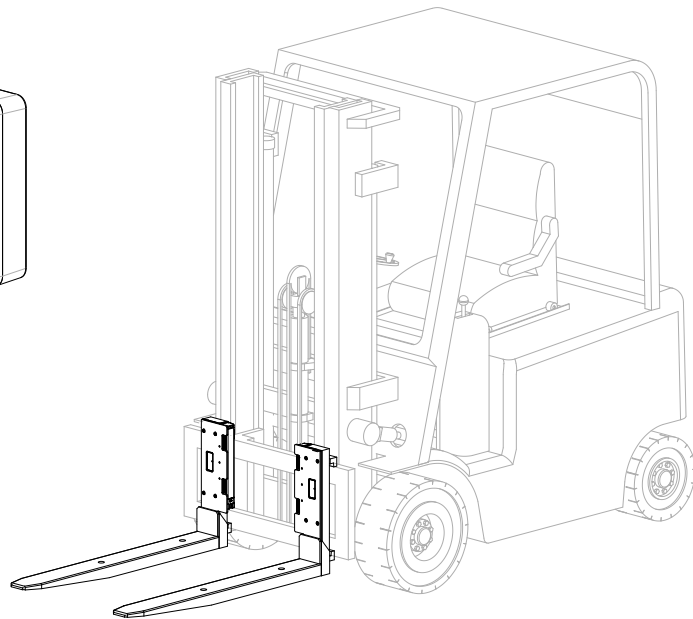
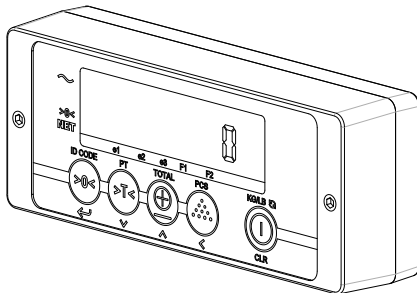




## USER MANUAL

# **iForks**



Rev.16.03.11

**PLEASE RETAIN THESE INSTRUCTIONS FOR FUTURE REFERENCE**

If you have any queries concerning the duration and terms of the guarantee, please contact your supplier. We would also refer you to our General Sale and Supply Conditions, which are available on request.

The manufacturer accepts no liability for any damage or injury caused by failure to follow these instructions, or from negligent operation or assembly, even if this is not expressly stated in this instruction manual.

In light of our policy of continuous improvement, it is possible that details of the product may differ from those described in this manual. For this reason, these instructions should only be treated as guidelines for the installation of the relevant product. This manual has been compiled with all due care, but the manufacturer cannot be held responsible for any errors or the consequences thereof. All rights are reserved and no part of this manual may be reproduced in any way.

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## 1. Introduction

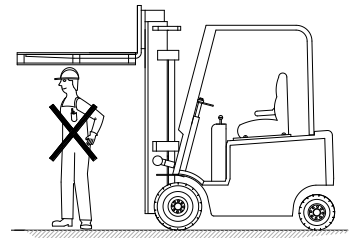
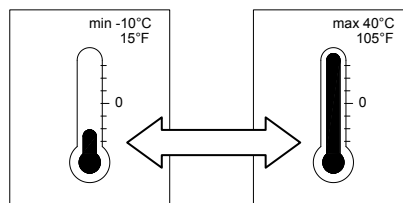
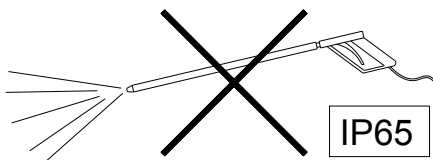
This manual describes the installation and use of the **iForks**. Read this manual carefully. The installer must be informed of the contents of this manual. Follow the contents of the manual precisely. Always do things in the correct order. This manual should be kept on a safe and dry place. In case of damage or loss the user may request a new copy of the manual from RAVAS.

## 2. Warnings & Safety measures

When using the **iForks**, 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, please contact RAVAS.



- 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.
- RAVAS 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.
- RAVAS is not responsible for errors that occur due to incorrect weightings or inaccurate scales.

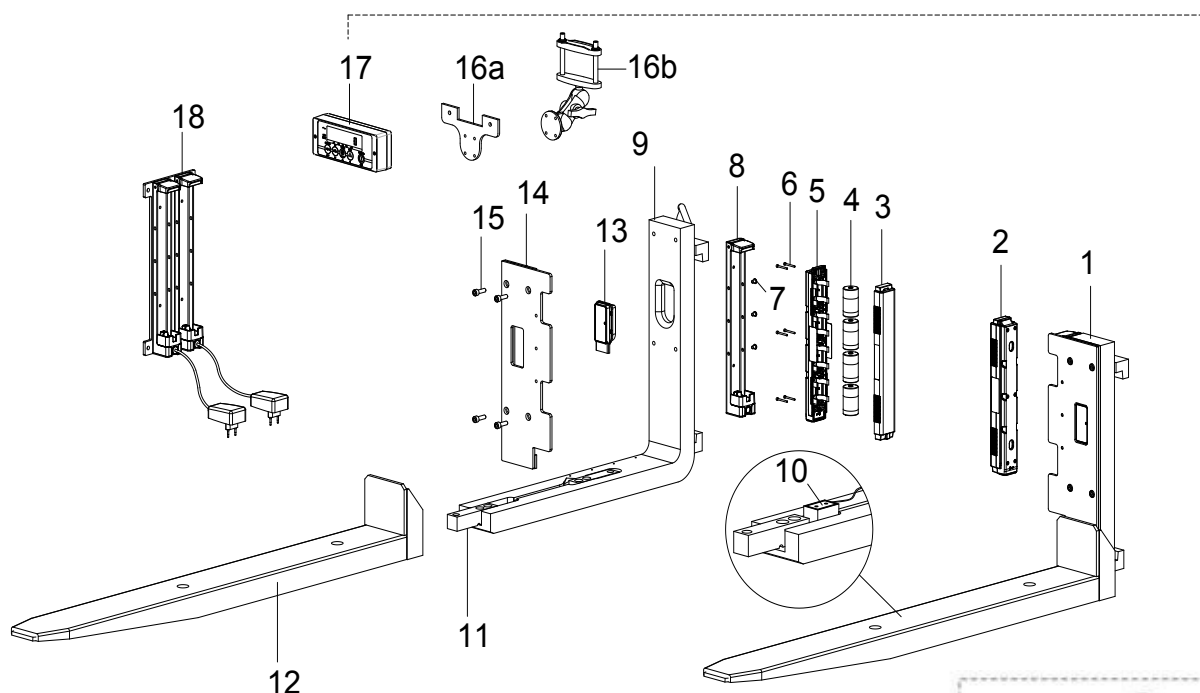


Should you have any further questions after reading this manual then you can contact us at:

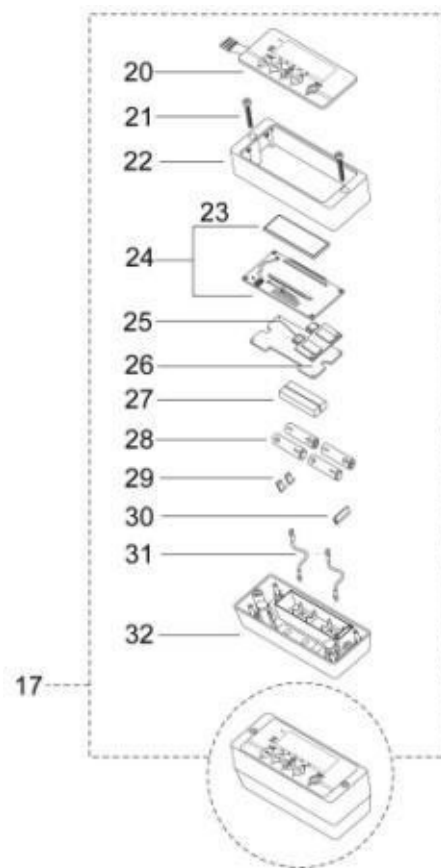
### **RAVAS Europe B.V.**

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Postbus 2023  
5300 CA Zaltbommel  
Nederland  
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Changes reserved

### 3. Exploded-view & parts list



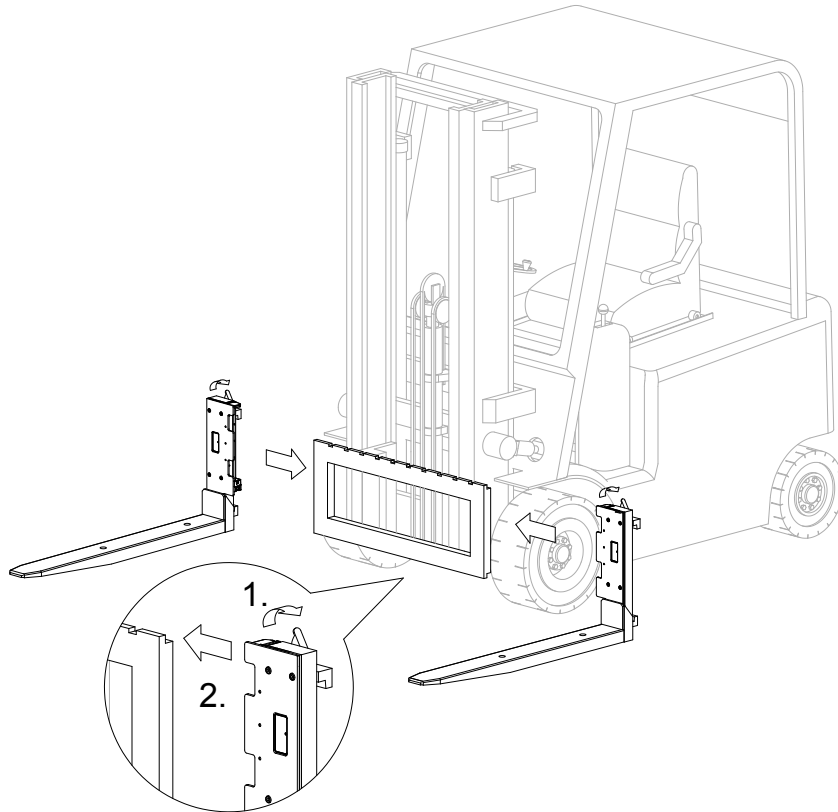
Part nr.	Designation	Article code	Number	Supplier
1	Assembled weighing fork		2	-
2	Battery pack (assembly without D-cells)	BAP-IFORK	2	RAVAS
2a	with 1.5 V alkaline D-cells (standard)	SA-BA-IFORK-ST	2	RAVAS
2b	with rechargeable 1.2 V D-cells (option)	SA-BA-IFORK-RC	2	RAVAS
3	Top housing battery pack		2	-
4	Batteries (D-cell):		-	-
4a	A = regular 1.5 V D-cells (standard)	BA-1,5-DCELL	8	Buy locally
4b	B = rechargeable 1.2 V D-cells (option)	BA-1,5-DCELL-RC	8	Buy locally
5	Bottom housing battery pack		2	-
6	Philips-head screw M3 x 25		12	Buy locally
7	Round-head screw M6 x 8	MP-SCREW-M6-8-LOW-STST	6	Buy locally
8	Holder battery pack	BAP-HOLDER-WF	2	RAVAS
9	Weighing fork	SA-WF-2A-100-45-608 (or 2B)	2	RAVAS
10	Loadcell	LC-2000	4	RAVAS
11	Loadcell fixation ring	MP-RING-LC-FIXATION	4	RAVAS
12	Fork shoe	FS-WF-25-1150-10-15-RAL7021	2	RAVAS
13	Bluetooth transmitterbox (assembly)	HO-J-RWV-BLT-F1 HO-J-RWV-BLT-F2	1	RAVAS
13a	Labels for Bluetooth transmitterboxes (set with nr. 1 and 2)	SS-LABEL-WF-SMALL	1	RAVAS
14	Coverplate forks (left)	MP-CP-RF-LEFT-FEM2A (or 2B)	1	RAVAS
	Coverplate forks (right)	MP-CP-RF-RIGHT-FEM2A	1	RAVAS
15	Socket-head screw M8 x 20	MP-BOLT-M8-20-CYL	8	Buy locally
16a	Mounting bracket indicator	MP-BRACKET-RAM-BB	1	RAVAS
16b	Indicator mounting support	MP-SUP-RAM-CLAMP-BASE	1	RAVAS
17	Indicator (assembled)	SA-IN-31-IFORK	1	RAVAS
18	Charger (option)	SA-CH-WF-DUAL	1	RAVAS
19	Level correction sensor (option)	EP-LEVELSENSOR	1	RAVAS
20	Touch panel	FR-31N-RAV-HO	1	RAVAS
21	Socket head screw M6x40	MP-BOLT-M6-40-CYL	2	RAVAS
22	Top housing indicator (red)	HOP-RAV-RAL3000-UPPER	1	RAVAS
23	Display	INP-31-DISPLAY	1	RAVAS
24	Indicator board	IN-31-N-NO-ADS	1	RAVAS
25	Bluetooth receiver board	EB-31-N-BLT-DUAL	1	RAVAS
26	Middle cover	HOP-MC	1	RAVAS
27	Cellrubber block	HOP-PACK-XTRA-RU-STRIP	1	RAVAS
28	AA battery 1.5V	BA-1.5-PENN-AA-R6	4	Buy locally
29	Contact snap single	BAP-SNAP-SINGLE	2	RAVAS
30	Contact snap dual	BAP-SNAP-DUAL	1	RAVAS



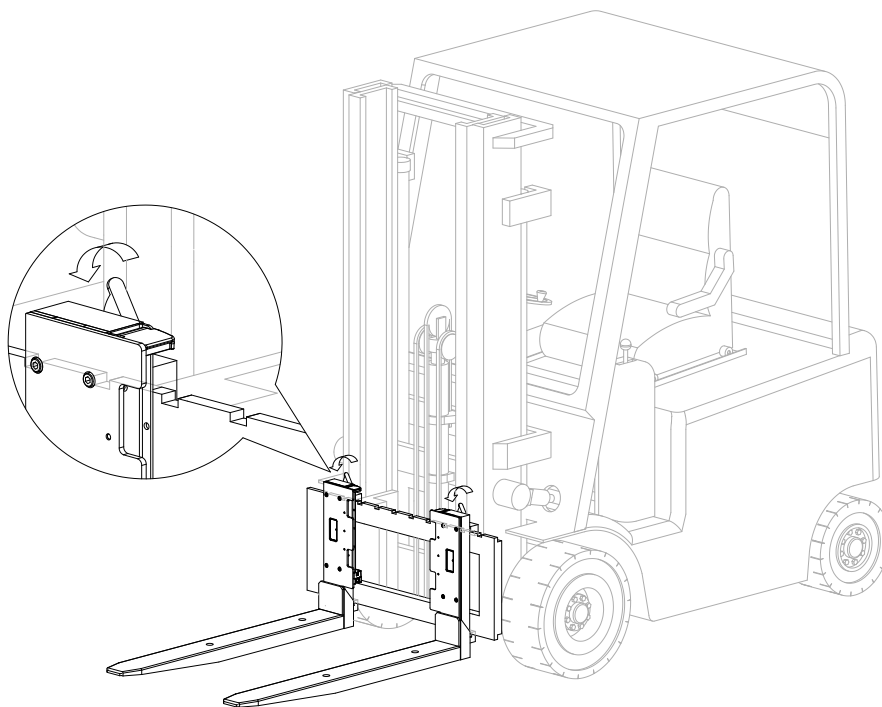
## 4. System setup

### 4.1 Installing the iForks

The standard forks must be taken from the carriage plate. The **iForks** are placed on the carriage plate.



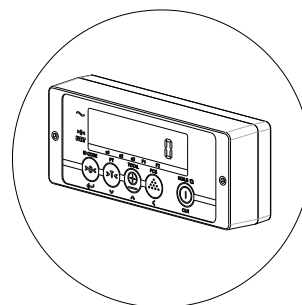
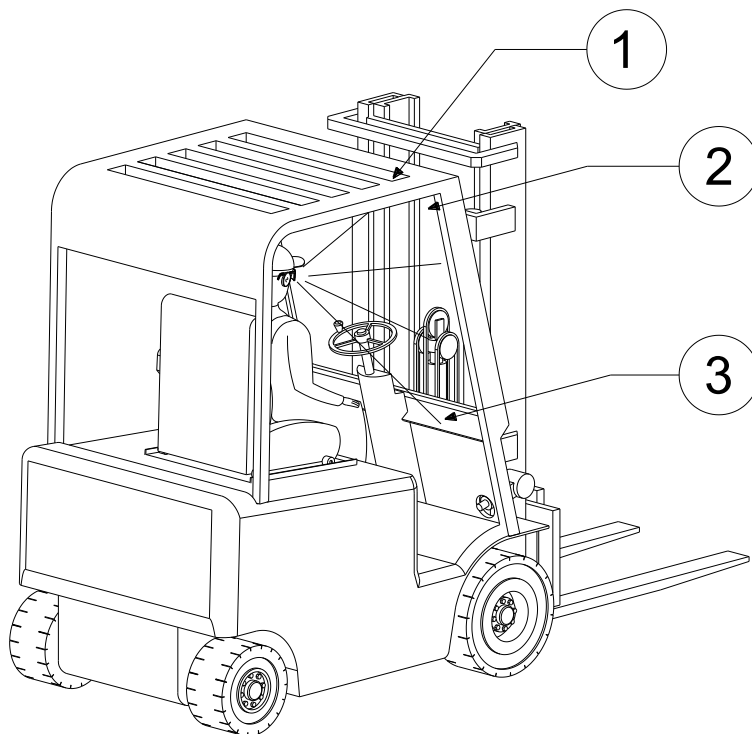
### Locking the iForks



## 4.2 Installing the indicator

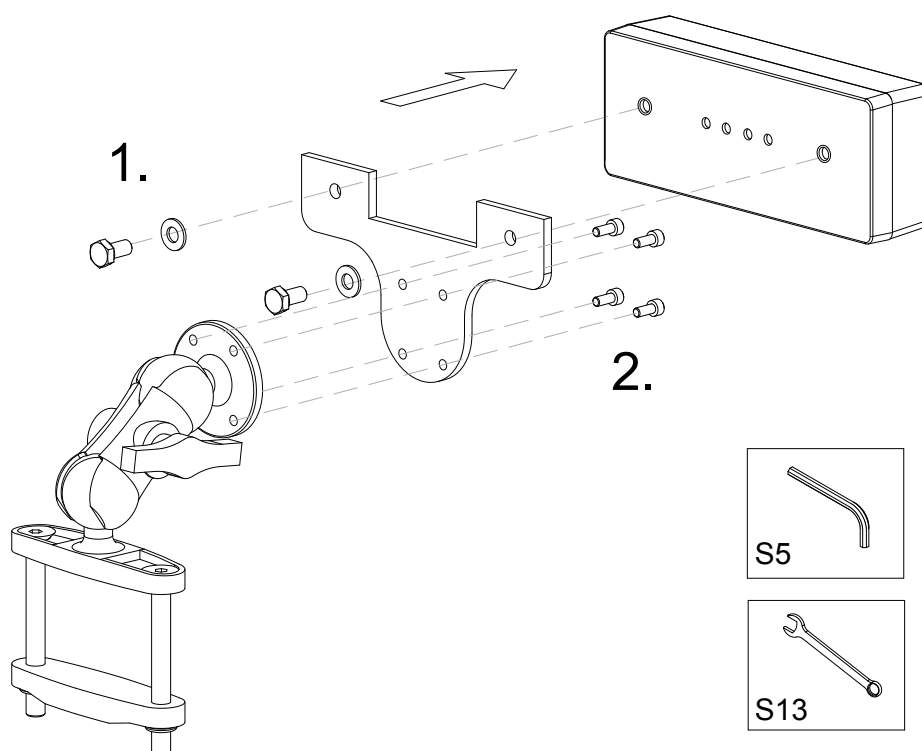
Find a suitable position for the indicator:

1. at the cabin's roof.
2. at the right side of the cabin, mounted onto a side-rail.
3. at the dashboard.



**The indicator should be easy to reach and read out!**

Installation of the indicator bracket & support

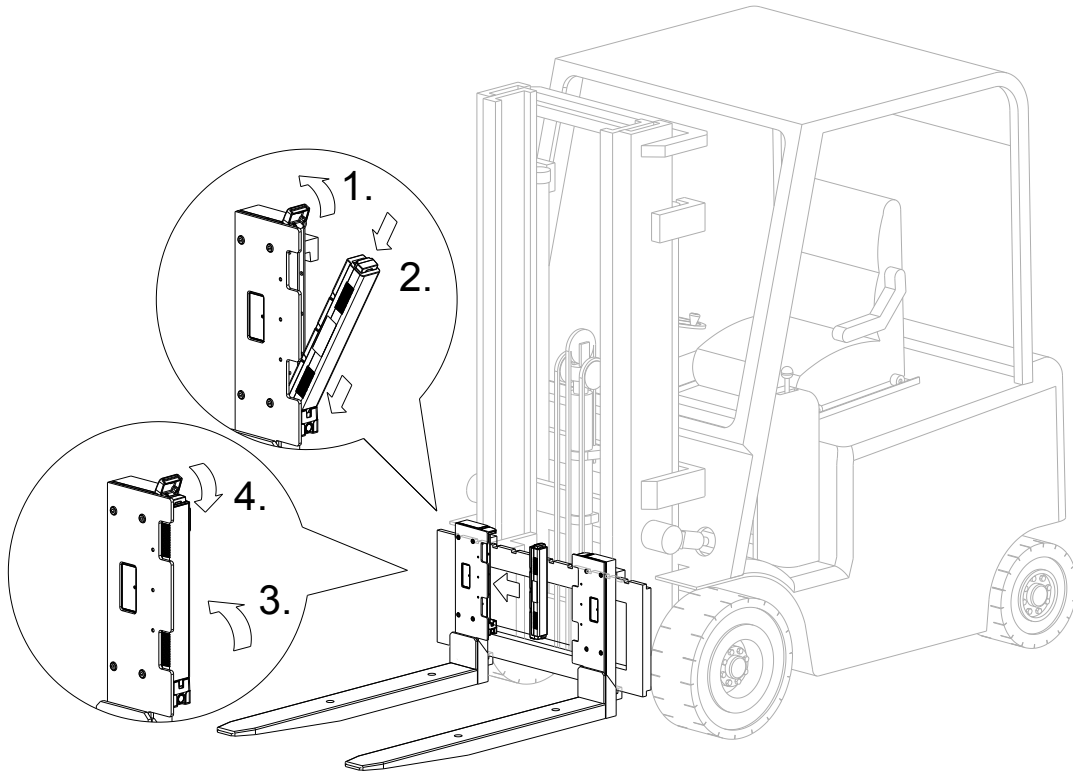


S5

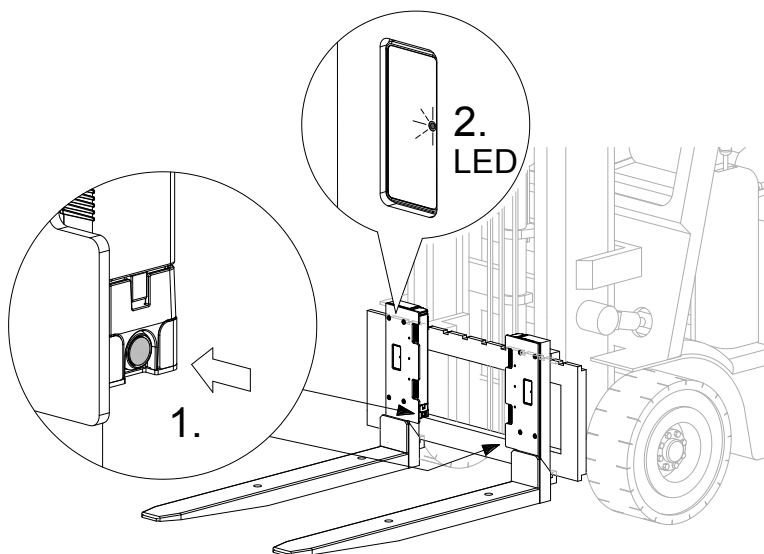
S13

#### 4.3 Placing the batterypacks in the **iForks**

1. Lift up the locking clips on the battery holders.
2. Position the batterypacks in both forks.
3. Click the batterypacks into the battery holders.
4. Push the locking clips down to secure the batterypacks.



#### 4.4 Switching on the **iForks**

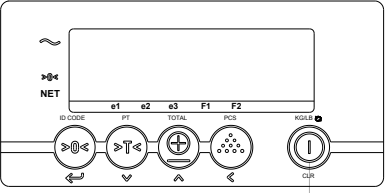


1. Switch on the forks by pressing the blue buttons on both batterypack holders.

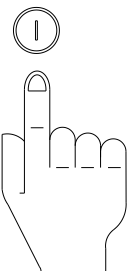
2. The blue LED's on the **iForks** will start blinking automatically.

## 4.5 Switching on the indicator

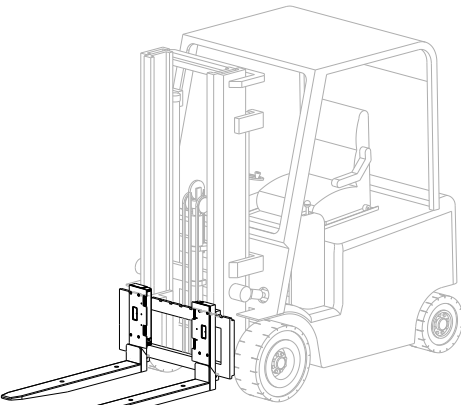
**1**



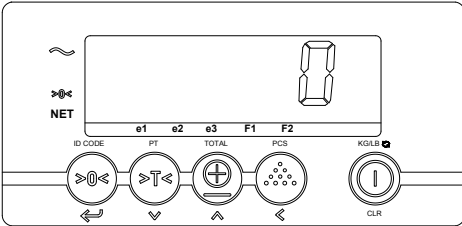
**Start up the indicator. Press the on/off key.**




**2**



**3**



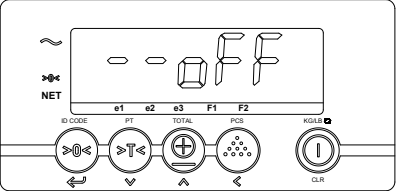
**5 sec.**



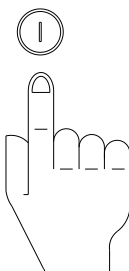
**Weigh!**

## 4.6 Switching off the system


**1**



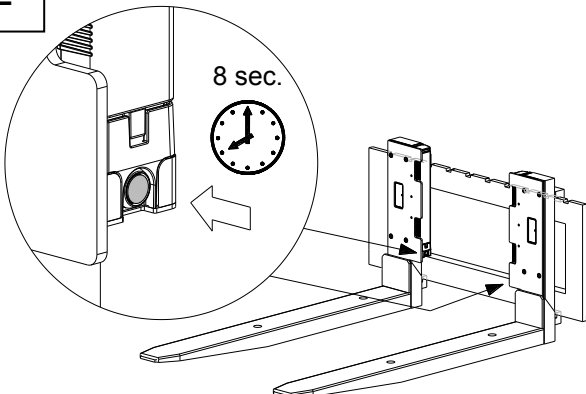
**Switch off the indicator by pressing the on/off key for 3 seconds.**




**3 sec.**



**2**



**8 sec.**



**Switch off the forks by pressing the blue buttons for 8 seconds.**

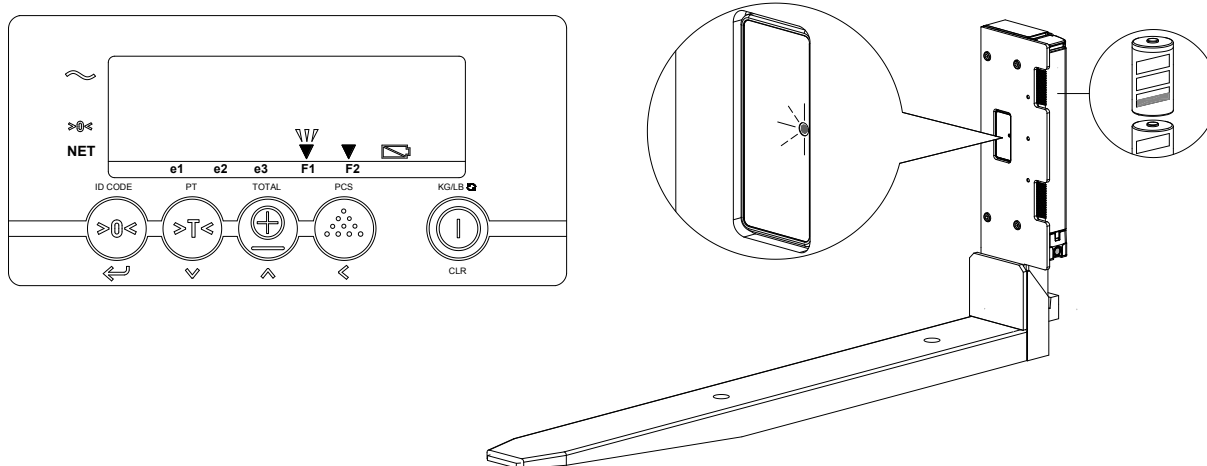
## 5. Changing batteries

### 5.1 Low battery indication **iForks**

Exchangeable batterypacks supply power to the **iForks**.

When the voltage level of the batterypacks is running low, the low bat indicator will light up and the pointer of the relating fork - "F1", "F2" or both - will start blinking in the display.

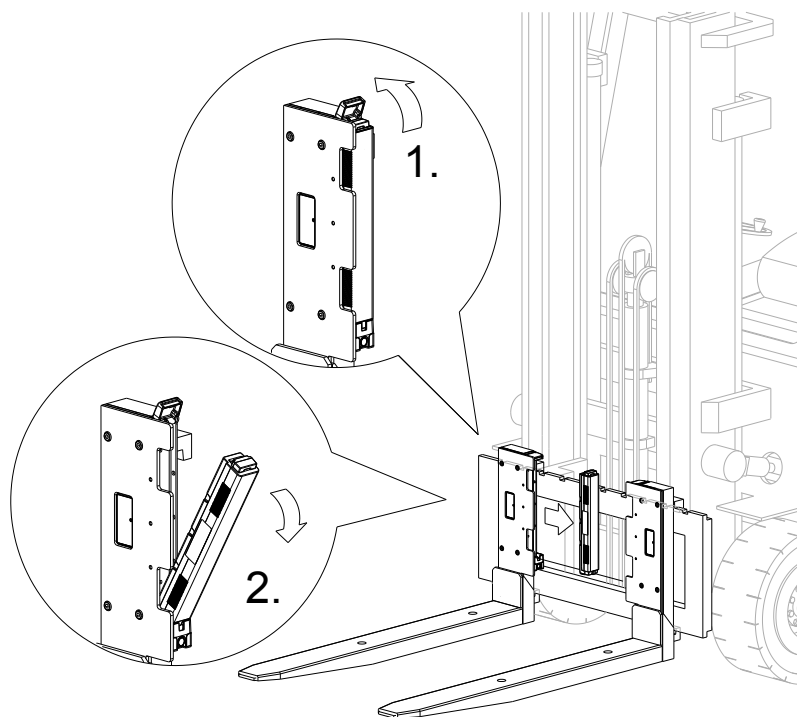
The blue LED's on the relating fork will start blinking very slowly (twice every 10 sec). The **iForks** will switch off automatically after 10 minutes.



FUNCTIONALITY BLUE LED	
DURING POWERING ON	ON for 5 sec.
FULL BATTERY	<i>Blink time interval</i>
Working mode	Once every 1,5 sec.
Sleep mode	Once every 4 sec.
LOW BATTERY	
Working mode	Twice every 10 sec.
Sleep mode	Twice every 10 sec.

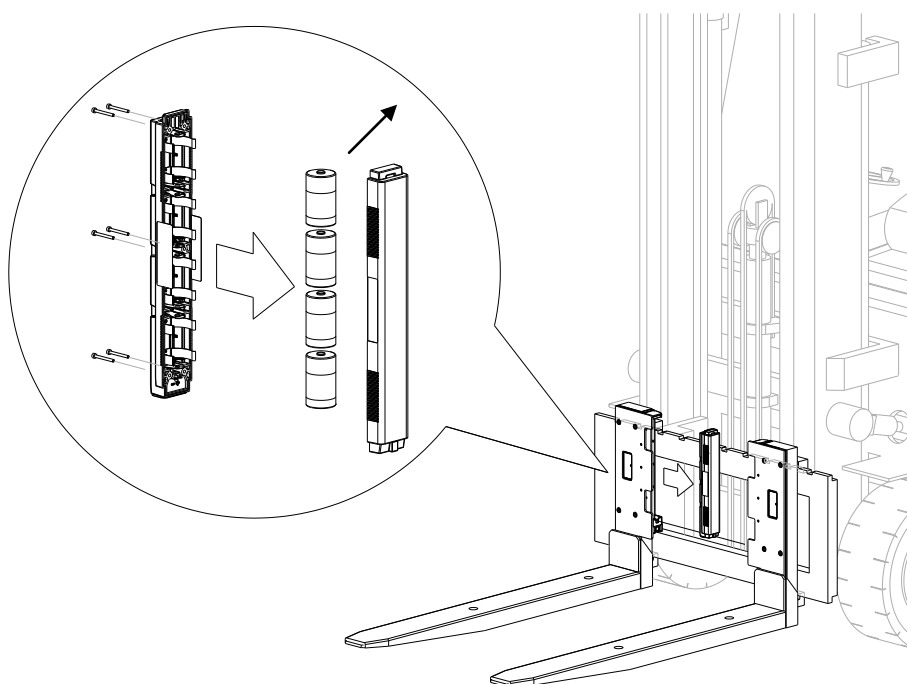
## 5.2 Changing the batterypacks of the **iForks**

### 5.2.1 Take out both batterypacks

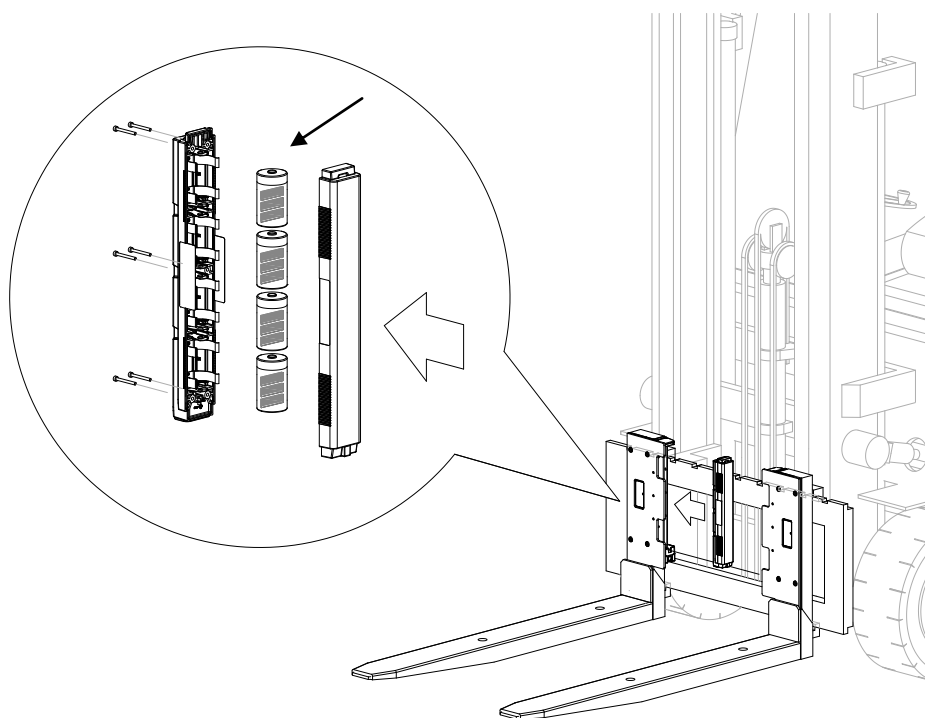


### 5.2.2 Change the D-Cells inside the batterypacks

1. Remove the 6 Philips-head screws M3 x 25.
2. Remove the top housing of the battery pack.
3. Take out the D-cells.



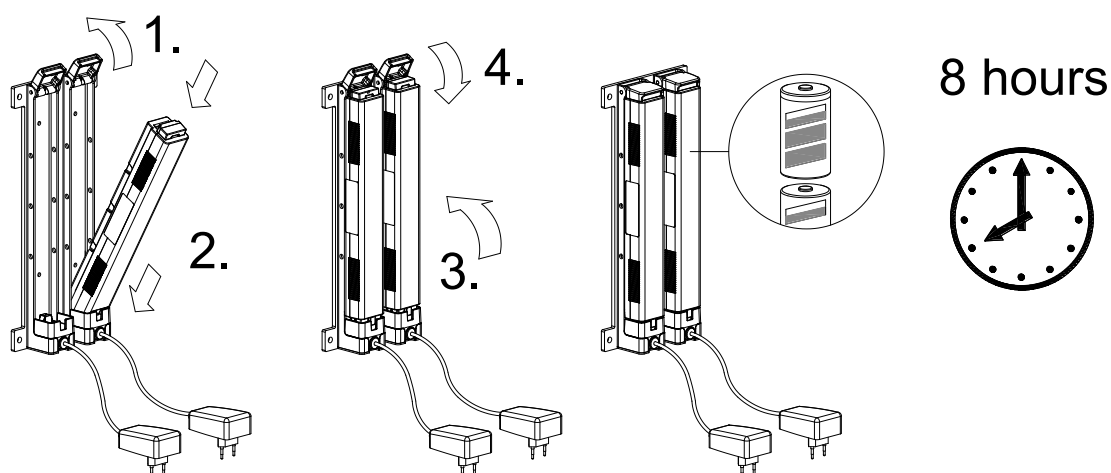
- 5.2.3 Place 4 full D-cell batteries in each batterypack. Replace the top housing of the batterypack and tighten the 6 Philips-head screws M3 x 25 (not too tight).



- 5.2.4 Replace the battery packs of the **iForks** (see step 4.3, page 8)

- 5.2.5 Charge the rechargeable battery packs (option)

The system additionally can be equipped with rechargeable battery packs and a charger. Charge the battery for at least 8 hours. This will prevent loss of battery capacity. Check by reading the battery-pack label to make sure this battery pack is equipped with rechargeable batteries. Only battery packs with rechargeable D-cells can be re-charged.

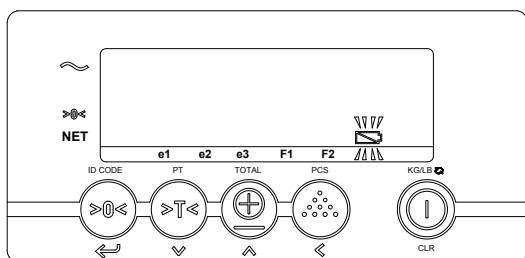


First position the battery pack inside the charger module, then plug the adaptors into the mains voltage. When the battery is being charged, the red LED on the charger is lit. After at least 8 hours charging, the battery packs are full again. The red LED will stay on, even when the battery packs are fully charged.

### 5.3 Changing the batteries of the indicator

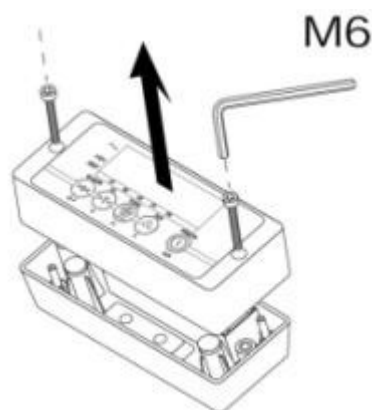
As standard, the indicator is equipped with 4 AA batteries. Optionally the power supply of the indicator can be wired from the truck's batteries. This has to be ordered separately because the indicator has to be supplied with the appropriate voltage converter or voltage stabilizer board.

1



Replace batteries as soon as the low bat indicator starts blinking. When the low-bat symbol starts flashing during printing (option) please change the batteries.

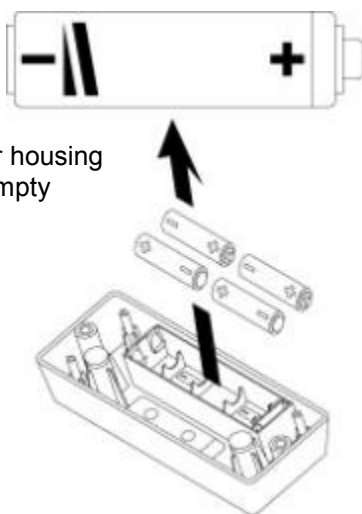
2



Use a M6 hex key to release the bolts of the indicator housing.

3

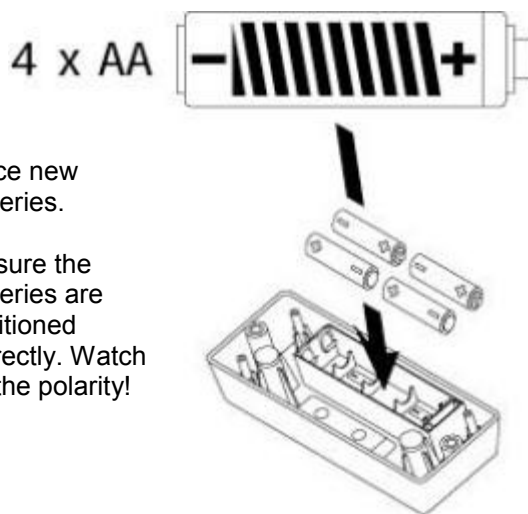
Open the indicator housing and remove the empty batteries.



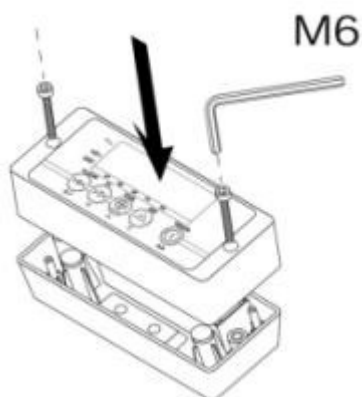
4

Place new batteries.

Be sure the batteries are positioned correctly. Watch for the polarity!



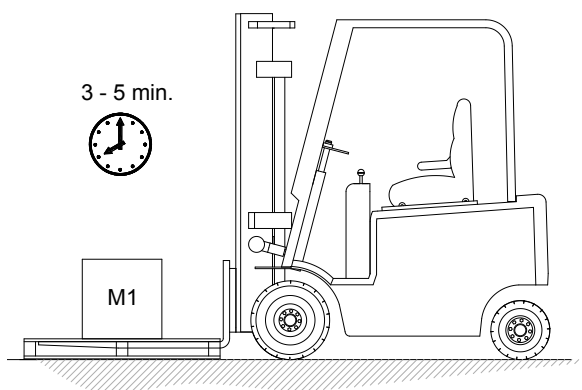
5



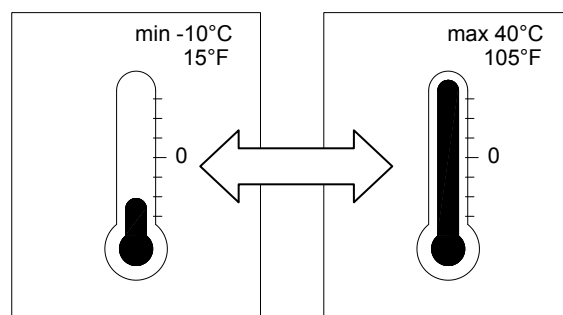
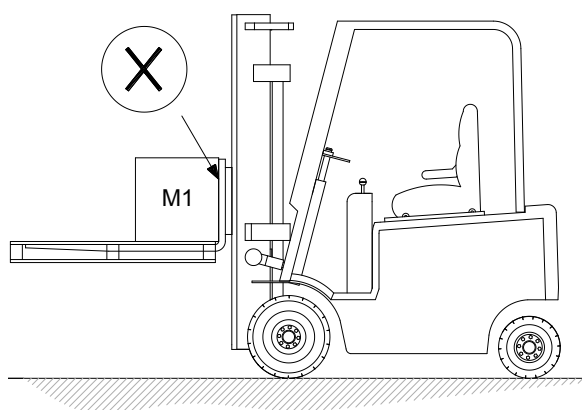
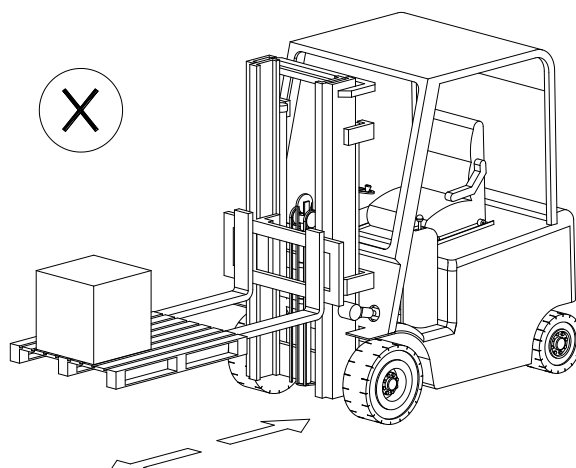
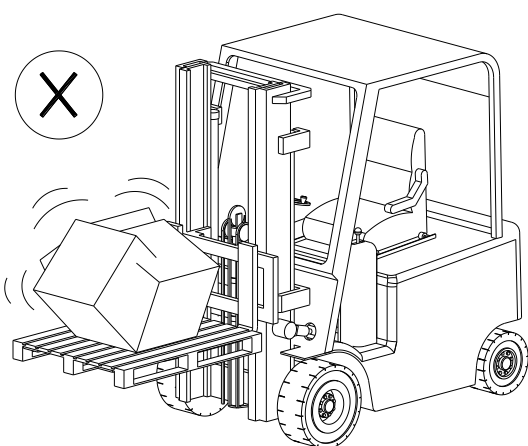
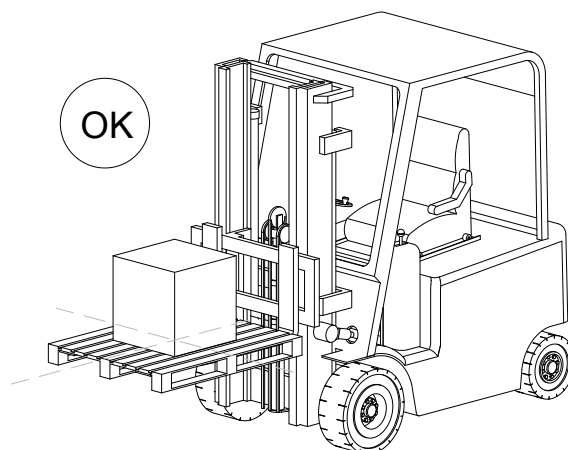
Close the indicator housing and tighten the bolts by using a M6 hex key.

## 6. Use

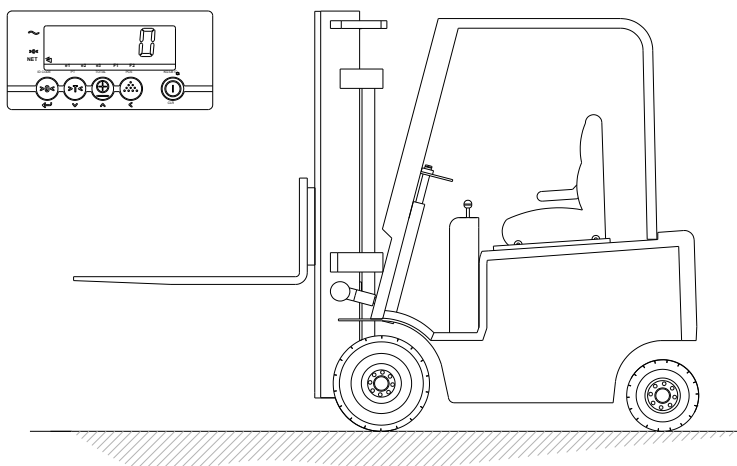
### 6.1 Use (accurate weighing)



After 3 to 5 minutes the load cells have reached the operational temperature. Don't lift loads before the zero-point correction has been executed.



### 6.1.1 Check the zero reading before each weighing

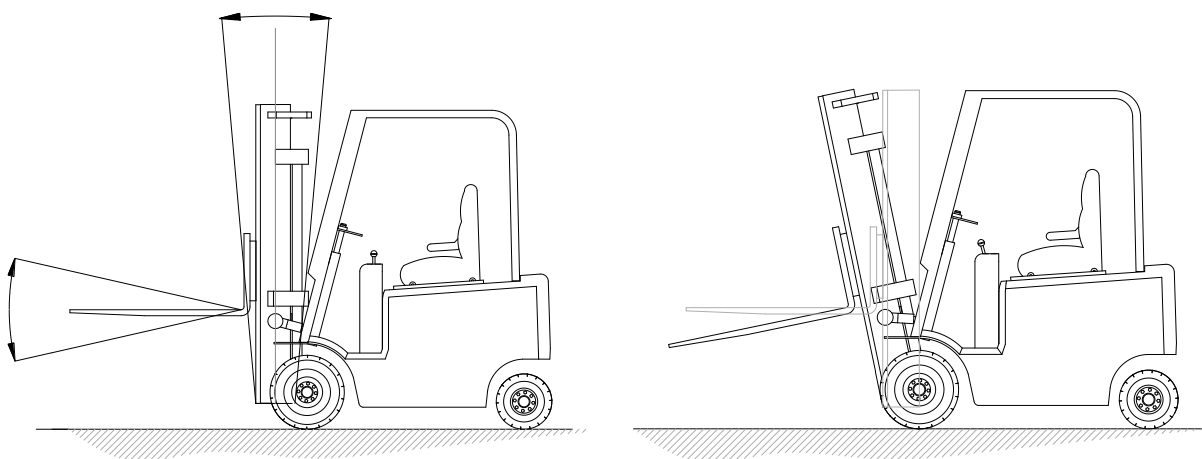


#### Check the zero reading before each weighing!

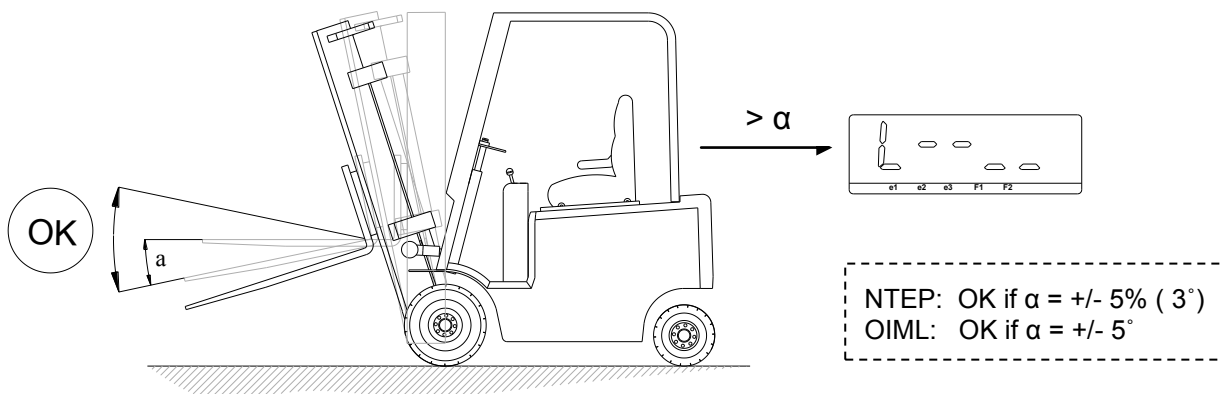
Before each weighing it is necessary to check if the system is without a load and does not make contact with other obstacles

When the indicator doesn't show automatically the zero, then a manual zero correction has to be done by pressing short on the key:  $>0<$

### 6.2 Level correction (option)

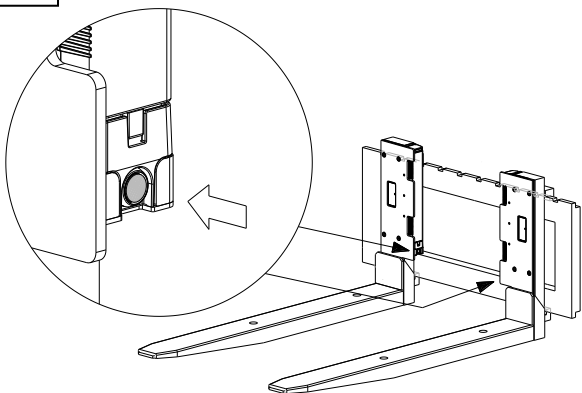


**Legal for trade:**



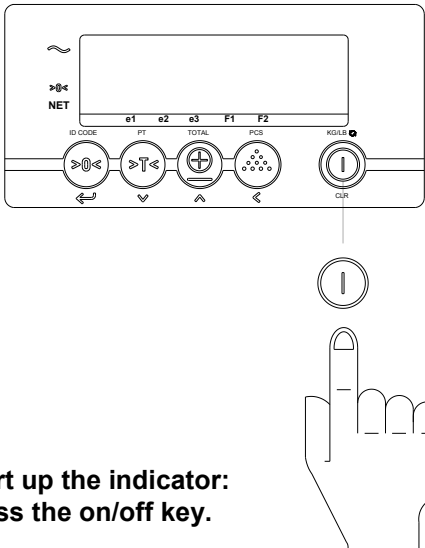
### 6.3 Establish Bluetooth communication and weigh!

1



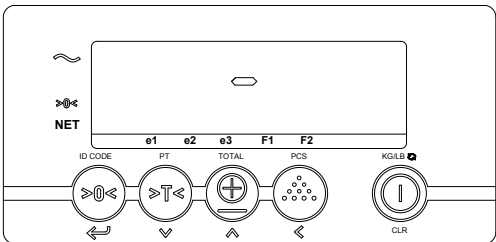
**Switch on the iForks:**  
press the blue button below both batterypacks.

2




**Start up the indicator:**  
press the on/off key.

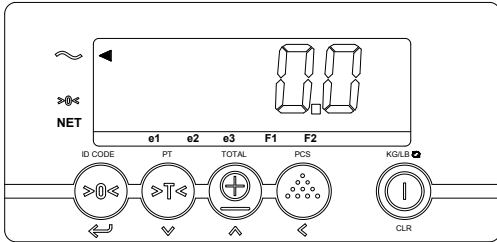
3



**5 sec.**



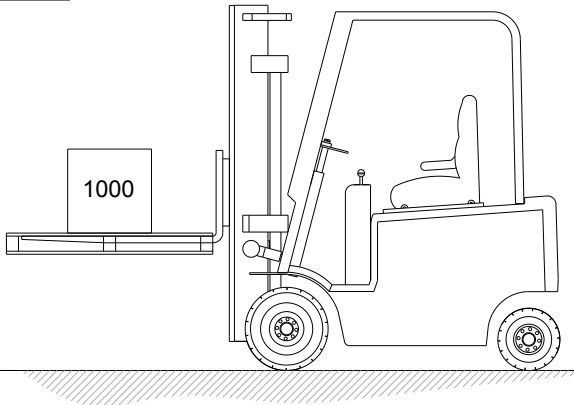
4



**Before each weighing: check the zero point!**

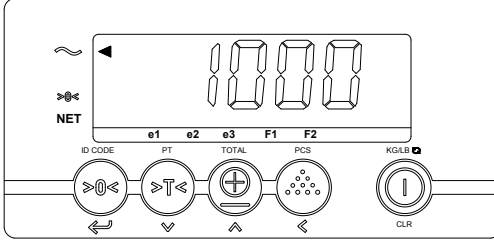
*Before each weighing it is necessary to check whether the system is unloaded and free.  
If the indicator does not determine the zero point automatically, it must be done manually using the >0< key.*

5



**System is ready to weigh.**

6



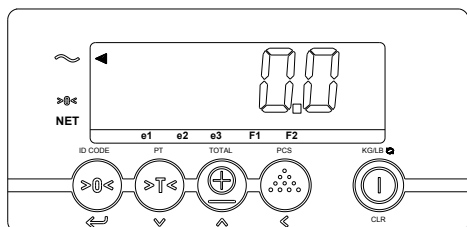
**Before the next weighing, check the zero point again.**

USER MANUAL - iForks

16

## 6.4 Auto shut-off indicator

1

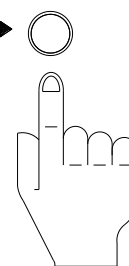
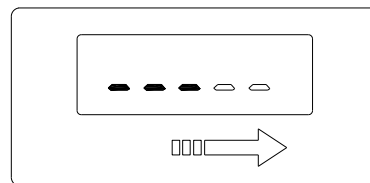


2 min. no action !



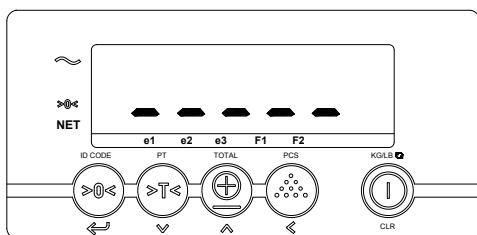
2

20 sec.

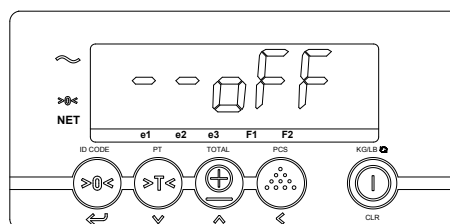


**Countdown starts:**  
Press any key during to  
cancel auto-shut-off and  
go back to the weighing  
mode.

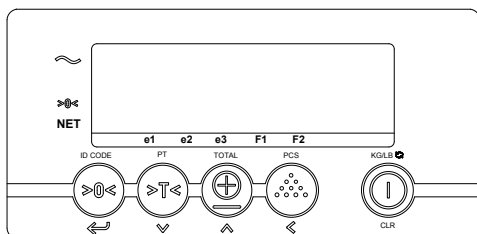
3



4



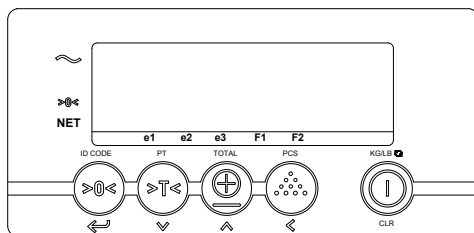
5



**Indicator off**

## 6.5 Auto shut-off **iForks**

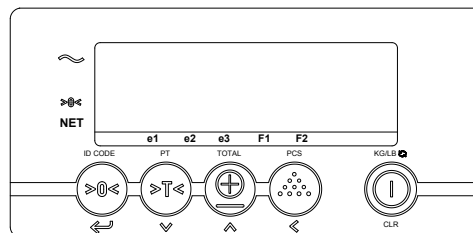
1



2 hour no weighing !

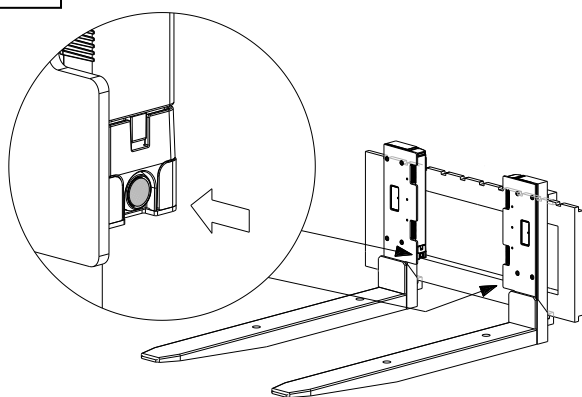


2



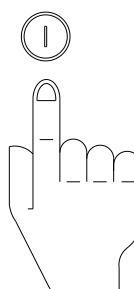
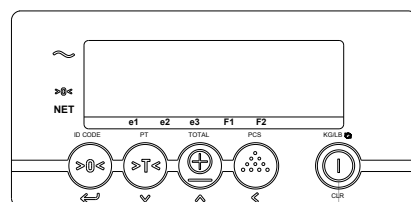
**-iForks off**  
-Indicator off

3



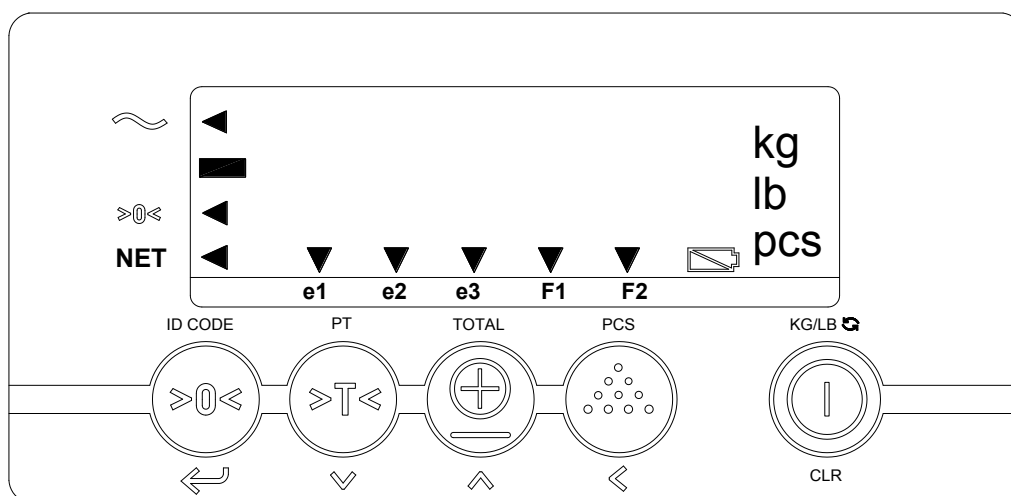
Switch on the **iForks**:  
press the blue button below both batterypacks.

4



Restart the indicator:  
Press the on/off key.

## 6.6 Indicator functions

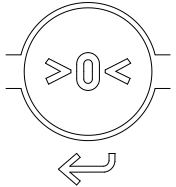
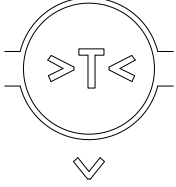
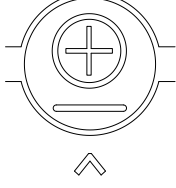
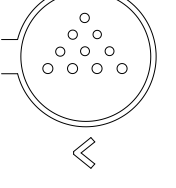

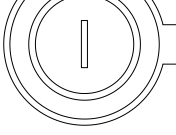


### Display Functions

		the weighing system (including load) is stable
		the weight shown is negative
<b>ZERO</b>		the weight shown is within the zero range
<b>NET</b>		the display is showing the net weight
<b>e1</b>		displayed weight shown is in range 1 (option multi range)
<b>e2</b>		displayed weight shown is in range 2 (option multi range)
<b>e2</b>		displayed weight shown is in range 3 (option multi range)
<b>F1</b>		Fork 1 / setpoint 1 is activated ( option relay output)
<b>F2</b>		Fork 2 / setpoint 2 is activated ( option relay output)
<b>kg</b>		displayed shows weight is kilograms
<b>lb</b>		displayed shows weight is pounds
<b>pcs</b>		number displayed represent number of pieces on the scale
		low bat indicator

## Key functions

Each key has 2 operational and one entry function.

Standard function (Short key press)	Key	Special function (long key press)	Value entering function (entry mode)
zero setting	ID CODE 	code entry	enter
automatic tare	PT 	pre-set tare	decrease the value of the digit flashing
print weight and add to the total	TOTAL 	check subtotal and print total	increase the value of the digit flashing
sampling a piece weight	PCS 	enter a piece weight	shift to the next digit on the left
On switch And change to lb and kg	KG/LB   CLR	Off switch	clear entry




## Important

Operation of a key is not accepted unless the weighing system is stable (and the “load stable” pointer lights up). This means that the indicator only executes commands with a stable load.

For a detailed description of the functions CODE ENTRY, PIECE COUNT and RELAY check our operational manual Indicator 4100 at [www.ravas.com](http://www.ravas.com).

## 6.7 Error messages

### ERROR MESSAGES

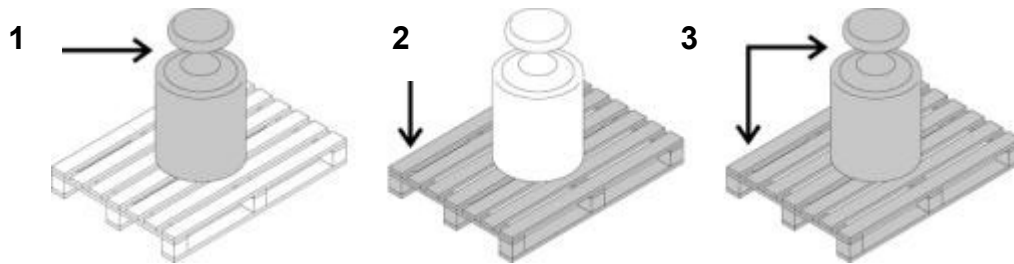
Display	Meaning	Out of error mode
Err01	Load cell signal is unstable	Automatic
Err02	Overload on full scale	Automatic after removing weight
Err03	Gross negative. This action is not allowed	Automatic
Err04	Out of zero range	Press any key
Err05	Sampling accuracy too low	Press any key
Err06	Input signal too high	Automatic after correcting input
Err08	Calibration out of range (negative)	Automatic
Err09	Calibration out of range (signal too low)	Automatic
Err10	Calibration count 2nd(3rd) point lower than count 1st(2nd) point	Automatic
Err14	Setpoint value 2 < setpoint value 1. This is not allowed	Automatic
Err97	Legal for trade version: not allowed action	When action is intended, install jumper JP1 (attention: after this action a complete new calibration and stamping of the system is necessary )
Err98	Calibration point must be higher than previous one	Automatic
Err99	Action only allowed in start-up units	Automatic
ErrF1	Problem with fork 1 (no communication)	Restart indicator. Restart forks & indicator
ErrF2	Problem with fork 2 (no communication)	Restart indicator. Restart forks & indicator
----	Loadcell signal negative	Lift up the forks from the ground
L - _	Forks are out of level (only legal-for-trade version)	Put the forks into horizontal position
ErrCS	Problem with correction sensor	Contact the RAVAS Service department
	Battery of indicator is empty	Replace the 4 AA batteries
 +F1 ▼	Battery of fork 1 is empty	Replace the D-cells in both battery packs or charge both battery packs
 +F2 ▼	Battery of fork 2 is empty	Replace the D-cells in both battery packs or charge both battery packs

### DISPLAY MESSAGES

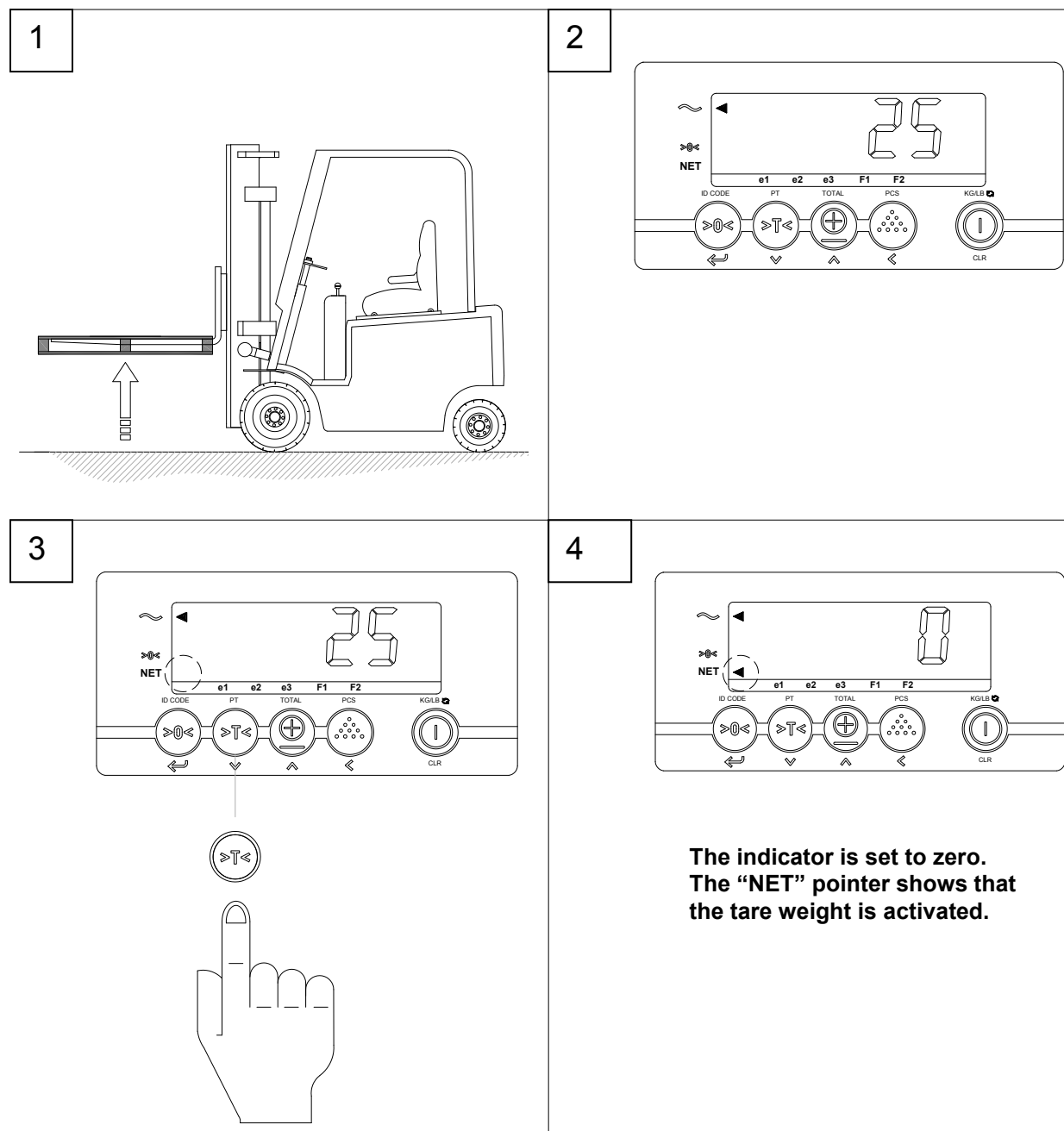
Display	Meaning	
BltF1	Successful Bluetooth link with fork 1	<i>No error</i>
BltF2	Successful Bluetooth link with fork 2	<i>No error</i>

## 6.8 Net / Tare / Gross weight

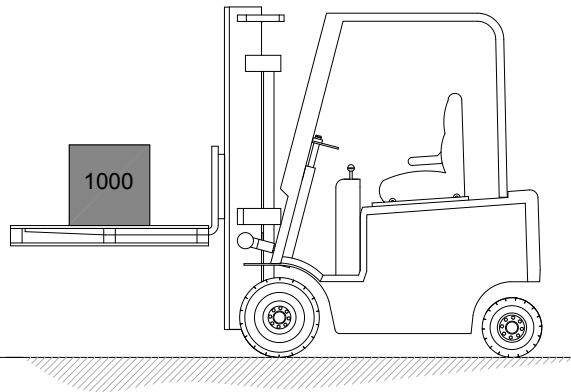
EXPLANATION:  $Net(1) + Tare(2) = Gross(3)$



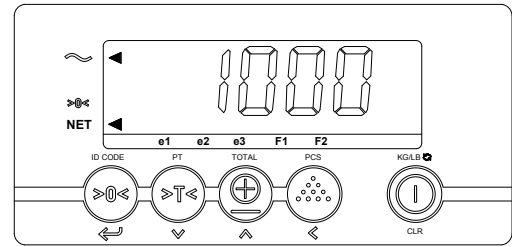
### 6.8.1 Net weighing: automatic tare



5

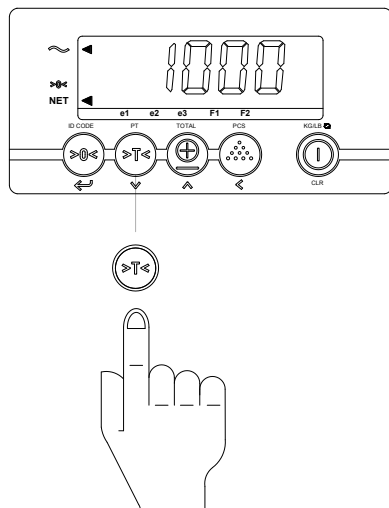


6

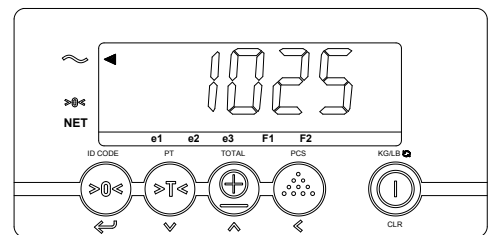


The display shows the net value of the weighed load.

7

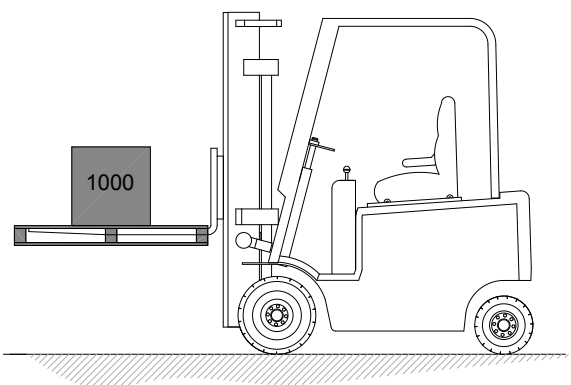


8

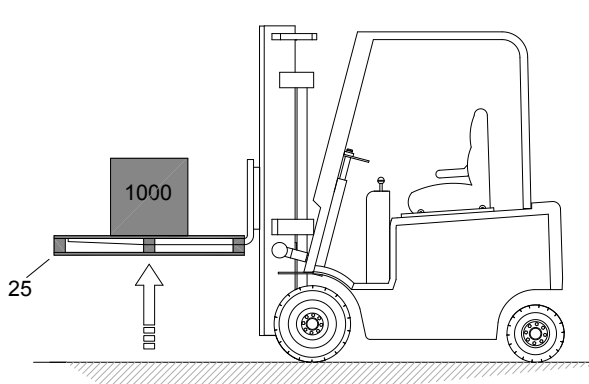
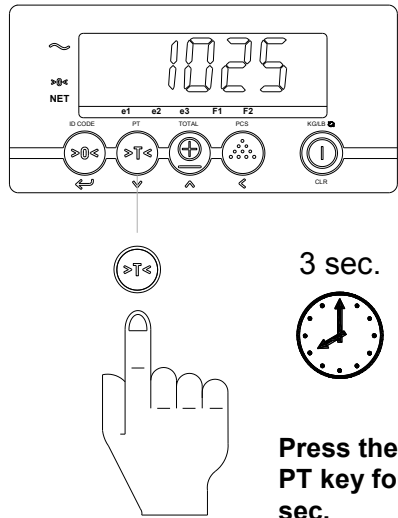
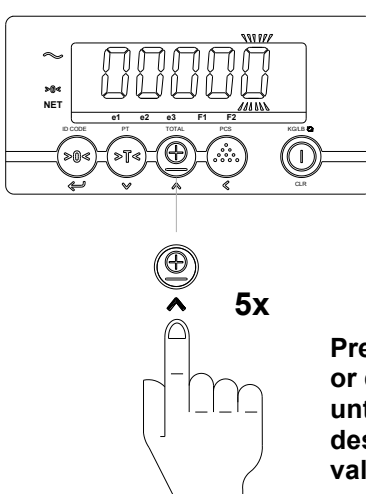
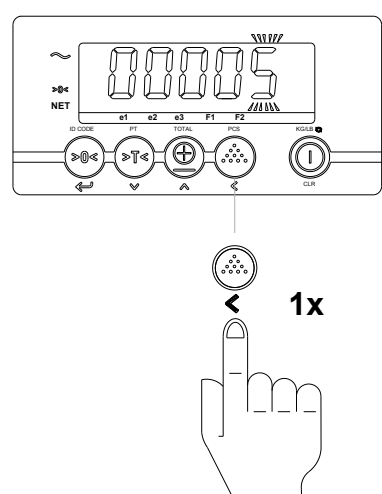
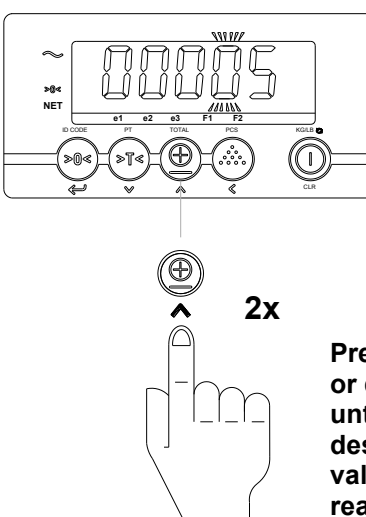
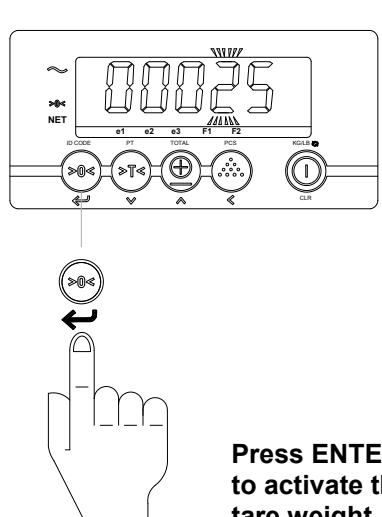


The gross weight is displayed again.

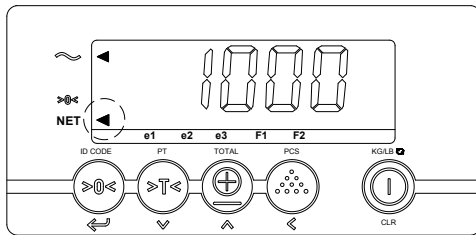
9



## 6.8.2 Net weighing: manual tare (PT)

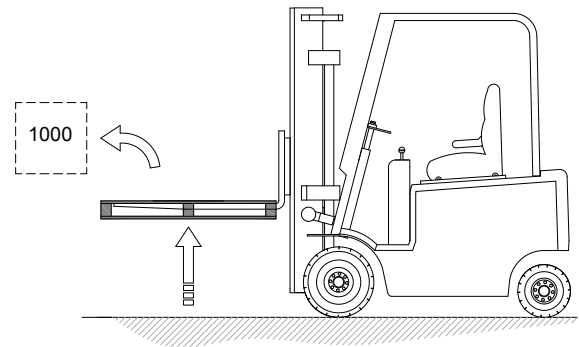
<p><b>1</b></p> 	<p><b>2</b></p>  <p>3 sec.</p> <p>Press the PT key for 3 sec.</p>
<p><b>3</b></p>  <p>5x</p> <p>Press the up or down key until the desired value is reached.</p>	<p><b>4</b></p>  <p>1x</p>
<p><b>5</b></p>  <p>2x</p> <p>Press the up or down key until the desired value is reached.</p>	<p><b>6</b></p>  <p>Press ENTER to activate the tare weight.</p>

7

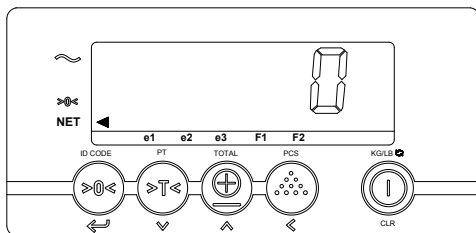


The “NET” pointer lights up

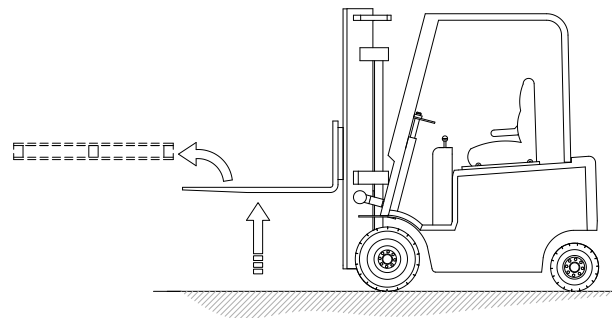
8



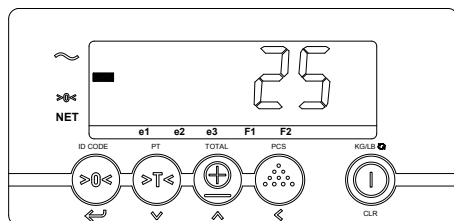
9



10

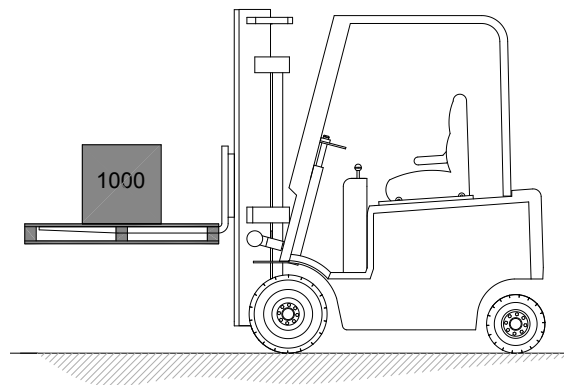


11

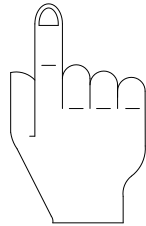
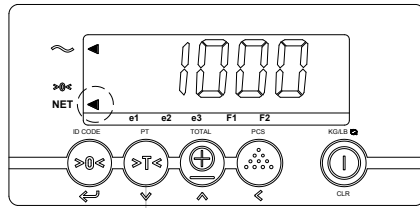


When the **iForks** are completely unloaded, the tare value is displayed negatively.

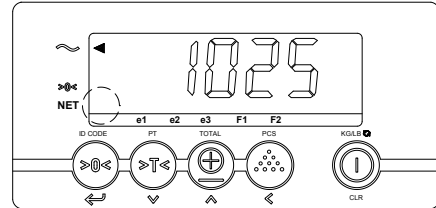
12



13

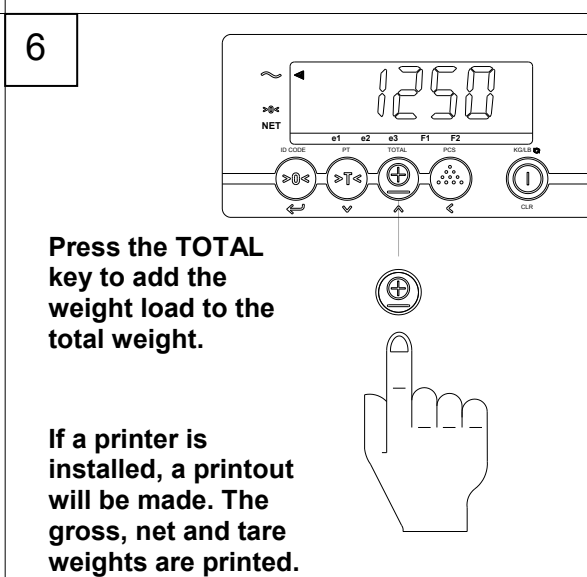
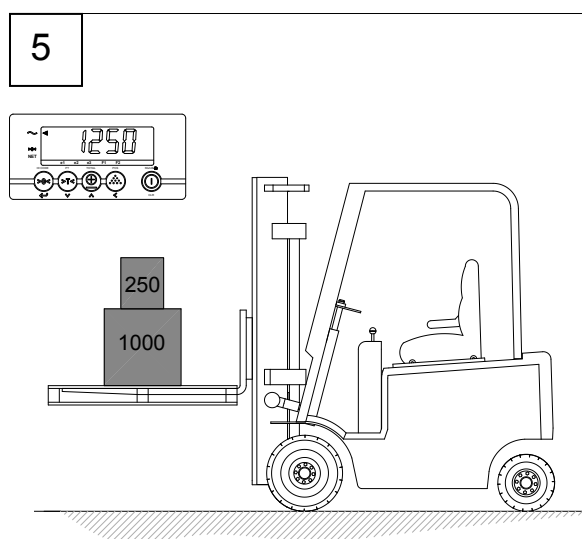
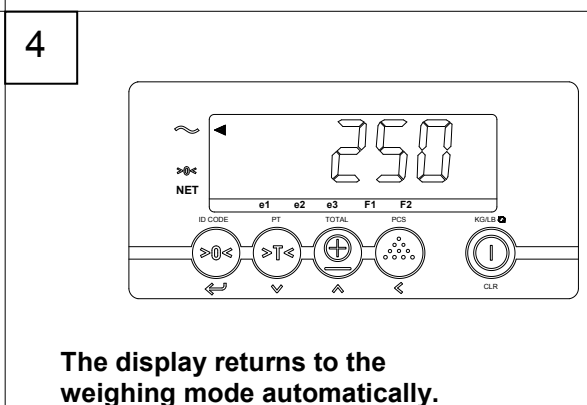
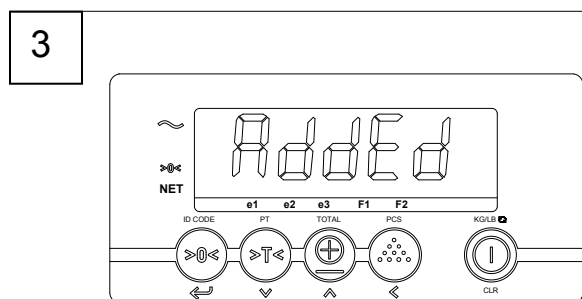
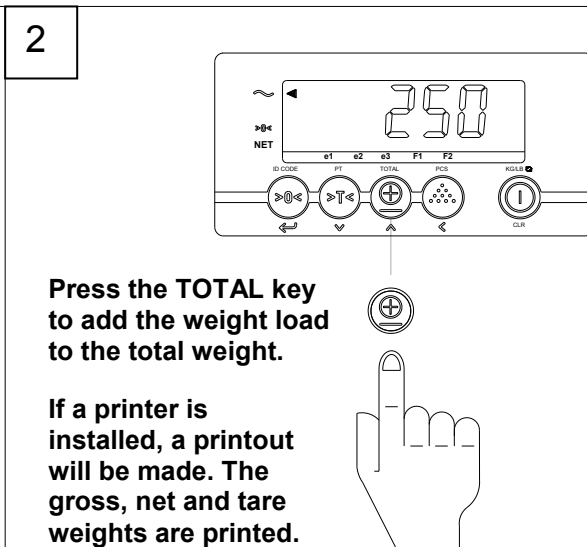
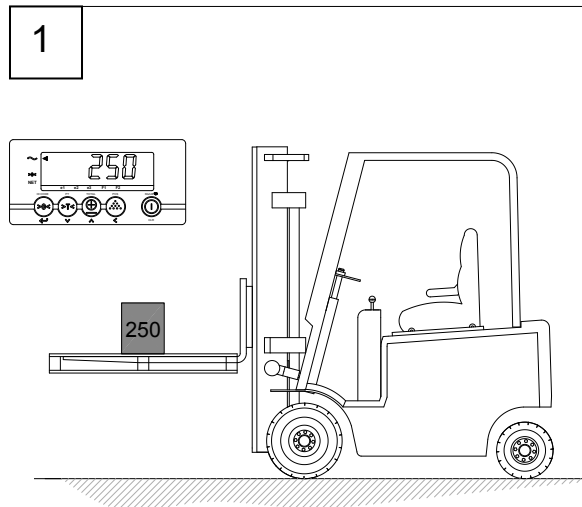


14

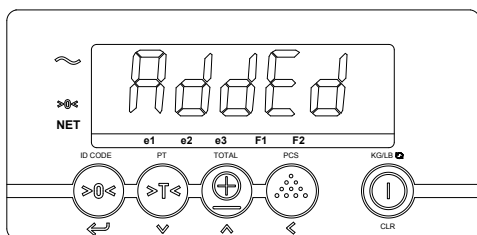


**The gross weight is displayed again.**

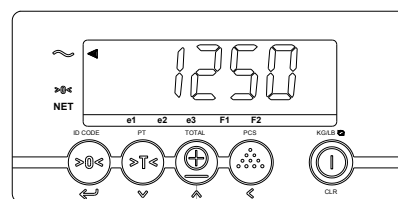
## 6.9 Adding & reset



7



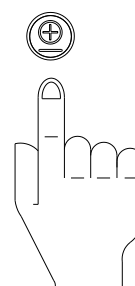
8



3 sec.

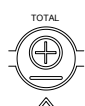
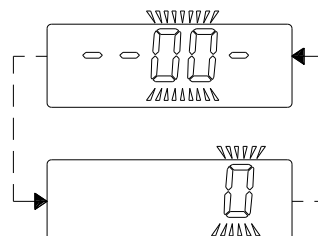
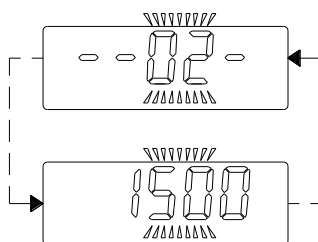
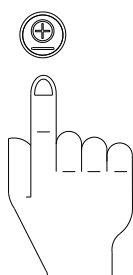


The subtotal  
can be checked  
by pressing the  
TOTAL key for  
3 sec.



9

3 sec.

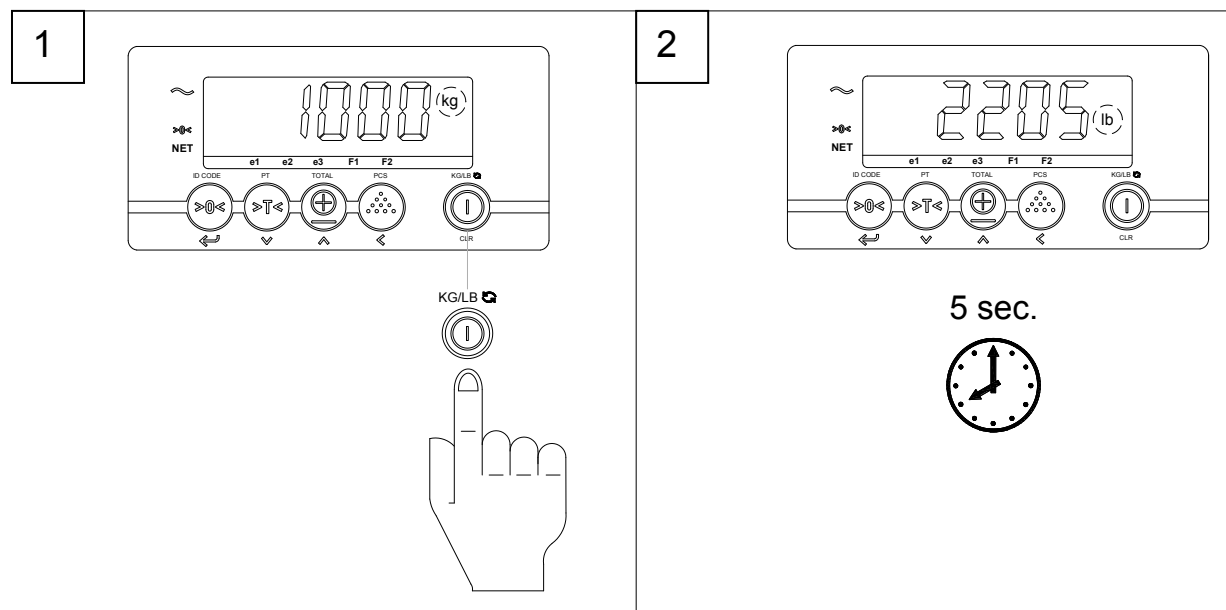


= RESET TOTAL & PRINT

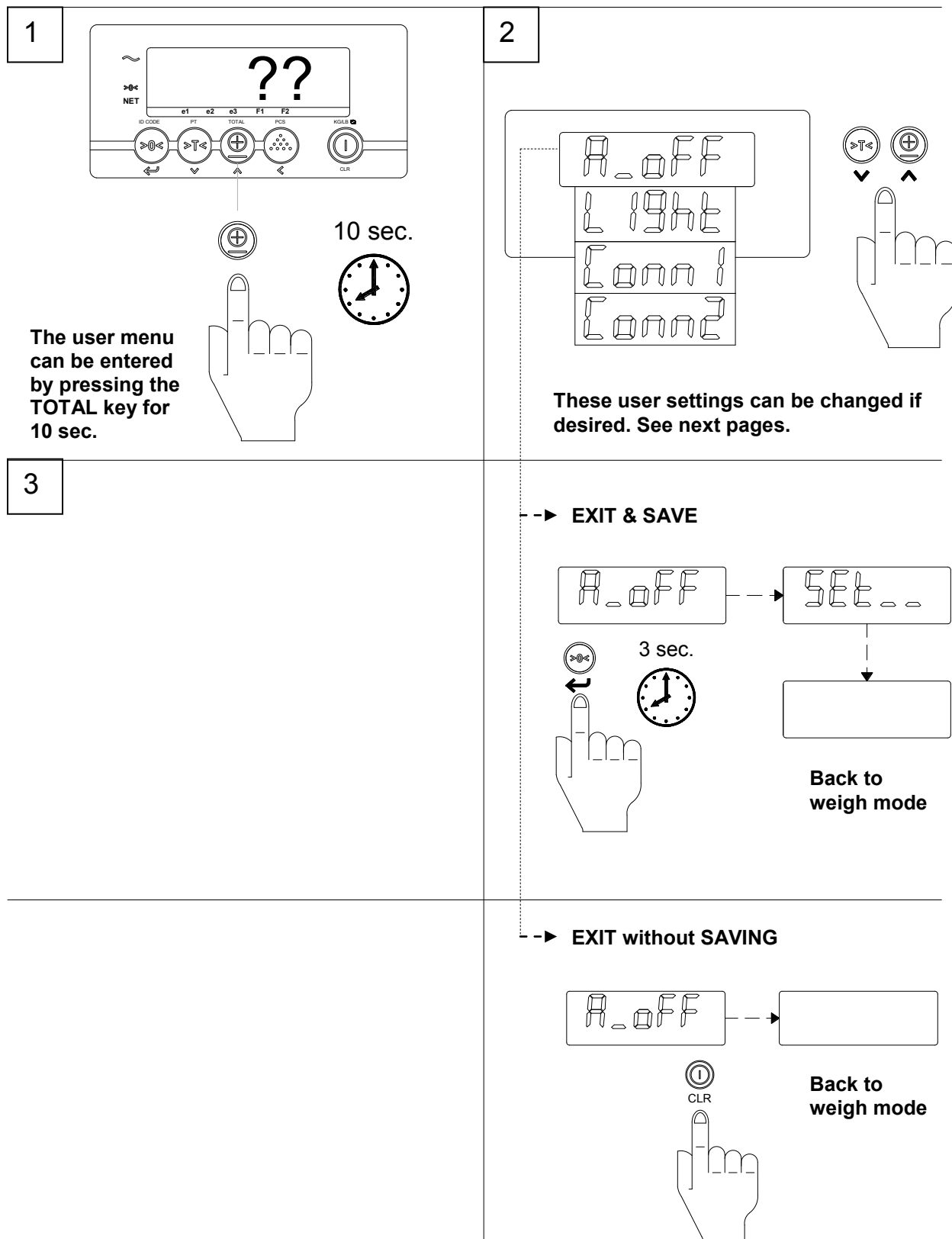


= RESET TOTAL

## 6.10 KG- LB switch

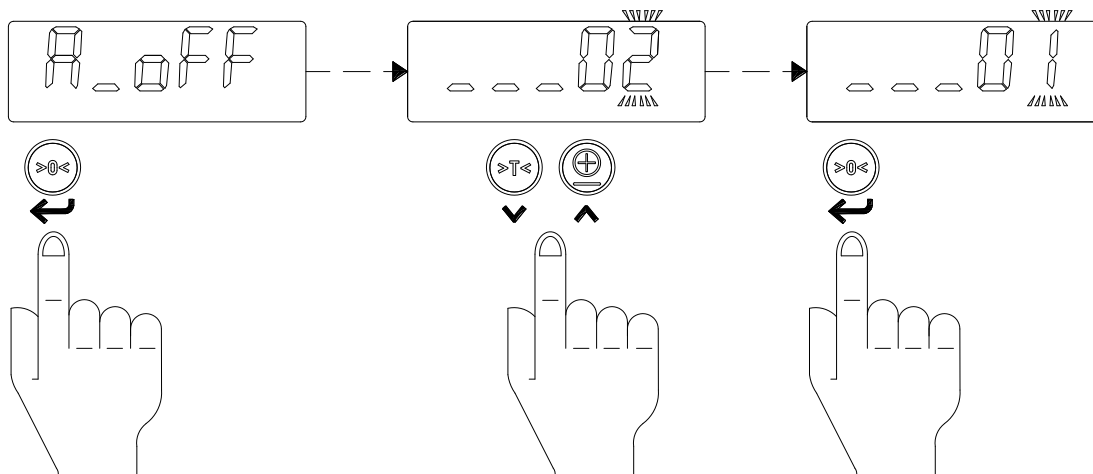


## 6.11 User settings



---

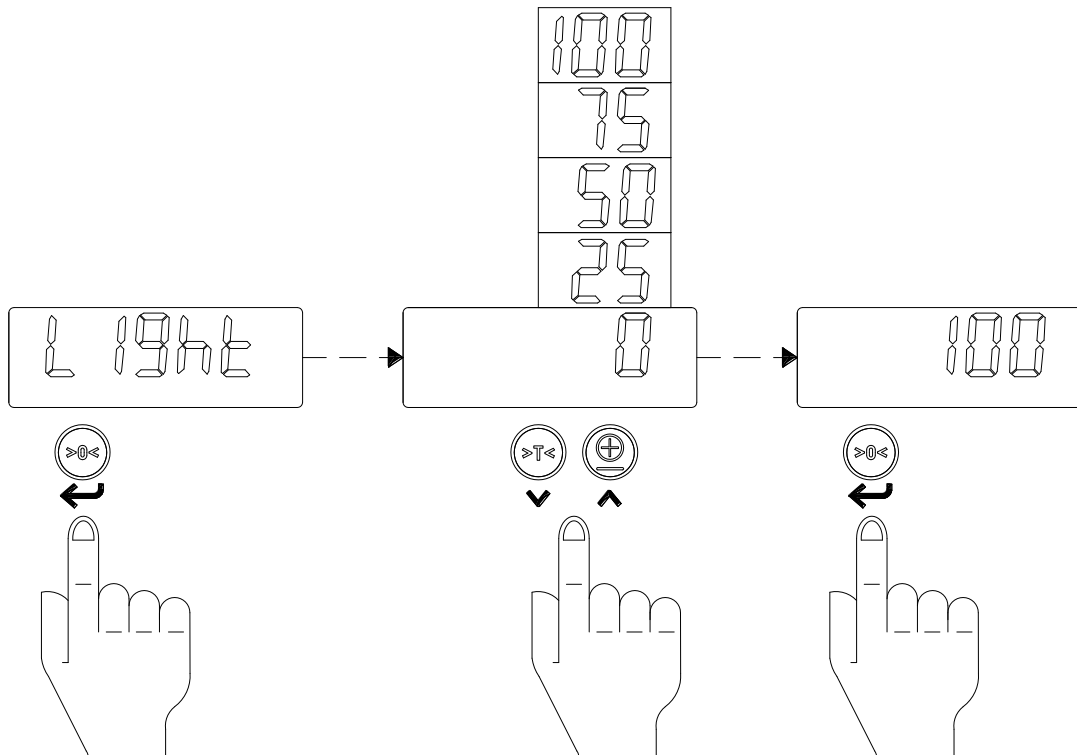
**Set the auto shut-off time indicator (delay time in minutes)**



**0 min = indicator always on**

---

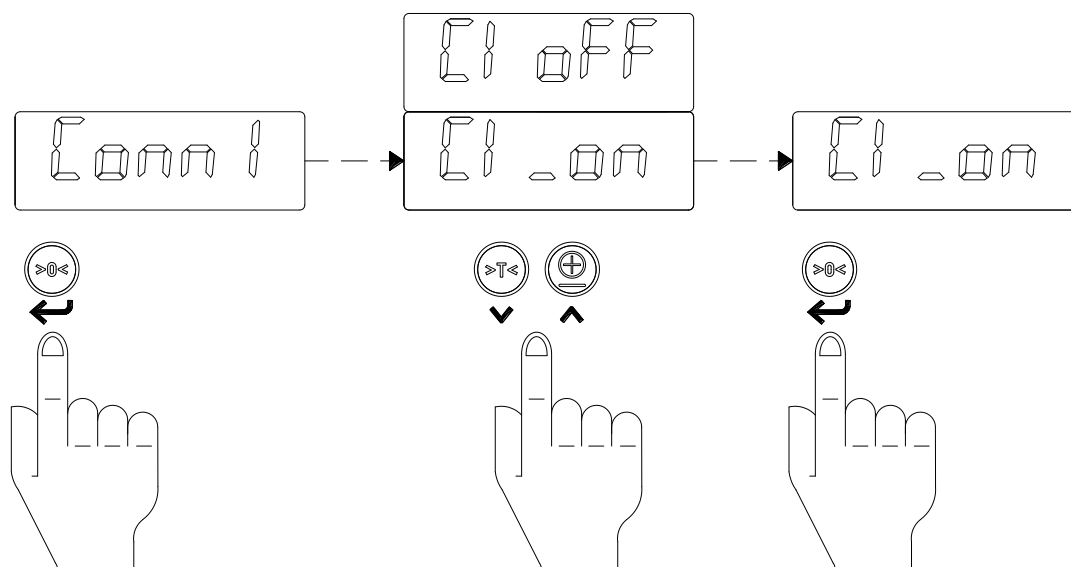
**Set backlight (intensity in %)**



**0 % = backlight off**

---

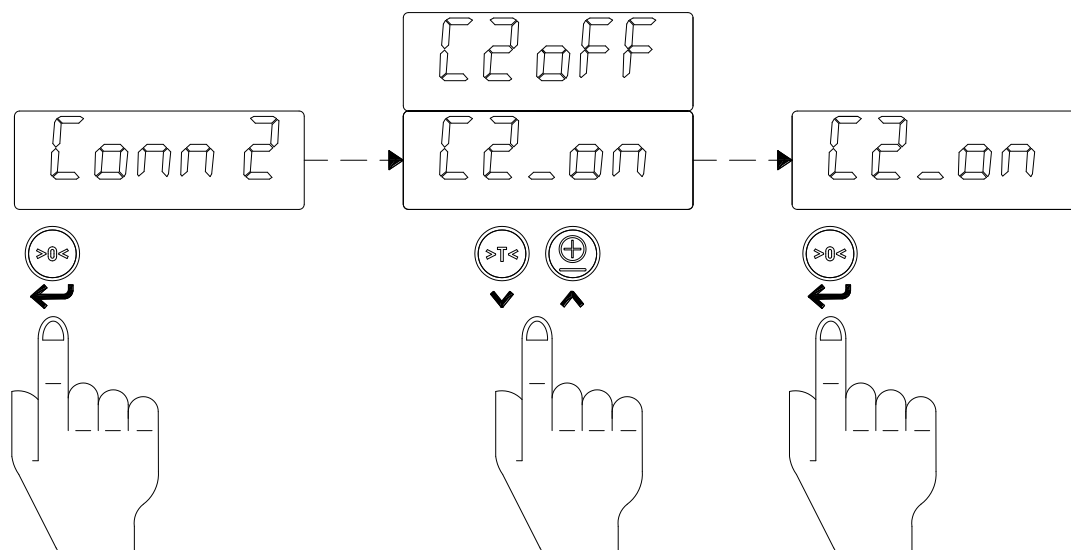
### (De-) activate Com Port 1



*It is not possible to de-activate Com Port 1 for iForks*

---

### (De-) activate Com Port 2



## DECLARATION OF CONFORMITY

**Issued by:** RAVAS Europe B.V.  
Toepadweg 7  
5301 KA Zaltbommel  
The Netherlands

**In accordance with the requirements of:**

Low Voltage Directive	2006/95/EC
EMC Directive	2004/108/EC
Committee Directive	2006/42/EC
Council Directive	90/384 EEC

Forks are produced according to international standards:  
ISO 2328  
ISO 2330  
EN 1726-1, paragraph 5.6.5

**In respect of:** a non-automatic weighing instrument

**Manufacturer:** RAVAS Europe B.V.

**Model:** **iForks**

**Description:** weighing forks

This declaration of conformity is valid when the above-mentioned instrument is marked with the CE mark. The instrument is verified in the factory and may be used immediately.

We, RAVAS Europe B.V., declare under our sole responsibility that this weighing system is in conformity with the directives and standards mentioned.



H.P.M. van Seumeren  
Technical Director