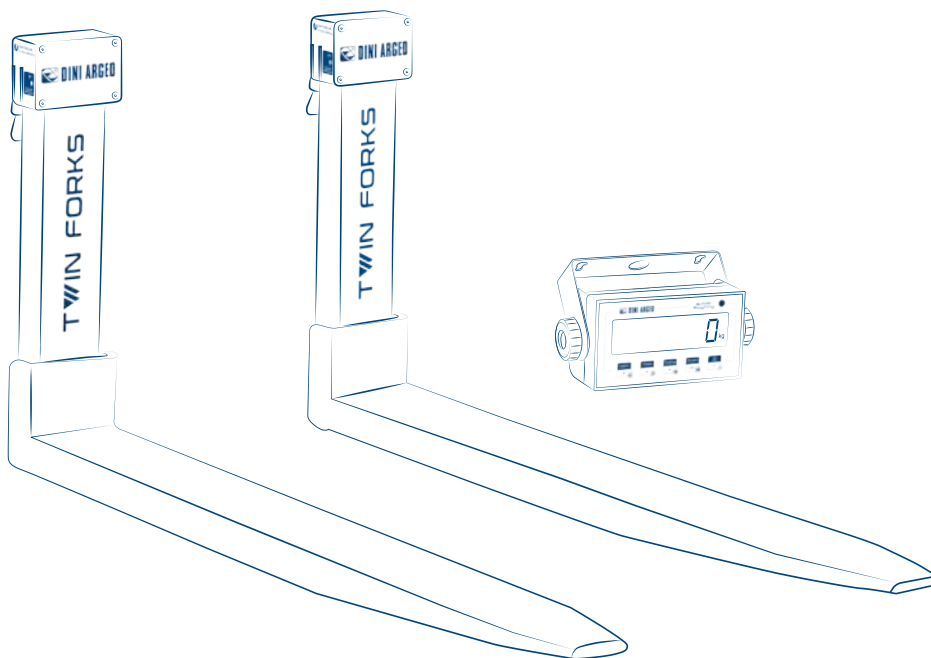


TWIN FORKS

TECHNICAL MANUAL

ENGLISH



1. Introduction	4
2. Warnings and safety	4
3. Technical features	5
4. System parts	5
5. Installation	6
Weighing forks	6
Weight indicator	8
Connections	8
6. Approval	9
7. Programming	10
8. Configuring Bluetooth communication	40
9. Calibrating the inclinometer	40
10. Communication strings	41
11. Wiring diagrams	42
12. Errors and messages	43
13. Summary of the parameters	44
14. FAQ - Frequently Asked Questions	46

CONTENTS BY TOPIC

Calibration

Quick calibration	12
Complete calibration	36

Equalisation

Equalisation procedure	35
------------------------------	----

Safety

Protection of the configuration menu via PIN	39
Protection of the user menu via PIN	39

Communication

Configuring Bluetooth communication	40
Configuration of the serial port for printer	17
Communication strings	41
Wiring diagrams	42

Approval

Approval seal	9
Viewing the metrological version	9

Reset

Factory configuration reset	32
Complete memory reset	39

1. INTRODUCTION

This product is the best solution for forklift weighing applications, offering ease of use, high precision in reading the weight and many functions to speed-up and simplify everyday work.

This manual provides an overview of the potentials of the product. The configuration menu can be used to adapt the product functionality to the required weighing application.

2. WARNINGS AND SAFETY

- Observe all safety regulations already applied to the forklift.
- Do not make repairs or replace electronic components of the instrument boards.
- Only use original spare parts.
- Any tampering with the equipment or use of non-original spare parts voids the warranty and relieves the manufacturer of any liability.
- Before any installation or repair that involves access to electronic parts, turn off the device and disconnect any source of power supply (battery or other).
- Always use network power supply sources regulated within $\pm 10\%$ of the rated voltage.
- In applications in connection with third parties, always follow the specifications given on the certificate of approval of the equipment.
- Do not wash the weight indicator with direct water jets and protect it from direct rain.
- Do not use aggressive cleaning solvents or substances.
- Do not install in potentially explosive environments.
- The installer is responsible for protective fuses between the forklift battery and the weight indicator.
- Pay attention to the dimensions of the weight indicator in the cab. Dini Argeo is not responsible for injuries due to collisions with the indicator.
- Service on the weighing system must only be carried out by authorised personnel.
- Avoid heavy impacts to the forks.
- Failure to follow the installation and operating instructions contained in this manual and the user's manual may compromise the proper operation of the system and void any warranty conditions.

BATTERIES

- Use only original batteries supplied by Dini Argeo.
- Only the charger supplied or original Dini Argeo chargers may be used.
- Keep batteries in the following temperature ranges:
 - During use: $-10\text{ °C} - +50\text{ °C}$
 - While charging: $0\text{ °C} - +40\text{ °C}$
- Do not allow the batteries to come into contact with water. Use is recommended in a dry place, with a relative humidity level lower than 85% (non-condensing).
- It is recommended to perform complete charge and discharge cycles to extend battery life. Fully charge the batteries before using the system for the first time.
- Charging takes about 6-7 hours. Disconnect the charger and try replacing the battery and/or charger if the battery charge is not complete after 8 hours (LED has not turned green).
- Avoid shocks that could deform the batteries. Do not use leaking or deformed batteries under any circumstances.
- Battery life will gradually decrease with use and time. The battery is probably at the end of its life and needs to be replaced if the battery life is too short.
- Batteries should be recycled according to the regulations in your country at the end of their life. Contact Dini Argeo in case of doubt.

3. TECHNICAL FEATURES

Weighing forks

Material	Painted steel
Compatibility	FEM2A (<i>FEM2B and FEM3A available on request</i>)
Weight	68 kg approx. (each)
Protection rating	IP54
Load cells	Stainless steel, IP68
Maximum capacity	2500 kg
Maximum overload	200% of maximum rated capacity
Power supply	Lithium battery, operating time about 90 hours

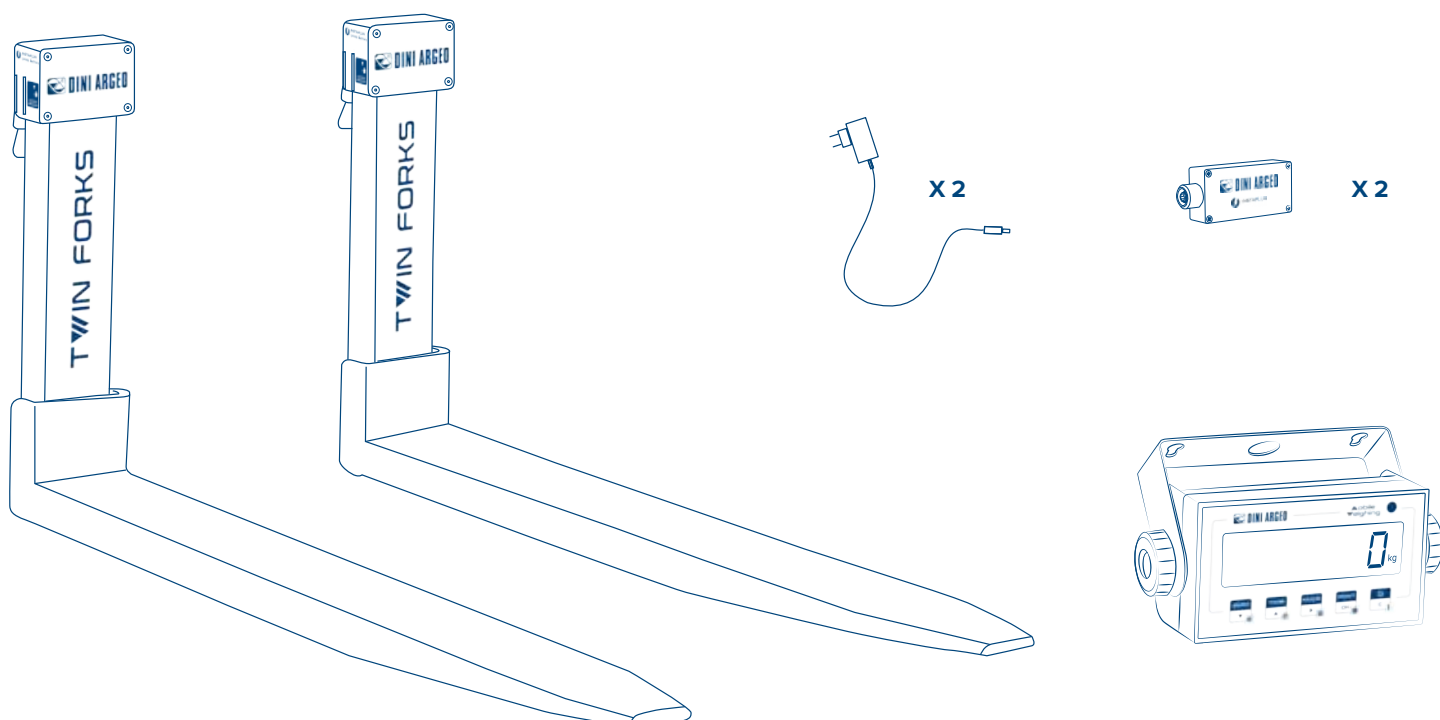
Weight indicator

Power supply	12-24 Vdc
MAX consumption	5W
Protection rating	IP54
Maximum operating temperature range CE-M - OIML	-10°C + 40°C
Maximum operating temperature range	-10°C + 60°C LCD/-20°C + 60°C LED
Display	6-digit 25 mm LCD, backlit
Keypad	Mechanical and waterproof, with 5 keys

Thermal printer (optional)

Power supply	5 Vdc
Roll width and length	57 mm, 30 m
Resolution	203 dpi
Number of columns	24/40
Graphics memory	1 logo 384 x 85 dots, programmable on request

4. SYSTEM PARTS



5. INSTALLATION

WEIGHING FORKS

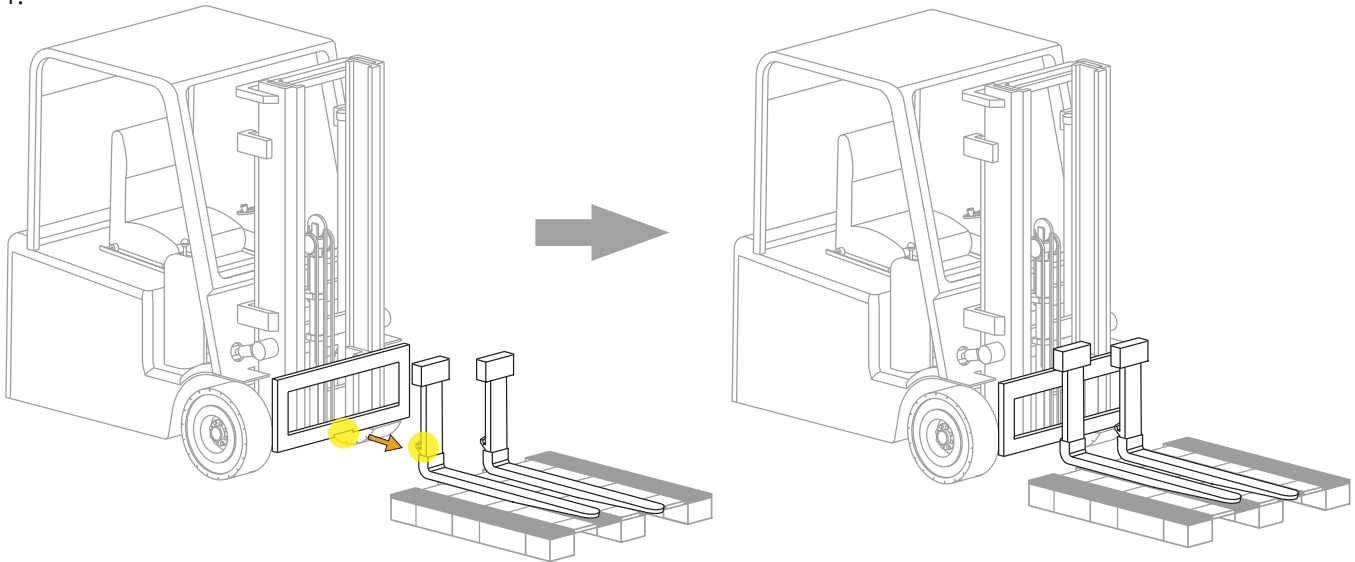


Installation of weighing forks

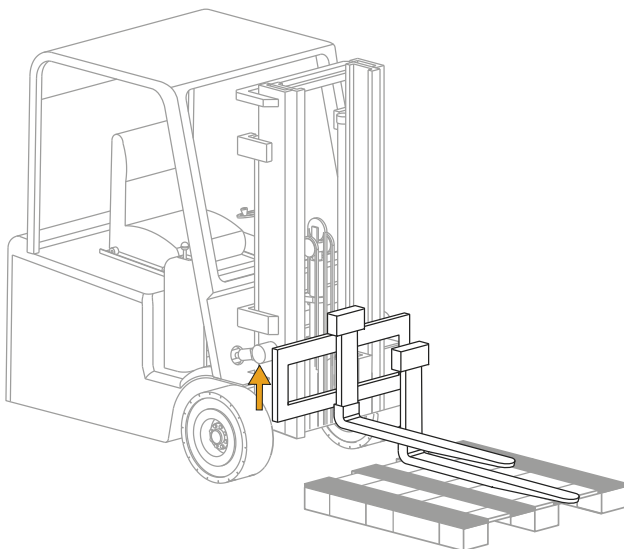


1. Move the forklift closer to the first fork making the lower cutout of the plate match with the fork hooks.
2. Lift the plate to engage the first fork.
3. Move the fork to the respective side, releasing the central recess of the plate again.
Keep the rear pin raised (detail A) to move the fork sideways.
4. Move the forklift closer to the second fork making the lower cutout of the plate match with the fork hooks.
5. Lift the plate to engage the second fork.
6. Move the fork to the correct side.

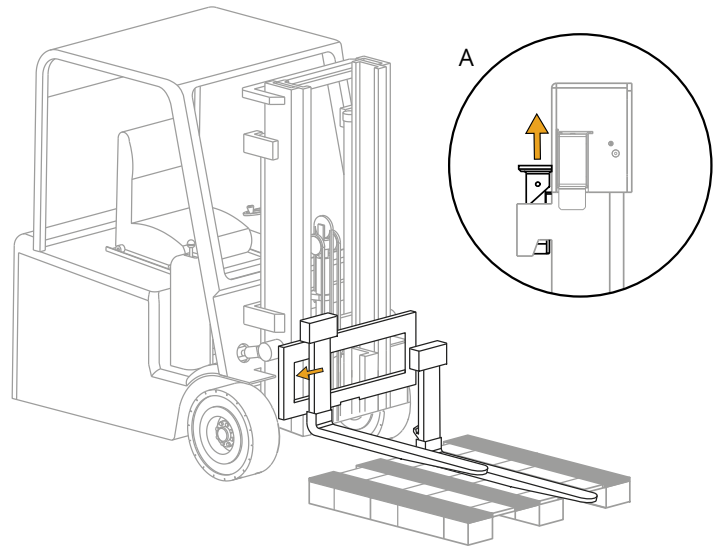
1.



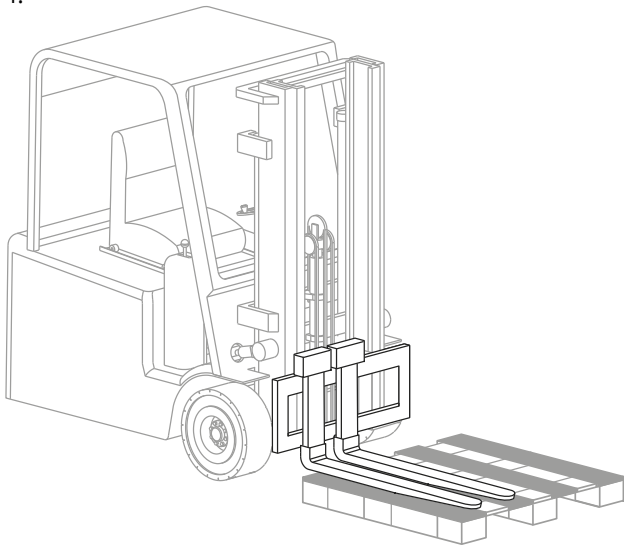
2.



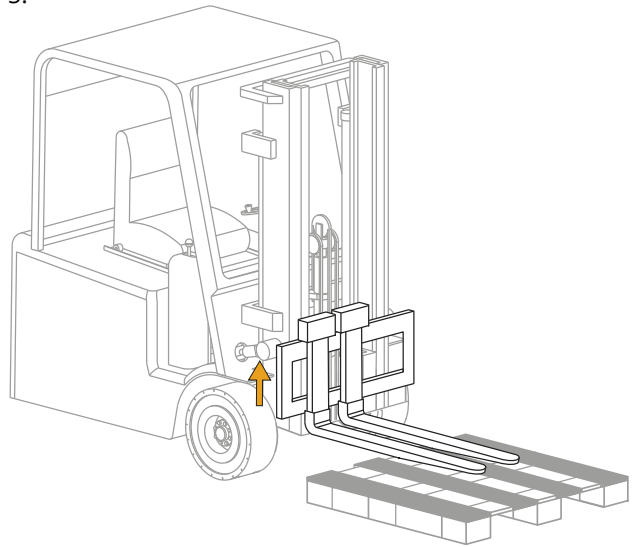
3.



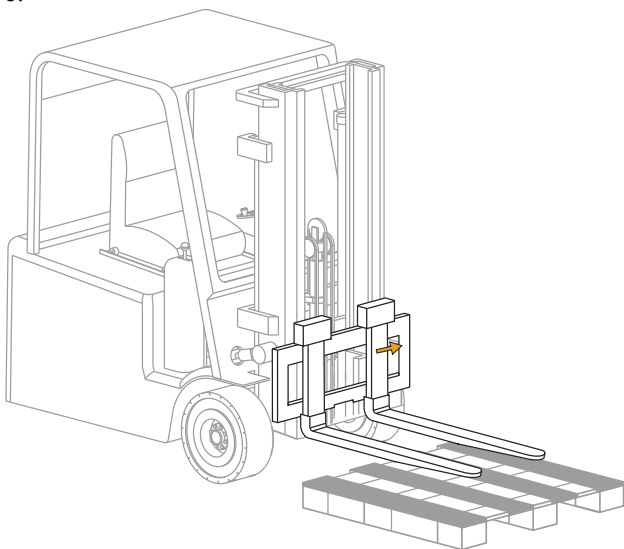
4.



5.



6.



Install the forks from the sides of the plate if the forklift does not have a central cutout at the bottom.

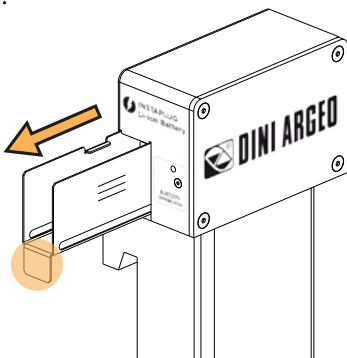
i At the end of the installation it is necessary to recalculate the load capacity and the centres of gravity of the forklift and to modify the relevant plate.

Powering the weighing forks

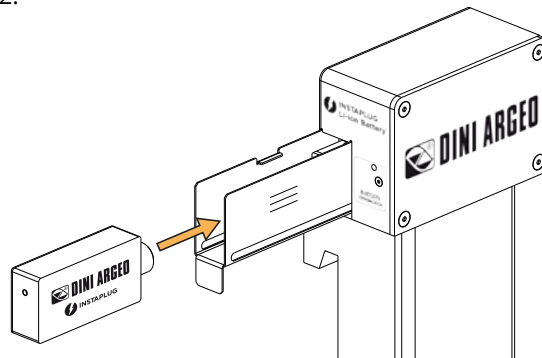


1. Remove the drawer from the fork by pulling the lower support.
2. Insert the battery into the drawer making the connector match.
3. Insert the drawer into the fork. A magnet holds the drawer in place.

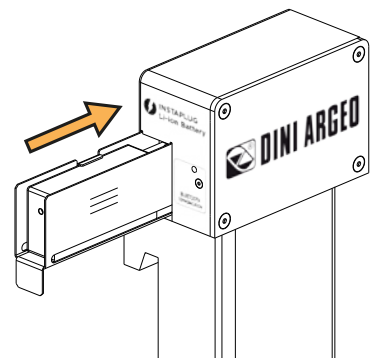
1.



2.



3.



WEIGHT INDICATOR

Bracket installation

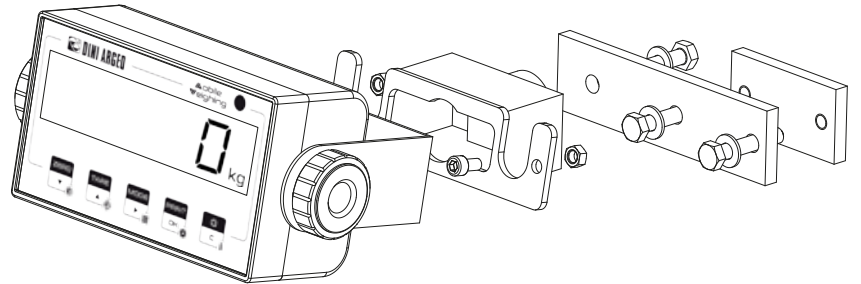
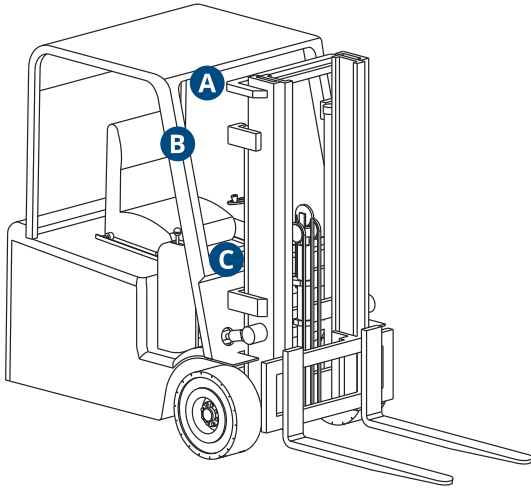


Ideal positions

On the side opposite to the one used for getting on:

- A. On the roof of the cab
- B. On the right side of the cab
- C. On the right side of the dashboard

1. Attach the bracket to the forklift structure. Choose a location in which the indicator is easily accessible and visible but at the same time does not restrict visibility or hinder the driver's entry/exit.
2. Attach the weight indicator to the bracket using the nuts and bolts provided.

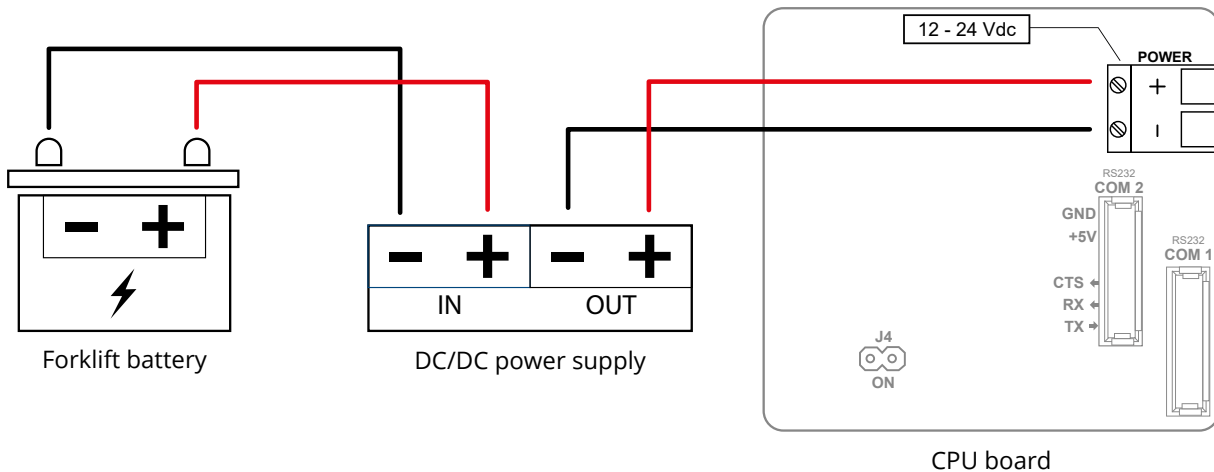


CONNECTIONS

Powering the weight indicator

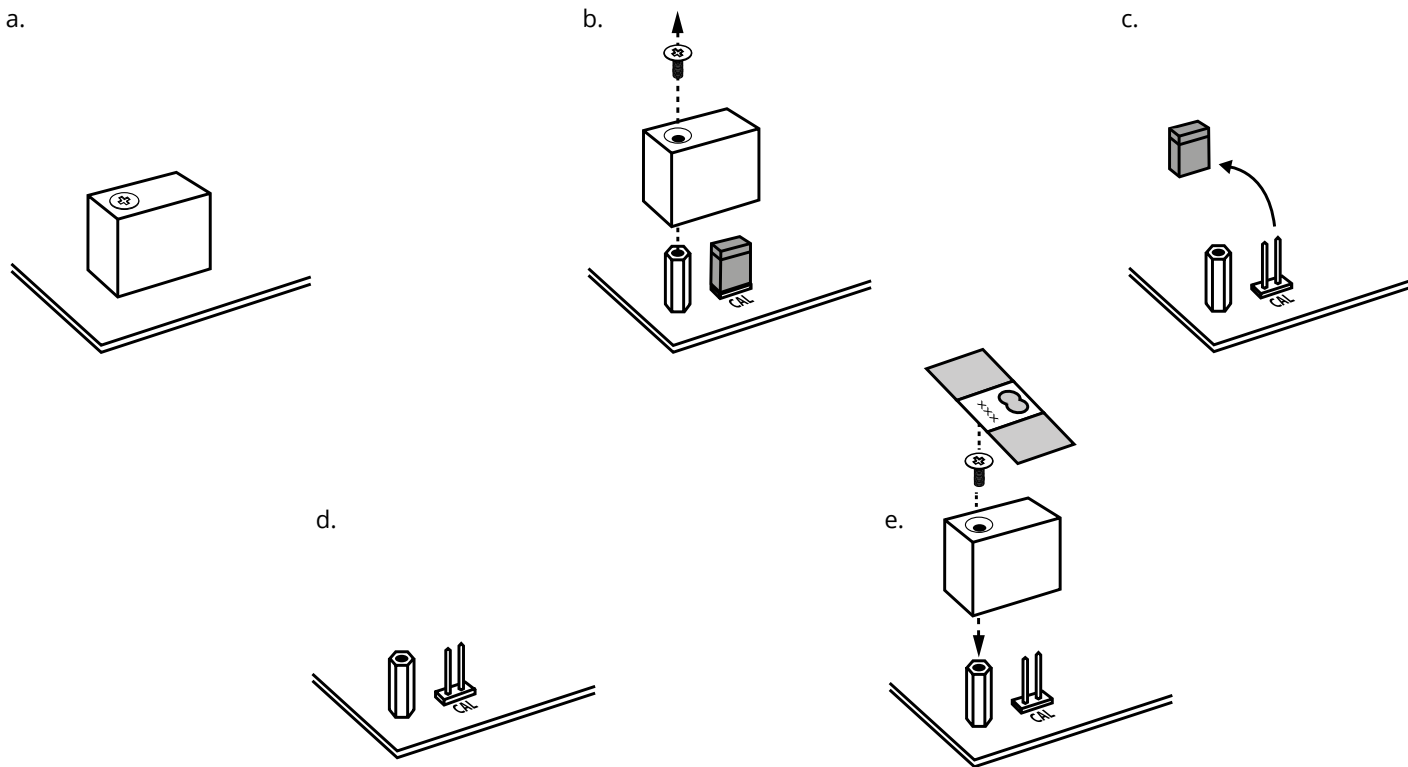


1. Connect the + and - terminals of the forklift battery to the input of the power supply.
2. Connect the output of the DC/DC power supply to the CPU board of the weight indicator.



i Pay special attention to the Bluetooth module aerial during installation / replacement.

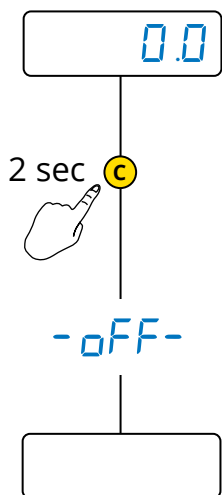
6. APPROVAL



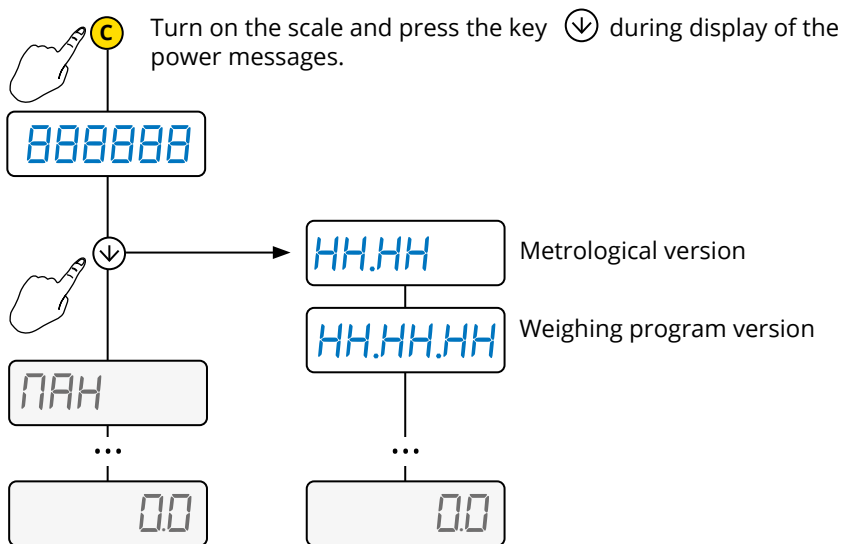
How to display the metrological version of the instrument



1. Turn off the scale



2. Follow the procedure:



7. BLUETOOTH COMMUNICATION CONFIGURATION

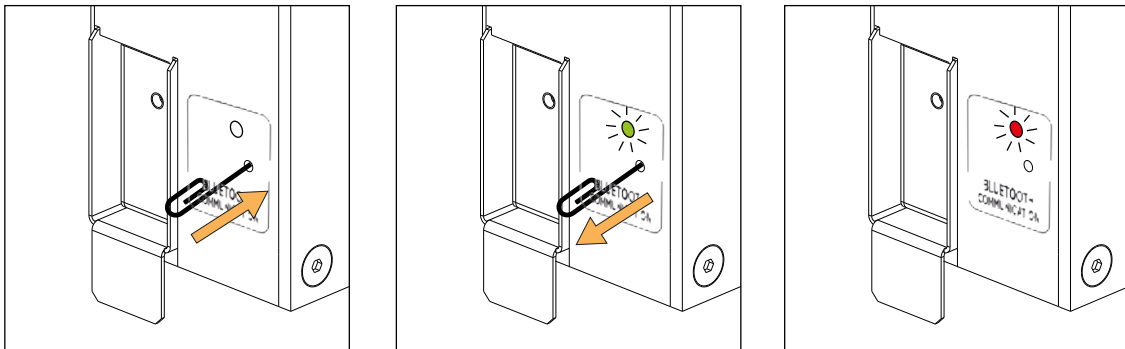
How communication between indicator and weighing forks works

Each weighing fork is connected to two load cells and communicates their weight to the indicator in the cab via Bluetooth communication.

The pairing procedure must be carried out first to establish the connection between the indicator and both weighing forks.

Pairing procedure

1. Enter the technical menu and go to step [PR ir .L - D-2](#). Press the PRINT key. The display shows "[PR ir ?](#)".
2. On the left fork, press and hold the key until the LED turns green, then release the key. The LED turns red for one minute, during which time the Bluetooth module of the fork is visible.



3. Press the PRINT key on the indicator to confirm the pairing and wait for the confirmation, given by the "[PR ir .oF](#)" message (in case of error, the "[PR ir .Er](#)" message appears).
4. Repeat the procedure for the right fork ([PR ir .r - D-3](#)).

M On approved systems, the approval seals must be removed to perform the pairing operation.

Initialising the weight indicator Bluetooth module

1. Enter the technical menu and go to step [bt . in it - D-1](#).

Note: Initialising the Bluetooth module of the indicator erases the previous pairing with the fork(s).

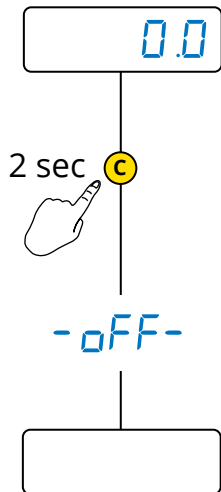
- i** The pairing operation is performed by default by Dini Argeo, so the system is already ready to use.
- i** The pairing procedure must be performed if one or more of the following components is replaced:
 - Board of one of the weighing forks (or both)
 - Weight indicator CPU board
 - Bluetooth weight indicator module

8. PROGRAMMING

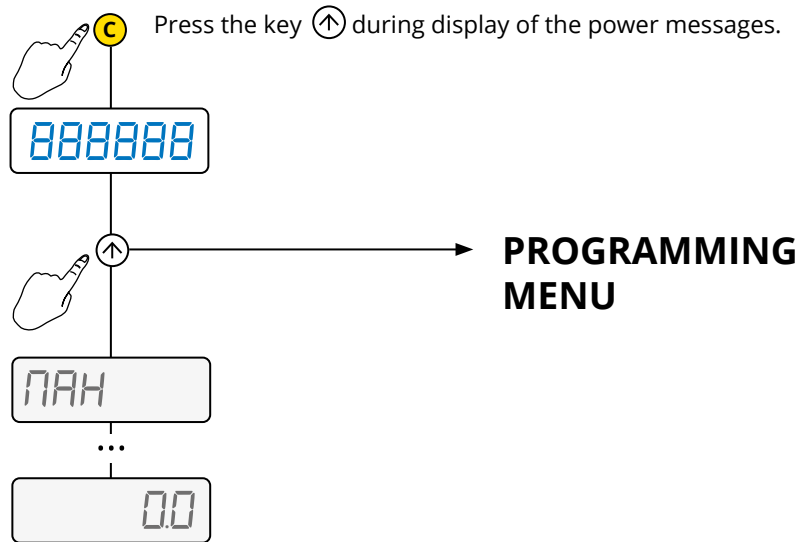
How to access the programming menu



1. Turn off the scale



2. Follow the procedure:

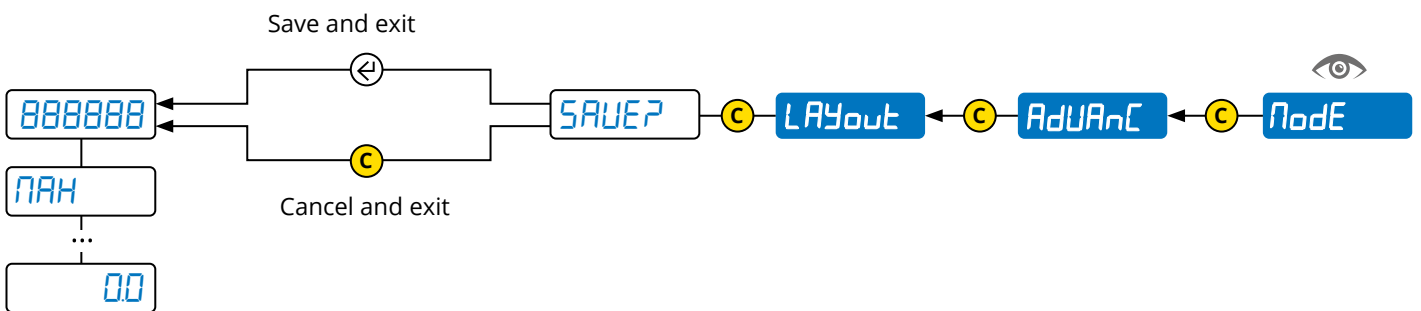


How to save the programming and exit the menu










To save the programming changes made, repeatedly press the key **C** browsing the menu in reverse, until the message **SAVE?** appears: press **Left Arrow** to save or **C** to exit without saving.


Example (read from right to left):



⚙️ PROGRAMMING MENU

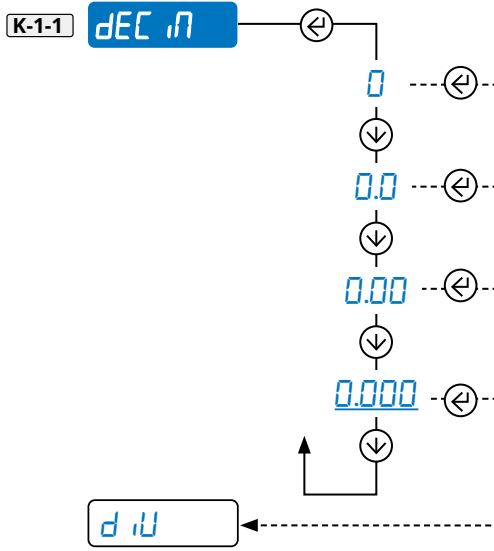
	CAL	Calibration.....	10
↓			
	DCAL	Resetting the pre-tare (zero calibration).....	11
↓			
	GrAV	Area of gravity of the place of use.....	11
↓			
	SErIAL	Configuration of the serial ports.....	12
↓			
	LAYout	Print customisation.....	18
↓			
	SCrEEEn	Adjusting the display.....	27
↓			
	AutoFF	Auto switch-off.....	29
↓			
 			
	rESEt	Factory configuration reset.....	34
↓			
	dIAG	Diagnostics.....	34
↓			
	AdVAnC	Advanced.....	35

 Parameter visible only under certain conditions.

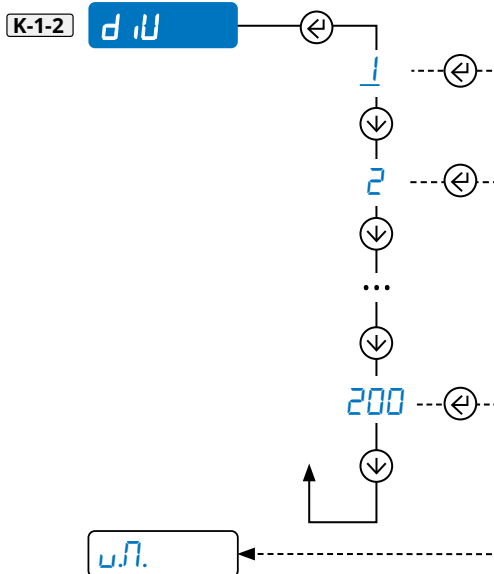
 Parameter or menu subject to approval.



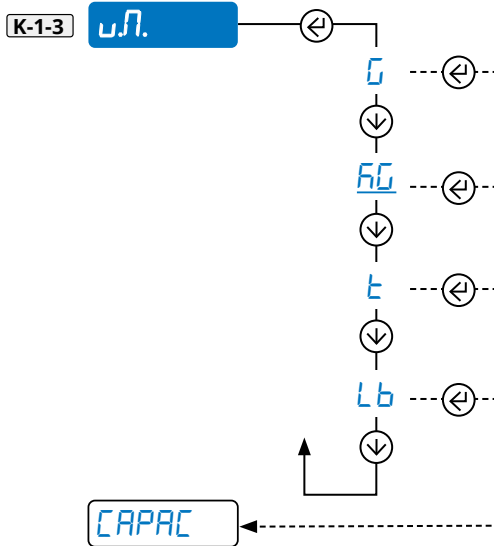
Configuration of the decimal point (0...3)



Reading division



Unit of measure



Enter	Browse	Save and exit
1. Off	=	
2. On	=	
3.	=	
Page 11	=	Page 11

A CAL		
B O.CAL	1 CAL.PAr	
C GrAU	2 EQwALP	1 dEC .n
D SEr iAL	3 CAL.AdU	2 dIU
E LAYout		3 uA.
F SCrEEen		4 rAnGE 1
G AutoFF		5 rAnGE 2
H rESEt		6 rAnGE 3
I d iAG		7 EQwAL
J AdVAnC		8 n.ChAn

MENU

Enter	Browse	Save and exit
1. Off	=	
2. On	=	
3.	=	
Page 11	=	

A CAL		
B O.CAL	1 CAL.PAr	
C GrAU	2 EQUALP	1 dEC iN
D SEr iAL	3 CAL.AdU	2 d iU
E LAYout		3 u.N.
F SCrEEr	4 rAnGE 1	
G AutoFF	5 rAnGE 2	
H rESEt	6 rAnGE 3	
I d iAG	7 EQUAL	
J AdUAnC		

Scale capacity. Set Max or Range 1 (Max range = 800.000)

K-1-4 rAnGE 1 ← 003.000 ← How to set the value

rAnGE 2 ←

Range 2

For multirange scales, set the second weighing range.

K-1-5 rAnGE 2 ← 000.000 ← How to set the value

rAnGE 3 ←

Range 3

For multirange scales, set the third weighing range.

K-1-6 rAnGE 3 ← 000.000 ← How to set the value

rAnGE 1 ←

Example of multirange configuration at 1500/3000 kg, division 0,5/1 kg.

Set: $dEC i = 0.0$
 $d iU = 5$
 $rAnGE 1 = 1500.0$
 $rAnGE 2 = 3000.0$

Equalisation function















K-1-7 EQUAL ←

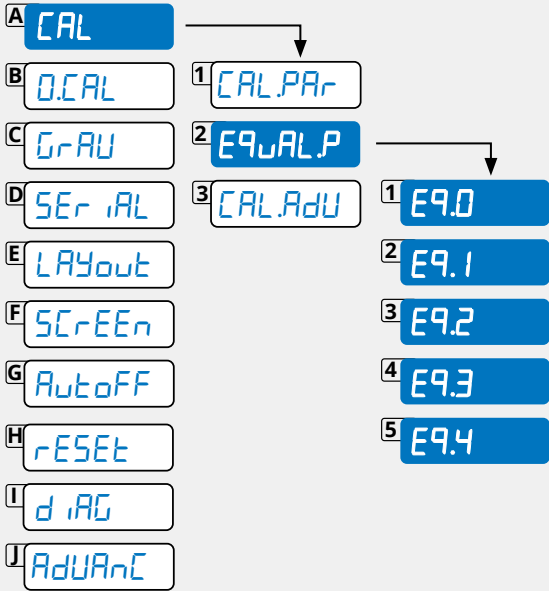
nO ←


YES ←

n.ChAn ←

See equalisation procedure.

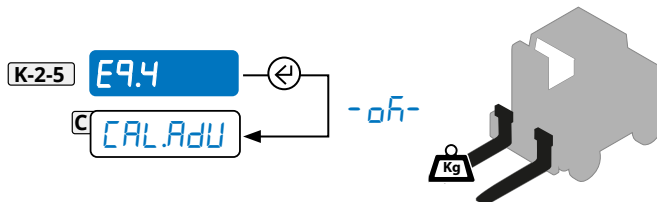
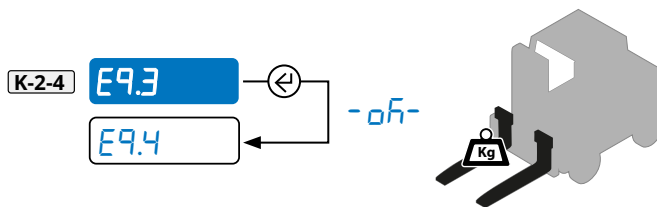
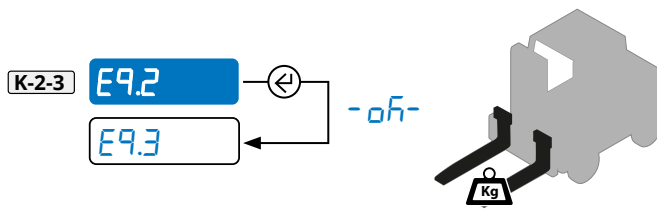
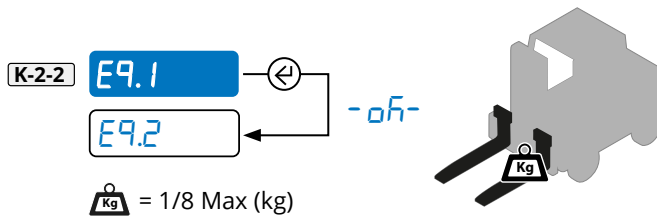
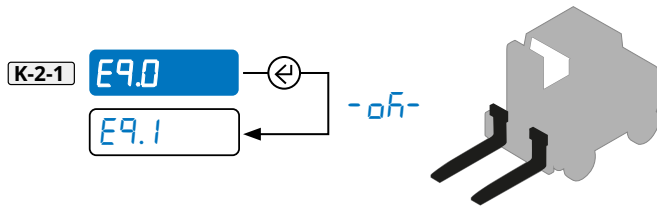
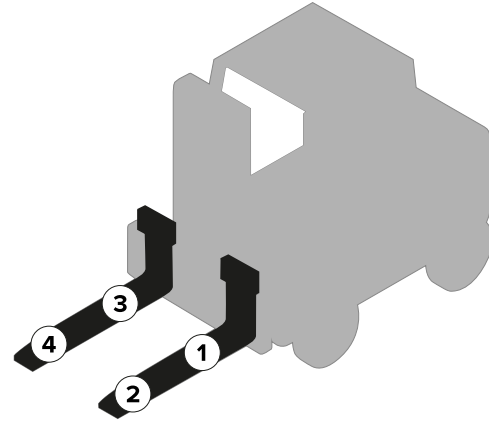
Enter	Browse	Save and exit
1. Off 	 = 	  Page 11
2. On 	 = 	
3. 	 = 	
 Page 11	 = 	

















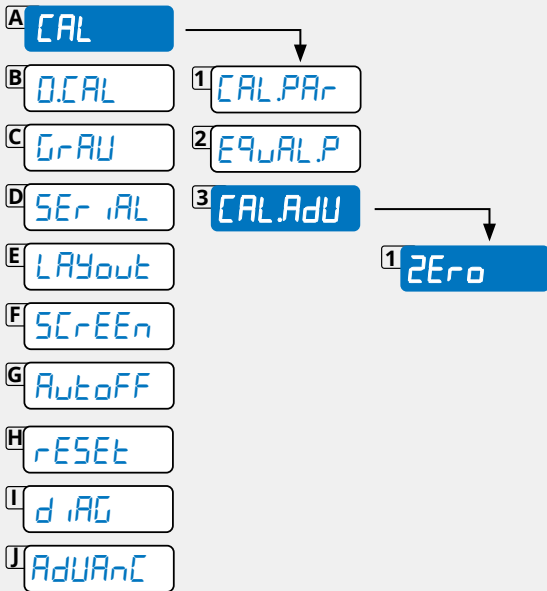
 **EQUALP** is only visible if the function **EQUAL** (L-1-7) is activated in the menu **CALPAR** (L-1).


The equalisation wizard asks to acquire the zero point with scale unloaded and to later place a weight of about 1/8 of the maximum capacity (Max) on each individual cell in the required order. The message **E9.0h** will appear after the procedure.

Proceed with the calibration.





Enter	Browse	Save and exit
1. Off 	 = 	  Page 11
2. On 	 = 	
3. 	 = 	
 Page 11	 = 	




 Before calibrating, configure the decimals (*dEE i* - L-1-1), the division (*d iU* - L-1-2) and the capacity (*rAnGE* - L-1-4,5,6).

Start of the calibration procedure:

K-3-1 **2Er0**  Unload the forks, press  and wait for the message **-oH-**.



CAL.Pnt  Now acquire the calibration points (up to 3):

I. Set the calibration points (1...3)

How to set the value



II. Enter the calibration weight

How to set the value



III. Load the weight and wait



-oH-

000.000 

Repeat the steps from II for the next points

CAL.oH

CAL.Pnt

MENU

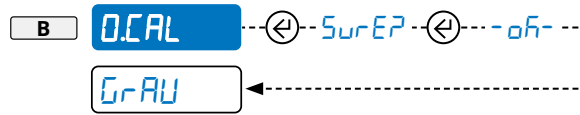
Enter	Browse	Save and exit
1. Off	=	 Page 11
2. On	=	
3.	=	
Page 11	=	

- A
- B
- C
- D
- E
- F
- G
- H
- I
- J

O.CAL Resetting the pre-tare



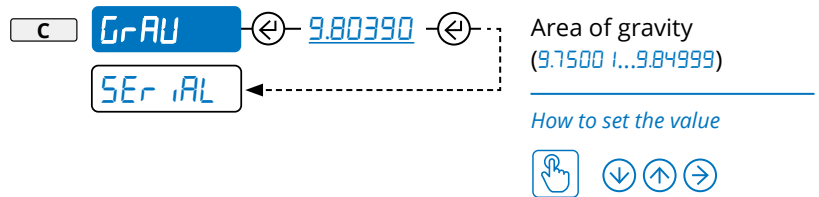
Acquisition of the zero point

















GrAU Area of gravity of the place of use



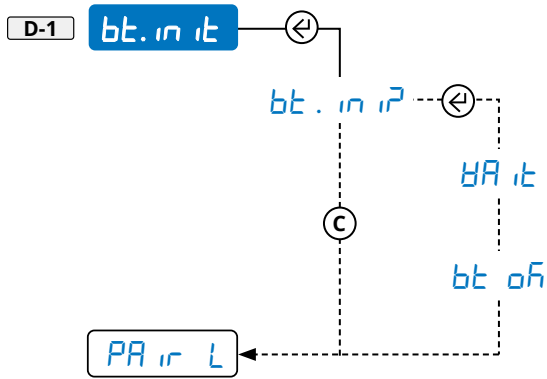
Once the calibration is completed, for proper operation set the area of use in this pitch (if different from that of calibration).



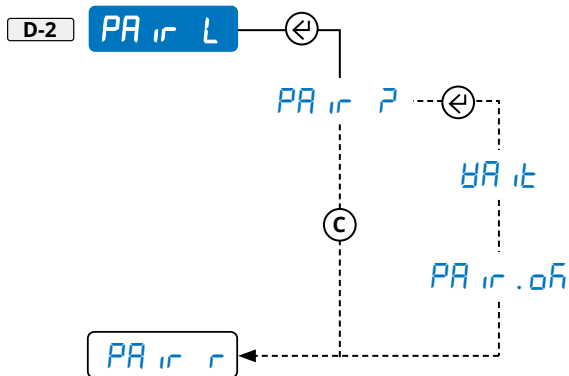
Enter	Browse	Save and exit
1. Off 	 = 	  Page 11
2. On 	 = 	
3. 	 = 	
 Page 11	 = 	

- A
- B
- C
- D →
- E
 - 1
- F
 - 2
- G
 - 3
- H
 - 4
- I
- J

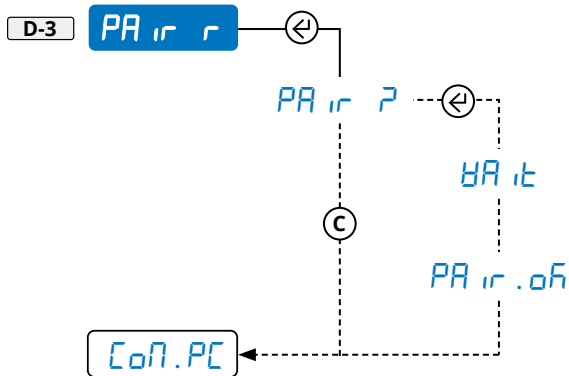
Initialising the Bluetooth module (loss of pairing with the forks)



Pairing with the left weighing fork



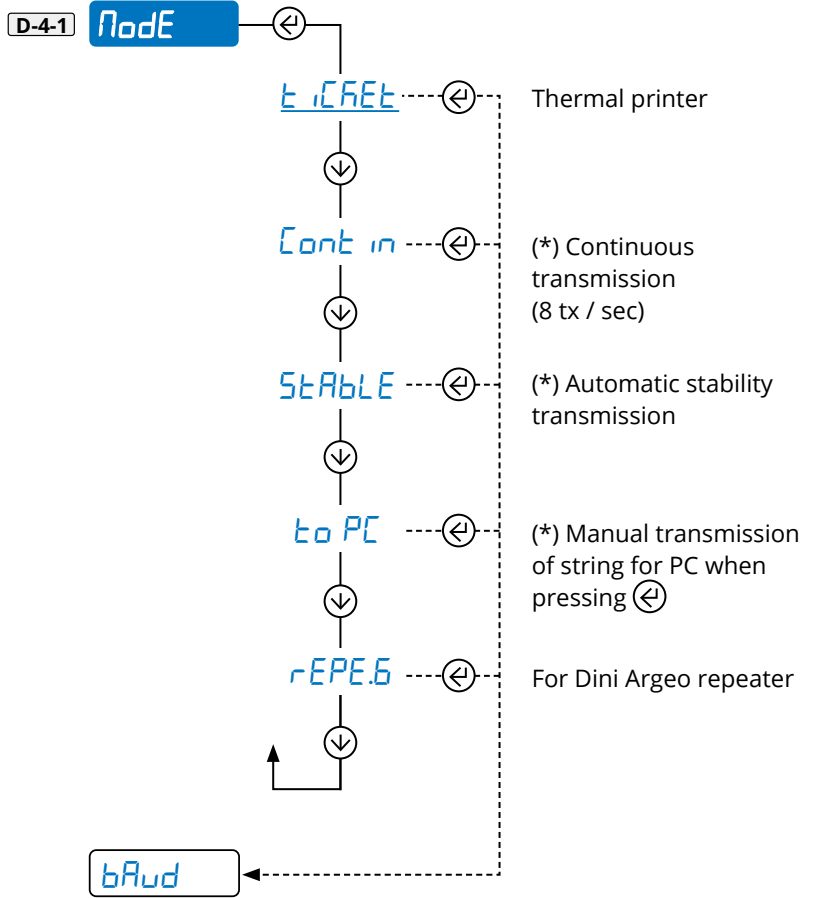
Pairing with the right weighing fork



CoNPrn Communication with printer or repeater or PC

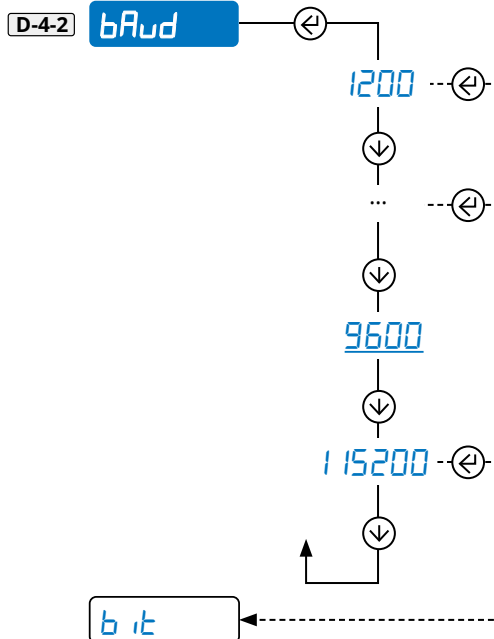


Selection of the communication mode



(*) See "Communication strings" paragraph.

Communication speed (Baud rate)



Enter	Browse	Save and exit
1. Off	↑ =	
2. On	↓ =	
3.	→ =	
Page 11	← =	
	Page 11	

A CAL

B O.CAL

C GrAU

D SERIAL

E LAYout 1 bt.in it

F SCrEEEn 2 PA ir L

G AutoFF 3 PA ir r

H rESEt 4 CoNPrn

I d iAG

J AdUArnC

1 Node

2 bAud

3 b it

4 CtS

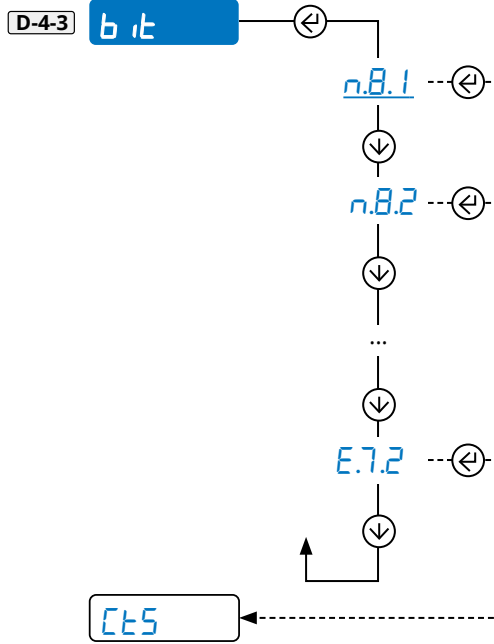
5 PoDErP

MENU

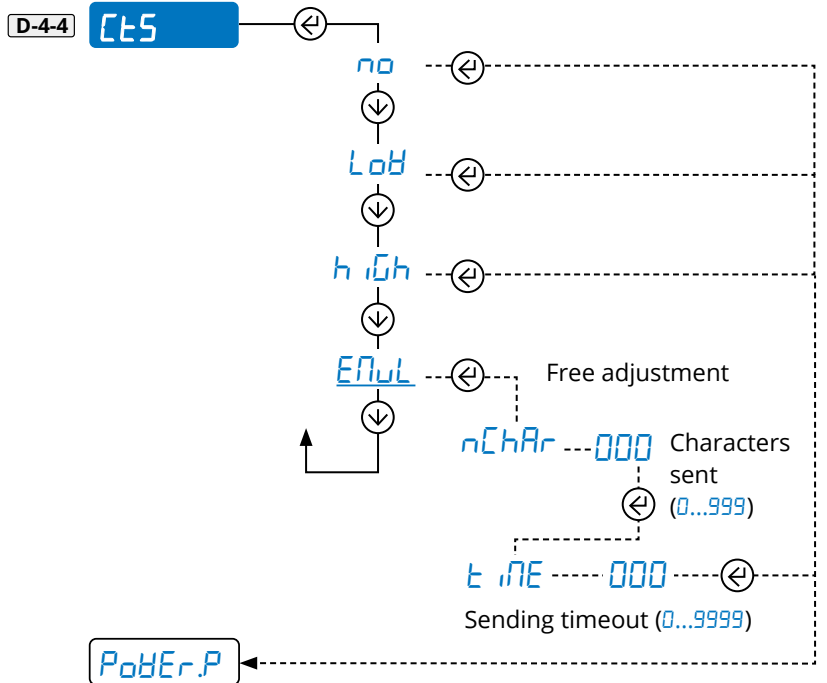
Enter	Browse	Save and exit
1. Off	=	
2. On	=	
3.	=	
Page 11	=	
	=	

- A
- B
- C
- D
 - 1
 - 2
 - 3
 - 4
 - 1
 - 2
 - 3
 - 4
 - 5
- E
- F
- G
- H
- I
- J

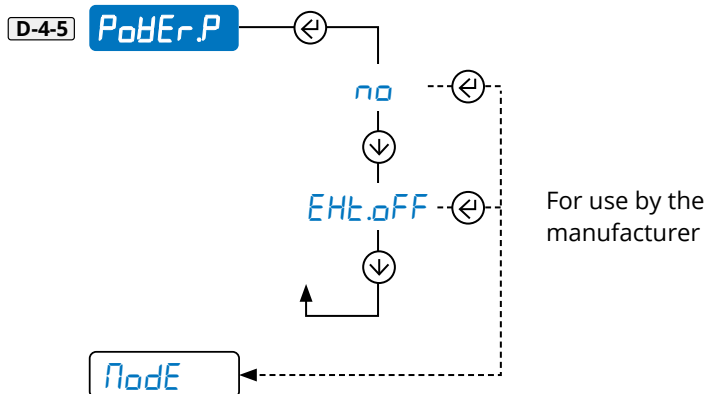
Configuration of the serial protocol



















Printer control signal



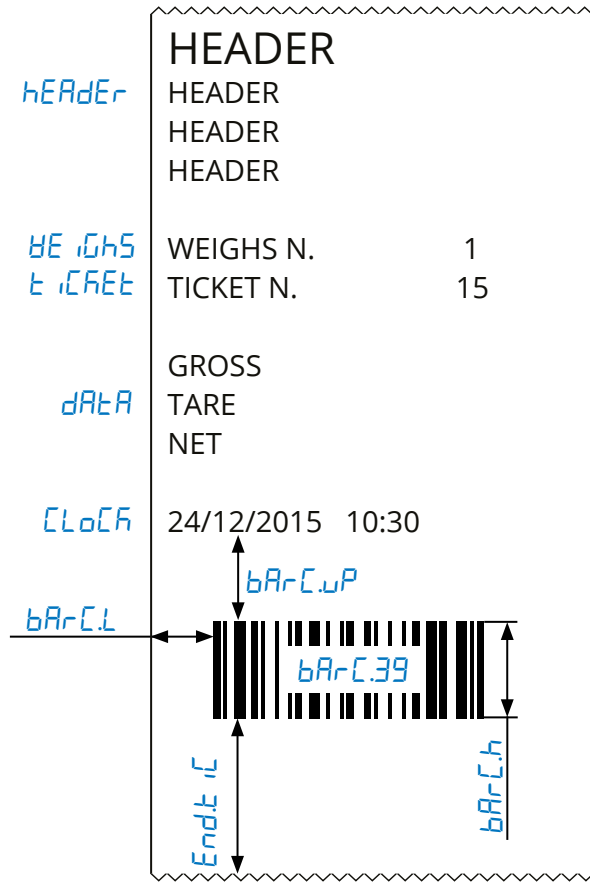
Printer power supply / Radio-frequency module



Enter	Browse	Save and exit
1. Off 	 = 	 
2. On 	 = 	
3. 	 = 	
 Page 11	 = 	
	 = 	

- A CAL
- B O.CAL
- C GRAU
- D SERIAL
- E **LAYout**
 - 1 LANG
 - 2 CHAR
 - 3 hEAdEr
 - 4 dAtA
 - 5 WEIGHs
 - 6 tICkEt
 - 7 CLoCh
 - 8 bARc.39
 - 9 bARc.wP
 - 10 bARc.L
 - 11 bARc.h
 - 12 bARc.dt
 - 13 CoP.iES
 - 14 Endt iC
 - 15 b.L inE
 - 16 tESt

Parameters for receipt / label mode

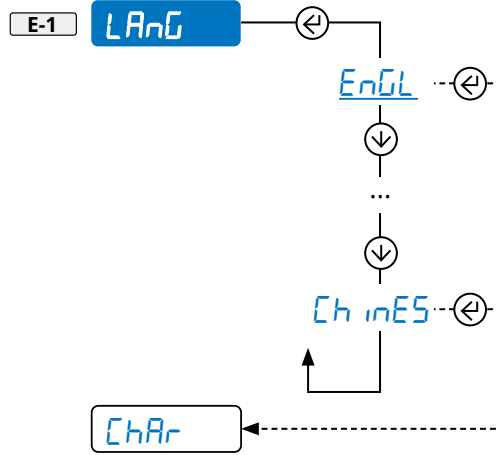


MENU

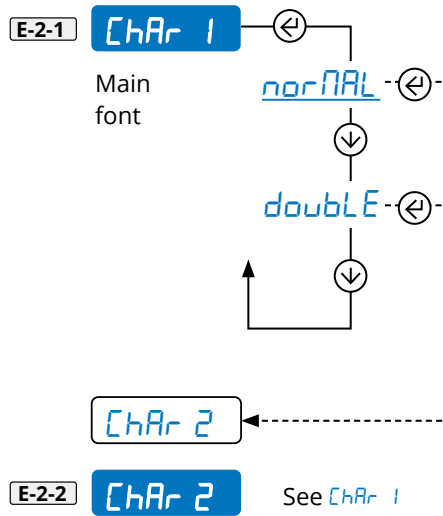
Enter	Browse	Save and exit
1. Off	=	
2. On	=	
3.	=	
Page 11	=	

- A CAL
- B D.CAL
- C GRAU
- D SERIAL
- E **LAYOUT**
 - 1 LANG
 - 2 CHAR
- F SCREEN
- G AutoFF
- H rESEt
- I d.iAG
- J AdVAnC
 - 1 CHAR 1
 - 2 CHAR 2
 - 3 hEAdEr
 - 4 dAtA
 - 5 hE iGhS
 - 6 t iCkEt
 - 7 CLoCk
 - 8 bArCL39
 - 9 bArCLwP
 - 10 bArCL
 - 11 bArCLh
 - 12 bArCLdt
 - 13 CoP iES
 - 14 Endt iC
 - 15 bL inE
 - 16 tESEt

Setting of the print language (i.e. iCAL, EnGL, dEut, FrAn, ESPA, Ch inES)



Font dimensions

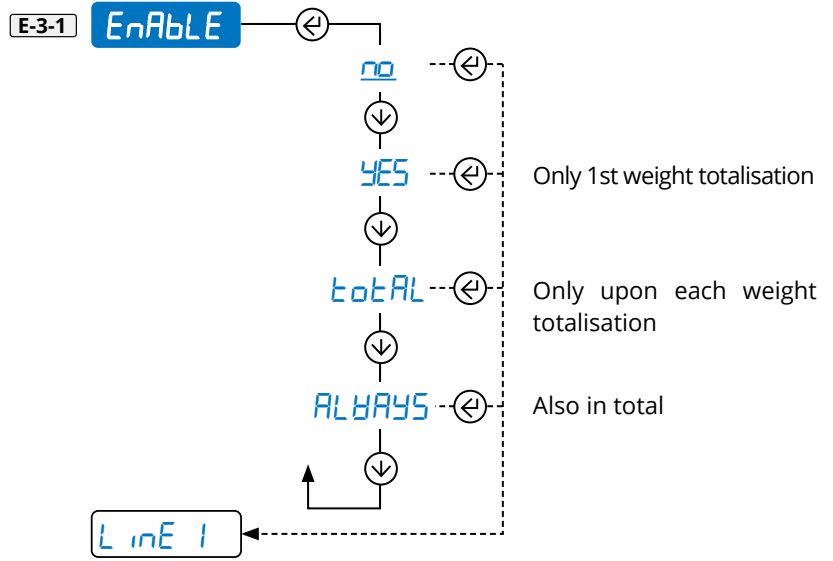


Enter	Browse	Save and exit
1. Off	=	
2. On	=	Page 11
3.	=	
Page 11	=	

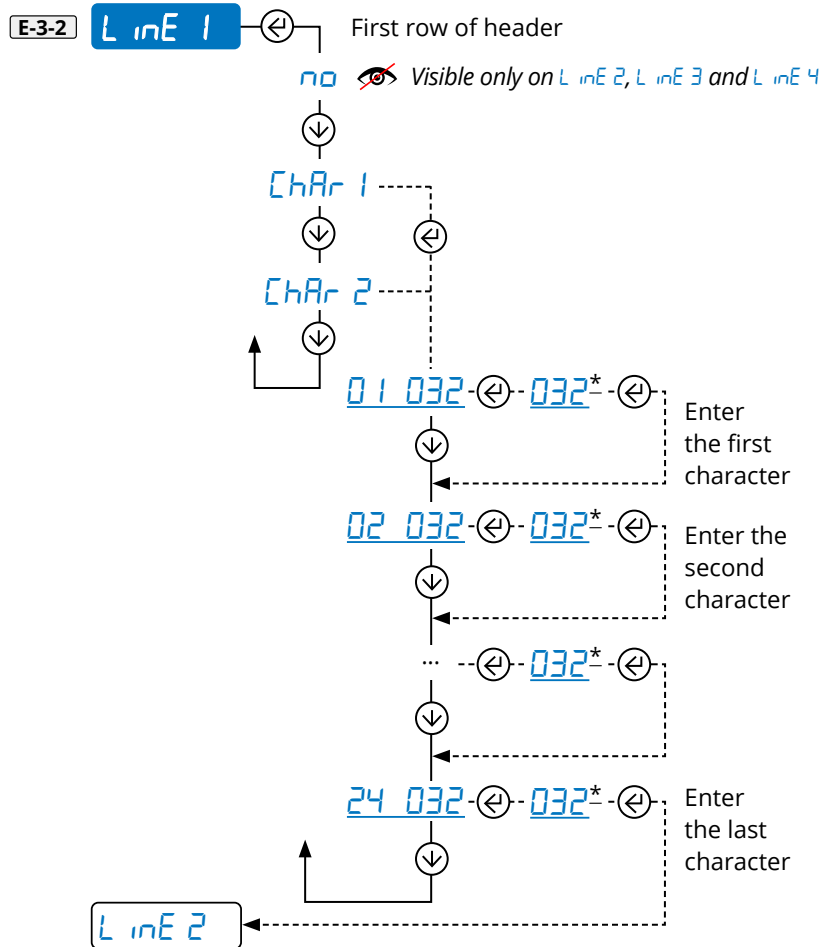
A	CAL		
B	0.CAL		
C	GrAU		
D	SEr iAL		
E	LAYout		
F	SCrEEEn	1	LANg
G	AutoFF	2	ChAr
H	rESEt	3	hEADer
I	d iAG	4	dAtA
J	ADUAnC	5	hE iGhS
		6	t iCREt
		7	CLoCh
		8	bARc.39
		9	bARc.wP
		10	bARc.L
		11	bARc.h
		12	bARc.dt
		13	CoP iES
		14	Endt iC
		15	b.L iNE
		16	tESEt

hEADer Print header

Enables header printing



Contents of the header lines



How to set the value



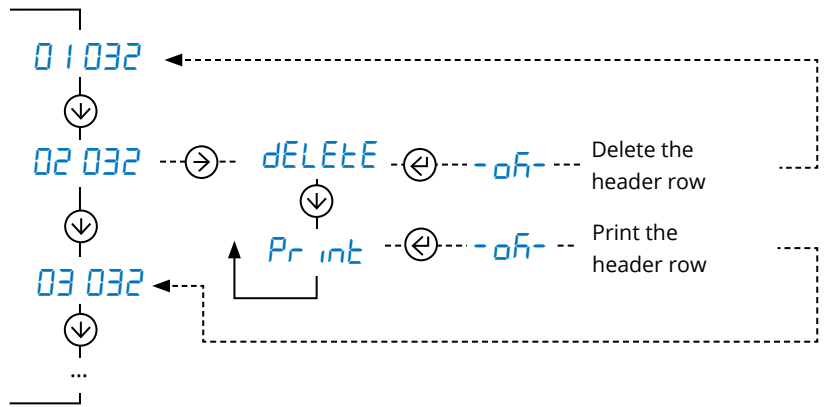
Repeat the operation to program L iNE 2, L iNE 3 and L iNE 4. Select no to disable them.

MENU

Enter	Browse	Save and exit
1. Off	=	
2. On	=	Page 11
3.	=	
Page 11	=	
		Page 11

- A CAL
- B 0.CAL
- C GrAU
- D SEr iAL
- E **LAYout**
 - F SCrEEen
 - 1 LANg
 - 2 CHAr
 - 3 **HEAdEr**
 - 1 **EnABLE**
 - 2 **LinE 1**
 - 3 **LinE 2**
 - 4 **LinE 3**
 - 5 **LinE 4**
 - 6 t iCkEt
 - 7 CLoCh
 - 8 bArCL39
 - 9 bArCLwP
 - 10 bArCL
 - 11 bArCLh
 - 12 bArCLdt
 - 13 CoP iES
 - 14 Endt iC
 - 15 bLinE
 - 16 tEst

How to print / delete the row being programmed



Programming example

01 032	072 *	H	HELLO
02 032	069 *	E	
03 032	076 *	L	
04 032	076 *	L	
05 032	079 *	O	
06 032	032 *		
...			
24 032	032 *		

How to set the value

List of characters (*)

32		47	/	62	>	77	M	92	\	107	k	122	z
33	!	48	0	63	?	78	N	93	]	108	l	123	{
34	"	49	1	64	@	79	O	94	^	109	m	124	|
35	#	50	2	65	A	80	P	95	_	110	n	125	}
36	\$	51	3	66	B	81	Q	96	'	111	o	126	~
37	%	52	4	67	C	82	R	97	a	112	p		
38	&	53	5	68	D	83	S	98	b	113	q		
39	'	54	6	69	E	84	T	99	c	114	r		
40	(	55	7	70	F	85	U	100	d	115	s		
41	)	56	8	71	G	86	V	101	e	116	t		
42	*	57	9	72	H	87	W	102	f	117	u		
43	+	58	:	73	I	88	X	103	g	118	v		
44	,	59	;	74	J	89	Y	104	h	119	w		
45	-	60	<	75	K	90	Z	105	i	120	x		
46	.	61	=	76	L	91	[	106	j	121	y		

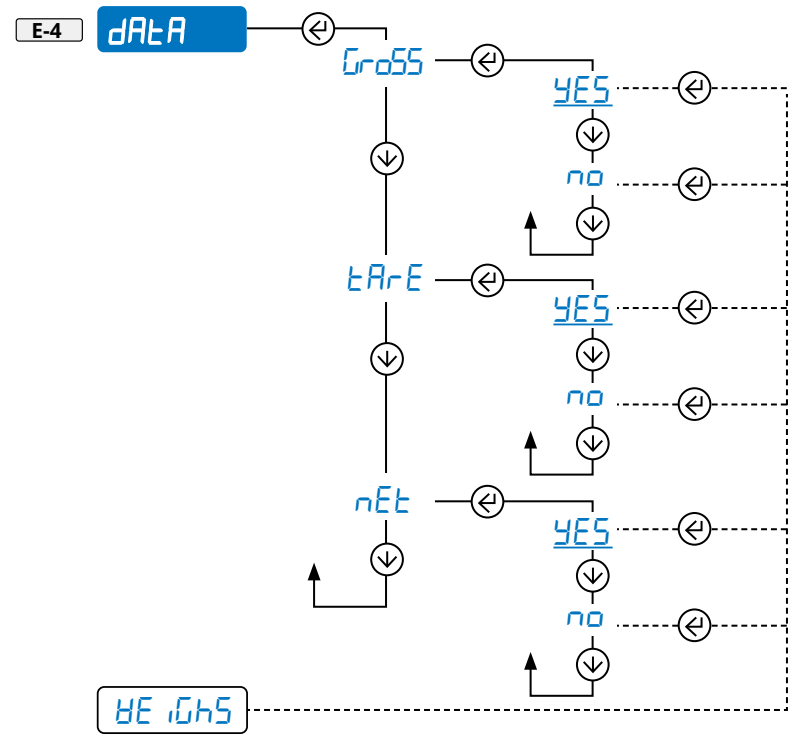


MENU

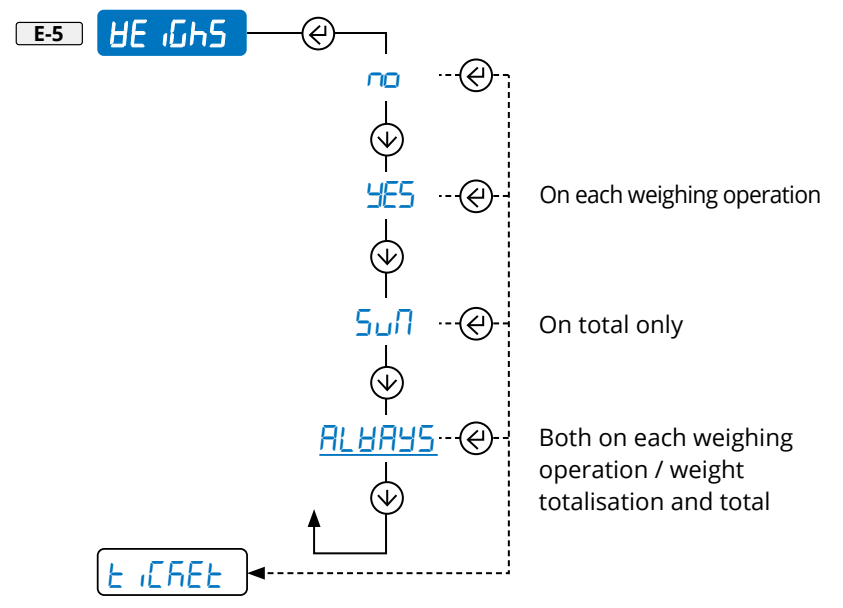
Enter	Browse	Save and exit
1. Off	=	
2. On	=	
3.	=	
Page 11	=	
		Page 11

- A CAL
- B O.CAL
- C GRAU
- D SERIAL
- E **LAYOUT**
 - 1 LANG
 - 2 CHAR
 - 3 HEADER
 - 4 **DATA**
 - 5 **WEIGHTS**
 - 6 **TARE**
 - 7 CLOFF
 - 8 BARC39
 - 9 BARCUP
 - 10 BARCL
 - 11 BARCh
 - 12 BARCdt
 - 13 COPIES
 - 14 EndtIC
 - 15 bLINE
 - 16 TEST

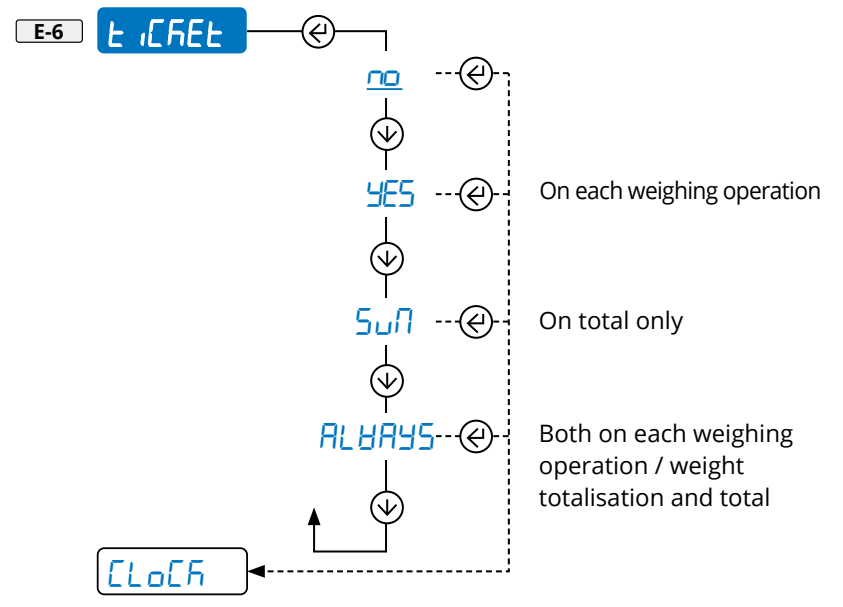
Selection of the weight data



Progressive weighed



Receipt / label progressive

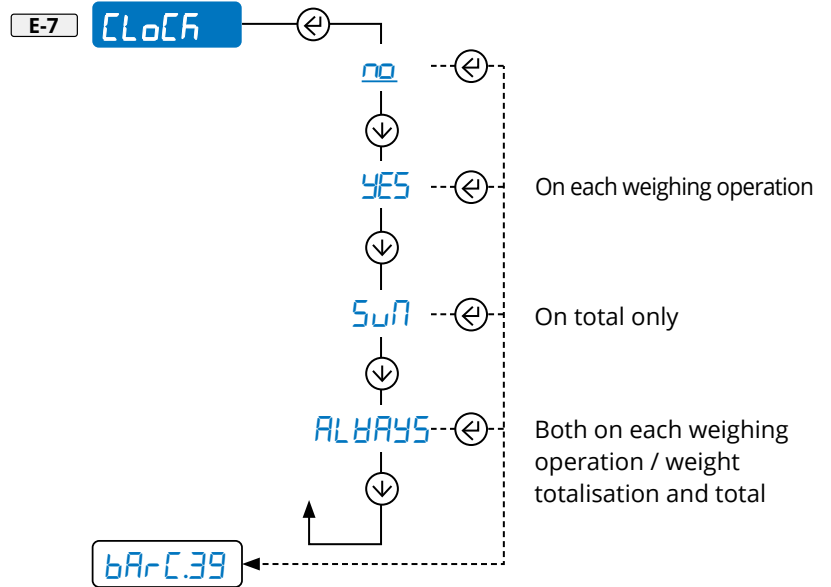


MENU

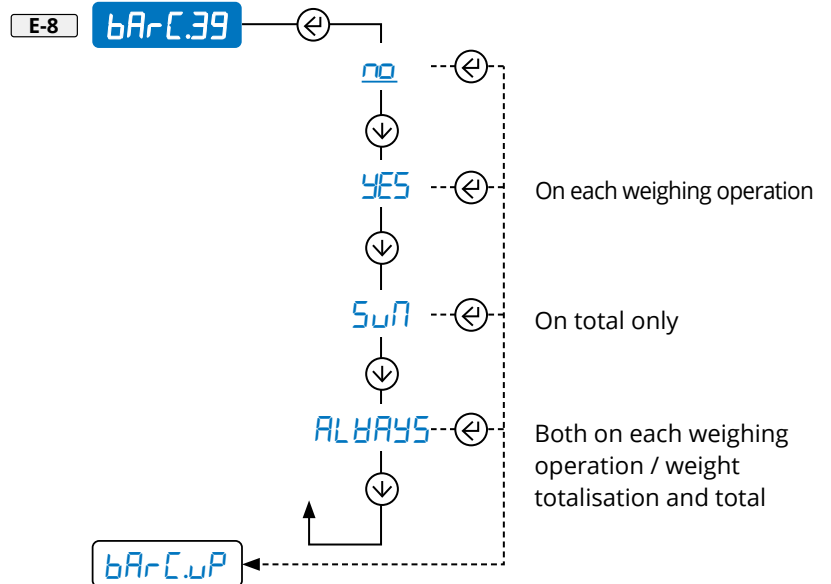
Enter	Browse	Save and exit
1. Off	=	 Page 11
2. On	=	
3.	=	
Page 11	=	

- A CAL
- B O.CAL
- C GRAU
- D SERIAL
- E **LAYOUT**
 - 1 LANG
 - 2 CHAR
 - 3 HEADER
 - 4 DATA
 - 5 WEIGHTS
 - 6 TARET
 - 7 **CLOCK**
 - 8 **BARC.39**
 - 9 **BARC.WP**
 - 10 **BARC.L**
 - 11 **BARC.h**
 - 12 **BARC.dt**
 - 13 **COPYES**
 - 14 **ENDTIC**
 - 15 **BLINE**
 - 16 **TEST**

Date and time

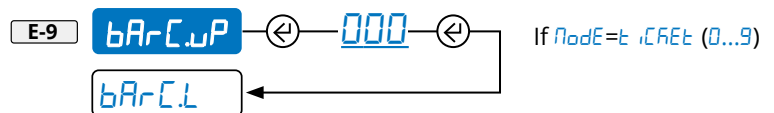


Bar code 39



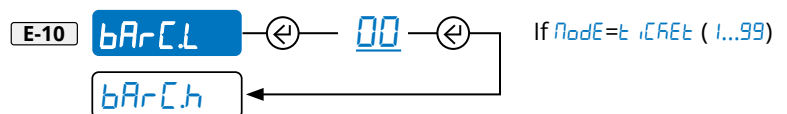
Barcode top margin (mm)

Visible only if **bARc.39** (E-8) is active



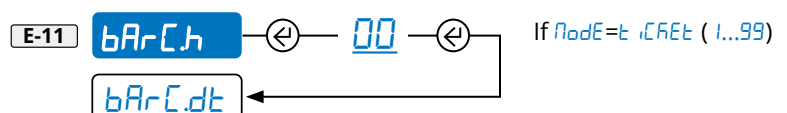
Barcode left margin (mm)

Visible only if **bARc.39** (E-8) is active



Barcode height (mm)

Visible only if **bARc.39** (E-8) is active



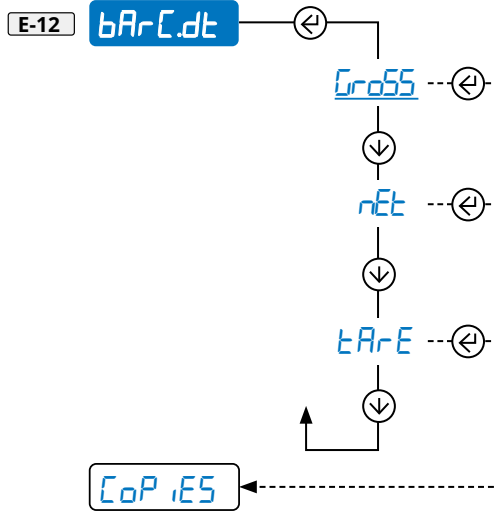
MENU

Enter	Browse	Save and exit
1. Off	=	
2. On	=	
3.	=	
Page 11	=	

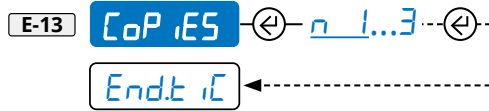
- A CAL
- B O.CAL
- C GRAU
- D SERIAL
- E **LAYOUT**
 - 1 LANG
 - 2 CHAR
 - 3 HEADER
 - 4 DATA
 - 5 WEIGHTS
 - 6 TARET
 - 7 CLOFF
 - 8 **bARC.39**
 - 9 bARC.WP
 - 10 bARC.L
 - 11 bARC.h
 - 12 **bARC.dt**
 - 13 **CoP.iES**
 - 14 **End.t iC**
 - 15 **b.L inE**
 - 16 tEST

Selection of the weight data

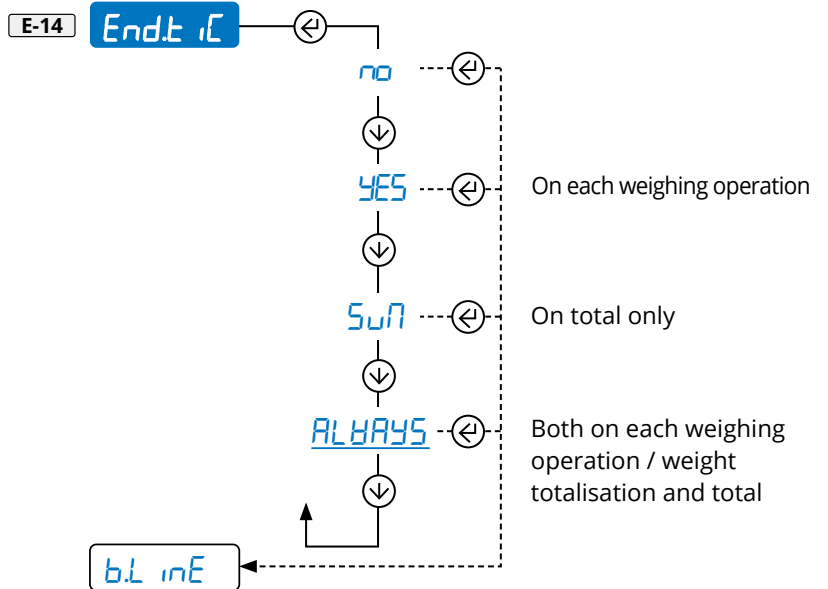
Visible only if **bARC.39** (E-8) is active



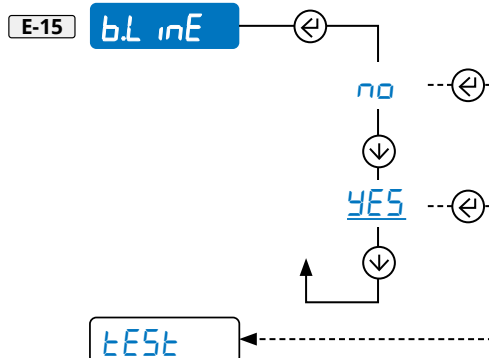
Multi-copy prints



Paper outlet for end of label
















White pre-heating line of the print head



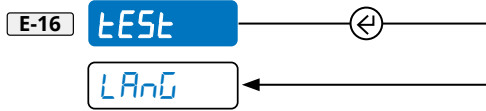


MENU

Enter	Browse	Save and exit
1. Off 	 = 	
2. On 	 = 	
3. 	 = 	
 Page 11	 = 	

- A CAL
- B O.CAL
- C GrAU
- D SEr iAL
- E **LAYout**
 - 1 LANG
 - 2 CHAr
 - 3 hEAdEr
 - 4 dAtA
 - 5 WE iGhS
 - 6 t iCrEt
 - 7 CLoCh
 - 8 bArC.39
 - 9 bArC.wP
 - 10 bArC.L
 - 11 bArC.h
 - 12 bArC.dt
 - 13 CoP iES
 - 14 End.t iC
 - 15 b.L inE
 - 16 **tEST**

Label test print

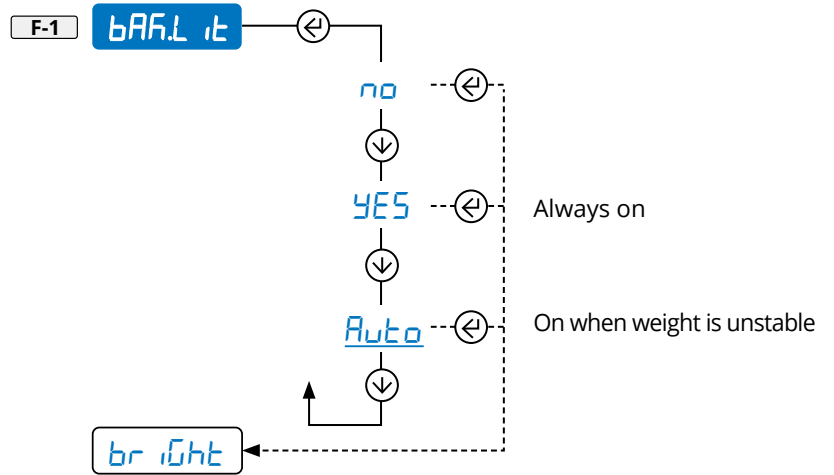




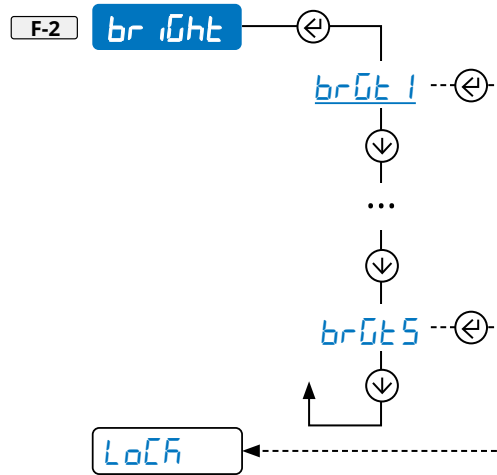
Enter	Browse	Save and exit
1. Off	↑ =	 <small>Page 11</small>
2. On	↓ =	
3.	→ =	
Page 11	← =	

- A CAL
- B D.CAL
- C GRAV
- D SERIAL
- E LAYOUT
- F **SCREEN**
 - 1 **backlit**
 - 2 **brght**
 - 3 **LoCh**
- G AutoOFF
- H rESEt
- I dIAG
- J AdVANC

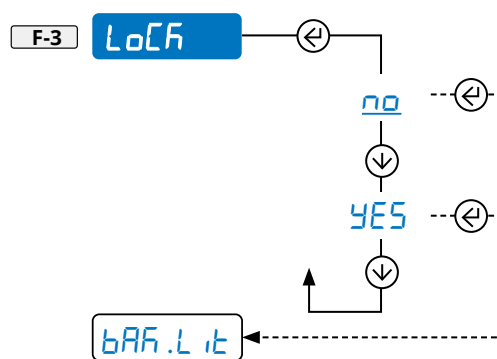
Backlighting

















Brightness




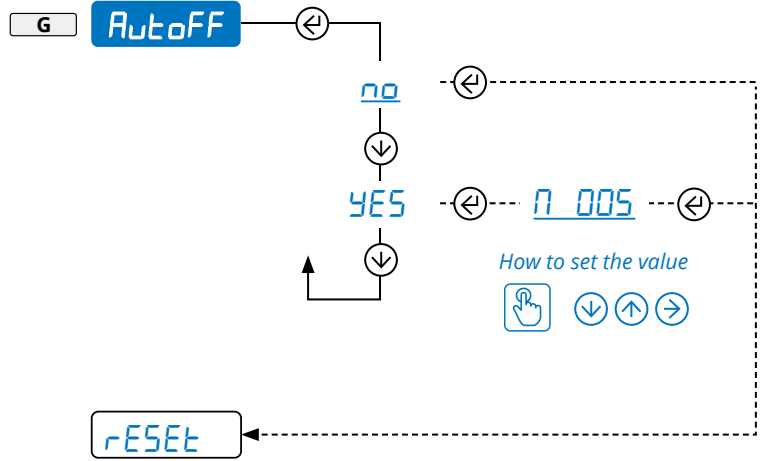
Display lock (for use by the manufacturer)




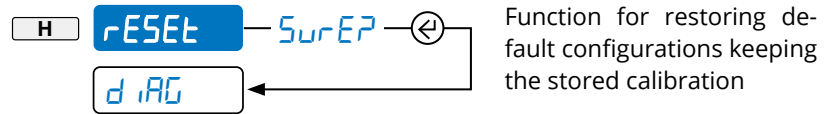
Enter	Browse	Save and exit
1. Off 	 = 	  Page 11
2. On 	 = 	
3. 	 = 	
 Page 11	 = 	















- A
- B
- C
- D
- E
- F
- G
- H
- I
- J

AutoFF Auto switch-off 







rESEt Factory configuration reset 




Enter	Browse	Save and exit
1. Off 	 = 	  Page 11
2. On 	 = 	
3. 	 = 	
 Page 11	 = 	















- A
- B
- C
- D
- E
- F
- G
- H
- I
 - 1
 - 2
 - 3
 - 4
 - 5
 - 6
 - 7
 - 8
 - 9
 - 10
 - 11
 - 12
 - 13
- J



- I-1 Converter Check of input signal in μV . Press the keys  or  to toggle the display between the two forks.
- I-2 Display. Integrity check of all segments and icons.
- I-3 Keypad. Press any key to check its correct operation, with beep and code on display.
- I-4 CTS. Check of status of the control signal from the printer.
- I-5 Scale serial number.
- I-6 Hardware version (e.g. *rEU 5*) followed by software version (e.g. *04.00.00*).
- I-7 For use by the manufacturer.
- I-8 For use by the manufacturer.
- I-9 For use by the manufacturer.
- I-10 For use by the manufacturer.
- I-11 For use by the manufacturer.
- I-12 Check of communication between the indicator and the internal Bluetooth module.
- I-13 Fork diagnostics. Press the keys  or  to scroll through the parameters:



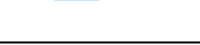
<i>bt .AdC</i>	Battery level
<i>E iLl</i>	Inclinometer
<i>PrG .UEr</i>	Firmware version

Press the key  to change the displayed fork.

Enter	Browse	Save and exit
1. Off 	 = 	  Page 11
2. On 	 = 	
3. 	 = 	
 Page 11	 = 	



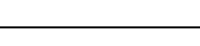
- A
- B
- C
- D
- E
- F
- G
- H
- I
- J
 - 1
 - 1
 - 2
 - 3
 - 4
 - 5
 - 6
 - 7

Resetting percentage using the key

J-1-1  
 ← 











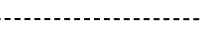
With approved scale (0...2)
 With non-approved scale (0...50)

Sensitivity of the weight stability control

J-1-2  
 ← 

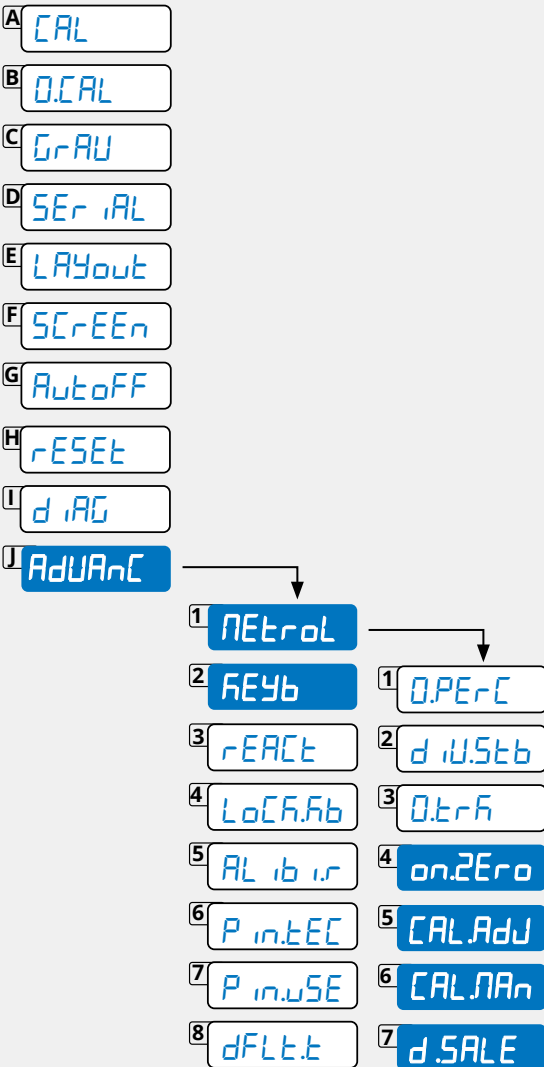
(0...20)

Zero hold function (tracking)

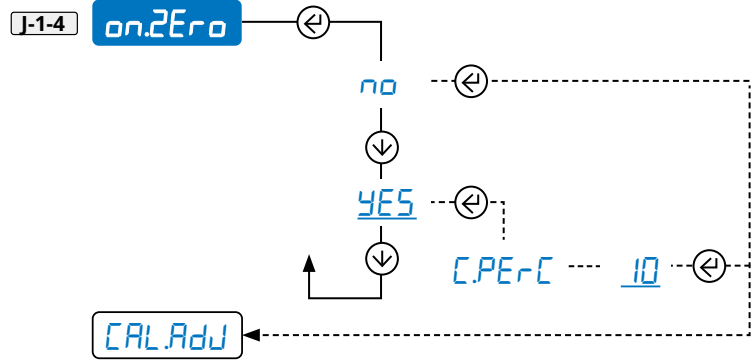
J-1-3 
 

 

 

 ...

 

 ← 

MENU

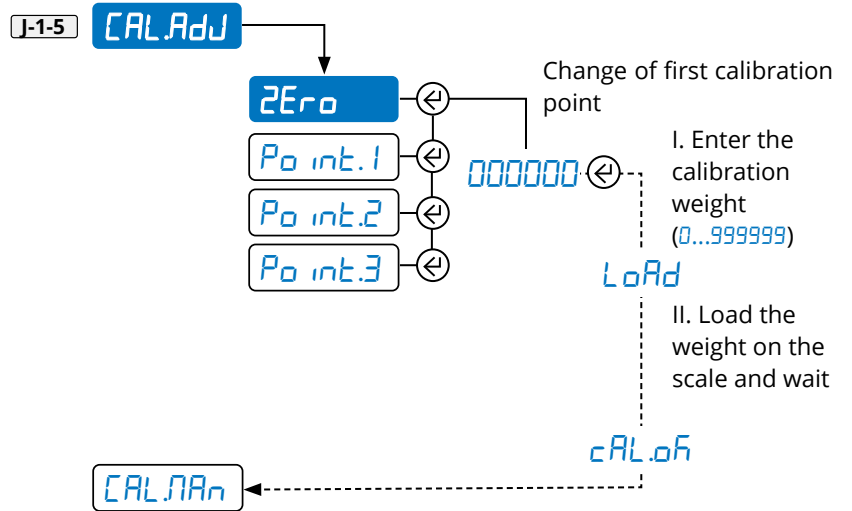
Enter	Browse	Save and exit
1. Off	=	
2. On	=	Page 11
3.	=	
Page 11	=	



Reset at power and reset percentage



Re-acquisition / change of the calibration points in memory.

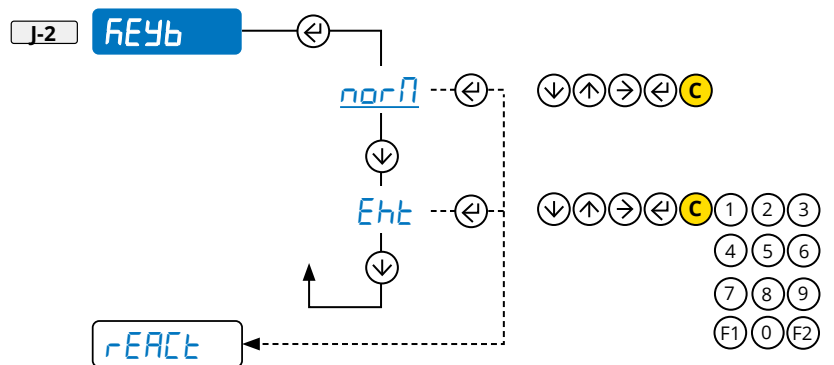


Repeat the same operation for Po int 1, Po int 2 and Po int 3

J-1-6 CALnAn For use by the manufacturer.

J-1-7 d.SALE For use by the manufacturer.

Type of keyboard

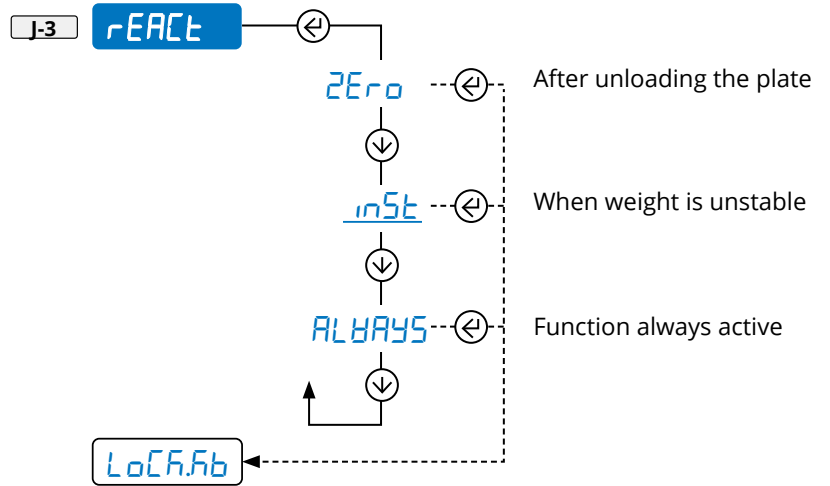


MENU

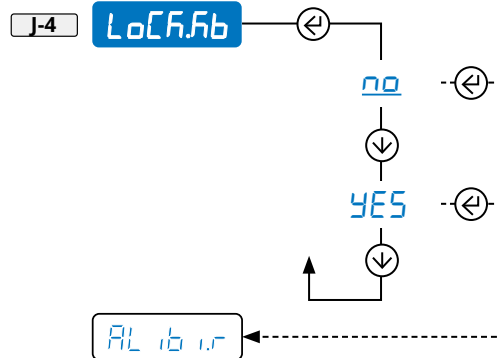
Enter	Browse	Save and exit
1. Off	=	
2. On	=	
3.	=	
Page 11	=	
		Page 11

- A **CAL**
- B **O.CAL**
- C **GrAU**
- D **SEr iAL**
- E **LAYout**
- F **SCrEEen**
- G **AutoFF**
- H **rESEt**
- I **d iAG**
- J **AdUAnC**
 - 1 **NEtroL**
 - 2 **REYb**
 - 3 **rEAct**
 - 4 **LoCkAb**
 - 5 **AL ib ir**
 - 6 **P in.tEC**
 - 7 **P in.uSE**
 - 8 **dFLt.t**

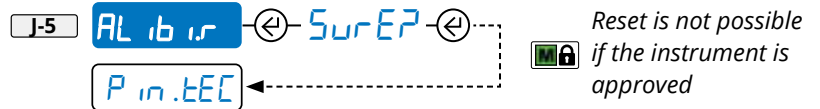
Reactivation of the print or weight totalisation function



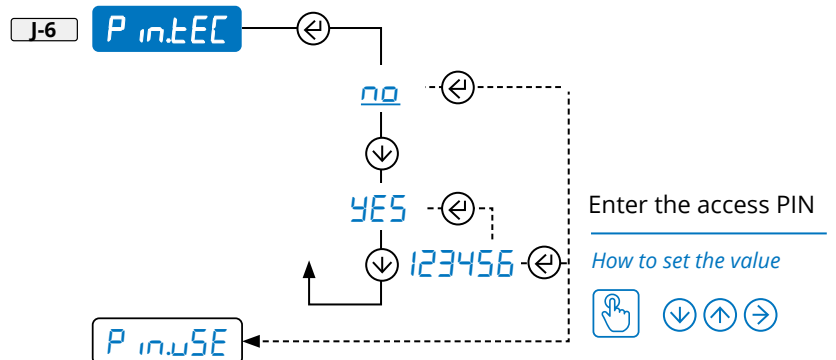
Permanent keyboard lock (excluding key)



Reset of fiscal memory (alibi memory)



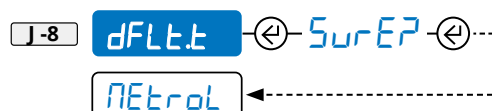
Access PIN to programming menu



Access PIN to user menus



Total reset of memory and of calibration, with reset of the factory settings.



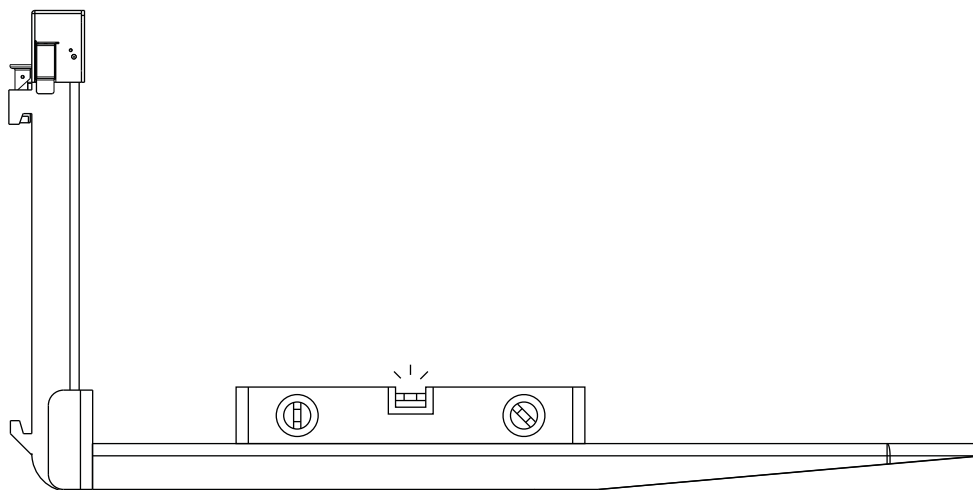
9. CALIBRATING THE INCLINOMETER

The weighing forks are equipped with a digital accelerometer that can also detect changes in tilt.

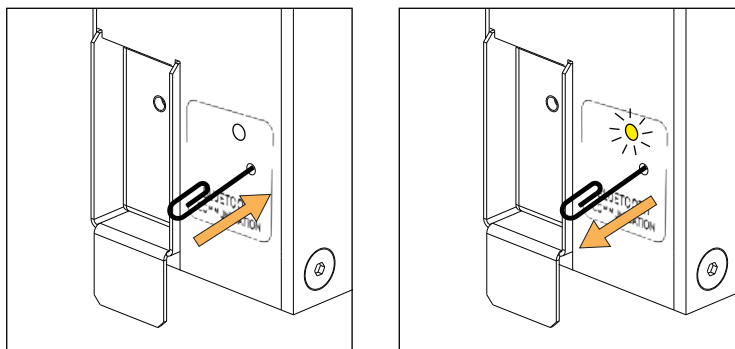
1. Place the forks in a perfectly horizontal position (use an external level gauge).
2. Press the key until the LED on the fork turns yellow, then release it.

Repeat the procedure for the second fork.

1.

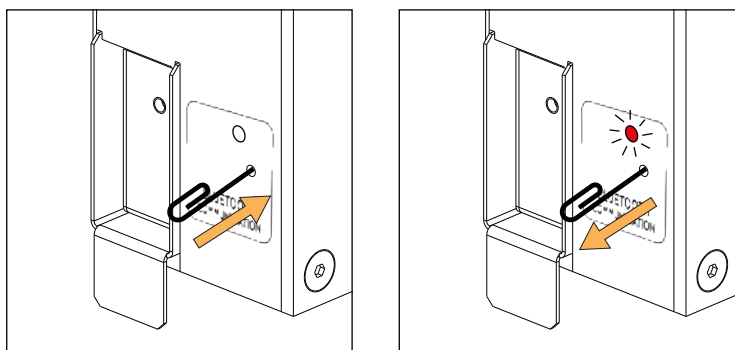


2.



To cancel the accelerometer calibration, press and hold the key on the weighing fork until the LED on the fork turns red, then release it.

Repeat the procedure for the second fork.



M On approved systems, this is done at the factory before shipment. The approval seal must be removed to calibrate the inclinometer again.

10. COMMUNICATION STRINGS

Short string

01ST,GS, 0.0,kg<CR><LF>

where

01	Code 485 of the instrument (2 characters), only if communication mode 485 is enabled
ST	Scale status (2 characters): <u>US</u> - Unstable weight <u>ST</u> - Stable weight <u>OL</u> - Weight overload (out of range) <u>UL</u> - Weight underload (out of range) <u>TL</u> - Scale not level (inclinometer active)
,	ASCII 044 character
GS	Type of weight data (2 characters) <u>GS</u> - Gross <u>NT</u> - Net
,	ASCII 044 character
0.0	Weight (8 characters including the decimal point)
,	ASCII 044 character
kg	Unit of measurement (2 characters)
<CR><LF>	Transmission terminator, characters ASCII 013 and ASCII 010

Extended string

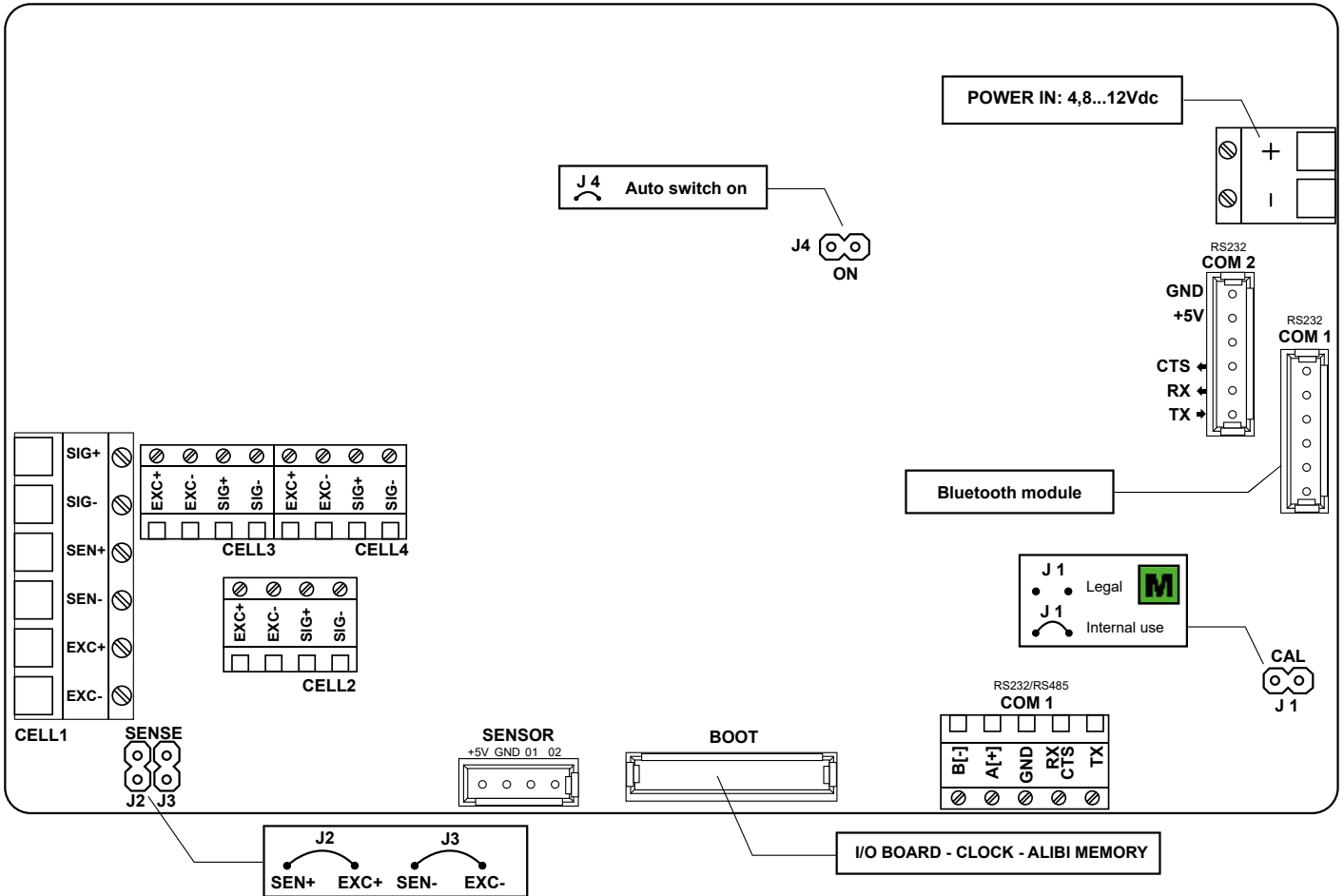
011,ST, 0.0,PT 20.8, 0,kg<CR><LF>

where

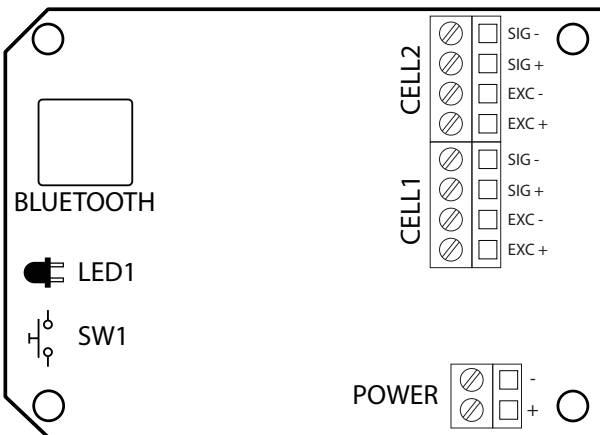
01	Code 485 of the instrument (2 characters), only if communication mode 485 is enabled
1	ASCII 049 character
,	ASCII 044 character
ST	Scale status (2 characters): <u>US</u> - Unstable weight <u>ST</u> - Stable weight <u>OL</u> - Weight overload (out of range) <u>UL</u> - Weight underload (out of range) <u>TL</u> - Scale not level (inclinometer active)
,	ASCII 044 character
0.0	Net weight (10 characters including the decimal point)
,	ASCII 044 character
PT	Indication of pre-set manual tare (2 characters)
20.8	Tare weight (10 characters including the decimal point)
,	ASCII 044 character
0	Number of pieces (10 characters)
,	ASCII 044 character
kg	Unit of measurement (2 characters)
<CR><LF>	Transmission terminator, characters ASCII 013 and ASCII 010

11. WIRING DIAGRAMS AND EXPLODED VIEW

Weight indicator CPU board

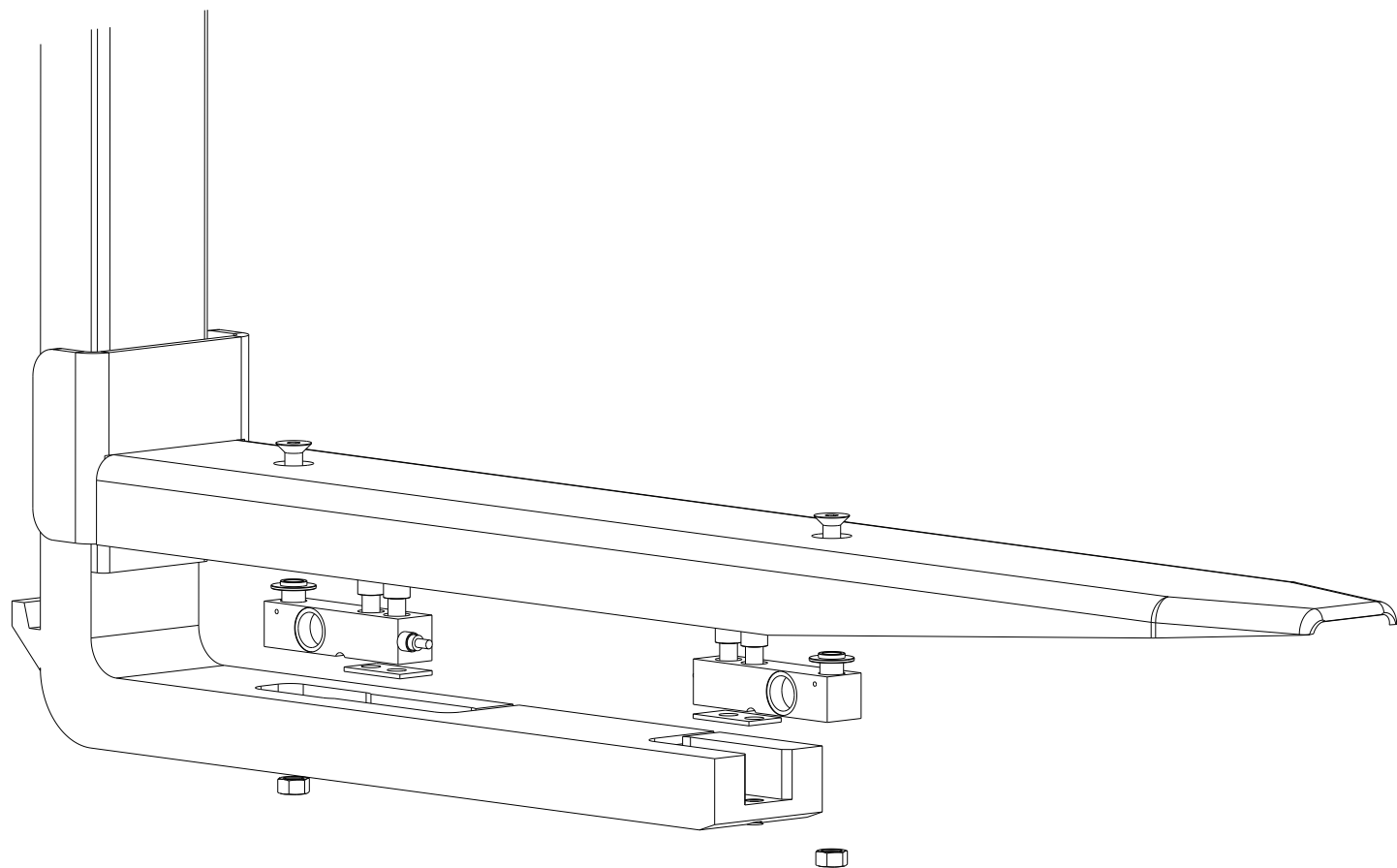
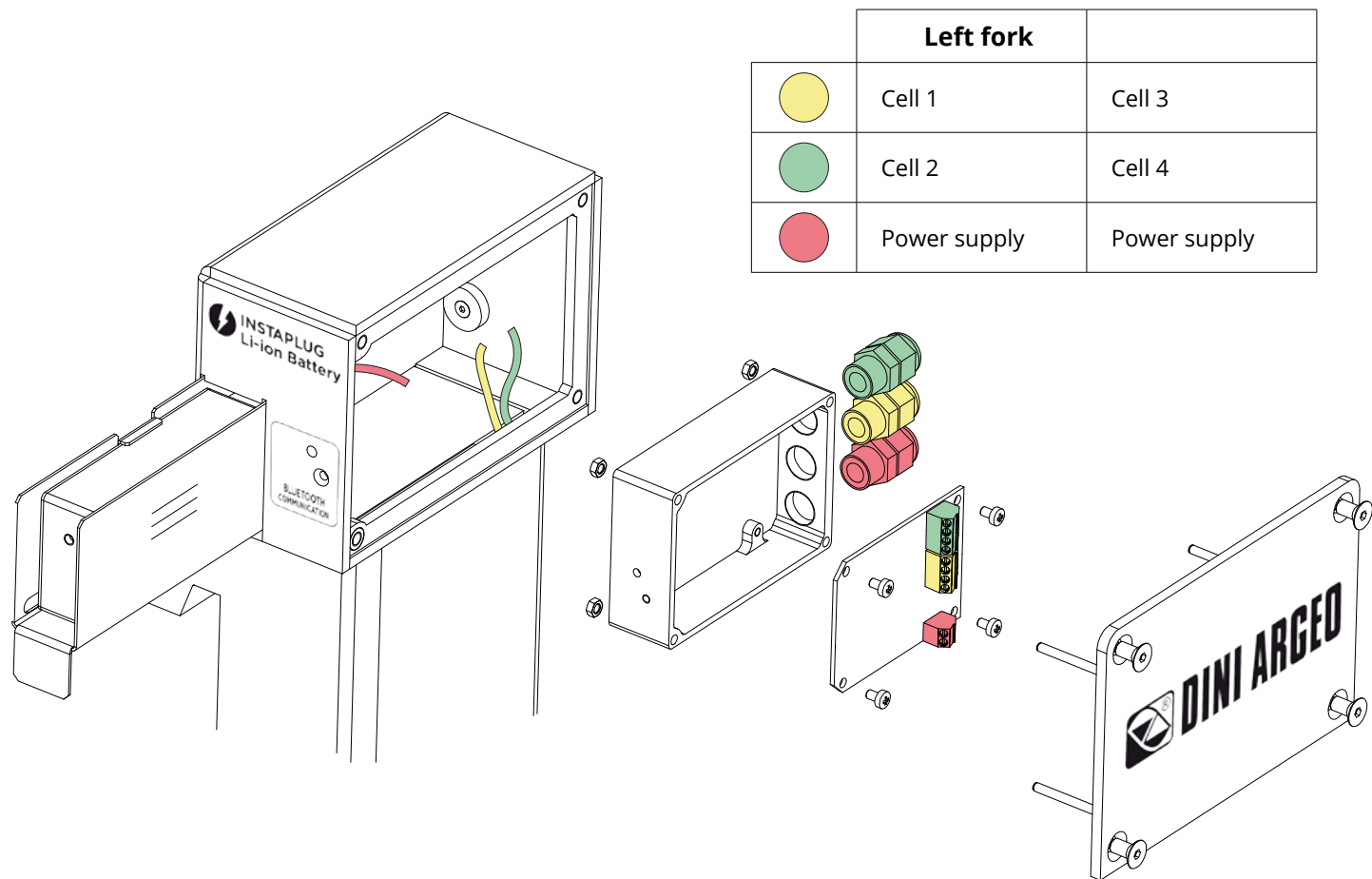


Weighing forks board



Pay special attention to the Bluetooth module aerial during installation / replacement.

Exploded view weighing forks



12. FACTORY CONFIGURATION RESET

Weight indicator

To restore the factory configuration of the weight indicator, open the technical menu and go to step `dFLt .t`. Press the PRINT key to select, the instrument shows the confirmation message "`dFLt?`". Press the PRINT key again to confirm.

When you have finished, exit the menu and save your changes.
This operation clears the calibration of the weight indicator.

Weighing forks

Press and hold the key on the weighing forks until the red light comes on, then release it.
The operation cancels the calibration of the inclinometer but maintains the pairing with the weight indicator.

M In approved systems, the approval seals must be removed and the weight indicator must be configured for internal use (Jumper inserted, see "Approval" paragraph) to run the reset operations.

13. ERRORS AND MESSAGES

MESSAGE	DESCRIPTION	SOLUTION
<i>AL.Err</i>	"Alibi memory" board (optional) not detected.	Check the presence of the board inside the indicator. If present, check it is not damaged and is installed correctly.
<i>E9.Err</i>	Impossible to perform equalisation.	Check the cells are connected properly. Check the signal of each cell in the diagnostic menu (menu <i>d.AG</i> , parameter <i>AdC.wU</i> , see page 34).
<i>Pr.EC.</i>	Calibration error.	First calibrate the zero point, then proceed with the next points.
<i>Err.Pnt</i>	Calibration error.	Check the connection of the load cell. Check that the cell signal is stable, valid and greater than that of the previously acquired point.
<i>Er 11</i>	Calibration error.	Increase the calibration weight.
<i>Er 12</i>	Calibration error.	Check that the signal coming from the cell increases upon the increasing of the weight loaded on the scale. When acquiring the calibration points, use the increasing calibration weights.
<i>Er 37</i>	Calibration error.	Repeat the calibration, checking that the capacity and division have been correctly set.
<i>Er 39</i>	Instrument not configured.	Reset the factory configurations (menu <i>AdUAnC</i> , parameter <i>dFLt.t</i> , see page 41).
<i>Er 85</i>	Instrument configured but not calibrated.	Perform calibration.
<i>CEr.36</i>	Calibration error.	Check that the signal coming from the load cell is not negative.
<i>Err.Not</i>	Unstable weight.	Check in the menu <i>d.AG</i> , parameter <i>AdC.wU</i> (see page 34) that the signal is stable and try again. If the connection of the cells is with 4 wires, check that the sense jumpers are inserted.
<i>PA ir .Er</i>	Pairing error between indicator and fork(s).	Check that the fork is switched on and in pairing mode (red LED).
<i>bt .Err</i>	Communication error between the indicator and the internal Bluetooth module.	Open the indicator case and check the connection of the Bluetooth module to the CPU board.

14 SUMMARY OF THE PARAMETERS

CAL	Calibration.....	13
CAL.PAR	Calibration parameters.....	13
dEC .n	Configuration of the decimal point.....	13
d iU	Reading division	13
u.n.	Unit of measure	13
rAnGE 1	Scale capacity (maximum capacity / first weighing range)	14
rAnGE 2	For multirange scales (second weighing range).....	14
rAnGE 3	For multirange scales (third weighing range).....	14
EQuAL	Equalisation function.....	14
EQuAL.P	Equalisation.....	15
CAL.AdU	Complete calibration.....	16
D.CAL	Resetting the pre-tare (zero calibration)	17
GrAU	Area of gravity of the place of use.....	17
SEr .AL	Configuration of the serial ports	18
bt.in .it	Initialising the Bluetooth module	18
PA ir .L	Pairing with the left weighing fork.....	18
PA ir .r	Pairing with the right weighing fork	18
CoM.Prn	Communication with printer or repeater or PC.....	19
ModE	Selection of the communication mode.....	19
bAud	Communication speed (Baud rate).....	19
bit	Configuration of the serial protocol	20
CtS	Printer control signal.....	20
PodEr.P	Printer power supply / Radio-frequency module	20
LAYout	Print customisation	21
LAnG	Setting the print language	22
ChAr	Setting the font	22
hEAdEr	Print header.....	23
dAtA	Selection of the weight data.....	25
WE iGht	Progressive weighed	25
t .iCfEt	Receipt / label progressive	25
CLoCh	Date and time.....	26
bArC.39	Bar code 39.....	26
bArC.uP	Barcode top margin (mm)	26
bArC.L	Barcode left margin (mm).....	26
bArC.h	Barcode height (mm).....	26
bArC.dt	Selection of the weight data.....	27
CoP .ES	Multi-copy prints.....	27
End.t .iC	Paper outlet for end of label / receipt.....	27
bL inE	White pre-heating line of the print head	27
tES.t	Label test print	28
SCrEEen	Adjusting the display.....	29
bAFL .it	Backlighting	29
br iGht	Brightness.....	29
LoCh	Display lock (for use by the manufacturer)	29

AutoOFF	Auto switch-off.....	30
rESEt	Factory configuration reset.....	30
d iAG	Diagnostics.....	31
AdC.uU	Converter.....	31
d iSPLA	Display.....	31
fEYb	Keypad.....	31
CtS	CTS status.....	31
SER.nuN	Serial number.....	31
PrG.UEr	Firmware release.....	31
d iU.int	Internal divisions.....	31
AdC.Pnt	ADC points.....	31
PH.AdC	Power supply value.....	31
SER.iAL	Serial ports.....	31
bth	Bluetooth.....	31
ForFS	Weighing forks.....	31
AdUAnC	Advanced.....	32
MEtroL	Metrological parameters.....	32
OPErC	Resetting percentage using the key (⏴).....	32
d iUStb	Sensitivity of the weight stability control.....	32
0trh	Zero hold function (tracking).....	32
onZEro	Reset at power and reset percentage.....	33
CAL.AdJ	Re-acquisition / change of the calibration points in memory.....	33
CAL.MAn	For use by the manufacturer.....	33
d.SALE	For use by the manufacturer.....	33
fEYb	Type of keyboard.....	33
rEACt	Reactivation of the print or weight totalisation function.....	34
LoCK.fAb	Permanent keyboard lock (excluding key (C)).....	34
AL ib ir	Reset of fiscal memory (alibi memory, optional).....	34
P intEEC	Access PIN to programming menu.....	34
P inUSE	Access PIN to user menus.....	34
dFLt.t	Total reset of memory and calibration.....	34

15. FAQ - Frequently Asked Questions

Calibration

Can I change the maximum capacity without recalibrating?

Yes, you must change the parameters [rARGE 123](#) (K-1-4,5,6).

The maximum capacity set on the weight indicator must be less than or equal to the nominal capacity of the weighing forks (2500 kg).

Can I change the division without recalibrating?

Yes, you must change the parameter [dIU](#) (K-1-2).

Can I change the position of the decimal point without recalibrating?

Yes, you must change the parameter [dEE n](#) (K-1-1) and the value of the calibration points using step [CAL.PPn](#) (K-5-6).

Communication

Scale doesn't answer

- Check that the Bluetooth module is working properly.
- Check that both weighing forks are switched on. If necessary, move the forks to wake them up.
- If necessary, perform the weighing fork pairing procedure again.

Generic

The scale does not turn on

- Check that the input voltage level to the motherboard is correct.
- Try the forced power by inserting the "ON BOOT" jumper present on the motherboard. If the indicator lights up, check the correct operation of the keyboard, using the diagnostic menu [dIAG](#).
- Possible failure of the internal rechargeable battery (if present).



A RICE LAKE WEIGHING SYSTEMS COMPANY

HEAD OFFICE

Via Della Fisica, 20
41042 Spezzano di Fiorano, Modena - Italy
Tel. +39 0536 843418 - Fax +39 0536 843521

SERVICE ASSISTANCE

Via Dell'Elettronica, 15
41042 Spezzano di Fiorano, Modena - Italy
Tel. +39 0536 921784 - Fax +39 0536 926654

www.diniargeo.com

Stamp of the authorised service centre

