



# RCS

## OWNERS MANUAL

Including Operators Manual  
And Installation Manual

We would like to inform you about the fact that this RAVAS product is 100 % recyclable on the basis that the parts are processed and disposed off in the right manner. More information can be found on our website [www.ravas.com](http://www.ravas.com).

Rev.20170516  
Printing/typographical errors and model changes reserved



# OPERATORS MANUAL RCS

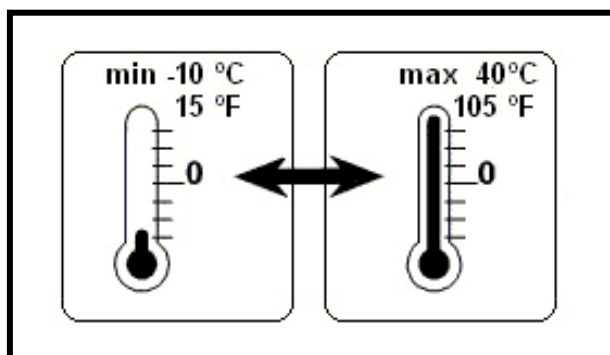
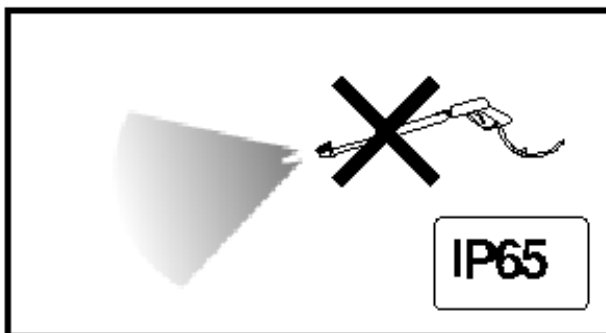
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Contact Us:

[www.ravasusa.com](http://www.ravasusa.com)  
[salesoffice@ravas.com](mailto:salesoffice@ravas.com)

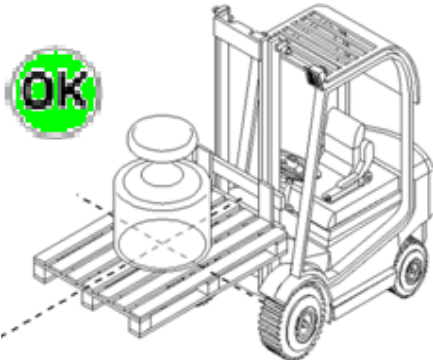
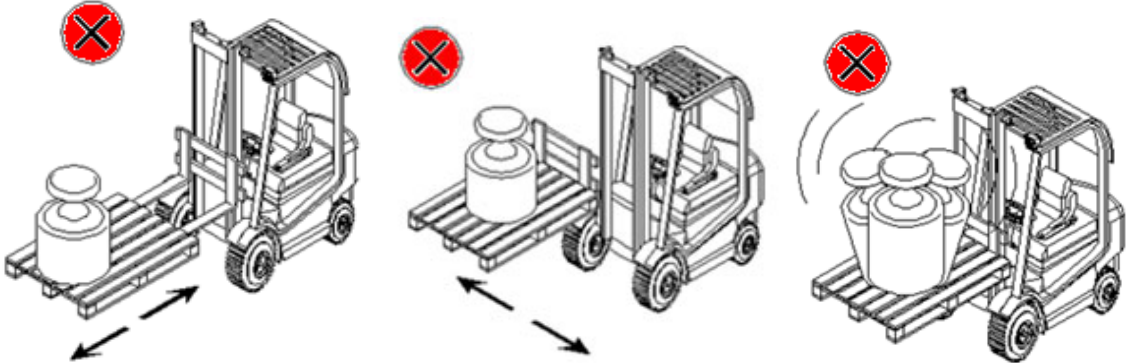
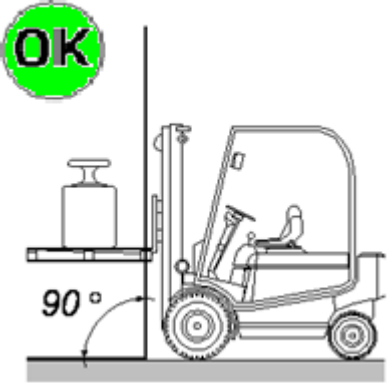
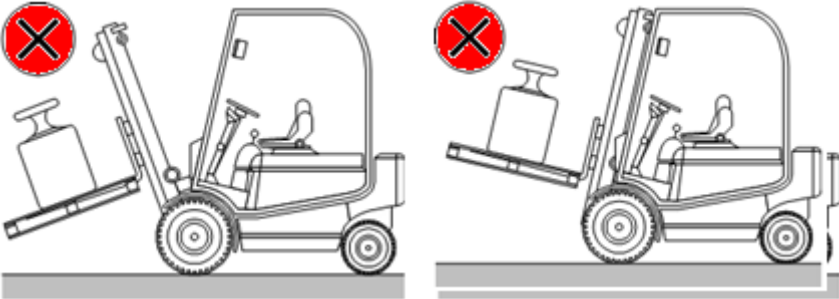
# 1 SAFETY INSTRUCTIONS

1. All safety regulations that apply on the truck remain valid and unchanged
2. No weighing operation is allowed while others are on or near the load.
3. No weighing operations allowed if any objects are in the vicinity; around, under or close to the load.
4. RAVAS is not responsible for physical harm done to the operator because of the presence of the indicator in the cabin.
5. Any modifications done to the system must be approved in writing from the supplier, prior to any work being completed.
6. It is the sole responsibility of the purchaser to train their own employees in the proper use and maintenance of this equipment.
7. Do not operate this unit unless you have been fully trained of its capabilities.
8. Do not use the weighing system in potentially explosive areas.
9. Do not weld to the lift truck without disconnecting the pressure sensor.
10. Check the accuracy of the scale on a regular basis to prevent faulty readings.
11. Only trained and authorized personnel are allowed to operate the scale.
12. Always follow the operating, maintenance and repair instructions of this truck and ask the supplier when in doubt.
13. Never lower loads if you are unsure you can place the goods on a stable surface. Personal injury may result from placement on an unstable environment.
14. System cannot be used for dosing applications.
15. RAVAS is not responsible for errors that occur due to incorrect weighings or inaccurate scales.
16. No high pressure cleaning

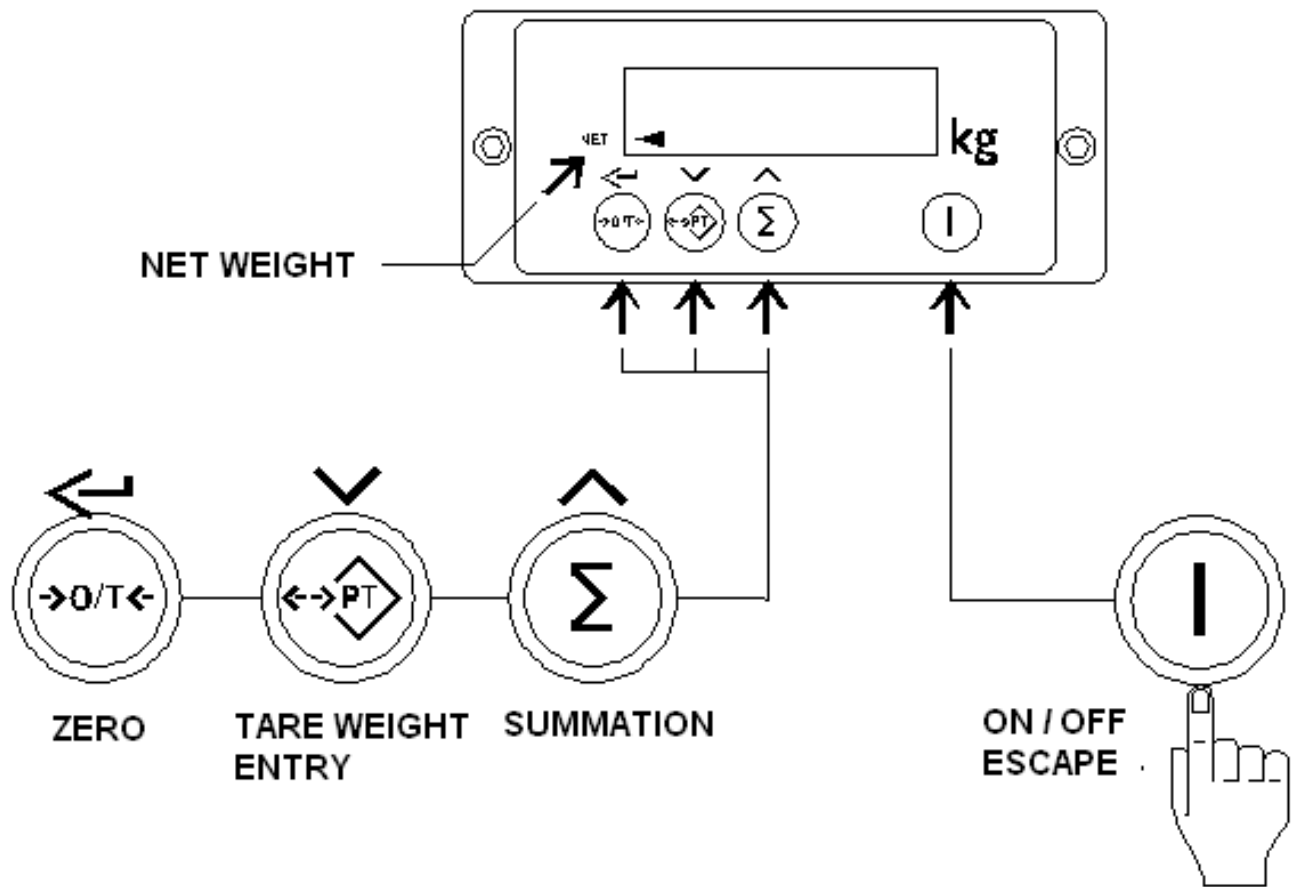


# 2 USERS MANUAL

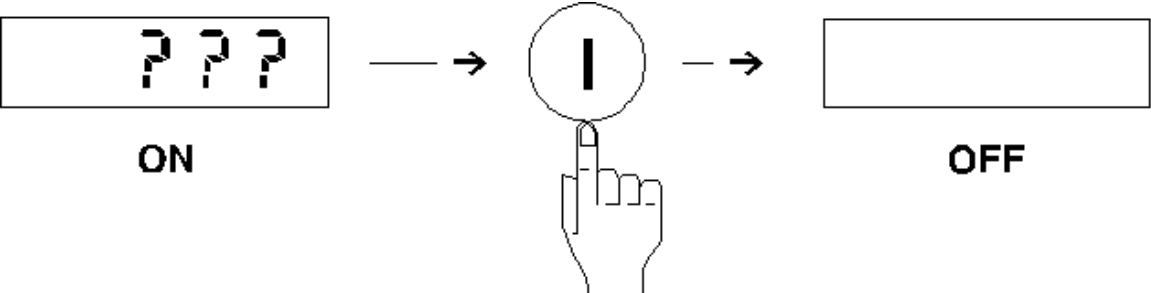
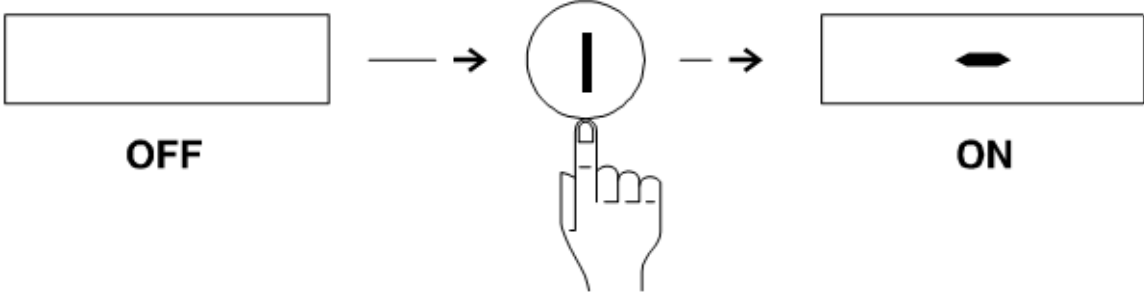
## Accurate weighing



## Touch panel indicator

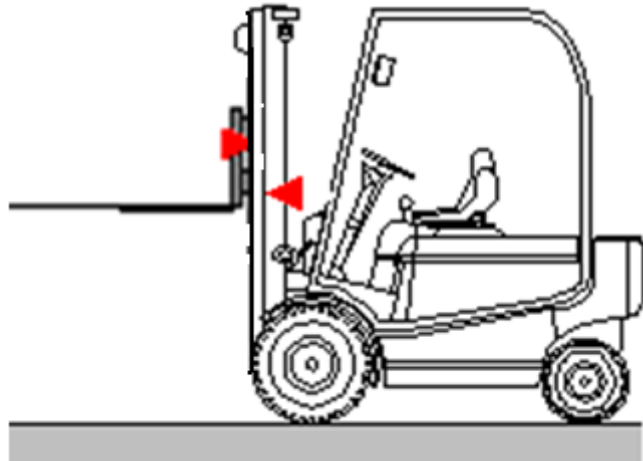


**On / Off**

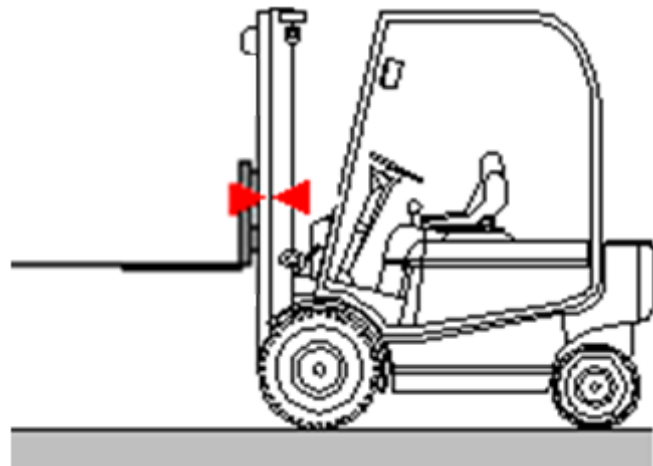


## Zero Correction

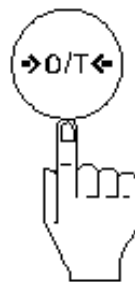
Bring empty forks above reference point



Lower forks **slowly** to reference point



Push Zero button

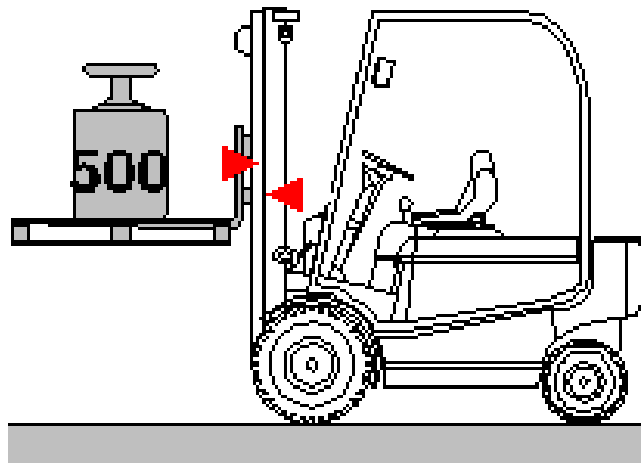


Display will read 0 LB

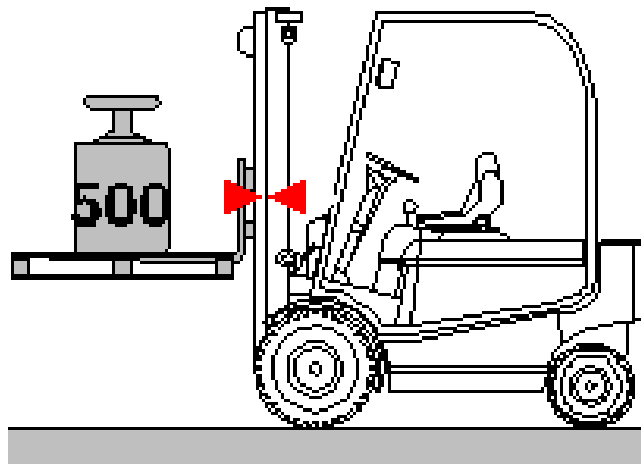


## Weighing

Bring forks with weight above reference point



Lower forks with weight **slowly** to reference point



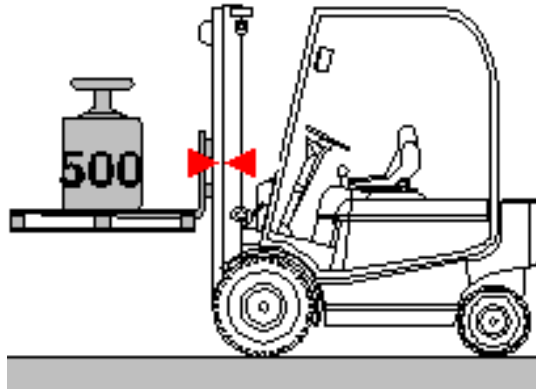
Display will show the weight. (plus minus 2% of truck capacity)

500

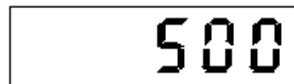


## Summing weights

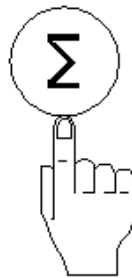
Bring forks with weight to reference height



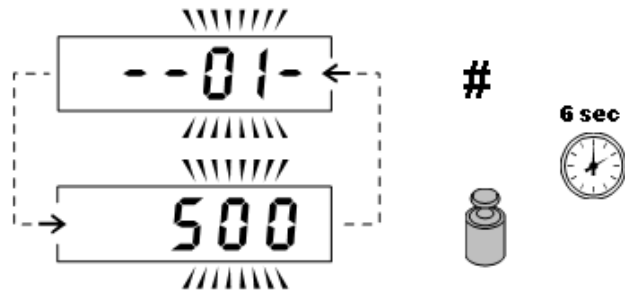
Display will show the weight



Push the summation button



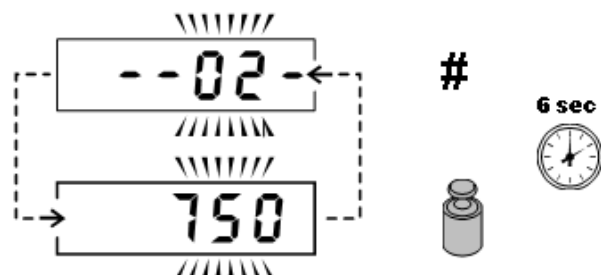
Display will show blinking 3 times the total weight and the sequence number (quantity of weights which are totalized)



If printer is available, weight of 500 LB will be printed with sequence number 1.

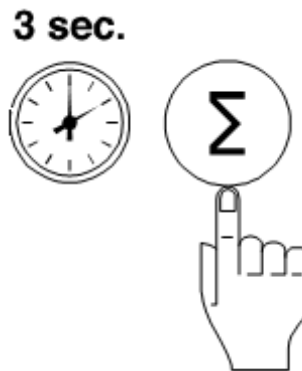
For second weight (if 250 LB is totalized)

If printer is available, 250 LB will be printed with sequence number 2.

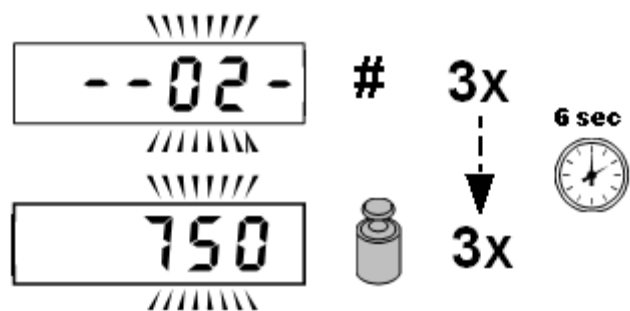


## Read total weight.

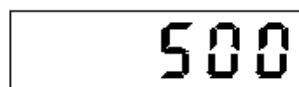
Push the summation button for 3 seconds



Display shows 3 times total weight and 3x sequence number.

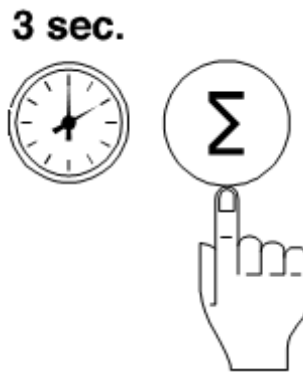


After 6 seconds display will return in normal weighing mode.



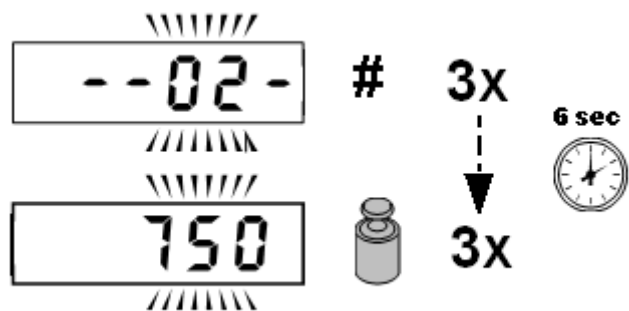
## Reset total weight

Push the summation button for 3 seconds

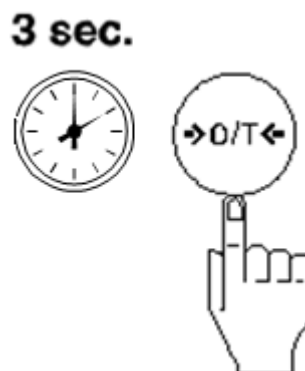


Display shows 3 times total weight and 3x sequence number.

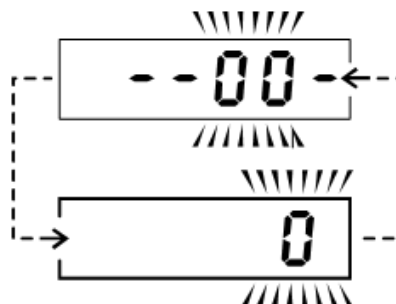
While display shows total weight, perform following action.



After 6 seconds display will return in normal weighing mode.

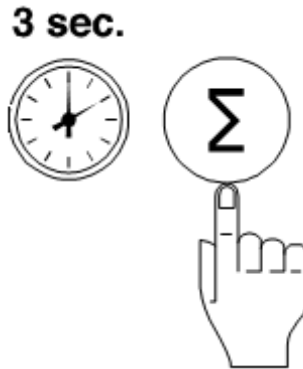


Display flashes 00 to show that summation memory has been reset to zero.



## Print total weight

Push the summation button for 3 seconds

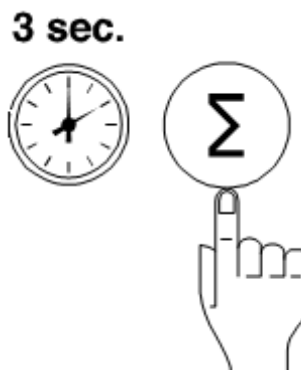


Display shows 3 times total weight and 3x sequence number.

While display shows total weight, perform following action.

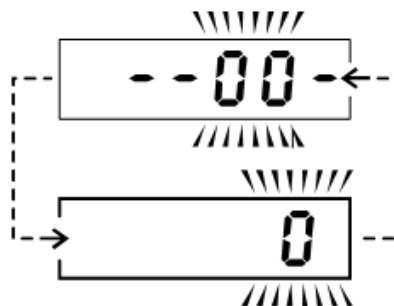


While display showing the total weight and sequence number, Push the summing button again.



Printer if available will print total weight

Display flashes 00 to show that summation memory has been reset to zero.



## Manual tare entry

Push at the tare entry button.



Example of entering tare weight of 25 LB

Display shows last entered tare weight with right digit flashing



Use cursor function if digit needs to be changed



Set Digit to 5



Use enter function



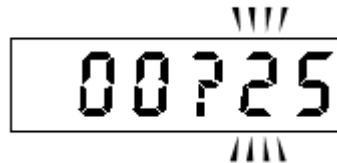
Second digit starts flashing



Change this digit if needed to show 2



Display shows 25 LB



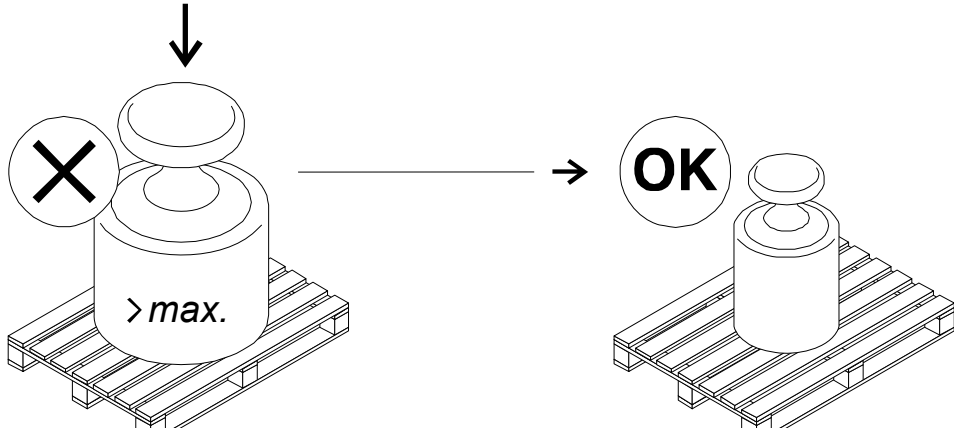

Use the enter button to pass other digits till display shows (minus) -25 LB



25 LB will be subtracted from the next weight lifted and weighed.



# Error messages

<p>HELP 1</p>	<p>STAB. <span style="border: 1px solid black; padding: 2px;">HELP 1</span></p> <p>NET.</p> 
<p>HELP 3</p>	<p>Negative (or no) signal from the sensor on AD converter</p>
<p>HELP 7</p>	<p>Too high signal of sensor on AD converter</p>
<p>LO-BA</p>	<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p>LOW BAT </p> </div> <p>Batteries need to be replaced. See page 22</p>

# 3 INSTALLATION

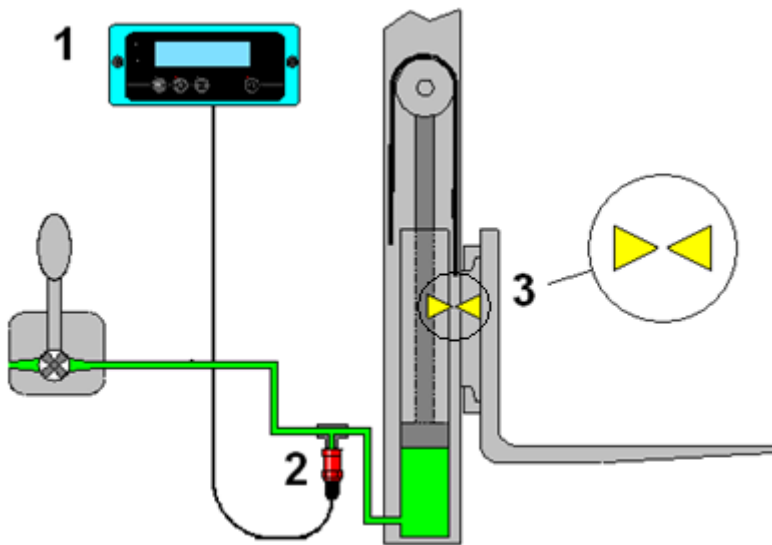
## How it works

The display unit (1) measures the hydraulic oil pressure with extreme high accurate oil pressure sensor (2).

Nevertheless, the system has limited accuracy because of friction in the rolls.

The friction in the rolls depend on

1. Condition of the mast.
  - a. When old, dirt or bad rolling rolls may have a influence
  - b. When brand new, the first week of use will also create changes. This is solved because the system is very easy to calibrate.
2. Position of the load. With the load placed to the right or to the left, the friction changes and less weight is transmitted to the cylinder and measured by the sensor. Place the load as much as possible as when done during calibration.
3. Mast should be vertical. When more than 1 degree out of level, this becomes of influence.
4. Speed at which you lower to reference point when done briskly or slowly, may cause changes. Best results are obtained when lowering slowly to the reference level.



## Specifications

The **RCS** can be installed on trucks with any capacity.

The **RCS** works properly with hydraulic pressures up to 5075 psi (350 bar).

The **RCS** operates on 4 AA batteries for several years.

The sensor is equipped with a BSP1/4" male thread. The sensor is supplied together with an adaptor to change from BSP1/4" male into NPTF18mm male.





It is recommended that the installation of the system is executed by an official forklift truck dealer.



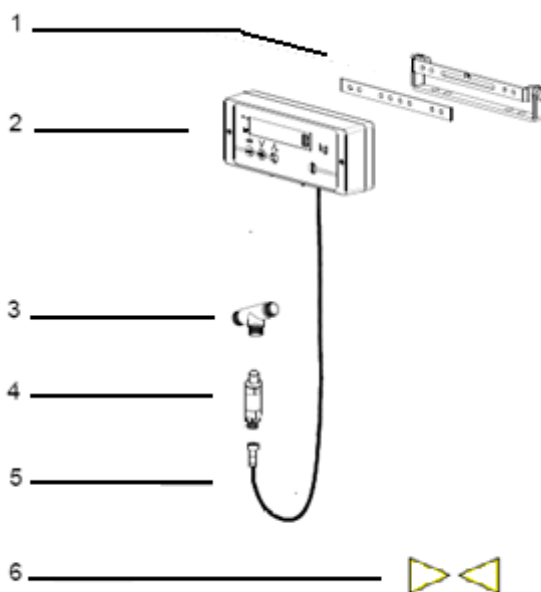
For the best accuracy the mast, rollers and bearings should be in good condition:



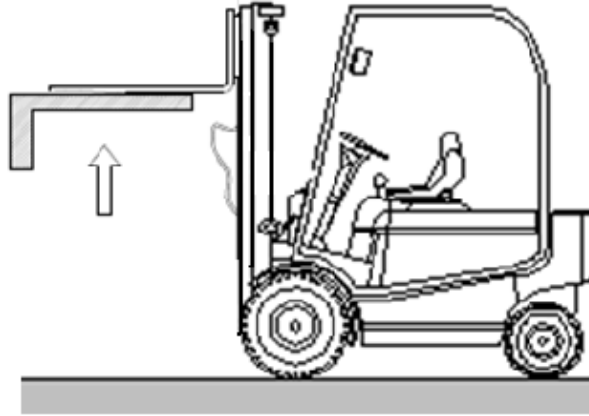
Make sure there is no pressure on hydraulic system before working on hydraulic system

#### Product overview:

1. Indicator mounting support
2. Indicator (display) unit
3. T-piece (supplied by installer)
4. Sensor
5. Sensor cable
7. Reference level stickers.



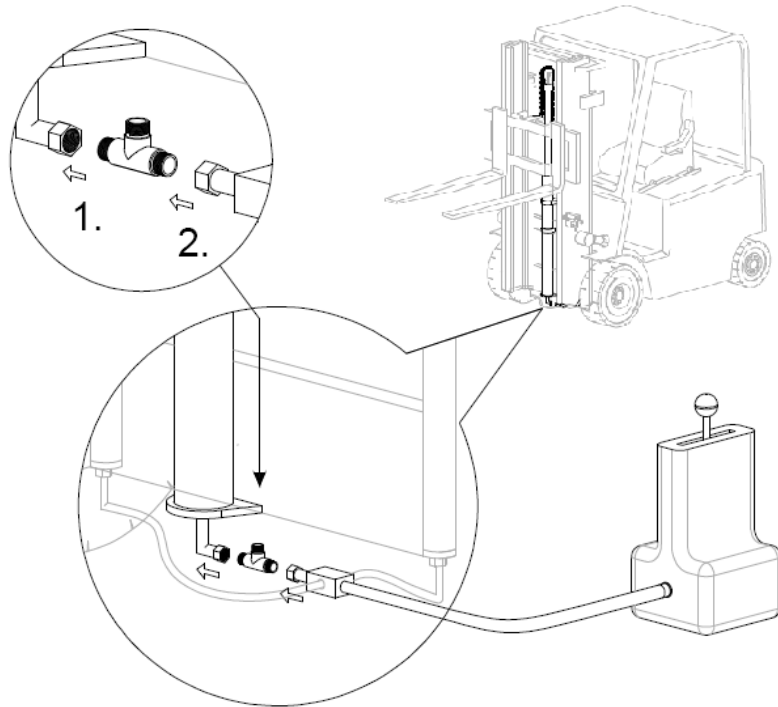
Support the forks and make sure that the chain in the mast is loose and no pressure remains in the system.



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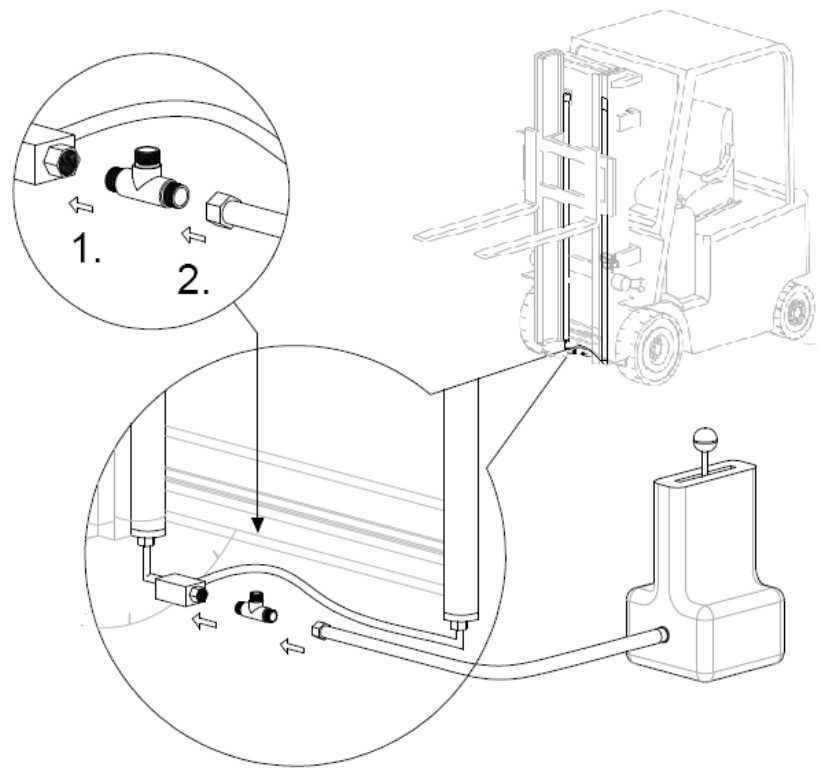
Install a T-piece in the pressure line of the primary lifting cylinder.

Install as close as possible to the cylinder.

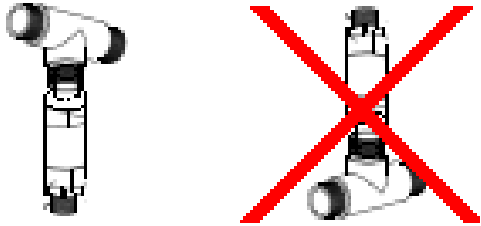


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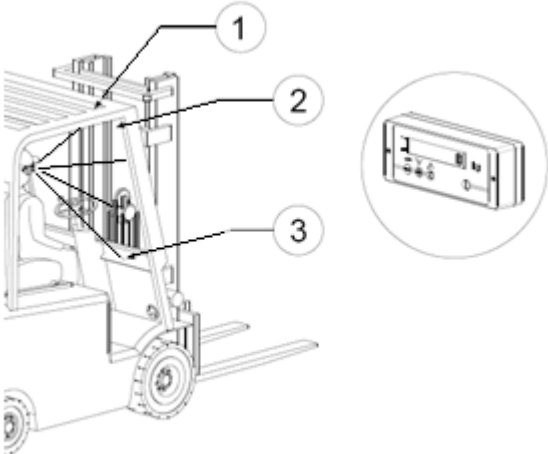
In case of two cylinders:



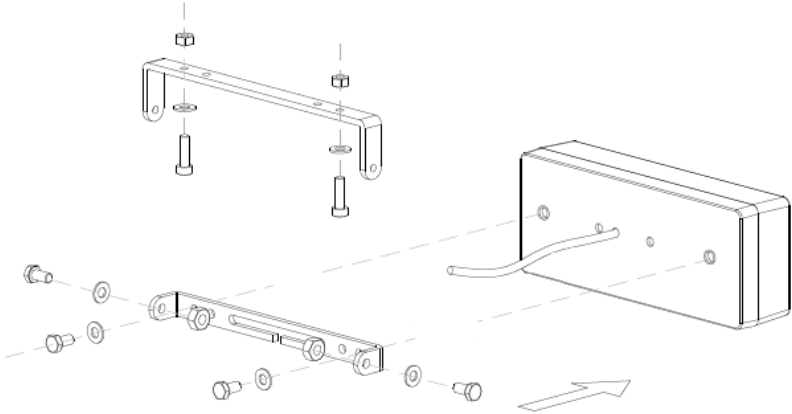
Install sensor onto the T-piece. The connector should point downwards



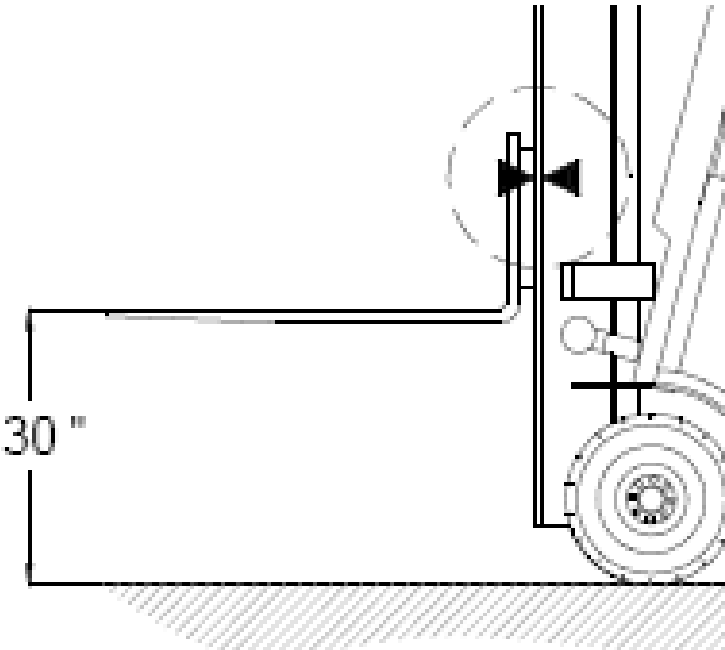
Choose position for the installation of the indicator



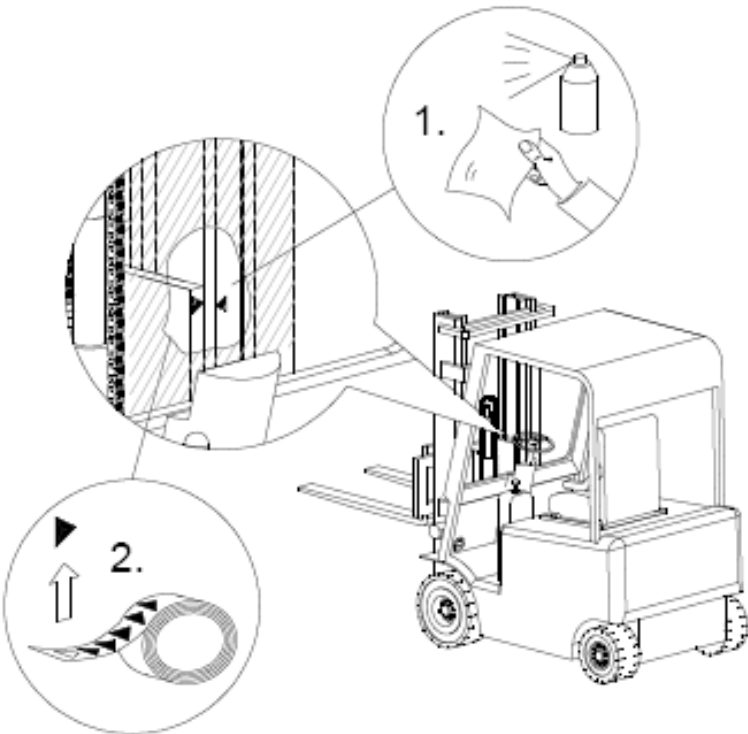
Install the indicator using the mounting support



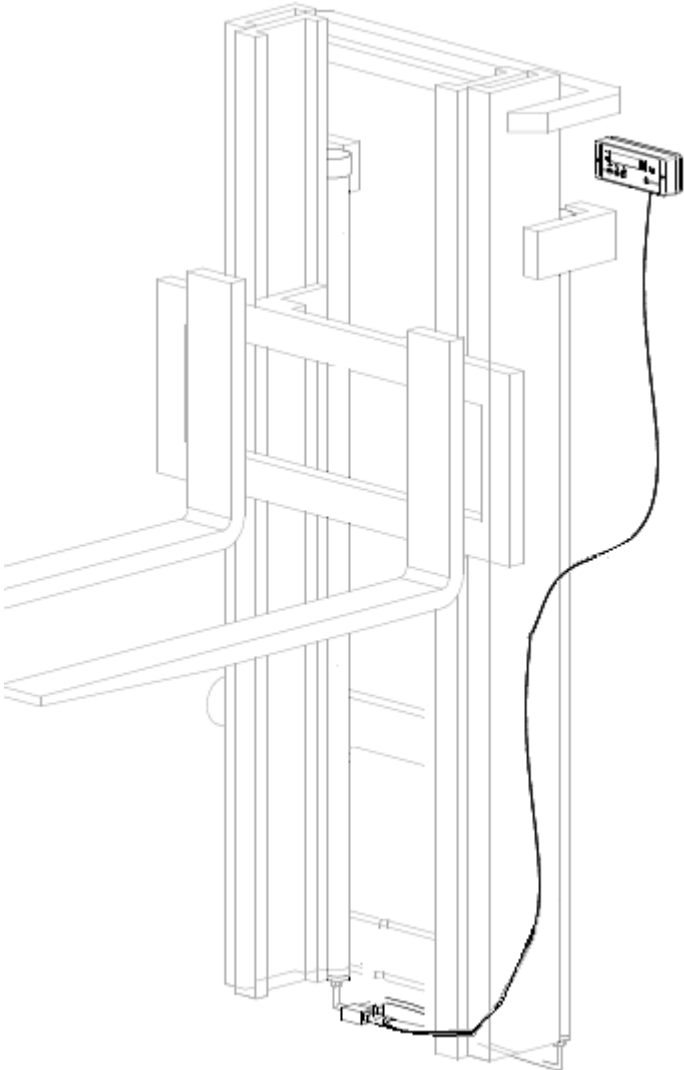
Install reference height marking stickers in such way that the operator can see it well.



Clean area for the stickers before sticking them onto the mast.

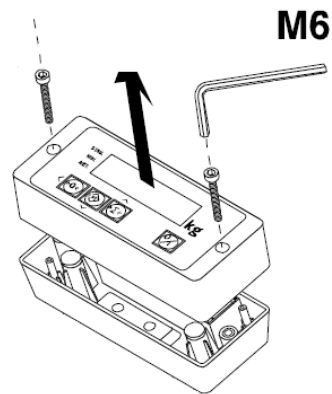


Install sensor cable  
between indicator and  
sensor.



## 4 INSTALLING OR CHANGING BATTERIES

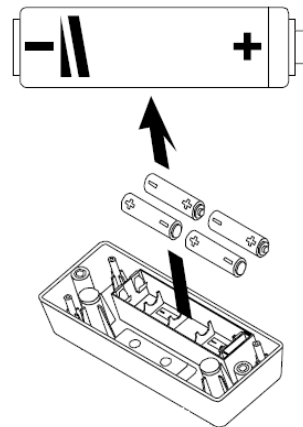
Open the housing.



Systems are supplied with batteries packed separately.

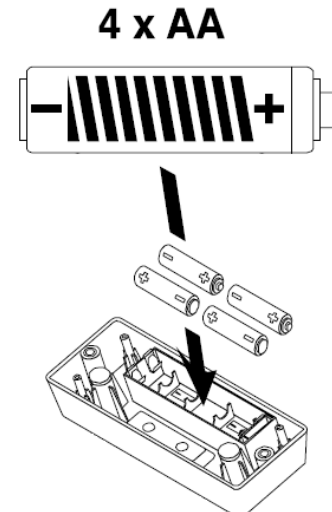
Your supplier may have installed them.

After message LO-BAT, old batteries have to be taken out.

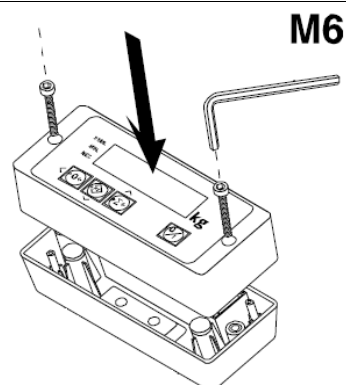


Place new batteries.

Watch for the polarity!!!



Close housing



## 5 PARAMETER SETTINGS

The standard setting of the system is for a capacity of 5000 lbs with a 10 lb graduation.

If the capacity of the truck is 5000 LB or lower, you can skip this chapter!

If needed the parameters can be changed to the following capacities:

- 10,000 lb with a 20 lb graduation
- 20,000 lb with a 50 lb graduation
- 30,000 lb with a 100 lb graduation

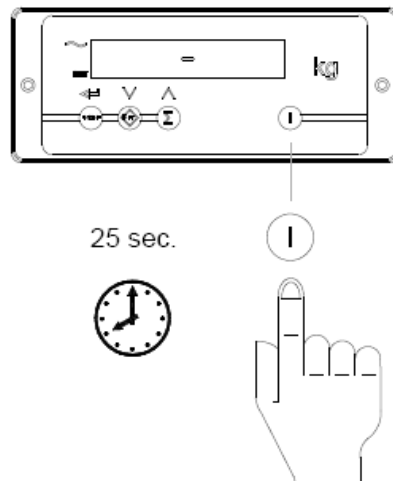
To do this; follow these instructions:

### Entering the parameter menu

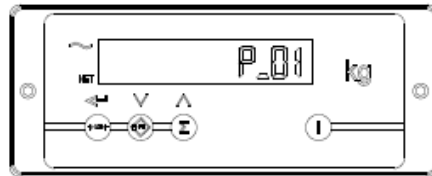
Turn OFF the indicator and then turn it on and hold the on/off button until you see P01 in the display

Turn off the indicator.

Turn on the indicator and hold the push button for 25 seconds, until you see P01 on the display



Display shows P\_01



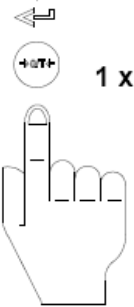
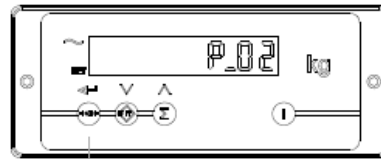


## Changing the graduation parameter = P02

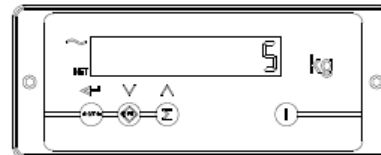
Change with cursor upwards to P\_02



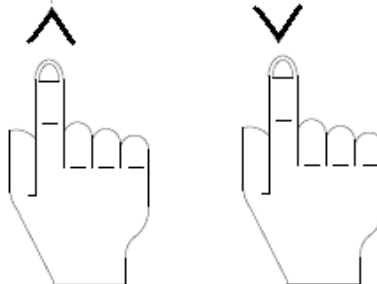
When display shows P\_02 then push the "enter" button



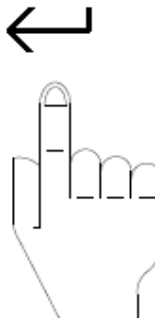
Display will show 5 which stands for a graduation of 5LB.



Change to desired graduation with the cursor up or cursor down function

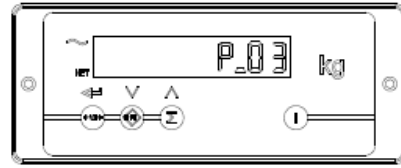


Confirm by pushing the "enter" button



## Changing the capacity parameter = P05

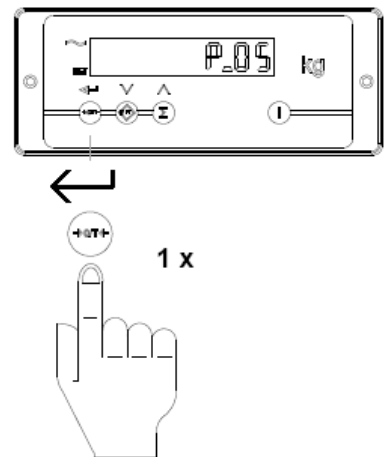
Display shows P\_03 or other value



Change with Cursor function to P\_05

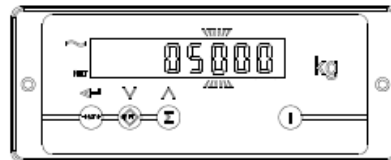


When display shows P\_05 then push the "enter" button



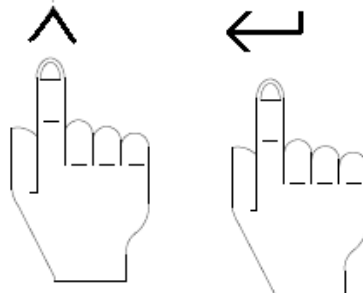
Display will show the scale capacity.

The most right digit is flashing

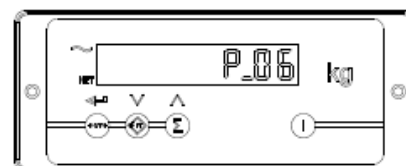


Change the flashing digit with the cursor functions, validate with the "enter" button.

Change all digits till display shows the capacity of the scale

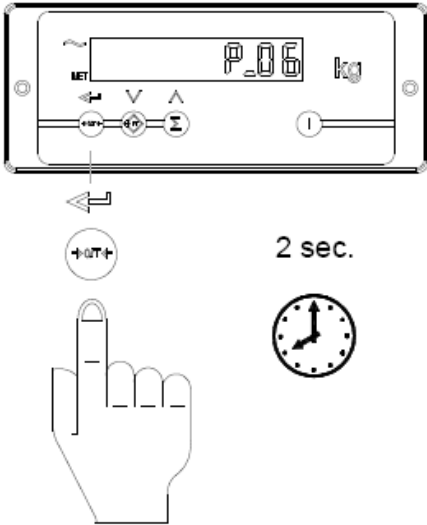


Push "enter" button until P\_06 appears

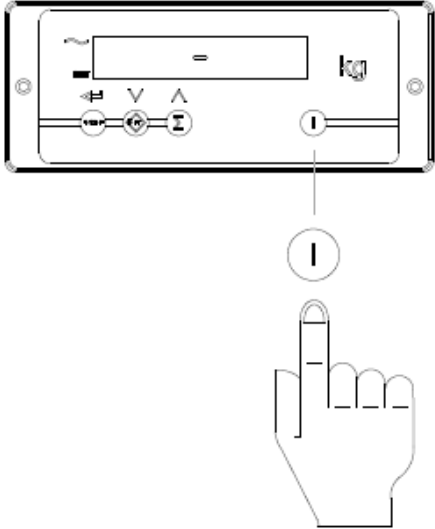


# Close parameter entry mode

Hold the “enter” button for 3 seconds



Turn indicator off and back on to get in standard weighing mode



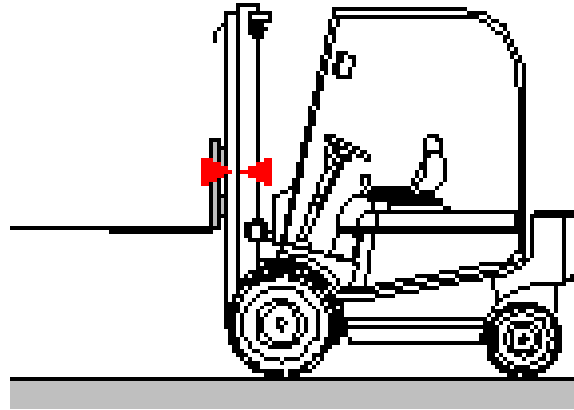
# 6 CALIBRATION

## Zero calibration

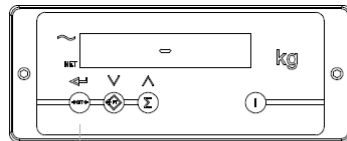


The forks must be unloaded!

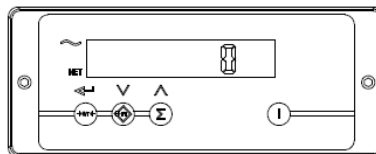
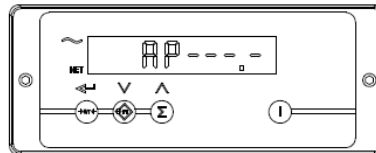
Bring empty forks to reference height



Push the zero button for 10 seconds until display starts showing AP 08, counting down.



Display will show AP while counting down.  
Display will show 0



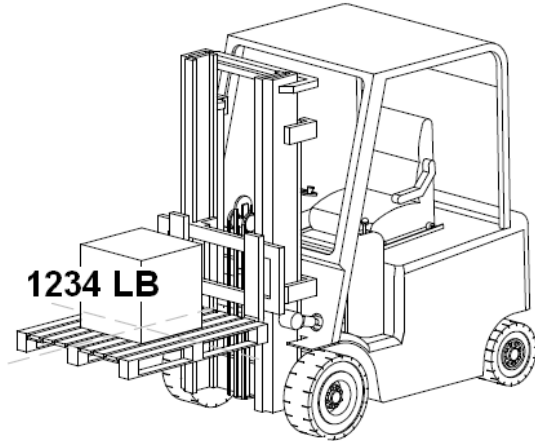
## Span (weight) calibration



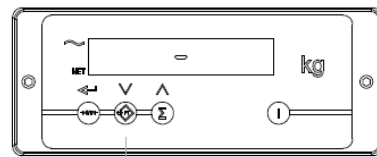
Perform this calibration immediately following zero calibration!

Get test weight.  
Maybe weigh a pallet on other scale and  
note down the weight.

Example 1234 LB



Push the PT button for 20 seconds until  
a value shows with the most right digit  
flashing.



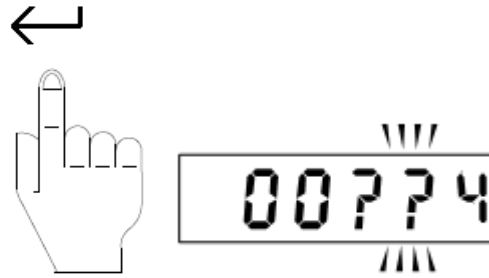
20 Sec.



Change the flashing digit to show 4 with  
the cursor functions

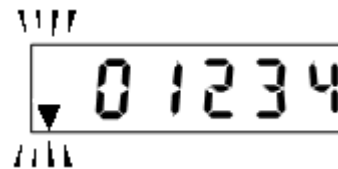


Validate by pushing the enter button.  
The next digit will flash and can be changed

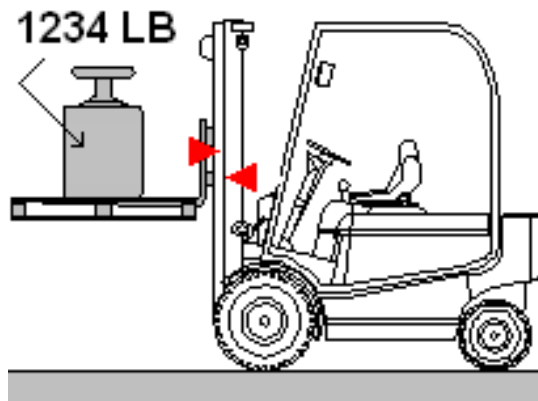


Change this digit to show 3 and continue until display shows 01234

The indicator on the left side should be flashing.



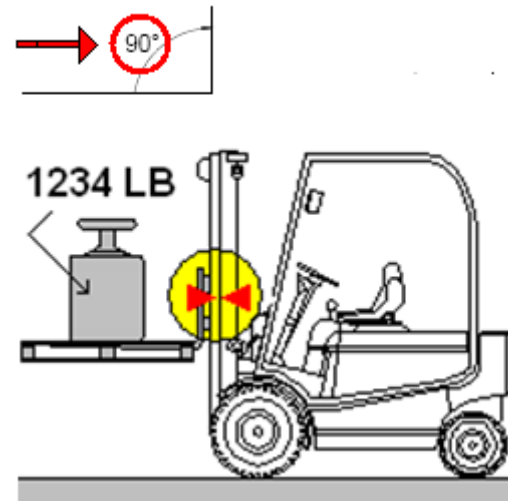
Lift Weight (1234) above reference point



Lower **slowly** to reference point.

**Attention:**

- Mast should be vertical!
- Load center should be in the middle of the forks.



Immediately!! **without time delay !!**  
push the “enter” button for 3 seconds

**3 sec.**



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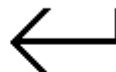
Push cursor function till display shows  
AP-??



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Push “enter” button for 3 seconds again

**3 sec.**



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System is calibrated and back in  
weighing mode

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Turn indicator off and back on.

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Check system by repeating by weighing with the calibration weight.

The changes should not be bigger then 2% of the truck capacity.  
With a 5000 LB Lift truck errors should not be bigger than 100LB

If weight readings are continuously higher or lower:  
Check if scale shows zero when doing a weighing cycle without weight.  
Repeat zero and weight calibration.

If no improvement, see chapter 7.

## 7 TROUBLE SHOOTING

<b>RCS-110</b>			
<b>Problem</b>	<b>Cause</b>	<b>To check</b>	<b>How</b>
Power	Batteries	Full or not?	Replace
Accuracy	User error	Check if customer is working the right way.	Is user doing zero check and zero correction
			Is the mast vertical when weighing
			Does the user weigh by lowering to reference point at a speed that should be the same as when the calibration was done. Best results are obtained when lowering slowly to reference point.
			Is the client weighing with the point of gravity in the middle of the forks.
			Side shift should be in the middle and not to the extreme right or left.
	No repeatability over a longer period of time	Check the zero point by doing a weighing action without weight on the forks to see if there is a zero change.	If this is the case, instead of zero the display shows a positive or negative weight, it might be necessary to correct the zero more regularly
			New systems
With new lift trucks, the friction in the mast may change over the first few weeks and recalibration may be needed. A new sensor will become more stable after a period of use.			
	Check if it may be caused by change of oil temperature. Maybe rolls have too much friction due wear of rollers or dirt in mast	If accuracy changes after the truck is used for a longer period of time the sensor maybe temperature sensitive.	
		Check by lifting a weight that has been weighed earlier that day.	
	Installation error Sensor mounted upwards	See if connector / cable is pointed downwards	Correct and turn sensor around.
Unstable	Peak-hold does not function	See if display freezes and stable weight is shown by:	Lowering more briskly to reference point.