Mk4-M Weigh Scale

Operator Guide

Mk4-M Weigh Scale **Introduction**

WARNING

WARNING: If the Weight Scale and forklift truck is used in conjunction with a quick release attachment then it is the operators responsibility to recalibrate the weight scale to suit the environment to which the forklift is being used at the time. Overload through incorrect calibration may result in injury or death. If in doubt DO NOT operate the equipment, contact a supervisior or your dealer for advise.

IMPORTANT: The Mk4-M weighing systems uses a Pressure Transducer as a means of assessing a load weight. Weighing systems based on the measurement of hydraulic pressure are not accurate enough to display weights in less than 5-10 kilogram increments. If you require a certified weighing device that is accurate to the smallest decimal then you need one of our loadcell activated measuring systems.

About this Guide The information in this guide is intended to simplify operator understanding about effective and safe use and operation. Read this guide thoroughly before operating the weigh scales. Be sure you know and understand all operating procedures and safety precautions. If you have any questions, or don't understand a procedure, ask your supervisor

Emphasize Safety! Most accidents are caused by operator carelessness or misjudgement. You must watch for hazardous situations and correct them.

Display Functions The Mk4 display unit is a simple to use affordable weighing system that is packed with a lot of computing power. It is a suitable replacement for the old style dial analogue weight scale. The brightly lit LED display is easy to read in all types of environments.

The Mk4-M Guage functions
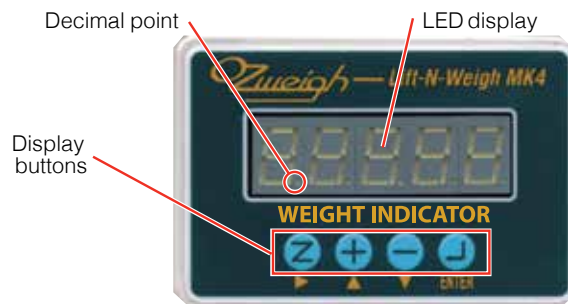
| Display Button	Short Key-Press	Entry Mode
Z ▶	Zero Setting - Manually zeros the display	Shift to the next digit on the right
+ ▲	Weighed load is added to total weight.	Increase the value of the digit flashing
— ▼	Subtrack load weight from total weight.	Decrease the value of the digit flashing
↵ ENTER		Enter (accept value)

Mk4-M Weigh Scale   *Product Disclaimers*

When using the Mk4 weigh scales, please observe carefully the
instructions and guidelines contained in this manual.
Always perform each step in sequence. If any of the
instructions are not clear, contact Ozweigh Innovations or your dealer.

- All safety regulations that apply on the truck remain valid and unchanged.
- No weighing operations are allowed if any persons or objects are in the vicinity; around, under or close to the load.
- Peco Technologies is not responsible for any physical harm done to the operator because of the presence of the indicator in the cabin.
- Any modifications done to the system must be approved in writing from the supplier, prior to any work being completed.
- It is the sole responsibility of the purchaser to train their own employees in the proper use and maintenance of this equipment.
- Do not operate this unit unless you have been fully trained of its capabilities.
- Check the accuracy of the scale on a regular basis to prevent faulty readings.
- Only trained and authorized personnel are allowed to service the scale.
- Always follow the operating, maintenance and repair instructions of this truck and ask the supplier when in doubt.
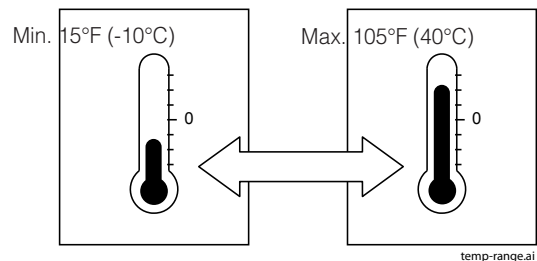- Peco Technologies is not responsible for errors that occur due to incorrect weighings or inaccurate scales.

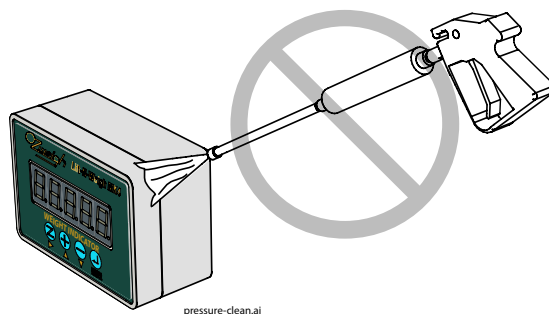Caution:
Do not stand under load

load-safety.ai
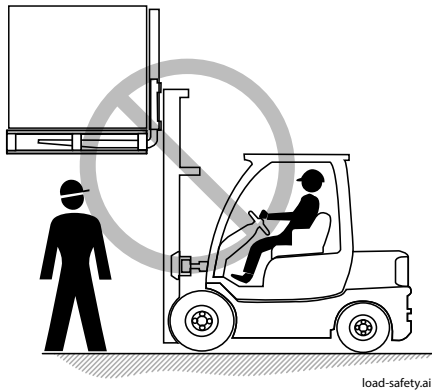
Caution:
Do not expose unit to temperatures
greater than those shown

Min. 15°F (-10°C)   0   Max. 105°F (40°C)   0

temp-range.ai

Caution:
Do not clean unit with high pressure sprayer

pressure-clean.ai

Un-Boxing your Mk4-M Weigh Scale

In this universal kit you will find the essential parts to install this Industrial quality "Weight Scale" to most forkilifts trucks from Europe, USA, Korea Japan and China. If you require additional parts please contact your nearest dealer who will liase with the engineers at Peco Technologies.

A - RAM Mount with Round Base
B - BSP -JIC Fittings
C - Lift-N-Weigh Scale
D - 7/16 JIC Hose Assembly
E - RAM Flexible Arm
F - Plate Clamp
G - Operating Instructions
H - Scale Mounting Plate
I - Power Cable Assembly
J - Corner Angle RAM Mount
K - Pressure Sensor
L - Scale Data Cable

Positioning the Mk4-M Weight Scale

In the universal kit you will find all the necessay brackets and fittings to install your Peco Technologies weight scale in the best position for the driver. The kit contains parts for fitment to most counterbalanced and narrow aile forklift trucks.

A - RAM - Clamp Mount offers a mounting solution for attaching the guage to the overhead guard, the flexible mount can be adjusted to suit the drivers preference.

B - RAM - Angle Mount provides a positive fix for the guage to any RHS steel uprights. The angle mount is attached to the section with a heavy duty insulated hose clamp.

B - STANDARD - Plate mount can be affixed to any surfaces or panel. The plate has pre-cut slots to allow bending if required. Fixing can be done with Teck screws or drilled and tapped as required.

NOTE: In both cases ensure that all wireing is securely cables tied into place.
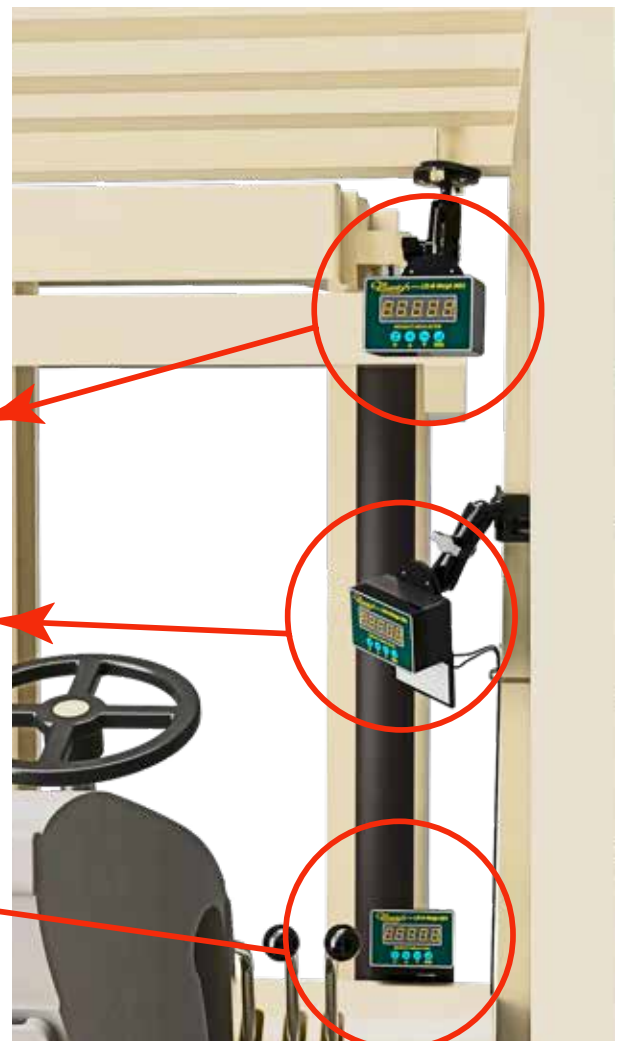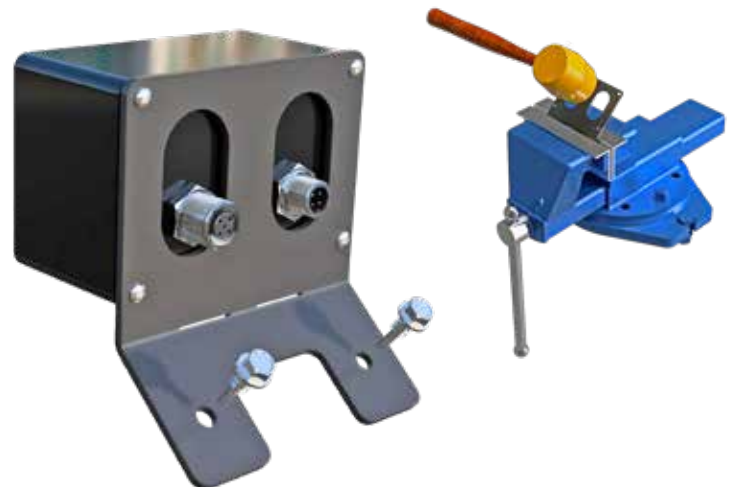
Mounting Options - Plate Clamp

RAM mount with clamp is very good for fixing to the overhead guard and requires no drilling and tapping. The RAM assembly allows for 360 degree rotation of the Scale Face .

Mounting Options - Post Clamp

RAM mount with post clamp is very good for fixing to rectangular steel posts and is held in place with a heavy duty hose clamp. The RAM assembly allows for 360 degree rotation of the Scale Face .

Mounting Options - Standard Bracket

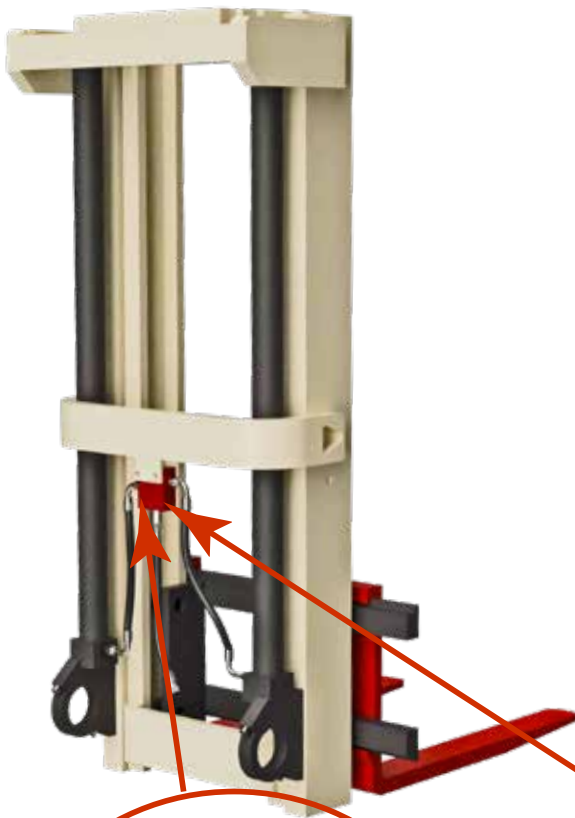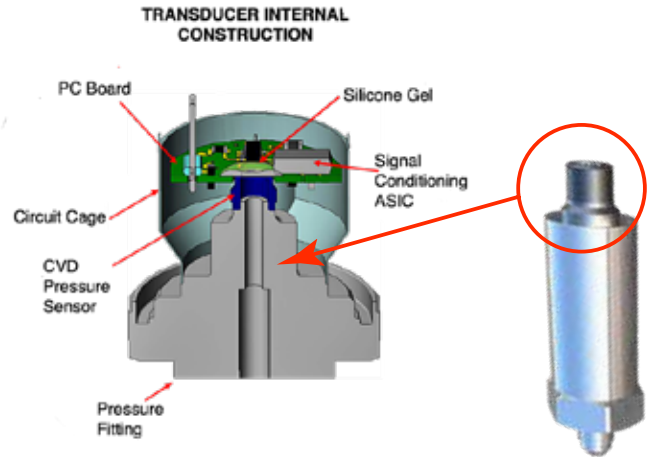can be used to secure the gague to the overhead guard, dash or firewall with either bolts or tech screws.
The plate is precut should bending be required. Bend in a vise with soft jaws to prevent damage to the protective coating.

What is a Mk4-M Transduser

The Mk4 Weight Scale requires the installation of a tranducer for it to function. One side of the transducer is coupled to the hydraulic lift supply line and reads this pressure and converts this into an analogue signal and sends it to the weight scale via a data cable. This signal is then filtered and averaged by the Mk4-M CPU.The OZWEIGH Transducer is specially desined to suit the Mk4-M Weight Scale.

TRANSDUCER INTERNAL CONSTRUCTION

PC Board
Silicone Gel
Signal Conditioning ASIC
Circuit Cage
CVD Pressure Sensor
Pressure Fitting

A The main control valve is an option as it is closest to the hydrailic sourse being the pump. Tapping into the lift/up circuit can be done easilly depending on the make and model of the forklift truck with an extended fitting tapped to take the 7/16th JIC hose supplied.
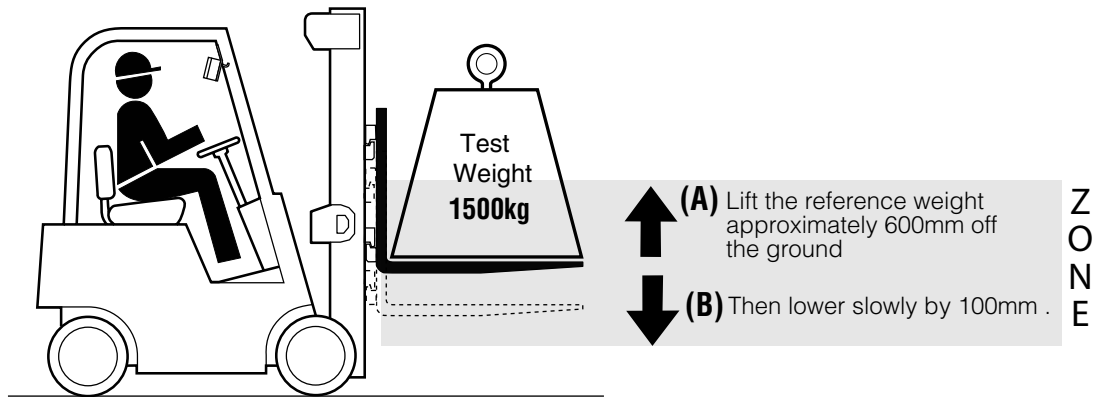

C This method should be your least option. Try to avoid drilling and tapping the junction block as the trouble It takes to dismantle and clean the valve can be a big undetaking. The chance for metal contamination entering the block and being passed into the hydraulic system is very risky.

B Prefered option, procure a set of fittings to make a "T" adaptor with a large fitting to match the truck supply line and branch to take an 1/8 BSP fitting supplied in the kit

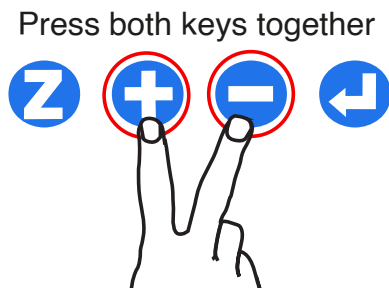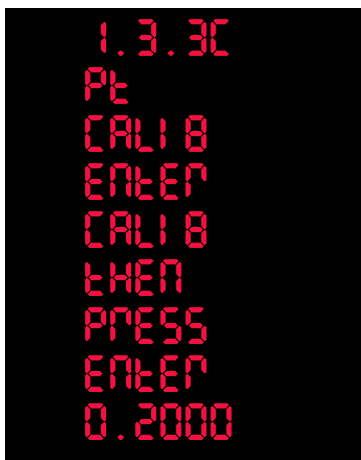# Mk4-M Weigh Scale *Calibrating Instructions*

PRIOR TO WEIGHING

Prior to calibrating the MK4M Indicator it is necessary to have a 'Reference Weight' which will be used during the calibration procedure.

Test Weight 1500kg

(A) Lift the reference weight approximately 600mm off the ground

(B) Then lower slowly by 100mm .

Z O N E

For consistent results always calibrate and weigh in the same "Zone".

Ideally the reference weight should be 75% of the lifting capacity of the forklift. For example, if the capacity plate of the forklift states a capacity of 2000 kg then the reference weight should be a minimum of 1500kg. You can calibrate with a lower test weight but the overall accuracy of the system could be reduced.

1. To enter calibration mode press and hold the 'Add' ➕ and 'Sub" ➖ keys together. This can be a little fiddly as the buttons have to be pressed together. A slight press of the ➕ or ➖ key may lead to the message not Added. When the buttons are successfully pressed together the following will be displayed:


1.3.3C
Pt
CALI8
Enter
CALI8
then
Press
Enter
0.2000

Press both keys together

Use the **Z** key to move the reference dot to the appropriate digit, then the or **−** keys (up and down) to enter the appropriate reference weight value. Once the value is completely entered press the Enter key.

For example, to enter a reference weight of 1500Kg the following procedure would be adopted:

1 Press the **Z** button once to move the cursor to the second zero.

2. Press the **+** button once to enter the numeral 1.

3. Press the **Z** key to move the cursor to the third zero.

4. Press the **+** button five times to enter the numeral 5 OR press the SUB button 5 times.

5. As the third and fourth digits are zeros there is no need to move the cursor any further.

6. With the 1500 now being displayed all we have to do is Press the **↵** button to accept the value.
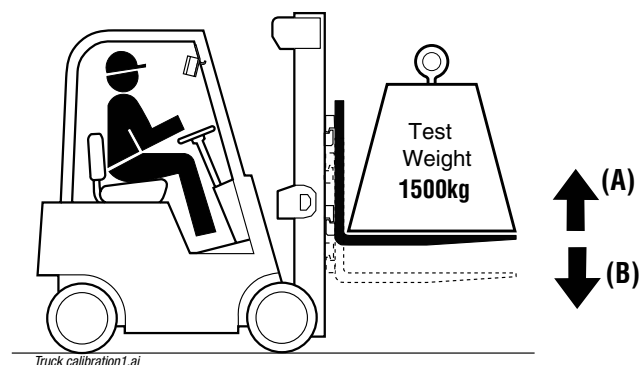
The following text will be displayed:

Press Zero to move cursor
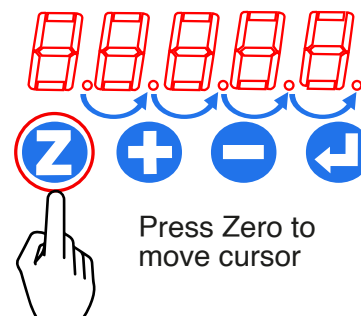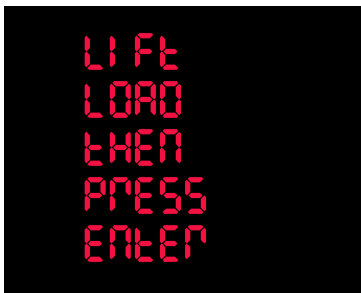
At this point the reference weight should be lifted 500-600mm above the ground. Then slowly lower the load approx 100mm.

Press the **↵** key.

The following text will be displayed:

Test Weight **1500kg**   (A) (B)
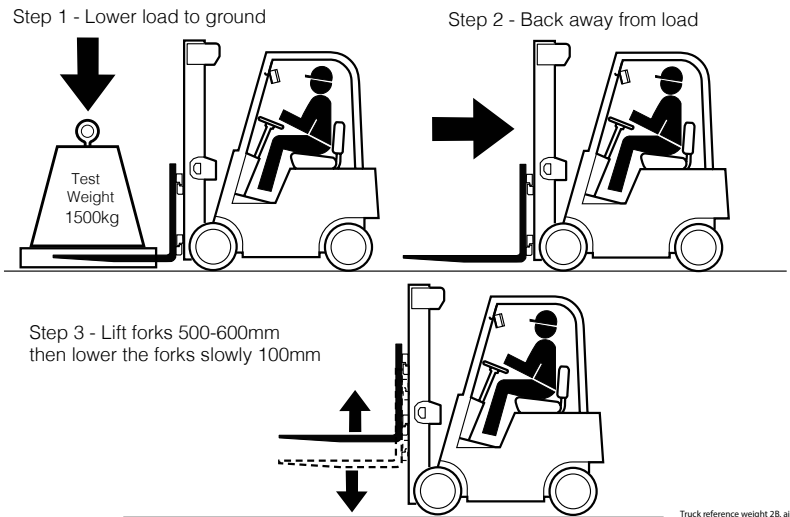
Truck calibration1.ai

Now lower the load to the ground and back away from the load. Lift the unladen forks 500-600mm above the ground then slowly lower the forks approx 100mm.

Press the ⏎ key.

Step 1 - Lower load to ground

Step 2 - Back away from load

The following text will appear:

- - - - -

Test Weight 1500kg

The following text will then appear:

Step 3 - Lift forks 500-600mm then lower the forks slowly 100mm

ENtEr
COUNt
84
0.000 10

Truck reference weight 2B. ai

This is a request for the operator to set the 'Count By' figure. 'Count By' is the integer increment the software will use to calculate and display the weight.

eg. 005 means the indicator will display the weight in increments of 5 units. The units can represent either kilograms or lbs.

Use the Ⓩ button to move the cursor and the ➕ or ➖ buttons to enter the values.

IMPORTANT NOTE:

In weighing systems using a **Pressure Transducer** it is not advisable to set the Count By in 1 unit increments. Weighing systems based on the measurement of hydraulic pressure are not accurate enough to display weights in 1 unit increments. A Count By of 10, 20 should be used. We would suggest the Count By be set to approximately 1% of the Truck Capacity. So for a 2500kg truck set the Count By to 20. Having said that, the Pressure Transmitter is very accurate so you could try a value of 10 first.

The following text will be displayed: By default the value of 02500 is displayed

```
ENtEr
trUC
CAP
02500
```

Using the same proceedure as you did for calibation, you are now required to enter the correct truck capacity look at the Capacity/Nameplate on the truck and enter the maximum capacity displayed there.
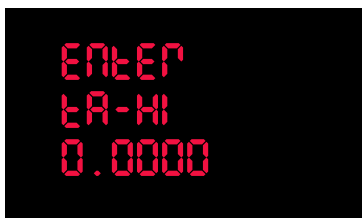
The following text will be displayed:

```
ENtEr
OLOAD
CAP
0.2500
```

OLOAD CAP is the 'Overload Capacity' allowed before the OLOAD message is displayed. We do not recommend making this more than the rated capacity of the truck.

```
ENtEr
tA-LO
0.0000
```
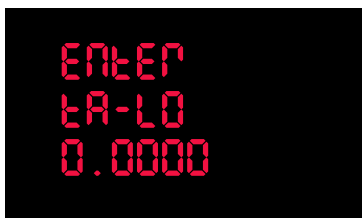
Enter the 'Low' target weight to sound the Buzzer

```
ENtEr
tA-HI
0.0000
```

Enter the 'High' target weight to sound the Buzzer

If you only want to have the Buzzer sound at the maximum truck capacity then make the Low and High values zero.

The following text will be displayed:

GOOD

The display should then show

'0'

Please Note. Each Weight Indicator Kit is tested prior to leaving the factory. By default, the following values have been entered:

Count By	-	*10*
Maximum Truck Capacity	-	*2500kg*
Target Lo	-	*0000*
Target Hi	-	*0000*

The weighing system should read to +/- 1% of the truck capacity.
After calibration test the system by lifting the calibration weight. Then pick a much lower weight to test the calibration at the low end of the scale. Weigh high, weigh low to test the system

Calibration Check
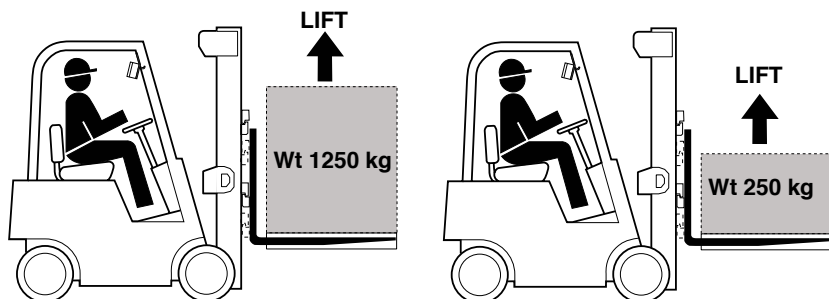
Using the Mk4M Weighing System

Simply lift the load to approximately 600mm (24 inches) above the ground and lower 100mm (4 inches) to relieve any back pressure.

(A) with the load, raise the forks approximately 600mm off the ground

(B) Lower them 100mm .
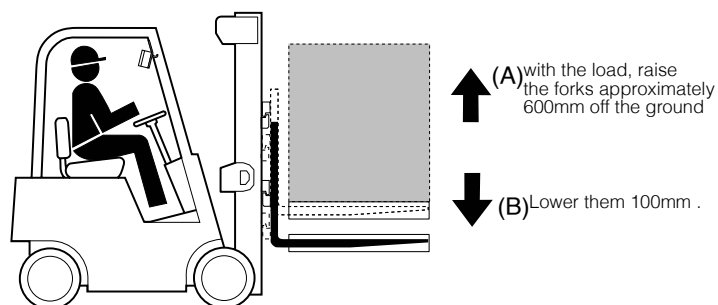
The indicator will display the weight based on the signal being received from the transducer. The weight will read high and then as the pressure settles it will reduce to a lower final weight.

Please note, if the forks are on the ground most of the oil in the lift cylinder will have returned to tank and there will be negative pressure in the hydraulic line. This will cause the display to show Neg.

To make sure the system is reading zero with no load on the forks simply lift the unladen forks above the ground and slowly lower the forks 100mm (4 inches). If the displayed value is not 0, press the Z button. If the value is within one increment, e.g. 10 or 20, don't worry about zeroing the indicator
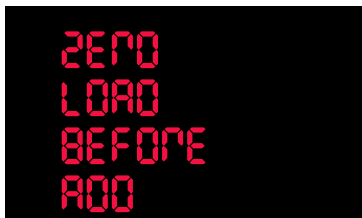
Totaling Loads with the MK4M Indicator

To ADD the displayed weight to memory simply press the ✚ button.
The weight will be added to memory and will appear on the display as a TOTAL
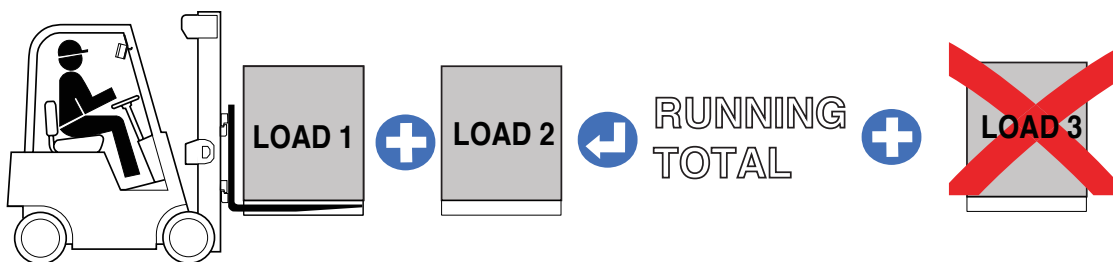
Subsequent weights can be added to memory by continuing to press the ✚ button.
If you try to add another load to the running total, before removing the existing load, the display will show

 You must remove the load and get another one.
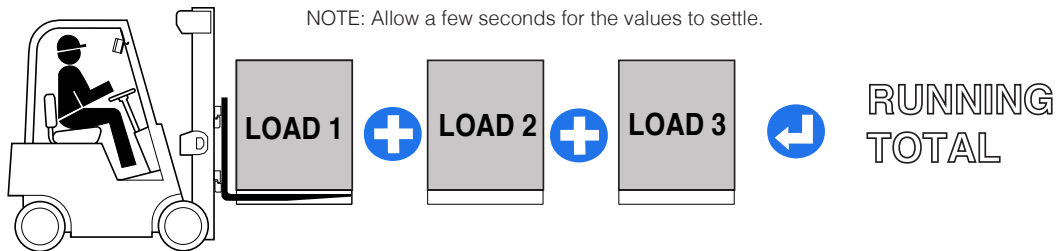
MUST START A NEW WEIGHT SEQUENCE

Mk4-M Weigh Scale — *Totaling Loads*

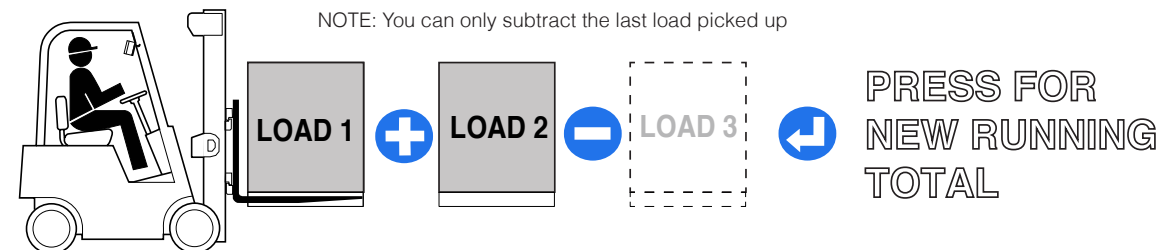How to manage and colate loads with your Mk4-M weigh scale.

RUNNING TOTAL
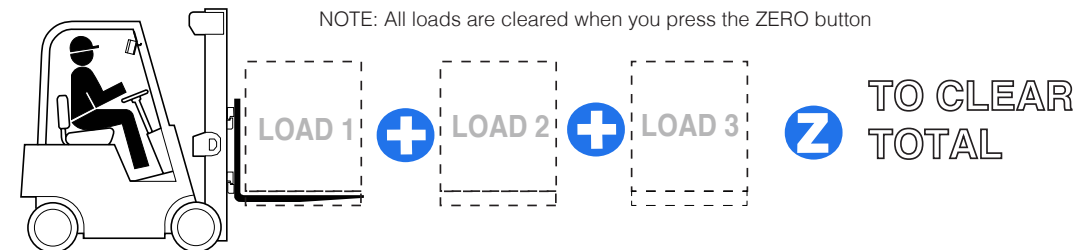
NOTE: Allow a few seconds for the values to settle.

LOAD 1 ➕ LOAD 2 ➕ LOAD 3 ↵ RUNNING TOTAL

TO SUBTRACT A TOTAL

NOTE: You can only subtract the last load picked up

LOAD 1 ➕ LOAD 2 ➖ LOAD 3 ↵ PRESS FOR NEW RUNNING TOTAL

TO CLEAR TOTAL

NOTE: All loads are cleared when you press the ZERO button

LOAD 1 ➕ LOAD 2 ➕ LOAD 3 Ⓩ TO CLEAR TOTAL

Data Cable Assembly

Power Cable Assembly

Ozweigh Transducer

Hi Pessure Hydraulic Hose

Fusable Link

Positive wire to Battery

Negative wire to Ignition

Connect to lift Raise/Hose