO THE OPERATORS CABIN

With its compact design and light weight the COMPULOAD 3000 instrument can easily be mounted within the operators compartment . Select a suitable location and using the mounting bracket as a template drill two holes and mount the bracket into position.

#### **DO NOT DRILL OR WELD ONTO ANY PORTION OF A R.O.P.S.**

A bracket however can be bolted onto a lock striker plate, window frame aperture or turret support. If an optional printer is to be fitted allow for this now as the mounting brackets are identical. See page 12 for wiring of the COMPULOAD

### 8.2 FITTING THE PRESSURE TRANSDUCER

#### 8.2.1 PRECAUTIONS

Lower load area completely to the ground and stop the engine.

Operate the tilt, dump and lift levers to ensure no residual pressure is present in the hydraulic system.

Remove the hydraulic tank filler cap to remove any pressure from the oil reservoir tank.

Loosen any "easy to get at" fitting in the lifting circuit to ensure no pressure is present.

8.2.2 The transducer is to be fitted into the lifting circuit of the hydraulic system between the control valve and the lifting cylinders. If possible locate a fitting that can be removed to allow drilling and tapping. Failing this an adaptor can be fitted or the system will have to be entered by direct drilling and tapping. Enter the system by drilling (8.2mm) and tapping (1/8 BSPT). Ensure all swarf is removed and refit to machine. Connect appropriate fitting and hose to allow transducer to be mounted in a safe position. (usually under the operators cabin). Avoid areas that are subject to oil and water. Do not run cable through articulated area of the machine use hose in this area. Ensure the hose does not foul when machine is turned lock to lock. Connect the transducer to the hydraulic line. Start the motor and bleed the air from the line, then using spanners tighten the transducer. (See page 12 for wiring of the transducer)

## Section 8 Installing the COMPULOAD 3000 (cont.)

### 8.3 FITTING THE MAGNETICALLY OPERATED LIFT SPEED SENSOR SWITCH (Lift speed compensated and Trigger mode) (See page 10)

Firstly establish a weighing point. Raise the loader lifting arms up approximately horizontal to the lifting arm pivot points. Using a suitable bracket, mount the switch and magnet approximately **250mm - 750mm** out from the pivot points with **10mm - 15mm clearance** between the switch and the magnet. The magnet is to pass the switch on the blank face (opposite the cap) The magnet is to pass the switch on the lift cycle when the lifting arms are at approximately the horizontal point. (bucket at eye level from drivers seat) The switch is mounted with the cable and cable flange pointing downwards and usually slightly forward. The magnet is to be mounted at 90° to the centre line of the switch. See drawing next page Raise the lift arms up and down to ensure the switch and magnet do not foul the machine components before final welding. Once the switch is at its final position and all testing has been done tack weld the protector in position around the switch. Remove the switch, finish welding the protector in position then replace and secure the switch.

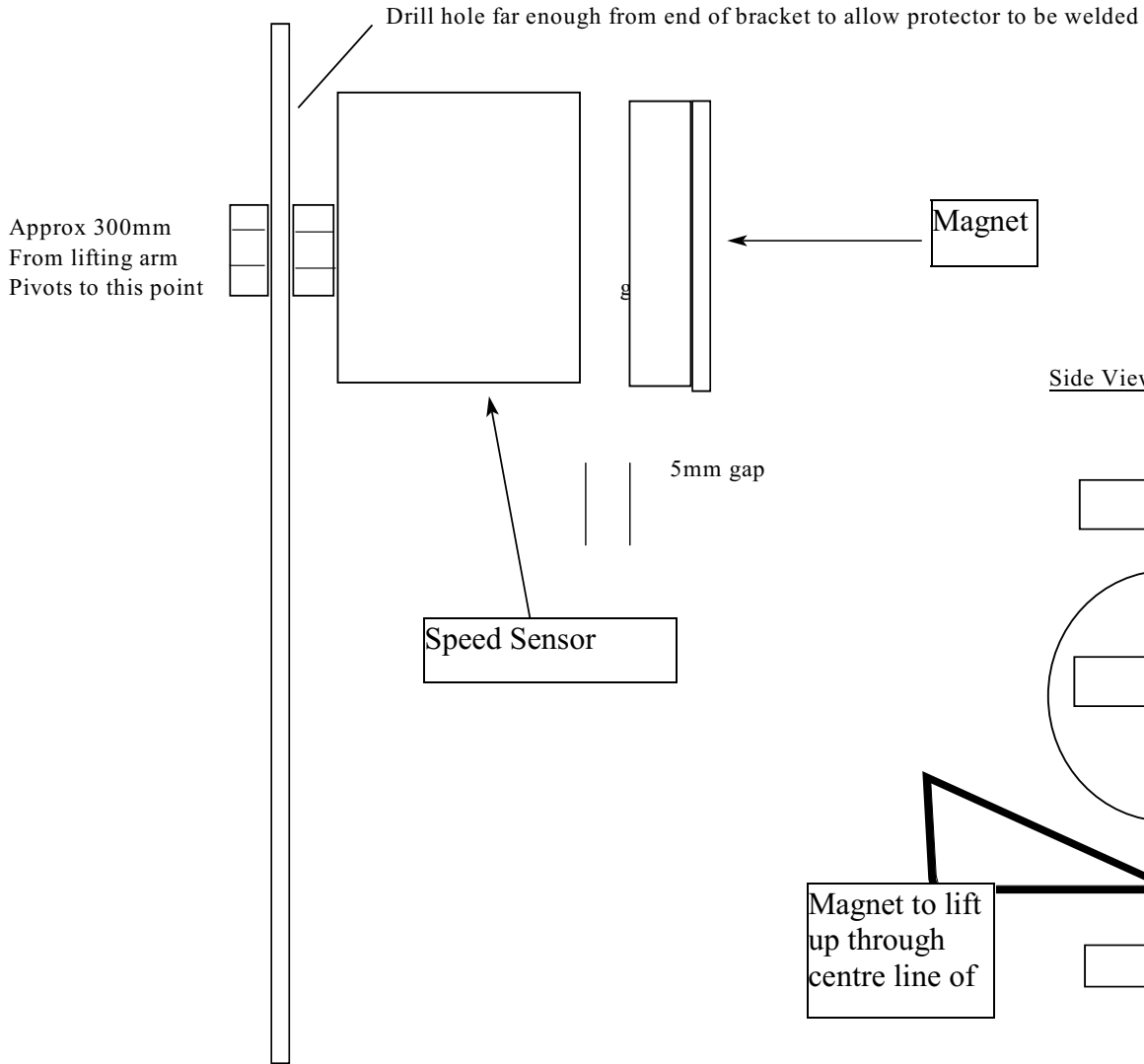
**NOTE** DO NOT weld across the top of the lifting arm. Wherever possible weld the magnet bracket to the side of the lifting arm or lengthways along the top of the lifting arm.

### 8.4 ESTABLISHING A WEIGHING POINT (Static mode)

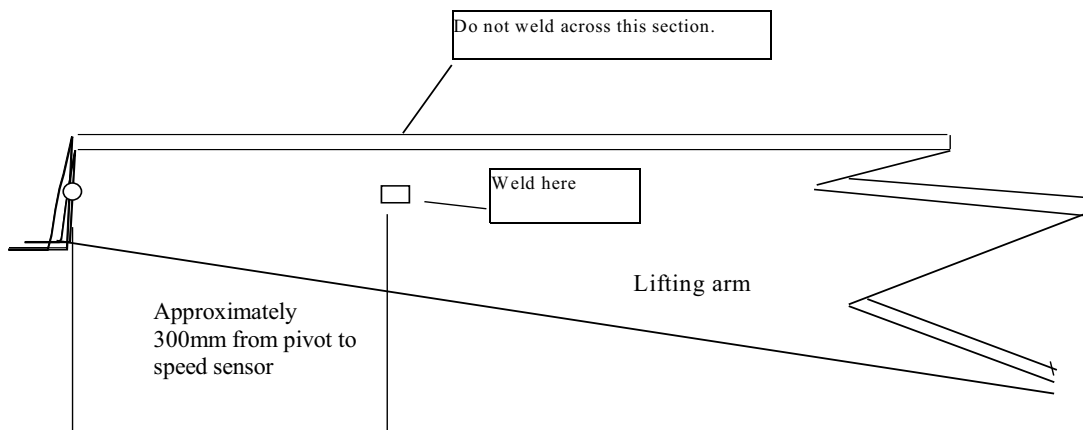
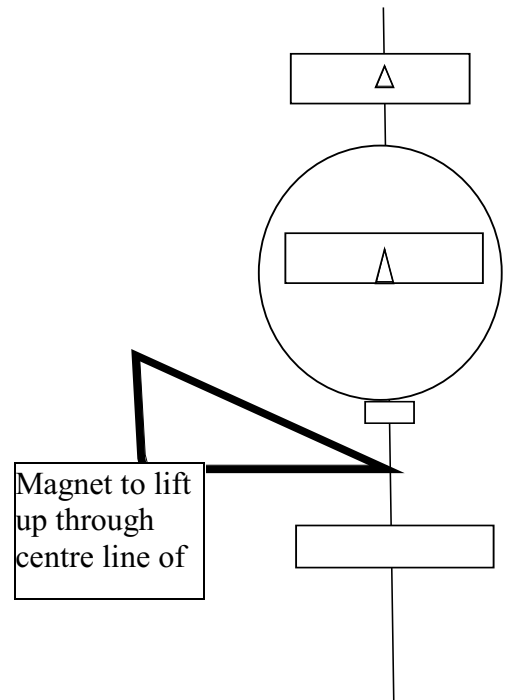
When weighing in the static method a predetermined weighing point must be established. This is done by either. a). welding a pointer to the machine or b) . adjusting the detent lift cutout so that the lifting arms stop lifting at a predetermined point. The weighing point should be when the loader arms are approximately horizontal to the loader arm pivot points.

## DRAWINGS SHOWING SPEED SENSOR AND MAGNET MOUNTING

Top view



Side View



## 8.5 WIRING OF THE COMPULOAD 4000 AND COMPONENTS

The COMPULOAD 3000 and COMPULOAD 4060 printer are designed to operate on either twelve (12) volt or twenty four (24) volt electrical systems with negative earth.

**CONTACT YOUR SUPPLIER PRIOR TO WIRING THE COMPULOAD TO A MACHINE WITH EXCESS OF 24 VOLT DC POWER SUPPLY**

- 8.5.1 Select a suitable location for the junction box (under the instrument panel dash panel or similar ) avoid wet, dusty or oily areas.
- 8.5.2 A moulded wiring harness from the COMPULOAD 3000 to the junction box is supplied. The cable is simply plugged into terminals at the junction box and COMPULOAD at the 15 pin connector. The chart on page 11 indicates the destination of each wire from the appropriate pin number  
See also wiring diagram on Page 11

**NOTE** Refer to diagram on Page 11

- 8.5.3 Connect the transducer to the appropriately marked terminals as follows

	<b>E+</b>	<b>S+</b>	<b>S-</b>	<b>E-</b>
<b>MAKE</b>				
Pioden	Red	Blue	Green	Yellow
LCM Systems	Red	Green	Yellow	Blue
Sentronics	Yellow	Red	Green	Blue
GemsWith removable lead	Red	Yellow	Blue	Green
Gems without lead	Make up as per Pioden			
Impress	Red	Green	Yellow	Blue

- 8.5.4 Connect the speed sensor switch to the appropriately marked terminals. (Brown to load 1 and blue to gnd)
- 8.5.5 If applicable connect the COMPULOAD 4060 printer cables to the appropriately marked terminals.
- 8.5.6 Finally connect the power supply cables to the appropriate junction box terminals.
- 8.5.7 Secure all cables with a cable tie through the location holes in the circuit board.
- 8.5.8 Cut a slot in the end of the junction box to accommodate the wire cluster. Enclose the circuit board into the box and seal the opening.

**NOTE: DO NOT USE SILASTIC OR OTHER ACID CURE SEALERS... USE NEUTRAL CURE SILICONE OR SIMILAR.**

- 8.5.9 Connect the power supply cables to the proposed power outlet. (Usually at the rear of the ignition switch.)  
Secure the box to the predetermined position with neutral cure silicone or similar adhesive.

**8.6 WIRING DESTINATION AND PURPOSE CHART**

PIN NO.	DESTINATION	PURPOSE
1	earth	ground for power, printer & lift speed sensor
2	printer	transmit data
3	printer	receive data
4	transducer	excitation -
5	transducer	excitation +
6	lift speed sensor	measure lift speed
7	remote load switch	manual load switch
8	ignition "ON"	turn scale & printer on & off with ignition
9	not used	not used
10	transducer	signal +
11	hold 1	not used
12	printer	clear to send data
13	transducer	signal -
14	not used	not used
15	power supply	24 or 12 volt power supply

## Section 9

### PREPARING THE COMPULOAD 3000 FOR CALIBRATION

Now that the COMPULOAD is installed and connected both to the electrical system and the hydraulic system the indicator should show a reading once the battery is connected.

The COMPULOAD 3000 is a very intelligent and precise instrument and will suit many applications consequentially has to be "set up" to suit the individual application. This section outlines the functions (hereafter referred to as FUNC) and their purpose. We have made every endeavour to describe the functions and their use in easy to follow instruction.. If in doubt leave the setting as it is, the instrument will most probably still work OK, then contact the supplier who will advise a possible more suitable setting.

NOTE 1 A full list of functions and their use is listed on page 32 of this manual.

NOTE 2 When the application is known the settings will be set as near as possible prior to leaving the factory.

The various functions are grouped and protected by either a two (2) digit LOW security code or a four (4) digit MANUFACTURERS security code. These codes are entered using the UP/DOWN keys.

NOTE 3 Holding the UP or DOWN key in allows the access code to be reached quickly. A short wait (two seconds) lets the cursor move to the right to allow numerals to be altered by lower increments

The functions are accessed by pressing FUNC and then LOAD until the required function is displayed. The operator accessible and low security functions must be selected and by-passed prior to having access to the following high security set up functions. Enter security codes when requested using the UP/DOWN keys (see Note 3 above) then press LOAD. All setup functions are High security number protected. The setup functions are as follows and are confirmed with the LOAD key. The CLEAR key allows exit without saving or altering the selection.

#### 9.1 PREPARATION FUNCTION CHART

	FUNC	PURPOSE
9.1.1	Set Trigger task	Determines trigger task options a. does nothing b. holds only c. holds & adds
9.1.2	Set alarm weight	Set target weight to be added to TOTAL display
9.1.3	Set tare	Allows a tare weight to be set. Is deducted from real weight
9.1.4	External Printer	Allows external printer (if fitted) to be turned on or off
9.1.5	Print grand total	Allows a progressive total to be printed on each ticket
9.1.6	Grand Total	displays progressive grand total
9.1.7	Print Cal Data	For diagnosis allows calibration to be printed

ENTER CODE 99

- 9.2.1 Overload Allowed Allows an amount over that programmed in 9.1.2 to be exceeded
- 9.2.2 Set Channel No Allows channel to be changed and a new set of calibration settings to be entered
- 9.2.3 Set Time Allows time to be set
- 9.2.4 Set Date Allows date to be set
- 9.2.5 Span adjustment Allows the span to be fine tuned
- 9.2.6 FSD Test For diagnosis, Allows FSD readings to be taken.

MANUFACTURERS CODE Obtain from supplier

- 9.3.1 Set Hold time Time in seconds weight will be displayed once obtained.
- 9.3.2 Set Load time Time in seconds allowed between each add of weights into total.
- 9.3.3 Set Need time Time in seconds amount of weight required to reach truck total will be displayed
- 9.3.5 Set Units Allows weight to be displayed in Kg/T/Lb or blank.
- 9.3.6 Set decimal point Allows decimal point position to be set.
- 9.3.7 Set Resolution Allows display to increase in the selected increment.
- 9.3.8 Set negative numbers Allows negative readings to be turned ON/OFF.
- 9.3.9 Set Stability Only accessible in "static" weighing mode (see 9.1.14 weighing method) Causes display to blank out whilst pressures are changing or unstable. 0 = turned off. 1 = max. 100 = min.
- 9.3.10 Set filter This is digital filtering and removes unwanted signal spikes 0 = lowest 8 = highest
- 9.3.11 Set Sample rate Determines the number of sample readings taken per second in multiples of ten (10 = lowest, 100 = highest).



## SECTION 10

### ALLOWING FOR LIFT SPEED COMPENSATION

NOTE:- 10.1, 10.2, 11.1, 11.2, 11.3 are only accessible in "lift speed compensated" weighing mode (see 9.3.14)

- 10.1 Set No. of lift speed Determines the number of speed changes when setting the lift speed compensation gain. (the number of speed changes from the slowest speed to the fastest speed)  
The least number of lift speed changes = 2  
The most number of lift speed changes = 6.  
Recommend 5 for most loaders
- 10.2 LSC speed Determines the maximum allowable speed change change % at any one lift speed when setting the lift speed compensation gain lowest = 0% highest = 50%. Recommend 10%

## SECTION 11

### CALIBRATING THE COMPULOAD 3000 and SETTING THE LIFT SPEED COMPENSATOR. (Lift Speed Compensated Mode)

NOTE 1:- Up to this stage the FUNCTIONS are set to suit your particular application. They were set by your supplier or by yourself on the recommendations of your supplier. If in Lift Speed Compensation mode follow the instructions from 11.1 to 11.5 carefully. They are critical for accurate weighing and repeatable readings.

NOTE 2: When lifting the bucket up in the following procedures it is important to

- 4 Have the machine close to normal operating temperature
- 5 Raise the bucket from ground level past the compensating switch smoothly
- 6 Open the lifting valve fully.
- 7 Have the machine on level ground.

NOTE 3: Basically in the following procedures we are going to raise the bucket at five different speeds (as selected in 10.1 ) three times at each speed both with an empty bucket and. then with a loaded bucket. The lifts are to be spread out between the slowest speed at slightly above idle and the fastest speed at just below full revs. This sets the lift speed zero and gain compensator also the calibration zero. After this we will apply the known weight and lift it up three or four times to do the weight calibration

NOTE 4: The change in pressure (Z.ZZ ) referred to in the instructions below should ideally not exceed 1% A reading in excess of 3% indicates a problem and the supplier should be contacted.

## 11.1

Set LSC zero Lift Speed Compensation Zero Calibration Select **Yes** /No with UP DOWN keys Press LOAD A Function required to set the Lift Speed Compensation Zero Values. When entered will display

**“LSC Zero 1”**  
**“Waiting for lift”**

NOW CARRY OUT THE FOLLOWING STEPS

- a. Raise the empty bucket up past the electronic lift speed sensor at the lowest practical speed. (just above idle) The reading will change to  
**“LSC Zero1 = XX”**  
**“0.00% SPEED XX”** (XX = the lifting speed)
- b. Lower bucket to ground then lift at the same speed again. The reading will change to  
**“LSC Zero1 = XX”**  
**“Z.ZZ% SPEED XX”** (Z.ZZ% = the change in pressure)  
NOTE:- If this lifting speed varies in excess of the setting referred to in 10.1 The display will show  
**“LIFT SPEED > XXX %”** (XXX being greater than the difference allowed in 10.2)  
**“SPEED ERR> 10%”**  
Then show the speed lifted. Adjust lifting speed and lift again  
Repeat step b three or four times.
- d. Press LOAD key  
display will change to  
**“LSC Zero 2 ”**  
**“Waiting for lift”**
- e. Increase the lifting speed and raise the load up past the electronic speed sensor at the next highest lift speed . The display will change to  
**“LSC Zero 2 = XX”**  
**“0.00% SPEED XX”**
- f. Lower bucket to ground again then lift at the same speed again. The reading will change to  
**“LSC Zero 2 = XX”**  
**“Z.ZZ% SPEED XX”**  
NOTE:- If this lifting speed varies in excess of the setting referred to in 10.1 the display will show  
**“LIFT SPEED > XXX%”** (XXX being greater than the difference allowed in 10.2)  
**“SPEED ERR> 10%”**  
Then show the speed lifted. Adjust lifting speed and lift again
- g Repeat step f two or three times.
- h Press LOAD key.

REPEAT THESE STEPS FOR THE NUMBER OF LIFT SPEED CHANGES SELECTED IN 10.1. THE LAST SPEED BEING THE FASTEST PRACTICAL LIFTING SPEED, SHOULD BE JUST SHORT OF FULL REVS.

When LOAD is pressed after the last speed is reached the COMPULOAD will proceed to the next Function

11.2 **“CALIBRATE ZERO  
NO / YES**

This step is not required if the lift speed zero compensation ( 11.1 ) has just been set. Select **NO**. Press **LOAD** Display will go to

11.3 **Lift Speed Compensation Gain Calibration. Select Yes /No with UP DOWN keys  
Press LOAD**

Lift speed compensation gain is ideally preformed with as near as possible to the normal load being lifted. Otherwise use as much weight as possible.

When entered 11.3 will display

**“LSC Gain 1”  
“Waiting for lift”**

**NOW CARRY OUT THE FOLLOWING STEPS**

- a. Raise the load up past the electronic lift speed sensor at the lowest practical speed. (just abovr idle) The reading will change to

**“LSC Gain 1 = XX”  
“0.00% SPEED XX”** (XX = the lifting speed)

- b. Lower load to ground again and lift at the same speed again. The reading will change to

**“LSC Gain 1 = XX”  
“Z.ZZ% SPEED XX”** Z.ZZ% = the change in pressure

NOTE:- If this lifting speed varies in excess of the setting referred to in 10.2 The display will show

**“LIFT SPEED > XXX %”** (XXX being the difference  
**“SPEED ERR> 10%”** difference allowed in 10.2)

Then show the speed lifted. Adjust lifting speed and lift again  
Repeat step b three or four times.

- c. Repeat step b three or four times.  
d. Press **LOAD** key. The display will change to

**“LSC Gain 2 ”  
“Waiting for lift**

- e. Increase the lifting speed and raise the load up past the electronic speed sensor at the next highest lift speed . The display will change to

**“LSC Gain 2 = XX”  
“0.00% SPEED XX”**

- f. Lower load to ground again and lift at the same speed again.  
The reading will change to

**“LSC Gain 2 = XX”  
“Z.ZZ% SPEED XX”**

NOTE If this lifting speed varies in excess of the setting referred to in 10.2 the display will show

**“LIFT SPEED > XXX%”** ( XXX being the difference  
**“LAST WT IGNORED”** allowed in 10.2)

**REPEAT THESE STEPS FOR THE NUMBER OF LIFT SPEED CHANGES  
SELECTED IN 10.1. THE LAST SPEED BEING THE FASTEST PRACTICAL  
LIFTING SPEED. SHOULD BE JUST SHORT OF FULL REVS.**

When **LOAD** is pressed after the last speed is reached the **COMPULOAD** will proceed to the next Function

## 11.4

### CALIBRATING THE COMPULOAD 3000 (Lift Speed Compensated Mode)

**Calibrate Gain** Select **Yes** /No with UP DOWN keys Press LOAD

Display will show    **“ENTER WEIGHT”**  
                                  **“0.00”**

Key in Proposed calibration weight Press "LOAD" Display will show .  
                                  **“Gain Calibration”**  
                                  **“Waiting For Lift”**

Apply the Calibration weight and raise it up past the electronic switch at a normal working speed. Display will show

**“Gain Calibration”**  
                                  **“ Speed = XX”**

Raise the calibration weight up past the Electronic switch a series of lifts (three or four times) Press "LOAD"

Then show

**“Check Cal”** No / Yes. Select **“NO”** Press LOAD

Display will show  
                                  **“Backup Cal**  
                                  **“NO / YES”**

When final calibration has been achieved it is recommended that the calibration values be stored. Select **YES** and press LOAD Display will show

## 11.5

**“Restore Cal”**  
                                  **“NO / YES”**

Select **NO**

Display will show.    **“Forced Zero Time”**  
                                  **“0 Mins”**

Set as Follows

0 =    Forced zero not requested

1=    Zero requested when first turned on only (recommended)

>1 =   Zero requested at selected number of minutes

Make selection

Press LOAD then CLEAR for two seconds to exit calibration mode

Section 12  
**SETTING THE ZERO AND CALIBRATING**  
**Trigger mode**

12.1 Setting the ZERO reference point.

12.1.1 A Function to establish a ZERO reference point to offset unwanted weights (Bucket etc.)

Display will show     **“CALIBRATE ZERO”**  
                                  **“NO”**

Select YES Press LOAD Display will show  
                                  **“Calibrate Zero”**  
                                  **“Waiting For Lift”**

Raise empty bucket up past the Electronic switch at a smooth steady speed.  
Display will show..

**“ZERO End”**

Then proceed to 12.2

12.2 Setting the calibration

**“Calibrate Gain”**  
**“NO”**

Select YES. Press LOAD

12.2.1 Apply the Calibration weight and raise it up past the electronic switch at a smooth steady working speed. Display will show.

Display will show     **“Calibrate Gain”**  
                                  **“Waiting for Lift”**

Display will show     **“ENTER WEIGHT”**  
                                  **“0.00”**

Enter calibration weight applied with UP/DOWN keys Press LOAD

Display will show.    **“CALIBRATION END”**

Then Show    **“Check Cal”** No / Yes. Select **“NO”** Press LOAD

Display will show            **“Backup Cal**  
  **“NO / YES”**

When final calibration has been achieved it is recommended that the calibration values be stored. Select **YES** and press LOAD Display will show

**“Restore Cal”**  
**“NO / YES”**

Select **NO** Press LOAD

Display will show.    **“Forced Zero Time”**

## **“0 Mins”**

Set as Follows

0 = Forced zero not requested

1 = Zero requested when first turned on only (recommended)

>1 = Zero requested at selected number of minutes

Make selection

Press LOAD then CLEAR for two seconds to exit calibration mode



**“Backup Cal  
“NO / YES”**

When final calibration has been achieved it is recommended that the calibration values be stored. Select **YES** and press **LOAD** Display will show

**“Restore Cal”  
“NO / YES”**

Select **NO** Press **LOAD**

Display will show. **“Forced Zero Time”  
“0 Mins”**

Set as Follows

0 = Forced zero not requested

1= Zero requested when first turned on only (recommended)

>1 = Zero requested at selected number of minutes

Make selection

Press **LOAD** then **CLEAR** for two seconds to exit calibration mode

Section 14  
**CALIBRATING THE COMPULOAD 3000**  
**Threshold Mode**

(Not normally used on loaders)

NOTE 1 Threshold weighing requires the weight to be raised with engine revs at idle or slightly above

NOTE 2 The settings shown below are sample only and will require some alteration to suit the application

14.1 **SETTING THE THRESHOLD**

Using the Set Input FSD function determine the %FSD required to hold the forks up in a static position (ie. 6%)  
Determine the FSD% required to raise the forks without any load smoothly up at low engine revs. ie 12%  
Set the “threshold” between these readings (ie 8-10%).

14.2 **SETTING THE AVERAGING TIME**

Determine the time you require the Compuload to take sample readings.  
Usually 1-2 seconds

14.3 **SETTING THE LIFT TIME**

Determine how long it takes to raise the load from rest after lifting the forks from the ground. Set the “Lift time” slightly above this reading.

14.4 **SETTING THE ZERO**

Display will show **“Calibrate Zero”**  
**“No”**

Select YES Press LOAD

Lower the forks to the ground (below the threshold) then raise them up (through the threshold and lift time) at the pre-determined lifting speed.  
Display will show **“Zero End”** Then show

14.5 **SETTING THE WEIGHT CALABRATION**

**“CalibrateGain”**  
**“No”**

Select YES Press LOAD Display will show **“Calibrate Gain”**  
**“Waiting for Lift”**

Lower the forks to the ground (below the threshold) Apply Load. Then raise them up (through the threshold and lift time) at the pre-determined lifting speed.

Display will change to **“Enter Weight”**  
**“ X.XX “**

Key in Calibration Weight with UP/DOWN Keys

Press "LOAD" Key. Display Will Show.

**“CALIBRATION END.”**

Then Show **“Check Cal”** No / Yes. Select **“NO”** Press LOAD

Display will show

**“Backup Cal  
“NO / YES”**

When final calibration has been achieved it is recommended that the calibration values be stored. Select **YES** and press LOAD Display will show

**“Restore Cal”  
“NO / YES”**

Select **NO** Press LOAD

Display will show. **“Forced Zero Time”  
“0 Mins”**

Set as Follows

0 = Forced zero not requested

1= Zero requested when first turned on only (recommended)

>1 = Zero requested at selected number of minutes

Make selection

Press LOAD then CLEAR for two seconds to exit calibration mode

## Section 15

### **PRINTER FUNCTION CHART (only applies if printer fitted)**

Following the calibration backup and restore functions the next series of functions allow for printer steep. They will be pre-set to suit the COMPULOAD 4060 Printer or other printer if supplied with the COMPULOAD 3000. Should another printer be used refer to the Printer manual for setup configuration.

Use UP/DOWN keys to alter if required and LOAD to confirm. CLEAR allows exit function mode without saving last alteration.

	FUNC	PURPOSE
15.1	Printer Time Delay	This is the time delay the printer requires to print a line of text. If characters are garbled mixed up or missing up increase this reading. If excessive delay between lines decrease this reading.
15.2	Line feed Between Total	Determines how far the paper comes out after each printout.
15.3	Printer CR or LF	Determines the type of command to the printer to cause the paper to come out after each printout. Options are CR , LF , CR and LF. Use LF
15.5	Printer Baud Rate	Determines the speed data in sent to the printer The COMPULOAD and printer speeds must be compatible. Use 9600
15.6	Printer Header One	Allows the first line of the printer heading to be entered. Up to sixteen (16) characters.
15.7	Printer Header Two	Allows the second line of the printer heading to be entered. Up to sixteen (16) characters.

This completes the Printer function setups. After LOAD is pressed following printer header two Press CLEAR to exit function mode.



## BASIC WEIGHING AND TOTALISING

16.2 (Static weighing method)

NOTE 1 All reference to weighing position refers to raising the bucket fully crowded up to a pre-determined position and lowering slightly and slowly.

The pre-determined position may be determined by either a pointer or having the lift detent cut-out set at a given position.

NOTE 2 When first turned on and sometimes through the operation a message will appear showing **“Zero Required”** In this instance proceed as in 2a below

2.a With the bucket empty raise up to the weighing position.  
(If other than 0.00 (zero) is displayed press ZERO key for two seconds.

2.b Apply the load and raise up to the weighing position. (the weight will be displayed on the top line of the display)

2.c Press LOAD to add weight into the 'total' display.

NOTE 3 For further weighings carry out steps 2.b & c

NOTE 4 By pressing FUNC then LOAD twice allows operator to enter target weight to load onto truck. Compuload will show "enter alarm weight"  
Use UP/DOWN keys to enter truck capacity. 0.00 turns target weight alarm off Press LOAD to save setting

(as load is raised in threshold weighing mode)

**NOTE 1**

Threshold weighing requires the weight to be raised with engine revs at idle or slightly above

**NOTE 2**

When first turned on and sometimes through the operation a message will appear showing **“Zero Required”** In this instance proceed as in 1a below

- a. With the forks empty and mast upright deplete pressure from system by lowering the forks to the ground.
- b. Raise forks up a slow steady lifting speed until weight is displayed. If reading is other than 0.00 (zero) press ZERO for two seconds to zero display.
- c. Apply the load. Deplete the pressure and raise up at a slow steady lifting speed. Display will show "weighing" then the weight will be displayed for a pre-determined period (usually 8 seconds)
- d. Press LOAD to add weight into the 'total' display.
- e. Press CLEAR for two seconds when required total is reached. This returns TOTAL display to 0.00 ready for the next .

**NOTE 3**

For automatic totalising press FUNC key once select "hold & add" using the UP/DOWN keys then press LOAD to save selection. Then press CLEAR to exit This allows automatic adding of the weight to the 'total' as it is weighed. **“hold & add” option is not normally used in threshold weighing mode.**

This function allows the sensor to perform tasks as follows.

- a        **HOLD & ADD**    Weight is "held" on display for a pre-determined period.  
(Not normally used    Weight is automatically added into the TOTAL display  
in threshold weighing
- b        **HOLDS ONLY**    Weight is "held" on display for a pre-determined period.  
Weight can be added into TOTAL display with LOAD  
key.
- c        **DOES NOTHING**        No action from lift sensor.  
Use UP/DOWN keys to scroll through options. Press LOAD to save selection.

**NOTE 4**

After LOAD is pressed when trigger task is selected an option allows the operator to enter target weight to load onto truck. COMPULOAD will show “enter alarm weight”  
Use UP /DOWN keys to enter truck capacity. 0.00 turns target weight alarm off. Press LOAD to save setting. Press CLEAR for two seconds to exit function mode

**NOTE 5.**

Weight results can generally be improved by using care whilst weighing.

- Lift the load at a slow smooth speed.
- Have machine stationary whilst weighing.
- Regularly check the zero. (Step 1)

Section 17  
**OPTIONS AVAILABLE**

The following options are available to the operator if required and as required. They are entered by pressing FUNC key. Use UP/DOWN keys to alter setting and then by pressing LOAD saves the setting and proceeds to the next function. Pressing CLEAR exits the function mode without altering the setting.

**17.1 USER ACCESSIBLE OPTIONS (unprotected)**

**Press FUNC** “External trigger task” (Not normally used in static mode)  
Allows the external trigger to perform the following tasks

- a) **HOLD and ADD** Weight is “held” on display for a pre-determined period. Weight is automatically added into the TOTAL display.
- b) **HOLD ONLY** Weight is “held” on display for a pre-determined period. Weight can be added into the TOTAL display with LOAD key
- c) **DOES NOTHING** No action from lift sensor.

Use UP/DOWN keys to scroll through options. Press LOAD to save selection.

- 17.1.1 **First Press LOAD** “Alarm Weight”  
Allows operator to set a target weight to cause an alarm to sound when target “Total” is reached. Set at **zero** to turn alarm weight “off”. Use UP/DOWN to set required weight  
Press LOAD to confirm
- 17.1.2 **Second PRESS** “Tare Weight”  
Allows a ‘tare’ weight to be entered . Weight is displayed in NETT mode.
- 17.1.3 **Third PRESS** “Optional Printer”  
Turns external printer (if fitted) ON / OFF. Use UP / DOWN keys to select. Press LOAD to save selection.
- 17.1.4 **Fourth PRESS** “Grand Total Print”  
Allows a progressive grand total to be printed on each ticket (if printer fitted) Use UP / DOWN to select. Press LOAD to save selection.
- 17.1.5 **Fifth PRESS** “View Grand Total”  
Allows operator to “view” progressive day total.  
When weight is displayed it can be reset with ZERO key.

## OPTIONS AVAILABLE

NOTE Codes and values are entered using the UP/DOWN keys. Press and hold the UP key numbers will go 0-10 in units 10-100 by tens 100-1000 by hundreds. When number under required amount is reached wait 2 seconds and cursor will jump one digit to right allowing required number to be reached.

### 1.16.2 CODE PROTECTED OPTIONS

Requires a code to be entered to allow access

#### 16.1.1 **Sixth PRESS** “Overload Allowed”

Allows alarm weight set above (3.2) to be exceeded by a percentage. Ie. An overload allowed set at 1% would allow a 10.00t load to totalise to 10.10 before alarm sounds

#### 17.2.2 **Seventh PRESS** “Set Channel”

Allows channel to be changed to allow the COMPULOAD 3000 to be re-fitted to another machine or weigh in a different method.

Use UP/DOWN to select Channel number Press LOAD.

#### 16.1.5 **“Fine Adjust of Span”**

Allows fine adjustment of accuracy of weighing system. Can be increased or decreased by a percentage as required. Use UP / DOWN to alter.

Press LOAD to save.

#### 16.1.6 **“Set Time”**

Press FUNC then use UP/DOWN keys to set the time. Press LOAD to save.

#### 16.1.7 **“Set Date”**

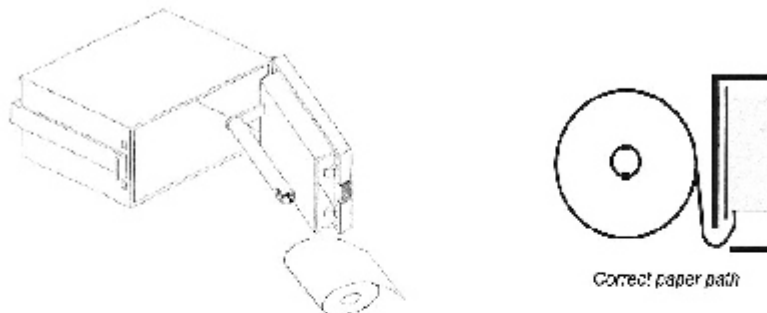
Press FUNC then use UP/DOWN keys to set. Press FUNC to save.

## Power On Self Test

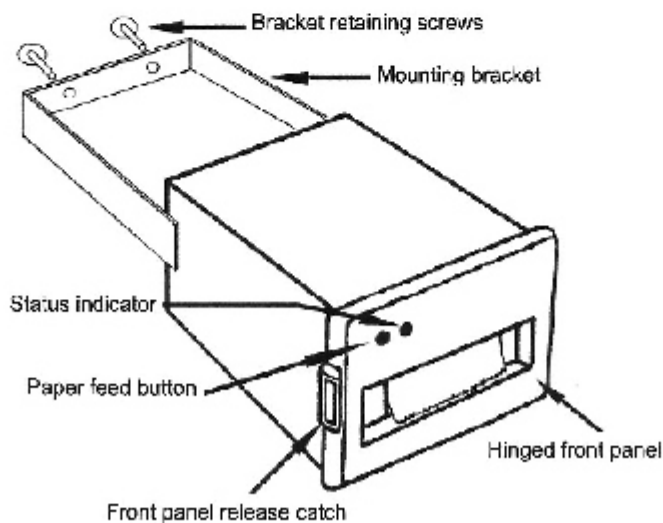
The self test procedure is initiated by applying power to the printer while the paper feed button is depressed. When the paper feed button is released a test print will be produced.

## Replacing Paper Roll

Access to the printer for changing the paper roll is provided by a hinged front panel. The spring-loaded catch on the left hand side of the printer front panel should be depressed to release the front panel. The paper roll carrier is mounted on the rear of the printer front panel and will swing out from the main body for ease of roll changing.



The printer incorporates an automatic paper feed facility. With a new paper roll mounted on the carrier and with a clean straight edge to the paper, present the paper to the entry point at the lower edge of the mechanism. The paper will be sensed by the mechanism and automatically feed through into a position ready for printing.



Section 18 Printer Information

Section 19  
FUNCTION LIST FOR THE COMPULOAD 3000 Ver CL3v1.16

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The Functions listed hereunder are listed in the order they are accessed. They are accessed by pressing the FUNC key then the LOAD key which allows the setting to be saved and move on to the next function. Use the UP/DOWN key to alter the setting then LOAD to save selection. Pressing the CLEAR key allows exit of the function mode without altering the last selection. Enter the security codes when requested with UP/DOWN keys.

FUNC DESCRIPTION	PURPOSE
19.1 Trigger Task	(not applicable in static weighing) ( See section 7) Options are a. DOES NOTHING No action b. HOLDS ONLY Weight is "held" on display for a pre-determined period. Weight can be added to TOTAL display with LOAD key. c. HOLDS & ADDS Weight is "held" on display for a pre determined period. Weight is automatically added to TOTAL display
19.2 Set Alarm Weight	Allows operator to set a target weight to cause an alarm to sound when target "Total" is reached. Set at <b>zero</b> to turn alarm weight "off".
19.3 Set Tare	Allows a pre-set tare to be deducted from actual weight Key in required tare. Weight will be displayed in "NETT" mode Not normally used on loaders
19.4 External Printer	Allows external printer if fitted to be turned on or off. Leave turned OFF if no printer fitted.
19.5 Grand Total ticket Print	Allows a progressive grand total to be printed on every printout if required.
19.6 Grand Total	Allows viewing of grand total
19.7 Print Cal Data	Allows calibration data to be printed for diagnosis purposes
19.8 Enter Code	Enter low security code here
19.9 Set Overload Above Total	Allows target weight to be exceeded by a percentage amount
19.10 Set Channel	Allows channel to be changed when indicator is changed from one machine to another or set to weigh in a different method. NOTE:- Indicator has to be recalibrated in different channel.

Section 16 (Cont)

**COMPULOAD 3000 FUNCTION LIST**

FUNC	DESCRIPTION	PURPOSE
19.11	Set Time Press	Press FUNC Key in Hours, Press LOAD, Key in Minutes, LOAD, Key in Seconds Press Load twice
19.12	Set Date	Press FUNC key in Year, Press LOAD, Key in Month, Press LOAD, Key in Date, Press LOAD twice.
19.13	Span Adjustment	Allows fine adjustment of span Key in required % span adjustment
19.14	FSD Check	For dignosis purposes
19.15	Manufacture Code	Enter high security code here.
19.16	Set HOLD Time.	To set in seconds the period the weight is 'held' on the display When sensor is tripped (Trigger mode of weighing)
19.17	Set LOAD Time	To set a period in seconds before another weight can be added into the TOTAL display.
19.18	Set NEED Time	To set in seconds the period the display will show the weight required to reach the Total Overload Alarm.
19.19	Set Display Units	To allow the weight to be displayed in Kg, t, lb, or blank.
19.20	Set Decimal Point	Allows decimal point to be set in one, two, or three position.
19.21	Set Display Res	Allows the display to alter in increments of the selected resolution.
19.22	Display Neg. Num.	Allows the display of readings less than the zero reference to be displayed or not. If turned off only a minus sign shows for negative readings.
19.23	Set Stability	<b>Only applies in Static weighing mode.</b> Allows the display to blank out whilst the pressures are changing or unstabilised. The lower the setting the more stable the pressure has to become before the weight is displayed.
19.24	Set Filter	This is digital filtering and is designed to filter out unwanted signal spikes. Optimum setting is 5
19.25	Set Sample Rate	This determines the number of sample readings taken per second.

Section 19 (Cont)

## COMPULOAD 3000 FUNCTION LIST

FUNC	DESCRIPTION	PURPOSE
19.26	Set Input FSD	Shows the Max Millivolt input allowed. With machine fully loaded set INPUT to allow Full Scale Deflection (FSD) to highest reading without going into overrange. (-----)
19.27	Set Max Capacity	Sets a maximum capacity to weigh up to 0.00 turns mac capacity off
19.28	Set Weighing Mode	Allows the method of weighing to be determined The options are
a.	LIFT SPEED COMPENSATED	(used in most loader applications) Allows the load to be weighed as it is lifted and compensates for the pressure differences due to different lifting speeds. The weight can be added into the total either manually or automatically .
b.	TRIGGER MODE	Allows the load to be weighed as it is lifted similar to above but does not allow for variations in the lift speed. The weight can be added into the total either manually or automatically.
c.	STATIC MODE	A simple form of weighing suitable for forklift applications and loader applications whereas the load is lifted to a pre-determined point and a weight reading is taken.
d.	THRESHOLD MODE	Similar to 7.2 whereas a weight reading is obtained as the load is lifted (without lift speed compensation) however a pre-set pressure (FSD) instead of a switch is used to cause the COMPULOAD 3000 to begin taking weight sample readings. The weight can be added into the total either manually or automatically.
19.29	Set Trigger Task	Same as Trigger task 19.1
19.30	Set Weight Threshold	Only accessible in Threshold weighing mode. This is the percentage of F.S.D. the pressure has to go below and then exceed to allow the threshold weighing method to begin. (See 19.28 d)
19.31	Averaging Time	This is the period in seconds the COMPULOAD takes sample readings in all weighing methods The optimum setting is 0.5-1.5 seconds

Section 19 (Cont)

**COMPULOAD 3000 FUNCTION LIST**

FUNC	DESCRIPTION	PURPOSE
19.32	Set Lift taking	This function is normally only used in threshold mode. If required this is a time delay time in seconds after the speed sensor switch is tripped or the threshold is exceeded that readings are ignored prior to the average time (16.23) effect.
19.33	Set No of Speeds	Lift Speed Compensated mode only. Set number of lift speeds to calibrate Lift Speed Calibration
19.34	LSC Speed Change	Lift Speed Compensated mode only. Determines the maximum speed change allowed at any one speed series of lifts.
19.35	Set LSC Zero	Lift Speed Calibration mode only. Allows the Lift Speed Compensation Zero and Calibration Zero reference point to be set
19.36	Calibrate Zero	Not required if 19.35 has been carried out. Allows the Zero Calibration point to be set
19.37	Set LSC Gain	Lift Speed Calibration mode only. Allows the Lift Speed Compensation Gain to be set
19.38	Calibrate Gain	Allows the weight calibration of the Compuload indicator to be set
19.39	Check Cal	Allows the calibration to be checked prior to exiting the calibration mode. Reading is in increments of "1"
19.40	Backup Cal	Allows for calibration and function values to be backed up
19.41	Restore Cal	Allows for the calibration values backed up to be restored.
19.42	Forced Zero Time	When set forces the operator to check the zero as below 0 = Forced zero not requested 1 = Zero requested when first turned on only (recommended) >1 = Zero requested at selected number of minutes
19.43	Printer Time Delay	This is the time delay the printer requires to print a line of text. If characters are garbled mixed up or missing increase this reading. If excessive delay between lines decrease this reading.
19.44	LF Between Total	Determines how far the paper comes out after each printout.
19.45	Printer CR or LF	Determines the type of command to the printer to cause the paper to come out after each printout.

Section 19 (Cont)

## COMPULOAD 3000 FUNCTION LIST

FUNC	DESCRIPTION	PURPOSE
19.46	Printer Baud Rate	Determines the speed data in sent to the printer. The COMPULOAD and printer speeds must be compatible.
<p>NOTE For functions 19.47 to Function 19.54 Press FUNC then enter character using UP/DOWN keys. Press FUNC enter next character. (Use blank space to centralise the message) Press FUNC. Press LOAD to move onto next line or function.</p>		
19.47	Printer Header One	Allows the first line of the printer heading to be entered. Sixteen (16) characters.
19.48	Printer Header Two	Allows the second line of the printer heading to be entered. Sixteen (16) characters.
19.49	Wake up message message 1 line 1	Allows message one line one of the indicator wake up to be programmed.
19.50	Wake up message message 1 line 2	Allows message one line two of the indicator wake up message to be programmed.
19.51	Wake up message message 2 line 1	Allows message two line one of the indicator wake up message to be programmed.
19.52	Wake up message message 2 line 2	Allows message two line two of the indicator wake up message to be programmed.
19.53	Wake up message message 3 line 1	Allows message three line one of the indicator wake up message to be programmed.
19.54	Wake up message message 3 line 2	Allows message three line two of the indicator wake up message to be programmed.
19.55	Ignition wake up Delay	Allows delay in obtaining a reading when ignition is turned on. Prevents start up electrical spikes affecting the readings.