TRANSLATION OF ORIGINAL INSTRUCTIONS

Checkweigher Series: WP (M)

Manufacturer's details

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Warning

TO PREVENT ACCIDENTS DO NOT USE THIS EQUIPMENT WITHOUT BEING FAMILIAR WITH THE INSTRUCTIONS CONTAINED IN THIS MANUAL

Dealer's stamp

Notes and general warnings

ATTENTION!!!
WARNING!!!

The checkweigher comes complete with guards, screens and so on, necessary for its use in safety; at the connection area with other parts/machines belonging to the Customer, it is the responsibility of the Customer itself to check the need to set up more guards/safety systems to prevent operator contact with moving parts and/or any dangerous and/or any electrical parts that can be installed in that area.

IF THIS CHECKWEIGHER BELONGS TO THE CATEGORY OF AUTOMATIC WEIGHING INSTRUMENTS GOVERNED BY THE 2014/32/EU DIRECTIVE OF THE EUROPEAN PARLIAMENT (REGULATION COMMONLY CALLED MID). THE USER MUST THEREFORE COMPLY WITH THE REGULATION CITED ABOVE.

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1. Foreword

1.1. Symbols

Safety instructions are preceded by special symbols.

The same symbols are provided on the machine to help the operator deal with the possible dangers and operate the equipment safely.

The dangerous situations are introduced with three different wordings, referring to the degree of hazard of the critical situation.

The symbols represented allow the type of dangerous situation to be identified, on which due caution is recommended.

1.2. Safety classifications

DANGER!

This indication introduces a direct danger for persons. Failure to comply with the instructions following the same can lead to serious injury.

WARNING!

This wording introduces a danger that can be clearly identified. Failure to comply with the following instructions may lead to serious damage for persons and/or damage to the equipment and/or parts thereof.

ATTENTION!

This wording refers to a danger. Failure to comply with the following instructions may lead to slight injury to persons and/or damage to the equipment and/or parts thereof.

1.3. Safety-related instructions

DANGER!

Moving mechanical parts! Only maintenance technicians can perform maintenance, cleaning and disassembly operations on the parts and devices of the machine.

DANGER!

Crushing danger due to moving parts! Do not put your hands in the areas near to this sign. In this must be done, disconnect the electricity first.

DANGER!

Electric shock caused by high voltage! Any electric system servicing must be carried out by carefully following the safety instructions:

- Connect the appliance without voltage;
- Block the machine against any accidental switch-on;
- Make sure it is not live.

DANGER!

Possible presence sources of noise.

PROHIBITION!

It is forbidden to adjust or service moving parts. Failure to comply with the following instructions may lead to serious consequences for persons and/or damage to the equipment and/or parts thereof.

1.4. Safety and accident prevention

The machine should be used exclusively by operators trained to use it and who must have fully read and understood the instructions contained in this manual.

Before starting to work, the operator must be fully aware of the position and operation of all the controls and of the machine characteristics.

Do not carry out operations of any kind if they are not specifically included in the machine working cycle.

Do not tamper with nor alter the operation and efficiency of the protection devices provided on the machine.

Any alteration likely to affect the machine safety and accident-prevention characteristics may only be carried out by the manufacturer, who must certify machine compliance with the applicable safety standards.

Therefore, any alteration or maintenance operation not mentioned in this technical documentation should be considered arbitrary.

Before carrying out any required maintenance operations not mentioned in this use and maintenance manual, contact the machine manufacturer.

1.5. Declared machine use

The type of use is allowed exclusively for product characteristics and product types indicated in the table values.

Do not use the machine, even temporarily, with products having dimensions and/or weights different from the chart values, as this might affect machine operation and safety.

Do not use the machine to weigh animals or persons.

1.6. General safety rules

Routine and extraordinary maintenance should be carried out while the machine is stopped and disconnected from electric and pneumatic energy sources.

Any servicing concerning the pneumatic circuits should only be carried out after releasing pressure from inside the circuits.

Any electric system repairs should be carried out after disconnecting the voltage supply.

Do not place foreign bodies, hands or other body parts on moving parts.

Do not climb onto or work on the machinery during operation, even if the machine is stopped, even during maintenance.

Do not occupy the work space surrounding the machine, which must be kept free from obstacles, clear and well lit.

Before starting any machining, concentrate all attention on what is being carried out. It is necessary to be extremely careful and to pay attention and maintain promptness of reflections: these are fundamental conditions for the operator.

The warning, recommendation and danger plates affixed to the machine must always be correctly maintained and left in place.

Lighting must be such as to always guarantee the greatest possible safety during work. If maintenance must be performed on machine parts and/or areas not sufficiently well lit, use a portable lighting system.

The operator should wear suitable clothing for the working environment and working situation.

Keep the work setting clean and free from obstacles; the working materials should be cleverly arranged, and so should the finished products and equipment.

It is strictly forbidden to remove any safety device.

1.7. Characteristics and technical data

See MDQ 38 attached to the manual.

1.8. Introduction to machine use

Before installing the machine, read this instruction manual carefully in order to become familiar with the machine and its uses and any contraindications.

This manual is an integral part of the machine and must therefore be kept intact and available for the User throughout the machine's production lifespan.

The machine must be used in accordance with that specified in this manual. Compliance with regulations and recommendations stated in this manual guarantees safety during use.

In case of differences observed between this manual contents and the actual machine, the user should inform the manufacturer before starting up the machine.

DANGER!

Only and exclusively use the machine for the uses specified in this manual. Operate the machine as recommended in this manual, do not alter or tamper with the machine, do not use the machine for unsuitable purposes.

1.9. Machine description

The machine in question is a checkweigher that's suitable for dynamically weighing various types of products.

The machine is therefore able to recognize weights and process data concerning the products fed through it.

The distinctive characteristic of this machine is dynamic weighing: in other words, with moving products and it is not necessary to stop them one by one for weighing.

The machine consists of a sturdy sheet steel base frame to which the weighing unit is fixed.

The weighing unit consists of a frame containing the loading cells and weighing belt.

In order for the machine to function properly, each product to be weighed must transit on the weighing belt.

The machine key sections therefore are:

- In-feed conveyor: when available, used for the sampling of a flow of incoming products and the subsequent connection with the weighing conveyor;
- Weighing conveyor: fixed on a suitable weighing cells, it can detect the weight of every single conveyed item;
- Out-feed conveyor: when available, it provides a connection between the weighing conveyor and any reject devices.

1.10. *Technical assistance*

Routine and extraordinary maintenance should be carried out according to the instructions contained in this manual.

For any other servicing and assistance, contact the manufacturer by checking the information contained on the data plate affixed to the machine:

A- Serial No - Indicates the serial number for identification of the machine

B- Model No - Indicates the model of the appliance supplied

C- Month - Year - Indicates the month and year of construction of the machine

D- Short circuit current - Indicates the short cut circuit that supports the machine

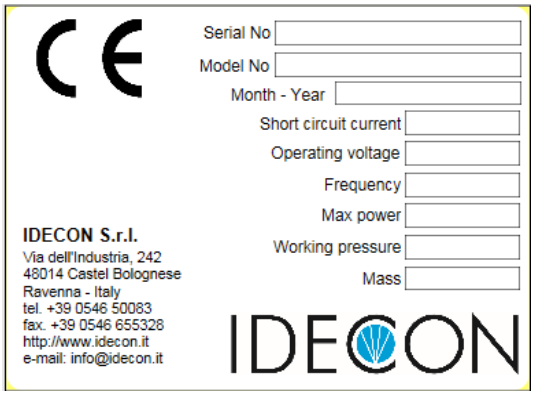
E- Operating voltage - Indicates the electric power supply voltage to be supplied

F- Frequency - Indicates the frequency (Hz)

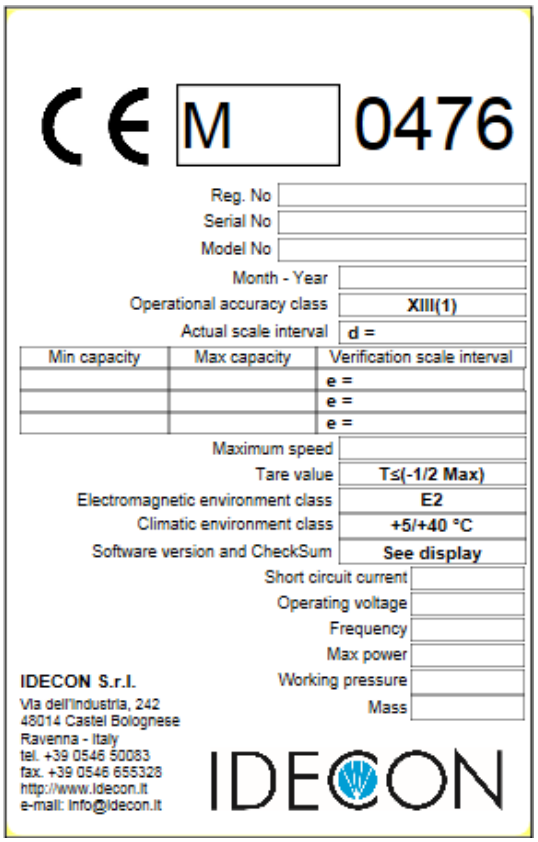
G- Max power - Indicates the electric power required

H- Working pressure - Indicates the machine working pressure

I- Mass - Indicates machine weight



OR



1.11. *Residual risks reminder*

This is a reminder for the machine operators concerning the possible residual risks.

During the design phase, aspects concerning machine safety have been reviewed and the risk connected with operating the machine has been considerably decreased.

Therefore, in order to maintain some functional technical features, such as the quick format change and cleaning of the parts, some residual risks have been reduced but not eliminated completely.

The residual risks are described below:

Main electric power circuit breaker

The machine is not equipped with its own automatic main circuit breaker.

We therefore recommend that the user installs an automatic circuit breaker on the electric power line, with break power calculated according to the system short-circuit current, the section of the wire and maximum current absorbed.

Conveyor moving parts

The machine is protected completely against accidental contact. Coupling the machine with other machines can, in some circumstances, generate additional residual risks.

Make sure that the personnel is aware of the risks involved and are asked not to perform operations or actions which could affect their own safety.

The residual risks can be:

- Contact with moving parts;
- Entanglement;
- Crushing.

Zones with residual risk of entrapment and crushing, remain in all entry and exit areas of this machine. Therefore, the customer must reduce these residual risks related to the incorporation of the conveyor inside the transport line.

Product reject device

The ejection system may become accessible because the safety measures may not be entirely applicable.

This usually happens when rejected products must be taken from areas nearby the reject device, or the machine size makes it impossible to fit a protection guard to completely eliminate any residual risk.

We therefore recommend:

- Not to remove nor alter the prescribed protection devices;
- To make sure that the personnel is aware of the risks involved and are asked not to perform operations or actions which could affect their own safety;
- To take rejected products from authorized areas only.

1.12. Recommended work setting

The machine should operate indoors, under controlled temperature conditions, be protected against excessive dust and humidity and away from ventilation systems or large access doors to the establishment. Whenever the last condition is not met, protective guards must be installed to minimise the impact of wind on the weighing system.

Unless otherwise specified at the time of ordering, it must be envisioned that the machine is in the following normal environmental conditions in order to operate correctly:

Altitude

The altitude of the machine work place shall not exceed 1000 metres a.s.l., except for special requirements for machines that may be built to different customer's specifications.

Climatic conditions

The electric equipment can work correctly in environmental conditions with relative humidity no greater than 85% and temperature between 40°C and 5°C (without condensation).

Lighting

The line does not have its own lighting.

The plant lighting system is therefore important to guarantee personal safety and the work quality and must comply with the EN 12464-1 2004 Standard.

Minimum lighting: sufficient to guarantee correct visual perception of symbols and marks.

Maximum lighting: such as not to dazzle the operator.

Environment at risk of explosion or fire

In its standard configuration, the machinery is not equipped with suitable drive parts and accessories for explosion or fire risks.

For these special environment applications, contact the manufacturer.

1.13. *Working space requirements*

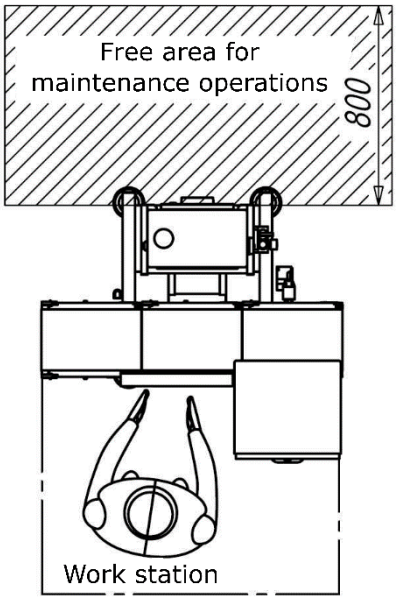
Define the areas reserved for the machine operator leaving sufficient room for operating and servicing the machine.

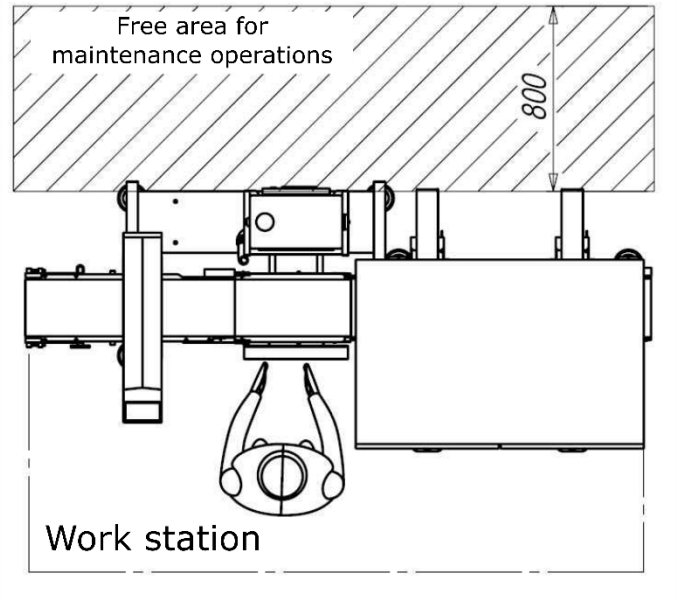
The choice of the right work setting and conveyor location is important to guarantee quality working conditions (maintenance, safety, etc...).

This area must be well lit and ventilated (always respecting the conditions envisioned by 1.12).

The environmental and working conditions must not prevent access to the machine controls, and to the emergency stop control in particular.

The entire machine operating potential must be guaranteed, including maintenance operations.





1.14. *Noise and vibrations*

When correctly installed, the machine produces a sound pressure level lower than 70 dB at the work stations and a negligible vibration level.

Danger

If higher levels are observed, contact the manufacturer directly.

In any case, we would like to remind that the “Italian Legislative Decree n° 277 dated 15/08/91” states that sound levels lower than 70 dB imply virtually zero risk of hearing damage, while for higher levels, special precautions should be adopted as provided for by the Law.

1.15. Scrapping and disposal

If the machine or any machine parts have to be scrapped, adopt the necessary precautions to prevent any risks resulting from industrial machinery disposal.

The user must take care of the scrapping and disposal of the machine construction materials according to EC regulations or any other regulations in force in his country. He must also destroy the machine ID plates and any other identification documents.

Special precautions must be taken in the following phases:

- Machine disassembly in the work setting;
- Transport and handling;
- Dismantling;
- Material separation.

For material separation and their disposal or recycling, refer to the National and Regional Laws regarding disposal of industrial solid waste and toxic or harmful waste.

If scrapping must be carried out, the user must use special precautions when it comes to the disposal of material such as:

- Guard materials (PVC and methacrylate);
- Shielded electric leads;
- Rubber parts;
- Plastic of the compressed air hose.

2. Installation

2.1. Machine delivery

DANGER

The operators in charge of transporting and handling the machine must be specially equipped and authorized to carry out these operations.

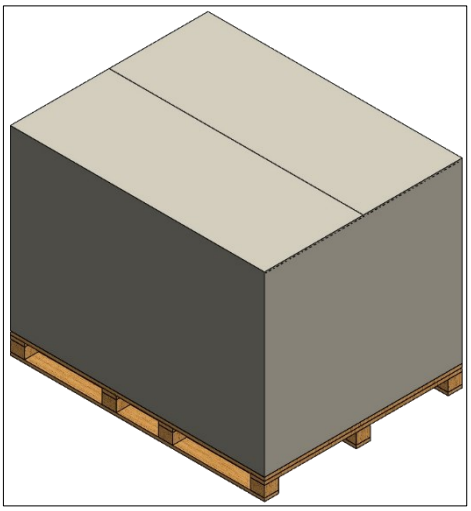
WARNING

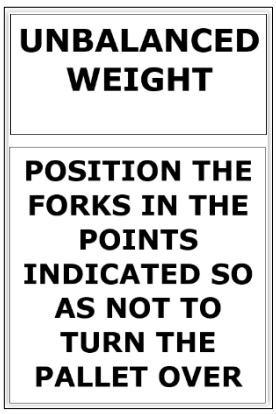
Handle the machine using forklift, by sliding the forks in at the points indicated in the figure. Do not use straps to sling the packaged machine for handling.

2.2. Packaging

When the machine arrives, make sure that the packaging has not undergone damage and has not been tampered with. If damage or tampering of the packaging are noticed, contact the manufacturer immediately. The following information is found outside the packaging:

- Manufacturer
- Address
- Position of the forks
- Notices





The machine is shipped fixed to pallet in order to prevent movement. In the loading and unloading operations, a trans-pallet or lift truck with suitable lifting capacity according to the machine weight must be used.

2.3. Storage

The machine must be stored at temperatures between -20 °C and 55 °C, in absence of ice formation in order to avoid damage to electronic devices.

The machine must be stored in a closed environment with limited exposure to dust and humidity.

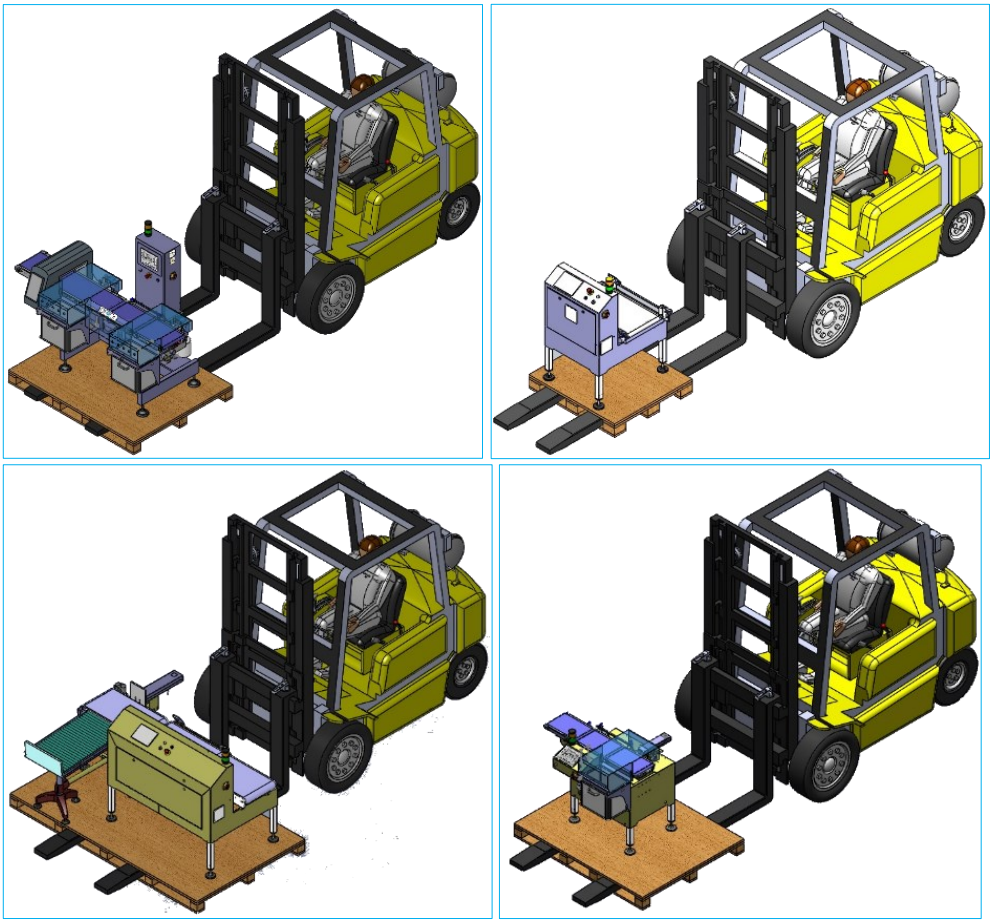
2.4. Lifting and transport

Suitable precautions should be adopted to prevent the machine coming off the lifting hooks or being damaged during handling or any other handling risk.

Position the forks next to the icons located on the machine packaging. If the special icons are missing, contact the machine manufacturer.

In any case make sure that the machine is well balanced and is not swinging during handling.

If the load dimensions do not allow sufficient visibility, a person should assist the handling operator by making signals from ground level.



After unloading and positioning the packaged machine next to the chosen work area, remove any fixing devices, lift the machine seizing it by the base frame and remove the packaging.

DANGER!

Do not use the weighing unit as lifting points for any reason whatsoever. This might affect the system operation irreparably.

Do not use the transport surface as a work surface or a support surface for heavy loads.

2.5. Installation

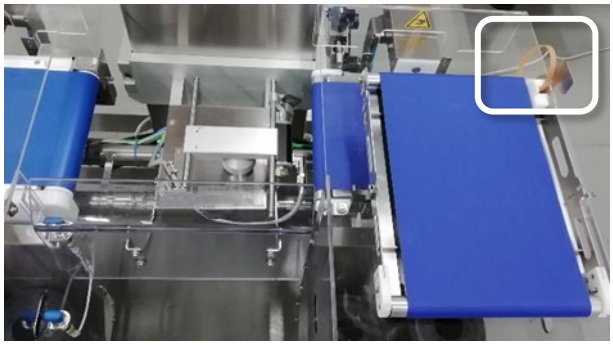
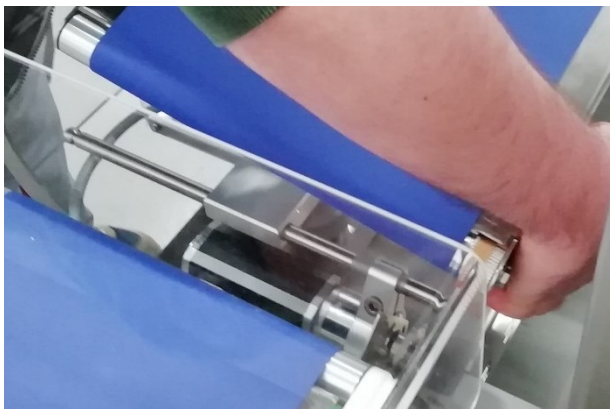
Installation operations should be carried out by skilled, sufficiently trained personnel.

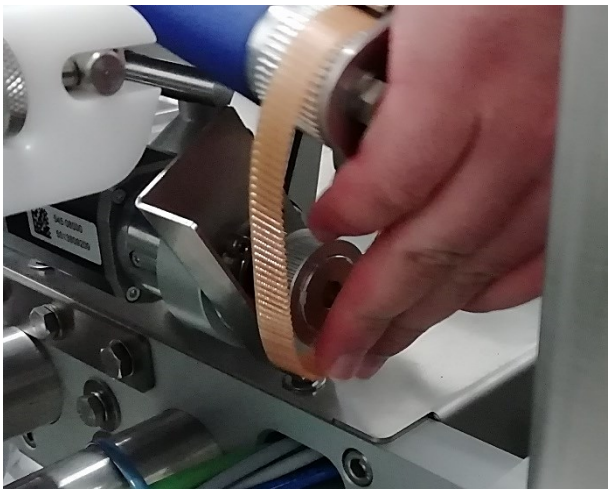
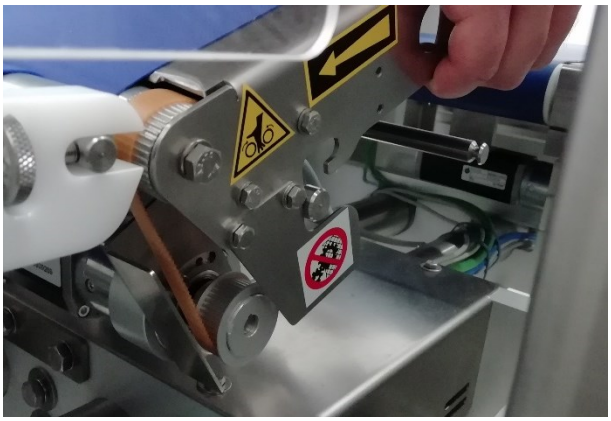
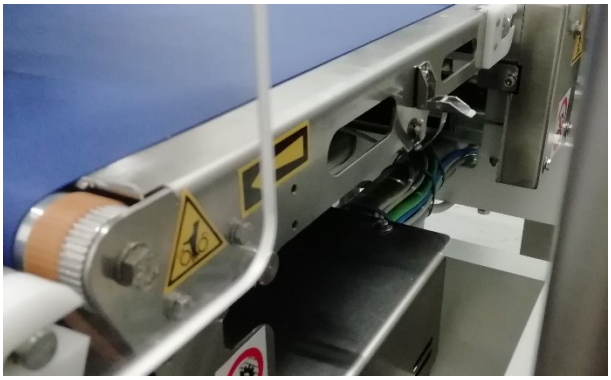
The machine is delivered tested and ready to be installed. Any machine parts which may have been disassembled before shipment are easily reinstalled.

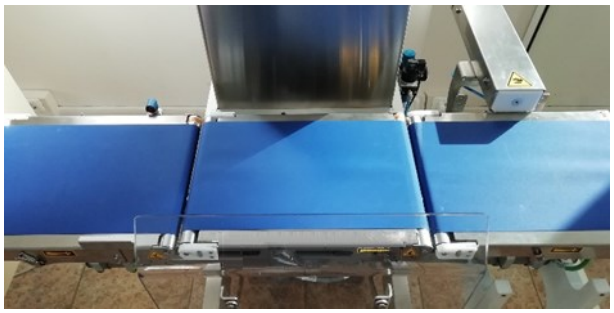
2.6. Assembly of the weighing belt

The checkweigher will be delivered with the weighing plate disassembled. The following steps must be followed to re-install this component.

PERFORM THIS PROCEDURE CAREFULLY AND DELICATELY. IN THE EVENT OF ACCIDENTAL BLOWS, DAMAGE MAY BE CAUSED TO THE LOAD CELL, THUS MAKING FURTHER CALIBRATION, AND EVEN REPLACEMENT, OF THE SAME MANDATORY!

The weighing plate can be found above the ejectors protection guard or inside the tanks. Presence of the drive belt can be noted inside a box positioned at the base of the checkweigher.	
Position the plate on the relative frame in a way that the drive belt is at the same angle as the motor pulley (generally this is positioned towards the column).	

Insert the belt onto the pulley.	
There are slots on the weighing plate, which allow the same to be inserted onto the load-bearing frame.	
Holding the plate inclined, insert the supports present near to the motor from both sides and take to end run. <u>Check that the belt is still inside the pulley when the plate has reached end run.</u> If an obstruction of any type is met when positioning the plate, check the problem without making sudden movements that could compromise system operation.	
Lower the plate keeping the plate fixing hooks lifted. At this point, the other part of the plate can be rested on the remaining two supports. Tighten the retainers present laterally to fix the plate. Position the hook on the support and tighten the retainer.	

Once the procedure has been completed, the retainer should appear in this way.	
Once the procedure has been completed, the checkweigher should appear in this way. **Note: remove the bubble wrap or the foam from under the weighing plate before starting the checkweigher.** To disassemble the plate, just perform this procedure in reverse order, paying attention.	

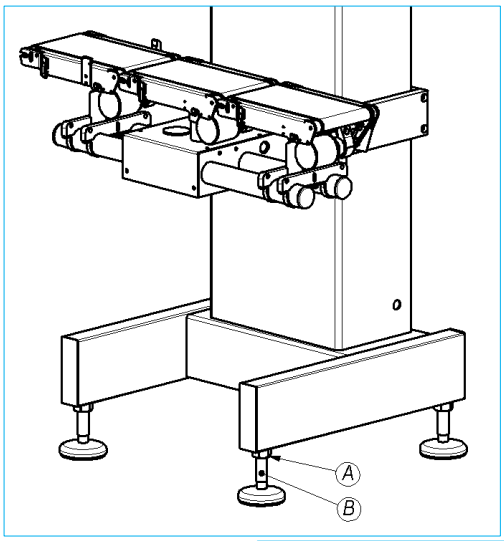
2.7. Anchorage

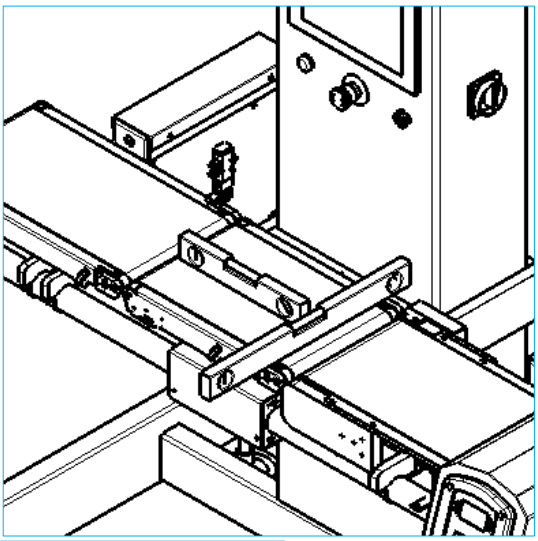
For correct floor levelling, suitable self-levelling feet with threaded rods are provided to make up for any height difference in the floor.

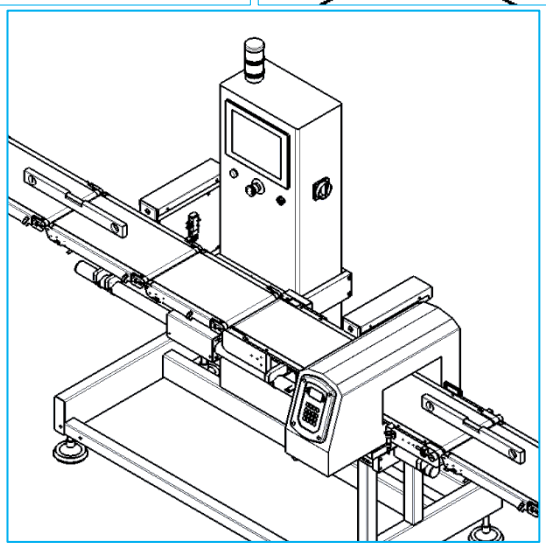
- Loosen the nut **A**;
- Use the threaded rod **B** to adjust height;
- Tighten the nut **A** again;
- Check horizontal positioning of the weighing plate using a spirit level.

Check correct alignment of the infeed and outfeed belts with respect to the ground, with the machinery positioned on the same production line.

Fix the feet to the floor using anchors industrial metal ø12 mm.







2.8. Working height adjustment

The machine can work at a height adjustable by +/- 30 mm.

Operate on feet with threaded rod to adjust the height.

2.9. Electric connection

DANGER!

Before carrying out the machine electric connection, check that the rated values correctly match the mains input values (voltage V, frequency Hz).

The user must arrange for the machine to be connected to the power supply network, using a special disconnecting switch with breaking power calculated according to the system short-circuit current, the section of the wire and current absorbed; this switch must protect both of the active lines (L and N). The connection cable must be in compliance with the attached wiring diagram specifications.

It is also recommended to install the machine on a power line that is equipped with a differential circuit breaker. Whenever inverters are present, use differential circuit breakers suitable for the type of inverter installed.

Carry out connections to the terminals in the special section of the line disconnecting switch inside the electric board.

For entry of the input lead into the machine, use the special hole in the lower part of the column.

Connection to the mains network without earthing is strictly forbidden; carry out earthing using the special connector (yellow/green and marked PE).

2.10. Pneumatic connection

The machine may be equipped with a special pneumatic system for reject device control.

Carry out the pneumatic connection by connecting the filter/regulator unit located in the bottom part of the ejection unit to the plant air system, by using a special inlet hose having suitable flow rate and characteristics (see attachment MdQ38).

The machine working pressure should be set to a value of 5,5 Bar. Check the exact pressure reading on the pressure gauge; if some adjustment is required, lift the knob in the adjustment unit and turn clockwise to increase or anti-clockwise to decrease pressure.

Air supply to the reject device control valves is prevented by a safety valve located immediately downstream from the filter/regulator unit. Valve opening is controlled when the emergency is reset.

For additional information on the air supply and control system, check the values indicated in the SPECIFICATIONS section.

DANGER!

Do not force or alter the operation of the system and the valve itself.

Carry out the connection when air supply is turned off.

3. *Commissioning and use*

The personnel in charge of starting up the machine must be sufficiently trained and must be familiar and comply with the safety regulations.

DANGER!

Moving part set-up operations must be carried out by one person only.

Unskilled or unauthorized personnel should not have access to the machine work area.

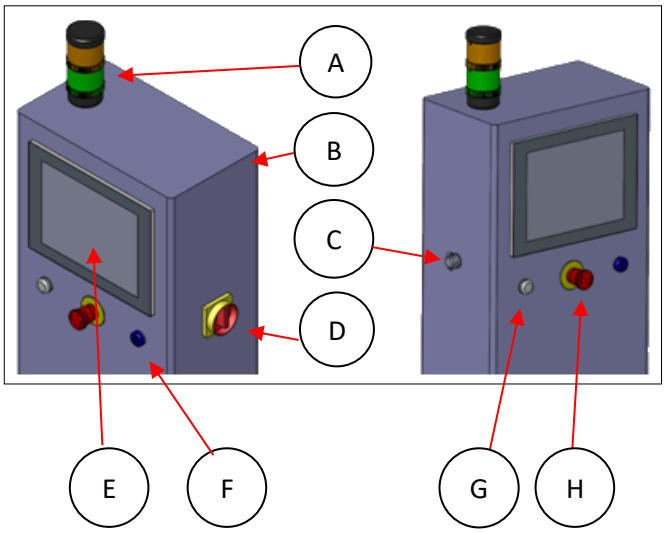
Avoid physical contact with any moving machine parts.

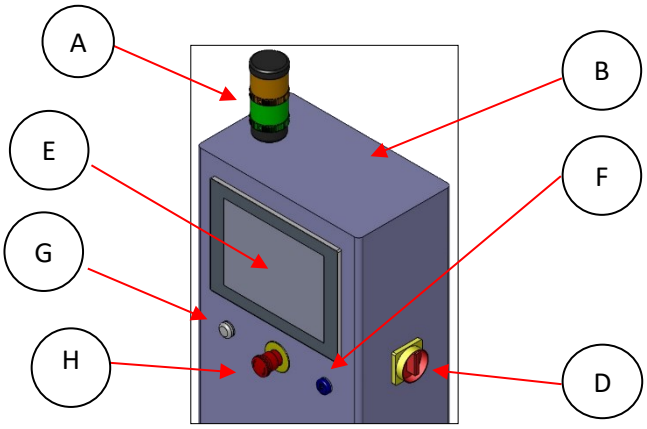
It is forbidden to remove safety devices and guards during machine operation.

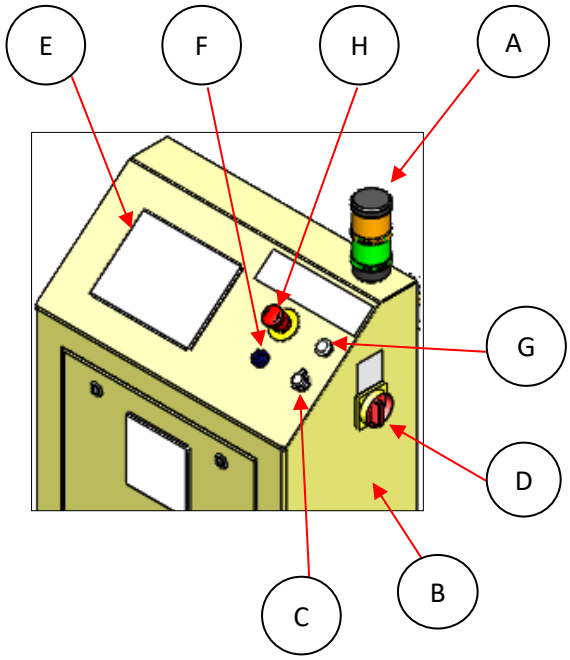
The machine cannot be restarted after maintenance or cleaning without having all the protections having been replaced.

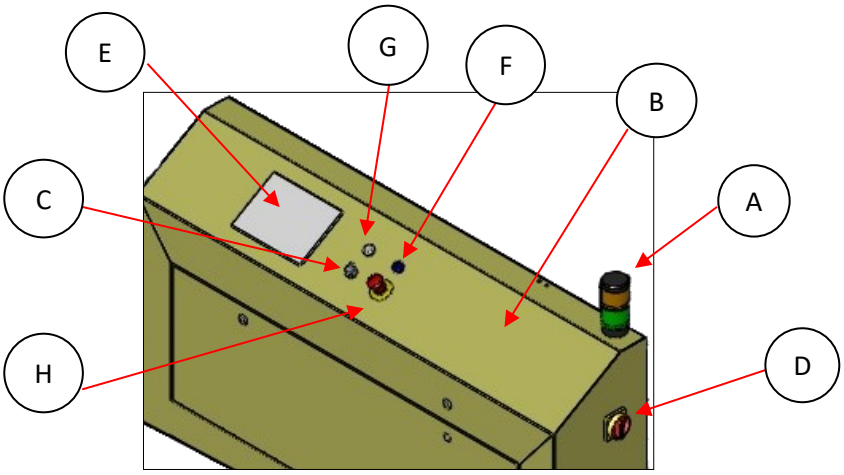
3.1. Machine description

A. Luminous column
B. Main frame
C. USB connector
D. Master Switch
E. Operator interface
F. Reset button
G. Mains presence LED
H. Emergency stop button









The **emergency button** disables the pneumatic system and stops the conveyor rollers. The **reset button** allows the machine to be ready for a new start after emergency stop push button activation or other safety devices. At each start of the machine, it is necessary to push the reset button.

3.2. Initial adjustments

Check that the machine has been correctly aligned with the systems located upstream/downstream.

Check that the products are fed along the conveyor belt center line and that they remain stable during infeed and outfeed.

In order to guarantee good working order of the machine, the products in transit must be well timed, making sure that the distance between the beginning of a product and the beginning of the next one is at least equal to the length of the weighing plate. Furthermore, the products must maintain perfectly linear advancement, avoiding splitting, rotating or jumping.

4. *Using the machine*

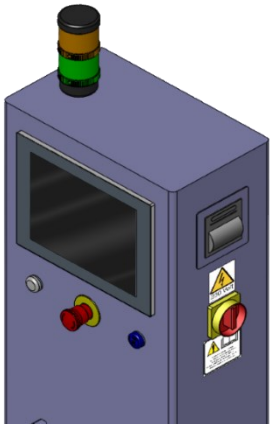
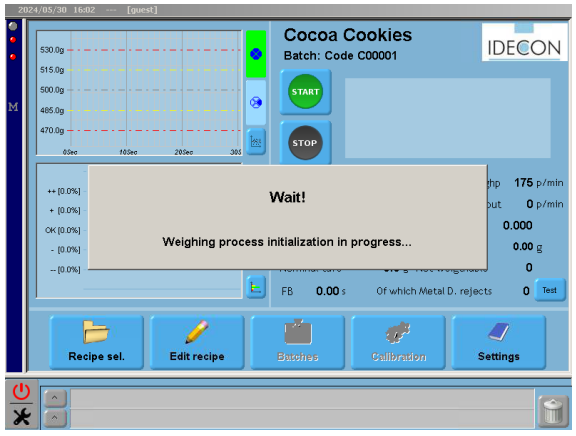
The machine in question is a checkweigher that's suitable for dynamically weighing various types of products. The electronics are based on a heavy-duty PC with Windows embedded operating system. The operator interface is based on a touch screen panel. Lightly touch the graphic keys provided on the screen without pressing. Do not press or the touch screen will be damaged.

It is recommended only to use the machine as a Checkweigher, do not use the PC for other purposes. Do not delete any files nor install any software not previously installed by the manufacturer. Use the machine according to the instructions given below.

NOTE ABOUT USE OF USB EXTERNAL DISK:

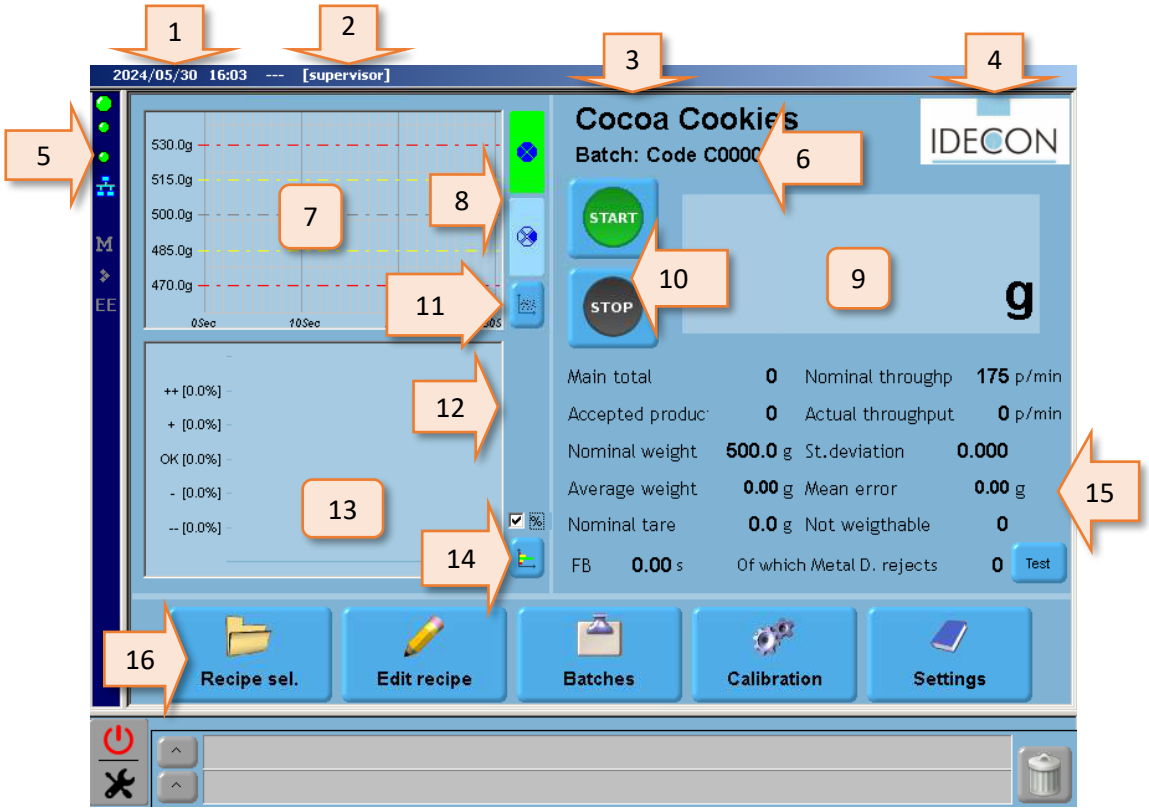
In some batch or recipe export operations a USB external memory is needed. Before use, it is recommended to format the media in order to prevent external contaminations, with FAT or FAT32 mode. Always press the "Remove drive" button before removing the media to prevent data loss or machine malfunction.

4.1. Start-up of the machine

Rotate the master switch.	
Wait for the software loading. During this time do not touch the panel to prevent the accidental starting of other procedures.	
The three LEDs (which indicate the software status) must became green, to indicate the good communication between the electronic devices. During machine start-up, these LEDs are red because the software has still to be loaded. During this time it is necessary that no objects stand on the weighing plate.	

When the three LEDs are green, press “**Start**” to run the machine. The machine will start with an active recipe. If no batch is active, every time that the recipe is changed or the machine is started, the piece count will restart from zero.	
Wait for machine calibration. During this phase, do not transit any products on the weighing belt.	
With the machine in "**Start**" mode, only the main “**Batches**” and “**Edit recipe**” functions can be accessed. The machine must be stopped for the other functions.	
If: ❖ There is a batch open; ❖ An Ejector or a Stop Event has not been configured for products of the “Not Weighable” (NW) class, on pressing the “**Start**” button, the machine does not start-up and the system will display this warning. To solve the issue, just set an ejector or Stop event for NW products (See Chapter 4.5.5.2).	

4.2. Main page



4.2.1. Visualized data

1. Date and time;
2. Active user name: shows the active user name (followed by a time-out if the active user is timed);
3. Name of the current recipe;
4. Manufacturer's logo;
5. Status software indicator LEDs: see chapter 4.2.1.1;
6. Batch code: shows the batch code (only if active);
7. Upper graphics: see chapter 4.2.1.2.1;
8. Global/Split Batch mean error box: green if the average weight is positive, while it is red if the average weight is negative. The upper button refers to the Global batch, the lower one to the Split batch;
9. Last read weight: it is the weight (in grams) of the last product weighed. When the letter “g” in the square box is red, it means that the weight has been acquired with a new tare value. (Each time the weighing plate remains empty for quite a long time, a new value of tare will be acquired). Exceptions are:
    - Products below minimum capacity, where “------" will displayed instead of the weight;
    - Products above maximum capacity, where “++++++" will displayed instead of the weight;
    - Products not suitable for weighing, where “!!!!!!" will displayed instead of the weight;

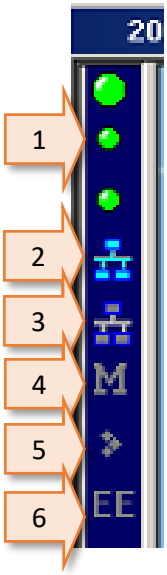
10. Start and Stop buttons: When "**START**" is pressed, the machine will run with the current recipe. The machine will run without products for a little time to perform calibration. A stand-by warning will appear during this calibration phase. PRODUCTS MUST NOT PASS ON THE WEIGHING PLATE DURING THIS PHASE;

    When the machine is working, it is only possible to enter in the main "**Batches**" and "**Edit recipe**" pages. The machine must be STOPPED for the other functions.

    If start/stop buttons on the screen are disabled, use the electromechanical buttons on the dashboard;

11. Upper graphics configuration button: see chapter 4.2.1.2.1;
12. Reset counters: this button allows the counters reset (function available only with batch closed);
13. Lower graphics: see chapter 4.2.1.2.2;
14. Lower graphics configuration button: see chapter 4.2.1.2.2;
15. Data and counters list:
    - Main total: counter of the products moved on the machine;
    - Accepted products: counter of the weighed products with positive result;
    - Nominal weight: nominal weight of the product of the current recipe;
    - Average weight: mean weight of pieces that are approved for the active recipe;
    - Nominal tare: tare of the piece of the current recipe;
    - Nominal throughput: it is the maximum number of pieces per minute, which can be weighed with current recipe;
    - Actual throughput: it is the real production measured moment by moment, expressed in pieces per minute;
    - St. deviation: it is standard deviation calculated only with the accepted pieces;
    - Mean error: average error calculated only on approved pieces;
    - Non-weighable: non-weighable pieces counter;
    - Of which metal detector rejects: (present only in WPM versions) counter of pieces rejected by the metal detector. It is a sub-group of non-weighable pieces;
    - FB: (present only if the feedback function is active) see chapter 4.5.1.2.1.1;
    - Test: (present only in WPM versions) button to perform metal detector test, see chapter 4.5.3;
16. Main navigation buttons:
    - Recipe sel.: (can be selected only with machine in stop mode) see chapter 4.5.1.1;
    - Edit recipe: see chapter 4.5.1.2;
    - Batches: see chapter 4.5.2;
    - Calibration: (can be selected only with machine in stop mode) see chapter 4.5.4;
    - Settings: (can be selected only with machine in stop mode) see chapter 4.5.5.

4.2.1.1. Status bar



1. Software status: they supply information about software status. The three LEDs must be green, showing that the electronic devices that handles the weighing process are working and are communicating among each others. During checkweigher boot, the LEDs are red because the software hasn't been loaded yet. BEFORE ACTIVATING ANY FUNCTION, THE THREE LEDS MUST BECOME GREEN.

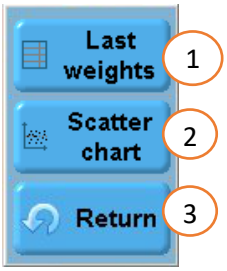
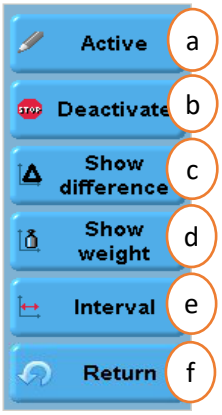
At points 2, 3, 4 and 5 it will be described some led status, defining them as: turned on, turned off or blinking.

- If the LED is turned on, it will be light blue colored.
- If the LED is turned off, it will be gray colored.
- If the LED is blinking, it will alternate between light blue and gray colors.

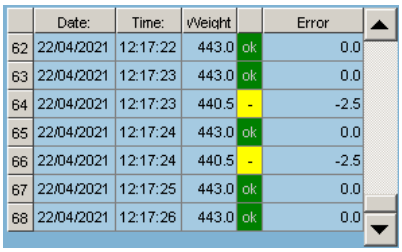
2. Remote connection status: it provides information about the remote connection status. See chapter 4.3.1.3. It could be:
    a. Turned on: it indicates that a remote connection with the system has been established, but there is not information exchange yet;
    b. Turned off: it indicates that there is no active remote connection with the system;
    c. Blinking: it indicates that the system is exchanging information through remote connection.
3. Ethernet printer status: it provides information about the ethernet printer status. See 4.5.5.1.5.1.2. It could be:
    a. Turned on: it indicates that a connection to the ethernet printer has been established, but there is not information exchange yet;
    b. Turned off: it indicates that there is no active connection to the ethernet printer;
    c. Blinking: it indicates that the system is sending information to the ethernet printer.
4. Metal detector communication status: it provides information about the metal detector connection status. It could be:
    a. Turned on: it indicates that the system is communicating with the metal detector;
    b. Turned off: it indicates that the system is not communicating with the metal detector.
5. Report export status: it provides information about the production report export status. See 4.5.2.9. It could be:
    a. Turned on: it indicates that the system is exporting production report;
    b. Turned off: it indicates that the system is not exporting production report.
6. System status: it provides information about the system status. The LED status must be communicated in case of customer service if requested.

4.2.1.2. Graphic configuration buttons detail

4.2.1.2.1. Upper Graphic [11]

		Via the "**Select upper graphics type**" button, it is possible to select the following: 1. Display the table with the last weights read; 2. Display the Scatter graph; 3. Return. If scatter graph is selected (2), it is possible to: a) Start it; b) Stop it; c) Display the difference of the individual products with respect to the nominal weight; d) Display the weight value; e) Select the interval of time to display; f) Return.

4.2.1.2.1.1. Last weights



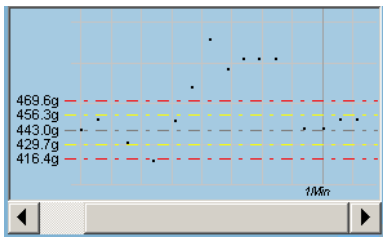
	Date:	Time:	Weight		Error
62	22/04/2021	12:17:22	443.0	ok	0.0
63	22/04/2021	12:17:23	443.0	ok	0.0
64	22/04/2021	12:17:23	440.5	-	-2.5
65	22/04/2021	12:17:24	443.0	ok	0.0
66	22/04/2021	12:17:24	440.5	-	-2.5
67	22/04/2021	12:17:25	443.0	ok	0.0
68	22/04/2021	12:17:26	443.0	ok	0.0

Displays in a table the weights read since the last counter reset. If there is an open batch, the last counter reset matches the batch opening.

The table contains the following elements:

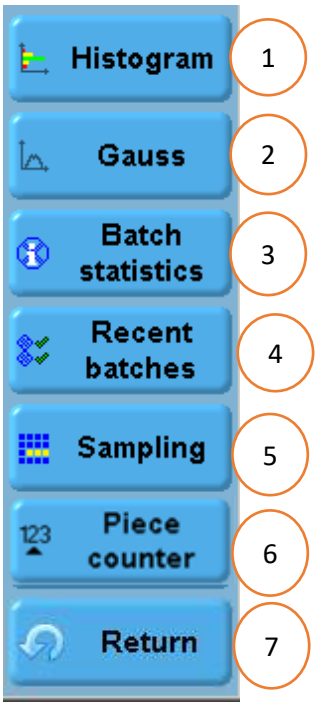
- Date;
- Time;
- Weight: value of the weight acquired;
- Product category: indicates to which category the weight acquired belongs, based on the defined limits in the recipe (see 4.5.1.2). If the weight doesn't belong to any of these categories, the following will be indicated:
  - "**!!! up**" if it is a Product Outside maximum capacity;
  - "**!!! dwn**" if it is a Product Outside minimum capacity;
  - "**<-->**" if the Product is Too long;
  - "**>--<**" if the Product is Too short;
  - "**<>**" if the Product is Too close to another;
  - "**M**" if the Product is Contaminated by Metals;
  - "**!!! val**" if the Product Is Not Valid;
  - "**!!! cnf**" if the Product Is Non-Conform;
- Error: difference between the nominal weight and the weight acquired by the scale.

4.2.1.2.1.2. Scatter chart



Displays in a graph the values of read weights in relation to time. See 4.2.1.2.1 for possible actions associated with that graph.

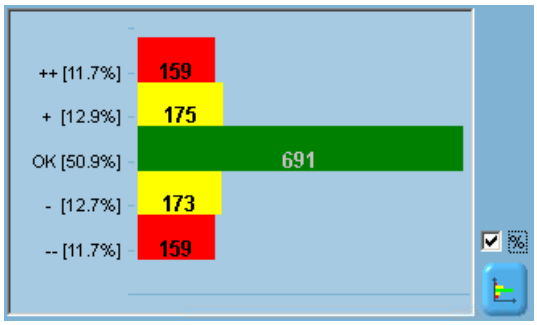
4.2.1.2.2. Lower Graphics [14]



Via the "**select lower graphics type**" button, it is possible to select the following:

1. Display the Bar graph (Histogram);
2. Display the Gaussian distribution graph;
3. Display the Overall Batch/Current Division information;
4. Display the summary of the batches terminated;
5. Display the settings page for the Sampling;
6. Display the Status of the Pieces Counter and reset it, if necessary or, only in stop mode, change its status in the case of active FlipFlop;
7. Return.

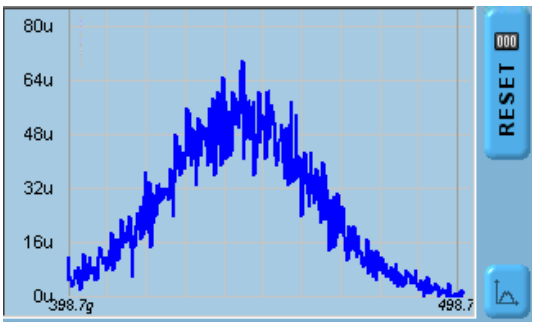
4.2.1.2.2.1. Histogram



Displays the number of occurrences of each product category in a bar graph. See 4.5.1.2 for the definition of categories.

If activated, the “%” flag allows the percentage of products assigned to each range to be displayed (in square brackets). If deactivated, it displays the nominal weight in the OK category and the values of the --, -, + and ++ limits in the other intervals.

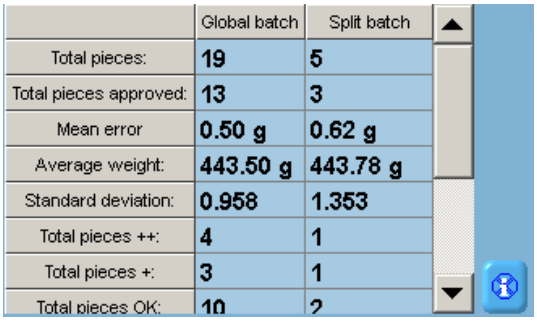
4.2.1.2.2.2. Gauss



Displays a graph with a Gaussian distribution representing the number of occurrences of each weight detected.

4.2.1.2.2.3. Batch statistics

Displays in a table data on the global batch and the split batch. For each column, the table is made up of the following items:

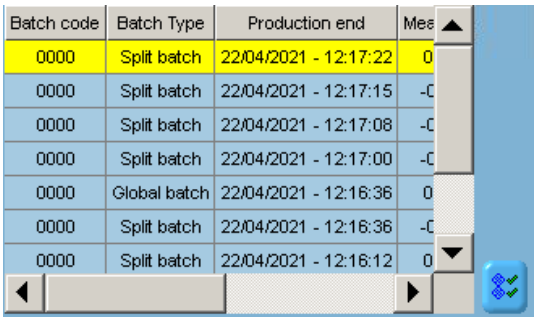


	Global batch	Split batch
Total pieces:	19	5
Total pieces approved:	13	3
Mean error	0.50 g	0.62 g
Average weight:	443.50 g	443.78 g
Standard deviation:	0.958	1.353
Total pieces ++:	4	1
Total pieces +:	3	1
Total pieces OK:	10	2

- Total pieces;
- Total pieces approved;
- Mean Error;
- Average weight;
- Standard deviation;
- Total pieces ++;
- Total pieces +;
- Total pieces OK;
- Total pieces -;
- Total pieces --;
- Not weighable;
- Accepted products: total weight of approved pieces (expressed in kg);
- Batch seq. number: For the Split batch only. Current split batch number indicator.

4.2.1.2.2.4. Recent batches

Displays, in a table, some important information on previously closed batches. The information given is:



Batch code	Batch Type	Production end	Mea
0000	Split batch	22/04/2021 - 12:17:22	0
0000	Split batch	22/04/2021 - 12:17:15	-0
0000	Split batch	22/04/2021 - 12:17:08	-0
0000	Split batch	22/04/2021 - 12:17:00	-0
0000	Global batch	22/04/2021 - 12:16:36	0
0000	Split batch	22/04/2021 - 12:16:36	-0
0000	Split batch	22/04/2021 - 12:16:12	0

- Batch code: batch code to be created;
- Batch Type: batch type to be created. See 4.5.2.1;
- Production End: Production end time and date;
- Mean Error: mean error in the batch;
- Approved products total weight: sum of the weight of accepted pieces;
- RECIPE: recipe name.

4.2.1.2.2.5. Sampling

This function enables automatic sampling of a given number of pieces after having passed a settable number of products.

The system uses a photocell to count the pieces passing through and an ejector to eject the products to be sampled.

The photocell will count each product and decrease the counter by one unit, starting with "Products to be ignored". Once this has reached zero, it will start decreasing "Products to be ejected" and the ejector will be activated simultaneously to carry out sampling.

When both counters reach zero, they are reset to their totals set in "Tot. products to ignore" and "Tot. products to reject".

	Sampling
Enabled	☒
Tot. product to ignore	1,000
Tot. product to eject	10
Product to ignore	1,000
Product to eject	10
	Restore
PTC - Ejec. distance(mm)	0
Eject. distance correction(mm)	20
Ejection duration(ms)	150
	Save

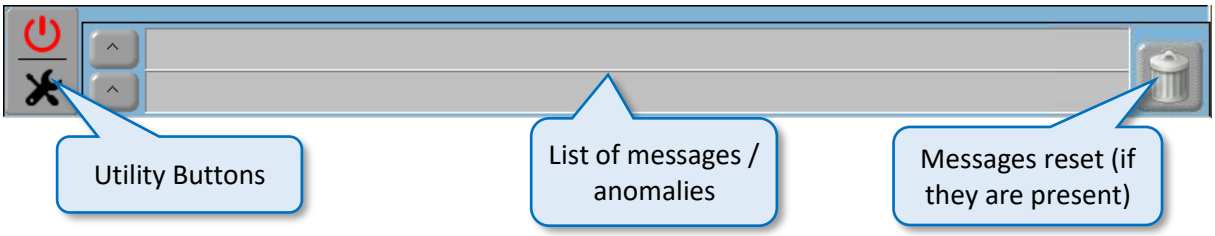
- **Enabled**: enables or disables the function;
- **Tot. Product to ignore**: total number of products to be passed before sampling;
- **Tot. Product to eject**: total products to be ejected for sampling;
- **Product to ignore**: (non-editable field) product status counter of products to be ignored;
- **Product to eject**: (non-editable field) product status counter of products to be ejected for sampling;
- **Restore**: resets the counters to maximum;
- **PTC – Ejec. distance(mm)**: (field reserved for the manufacturer) setting of the distance, in millimetres, of the sampling photocell from the sampling ejector;
- **Eject. Distance correction(mm)**: distance in millimetres to delay (positive value) or anticipate (negative value) ejection;
- **Ejection duration (ms)**: length of time in milliseconds when the ejector solenoid valve is activated.

4.2.1.2.2.6. Counter

	Counter
On expiration	Automatic flip-flop output
Maximum value	50
Current value	0
	Restore
	Swap the output

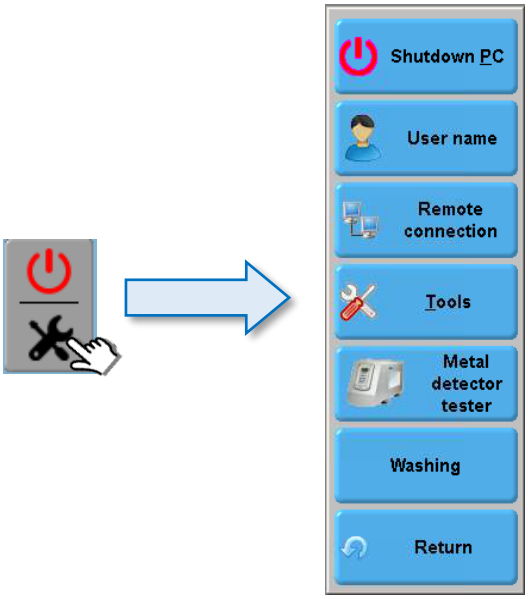
Displays the parameters set in the recipe for managing the parts counter. See 4.5.1.2.2 for the meaning of the individual parameters. The "**Restore**" button sets the current value to the maximum value, while the "**Swap the output**" button activates the other output managed by the counter.

4.3. Multifunction bar



4.3.1. Utility menu

In the *Utility* Menu there are the following buttons:

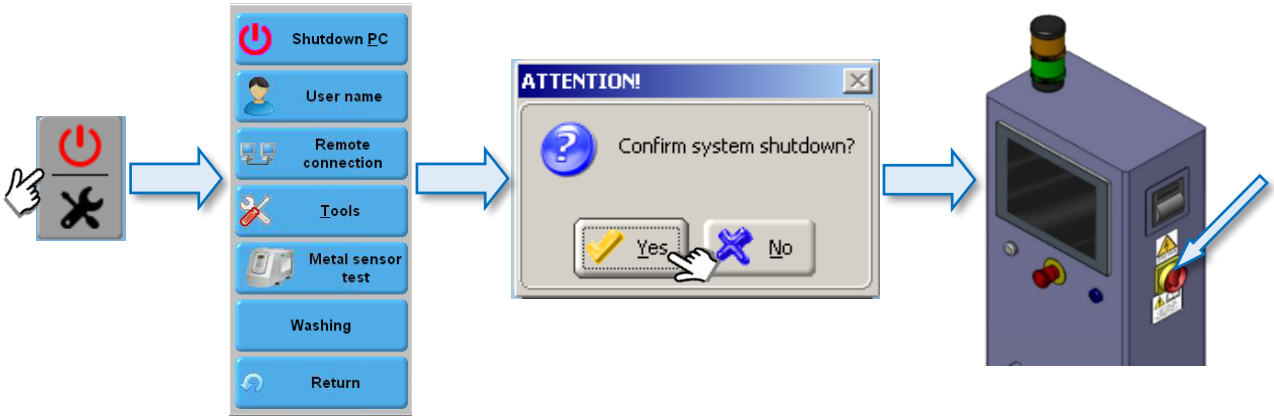


- Shutdown PC: This button must be pressed to shutdown the machine (see 4.3.1.1). If the power is cut without first switching off the machine with this button, it could cause a damage to the electronic devices, as well as compromise the integrity of the files saved inside the PC;
- User name: To change user. See 4.3.1.2 for more details;
- Remote connection (optional): Allows the work mode to be managed with remote connection. See 4.3.1.3 for more details;
- Tools: To open the tools menu. See 4.3.1.4 for more details;
- Metal detector tester (optional): To open the metal detector tester menu. See 4.3.1.5 for more details;
- Washing: To open the machine washing page. See 4.3.1.6 for more details;
- Return: To close the menu.

IDECON WILL NOT BE LIABLE FOR DAMAGES CAUSED BY INCORRECT MACHINE SHUTDOWN.

4.3.1.1. Machine shutdown and switch off

It is important to follow the instructions below for shutting down the machine.



1) Press the "**Utility**" button;
2) Press "**Shutdown PC**";
3) Confirm and wait for the screen to turn off;
4) Rotate the main switch to remove voltage.

<u>IDECON WILL NOT BE LIABLE FOR DAMAGES CAUSED BY INCORRECT MACHINE SHUTDOWN INCLUDING THE LOSS OF FILES</u>

4.3.1.2. User name

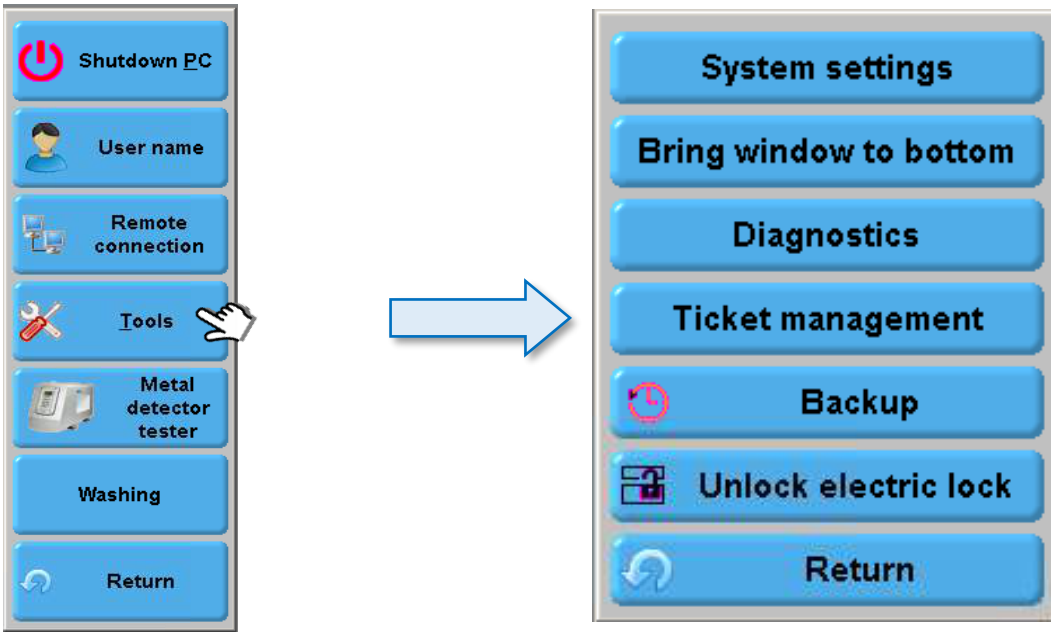
To change user, select the desired user in the box on the left and introduce the password (where necessary) in the box on the right and press "**Ok**".

4.3.1.3. Remote connection

In this box the remote connection working mode can be managed (Local, Remote o Maintenance).

- Local mode: The touch screen and the TCP/IP protocol can be used to interact with the checkweigher and to exchange information with the latter.
- Remote mode: Only the TCP/IP protocol can be used to interact with the checkweigher and to exchange information with the latter. All the button on the screen, except for the "**Stop**" are disabled.
- Maintenance mode: Only the touch screen can be used to interact with the checkweigher and to exchange information with the latter. The TCP/IP protocol is disabled in this working mode.

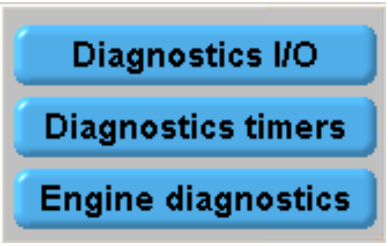
4.3.1.4. Tools Menu



In the *Tools Menu* there are the following buttons:

- System settings: It allows to view the hide menu (See 4.8);
- Bring window to bottom: It allows to view the remote assistance windows;
- Diagnostics: It allows to access to various tools useful for checkweigher diagnostic purposes (See 4.3.1.4.1);
- Ticket management: It allows to create and manage remote assistance ticket (See 4.3.1.4.1.2);
- Backup: It allows to make or restore a backup (See 4.6);
- Unlock electric lock: It allows to open the electric lock (if it is present and configured);
- Return. Closes the menu.

4.3.1.4.1. Diagnostics



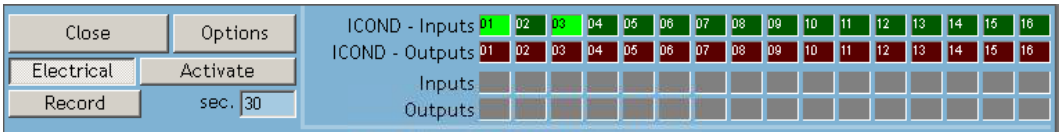
Into Diagnostics menu there are the following buttons:

- Diagnostics I/O: It allows to view I/O status (See 4.3.1.4.1.1);
- Diagnostics timers: It allows to view the configured timer status (See 4.3.1.4.1.2);
- Engine diagnostics: It allows to view information about the motors (See 4.3.1.4.1.3).

4.3.1.4.1.1. I/O Diagnostics

This mode allows any machine malfunctioning to be diagnosed, forcing its outputs to verify the status of the devices connected to it, or recording the dynamics of the machine for a limited period of time in order to verify the coincidences.

By clicking on the button in the Tools menu, the following window will open:



The following buttons are present on the left:

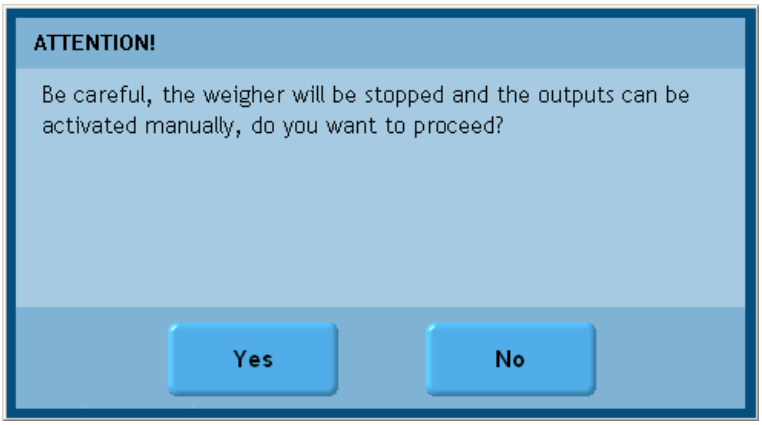
- Close: It allows to close the diagnostic page;
- Options: For administrators only;
- Electric: It allows to change the I/O visualization from electric status (pressed button) to logic status (unpressed button). The button should be kept always pressed, unless different and explicit indication is given in case of remote assistance

  Force: activates the outputs forcing mode;
- Record: allows machine dynamics to be recorded in a file which can then be sent to the after-sales assistance for additional investigations. At the side find the recording time, which can be set.

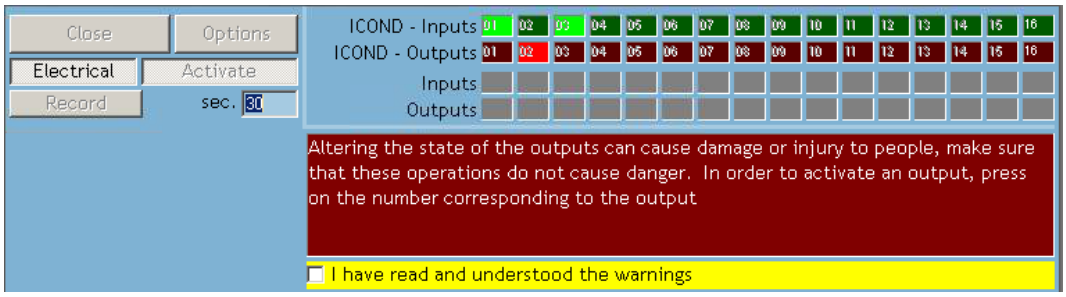
Visible on the right is the inputs (in green) and outputs (in red) grid, with their current status (dark if the input or the output is not active, light otherwise). In Forcing mode, it will be possible to alter the status of the outputs.

4.3.1.4.1.1.1. Forcing mode

By pressing "**Force**", the system will request confirmation of the desire to enter the forcing mode by message:



On confirming the request, the system will enter the forcing phase and the window will warn of the risks connected to this mode. Once the warning has been read and understood, click on confirm in yellow to continue:



Successively, it will be possible to drive the desired outputs by pressing the corresponding red box. Press the close button to exit the mode and wait for the 3 green status LEDs on the left all to be green again:

4.3.1.4.1.2. Timer Diagnostics

This function allows to check the correct timers behavior associated to specific checkweigher functionalities, checking their names and activations.

By pressing "**Timer Diagnostics**" button, the following window will display foreground:

On the left there is the following button:

- Close: It allows to close the diagnostic page.

On the right there is the configured timers grid. Each timer is represented with its own actual status (light green if it is active, dark green otherwise). To configure each timer, see 4.5.5.1.5.3.

4.3.1.4.1.3. Engine Diagnostics (L / T Models)

This function allows to obtain information about motors speed and status.

By pressing "**Engine Diagnostics**" button, the following window will display foreground:

On the left there is the following button:

- Close: It allows to close the diagnostic page.

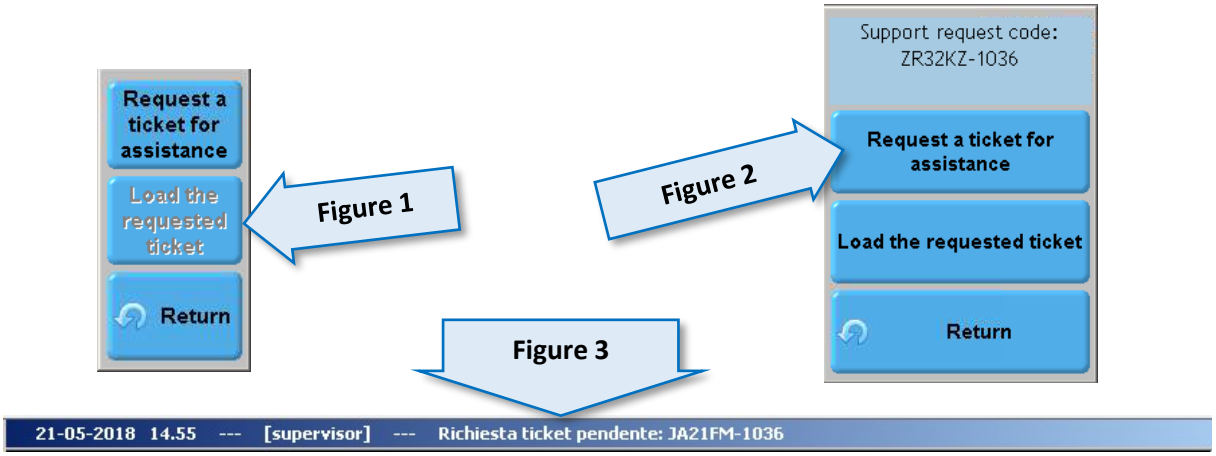
On the right there is the configured motors grid. Each motor is represented with its own actual status. Below a motor status description:

Graphic representation	Description
	The motor is not configured.
0.00	The motor is configured, but it's stopped.
15.89 !	The motor is configured and in its adjustment phase.
78.30	The motor is configured and regulated.

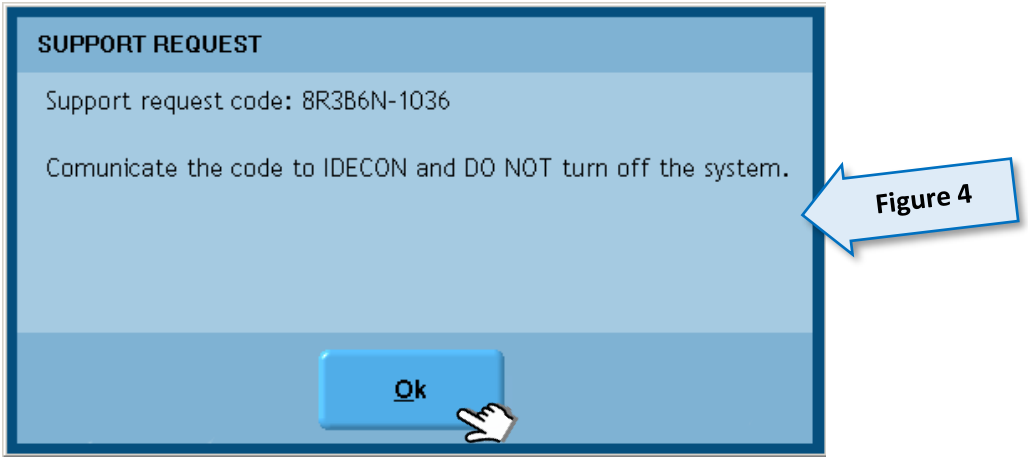
The speed indicated in this page is just an indication. In case of more precise measurement, please use and external device.

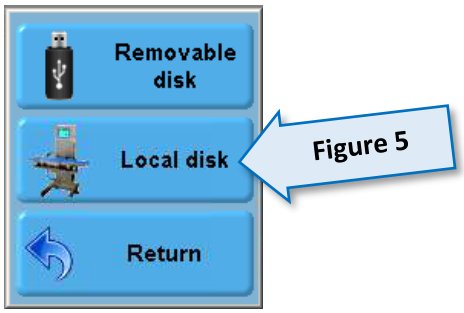
4.3.1.4.2. Ticket Management

The ticket management button is used to request assistance from the manufacturer if it is not possible to connect with remote assistance.



After having pressed the ticket management button, select the "**Request a ticket for assistance**" button (figure 1). A box appears (figure 4) that indicates the code to communicate to the manufacturer. Communicate the code to the manufacturer and press "**Ok**".



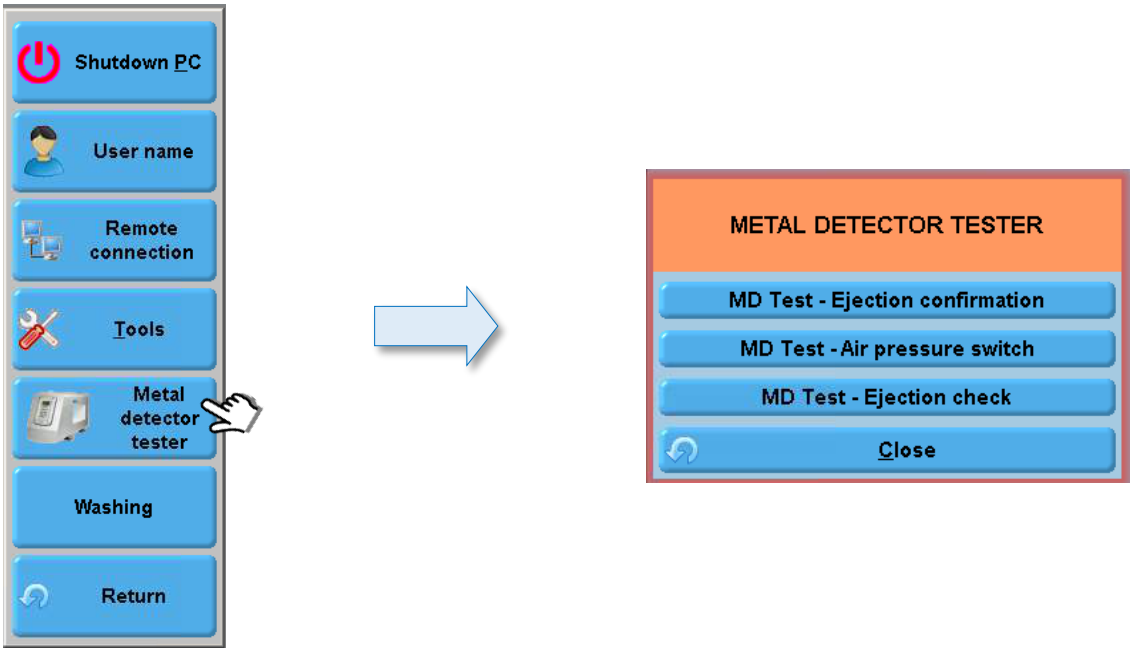


The ticket file received from the manufacturer must be uploaded onto a USB pendrive, which must be inserted into the USB port at the side of the column.

At this point, select the "**Ticket management**" button from the tools menu. Select the "**Upload ticket requested**" button (figure 2), select the "**Removable disk**" button (figure 5) and follow the instructions on the screen.

ATTENTION: WHILE WAITING TO RECEIVE THE TICKET FROM THE MANUFACTURER, THE MACHINE MUST NOT BE STOPPED/RE-STARTED

4.3.1.5. Metal detector tester menu



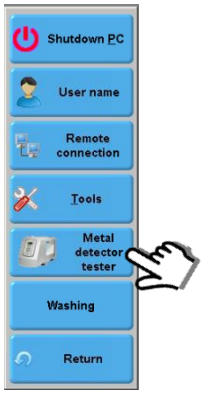
In the *Metal Detector tester Menu* there are the following buttons:

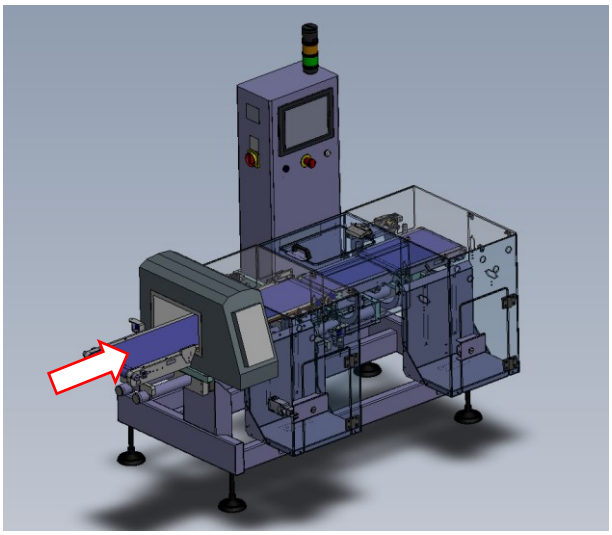
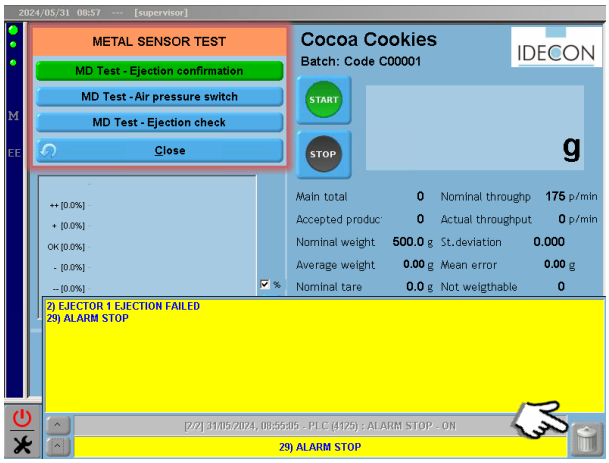
- MD Test – Ejection confirmation: the activation command of the Metal products ejector is prevented and the “Ejection check” photocell is excluded so that the product is not read (as if it had not passed). The scales **must stop the belts** when the product is after the weighing plate. The piece is counted in the statistics. The functionality is available only if the related device has been installed and well-configurated;
- MD Test - Air Pressure switch: the pressure switch is prevented. In this way the air escapes from the plant and the "Insufficient Air Pressure" message **must appear** on the interface. Any products passing in this phase are counted. The functionality is available only if the related device has been installed and well-configurated;
- MD Test – Ejection check: the activation command of the Metal products ejector is diverted onto the Ejection check photocell, simulating the passage of the product (therefore, no ejection). The metal detector **must go** into “Metal Detector Failure Alarm” and the checkweigher **must stop** the belts when the product is in front of the Ejection Check photocell, before it arrives on the weighing plate. The product is not counted. The functionality is available only if the related device has been installed and well-configurated;
- Close. To close the menu.

NOTE: Failure of just one of these tests indicates malfunctioning of the checkweigher. It is good practice to contact your dealer.

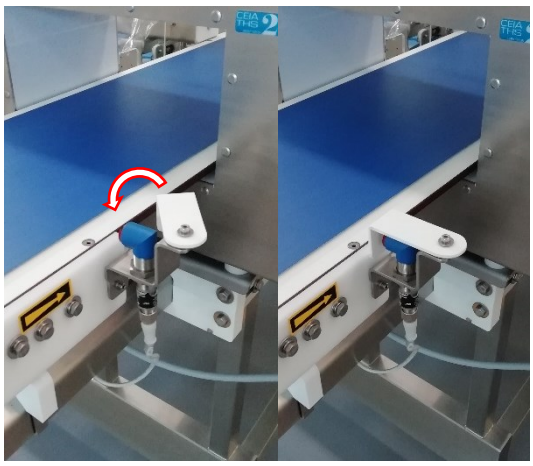
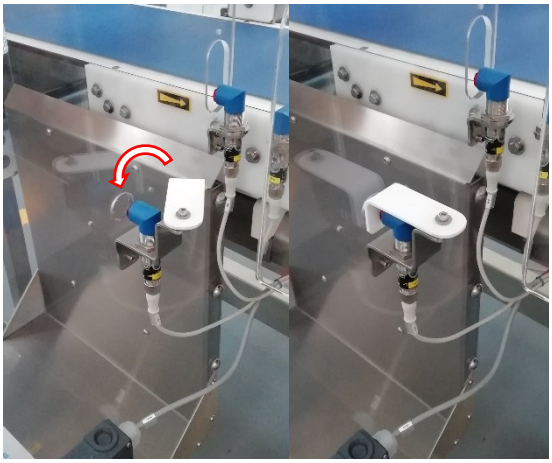
4.3.1.5.1. Example of Execution of the Test

Check for the presence of air before continuing with the test!

Open the “**Utility Menu**” (See 4.3.1 for more detail).	
Open the “**Metal detector tester**” menu.	
Select "**MD Test – Ejection confirmation**".	

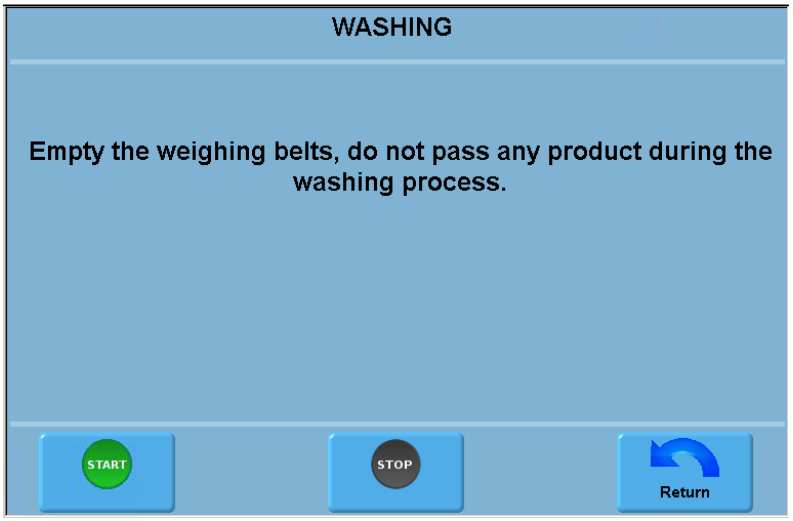
Start the machine pressing the **Start** button.	
Therefore, pass a contaminated product and wait for the belts to stop. These **MUST stop** when the product has just passed the weighing plate.	
Reset any errors.	

Unselect the first item and activate the second test: “**MD Test - Air pressure switch**”. The noise of the air escaping from the plant and the appearance of the “Insufficient Air Pressure” message confirm the positiveness of the test. It is therefore possible to disable this test by pressing the relative button.	
The errors can now be reset again.	
The third and last test made available by the application is “**MD Test - Ejection Test**”. Select the item and start the machine. When the machine is ready, a contaminated product must be passed. The belts must stop when the sample is in front of the “**Ejection check**” photocell.	
Therefore, unselect the item and close the menu.	

If there are white plastic wings on the machine, mounted on the photocells, the following tests can be carried out.	
First test: Using the appropriate wing, the first photocell that the products meet on entering the scales must be obstructed (the one just before the Metal Detector).	
After a few moments, the following warning should appear on the monitor: “PHOTOCELL ANOMALY”. Remove the obscuration plate and reset the errors. If the message should not appear, check the correct operation of the photocell (also performing calibration if necessary, par. 6.3.1). If these operations also do not solve the problem, contact the after-sales assistance.	
Second Test: Using the wing, obstruct the ejection performed photocell present of the Metal Detector tray.	

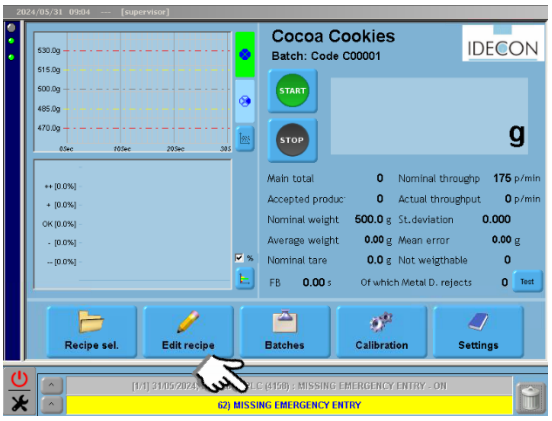
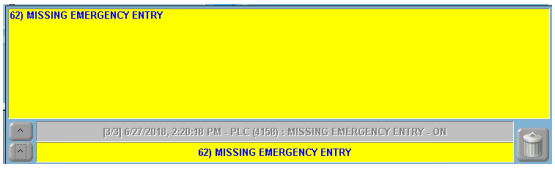
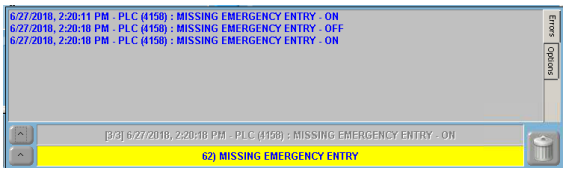
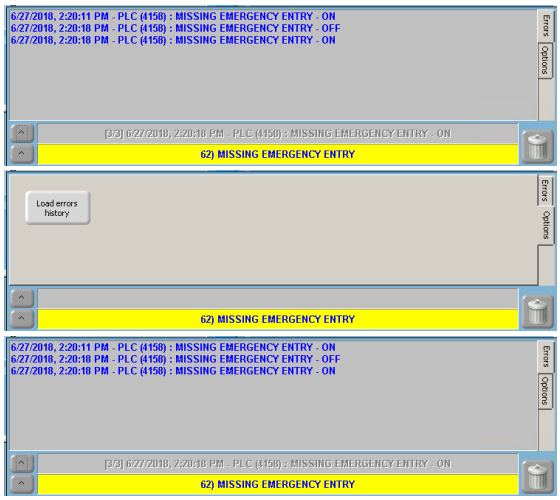
After a few moments, the following warning should appear on the monitor: “EJECTOR 1 TANK CLOGGING”. Remove the obscuration plate and reset the errors. If the message should not appear, check the correct operation of the photocell (also performing calibration if necessary, par. 6.3.1). If these operations also do not solve the problem, contact the after-sales assistance.	

4.3.1.6. Washing



The washing page allows the belts to be started without weighing in a way to wash the machine without generating also product readings.

4.3.2. Dialogue box for messages and anomalies

In the lower part of the window there are two dialogue boxes: - One containing generic messages (upper); - One containing the alarms (lower).	
When alarm messages (highlighted in yellow) are displayed, a yellow light will light up on the luminous column. Press "**Message Reset**" button (bin icon) in the bottom right corner to delete all messages and, if there are no other alarms, the yellow light will turn off.	
All alarms active at that moment will be displayed in the alarms window.	
The messages window displays all the messages present after the last reset (an automatic reset is performed when the machine is activated).	
In order to display the log of messages/anomalies, select the "**Options**" button from the messages window, and then press the "**Load errors history**" button. The list is cleared upon shutdown.	

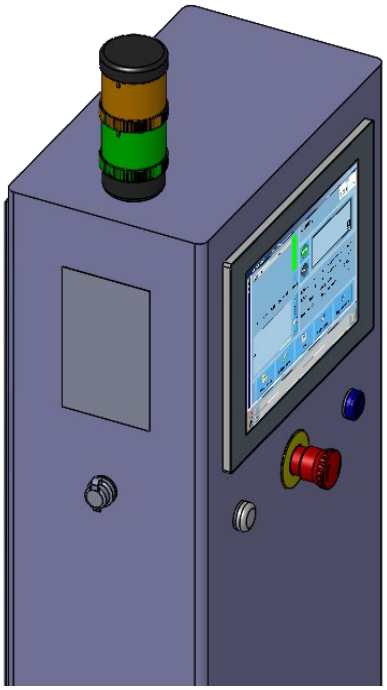
4.3.2.1. Description of the messages, cause and correction

Message	Cause	Correction
Products too close	Two consecutive items have been fed to the scales without observing the minimum distance requirement for correct weighing.	Distance the products more on entry or increase the nominal throughput value in the recipe.
Product too long	An object has transited whose length exceeds the "Maximum object length" set in the recipe (with "Deactivated or "Developed" recipe filter).	Increase the "Maximum object length" set in the recipe (with "Deactivated or "Developed" filter) or set a "Simple" filter (see 4.5.1.2.1).
Product too short	An object has transited whose length is smaller than the "Minimum object length" set in the recipe (with "Deactivated or "Developed" recipe filter).	Reduce the "Minimum object length" set in the recipe (with "Deactivated or "Developed" filter) or set a "Simple" filter (see 4.5.1.2.1).
Weight below the minimum limit	An item has been fed, the weight of which is below the minimum capacity.	
Weight higher than the maximum capacity	An item has been fed, the weight of which is above the maximum capacity.	
Insufficient air pressure	The air pressure in the ejection system is insufficient.	Check that the pneumatic plant on entry to the machine is connected and has a pressure of at least 5.5 bar. If the message persists, calibrate the pressure switch.
Rhythm faster than the maximum permitted	An attempt has been made to set a higher output rate than the maximum rate reachable by the machine.	Set a lower nominal frequency. If necessary, increase the maximum frequency of the machine; contact the manufacturer to check feasibility.
Validity of last automatic tare expired	In the latest work period, the machine has never had an interval of products such to perform an automatic tare.	Envision an interval of products in the upstream line such to allow the scales to perform an automatic tare.
Photocell operating anomaly	The machine entry photocell has been engaged for too long.	Check that: - There are no products or parts of the same in front of the photocell; - The photocell connection cable is not damaged; - The photocell and the projector/receiver are correctly aligned; - The photocell is not faulty.
No emergency input	The emergency circuit is not restored.	Check that all emergency button on the scales are in rest position and restore the circuit using the blue restore button (R).

Automatic tare correction error exceeding 20% of the maximum capacity.	On machine start-up, a tare was acquired of the weighing conveyor, which offsets from the factory value by a value exceeding 20% of the maximum capacity.	1. Check that the weighing conveyor is empty and does not strike anything. Control that there are no alarms on the video, photocells engaged / broken or misaligned, insufficient air pressure; 2. Go to SETTINGS-SETUP-GENERAL (see chapter 4.5.5.1) and set the machine in weighing mode; 3. Re-start the system; 4. If the problem is not solved, contact the machine manufacturer.
Machine in tare warning status	During machine operation, the automatic tare value acquired is changed more than 4% of the maximum capacity with respect to the value acquired on start-up.	1. Check that the plate is empty and does not strike anything; 2. Reset the error; 3. Re-start the machine; 4. If the problem is not solved, re-start the machine; 5. If the problem persists, contact the machine manufacturer.
End of global batch	The condition pre-set as global batch end (number of pieces or time in minutes) has been reached.	
End of split batch	The condition pre-set as split batch end (number of pieces or time in minutes) has been reached.	
Failed reject by ejector (1, 2, 3, 4)	The control photocell has not detected the passage of the rejected product.	Check that: 1. The product is expelled correctly and transits in front of the photocell; 2. The photocell connection cable is not damaged; 3. The photocell and the projector/receiver are correctly aligned; 4. The photocell is at a height coherent with the type of product used; 5. The photocell is not faulty.
Max. number of consecutive rejects (plus type of reject)	The pre-set maximum limit of consecutive rejects produced by the same cause has been exceeded (indicated in the message).	
Ejector tank jam (1, 2, 3, 4)	The full tank control photocell has been engaged for too long.	Check that: 1. There are no products or parts of the same in front of the photocell;

		2. The photocell connection cable is not damaged; 3. The photocell and the projector/receiver are correctly aligned; 4. The photocell is not faulty.
Metal detector in alarm mode	The metal detector head is faulty and not working properly and is therefore compromised.	
Stop due to passage of products with machine not yet ready	A product has passed while the machine was in the initialization phase.	Wait for the machine to finish the initialization phase before introducing products. For production chains, connect the upstream consent relay, which activates when the machine can receive products.
No downstream machine enabling	No downstream machine consent of the checkweigher.	Check that consent is present (high logic signal) on the relative pin in the checkweigher terminal board. See the wiring diagram attached to know where the consent is connected.
Impossible to modify the recipe with production batch open!	It is not possible to modify the recipe if there is a connected batch open.	Close the connected production batch before modifying the recipe.
External/generic alarm	A change is status has been detected in the input configured as external alarm.	Check that the equipment is connected to this input. Reset the anomaly on the screen.
Machine clogging error	The machine clog photocell has been engaged for too long.	Check that: 1. There are no products or parts of the same in front of the photocell; 2. The photocell connection cable is not damaged; 3. The photocell and the projector/receiver are correctly aligned; 4. The photocell is not faulty.

4.4. Luminous column



4.4.1. Composition

The luminous column is composed of:

- Green light;
- Yellow light;
- Blue light (optional);
- Red light (optional);
- White light (optional);
- Acoustic alarm (optional).

4.4.2. Description

- Green light: It is on with a fixed light when the machine can weigh. It blinks when the machine is performing calibration. During this phase there must not be any products on the weighing plate.
- Yellow light: It flashes when alarm/anomaly messages appear.
- Blue light (optional): Whenever installed, it can be used to signal a particular machine operating status.
- Red light (optional): Whenever installed, it can be used to signal a particular machine operating status.
- White light (optional): Whenever installed, it can be used to signal a particular machine operating status.
- Acoustic alarm (optional): Whenever installed, it can be used to signal a particular machine operating status.

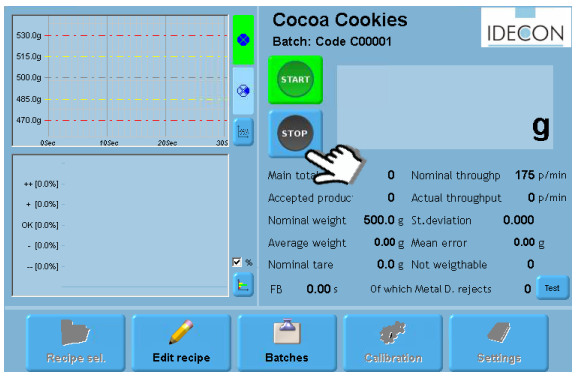
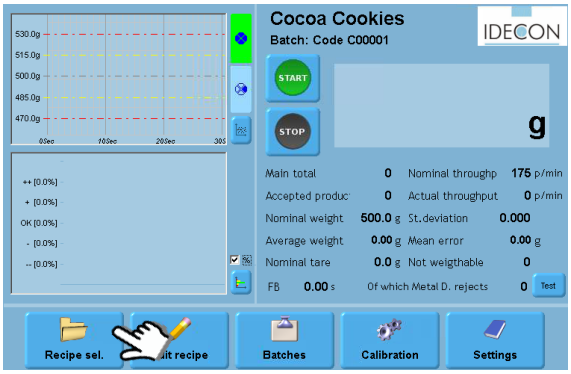
4.5. Main functions

4.5.1. Recipes

4.5.1.1. Select a recipe

It allows a recipe to be selected.

The command can be used to select the recipe to activate.

If the machine is running, press “**Stop**”.	
Press “**Recipe sel.**”.	
Select a recipe from the list. If the recipe name is green, the latter has an associated open batch.	

Press “**Active**”.	

Note:

For the recipe selection page, it is possible to configure also selection via bar code scanner. When this configuration is active, the manual selection is deactivated.	
In the case of MID approved checkweigher, if the recipe is not calibrated, the "**Invalid calibration parameters**" message appears and it must be calibrated. See paragraph 4.5.4.	
Whenever the number of recipes exceed 500, a warning will appear on the screen, which suggests those unused are eliminated, in order to lighten the system.	

4.5.1.1.1. Recipe selection from serial input

Whenever the machine has been appropriately configured, the recipe to be used can be selected using two specific inputs and a specific output.

INPUT:

- Performance of procedure in progress (A);
- Recipe transmission line (B);

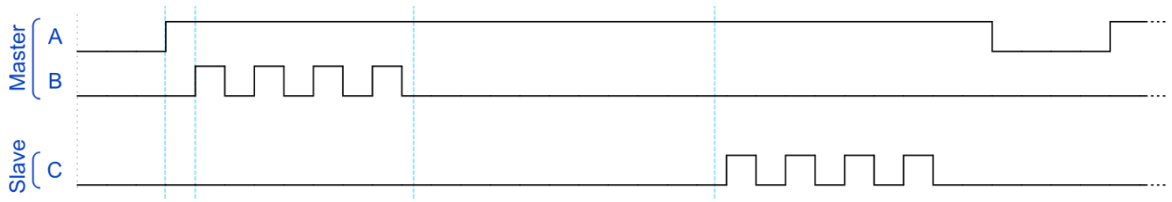
OUTPUTS

- Reading confirmation requested (C).

Procedure:

- The selection starts by increasing the level of the signal A;
- The scales listen on signal B; the master must start to send the recipe code, spacing the leading edges with maximum 50ms; alternatively the scales go into timeout and to repeat sending, signal A must be lowered and increased again;
- Once the scales correctly read the recipe sent, and this recipe can be found on the list of recipes, it confirms receipt on signal C, sending the same number of edges.

Example:

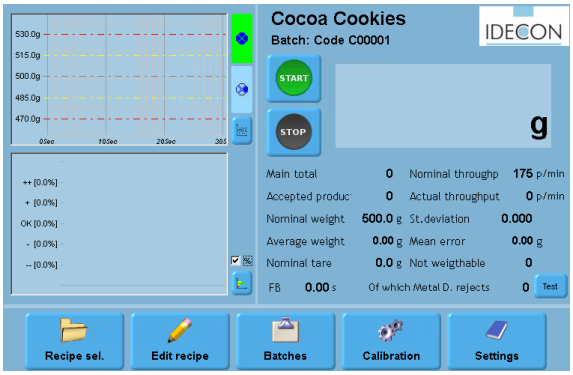
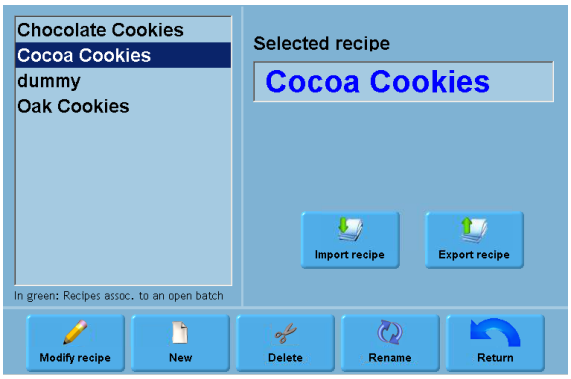
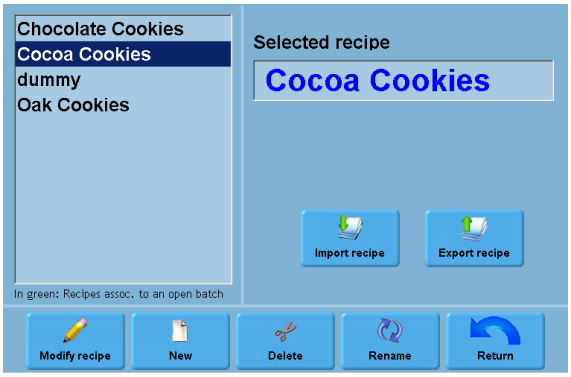


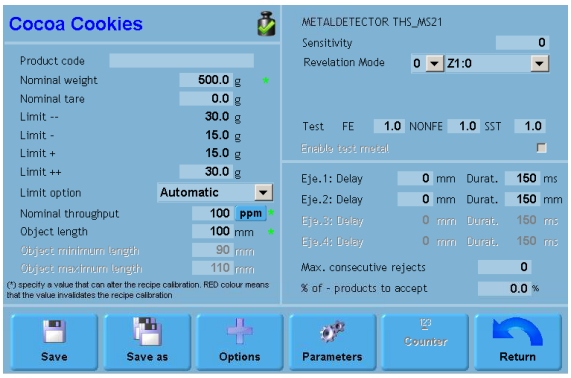
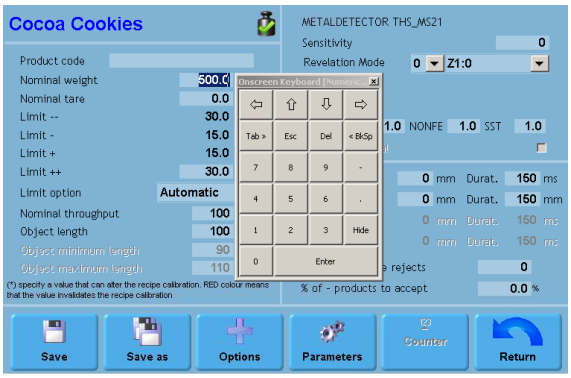
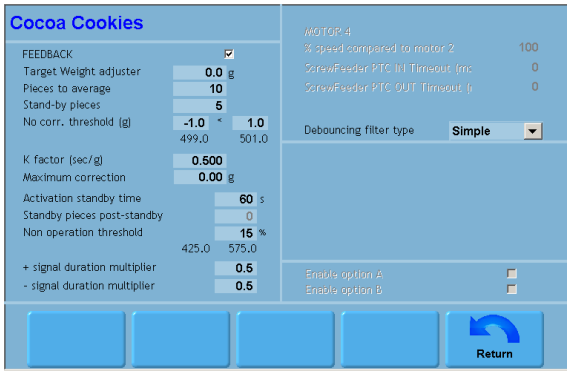
1) The Master increases signal A, because it wants to configure the recipe with name “4”;
2) Within 50ms the Master starts to increase and lower signal B, for a total of 4 edges;
3) The scales process the request, and respond on signal “C”, confirming selection of recipe “4”.

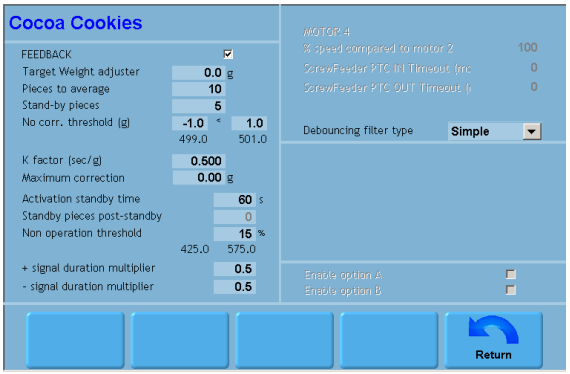
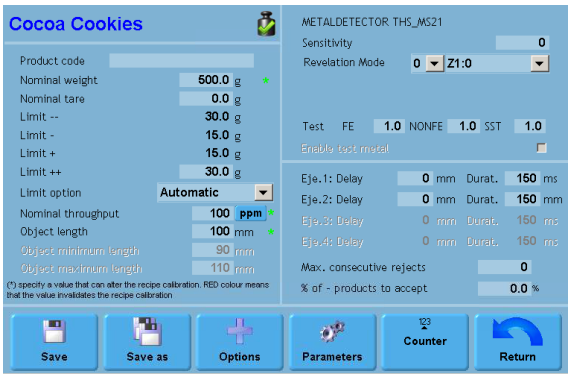
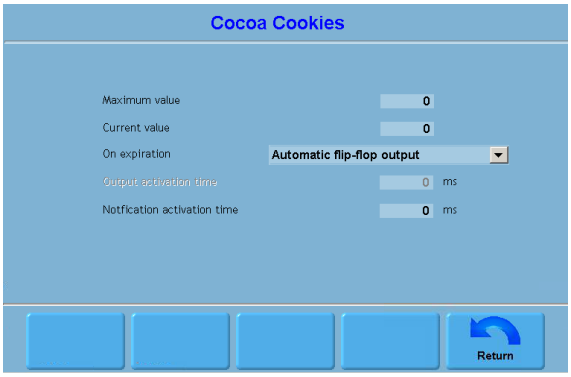
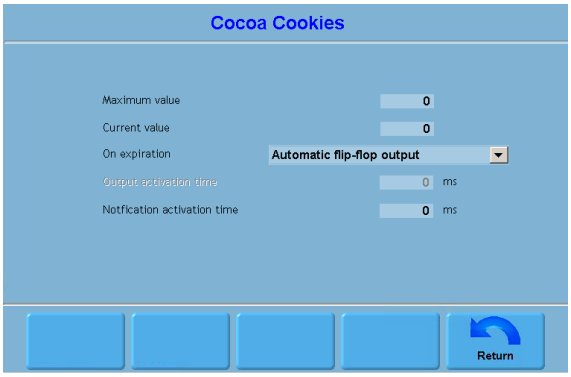
4.5.1.2. Edit recipe

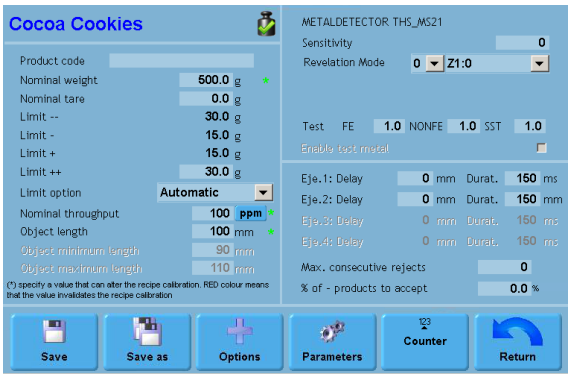
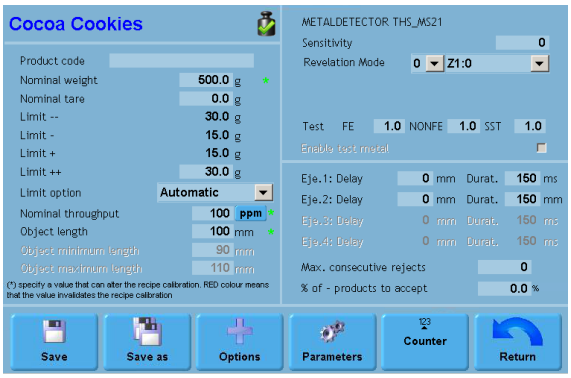
In the case of MID approved checkweigher, modifications of the recipe are only possible for fields that do not affect the calculation of the weight.

The fields that affect the weight calculation (indicated with green or red asterisk in the MID approved checkweigher) can be modified within a certain range (10%) with no need for the parameters to be re-verified. If the parameters are modified beyond the predefined limits, a new validation will have to be carried out using the "**Dynamic Calibration**" function described in section 4.5.4.

Press “**Edit Recipes**”.	
Select the recipe to be modified.	
Press “**Modify Recipe**”.	

Press on the value to be modified (according to the type of machine, it will or will not be possible to modify some parameters).	
Insert the new value and press “**Enter**”.	
Press **“+ Options**” to modify other data.	
In this page the debouncing filter type can be changed. Further functionalities can also be enabled and/or configured.	

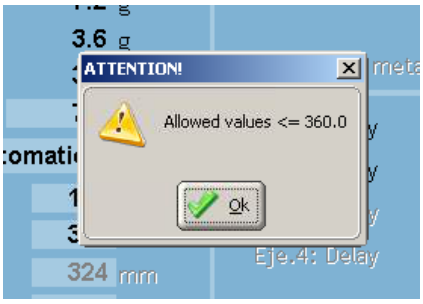
Press “**Return**”.	
Press the “**Piece Counter**” key to configure and set the latter.	
Modify the data desired.	
Press the "**Return**" button.	

After having modified the values, press “**Save**”.	
Press "**Return**" several times until reaching the main page. NOTE: to activate some modifications of the recipe data, it is necessary to press “**Stop**” and then “**Start**” on the main page.	

In the recipe page it is possible modify the following data:

- Code of the product;
- Nominal weight[1] of the product;
- Nominal tare of the product;
- Product tolerance limits: If “**Limit option**” is set to its MANUAL operation mode, values can be entered freely. If “**Limit option**” is set to its AUTOMATIC operation mode, values are automatically entered by the software according to product weights according to OIML R51 recommendations;
- Thanks to the limits of tolerance, the products are classified in the following categories:
  - **"Product - -"**: products with weight lower than (limit - -);
  - **"Product -"**: products with weight between the (limit - -) and the (limit -). If the “**Dynamic check of batch average weight**” (see 4.5.5.1.4) setting is active, it will be possible also to find products in the following category:
    - **“Product -OK”**: “Products -” that have been accepted;
  - **"Product OK"**: products with weight between the (limit -) and the (limit +). This category is further divided into:
    - **“Product OK-”**: products with weight lower than the Nominal Weight;
    - **“Product OK+”**: products with weight higher than the Nominal Weight;
  - **"Product +"**: products with weight between the (limit +) and the (limit ++);
  - **"Product ++"**: products with weight higher than (limit ++);
- Nominal throughput[1] (*L and T models only*): represents the maximum frequency that the program can weigh when all products arrive equally distanced (default is in cpm but using the button at the side, it is possible to see the conversion into m/min);

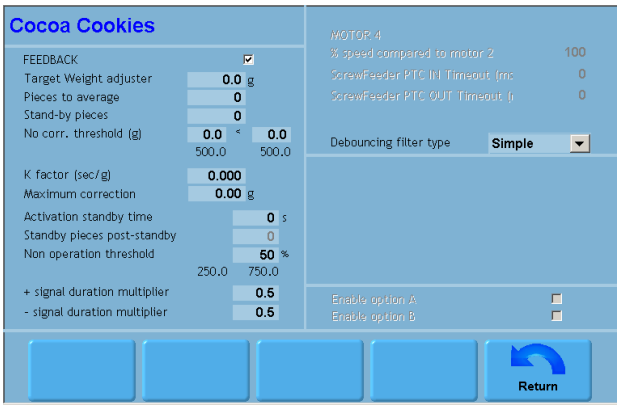
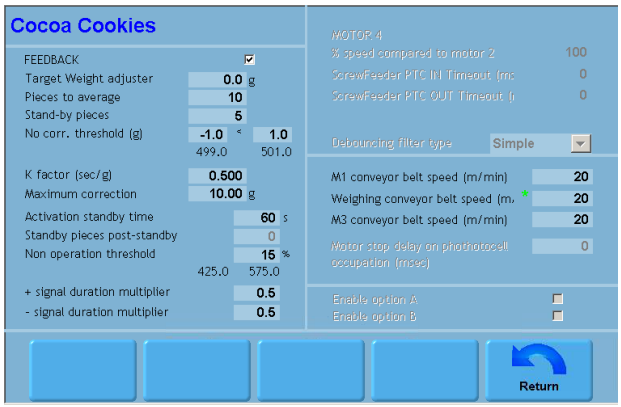
- Object length[1] (*L and T models only*): it is the nominal length of the object to be weighed. Depending on the type of filter set, the machine can detect the passage of an object that is too short or too long. If an excessively long dimension is introduced, for which the accuracy of weighing is not excellent, a window similar to that shown at the side will be displayed;



- Object minimum length and maximum length (*L and T models only*): they indicate the limits within which the object length is included if a *disabled* or *advanced* debouncing filter type being active;
- Dynamic difference (*Non-MID models only*): indicates the correction applicable to the weight in transit in order to align the value to the static weight value;
- Metal detector (function valid only for CEIA metal detector): the metal detector settings (present only with machines fitted with metal detector head) are used to adjust some metal detector data. These values can be different in each individual recipe. The best values for these parameters can be acquired automatically using the *"metal calibration"* function (See 4.5.4.1);
- Metal Detector Test: if this option has been selected, you can activate the metal detector test on recipe (see paragraph 4.5.3);
- Ejectors: it is possible to have up to 4 independently managed ejectors on each machine. The following can be set for each of these: the duration of operation and the correction, which is used in order to advance or delay the time of ejection. These settings can be different in each individual recipe. If the ejection time is set to be equal to 0, ejection of all the products connected with that recipe will be bypassed;
- Max. consecutive rejects: it indicates the amount of ejected product that belongs to the same category that the system ejects before showing the max consecutive ejection error and, eventually, stop the checkweigher if the option has been enabled (See 4.5.5.4.1);
- % of – products to accept: indicates the percentage of products classified as "- " that the system can accept even if Global batch is negative.

[1] *If the machine is MID certified, the **EXCEEDING 10%** modification of the value with which it has been calibrated, means that it is NO LONGER calibrated! The process is reversible.*

4.5.1.2.1. Options Page

L/T models	U/D/S models
	

In the "**+ Options**" page, relative to the recipe, the following data can be entered and adjusted:

- Motor *4*: Management of the 4th motor into the recipe (optional). The functionality is available only if the device is installed and configured;
  - % speed compared to motor 2*:* This function lets the 4th engine rotate at a higher or lower speed compared to the 2nd engine (the engine of the weight conveyor) to time the products according to production needs. The value is expressed as a percentage
  - Screw feeder PTC IN Timeout*:* (the option is present with the screw feeder device only). It allows the time to be set (in ms), after that the screw feeder stops assuring a minimum accumulation of product in entrance;
  - Screw feeder PTC OUT Timeout: (the option is present with the screw feeder device only). It allows the time to be set (in ms), after that the screw feeder stops when the line is overloaded downstream;
- Debouncing filter type:
  - DISABLED: the machine measures the actual length of the piece and optimises weighing according to the measured length. All the products having lengths shorter than the *minimum length* and the products having lengths exceeding the *maximum length* will be rejected; in this way, it is possible to reject pieces with incorrect size as well as pieces too close, which accidentally are found on the machine. This type of filter is not recommended for sacks, bags, irregular or transparent products;
  - SIMPLE: the machine weighs pieces as if they were equal to the nominal length set, independently of the actual piece length. When the entry of a product is detected, the photocell stops reading for a certain distance. When this length has passed, it goes back to reading differentiating two cases:
    - If it continues to see the product, it simply waits for the end of the same;
    - If it doesn't see anything and it sees something within the "**product length**" distance, "**products too close**" is signalled.

    It is recommended always to activate the filter in the presence of bags, sacks and transparent and semi-transparent objects (**this function is active by default**);

- ADVANCED: the machine weighs the pieces as if they were equal to the nominal length set, then the machine executes an additional check during the transit of the piece that permits in the major part of cases to identify and reject products that are too long, too short or too close. This filter has been developed for the weighing optimisation of transparent or semi-transparent items with irregular extremities (for example sacks) and it may not be possible to know from which side it will reach the scales. When the entry of a product is detected, the photocell stops reading for a certain distance "L". When this length has passed, it goes back to reading differentiating two cases:
    - If the product is still detected, it continues to read until the same distance "L" is missing before the theoretical end of the product. At this point a second one is obstructed. During this last phase, if it sees the product end within a certain tolerance from the theoretical end, it marks the product as ok. Otherwise, it will result as "**product too long**";
    - If it doesn't see anything else, the current product is marked as "**product too short**".

- M1, M2, M3 belt speed (*U, D and S models only*): indicates the speed with which the motor is to be controlled;
- Motor Stop Delay on engagement of outfeed photocell (msec) (*S model only*): Indicates the delay with which the machine stops regarding outfeed photocell;
- Enable or deactivate options A and B: Options A and B (when they are active) control two (optional) relays used to activate devices available on the production line. For example a labelling unit or a product diverter;
- Feedback: This section is also present, which allows the amount of product that is deposited in the individual packages to be controlled. For more detailed information, see the following paragraph (4.5.1.2.1.1).

4.5.1.2.1.1. Feedback

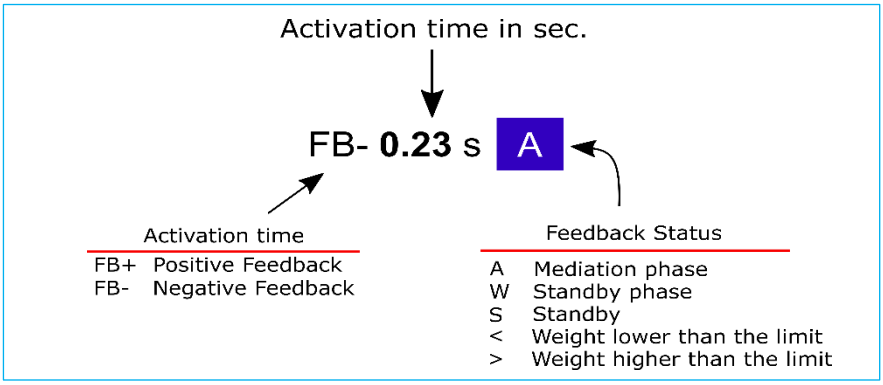
The feedback functions (optional) are used to control a filling machine upstream of the checkweigher and adjust the amount of product inserted in the packages.
The upstream machine is controlled by sending two timed signals:

- One, to increase the weight (positive adjustment);
- One, to decrease the weight (negative adjustment).

Name	Code	Unit of Measurement	Description
Nominal weight	PN	g	Nominal weight of the recipe.
Target weight adjuster	CPT	g	This parameter represents a correction that is added to the nominal weight of the product. The target weight will therefore be defined by the formula: $Target\ weight = PN + CPT$
Pieces to Average	PDM	N°	Number of pieces used to calculate the average weight (PMED). If value "0" is attributed to this field, the feedback will be disabled for the relative recipe.
Stand-by pieces	PIA	N°	It is the number of pieces allowed to transit after a correction, before calculating a new average weight to be corrected.
No correction threshold	SNC	g	It is the average weight range (*PMED*) within which no correction will be made. In our case, the lower limit will be identified as *SNCLOW* and the upper limit as *SNCHIGH*.
K Factor	FATK	sec/g	Conversion factor that determines the Feedback activation time (TAC), expressed in seconds/gram.
Maximum Correction	MAXC	g	It is the maximum correction value that the checkweigher sends to the filler regardless of the calculated $\Delta weight$. The feedback function uses the lowest of the following two values: • $\Delta weight$; • MAXC.
Activation standby time	TSTB	s	Time, over which, if pieces do not transit on the machine, Feedback goes into standby status. If the fixed value is "0", the function is disabled.
Standby pieces post-standby	PPSTB	N°	Number of products not considered in the "TAC" calculation on exiting standby mode.
Non-intervention threshold	SNI	%	Percentage with respect to nominal weight. If the weight of the individual product is outside these limits, the weight will be ignored by the feedback calculations.
+ signal duration multiplier	MDSP	-	Multiplication factor to specifically change the real duration of the "Positive Feedback" signal. Default value = 0.5.
+ signal duration multiplier	MDSM	-	Multiplication factor to specifically change the real duration of the "Negative Feedback" signal. Default value = 0.5.
Weight Delta	$\Delta weight$	g	It is the amount of weight that the feedback has calculated and that wants to correct at the upstream filling machine.
Feedback activation time	TAC	sec	It is the time in which the outfeed (Positive or negative according to the $\Delta weight$) remains active proportionally to the FATK.

Average weight of the products transited	PMED	g	Calculation of the average weight of the products transited and which are not outside the non intervention threshold.

The display format of the feedback status (if available) is the following:



Description:

<u>Example of several parameters:</u>

- $PN = 100g$
- $CPT = 0g$
- $SNI = 5\%$. Below find the lower and upper calculation limits:

$$SNILOW = (PN + CPT) * \left(1 - \frac{SNI}{100}\right) = (100 + 0)g * \left(1 - \frac{5}{100}\right) = 95g$$

$$SNIHIGH = (PN + CPT) * \left(1 + \frac{SNI}{100}\right) = (100 + 0)g * \left(1 + \frac{5}{100}\right) = 105g$$

If $PN < 95g$ or $PN > 105g$ the weight is ignored for the purposes of the feedback calculation.

If $95\ g < PN < 105\ g$ the weight is considered for calculation of the feedback even if it has been rejected.

- $SNC = 0g\ e\ 1g$

$$lower\ threshold = PN + CPT + SNCLOW = (100 + 0 + 0)g = 100g$$

$$upper\ threshold = PN + CPT + SNCHIGH = (100 + 0 + 1)g = 101g$$

If the average weight lies within the limits $(100 < PMED < 101)$, the product is considered correct.

<u>Example of Correction via Feedback:</u>

- STEP 1:
  - $PMED = 98.9g$
  - $FATK = 2\ sec/g$
  - $MAXC = 5g$
  - $MDSP = 0.5$ (default)
  - $MDSM = 0.8$

$$\Delta weight = PN + CPT + \left(\frac{SNCLOW + SNCHIGH}{2}\right) - (PMED) =$$

$$= \left(100 + 0 + \left(\frac{0 + 1}{2}\right) - 98.9\right) g = 1.6g$$

Once the $\Delta weight$ has been calculated, "**Feedback activation time**" can be obtained[2/3]:

$$TAC = min(abs(\Delta weight), MAXC) * FATK * MDSP = 1.6g * 2\,sec/g * 0.5 = 1.6sec$$

This means that the checkweigher will activate the outfeed to increase the weight (positive adjustment) for 1.6 seconds.

If the value $\Delta weight$ should result negative; for example, $\Delta weight = -1.6g$ the formula to calculate the TAC would be:

$$TAC = min(abs(\Delta weight), MAXC) * FATK * MDSM = 1.6g * 2\,sec/g * 0.8 = 2.56sec$$

Note that the selection of the multiplier $MDSP$ or $MDSM$ in the calculation formula is made according to value $\Delta weight$.

$$\begin{cases} \Delta weight > 0 \;\rightarrow\; MDSP \\ \Delta weight < 0 \;\rightarrow\; MDSM \end{cases}$$

The default MDSP and MDSM values are set to 0.5 to avoid excessive correction of the upstream machine. However, the parameter can be modified according to specific needs.

If the value of MAXC had been smaller than $\Delta peso$, for example $MAXC = 1g$, the formula for calculation of the TAC would have been:

$$TAC = min(abs(\Delta weight), MAXC) * FATK * MDSM = 1g * 2\,sec/g * 0.8 = 1.6sec$$

- STEP 2:
  - $PMED = 99.8g$

It appears that the first correction has not been sufficient to take the average back within the non correction threshold. A new intervention is required:

$$\Delta weight = \left(100 + 0 + \left(\frac{0+1}{2}\right) - 99.8\right) g = 0.70g$$

Of which:

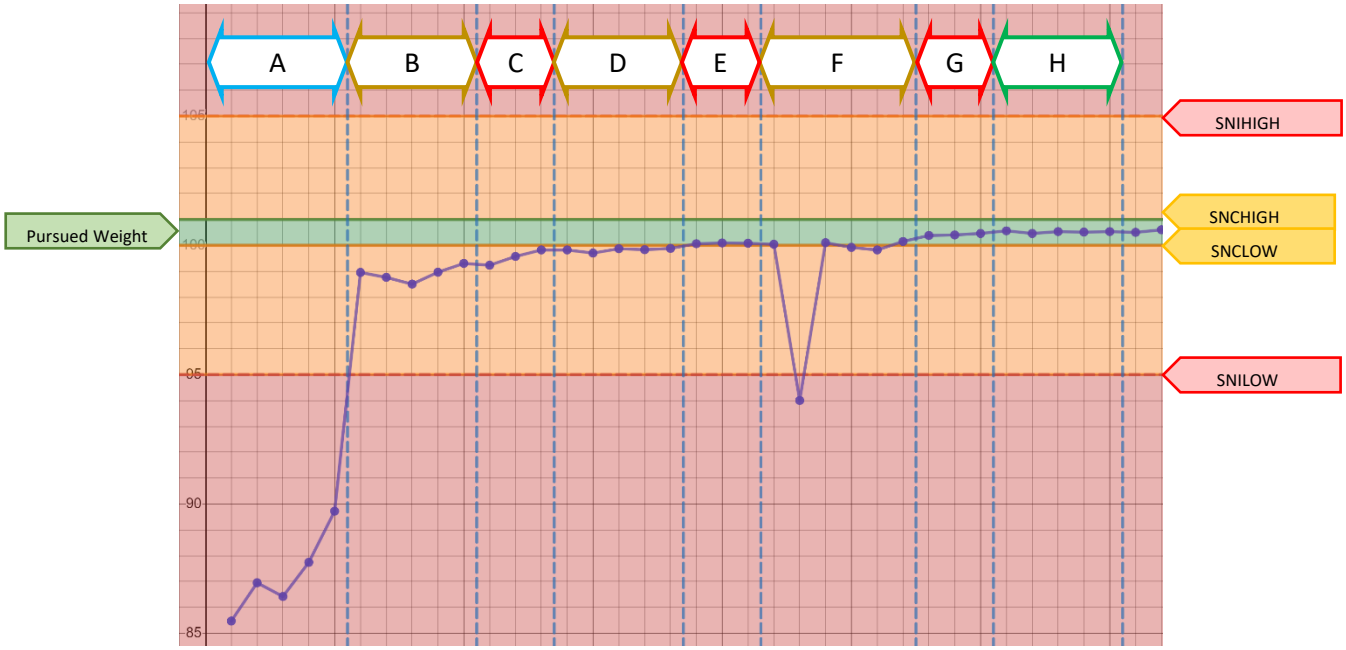
$$TAC = min(abs(\Delta weight), MAXC) * FATK * MDSP = 0.70g * 2\,sec/g * 0.5 = 0.70sec$$

- STEP 3:
  - $PMED = 100.2g$

At this point, our average weight will lie within the non correction thresholds ($100 < PMED < 101$) and therefore no outfeed has been activated.

[2] This $abs(\Delta weight)$ means the value of the weight without sign (example: $abs(-8) = 8$).
[3] For $min(\Delta weight, MAXC)$ the lowest value of the two is intended (example: $min(2,6) = 2$).

Example graphics

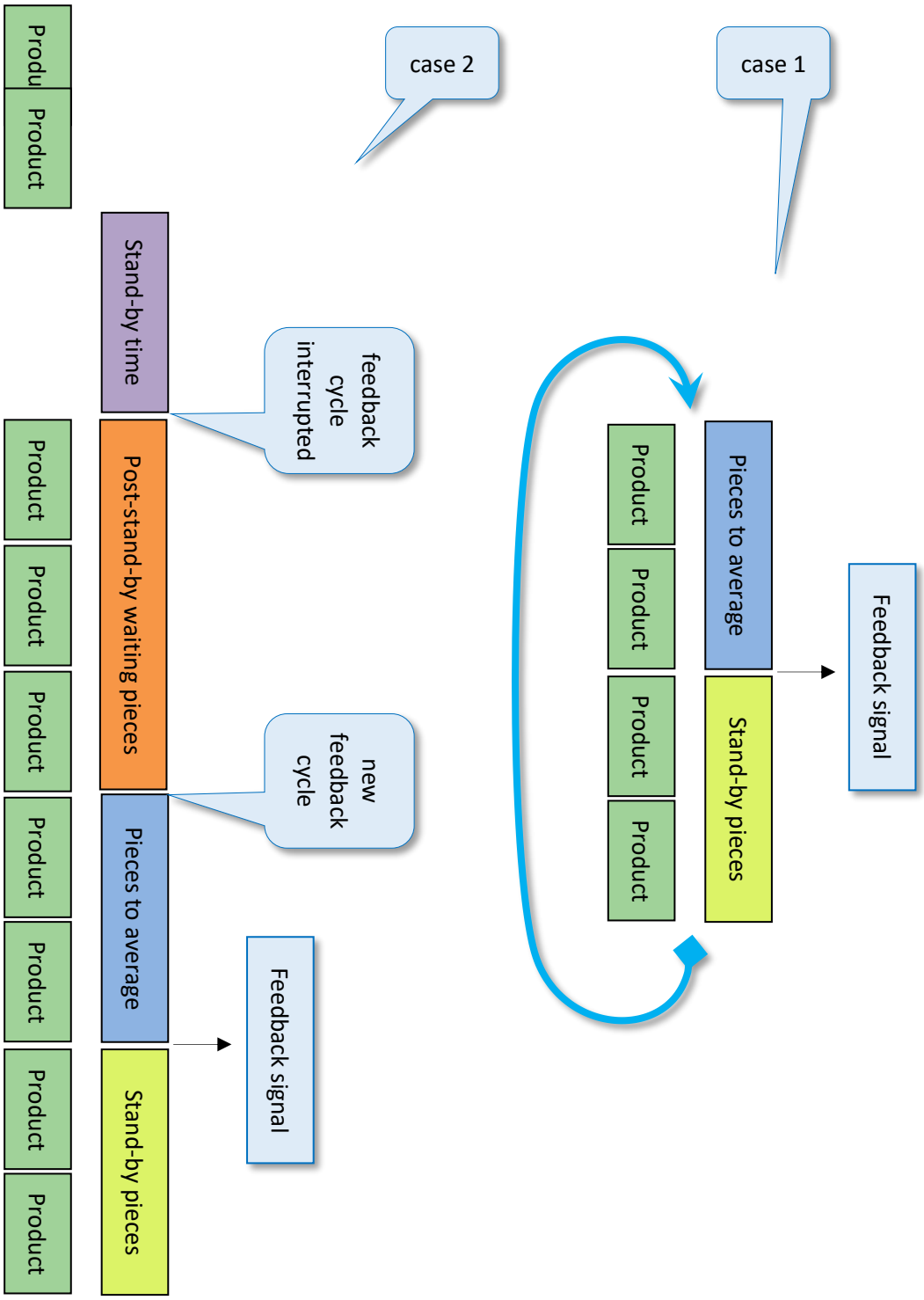


A. **Initialisation** of the upstream machine: In this case, no product lies within the SNILOW and has therefore not been considered;
B. **Pieces useful for average**: PDM are counted (e.g. 5pcs) of individual products within the SNI in order to have an average;
C. **First Correction**: in this phase, the signal has been sent to the filler to increase/decrease the amount of product and a number of pieces are ignored by the PIA to wait for the pieces with weight that has been corrected;
D. **New average**: after the first correction, the PDM did not lie within the SNC. A new correction is required;
E. **Second Correction**;
F. **New Average**: this time a weight OUTSIDE the SNI has been presented, which has not been considered for the PMED calculation. Therefore, wait for another product;
G. **Third Correction**;
H. **New Average**: Finally, our PMED lies within the SNC and while it remains here, the feedback will not send new corrections.

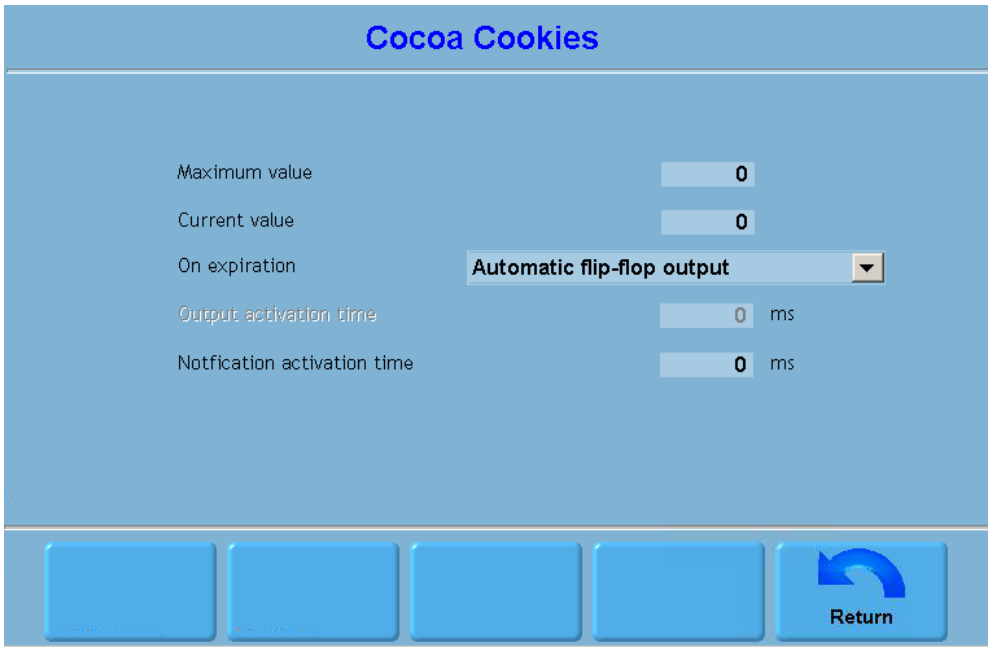
Feedback functioning logic layout

case 1: classic feedback cycle.

case 2: if, at any time of the feedback cycle between on product and the next, a standby time passes, the feedback cycle is interrupted and it passes to the "post-standby pieces" to then resume from the beginning.



4.5.1.2.2. Pieces Counter Page



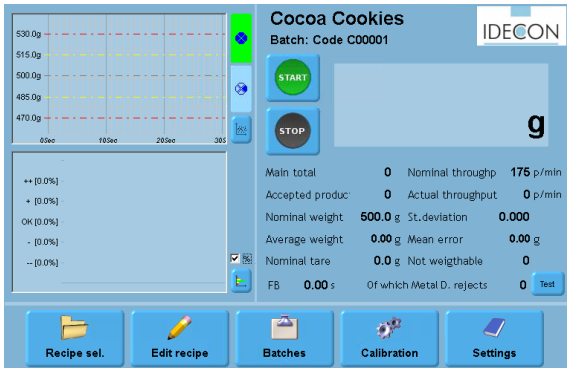
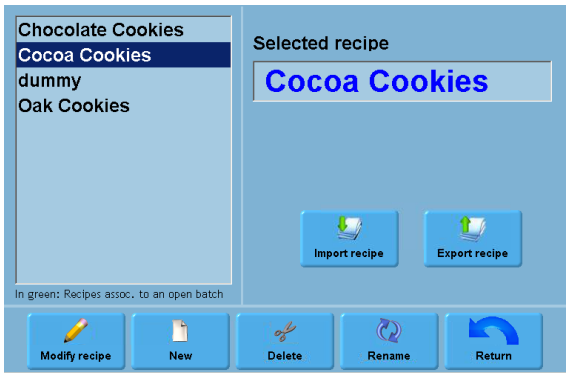
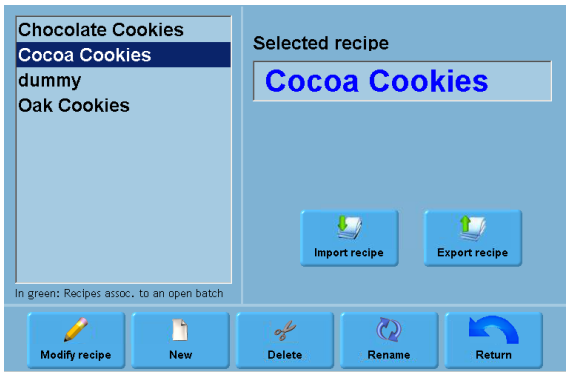
This page allows two checkweigher outfeeds to be managed, which change dynamically on reaching or resetting of the counter set.

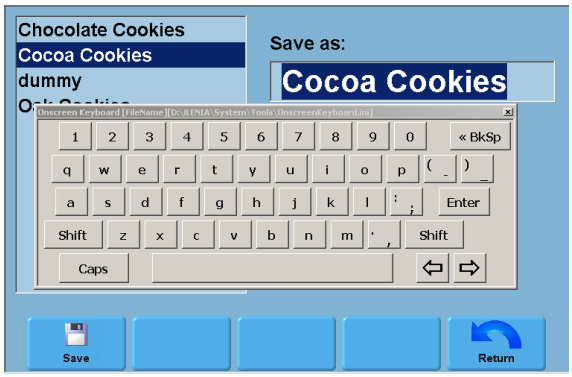
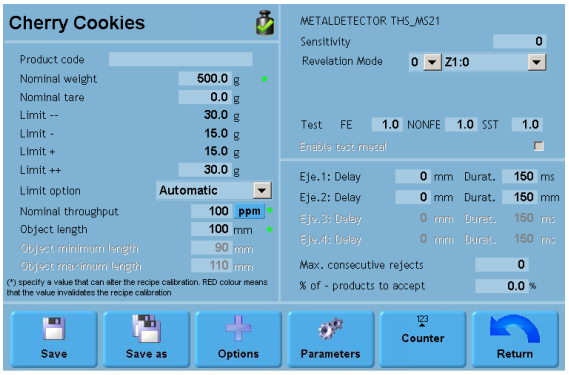
Below find the options:

- Maximum value: counter maximum value. When the counter reaches the value set, the relative outfeeds will be activated according to the logic set under "**On expiration**";
- Current value: counter current value. It can be consulted and reset if necessary, via the lower graphics on the screen (see paragraph 4.2.1.2.2);
- On expiration: once the counter has reached the maximum value, it is possible to configure different behaviours for the relative outfeeds:
    - No action: the outputs do not activate or deactivate. This means that the counter is deactivated;
    - Activate output: the outfeed is activated for the amount of time set. The counter must be reset manually;
    - Stop: the checkweigher is stopped and the notification is activated for the amount of time set. The counter must be reset manually;
    - Automatic flip-flop output: in this mode, every time the counter reaches maximum value, the notification is activated for the period of time set (example for a siren) and the outfeed changes status. The counter resets automatically.
- Output activation time: indicates for how long the outfeed must remain active after the maximum value has been reached. This parameter can only be edited if "**On expiration**" is set to "**Activate output**";
- Notification activation time: indicates for how long the notification must remain active after the maximum value has been reached. This parameter cannot be edited if "**On expiration**" is set to "**No action**".

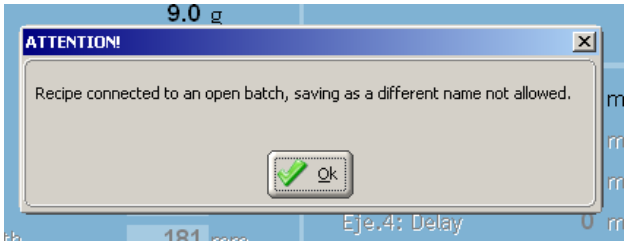
4.5.1.3. Duplicate an existing recipe

If the checkweigher is not MID approved or is MID approved by the fields that affect the weight are not modified, (see paragraph 4.5.1.2), duplication of the recipe does not require validation of the same. If the parameters are modified beyond the predefined limits, a new validation will have to be carried out using the "**Dynamic Calibration**" function described in section 4.5.4.

Press “**Edit recipe**”.	
Select the recipe to be duplicated.	
Press “**Modify Recipe**”.	
Press “**Save as**”.	

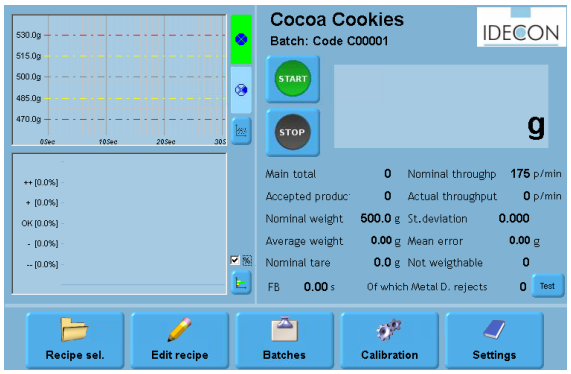
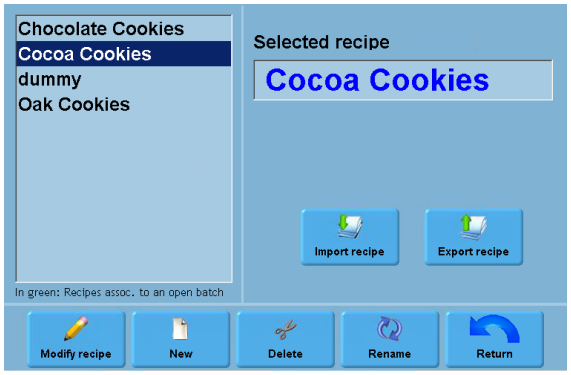
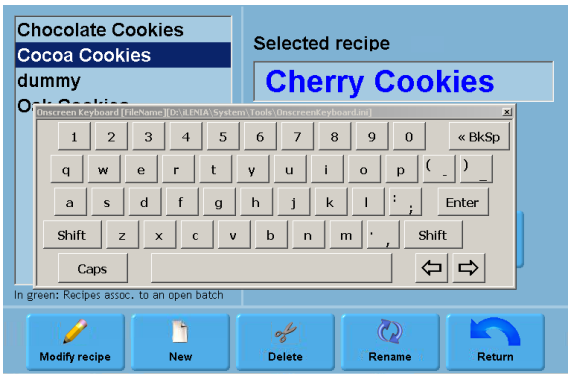
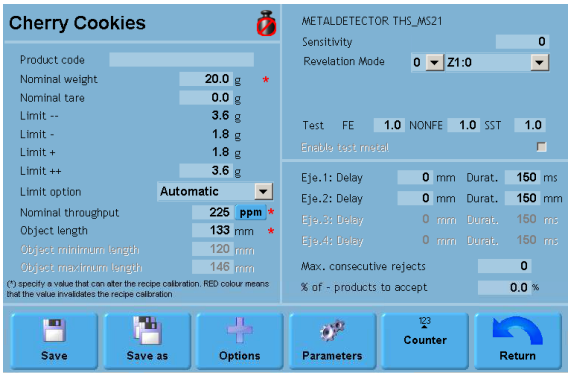
Insert the new name and press “**Enter**”.	
Press “**Save**".	
Change the desired parameters (it may be necessary to recalibrate the recipe for certain conditions, see paragraph 4.5.1.2). Press “**Return**” more times to return to the main page.	

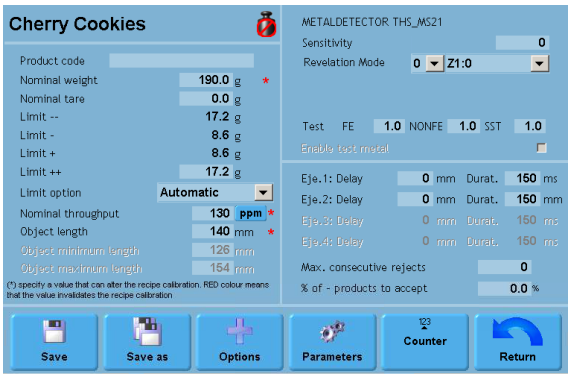
Note:

If a batch has been opened, it is not possible to duplicate the recipe and the message at the side will be displayed.	

4.5.1.4. Create a new recipe

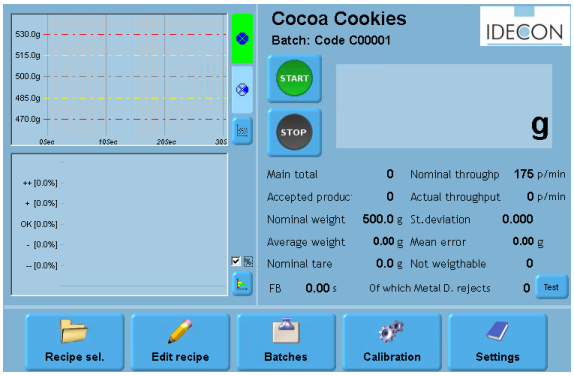
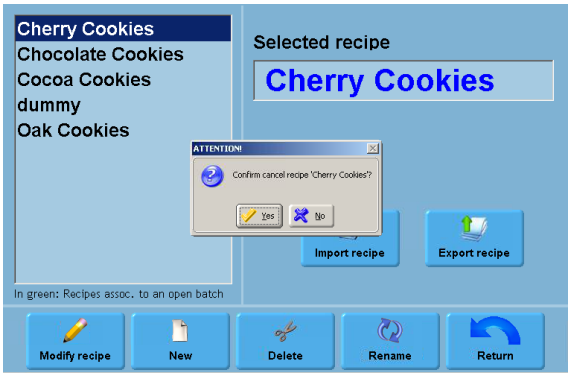
If the checkweigher is MID approved, the creation of a new recipe requires a new validation to be carried out using the "**Dynamic Calibration**" function described in paragraph 4.5.4.

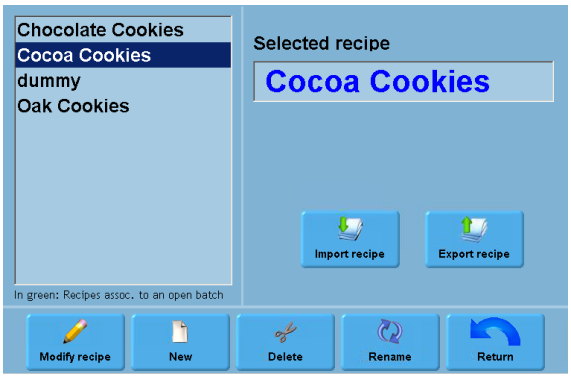
Press “**Edit recipe**”.	
Press “**New**”.	
Insert the name of the new recipe and press “**Enter**”. The name selected can have maximum 25 characters.	
Insert the desired data.	

Press “**Save**".	
Press “**Return**” more times to return to the main page.	

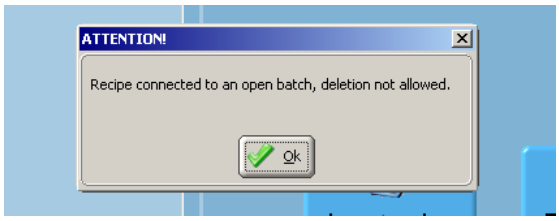
4.5.1.5. Delete a recipe

The active recipe cannot be deleted.

Press “**Edit recipe**”.	
Select the recipe to be deleted.	
Press “**Delete**”.	
Press “**Yes**”.	

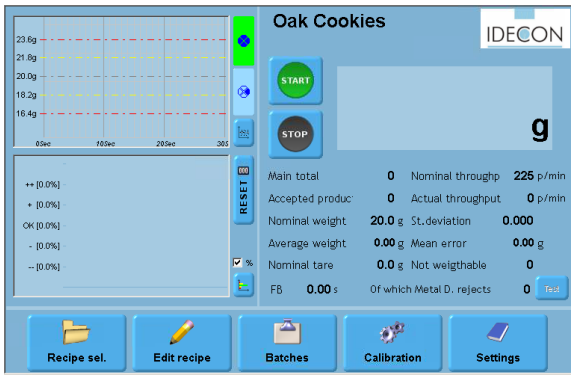
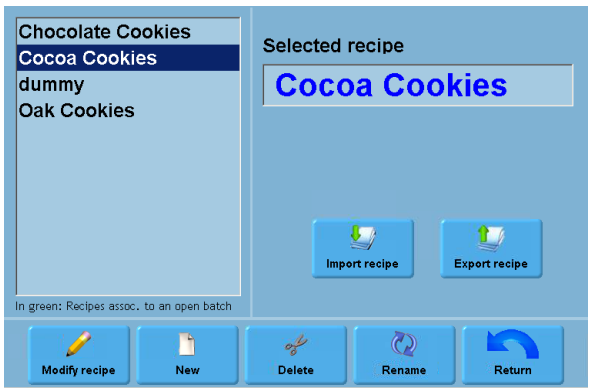
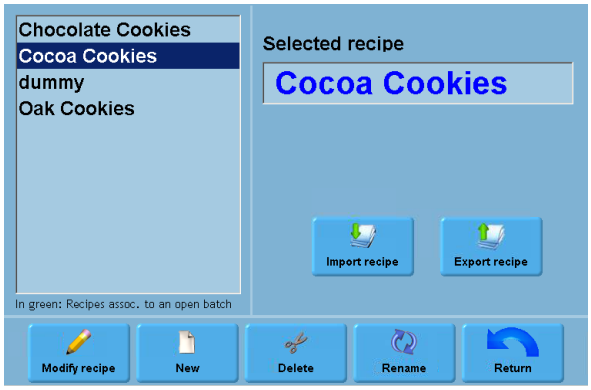
Press the button “**Return**” repeatedly to return to the main screen.	

Note:

If a batch has been opened, it is not possible to eliminate the recipe and the message at the side will be displayed.	

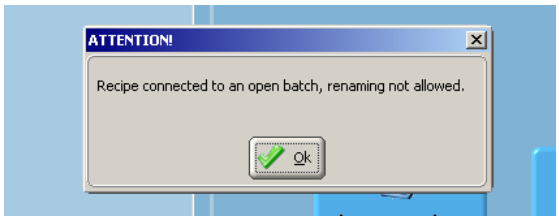
4.5.1.6. Rename an existing recipe

The active recipe cannot be re-named.

Press “**Edit recipe**”.	
Select the recipe to be renamed.	
Press “**Rename**”.	
Insert the new name and press “**Enter**”. The name selected can have maximum 25 characters.	

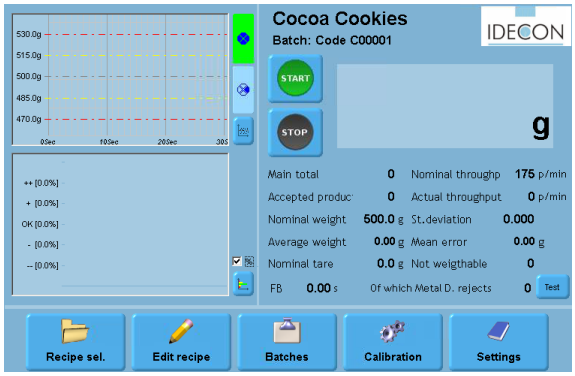
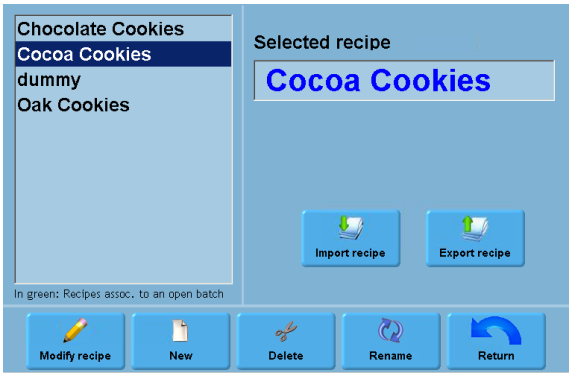
Press the button “**Return**” repeatedly to return to the main screen.	

Note:

If a batch has been opened, it is not possible to re-name the recipe and the message at the side will be displayed.	

4.5.1.7. Import or export a recipe

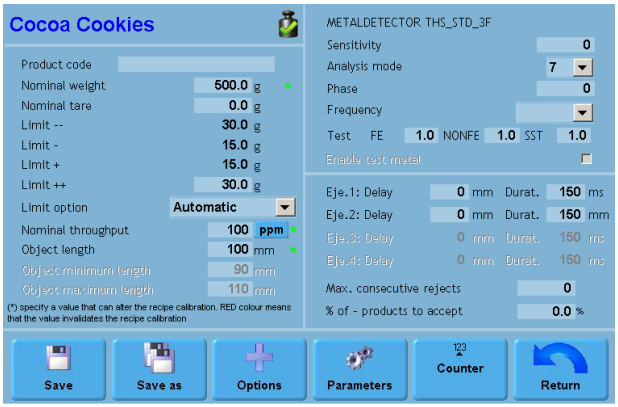
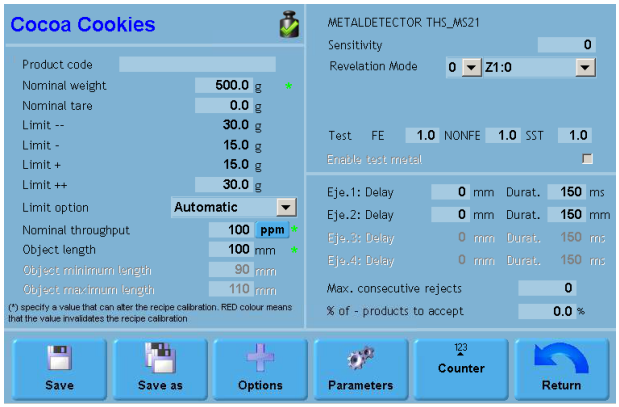
Recipes can be imported and exported using a removable USB pendrive. In this way backup of the recipes is possible or the recipes can be copied into another machine. Each recipe can be saved as text file; the name of the file is the name of the recipe itself. If there is data in the recipe imported that do not lie within the weigher limits, they are modified automatically. If the checkweigher into which the recipes are to be imported is MID approved, dynamic calibration must be performed.

Press "**Edit recipe**".	
Press "**Export recipe**" to export them in a USB pendrive, or press "**Import recipe**" to import them from a USB pendrive.	
Select one or more recipes to be exported. Press "**Select all**" to select all the recipes. **Note**: the box on the left displays the recipes saved in the machine. In the box on the right there are the recipes saved in the pendrive. When recipes are imported, select them from the right box.	

Press “**Export recipe**”.	
Wait…	
Press “**Remove drive**”. After that it is possible to remove the pendrive from the USB connector. If these steps are not followed, the data in your pendrive may be lost as well as compromising the correct operation of the disk and/or USB connector.	
Press the button “**Return**” repeatedly to return to the main screen.	

4.5.1.8. Metal Detector recipe data

In case of metal detector (CEIA) integrated to the checkweigher (WPM series), in the recipe page the field “METAL DETECTOR” will be active.

THS_21E and THS_21E_3F	THS_MS21 and THS_21
	
Metal detector settings are: • Sensitivity; • Analysis mode; • Phase; • Frequency (not in THS_21E model); • Sample test size.	Metal detector settings are: • Sensitivity; • Revelation mode; • Sample test size.

Settings listed above have been automatically adopted by the metal detector during the “Metal-detector calibration” operation (see par.4.5.4.1). Don’t modify the parameters adopted during this phase (in specific case it is possible modifying lightly the “**Sensitivity**” value of 5-10 points maximum).

It is possible to fill in the field “test” with test samples diameters which will be use during “Metal-detector Test” phase (see par 4.5.3.1).

4.5.2. Batches management

4.5.2.1. Batches page

The batch is used to manage the production data of a certain amount of pieces for which a production report is required.

By pressing the "**Batches**" button on the main page, enter the following page:

- Operator: operator's name who starts the production batch;
- Batch code: code of the batch to be realized;
- Production order: code of production order;
- Batch type: batch type to be realized. It is possible to choose between global batch and split batch:
  - Global batch: the pieces of the batch coincide with the production size. The production report will be created at the end of the global batch;
  - Split batch: the system divides the production into split batches. Split batches are generated after reaching of a fixed number of pieces or minutes passed. A production report will be created for each split batch.
- Community rules applied to: this function checks that the following parameters are correctly set:

  1) *Batch size: When prepackages are checked at the end of the packing line, the number in each batch shall be equal to the maximum hourly output of the packing line, without any restriction as to the batch size. In other cases the batch size shall be limited to 10,000 prepackages* (Law 690-1978). Therefore, the machine checks that the batch is not higher than 10,000 pieces or with duration longer than 60 minutes*;*
  2) Reject activation for the category "-", "- -", "NP";
  3) Limits of product acceptance set on "Automatic" or "Automatic editable".

It is possible to choose to which kind of batch can apply the previous rules:

- Global batch: it applies the community legislation checking on the global batches;
- Split batch: it applies the community legislation checking on the split batches;
- Disabled: it ignores the community legislation.

- Extra field 1: editable alphanumeric field (max 71 characters);
- Extra field 2: editable alphanumeric field (max 90 characters).

SPLIT BATCH SECTION:

- Batch end: it allows the mode to determine the end of a split batch to be chosen. It is possible to choose between the following options:
  - Pieces: the split batch ends with the achievement of a specific number of products;
  - Minutes: the split batch ends according to the time, setting the minutes of production.
- Batch size: number of pieces or minutes which determine the closure of the split batch.

GLOBAL BATCH SECTION:

- Production end: it allows the mode to determine the production end to be chosen. It is possible to choose between the following options:
  - Pieces: the production of a batch ends with the achievement of a specific number of products;
  - Minutes: the production of a batch ends according to the time, setting the minutes of production;
  - Manual: the operator decides when to start and stop the batch. The production of a batch ends when the operator presses the BATCH END button. The option is not available if the settings control is active according to EC regulations (4.5.5.1.4).
- Production size: number of pieces or minutes which determine the closure of the global batch;
- Global batch printout (optional): It allows to choose between the following global batch print modes:
  - Manual: when pressing the “Print batch” button at the bottom of the page, the batch document will be printed;
  - Automatic: print the batch at the end of the production.
- Close and reopen batch at hour: it allows the time wherein forcing a closure or reopening of a global batch to be set. If enabled, this operation has effect also on the split batch. Generally, the 0:0 value is set in a way not to have batches that start on one day and continue to the next day. The function is enabled only if the global batch has been set with MANUAL end.

At the top of batches page, there is a "**Default**" button. By pressing this button the three following choices are displayed: - Save as default: it allows all the modifications made on the batch page as default to be saved; - Load defaults: it applies all default data to the batch you want to create; - Return: to return at the batches page. Always use default settings: by choosing this option when creating a new batch, default settings will be automatically loaded.	

Pieces counting with its related statistical data begins by pressing the "**Batch start**" button or automatically when selecting the recipe if the option "**Select recipe and batch opening**" (See 4.5.5.1).

The count ends when:

- The "**Batch end**" button is pressed;
- The time set for batch end is reached;
- The number of pieces for batch end is reached;
- In automatic mode, on changing recipe, the "**select recipe and batch opening**" option is selected (See 4.5.5.1).

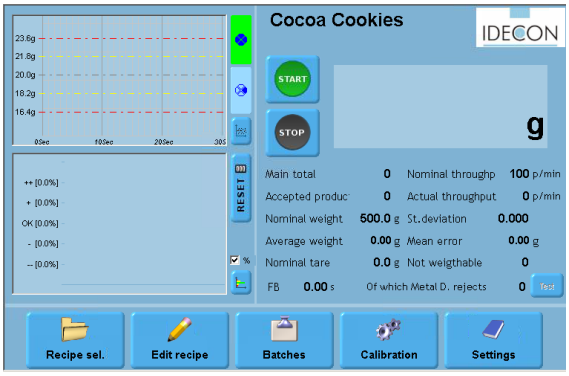
When the batch ends:

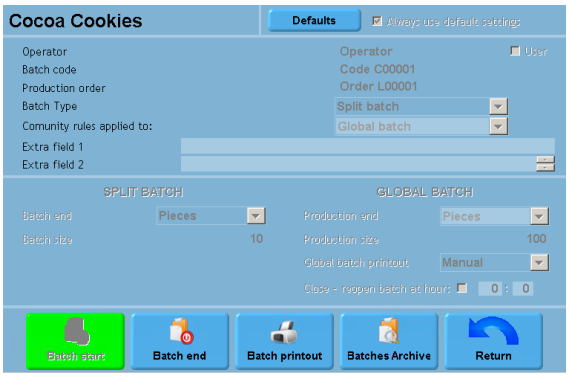
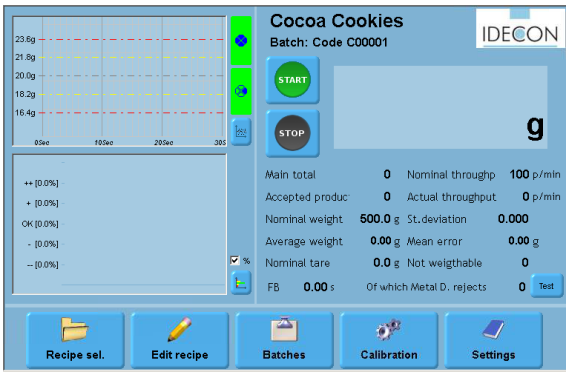
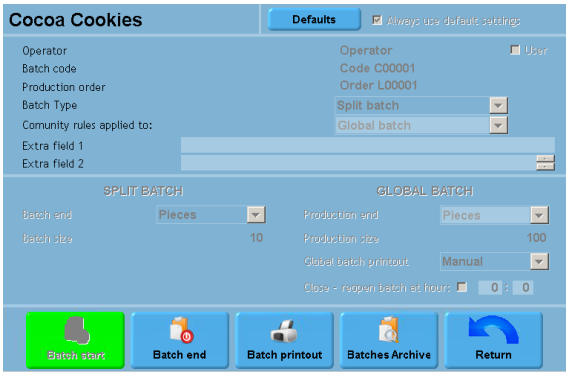
- A video signal is sent;
- If the Remote Communication is enabled (see par. 4.5.5.1.5.1.4) a signal is sent on the TCP/IP communication socket;
- A production Report is generated (PDF) with the batch data. A list of weights or a new line on Production Report (CSV) file can also be generated if enabled in Setup Batches (4.5.5.1.4);
- A report can be printed of the batch terminated if the optional printer is present and configured (See 4.5.5.1.5.1.1). When the batch ends, the machine continues to operate, starting a new count independently from batch functioning (unless machine stop due to batch end has been set).

The data related to a started, but not yet closed, batch remain referred to the recipe; in that way, if the option "**select recipe and open batch**" has not been chosen, at recipe change the piece counting will restart from the point into which was stopped, until the batch closure following the settings.

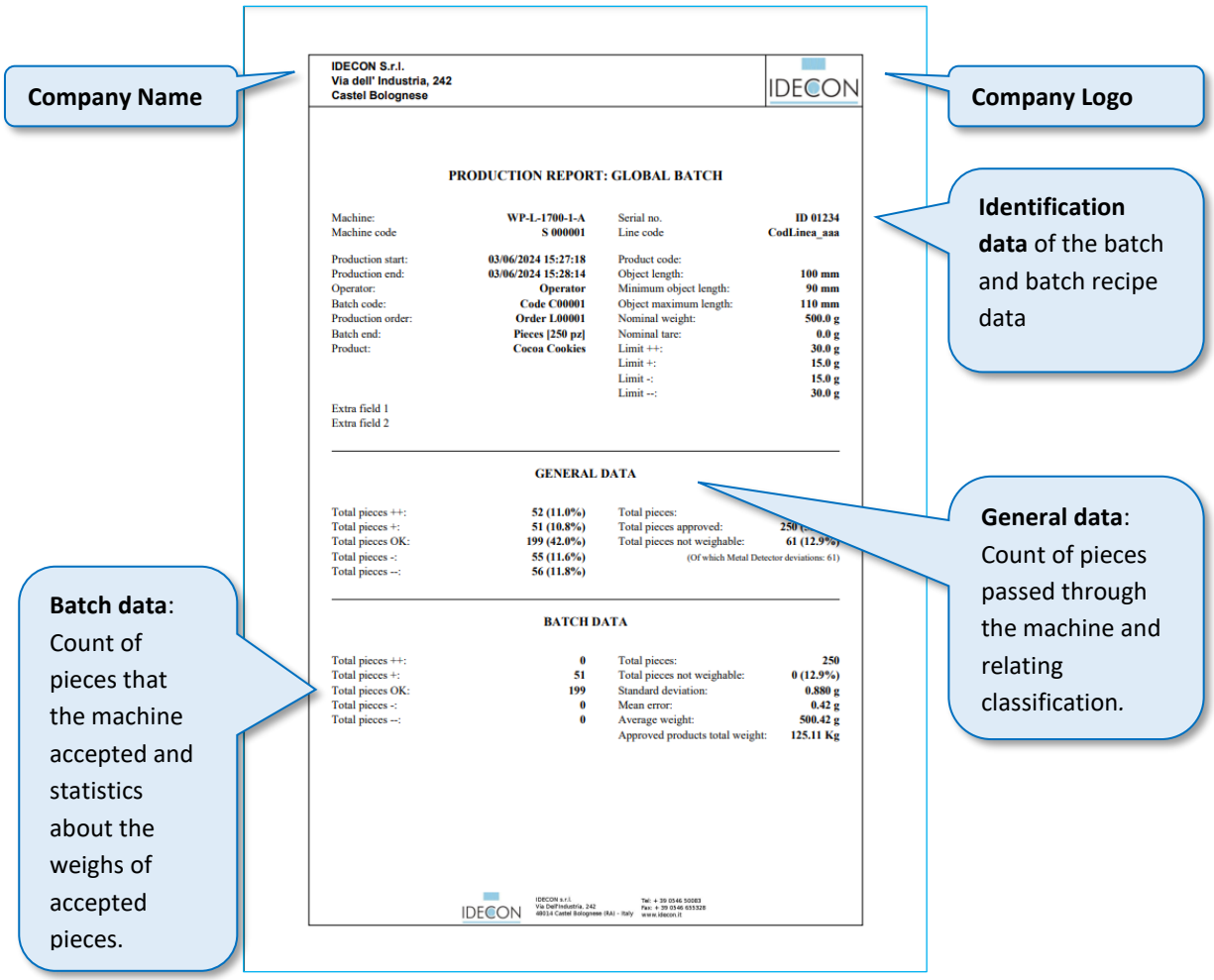
As previously indicated, a batch can be automatically closed and reopened at a pre-determined time (See "**Close and reopen batch at:**").

4.5.2.2. Example of batch creation

Press “**Batches**”.	
Fill in all the fields starting from the top of the page. All the fields must be filled-in, excluding “*Operator*”, “*Code*”, “*Production order*”, “*Extra field 1*” and “*Extra field 2*”, which can be omitted. **NOTE**: in the editable fields it is not allowed to use special characters such as: dot (.), comma (,), asterisk (*), slash (\).	
When all the compulsory fields are filled in, the “**Batch start**” button is active.	
Press “**Batch start**”.	

Press repeatedly to “**Return**” back to the main page.	
On the main page, there will be the code of the active batch below the name of the recipe. Return to the page “**Batches**” to stop the counting.	
Press “**Batch end**” to stop the counting and close the batch.	

4.5.2.3. *Example of a batch production report*



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Via dell' Industria, 242
Castel Bolognese

IDECON

PRODUCTION REPORT: GLOBAL BATCH

Machine:	WP-L-1700-1-A	Serial no.	ID 01234
Machine code	S 000001	Line code	CodLinea_aaa
Production start:	03/06/2024 15:27:18	Product code:	
Production end:	03/06/2024 15:28:14	Object length:	100 mm
Operator:	Operator	Minimum object length:	90 mm
Batch code:	Code C00001	Object maximum length:	110 mm
Production order:	Order L00001	Nominal weight:	500.0 g
Batch end:	Pieces [250 pz]	Nominal tare:	0.0 g
Product:	Cocoa Cookies	Limit ++:	30.0 g
		Limit +:	15.0 g
		Limit -:	15.0 g
		Limit --:	30.0 g
Extra field 1			
Extra field 2			

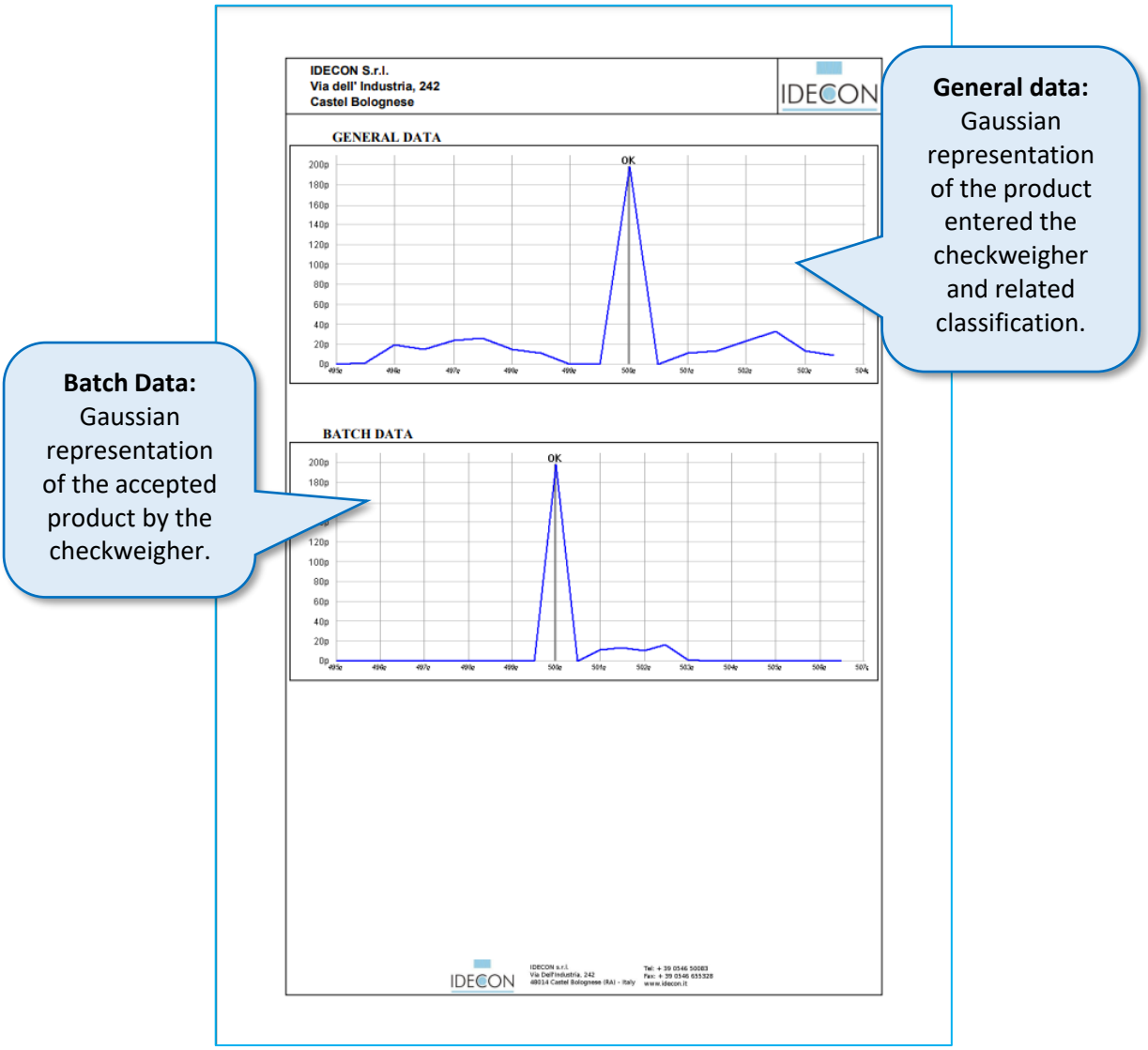
GENERAL DATA

Total pieces ++:	52 (11.0%)	Total pieces:	
Total pieces +:	51 (10.8%)	Total pieces approved:	250
Total pieces OK:	199 (42.0%)	Total pieces not weighable:	61 (12.9%)
Total pieces -:	55 (11.6%)	(Of which Metal Detector deviations: 61)	
Total pieces --:	56 (11.8%)		

BATCH DATA

Total pieces ++:	0	Total pieces:	250
Total pieces +:	51	Total pieces not weighable:	0 (12.9%)
Total pieces OK:	199	Standard deviation:	0.880 g
Total pieces -:	0	Mean error:	0.42 g
Total pieces --:	0	Average weight:	500.42 g
		Approved products total weight:	125.11 Kg

IDECON



NOTES:

- Whenever the sum of the pieces Ok- and pieces – does not seem to coincide, it is possible that the negative pieces acceptance logic is activated, where the scales try to maintain the batch average positive. Alternatively, it is possible that the acceptance exception is activated for a batch with 2.5% negative production.
- Whenever the "**Community regulatory control**" option is activated, a batch cannot be opened without having specified a not weighable products ejector. If this mode is not activated, it is possible to continue with production without specifying it, but use is not recommended.
- If, on closure of the scheduled batch, no passed pieces are present, the batch, and the consequent PDF would not be created.
- If the "%" flag in the lower graphics (see 4.2.1.2.2.1) is activated, the counters of the "General data" section contain the representation of the counter with respect to the "General total pieces" as a percentage in brackets.
- If the "**PDF with charts**" flag (See 4.5.2) is not active, the PDF production report will not contain the second page previously described. In that case the first page does not change.

4.5.2.4. *Example of "List of weights (CSV)"*

As seen, the scales can be set (See 4.5.2) in a way to produce a file containing details of each weight. Below find all fields.

Example of weights file:

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	ID 0XXXX	WP-L-1700-1-A	S XXXXXXXXX	codlin	500g	0.05									
2	Peso	Rejected	Date(dd/mm/yyyy)	Time(hh:mm:ss)	Time(msec)	Flags	Tare	++	+	OK	OK+	OK-	-	=-OK	--
3	512,75	0	29/11/2019	14:05:27	985	66688	455,1	0	0	1	0	1	0	0	0
4	520,35	0	29/11/2019	14:05:33	448	66688	454,9	0	0	1	0	1	0	0	0
5	528,45	0	29/11/2019	14:05:38	693	132224	454,9	0	0	1	1	0	0	0	0
6	529,05	0	29/11/2019	14:05:43	266	132224	455,1	0	0	1	1	0	0	0	0
7	537,1	0	29/11/2019	14:05:48	60	132224	455,2	0	0	1	1	0	0	0	0
8	545,1	0	29/11/2019	14:05:52	673	1040	455,3	0	1	0	0	0	0	0	0
9	545,25	0	29/11/2019	14:05:58	28	1040	455,1	0	1	0	0	0	0	0	0
10	504,15	1	29/11/2019	14:06:05	649	1344	455,4	0	0	0	0	0	1	0	0
11	537,35	0	29/11/2019	14:06:15	223	132224	455,5	0	0	1	1	0	0	0	0
12	504	1	29/11/2019	14:06:31	507	1344	455,9	0	0	0	0	0	1	0	0
13	530,05	0	29/11/2019	14:06:42	330	132224	455	0	0	1	1	0	0	0	0
14	561	1	29/11/2019	14:06:57	809	1288	455	1	0	0	0	0	0	0	0
15	448,25	1	29/11/2019	15:39:56	51	1312	455,4	0	0	0	0	0	0	0	1
16	504,35	1	29/11/2019	15:40:11	981	1344	455,6	0	0	0	0	0	1	0	0
17	528,6	0	29/11/2019	15:40:23	962	132224	455,4	0	0	1	1	0	0	0	0
18	528,3	0	29/11/2019	15:40:28	854	132224	455	0	0	1	1	0	0	0	0
19	528,2	0	29/11/2019	15:40:33	758	132224	455	0	0	1	1	0	0	0	0
20	528,3	0	29/11/2019	15:40:38	278	132224	455,3	0	0	1	1	0	0	0	0
21	527,7	0	29/11/2019	15:40:42	740	132224	455,7	0	0	1	1	0	0	0	0
22	520,2	0	29/11/2019	15:40:47	577	66688	455,5	0	0	1	0	1	0	0	0
23	535,75	0	29/11/2019	15:40:57	246	132224	455,5	0	0	1	1	0	0	0	0
24	536,95	0	29/11/2019	15:41:02	75	132224	455,4	0	0	1	1	0	0	0	0
25	545,4	0	29/11/2019	15:41:09	547	1040	455,4	0	1	0	0	0	0	0	0
26	544,95	0	29/11/2019	15:41:14	242	1040	455,5	0	1	0	0	0	0	0	0
27	544,5	0	29/11/2019	15:41:18	724	1040	455,6	0	1	0	0	0	0	0	0
28	536,7	0	29/11/2019	15:41:23	286	132224	455,6	0	0	1	1	0	0	0	0
29	528,8	0	29/11/2019	15:41:27	801	132224	455,5	0	0	1	1	0	0	0	0
30	528,7	0	29/11/2019	15:41:32	114	132224	455,4	0	0	1	1	0	0	0	0
31	529,05	0	29/11/2019	15:41:36	423	132224	455,6	0	0	1	1	0	0	0	0
32	528,7	0	29/11/2019	15:41:40	695	132224	455,8	0	0	1	1	0	0	0	0

Below, a brief description of the fields.

The first row lists the main work information:

Table of Contents	Column	Description
A	Serial Number	Checkweigher serial number.
B	Model	Checkweigher model.
C	Machine Code	Checkweigher drawing code.
D	Line Code	Line Code (configurable, see 4.5.5.1).
E	Recipe	Recipe linked to this production batch.
F	Internal Division (d)	Effective interval of the resolution scale (see OIML-R51-1-2006).

All of the weights are given from the second row onwards. The columns give the relative information in the following order:

Table of Contents	Column	Description
A	Weight	Weight Value in resolution "d".
B	Rejected	"1" if it has been ejected, "0" if it has passed.
C	Date (dd/mm/yyyy)	Day on which the product passed.
D	Time (hh:mm:ss)	Time at which the product passed.
E	Time (msec)	Permanence time on the weighing plate.
F	Flags	Number that describes the features of the weight detected (see par. 4.5.2.4.1).
G	Tare	Points of the tare considered for that product.
H	++	"1" if it is a "Product ++", "0" if it is not part of this category.

I	+	“1” if it is a “Product +”, “0” if it is not part of this category.
J	OK	“1” if it is a “Product OK”, “0” if it is not part of this category.
K	OK+	“1” if it is a “Product OK+”, “0” if it is not part of this category.
L	OK-	“1” if it is a “Product OK-”, “0” if it is not part of this category.
M	-	“1” if it is a “Product -”, “0” if it is not part of this category.
N	-OK	“1” if it is a “Product -OK”, “0” if it is not part of this category.
O	--	“1” if it is a “Product - -”, “0” if it is not part of this category.

4.5.2.4.1. Flags Table

Meaning of every flag currently managed in Bit.

Meaning	MASK	Bit	VALUE
Product Too Long	0x00000001	1	1
Product Too Short	0x00000002	2	2
Product Contaminated (Metal Detector)	0x00000004	3	4
Weight + +	0x00000008	4	8
Weight +	0x00000010	5	16
Weight - -	0x00000020	6	32
Weight -	0x00000040	7	64
Weight OK	0x00000080	8	128
Product Ejected	0x00000100	9	256
Product Too Close	0x00000200	10	512
Product with a new tare	0x00000400	11	1024
Product with incorrect tare	0x00000800	12	2048
Product out of range below	0x00001000	13	4096
Weight – but which is OK (- OK)	0x00002000	14	8192
Product not valid	0x00004000	15	16384
Non-conform product	0x00008000	16	32768
Weight Ok -	0x00010000	17	65536
Weight Ok +-	0x00020000	18	131072
Product out of range above	0x00040000	19	262144

4.5.2.4.1.1. Example of decoding from Value to Flags:

As an example, let's take any weight whose flags value has been set at 132224. Firstly, the value must be transformed into a binary number.

$$132224_{10} \Rightarrow 0010\ 0000\ 0100\ 1000\ 0000_2$$

Notice must be taken of the positions of the values of “1” (in red). The count starts from 1 and proceeds from right to left. In this example, we will therefore have positions 8, 11 and 18.

20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0

Through the table (par. 4.5.2.4.1), using the positions to read the “Bit” column, we can therefore assert that it is a “***Weight OK***”, it is a “***Product with new tare***” and a “***Weight Ok+***”.

4.5.2.5. *Example of "ReportSummary.csv"*

On request, the scales also supply a statistic for all productions, divided by batch, where every row contains the summarised information of the batch itself.

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO
GLOBAL	ID 01234	13/10/2021 14:43	13/10/2021 14:48	test	PIECE [10000]	user	1A2bc test	Lot1234	100	300	0	18	9	9	9	18	1	3	6	0	1	11	9	0	0	0	3	6	0	0	9	9,355	3,65	303,65	2,73	codin	codin	0	0
DIVIDED 1	ID 01234	13/10/2021 14:53	13/10/2021 15:02	test	PIECE [1000]	user	1A2bc test	Lot1234	100	300	0	18	9	9	9	18	52	204	796	178	42	1272	1000	0	0	0	204	796	0	0	1000	6,868	2,58	302,58	302,58	codin	codin	0	0
DIVIDED 2	ID 01234	13/10/2021 15:02	13/10/2021 15:09	test	PIECE [1000]	user	1A2bc test	Lot1234	100	300	0	18	9	9	9	18	45	191	809	175	43	1263	1000	0	0	0	191	809	0	0	1000	6,68	2,5	302,5	302,5	codin	codin	0	0
DIVIDED 3	ID 01234	13/10/2021 15:09	13/10/2021 15:16	test	PIECE [1000]	user	1A2bc test	Lot1234	100	300	0	18	9	9	9	18	41	204	796	166	40	1247	1000	0	0	0	204	796	0	0	1000	6,79	2,69	302,69	302,69	codin	codin	0	0
DIVIDED 4	ID 01234	13/10/2021 15:16	13/10/2021 15:24	test	PIECE [1000]	user	1A2bc test	Lot1234	100	300	0	18	9	9	9	18	50	185	815	178	34	1262	1000	0	0	0	185	815	0	0	1000	6,801	2,33	302,33	302,33	codin	codin	0	0
DIVIDED 5	ID 01234	13/10/2021 15:24	13/10/2021 15:31	test	PIECE [1000]	user	1A2bc test	Lot1234	100	300	0	18	9	9	9	18	39	185	815	161	43	1243	1000	0	0	0	185	815	0	0	1000	6,67	2,24	302,24	302,24	codin	codin	0	0
DIVIDED 6	ID 01234	13/10/2021 15:31	13/10/2021 15:38	test	PIECE [1000]	user	1A2bc test	Lot1234	100	300	0	18	9	9	9	18	49	184	816	190	48	1287	1000	0	0	0	184	816	0	0	1000	6,417	2,4	302,4	302,4	codin	codin	0	0
DIVIDED 7	ID 01234	13/10/2021 15:38	13/10/2021 15:46	test	PIECE [1000]	user	1A2bc test	Lot1234	100	300	0	18	9	9	9	18	56	188	812	175	51	1282	1000	0	0	0	188	812	0	0	1000	6,768	2,12	302,12	302,12	codin	codin	0	0
DIVIDED 8	ID 01234	13/10/2021 15:46	13/10/2021 15:54	test	PIECE [1000]	user	1A2bc test	Lot1234	100	300	0	18	9	9	9	18	47	169	726	165	37	1144	895	0	0	0	169	726	0	0	895	6,775	2,29	302,29	270,55	codin	codin	0	0
GLOBAL	ID 01234	13/10/2021 14:53	13/10/2021 15:54	test	PIECE [10000]	user	1A2bc test	Lot1234	100	300	0	18	9	9	9	18	379	1510	6385	1388	338	10000	7895	0	0	0	1510	6385	0	0	7895	6,721	2,39	302,39	2387,4	codin	codin	0	0
DIVIDED 1	ID 01234	13/10/2021 15:54	13/10/2021 16:01	test	PIECE [1000]	user	1A2bc test	Lot1234	100	300	0	18	9	9	9	18	44	180	820	162	36	1242	1000	0	0	0	180	820	0	0	1000	6,74	2,28	302,28	302,28	codin	codin	0	0
DIVIDED 2	ID 01234	13/10/2021 16:01	13/10/2021 16:09	test	PIECE [1000]	user	1A2bc test	Lot1234	100	300	0	18	9	9	9	18	48	180	820	206	48	1302	1000	0	0	0	180	820	0	0	1000	6,781	2,25	302,25	302,25	codin	codin	0	0
DIVIDED 3	ID 01234	13/10/2021 16:09	13/10/2021 16:17	test	PIECE [1000]	user	1A2bc test	Lot1234	100	300	0	18	9	9	9	18	45	176	824	189	44	1278	1000	0	0	0	176	824	0	0	1000	6,755	2,17	302,17	302,17	codin	codin	0	0
DIVIDED 4	ID 01234	13/10/2021 16:17	13/10/2021 16:24	test	PIECE [1000]	user	1A2bc test	Lot1234	100	300	0	18	9	9	9	18	45	171	829	176	52	1273	1000	0	0	0	171	829	0	0	1000	6,443	2,05	302,05	302,05	codin	codin	0	0
DIVIDED 5	ID 01234	13/10/2021 16:24	13/10/2021 16:31	test	PIECE [1000]	user	1A2bc test	Lot1234	100	300	0	18	9	9	9	18	40	168	832	181	41	1262	1000	0	0	0	168	832	0	0	1000	6,528	1,99	301,99	301,99	codin	codin	0	0
DIVIDED 6	ID 01234	13/10/2021 16:31	13/10/2021 16:39	test	PIECE [1000]	user	1A2bc test	Lot1234	100	300	0	18	9	9	9	18	39	184	816	187	53	1279	1000	0	0	0	184	816	0	0	1000	6,649	2,1	302,1	302,1	codin	codin	0	0
DIVIDED 7	ID 01234	13/10/2021 16:39	13/10/2021 16:46	test	PIECE [1000]	user	1A2bc test	Lot1234	100	300	0	18	9	9	9	18	44	174	826	184	55	1283	1000	0	0	0	174	826	0	0	1000	6,805	2,12	302,12	302,12	codin	codin	0	0
GLOBAL	ID 01234	13/10/2021 15:54	14/10/2021 09:02	test	PIECE [10000]	user	1A2bc test	Lot1234	100	300	0	18	9	9	9	18	336	1383	6450	1462	369	10000	7833	0	0	0	1383	6450	0	0	7833	6,679	2,15	302,15	2366,8	codin	codin	0	0
DIVIDED 1	ID 01234	14/10/2021 09:08	14/10/2021 09:15	test	PIECE [1000]	user	1A2bc test	Lot1234	100	300	0	18	9	9	9	18	49	203	797	187	41	1277	1000	0	0	0	203	797	0	0	1000	6,806	2,46	302,46	302,46	codin	codin	0	0
DIVIDED 2	ID 01234	14/10/2021 09:15	14/10/2021 09:23	test	PIECE [1000]	user	1A2bc test	Lot1234	100	300	0	18	9	9	9	18	43	193	807	159	47	1249	1000	0	0	0	193	807	0	0	1000	6,778	2,58	302,58	302,58	codin	codin	0	0
DIVIDED 3	ID 01234	14/10/2021 09:23	14/10/2021 09:30	test	PIECE [1000]	user	1A2bc test	Lot1234	100	300	0	18	9	9	9	18	44	184	816	163	41	1248	1000	0	0	0	184	816	0	0	1000	6,659	2,28	302,28	302,28	codin	codin	0	0
DIVIDED 4	ID 01234	14/10/2021 09:30	14/10/2021 09:37	test	PIECE [1000]	user	1A2bc test	Lot1234	100	300	0	18	9	9	9	18	50	186	814	201	32	1283	1000	0	0	0	186	814	0	0	1000	6,804	2,33	302,33	302,33	codin	codin	0	0
DIVIDED 5	ID 01234	14/10/2021 09:37	14/10/2021 09:45	test	PIECE [1000]	user	1A2bc test	Lot1234	100	300	0	18	9	9	9	18	41	200	800	193	42	1276	1000	0	0	0	200	800	0	0	1000	6,877	2,67	302,67	302,67	codin	codin	0	0
DIVIDED 6	ID 01234	14/10/2021 09:45	14/10/2021 09:52	test	PIECE [1000]	user	1A2bc test	Lot1234	100	300	0	18	9	9	9	18	37	198	802	193	47	1277	1000	0	0	0	198	802	0	0	1000	6,927	2,39	302,39	302,39	codin	codin	0	0
DIVIDED 7	ID 01234	14/10/2021 09:52	14/10/2021 10:00	test	PIECE [1000]	user	1A2bc test	Lot1234	100	300	0	18	9	9	9	18	37	179	821	161	43	1241	1000	0	0	0	179	821	0	0	1000	6,741	1,99	301,99	301,99	codin	codin	0	0
DIVIDED 8	ID 01234	14/10/2021 10:00	14/10/2021 10:16	test	PIECE [1000]	user	1A2bc test	Lot1234	100	300	0	18	9	9	9	18	50	162	734	167	36	1149	896	0	0	0	162	734	0	0	896	6,664	2,2	302,2	270,77	codin	codin	0	0
GLOBAL	ID 01234	14/10/2021 09:08	14/10/2021 10:16	test	PIECE [10000]	user	1A2bc test	Lot1234	100	300	0	18	9	9	9	18	351	1505	6391	1424	329	10000	7896	0	0	0	1505	6391	0	0	7896	6,784	2,37	302,37	2387,5	codin	codin	0	0
DIVIDED 1	ID 01234	14/10/2021 10:16	14/10/2021 10:24	test	PIECE [1000]	user	1A2bc test	Lot1234	100	300	0	18	9	9	9	18	50	193	807	189	44	1283	1000	0	0	0	193	807	0	0	1000	6,858	2,53	302,53	302,53	codin	codin	0	0
DIVIDED 2	ID 01234	14/10/2021 10:24	14/10/2021 10:31	test	PIECE [1000]	user	1A2bc test	Lot1234	100	300	0	18	9	9	9	18	37	183	817	152	42	1231	1000	0	0	0	183	817	0	0	1000	6,661	2,41	302,41	302,41	codin	codin	0	0
DIVIDED 3	ID 01234	14/10/2021 10:31	14/10/2021 10:39	test	PIECE [1000]	user	1A2bc test	Lot1234	100	300	0	18	9	9	9	18	48	183	817	216	48	1312	1000	0	0	0	183	817	0	0	1000	6,716	2,33	302,33	302,33	codin	codin	0	0
DIVIDED 4	ID 01234	14/10/2021 10:39	14/10/2021 10:46	test	PIECE [1000]	user	1A2bc test	Lot1234	100	300	0	18	9	9	9	18	41	180	820	222	36	1299	1000	0	0	0	180	820	0	0	1000	6,827	2,17	302,17	302,17	codin	codin	0	0
DIVIDED 5	ID 01234	14/10/2021 10:46	14/10/2021 10:54	test	PIECE [1000]	user	1A2bc test	Lot1234	100	300	0	18	9	9	9	18	46	199	801	218	51	1315	1000	0	0	0	199	801	0	0	1000	6,74	2,36	302,36	302,36	codin	codin	0	0
DIVIDED 6	ID 01234	14/10/2021 10:54	14/10/2021 11:02	test	PIECE [1000]	user	1A2bc test	Lot1234	100	300	0	18	9	9	9	18	47	161	839	183	33	1263	1000	0	0	0	161	839	0	0	1000	6,417	2,01	302,01	302,01	codin	codin	0	0
DIVIDED 7	ID 01234	14/10/2021 11:02	14/10/2021 11:09	test	PIECE [1000]	user	1A2bc test	Lot1234	100	300	0	18	9	9	9	18	45	183	817	188	46	1279	1000	0	0	0	183	817	0	0	1000	6,614	2,27	302,27	302,27	codin	codin	0	0
DIVIDED 8	ID 01234	14/10/2021 11:09	14/10/2021 12:18	test	PIECE [1000]	user	1A2bc test	Lot1234	100	300	0	18	9	9	9	18	29	158	618	166	47	1018	776	0	0	0	158	618	0	0	776	6,866	2,48	302,48	234,73	codin	codin	0	0
GLOBAL	ID 01234	14/10/2021 10:16	14/10/2021 12:18	test	PIECE [10000]	user	1A2bc test	Lot1234	100	300	0	18	9	9	9	18	343	1440	6336	1534	347	10000	7776	0	0	0	1440	6336	0	0	7776	6,708	2,32	302,32	2350,8	codin	codin	0	0

Table of Contents	Column	Description
A	Batch type	Batch type (See 4.5.2.1).
B	Machine	Checkweigher serial number.
C	Production start	Date of production start shown as “DD/MM/YYYY HH:MM:SS”.
D	Production end	Date of production end shown as “DD/MM/YYYY HH:MM:SS”.
E	Batch code	Code assigned to the batch.
F	Batch end	Type of closure of the batch selected (see 4.5.2.1).
G	Operator	Operator identification parameter.
H	Production order	Batch production order.
I	Product	Name of the recipe used.
J	Product code	Any code assigned to said product.
K	Object length (mm)	Nominal length of the product set in the recipe.
L	Nominal weight (g)	Nominal weight of the product set in the recipe.
M	Nominal tare (g)	Nominal tare of the product set in the recipe.
N	Limit ++ (g)	Limit ++ value calculated in the recipe (See 4.5.1.2).
O	Limit + (g)	Limit + value calculated in the recipe (See 4.5.1.2).
P	Limit - (g)	Limit - value calculated in the recipe (See 4.5.1.2).
Q	Limit -- (g)	Limit -- value calculated in the recipe (See 4.5.1.2).
R	General - Total pieces ++	Number of “Products ++” that have been generated by the scales since the batch was opened.
S	General - Total pieces +	Number of “Products +” that have been generated by the scales since the batch was opened.
T	General - Total pieces OK	Number of “Products OK” that have been generated by the scales since the batch was opened.
U	General - Total pieces -	Number of “Products -” that have been generated by the scales since the batch was opened.
V	General - Total pieces --	Number of “Products --” that have been generated by the scales since the batch was opened.
W	General - General total pieces	Absolute number of products that have transited on the scales since the batch was opened.
X	General - Total pieces accepted	Number of pieces that have been accepted (and therefore not ejected) since the batch was opened.
Y	General - Total pieces not weighable	Number of “Products not weighable” that have been generated since the batch was opened.
Z	General - (Of which metal detector rejects)	Quota (of the “not weighable”) specific of the products detected by the Metal Detector.
AA	Batch - Total pieces ++	Number of “Products ++” that have made up the batch.
AB	Batch - Total pieces +	Number of “Products +” that have made up the batch.
AC	Batch - Total pieces OK	Number of “Products OK” that have made up the batch.
AD	Batch - Total pieces -	Number of “Products -” that have made up the batch.
AE	Batch - Total pieces --	Number of “Products --” that have made up the batch.

AF	Batch - Total pieces	Absolute number of products that have made up the batch.
AG	Batch - Standard deviation (g)	Standard deviation calculated of that specific batch.
AH	Batch - Average error (g)	Average error calculated of that specific batch.
AI	Batch - Average weight (g)	Average weight calculated of that specific batch.
AJ	Batch - Prod. total weight accepted (Kg)	Total weight of all products accepted belonging to the batch.
AK	Batch - Extra field 1	Any additional field (See 4.5.2.1).
AL	Batch - Extra field 2	Any additional field (See 4.5.2.1).
AM	Line Code	Machine line code (See 4.5.5.1).
AN	Total pieces OK-	Number of “Products OK-” that have been generated by the weigher since the batch was opened.
AO	Batch - Accepted pieces OK-	Number of “Products OK-” accepted from batch opening.

4.5.2.6. Global batch

By activating this option, it is possible to create global batches.

The global batch begins when “**Batch start**” is pressed.

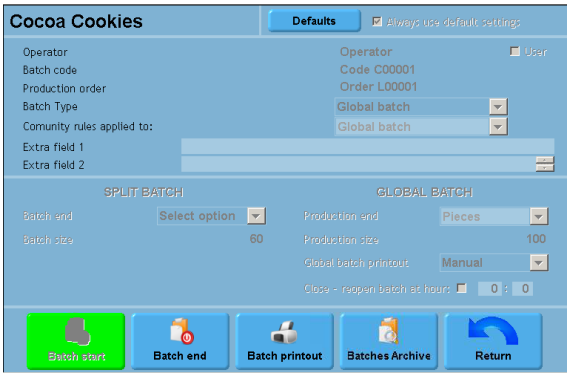
On pressing “**Batch end**” the counting of the global batch will be stopped.

Every time a global batch ends, a video signal will be displayed on the screen, a PDF file with all the batch data will be created. Using the optional printer, it is possible to print a report of the completed global batch. If the creation of a Weight List has been enabled (4.5.5.1.4), this file will also be generated when this batch closes.

Also in this case the data concerning a batch that had been started but not finished remain ‘associated’ to the recipe.

4.5.2.6.1. Example of global batch:

Chose “**Global batch**” in the “**Batch type**” field.	
Select the end production mode.	
Press “**Batch start**” to start the batch.	

Press “**Batch end**” to stop the counting.	

4.5.2.7. Split batch

By activating this option, it is possible to create partial batches.

In this case the end of the partial batch can be managed by the time or by the number of pieces.

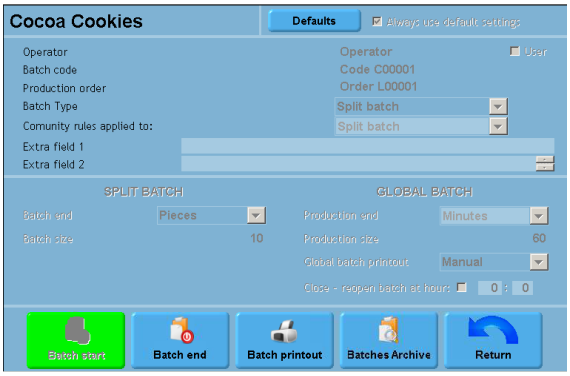
The first partial batch begins simultaneously with the global batch by pressing “**Batch start**”.

When pressing “**Batch end**”, the global batch count is ended and so is the partial batch count.

At the end of a partial batch, a video signal is given and a PDF file is generated with the data referring to that part of production. As for the overall batch, at the end of the divided batch, a summary print-off is created if there is a printer present. If the creation of a Weight List has been enabled (4.5.5.1.4), this file will also be generated when this batch closes.

4.5.2.7.1. Example of split batch:

Chose “**Split batch**” in the “**Batch type**” field.	
Select the end production mode.	
Press “**Batch start**” to start the batch.	

Press “**Batch end**” to stop the counting.	

Let's assume a batch has been set with the following features:

Parameter	Value
Batch type	Split Batch
Community rules applied to	Split Batch
Split Batch End	Minutes
Split Batch Size	60 (1 hour)
Global Batch End	Minutes
Global Batch Size	480 (8 hours)

The entire batch will close after 8 hours since it has been made to start independently from the number of pieces transited (if closed and then re-opened, the timer will be made to re-start from 0). Therefore, 9 batches will be obtained at closing: **8 partial** + **1 global**.

The names of the files (PDF and CSV) referring to the Global will be composed of the following parts:

PRODUCT_CODE – BATCH_CODE – YYYY-MM-DD HH.MM.pdf/csv

The date and time are relative to the moment the batch is opened. Below find an example:

coffee – 0000 – 2019-05-31 08:30.pdf

The names of the files (PDF and CSV) referring to the individual Split, will have the same name as the global but with a progressive number in brackets.

PRODUCT_CODE – BATCH_CODE – YYYY-MM-DD HH.MM (N).pdf/csv

Below find several examples:

coffee – 0000 – 2019-05-31 08:30 (1).pdf

coffee – 0000 – 2019-05-31 08:30 (2).pdf

coffee – 0000 – 2019-05-31 08:30 (3).pdf

coffee – 0000 – 2019-05-31 08:30 (4).pdf

coffee – 0000 – 2019-05-31 08:30 (5).pdf

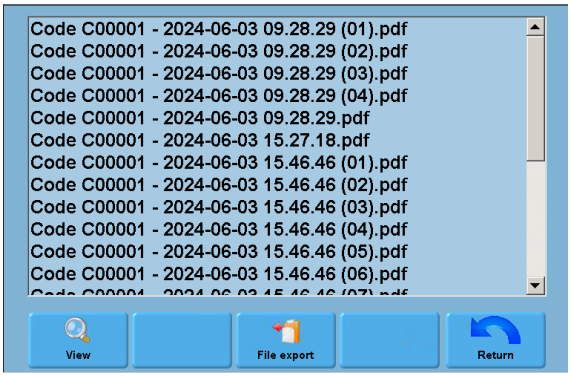
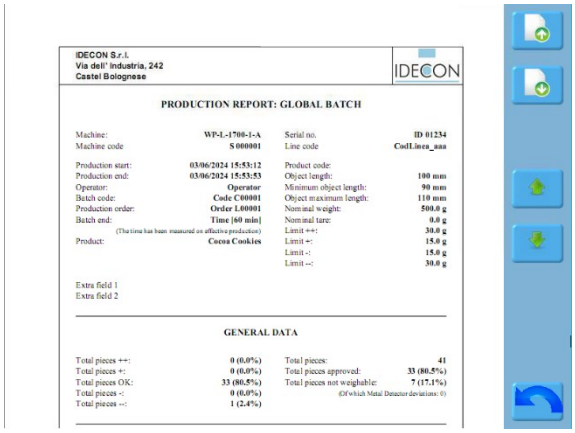
coffee – 0000 – 2019-05-31 08:30 (6).pdf

coffee – 0000 – 2019-05-31 08:30 (7).pdf

coffee – 0000 – 2019-05-31 08:30 (8).pdf

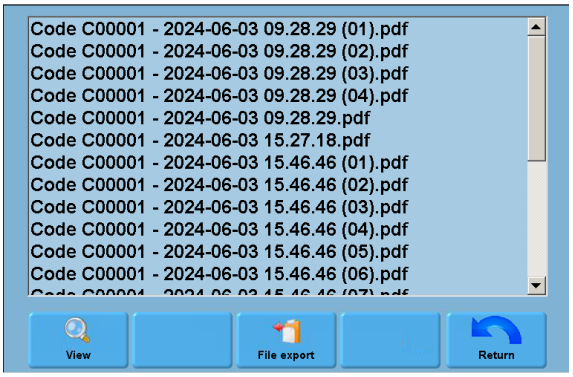
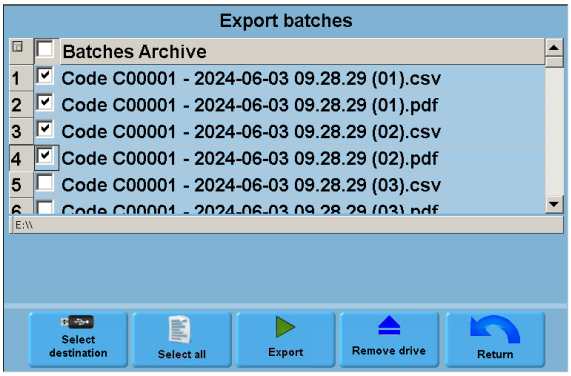
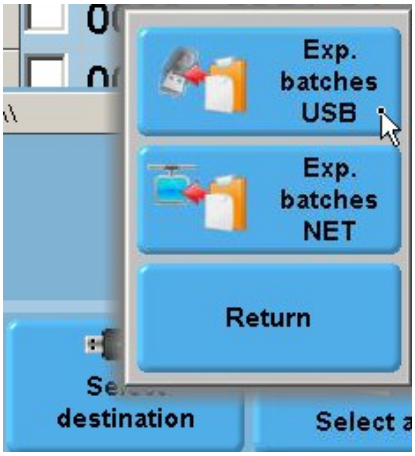
4.5.2.8. Display batch data

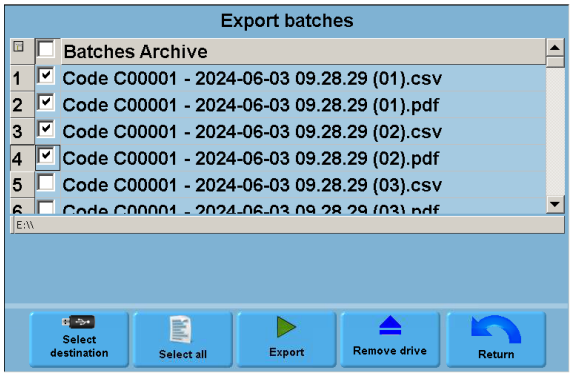
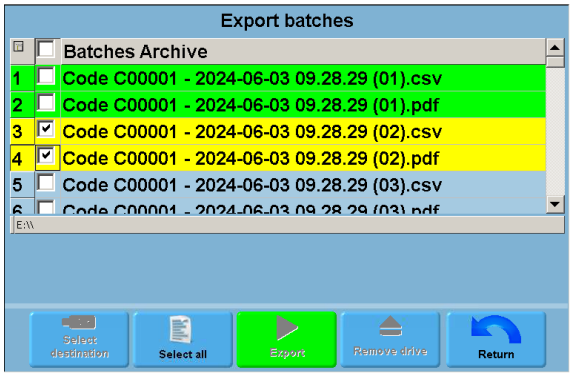
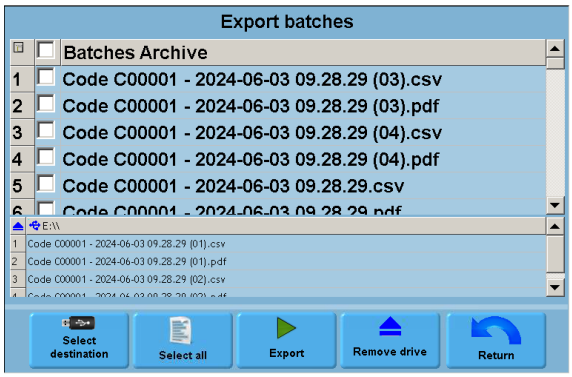
It is possible to display pdf file for each batch end.

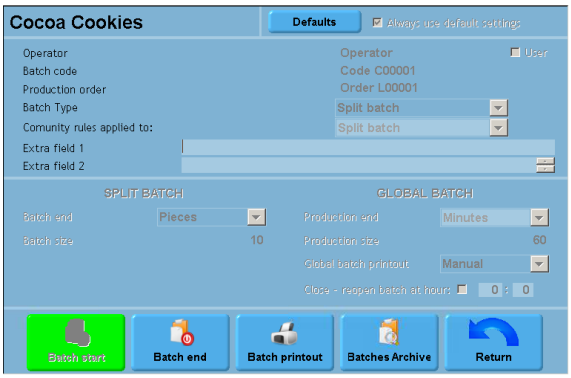
Press “**File export**”. A screen opens that displays all the PDF files created and never exported.	
Select the report to be displayed in the box. Press “**View**”.	
If the “**PDF with charts**” function (See 4.5.2) is active, it will be possible to swap among the report’s pages using the two white arrows on green background on the top right part of the page. It is possible to scroll the current document page using the two green arrows (in the middle). Press the blue arrow button on the bottom right part of the page to go back.	

4.5.2.9. Export of batch data

It is possible to export PDF files created at each batch end to an USB pendrive.

Press “**Batches**”. When pressing “**Batches Archive**”, all the pdf files never exported before, will be displayed.	
Select “**File export**”.	
Select the report to be exported in the box. The multiple selection is supported as well. Alternatively, all reports can be selected by pressing “**Select all**”. In the menu that opens, press “**Select all**”.	
Press “**Select Destination**” to choose where to export the desired files. If the scale is mapped in the network (See 4.8.3), files can be exported to that folder. Alternatively, a USB stick must be used for the export.	

Press “**Export**” to export. The box below shows all the exported files.	
Wait until the operation is completed. It is possible to notice that the list colours according to the result: • Yellow: Element in queue; • Green: Element exported successfully; • Red: Exporting Failed. The lower section shows what is present inside the pen drive.	
Press “**Remove drive**”, to remove the stick from USB connector. **<u>If this procedure is not followed, there is a risk of losing data present in the removable disk, as well as damaging the latter and the USB port used</u>**.	

OPTIONAL: By pressing "**Batch printout**" print (by the optional printer correctly activated and configured) a report with the production data for all the products which passed on the machine until that moment.	
OPTIONAL: If the options "**Global batch printout**" is set in "Automatic" mode, a production report will be automatically printed at every batch end (with the optional printer).	

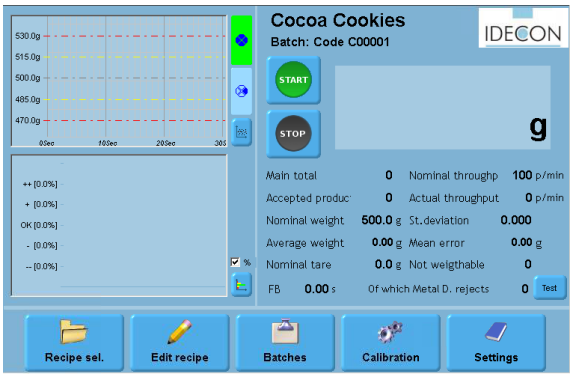
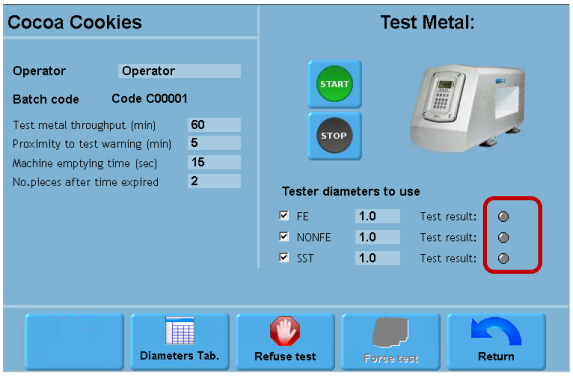
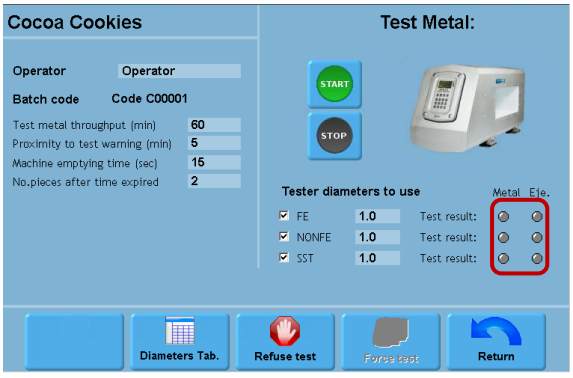
NOTES:

- There is a maintenance mechanism present in the system that deletes the oldest reports. If more than 2000 files are present in the production report folder and in that of the reports exported, the system will issue a warning. Whenever the number of files exceeds 2500 elements, the oldest will be deleted.

4.5.3. Metal detector test (enabled only with batch open)[4]

In presence of an active batch and a metal detector, it is possible to execute the operation “Metal test”. This operation permits to check the metal detector performances and to save the testing results in a specific report.

To enable or disable the “**Test metal**” option, the “**Metal Detector test** ” field must be set in “**Setup**”, “**General**”. The function could be always enabled, enabled by recipe or disabled (See 4.5.5.1).

Press “**Test**” to open the “**Metal test**” page.	
Test metal page <u>without</u> check ejection device.	
Test metal page <u>with</u> check ejection device. In presence of this option, there are three additional LEDs, which are able to indicate if the rejection of the product has been completed successfully.	

[4] *Only for models with integrated metal detector*

In the Test metal page it is possible to add and modify the following data:

- Operator: the name of the person who execute the test;
- Tester diameters to use: diameters of the head spheres to use. By default the values indicated in the recipe will be present (see par.4.5.1.8). **The operator is responsible for using the diameters of the tester declared for the tests**;
- Test Metal throughput (min.): it is a value of time between each metal test. By setting a positive value, different from 0, the machine automatically will require to the operator the execution of the metal testing. Then it will stop if the option "**Last metal detector test validity is expired**" on the page "**Alarm setup**" will be activated (see par 4.5.5.4).

  Setting the value 0, the machine will not require the necessity of executing the test metal. The operator will take charge of the test metal execution pressing "**Force test**";
- Proximity to test warning (min.): time of advance in mins. which the machine warns the operator that the validity of the Metal test is expiring;
- Machine emptying time: delay value of machine stop after the Metal test validity has expired and the "**N° pieces after time expired**" has reached the set limit (it is necessary for emptying the checkweigher in case the stop-machine is active due to "**Last metal detector test validity is expired**" on the page "**Alarms Setup**", see par. 4.5.5.4). If "**deactivate relay due to expired validity of last metal test**" is also configured at the time that the "**n°. pieces after time expired**" has reached the limit set, the machine ready relay deactivates to inform the upstream machine not to send more products;
- No. Pieces after time expired: no. of pieces that the checkweigher lets pass through after the expiration of Metal test or after pressing "**Force test**" by the operator. It is useful in case of start production when Metal test has expired and the operator has to pick up some pieces from the line to execute the test;
- Diameters Tester to be used: you can choose if execute the test for the FE, NONFE, SS by enabling the relative flag.

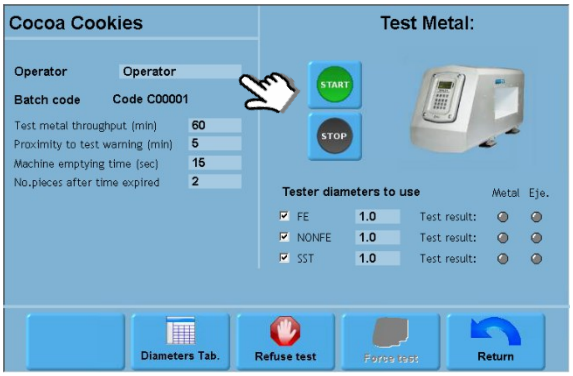
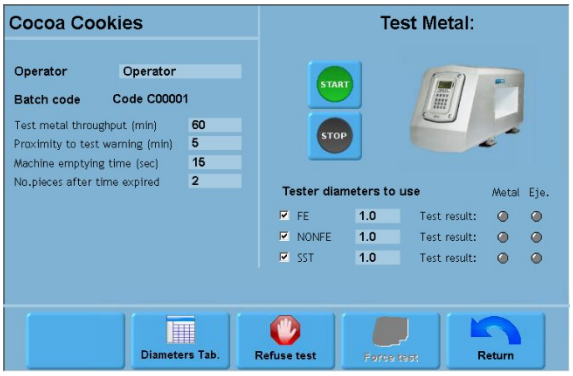
The following buttons are present:

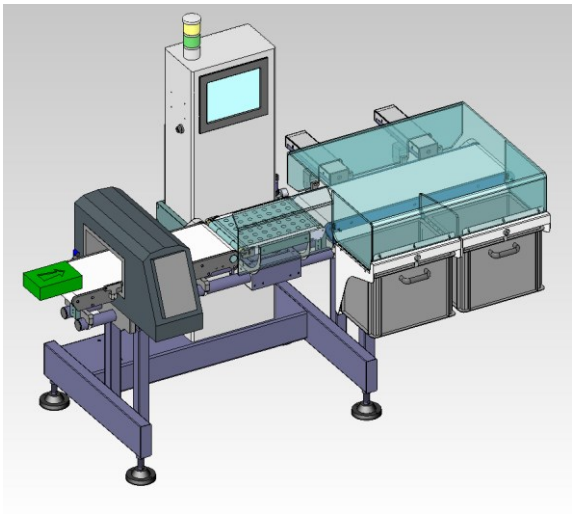
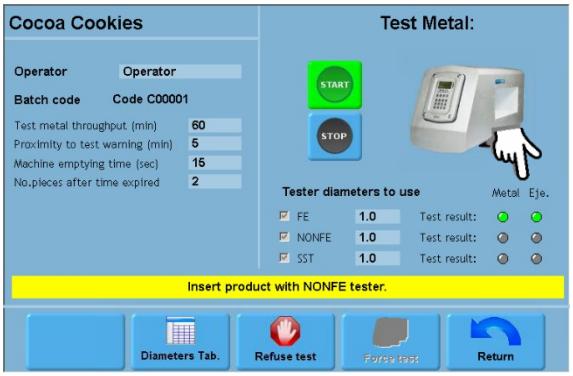
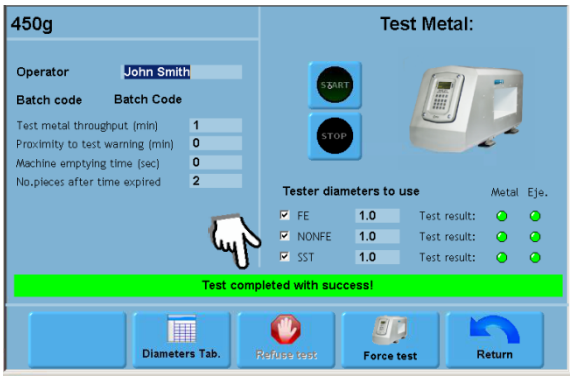
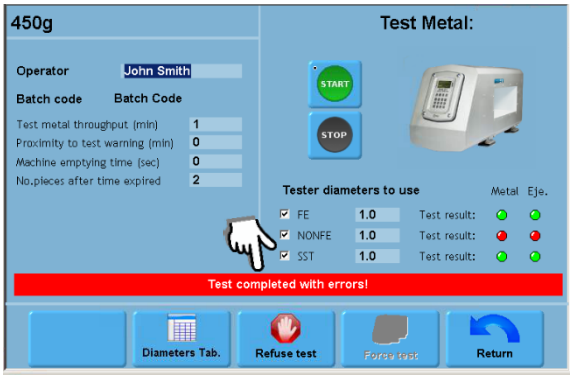
- Diameters table: accesses a table in which the relative serial number can be entered for each tester sphere diameter and material, which will be subsequently indicated on the Metal Test operation report;
- Refuse test[5]: it allows the Metal Test to be cancelled. It will be saved on the report and the expired validity request will be cancelled;
- Force test: it allows a Metal Test to be performed even if the time of validity is not expired, if the operator sets the value "0" for the "**Metal Test frequency**" and if Metal Test is to be performed again.

[5] *Every time a metal test ends with positive outcome or is refused (both with automatic or manual frequency with "force test" key), all counters and timers resume from initial value.*

4.5.3.1. Example of metal-detector test

If the text “**proximity warning**” value has been set, the alarm will be displayed before the end of validity and of the eventual shutdown of the machine.	
In case the value “**No. pieces after time expired**” is different from 0, the machine highlights how many pieces will have to pass before the eventual stop of the machine.	
If the machine is working, press “**Stop**” (in case the stop machine has not been set for expired Metal test validity, see par.4.5.5.4).	

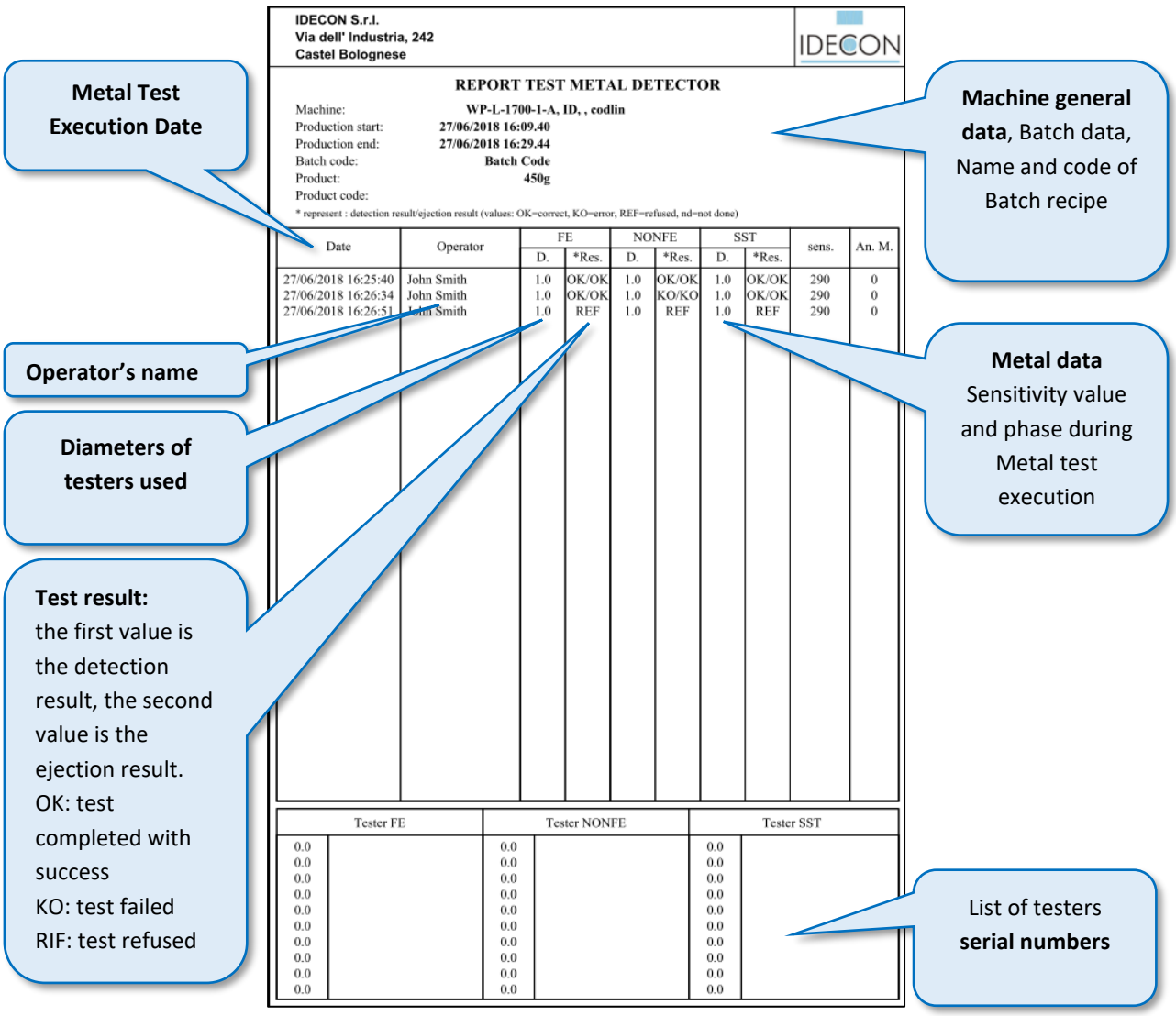
If you want to start the Metal test, press “**Test**”.	
Metal test page opens: The operator field must be filled in with the name of the operator who is starting test.	
Press “**Start**” to start the test.	
Wait for the machine auto-regulation and then start passing the samples.	

Now, pass the sample-product where inside there is a FE tester sphere (ferrous) with characteristics shown on the Metal Detect. test page. The product with the tester inside must be collocated at the machine entry and let it pass long the machine until an eventual ejection. **Warning**: don't let the product pass under the metal detector only.	
In case of detection of contaminant and correct ejection, the indicator next to the FE (Ferrous) field becomes green. Now, pass the sample-product where there is a NON FE (Non Ferrous) tester sphere with characteristics shown on the Metal Detect. test page. Now, pass the sample-product where there is a SST tester sphere (Stainless steel) with characteristics shown on the Metal Detect. test page. (Following the instruction shown step-by-step over a yellow background under the table "**Tester diameters to use**")	
If metal detector found all the testers and all the products have been correctly rejected, all the indicators will be green and the message "**Test completed with success!**" will be displayed. Press "**Return**" to return back to the main page.	
In case Metal detector didn't detect all the testers, one or more indicators will be red and the message "**Test completed with errors!**" will be displayed. At this point, the "**Force Test**" test can be repeated. Press "**Return**" to return back to the main page.	

NOTES:

- If several metal tests are completed with errors, it is advised to check the infeed belt and the space between the belt and the plate is clean and to calibrate the metal detector (see par. 4.5.4.1) before repeating further Metal tests;
- If, after calibration it is not possible to successfully complete a Metal test, it will be possible to use a tester with a bigger diameter. This modification must be indicated in the "**Tester diameters to use**" field and arranged with the production line director where the machine is installed;
- The Metal test report will be created when the production batch is closed. To display or to export reports, follow the instructions about production reports (see par. 4.5.2.8);
- When the associated production batch is closed and this does not contain any products, the reference metal test will not be created.

4.5.3.2. *Example of Metal test report*



IDECON S.r.l.
Via dell' Industria, 242
Castel Bolognese

REPORT TEST METAL DETECTOR

Machine: WP-L-1700-1-A, ID, , codlin
Production start: 27/06/2018 16:09.40
Production end: 27/06/2018 16:29.44
Batch code: Batch Code
Product: 450g
Product code:

* represent : detection result/ejection result (values: OK=correct, KO=error, REF=refused, nd=not done)

Date	Operator	FE		NONFE		SST		sens.	An. M.
		D.	*Res.	D.	*Res.	D.	*Res.		
27/06/2018 16:25:40	John Smith	1.0	OK/OK	1.0	OK/OK	1.0	OK/OK	290	0
27/06/2018 16:26:34	John Smith	1.0	OK/OK	1.0	KO/KO	1.0	OK/OK	290	0
27/06/2018 16:26:51	John Smith	1.0	REF	1.0	REF	1.0	REF	290	0

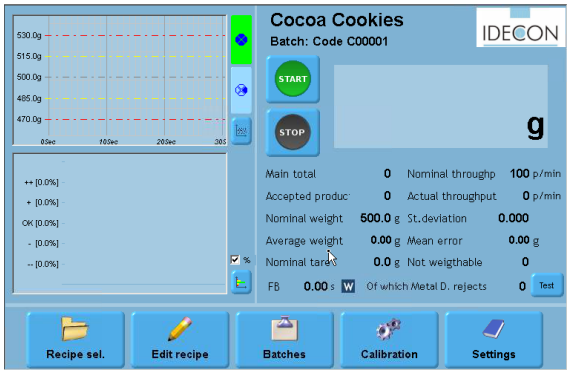
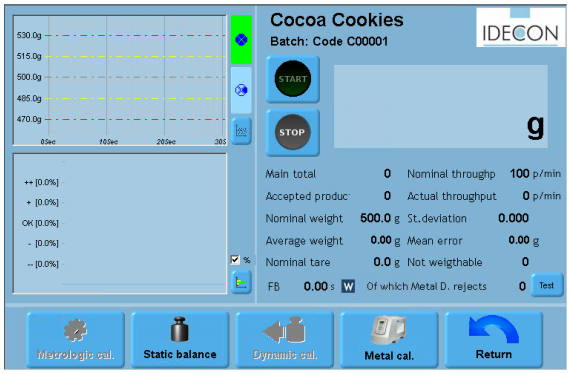
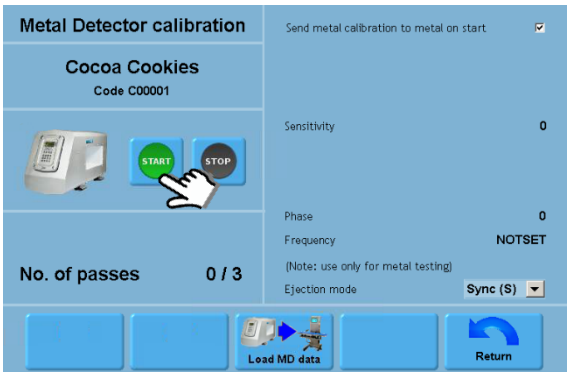
Tester FE		Tester NONFE		Tester SST	
0.0		0.0		0.0	
0.0		0.0		0.0	
0.0		0.0		0.0	
0.0		0.0		0.0	
0.0		0.0		0.0	
0.0		0.0		0.0	
0.0		0.0		0.0	
0.0		0.0		0.0	
0.0		0.0		0.0	
0.0		0.0		0.0	

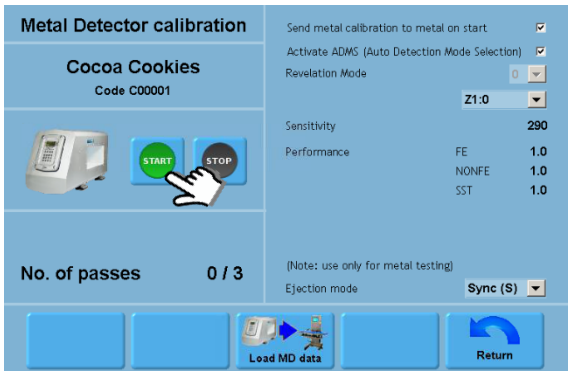
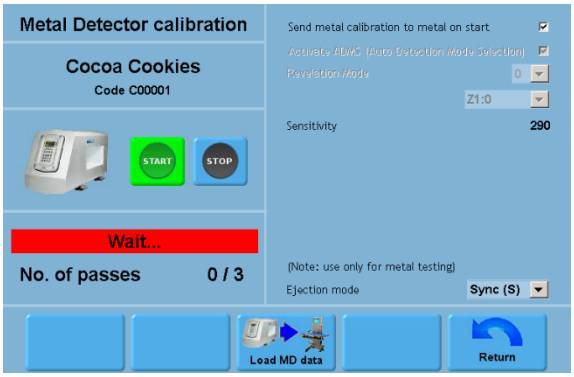
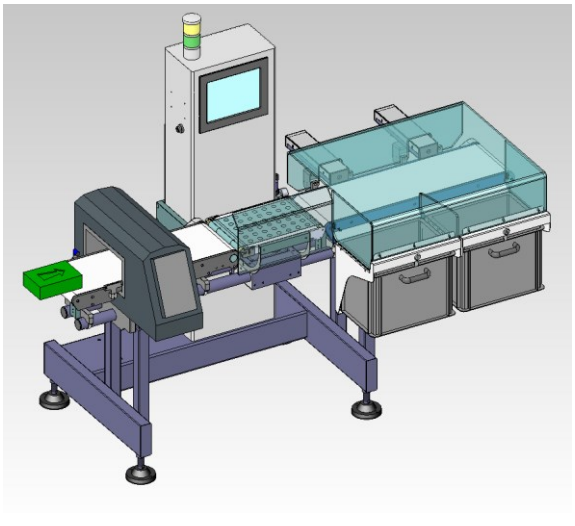
4.5.4. Calibration

4.5.4.1. Metal detector calibration (only for models with metal detector)

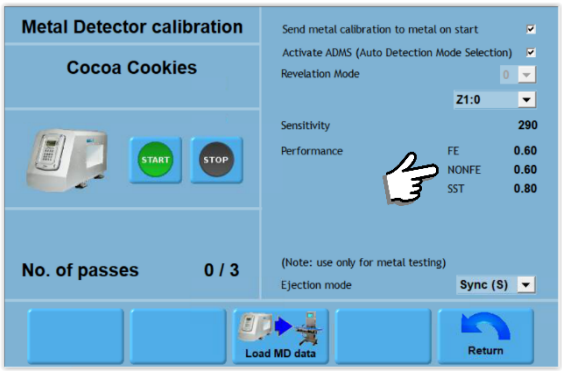
It is the procedure (available only on WPM series machines) to automatically acquire the optimal parameters of metal detector functioning. The parameters that will be acquired are: sensitivity, timing and frequency (the last one for multifrequency unit only). The optimal functioning parameters can change according to individual products.

The recipe for which the calibration data is to be obtained must be rendered active.

Press “**Calibration**”.	
Press “**Metal Cal**”.	
The operator interface varies based on the metal detector model, for all models press "**Start**".	For THS_21E and THS_21E_3F 

	For THS_MS21 and THS_21 
Wait for metal detector auto-regulation.	
Pass the reference sample for the number of times specified.	
	

At the end of the passes, new parameters will be displayed. They will be automatically saved in the current recipe.
Press “**Return**” more times, in order to return back to the main page. When you press “**Return**” the acquired data are automatically memorized in the current recipe.



The "**send metal calibration to start**" flag allows the calibration parameters memorized in the recipe to be sent to the metal detector head every time “**Start**” is pressed on the main page. If this flag is not selected, the calibration parameters present in the metal detector <u>will not be updated on starting a new recipe</u>. This means that the metal detector <u>may not correctly recognise the products</u> (both false positives and negatives). It is however useful to disable this option if the “**Autodetection**” option has been activated on the Metal Detector”.

In the case of the THS_MS21 and THS_21 metal detector models, the “**Performance**” field indicates the expected detection performance of the metal detector; these are purely indicative value.

Via the upload MD data button (figure 1), it is possible to upload the calibration data from the head of the Metal Detector. A pop-up informs that the data will be saved in the recipe and asks if you want to continue (figure 2). If the data is uploaded successfully, the button turns green (figure 3), while differently it turns red (figure 4).

Figure 1

Figure 2

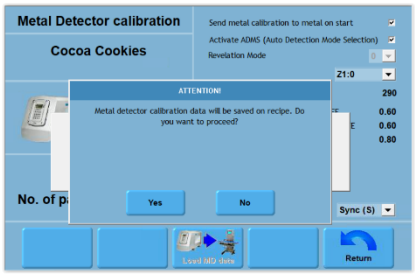


Figure 3

Figure 4

4.5.4.2. Dynamic calibration (L and T models)

This is the procedure for setting and automatically verifying the optimal weight acquisition parameters for the current recipe.

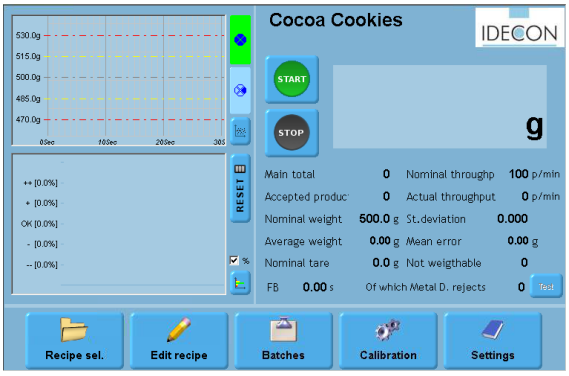
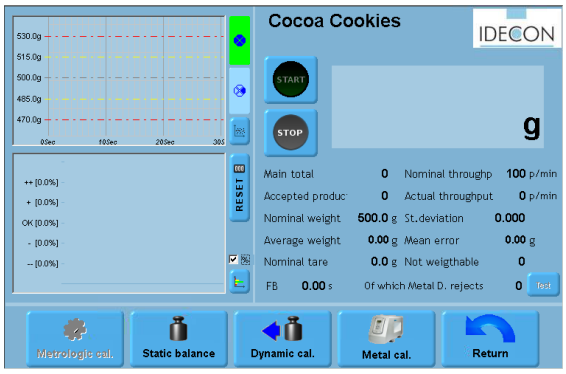
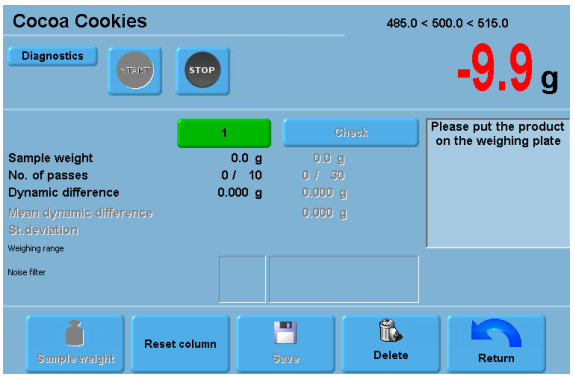
The recipe for which the calibration data is to be obtained must be rendered active.

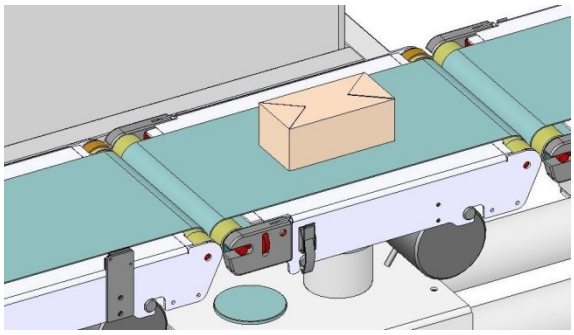
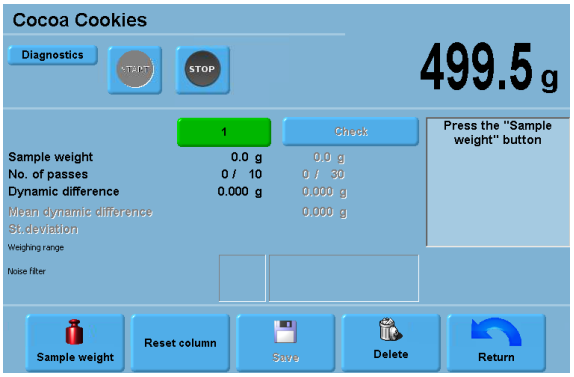
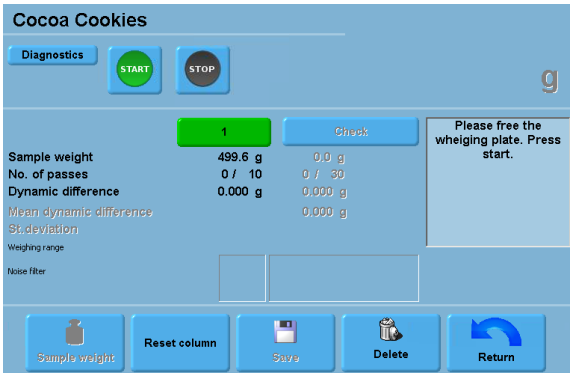
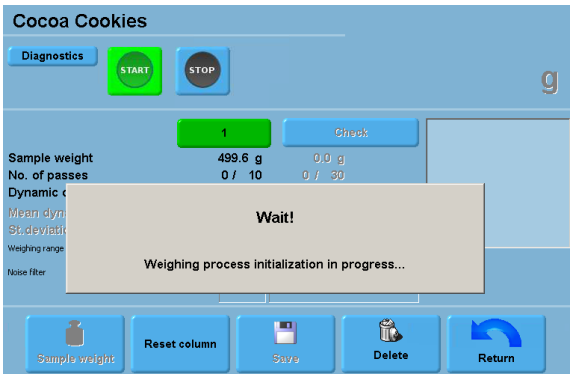
If the checkweigher is MID approved and the recipe to be activated needs to be calibrated, you can access the "**Dynamic Calibration**" screen from the "**Recipe selection**" screen.

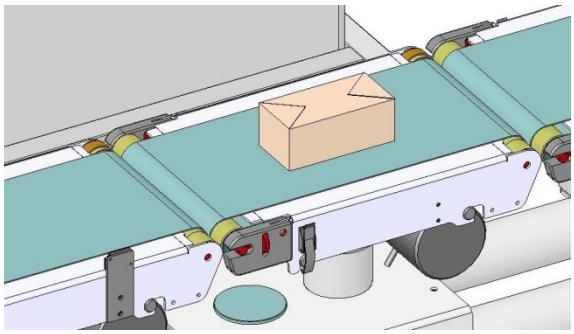
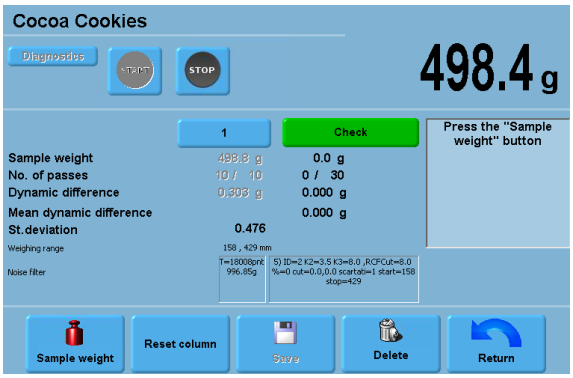
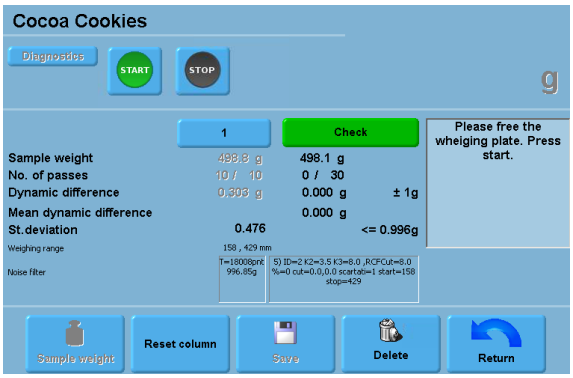
The dynamic calibration of a recipe using a nominal weight of 500g is considered during the procedure. More generally, while the number of passages in steps 1, 2 and 3 is fixed, the number of passages in the verification step depends on the nominal weight entered in the recipe. This value can be determined using the number of passages required to create a test report (see 4.5.4.5 for the summary table), according to the following equation:

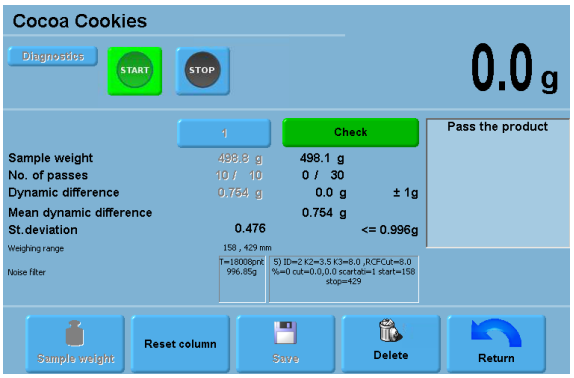
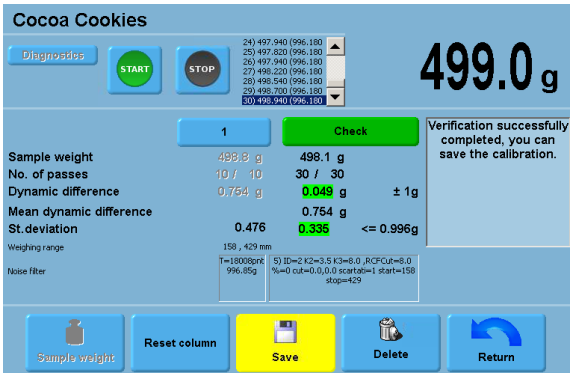
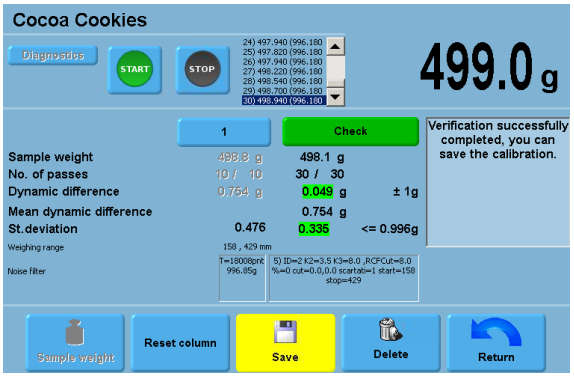
$$\text{Number of passages in Check phase} = \frac{\text{Number of passes while creating test report}}{2}$$

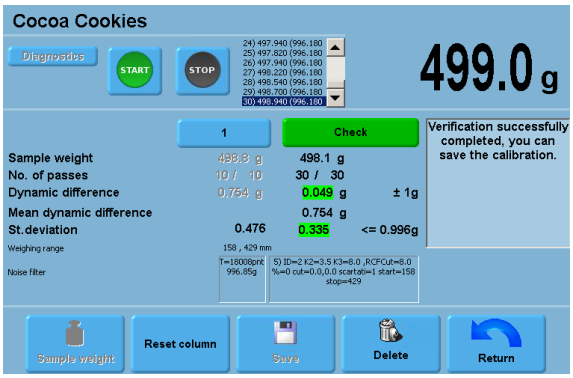
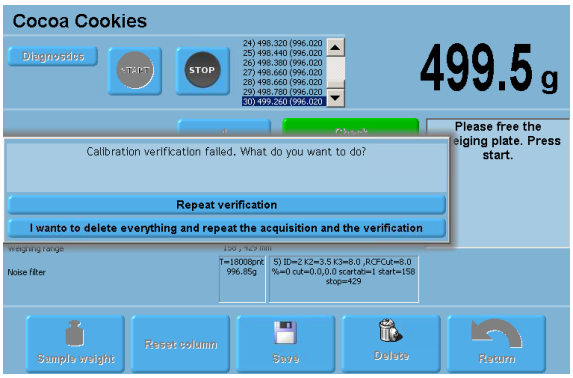
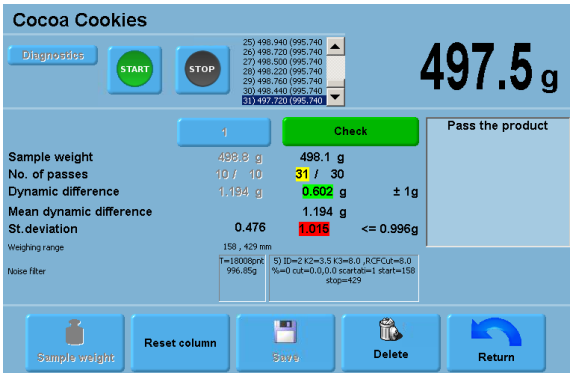
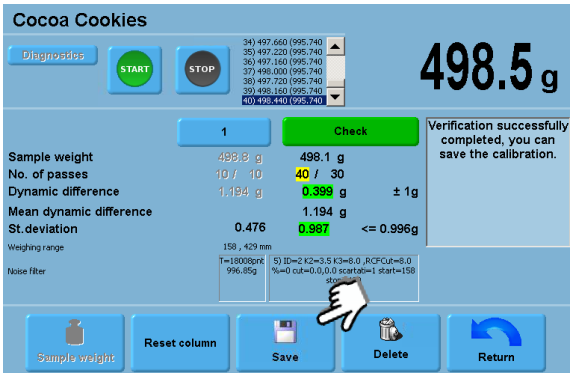
4.5.4.2.1. MID approved checkweigher

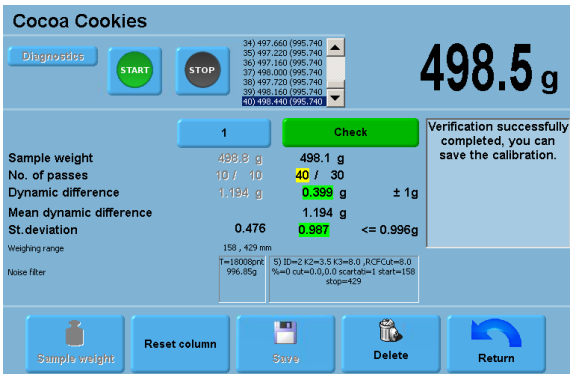
Empty any products present from the machine and press "**Calibration**". **Note:** An open batch related to the recipe that must be calibrated, makes the procedure unfeasible. Close the batch before proceeding.	
Press "**Dynamic calibration**".	
Empty the weighing plate and press the "**Reset column**" button, and check that the number highlighted in red corresponds to the tare value.	

Put the product on the weighing plate.	
If the product's weight is in-line with the edited weight in the recipe, the “**Sample weight**” button will appear on the lower left. Press “**Sample weight**”. This will cause the object's actual weight to be detected.	
After having removed product from the weighing plate, press the green “**START**” button. The conveyor belts will start running.	
Wait for the checkweigher to perform the dynamic reset. 	

Pass product through for the foreseen number of times (10 passes). When the passages are over, the belts stop, the system evaluate the optimized settings for the recipe that must be checked later. The check field will activate automatically. Keep free the weighting plate and press “**Reset column**” button.	
Place one of the products on the weighing plate.	
Press “**Sample weight**”.	
After having removed the product from the weighing plate, press the “**START**” button.	

Wait for the dynamic reset procedure to be completed.	
Pass product through for the foreseen number of times.	
After having completed the 30 passes, if the dynamic difference and standard deviation values fall within the ranges accepted by the OIML-R51-1-2006 standard, the box represented in the figure appears.	
The relative fields will be highlighted in green, and the recipe will be calibrated. Press “**Save**”.	

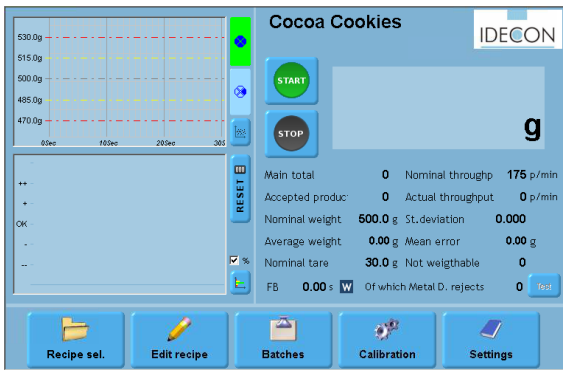
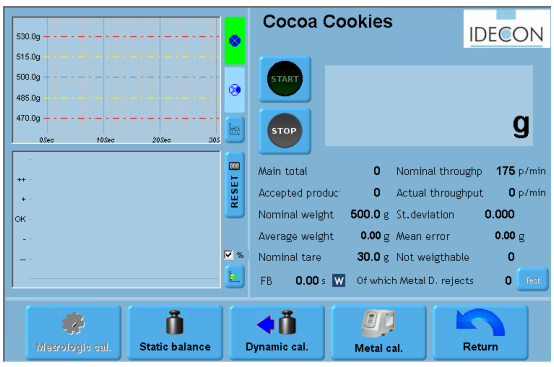
Press "**Return**" repeatedly to return to the main page.	
If the dynamic difference and standard deviation values do not fall within the ranges accepted by the OIML-R51-1-2006 standard, after having completed the 30 passes, the relative fields will be highlighted in red, and the recipe will be marked as un-calibrated and not ready for use. In that case a menu is shown on the screen. It is possible to repeat the verification or the whole procedure.	
If at the end of the 30 passages the mean dynamic difference and standard deviation values <u>are close to</u> the ones defined by OIML-R51-1-2006 regulations, the field of the number of passages becomes yellow and the procedure can continue.	
As soon as the parameters back to the limits provided by the regulations, the verification succeed and the checkweigher stops. Press "**Save**".	

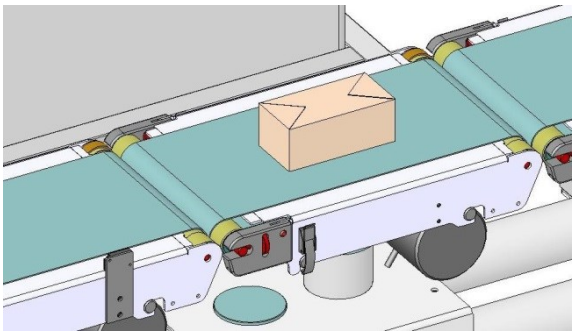
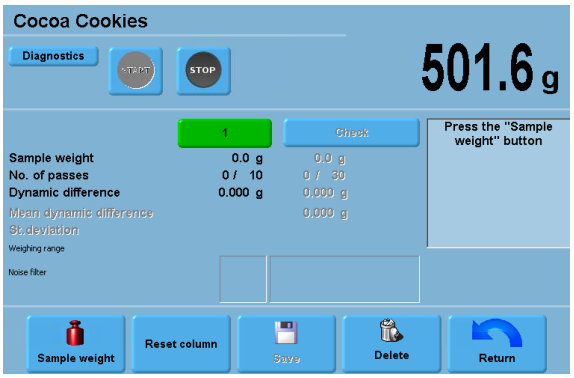
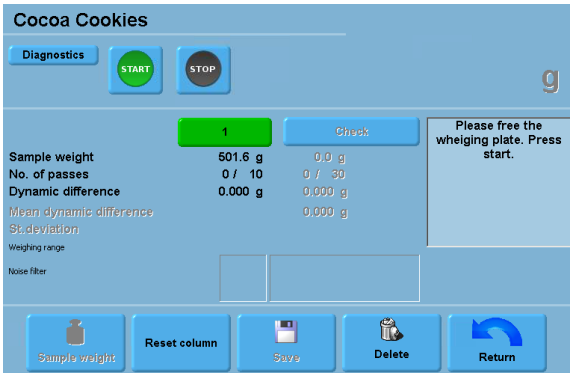
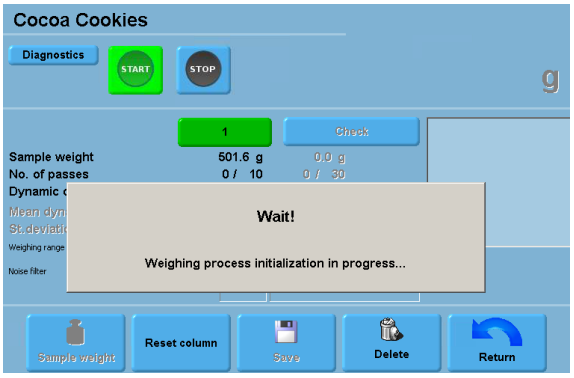
Press "**Return**" repeatedly to return back to the main page.	

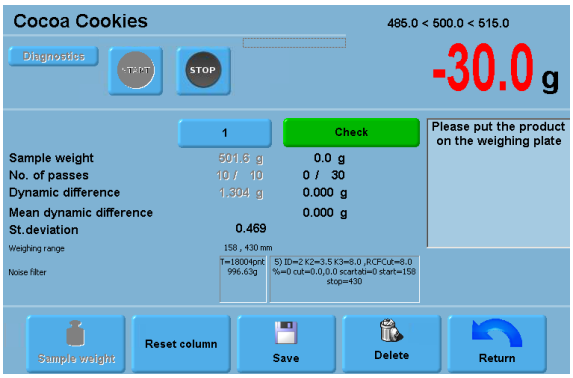
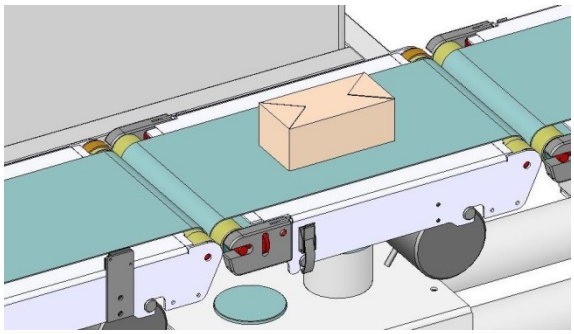
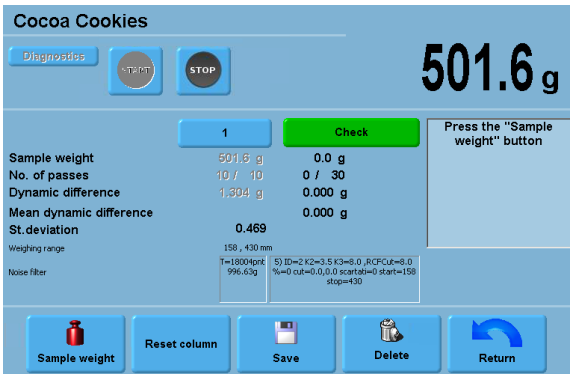
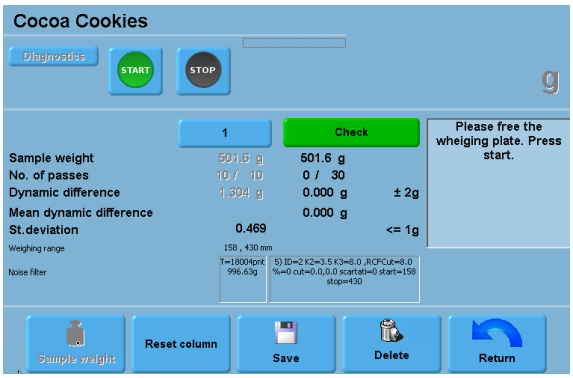
4.5.4.2.2. Non-MID approved checkweigher

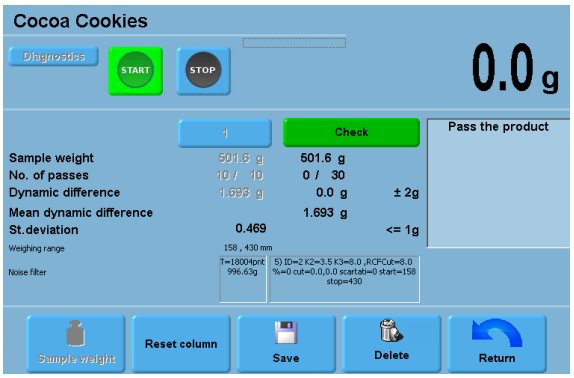
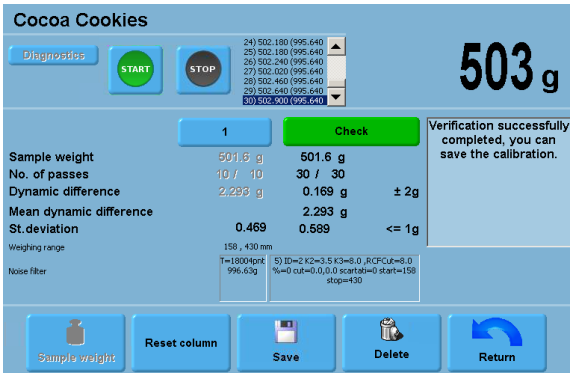
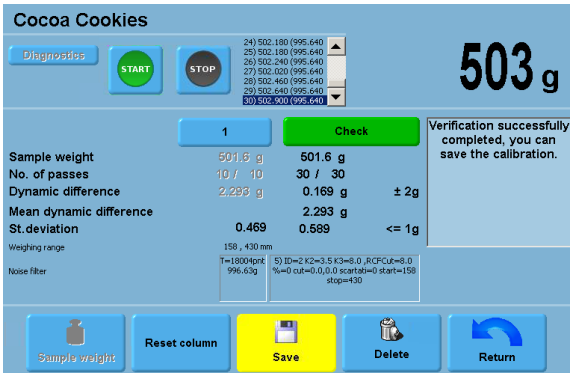
The dynamic calibration of a recipe using a nominal weight of 500g is considered during the procedure. More generally, while the number of passages in step 1 is fixed, the number of passages in the verification step depends on the nominal weight entered in the recipe. This value can be determined using the number of passages required to create a test report (see 4.5.4.5 for the summary table), according to the following equation:

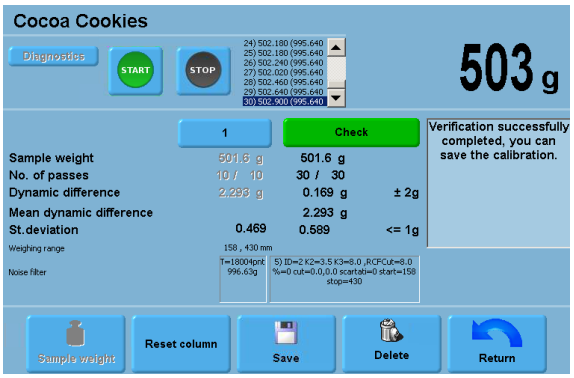
$$\text{Number of passages in Check phase} = \frac{\text{Number of passes while creating test report}}{2}$$

Empty any products present from the machine and press "**Calibration**".	
Press "**Dynamic calibration**".	
Empty the weighing plate and press the "**Reset**" button.	

Put the product on the weighing plate.	
If the product's weight is in-line with the edited weight in the recipe, the “**Sample weight**” button will be unlocked on the lower left. Press “**Sample weight**”. This will cause the object's actual weight to be detected.	
After having removed product from the weighing plate, press the green “**START**” button. The conveyor belts will start running.	
Wait for the checkweigher to perform the dynamic reset. 	

Pass product through for the foreseen number of times (10 passes). Once the passes have been completed, the rollers will stop, the parameters for product will be filled in and: 1. It will be possible to save (press "**Save**"); 2. It will be possible to perform the verification (press "**Reset**").	
If proceeding with the verification, position the product on the weighing plate.	
Press "**Sample weight**".	
After having removed the product from the weighing plate, press the "**START**" button.	

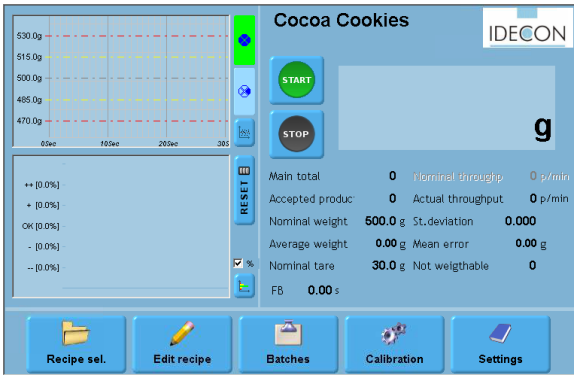
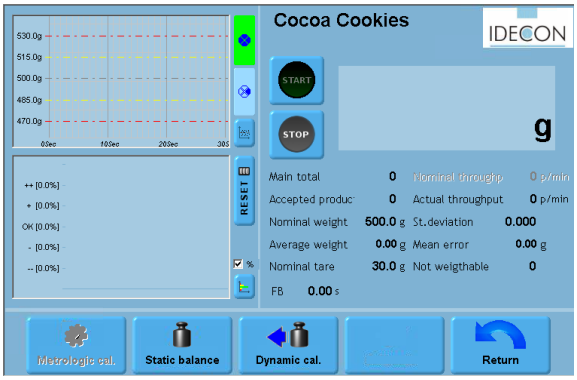
Wait for the dynamic reset procedure to be completed.	
Pass product through for the foreseen number of times.	
After 30 passages, the box represented in the figure appears. Press "**Ok**".	
Press “**Save**”.	

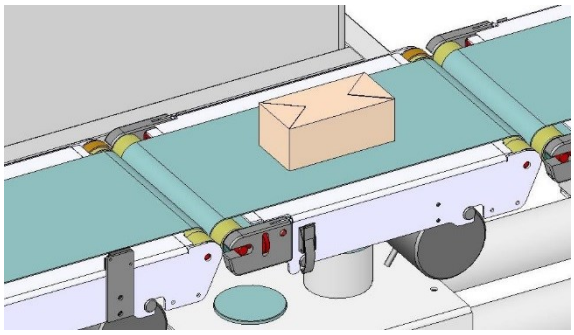
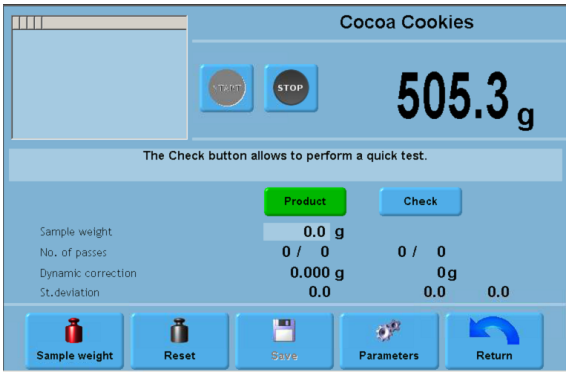
Press "**Return**" repeatedly to return to the main page.	

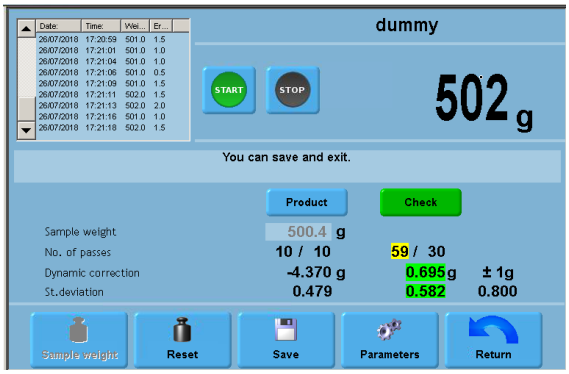
4.5.4.3. *Dynamic calibration (U,D and S) models*

The dynamic calibration of a recipe using a nominal weight of 500g is considered during the procedure. More generally, while the number of passages in steps 1 is fixed, the number of passages in the verification step depends on the nominal weight entered in the recipe. This value can be determined using the number of passages required to create a test report (see 4.5.4.5 for the summary table), according to the following equation:

$$\text{Number of passages in Check phase} = \frac{\text{Number of passes while creating test report}}{2}$$

Empty any products present from the machine and press "**Calibration**."	
Press "**Dynamic cal.**".	
Empty the weighing plate and press the "**Reset**" button.	

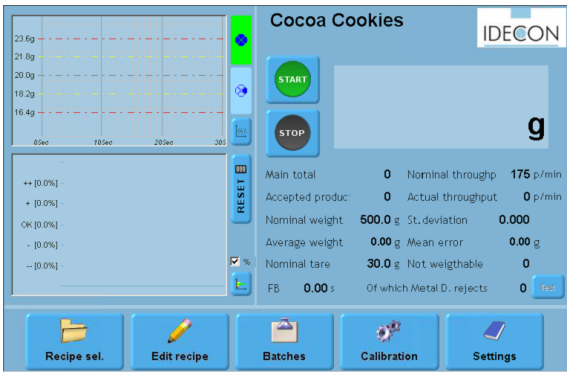
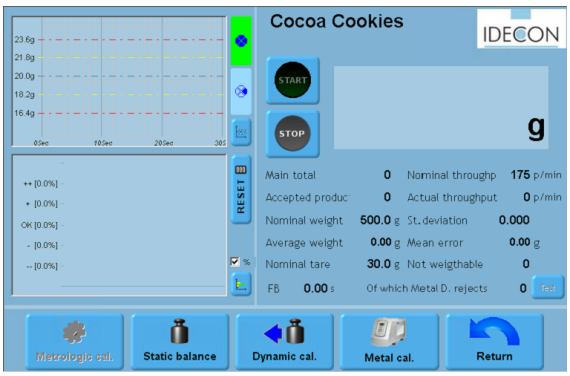
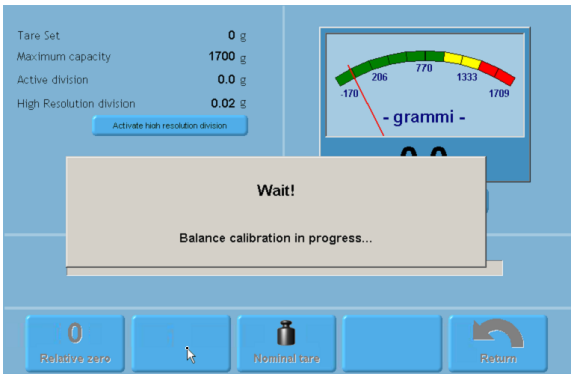
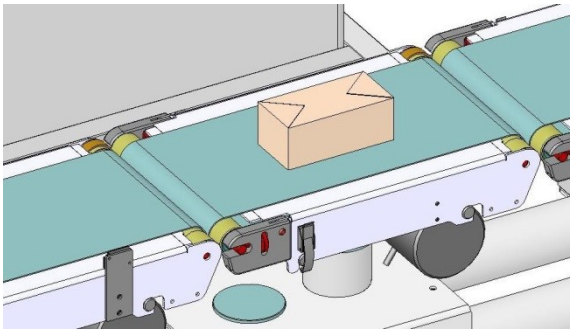
Put the product on the weighing plate.	
If the product's weight is in-line with the edited weight in the recipe, the “**Sample weight**” button will appear on the lower left. Press “**Sample weight**”. This will cause the object's actual weight to be detected.	
After having removed product from the weighing plate, press the green “**START**” button. The conveyor belts will start running.	
Pass product through for the foreseen number of times (10 passes). Once the passes have been completed, the rollers will stop, the parameters for product will be filled in and: 1. It will be possible to save (press "**Save**") (if the weigher is not certified); 2. It will be possible to perform the verification (press "**Reset**").	

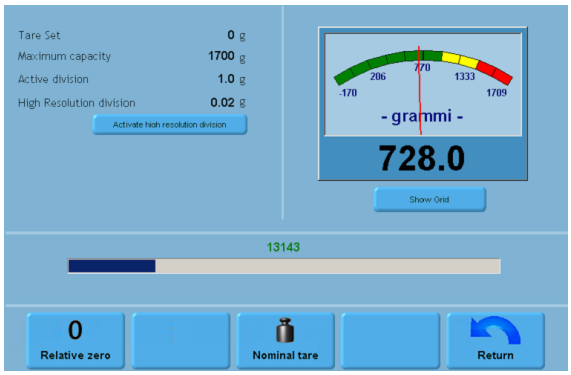
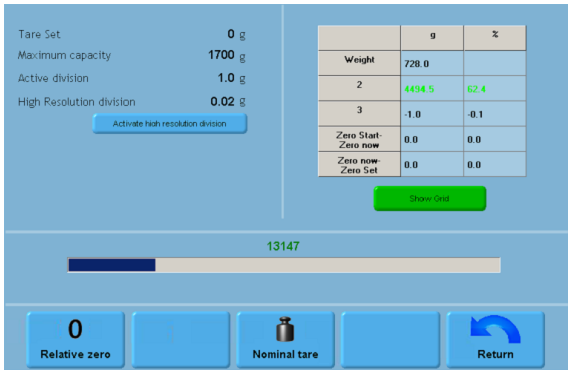
After having removed the product from the weighing plate, press the “**START**” button.	
Pass product through for the foreseen number of times. If the system detects an offset of one of the values with respect to normal, the value will be highlighted in red. Alternatively, the control fields will be highlighted in green.	
Whenever the test does not lie within the tolerance, it is possible to try and continue the verification, up to a maximum of double the passes envisioned. In this case, the interface will display the number of passes in yellow and as soon as it returns within tolerance, the system will stop acquirement.	

Press “**Save**”.	
Press "**Return**" repeatedly to return back to the main page.	

4.5.4.4. Static balance

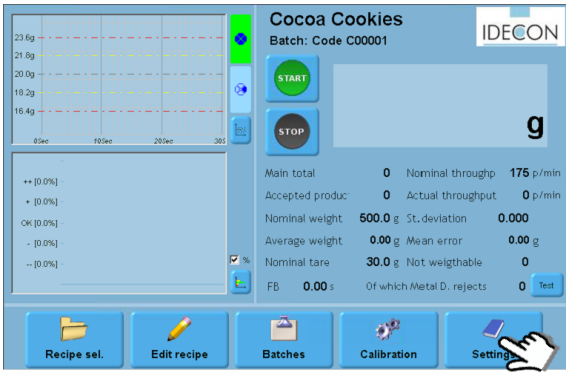
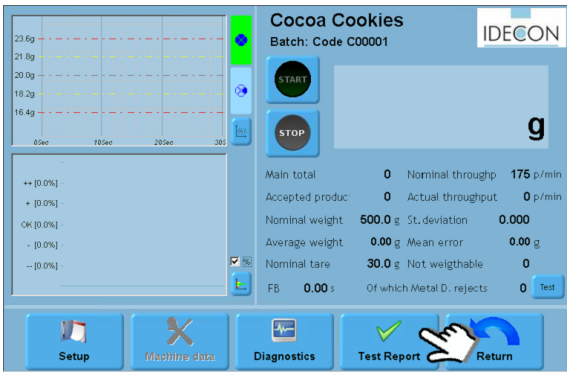
In this mode you can use the machine like a simple static balance:

Press “**Calibration**”.	
Press “**Static balance**”.	
Wait for reset. Don’t put products on the weighing plate during the “reset” phase otherwise it will acquire a wrong tare. When you press “**Static balance**” the weighing plate must be empty otherwise it will acquire a wrong zero. Pressing “**Relative zero**” a new value of zero tare will be acquired.	
Place the product to be weighed on the plate.	

The weight has been displayed.	
By pressing the “**Show Grid**” button, an alternative representation of the static scale can be displayed.	

4.5.4.5. Creation of a test report

As indicated in the WP model checkweigher MID 81-B certificate, to verify the conformity of the measuring instrument, a consecutive number of passes with the same weight must be performed (in agreement with point 6.1.2 of the OIML R51-1) and the average error and standard deviation must be determined (in agreement with the tables indicated in points 2.5.2.2 of OIML R51-1). To verify this requirement, a diagnostics procedure can be carried out, which will record the accuracy of the scales, reporting it in a text file. To produce this report, the USB pendrive must be introduced into the scales and the relative function launched:

Press "**Settings**".	
Press "**Test Report**".	

The system will inform the user of the start of the procedure, indicating the number of passes to perform. Successively, it is possible to press Start, and begin the procedure.

Pass the product to be weighed with the recipe selected the number of times required, always the same packet, making sure it is always introduced into the machine in the same way.

For reference, the number of passes is indicated in the regulation and depends on the nominal weight of the product:

Nominal Weight	Number of Passes
M ≤ 1kg	60
1kg ≤ M ≤ 10kg	30
10kg ≤ M ≤ 20kg	20
20kg ≤ M	10

Once the procedure has been completed, a txt report will be produced indicating the results of the processing. The format of the file will be:

TestID <machine serial number> < date and time of the test>.txt

Machine identification data

Company identification data

Recipe identification data

Passes carried out with error with respect to the reference weight

Reference values calculated according to OIML-R51 for Initial and Inservice

Statistics obtained

Date: 10-04-2019, 08:08
Model: WPM-L-1700-1-A
Serial No.: ID 01360

Idecon s.r.l.
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48014 CastelBolognese RA
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TEST REPORT

This test implies the usage of a reference weight equal to the nominal defined. This weight would be passed several times on the weighing system at the nominal speed. The system would calculate the standard deviation and the mean error of the acquired weighing automatically. This values can be compared to their maximum acceptable values, in case of Initial verification and In-Service Inspection.

Reference Weight: 553.8g
Actual scale(d): 0.1g
Verific. scale(e): 1g

Number of passages: 60
Rate of Op.: 130cpm (63.9 m/min)
Length: 150mm

Test n°	Value (Resol. e)	Error (Resol. d)	Test n°	Value (Resol. e)	Error (Resol.
01	554	0.2	31	554	0
02	553	-0.5	32	554	0.0
03	554	-0.2	33	554	0.2
04	555	0.7	34	555	1.2
05	553	-0.7	35	554	0.6
06	554	0.0	36	554	0.1
07	554	0.3	37	555	1.1
08	554	-0.2	38	555	0.7
09	554	0.3	39	554	0.6
10	554	0.5	40	555	1.0
11	554	0.1	41	555	1.4
12	554	0.3	42	554	0.1
13	554	0.3	43	555	1.3
14	555	0.9	44	554	0.5
15	554	0.4	45	555	0.7
16	554	-0.2	46	554	-0.2
17	554	-0.1	47	554	0.6
18	554	0.4	48	555	0.9
19	554	0.4	49	554	0.0
20	554	0.3	50	554	0.6
21	554	0.0	51	555	0.7
22	554	0.2	52	554	-0.1
23	554	0.5	53	555	0.9
24	554	0.1	54	555	1.0
25	554	0.2	55	554	0.5
26	554	0.6	56	554	0.0
27	554	0.0	57	554	0.1
28	554	0.3	58	554	0.3
29	554	0.0	59	555	1.1
30	555	1.0	60	554	0.3

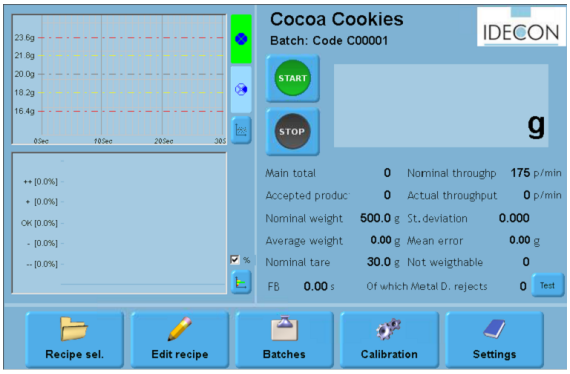
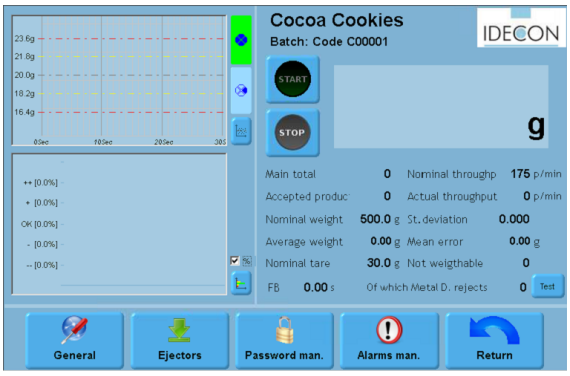
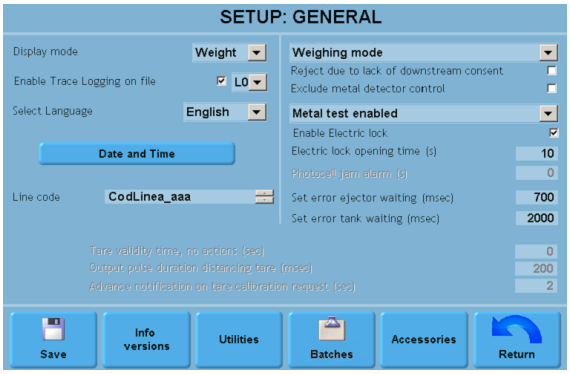
Mean Weight: 554.18g
STD Deviation: 0.443g
Mean Error: 0.38g

LIMITS:	INITIAL	INSERVICE
MPSD:	0.800	1.000
MPME:	± 1g	± 2g

Sign

4.5.5. Setting

4.5.5.1. General settings

Press “**Settings**”	
Press “**Setup**”.	
Press “**General**”.	
Set the desired preferences and press “**Save**”. Press “**Return**” more times to return to the main page. **NOTE: to activate language modification, it is necessary to reboot the machine.**	

In "**Setup: General**" page you can modify the following settings:

- Display mode: it allows to choose between weight and error; the latter is the difference between the actual weight of the object and the nominal weight indicated in the recipe (this type of selection only affects the graphics and not in the weighing box);
- Enable trace logging on file: it allows to track the scales, especially in the event of problems. Option necessary for the creation of a complete diagnostics report (See 4.5.5.1.3.). It is possible to select from three levels:
    - **L0**: default level and saves the main information;
    - **L1**: intermediate level, saves other information in addition to the main information. To be used only when necessary and under the supervision of an IDECON technician;
    - **L2**: extremely detailed level, keeps track of all that the scales can detect. To be used only when necessary and under the supervision of an IDECON technician.
- Select language: it allows to select the language. The machine must be re-started to make the modification effective;
- Line Code: it allows to set a line code customised by the customer. This code will be visible on all reports;
- Mode: it allows to select from three different modes:
    - **Weighing Mode**: if the machine has managed to carry out a correct tare at start-up, it will be able to weigh and all on-board machine checks will be operational;
    - **Transport only mode**: in this mode, the machine functions exactly as if it were a simple conveyor belt. The on-board machine checks (e.g. photocell jamming) operate, but the weighing, ejection and MD contaminated system is disabled. This mode is permanent until it is changed manually;
    - **Temporary transport only mode**: same operation as the "Transport only" mode but with the difference that when the scales are re-started they will request to go back to weighing mode.
- Reject due to lack of downstream consent: it allows, when this operating mode is active, the machine to reject all the products in transit if there is a lack of downstream consent;
- Exclude metal detector control: (available on machines with built-in metal detector only) it allows, when this operating mode is active, to disable the checks carried out by the metal detector head;
- Metal Detector test selection: (available on machines with built-in metal detector only) it allows, when the functionality is active, to choose from which page the test metal detector must be enabled. It could be disabled, enabled by recipe or always enabled. The function is available only if a batch has been opened;
- Enable electric lock: (available on machines with built-in metal detector only) if there is an electric lock in the rejects bin it allows to activate it and choose the opening time after having pressed the button "**Unlock electric lock**" in the Utility (See 4.3.1.4);
- Photocell jam alarm (s): if the jamming photocell is present at the end of the machine, it allows to configure a time (in seconds) after which the machine signals an alarm message (See 4.3.2.1). It is possible to configure a machine stop associated to such error (See 4.5.5.2.1);
- Set error ejector waiting (msec): if an ejection performed photocell is present, it allows to configure the maximum time that must pass between the activation of the ejector and passage of the product in front of the photocell. If this does not happen, the

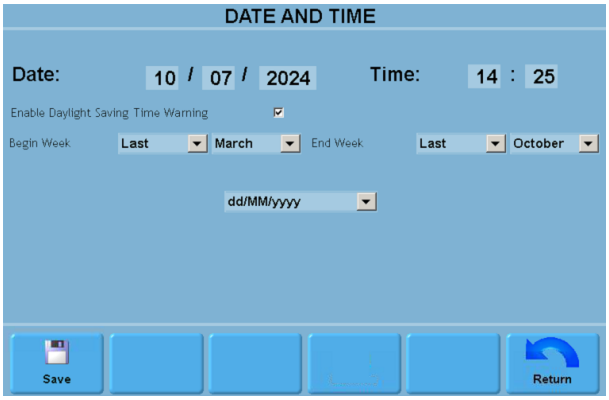
checkweigher raises an alarm (See 4.3.2.1) and it is possible to configure a machine stop associated to such error (See 4.5.5.2.1);

- Set error tank waiting (msec): if a full tank photocell is present, it allows to configure the maximum time in which the rejects tank can remain full. After the given time, the checkweigher raises an alarm (See 4.3.2.1) and it is possible to configure a machine stop associated to such error (See 4.5.5.2.1);
- Valid tare time, no action (sec): it allows to set the time that the scale waits before carrying out a tare. This parameter is activated only if the checkweigher is in STATIC mode;
- Output pulse duration distancing tare (msec): it allows to send a command to the upstream machine to temporarily stop the checkweigher feed and allow an auto-tare. Indeed, the checkweigher must execute an auto-tare periodically, otherwise it will stop;
- Advance notification on tare calibration request (sec): it allows to set the anticipation of the spacing output pulse's activation with respect to the time in which the checkweigher would normally stop due to an expired tare value.

Furthermore, from this menu it is possible to access other configurations such as:

- Date and Time (4.5.5.1.1);
- Information and Versions (4.5.5.1.2);
- Utilities (4.5.5.1.3);
- Batches (4.5.5.1.4);
- Accessories (4.5.5.1.5):
  - Communication (4.5.5.1.5.1):
    - Printers (4.5.5.1.5.1.1);
    - Remote Connection (4.5.5.1.5.1.4);
    - Weight transmission Setup (4.5.5.1.5.1.5);
  - Inputs/outputs (4.5.5.1.5.2):
    - Messages connected to Inputs (4.5.5.1.5.2.1);
    - Energy saving (4.5.5.1.5.2.2);
    - Timers (4.5.5.1.5.3).

4.5.5.1.1. Date and Time



In this page, it is possible to modify the date and time of the system, enable the daylight saving time warning and choose the date visualization format.

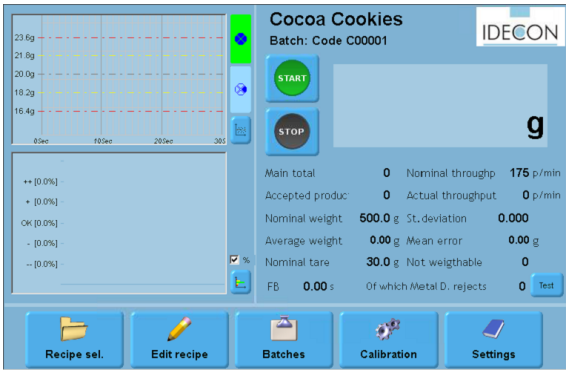
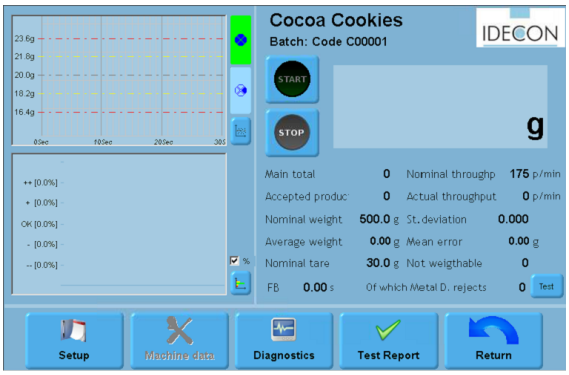
It is not allowed to insert date and time prior to the last weight placed in the active batch. In other cases, it is possible that the machine shows a warning, but it is possible to confirm and continue.

Enable daylight saving time warning: it allows to configure a warning that notifies the user when the change from the solar time and the summer time (or vice versa) must be done. The warning is active one week before the effective time change.

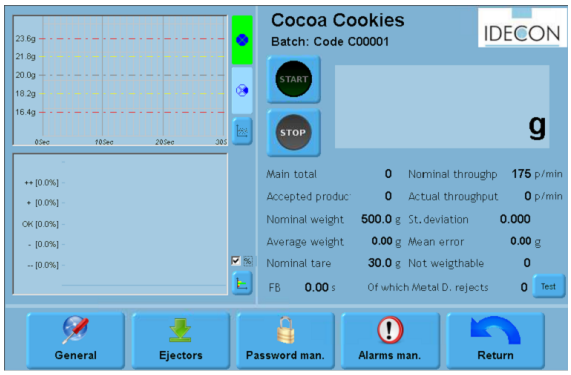
Data visualization format: it allows to choose the format to use to visualize date information on the production report. It could be:

- dd/mm/yyyy (day / month / year);
- yyyy/mm/dd (year / month / day).

4.5.5.1.2. Company data and software version settings

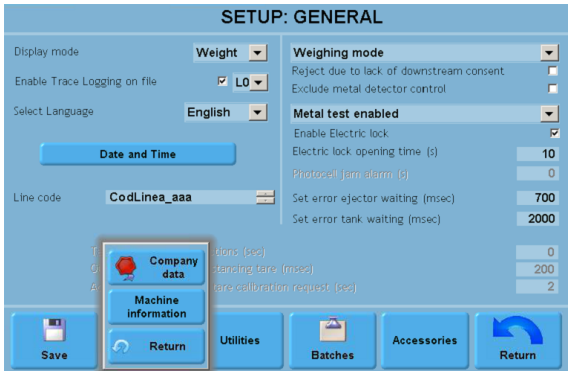
Press “**Settings**”.	
Press “**Setup**”.	

Press “**General**”.



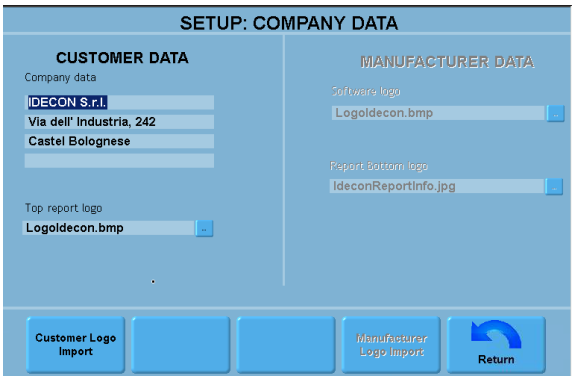
The "**Setup: General**" screen allows the user to change the company data that will be printed on the batch reports, and to verify the machine's software version.

Press the "**Information and versions**" button and the "**Company data**" button.



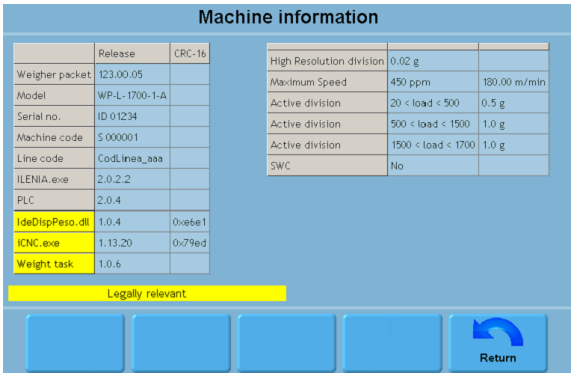
The client's information can also be modified.
It is possible to customize the Report's header logo using the “**Customer Logo Import**” button (size 195x90 pixels- BMP format).

Press the button “**Return**” repeatedly to return to the main screen.



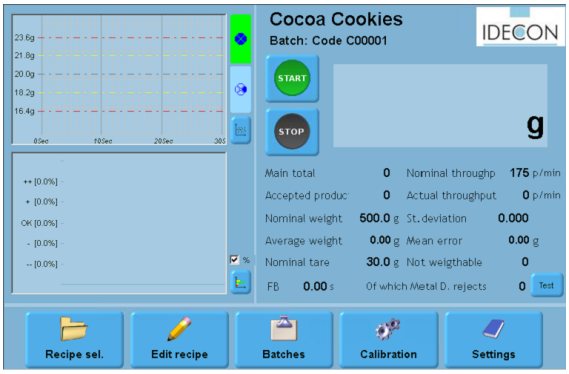
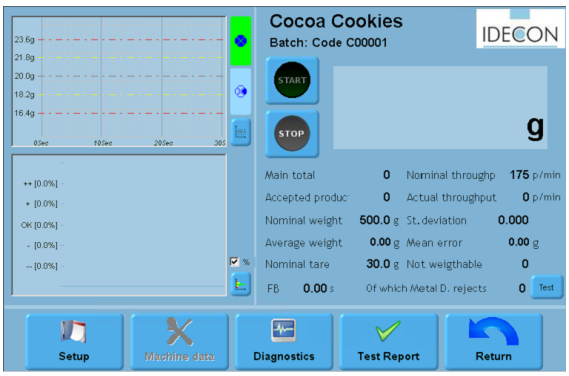
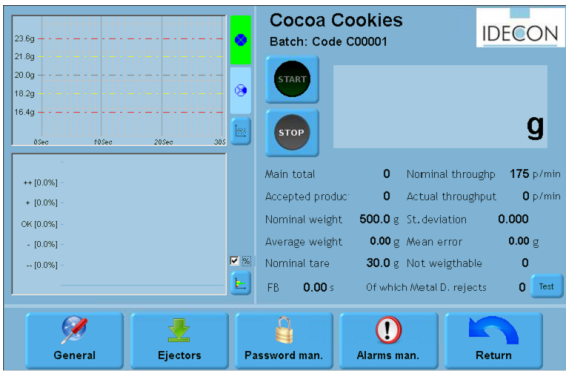
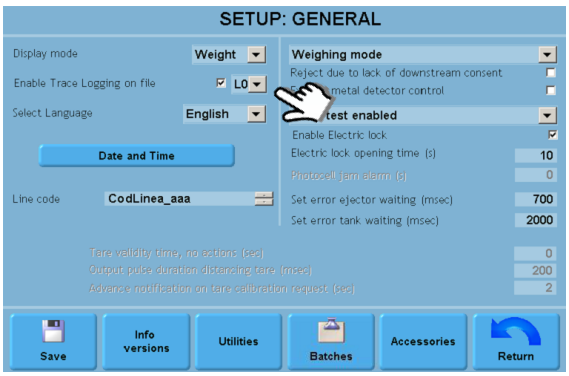
By pressing the "**Software version**" button, on the other hand, a screen will appear that allows the user to verify the versions of the various software components and the relative CRCs.

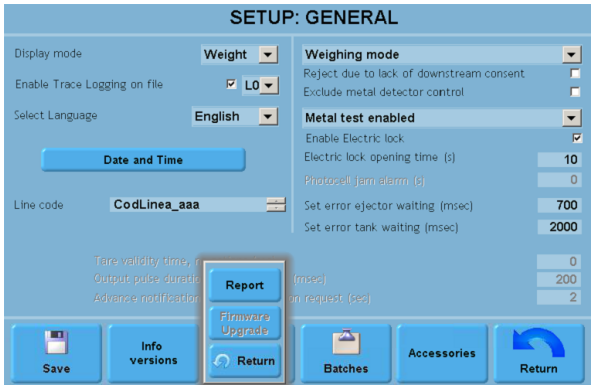
Press the “**Return**” button to close the window.

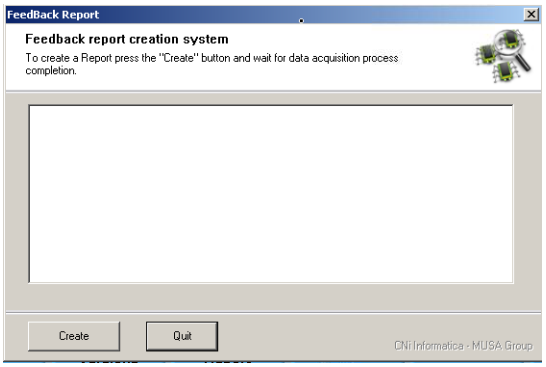
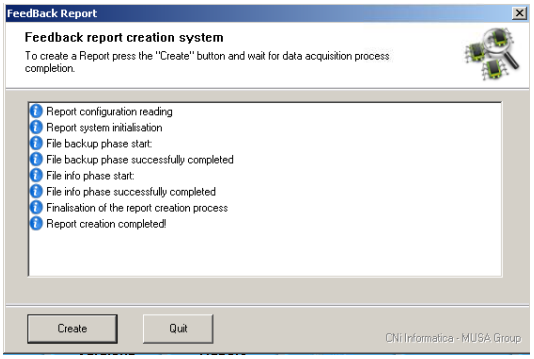


4.5.5.1.3. How create a diagnostic report

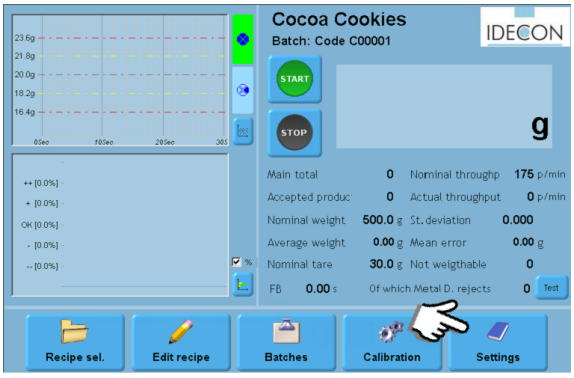
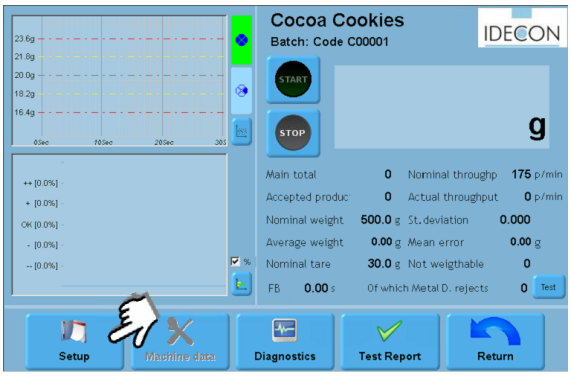
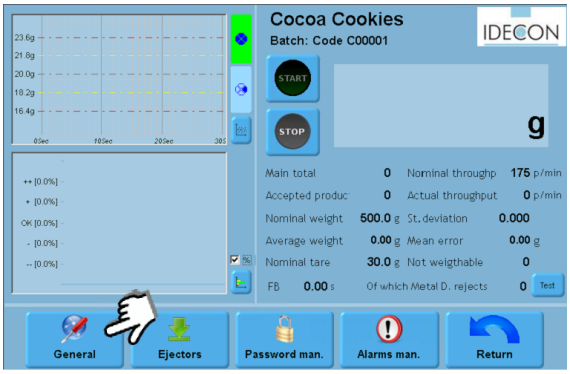
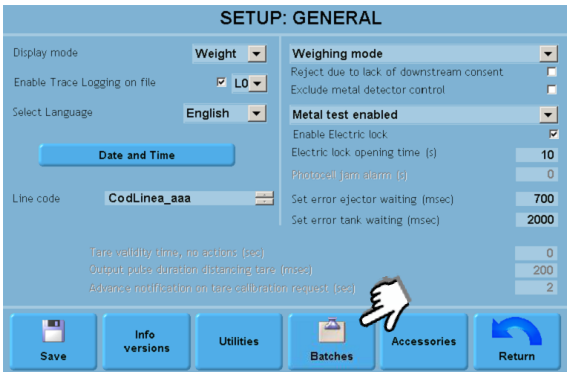
In this paragraph it will be explained how to create a diagnostic report which allows the constructor to check the correct checkweigher behaviour. The checkweigher allows to save a report with all the data relating to the last minutes of production over a USB pendrive. The report can be sent to the constructor for troubleshooting purposes.

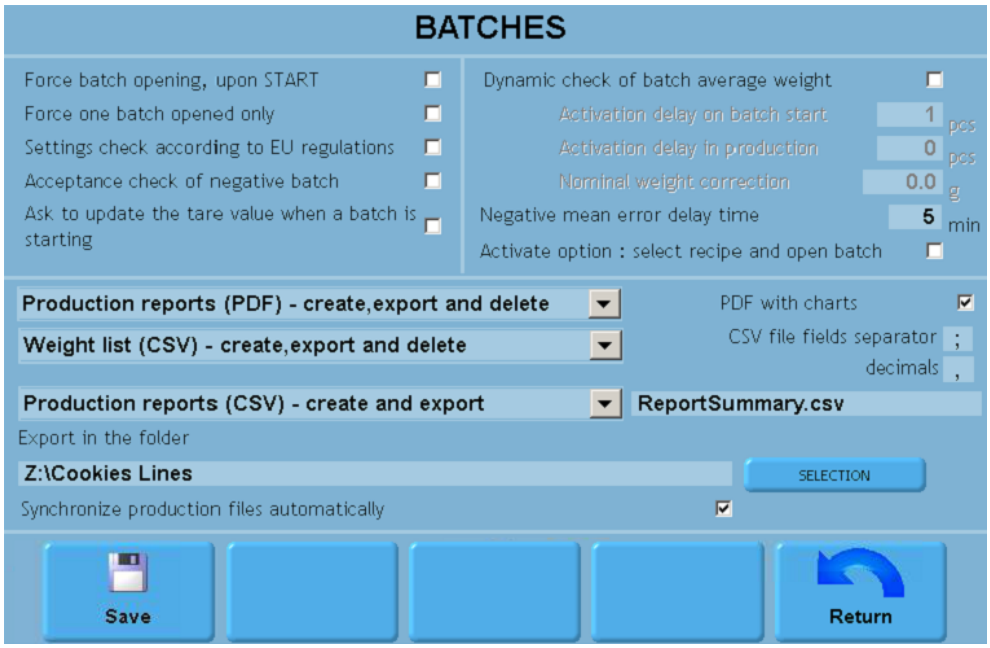
Press “**Settings**”.	
Press “**Setup**”.	
Press “**General**”.	
Enable Trace Logging on file: if active, it is possible to create a diagnostic file (See 4.5.5.1).	

Press the “**Utilities**” button and then the “**Report**” button.	
By pressing “**Dump CNC**”, a report with PLC events will be created.	
Press “**Create report**” for generating the diagnostic file of the machine.	
You can choose where save the report: • On a pendrive (if plugged in); • On the local disk.	

This new window will be displayed. Press “**Create**”.	
The report will be generated and saved on a USB pendrive. When the process is finished, press “**Quit**”.	
Now, press “**Remove drive**” before extracting the USB pendrive. The diagnostic file, generated and saved on the USB pendrive, is named “**Report.zip**”.	

4.5.5.1.4. Setup Batches

Press “**Settings**”.	
Press “**Setup**”.	
Press “**General**”.	
Press “**Batches**”.	



The settings that can be changed from the "**General Setup-Batches**" screen are the following:

- Force batch opening, upon start: when this function is active, the machine won't start if a batch has not been launched;
- Force one batch opened only: when this function is active, the machine does not allow the operator to open a batch if one is already open (regardless of the recipe selected);
- Settings check according to EU regulations: when this mode is enabled, the machine checks that the settings of the recipe limits and the ejectors are consistent with the 76/211/EEC standard (in particular, it specifies an ejector for the category for "-", "- -" and "NP" products);
- Acceptance check of negative batch: this mode is only affective on the **GLOBAL** batch and if production end has been set at **PIECES** or **MINUTES**. When this mode is activated, at the end of the batch, if the average weight of the batch is negative, the scales will ask whether to continue production until the average becomes positive, or conclude production. If production is terminated, the batch report will indicate "ATTENTION! AVERAGE BATCH WEIGHT LOWER THAN NOMINAL WEIGHT"; if you wish to continue, the type of production end will be modified to "**Manual**";
- Ask to update the tare value when a batch is starting: when this mode is enabled, a message asking the operator to update the tare of the current recipe has been displayed when the batch is opened;
- Dynamic check of batch average weight: when this mode is enabled, the machine checks that the average weight of the batch is equal to or greater than the nominal value set in the recipe. If it isn't, the machine will also discard any pieces that fall within the OK category, but weigh less than the nominal weight. If this option is activated, the following fields can be edited:
    - Activation delay on batch start: the number of pieces that will be overlooked at the start of the batch before the system begins discarding products;
    - Activation delay in production: the number of pieces that will be overlooked during production before the system begins discarding products;
    - Nominal weight correction: value for correcting the system's "target" value.
- Negative mean error delay time: if the mean error is negative for a time longer than the pre-set time, an alarm will appear. This alarm can be configured to stop the machine (See 4.5.5.4.1);

- Activate option: select recipe and open batch: if this option is active, when the recipe is selected, a batch will be created and at the recipe change and the open batch will be closed. The batch of the new selected recipe will be opened;
- Production report (PDF): on closure of a batch, a PDF document is always created with the most important production data relative to a given batch. It is possible to select 3 different operational modes:
  - Create: the machine creates a PDF file and saves it in the memory;
  - Create and export: when this mode is active, the machine will automatically export the batch reports to the address that can be filled-in in the "**Export into folder**" field. This function can be used when the machine is connected to the network;
  - Create. Export and delete: same behaviour as the previous option with the difference that the file is deleted from the checkweigher once it is exported into the network folder.
- Weight list (CSV): if desired, it is also possible to request the creation of the list of ALL weights (and other info, see 4.5.2.4) in CSV format. Within the list are not inserted products considered as “Not weighable”. Every list is associated to its own batch (differentiated by GLOBAL/DIVIDED). It is possible to select four different operational modes:
  - Disabled: no file is created containing the list of the weightings;
  - Create: the machine creates a CSV file and saves it in the memory;
  - Create and export: when this mode is active, the machine will automatically export the batch reports to the address that can be filled-in in the "**Export into folder**" field. This function can be used when the machine is connected to the network;
  - Create. Export and delete: same behaviour as the previous option with the difference that the file is deleted from the checkweigher once it is exported into the network folder.
- Production reports (CSV): if desired, it is also possible to request the creation of the list of all batches that have been created (with some statistical data associated, see 4.5.2.5) in CSV format. The customer can choose the name of the file and which field / decimal separators to use in the report to guarantee compatibility of the file with the various operational systems. It is possible to select four different operational modes:
  - Disabled: no production report is created in CSV format;
  - Create: the machine creates a CSV file (if the file is already created, it adds a new line) and saves it in the memory;
  - Create and export: when this mode is active, the machine will automatically create (or append a new row) and export the batch reports to the address that can be filled-in in the "**Export into folder**" field. This function can be used when the machine is connected to the network;
  - Create. Export and delete: same behaviour as the previous option with the difference that the file is deleted from the checkweigher once it is exported into the network folder;
- PDF with charts: it allows to enable the creation of two charts in the PDF production report. The first chart describes the distribution of the passed products with an open batch (Total pieces), while the second one describes the distribution that form the batch (Total pieces approved).

NOTES ON FUNCTIONALITY USAGE:

The usage of this functionality increases considerably the file dimension. This function should not be used, if the checkweigher is not configured to export automatically the reports or the latters are not regularly exported through USB.

- CSV file fields separator: it allows the separator character among the fields of the CSV file to be chosen;
- Decimal: it allows the character to use as decimal separator to be set;
- Export in the folder: it allows to select a folder into which export the production reports. If the destination folder is a network folder, a network unit must be mapped before using the desired path (See 4.8.3);
- Synchronize Production files automatically: if, for any reason, the checkweigher cannot export the various files into the network when the batch is closed, they are queued and a new attempt is made every time the checkweigher is switched on. If this option is disabled, exportation must be forced manually (See 4.5.2.9).

To avoid machine slowdowns, production report loss or any other system issues, it is strongly suggested to enable the automatic export of the production report on a network folder. Here below the suggested configuration:

- Production report (PDF): Create. Export and delete;
- Weight list (CSV): Create. Export and delete;
- Production reports (CSV): Create and export;
- Export in the folder: Path of the desired remote folder into which export the reports;
- Synchronize Production files automatically: Active.

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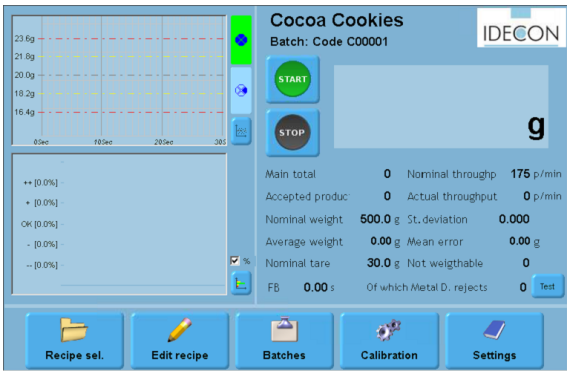
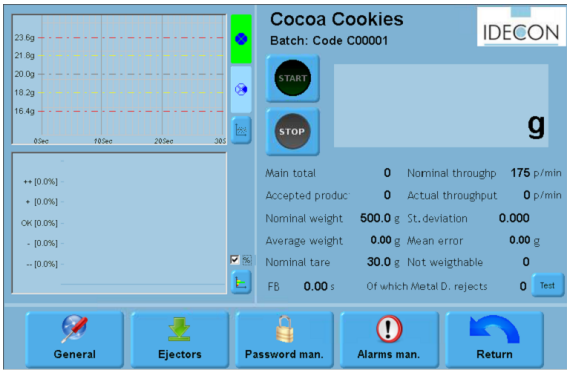
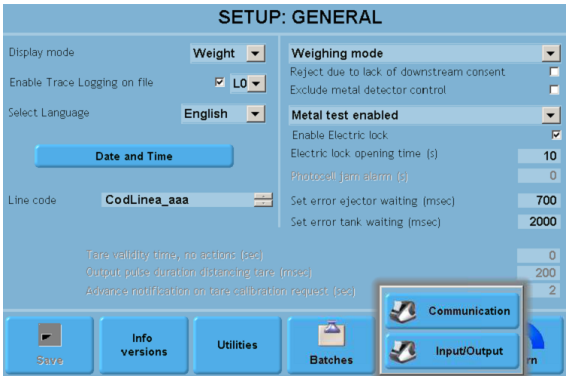
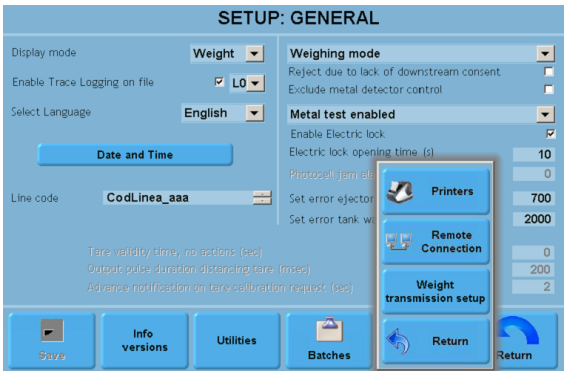
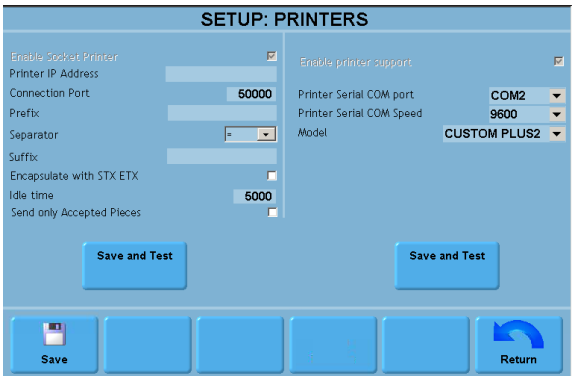
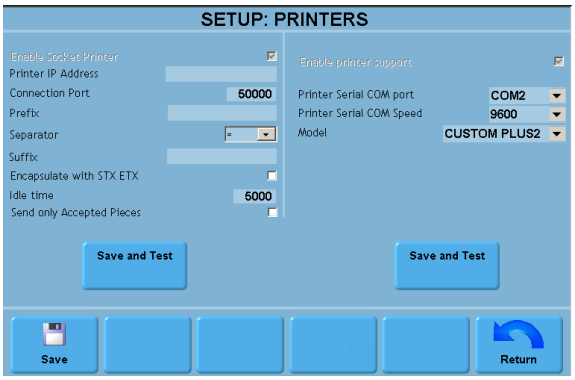
4.5.5.1.5. Accessories

4.5.5.1.5.1. Communication

4.5.5.1.5.1.1. Printers configuration (optional)

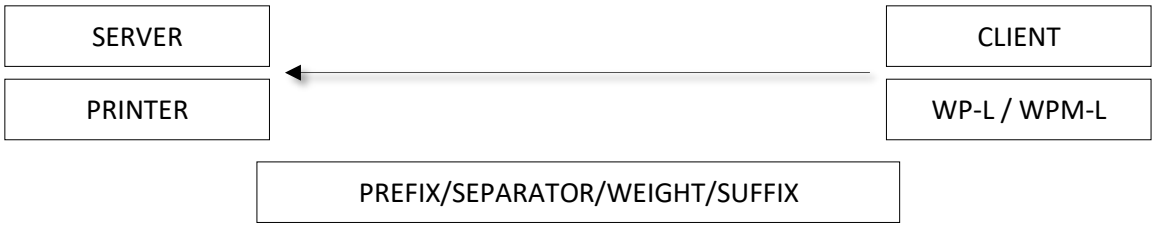
Press “**Settings**”.	
Press “**Setup**”.	
Press “**General**”.	
Press "**Accessories**" and then press “**Communication**”.	

Press "**Printers**".	
The Ethernet printers can be configured on this page (on the left) or serial printers (on the right). For the compatible models, contact the machine manufacturer.	
When configuration has been completed, press "**Return**" several times to return to the main page.	

4.5.5.1.5.1.2. Ethernet printers

In the left-hand part of the page, it is possible to configure the parameters for Ethernet printers, which work as "servers".

Operating logic layout:



The string that the checkweigher sends to the printer is composed as follows:

PREFIX+SEPARATOR+WEIGH + SUFFIX (without + between the various fields).

The prefix fields, separator and suffix can be configured.

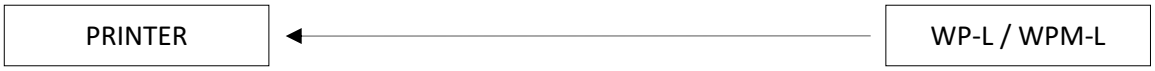
The parameters that can be configured for the Ethernet printers are:

- Printer IP address: it sets the printer IP address to which the commands must be sent;
- Connection port: it sets the port in which the printer receives commands;
- Prefix: it sets the indicator that is positioned before the separator in the command sent to the printer;
- Separator: it sets the indicator that is positioned before the weight value in the command sent to the printer;
- Suffix: it sets the indicator that is positioned after the weight value in the command sent to the printer;
- Add STX and ETX: if this option is selected, the STX (start transmission, ASCII: 0x02) and ETX (end transmission, ASCII: 0x03) characters are positioned as delimiters (STX before and ETX after) in the command sent to the printer;
- Inactivity time: time (expressed in ms) after which, if the scales have been disconnected from the printer, re-connection is attempted;
- Send accepted weights only: if this option is selected, the command is sent to the printer only for weights accepted by the checkweigher;
- Save and Test: use this button to test the communication with the printer. If the communication is successful, a box appears with the text "String of text sent to the printer", while if the communication is not successful, a box appears with the error message.

4.5.5.1.5.1.3. Serial printers

In the right-hand part of the page, it is possible to configure the parameters for serial printers (only models supported).

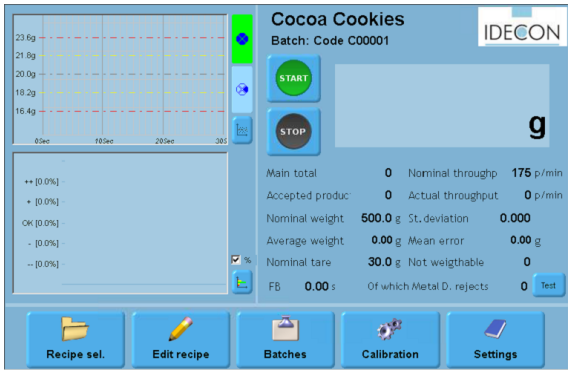
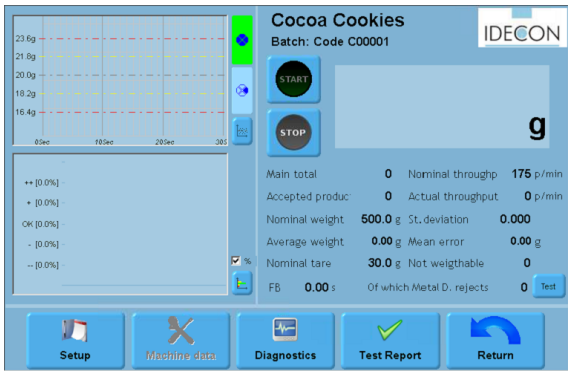
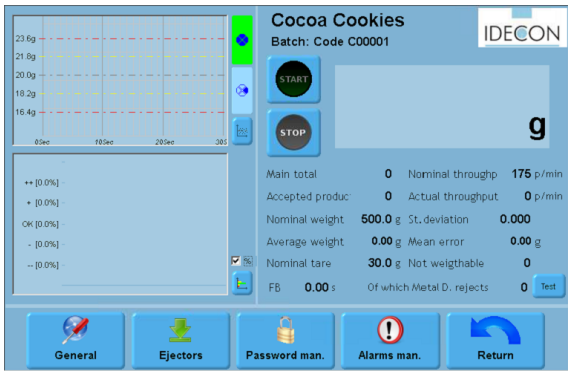
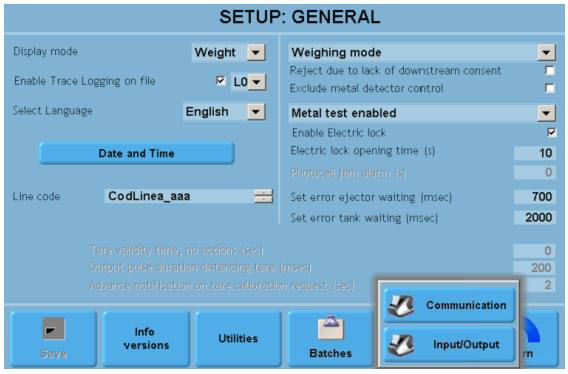
Operating logic layout:

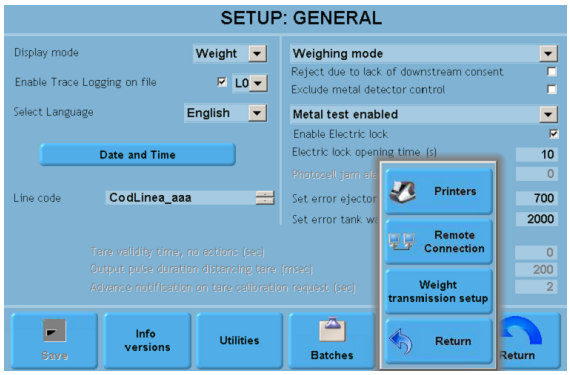
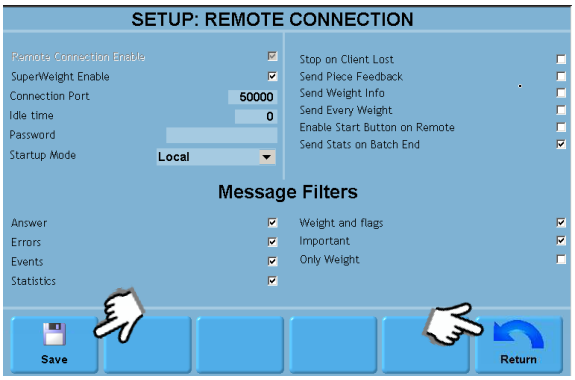


The parameters that can be configured for the serial printers are:

- Printer serial COM port: it sets the name of the COM port where the printer is connected;
- Connection speed: it sets the transmission speed (in baud rate) with which the data package is sent to the printer;
- Model: it sets the model of the printer connected (choose from 4 models available);
- Save and Test: use this button to test the communication with the printer. If the communication is successful, the button "deactivates" and "re-activates", while if the communication is not successful, an error message appears in the bar at the bottom.

4.5.5.1.5.1.4. Remote connection configuration

Press “**Settings**”.	
Press “**Setup**”.	
Press “**General**”.	
Press "**Accessories**" and then press “**Communication**”.	

Press "**Remote Connection**".	
The remote connection parameters can be configured in this page. Press "**Save**" to save the changes and press "**Return**" several times to go back to the main page.	

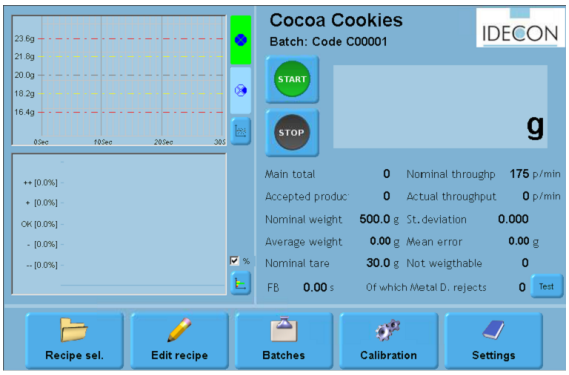
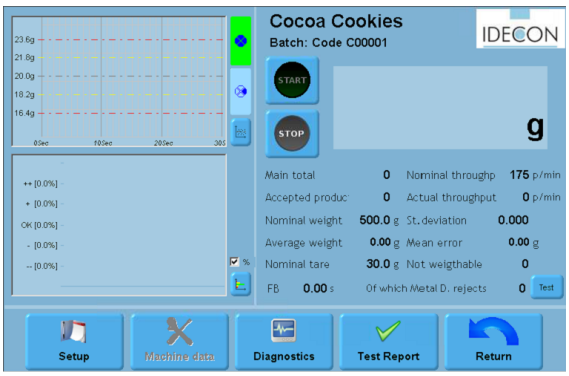
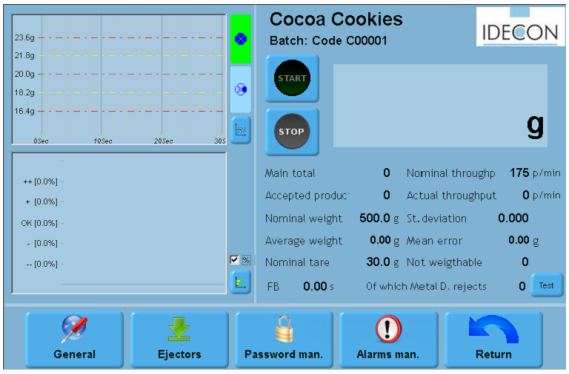
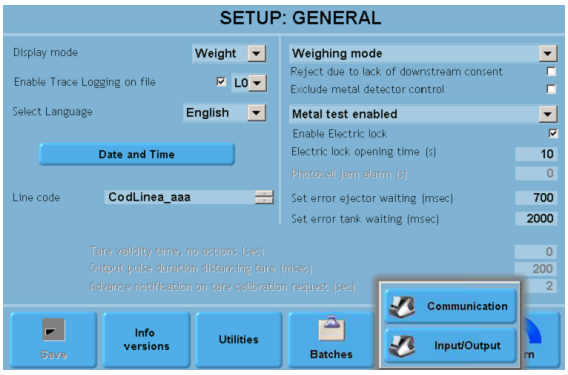
The following parameters can be configured for the remote connection:

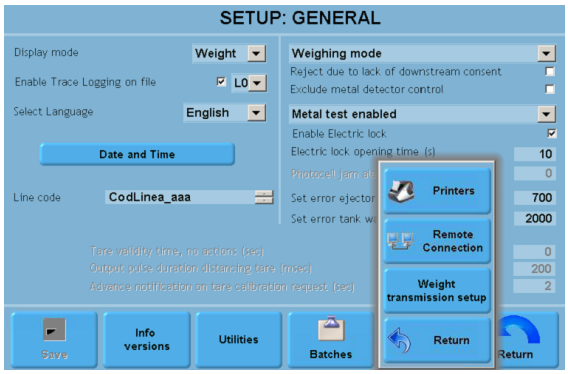
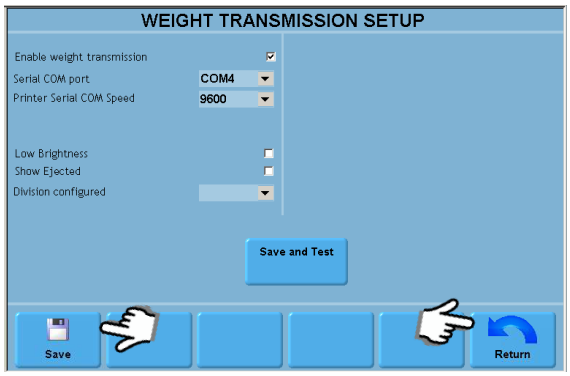
- Connection Port: it sets the communication port for the TCP/IP;
- Idle time;
- Password;
- Stop on Client lost: it allows the checkweigher to be stopped if the connection is lost;
- Send Piece Feedback: it allows to send information regarding the Feedback;
- Send Weight Info: it allows to send just the value of the weight via the "NEWPIECE=" command;
- Send Every weight: it allows to send the information of the weights, including production information and the identification of the machine;
- Enable Start button on Remote: it allows to enable/disable the checkweigher start via the START button on interface, even if in remote mode;
- Send Stats on batch end: in addition to a periodic statistic, it allows to have this information sent at the end of every batch;
- Enable Superweight: if enabled, the following fields can be modified:
    - Startup Mode: three different methods can be selected:
        - Local: the connection remains enabled and it is possible to use the interface freely. It is NOT possible to START from remote;
        - Remote: the interface menus are disabled and, according to the configuration, it may not be possible to start the checkweigher via the START button;
        - Maintenance: close the remote connection channel. The checkweigher therefore does not receive any command. It is possible to operate only via interface;

- Message Filters: on sending a command and during operating phases, in turn, the checkweigher sends messages to the supervisor. In this section, it is possible to select which types of messages to send by the checkweigher:
    - Answers: every time a command is received, the checkweigher answers with the same command to acknowledge that the message has been understood. In some cases, it also sends a series of information in addition to the message. By disabling this option, the checkweigher will no longer send answer messages. To maintain the complete functionalities, we recommend this option is left active;
    - Errors: by disabling this option, the checkweigher will not send the errors occurred on itself anymore. The latter will remain visible on the interface;
    - Events: an event is considered any action relevant regarding operation of the checkweigher (e.g. opening/closing of a batch, Start/stop, recipe change…). By disabling this option, the checkweigher will no longer send event messages;
    - Statistics: by default the checkweigher, on demand or periodically, sends messages regarding the open batch statistics. By disabling this option, the checkweigher will no longer send statistics messages;
    - Weight and flags: it is possible to decide to send some information about individual weightings. By disabling this option, the checkweigher will no longer send weight and flag messages;
    - Important: system messages (as for example, switch-off);
    - Only Weight: the checkweigher will only send weights WITHOUT additional information.

4.5.5.1.5.1.5. Weight Transmission Setup Configuration (optional)

The machine provides the possibility to transmit the weight currently read via serial port. It is important to know that this data DOES NOT HAVE METROLOGICAL VALUE!

Press “**Settings**”.	
Press “**Setup**”.	
Press “**General**”.	
Press "**Accessories**" and then press “**Communication**”.	

Press "**Weight transmission setup**".	
On this page, it is possible to modify the settings for the serial transmission of the weight read. Press "**Save**" to save the changes and press "**Return**" several times until the main screen is displayed.	

The following fields are present on this page:

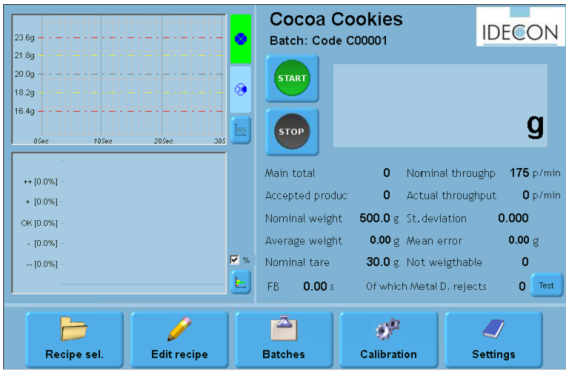
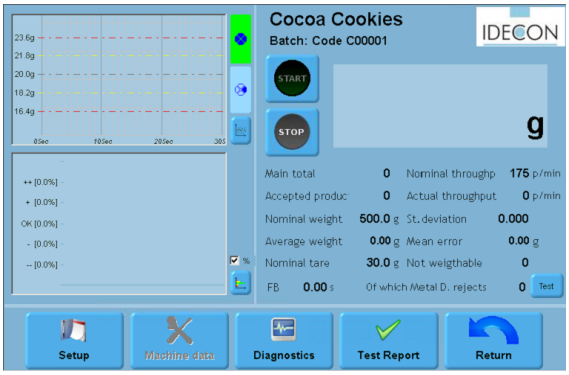
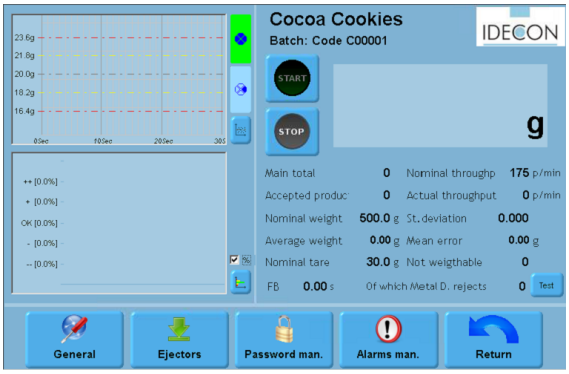
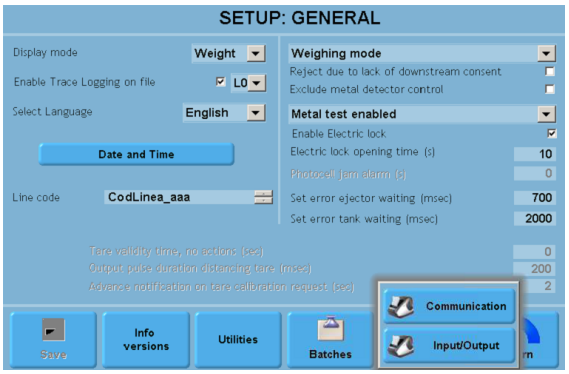
- Serial COM port: it allows to set the serial port to which the receiver device is connected;
- Connection speed: it allows to set the speed with which the data has to be transmitted;
- Low Brightness: in the event of a display, it is possible to indicate to reduce the latter's brightness;
- Show ejected: if active, it will also send the weights of the products that have been ejected;
- Division configured: it is possible to select which division to use to transmit the weight.

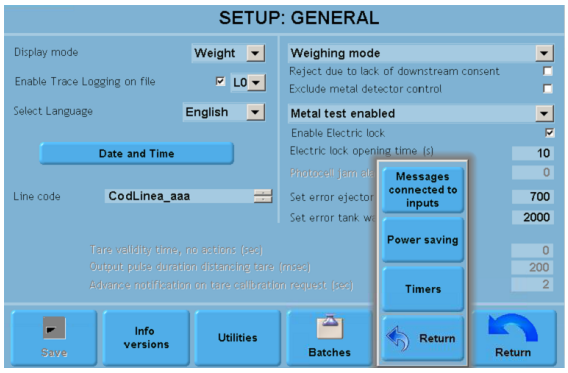
IT IS IMPORTANT TO REMEMBER THAT THE VALUE TRANSMITTED DOES NOT HAVE METROLOGICAL VALUE.

4.5.5.1.5.2. Input/Output

4.5.5.1.5.2.1. Messages connected to Inputs configuration (optional)

The Checkweigher can be configured in a way that on activation of a determined input, a specific message is displayed.

Press “**Settings**”.	
Press “**Setup**”.	
Press “**General**”.	
Press "**Accessories**" and then press “**Input/Output**”.	

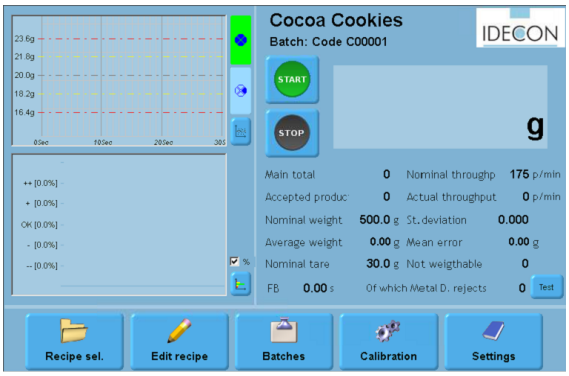
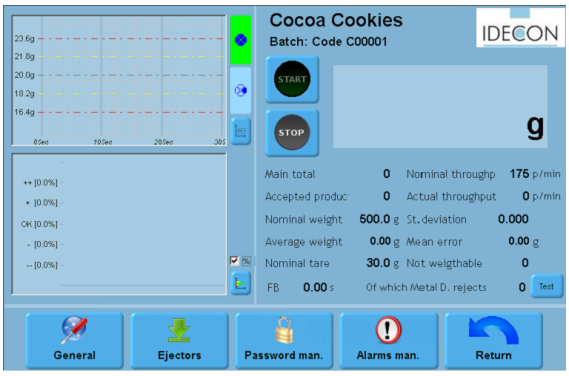
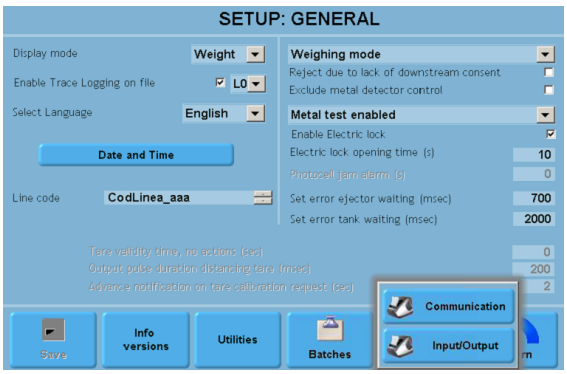
Press “**Messages connected to inputs**”.	
The properties of the individual messages can be modified on this page. Press “**Save**” to save the changes and press “**Return**” several times until the main screen is displayed.	

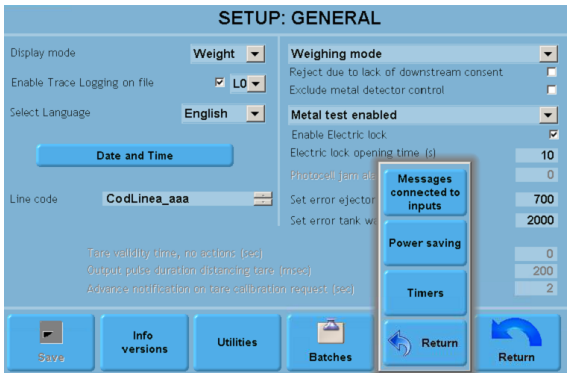
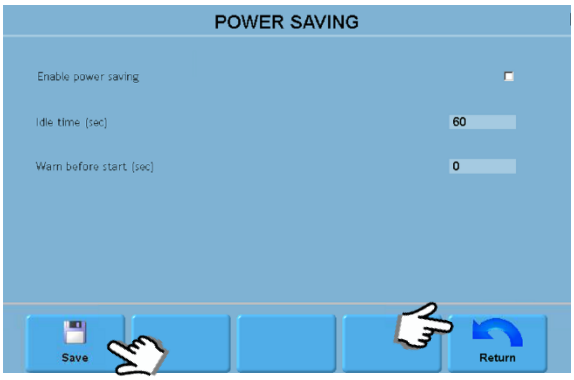
The following fields are present on this page:

- Inputs: it allows to select the message to modify. A maximum of three Inputs can be configured in the menu;
- View: representation of the test that will be shown as soon as the relative input will be activated;
- Reset type: there are 2 types of message reset:
  - Automatic: when the relative signal disappears, the message resets autonomously;
  - Manual: the message remains active even after the signal that generated it has disappeared, until it is reset (See 4.3.2).

4.5.5.1.5.2.2. Power Saving (optional)

The Scales can be configured in a way that the power saving mode is available.

Press “**Settings**”.	
Press “**Setup**”.	
Press “**General**”.	
Press "**Accessories**" and then press “**Input/Output**”.	

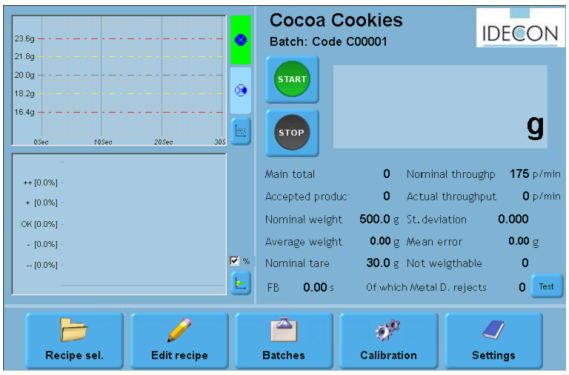
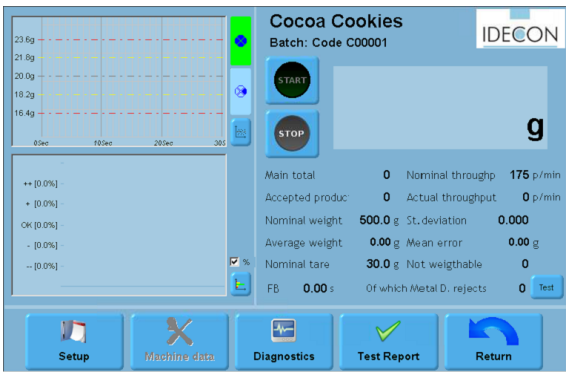
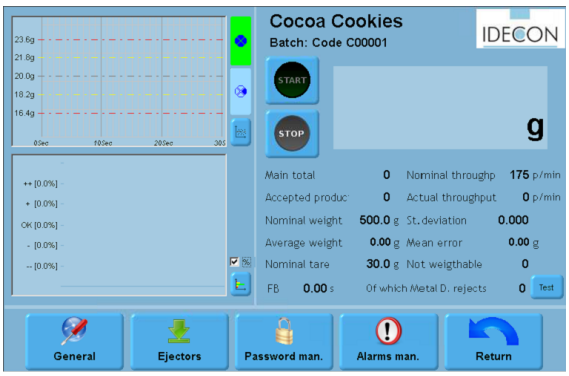
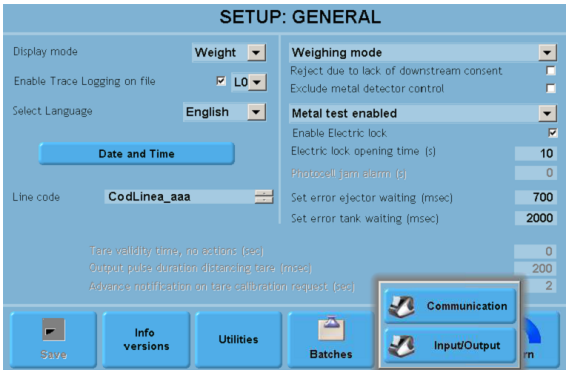
Press “**Power saving**”.	
Flag the “**Enable power saving**” box. Set the values in “**Idle time (sec)**” and “**Warn before start (sec)**”. Press “**Save**” to save the changes and press “**Return**” several times until the main screen is displayed.	

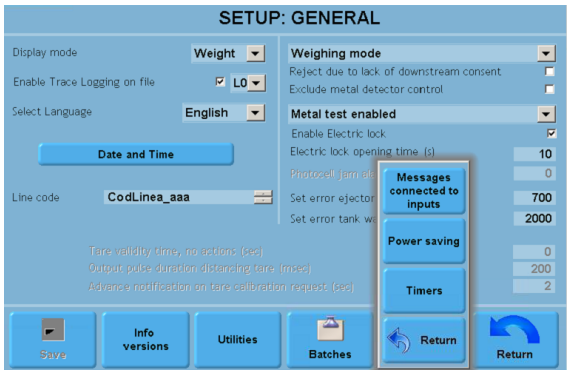
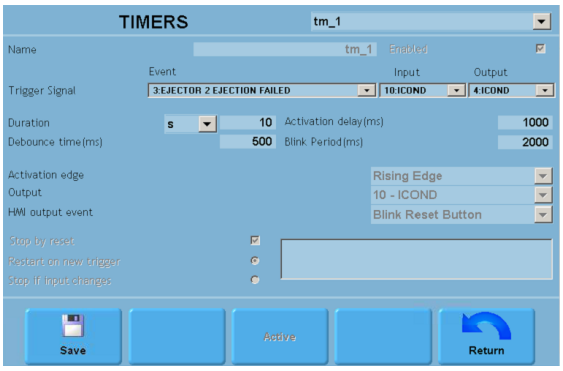
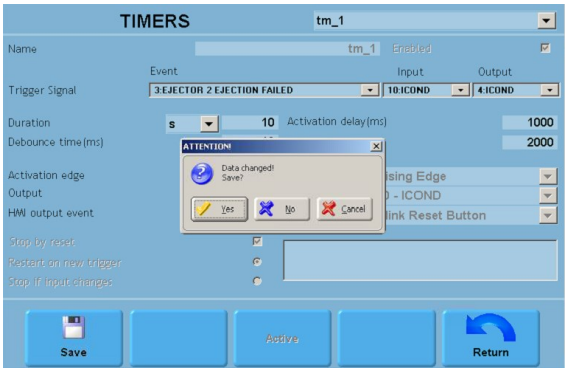
The following fields, which can be modified, are present on this page:

- Enable power saving: it allows to enable the energy saving mode and to modify the successive fields;
- Idle time (sec): it allows to set the value in seconds. If no product passes within the time set, the machine goes into energy saving mode (belts standstill);
- Warn before start (sec): it allows to set a value in seconds. When the machine receives the signal to resume working, a countdown of the duration of the value set will appear on the screen, at the end of which the machine will re-start the belts.

4.5.5.1.5.3. Timers (optional)

It is possible to configure the scales in the way that a timer is activated by particular conditions.

Press “**Settings**”.	
Press “**Setup**”.	
Press “**General**”.	
Press "**Accessories**" and then press “**Input/Output**”.	

Press “**Timers**”.	
The editable fields in this page are: Duration (ms), Activation delay (ms), Debounce time (ms), Blink period (ms).	
Press “**Save**” to save the configuration and press “**Return**” until the main screen is displayed.	

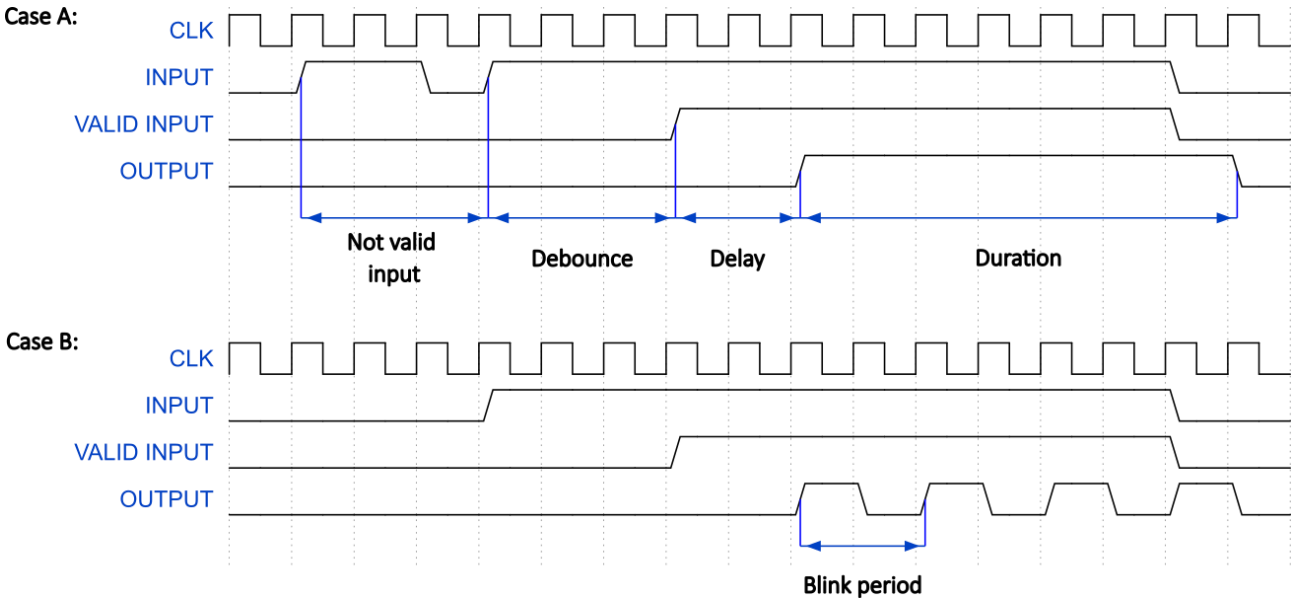
These are the editable fields:

- <u>Duration (ms)</u>: it allows to set the output timer signal duration by choosing the measurement unit (ms, s, min or h) and its value. Note: the maximum timer duration is 24 hours;
- <u>Activation delay (ms)</u>: it sets a delay before the timer starts to generate a signal;
- <u>Debounce time (ms)</u>: it allows to set a time interval, during which at least one of the conditions set in “**Trigger signal**”, must kept true, before the output timer signal becomes active;
- <u>Blink period (ms)</u>: it allows to set the period duration into which the output signal blinks with 50% duty cycle[6].

The remaining fields are only editable by authorised personnel. Please contact the seller or the manufacturer.

[6] 50% duty cycle means that in the first half period the timer signal is active, while in second one isn’t it.

Here below an example regarding the working of the configured timer.



The effective delay used by the timer to enable its output depends on the debounce time plus the activation delay.

To describe the previous charts, the "**Activation edge**" has been configured using the option "**Rising Edge**".

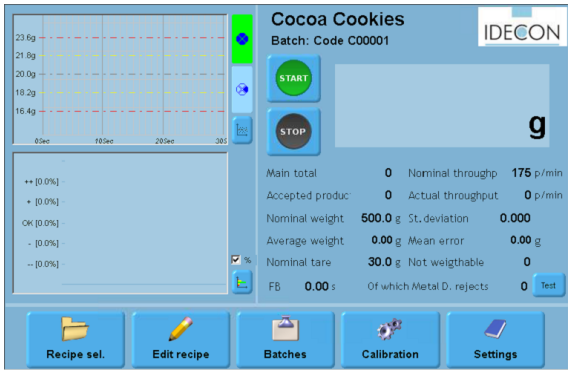
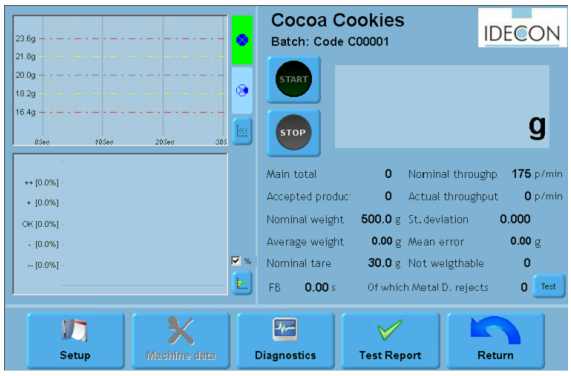
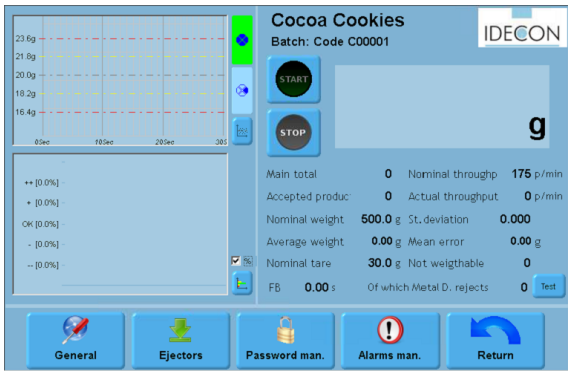
Case A:

It has been configured a timer with a debounce time equal to 1.5 sec and an activation delay equal to 1.0 sec. The overall delay from the input signal rising edge to the output signal rising edge is equal to 2.5 sec.

Caso B:

It is shown the timer working if a blink period has been configured. When the timer output is active, it will blink with a period equal to the configured one. In the first half-period the signal will be high, in the second half will be low.

4.5.5.2. Ejectors setup

Press “**Settings**”.	
Press “**Setup**”.	
Press “**Ejectors**”.	
Set the parameters and press “**Save**”.	

Press “**Return**” more times to return to the main page.	

In one machine, it is possible to use four different ejectors (the same reject category must be set on just one ejector).

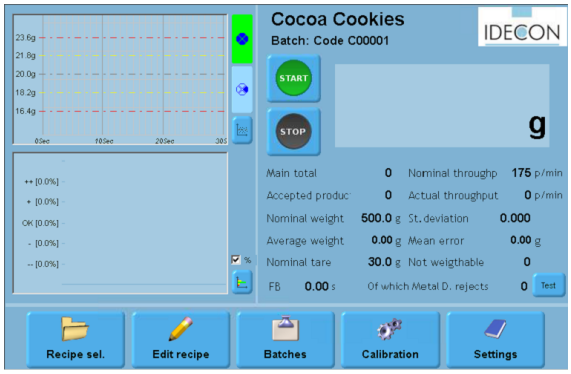
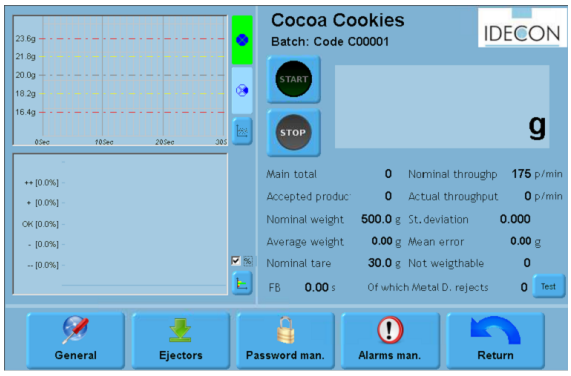
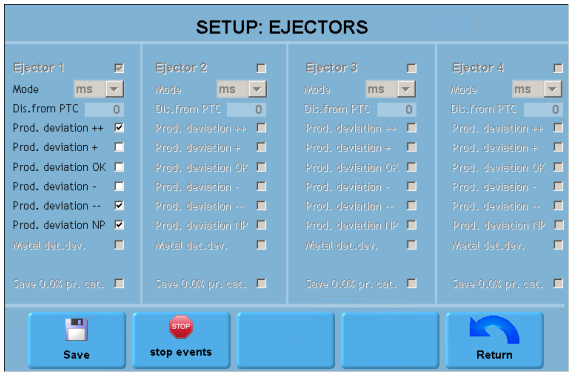
The settings that can be modified are:

- Mode: it allows to choose the type of ejection duration control. The following choices are present up to now:
  - Mm: the duration of ejection is managed depending on the space (in mm) travelled by the belt. Since it is linked to the speed of the belts, the higher will be the latter, the shorter will be the time in which the ejector will remain activated;
  - Ms: the duration of ejection is managed simply in time passed from its activation. This mode is unrelated to the speed of the belts;
- Dis. from PTC: parameter for setting the distance (in mm) of the ejector with respect to the infeed photocell (the first photocell of the checkweigher that the product meets, usually called PTC1);
- Product classification: tick the weight class you want the selected ejector ejects:
  - Products ++: products with weight higher than limit ++ (See 4.5.1.2);
  - Products +: products with weight between limit ++ and limit + (See 4.5.1.2);
  - Products OK: products with weight between limit + and limit - (See 4.5.1.2);
  - Products -: products with weight between limit - and limit - - (See 4.5.1.2);
  - Products - -: products with weight lower than limit - - (See 4.5.1.2);
  - Products NP: products which cannot be weighed (See 4.2.1.2.1.1);
  - Metal detector dev.: products contaminated with metals;

  NP Products, metal detector rejects and aux rejects will not be weighed.
- Save 0.0% pr. cat. -: with this operating mode (if the rejection of category - products is enabled) not all the products of category - will be rejected, but only a % (equal to the stated value) will be saved. The value must be compliant with the limits given by existing legislation. “Products -” will not be accepted if they should bring the mean error below zero.

4.5.5.2.1. Setting Stop Events (U, D and S models)

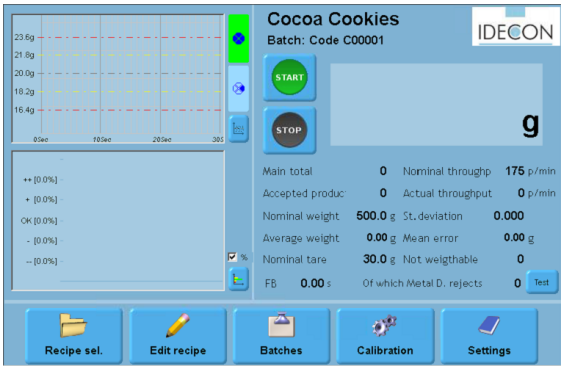
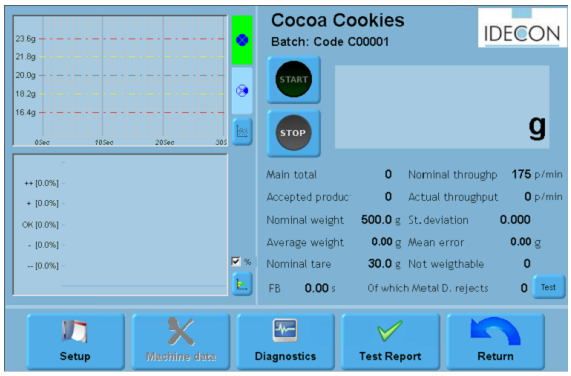
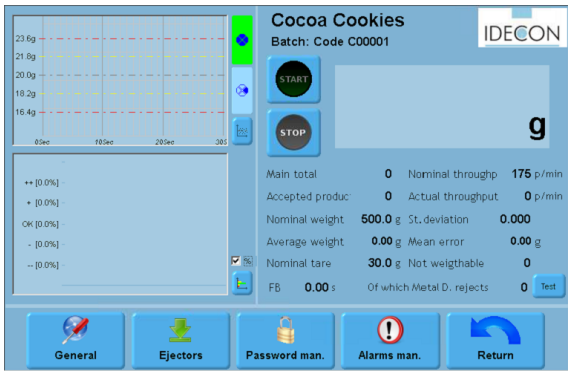
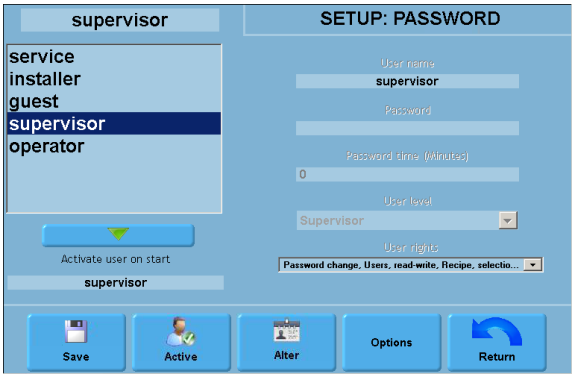
In the models envisioned, machine stop can be set regarding determined events.

Press “**Settings**”.	
Press “**Setup**”.	
Press “**Ejectors**”.	
Press “**Stop Events**”.	

Select for which events the machine must be stopped and press "**Save**". **ATTENTION: DO NOT SELECT SEVERAL OPTIONS FOR THE SAME EVENT. IF THE STOP IS DEFINED, CHECK THAT THERE IS NO EJECTOR ASSOCIATED TO THE SAME EVENT.**	
Press "**Return**" more times to return to the main page.	

4.5.5.3. Password setup

The machine switches on by default, sets on the user called *supervisor* and no password is required. In this mode, all the functions available to expert operators are enabled. The name of the active user can be found on the upper portion of the screen close to date and time information.

Press “**Settings**”.	
Press “**Setup**”.	
Press “**Password man.**”.	
Make the necessary changes. Press the “**Save**” button and then “**Return**” several times to return to the main screen.	

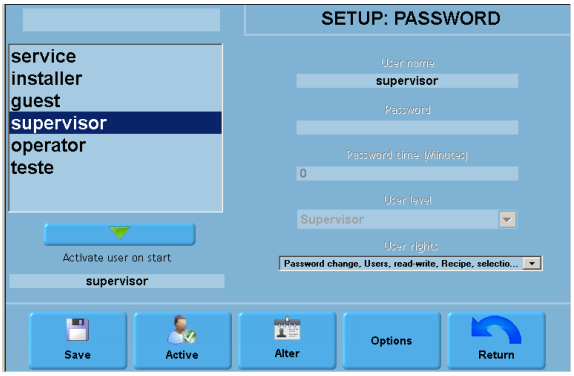
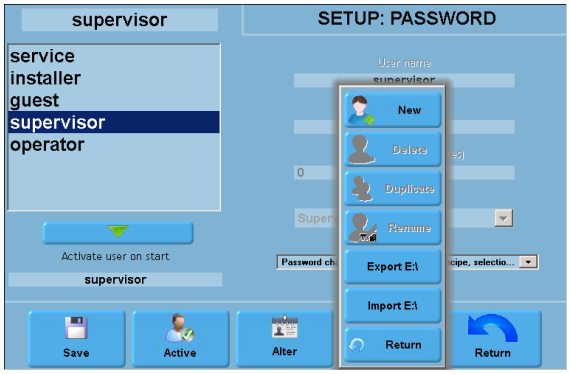
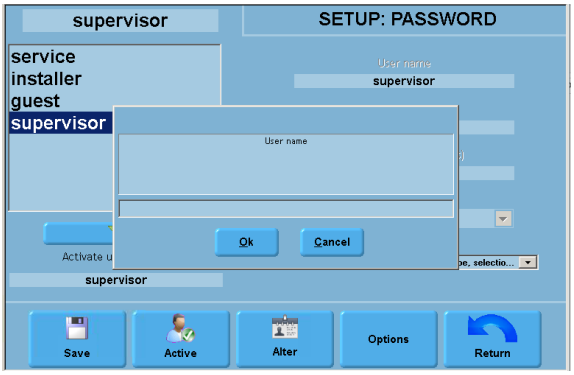
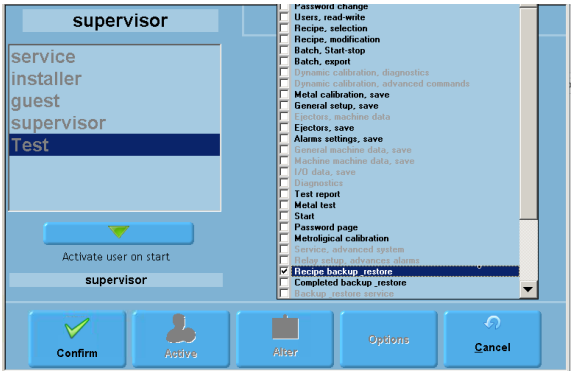
This screen consists of:

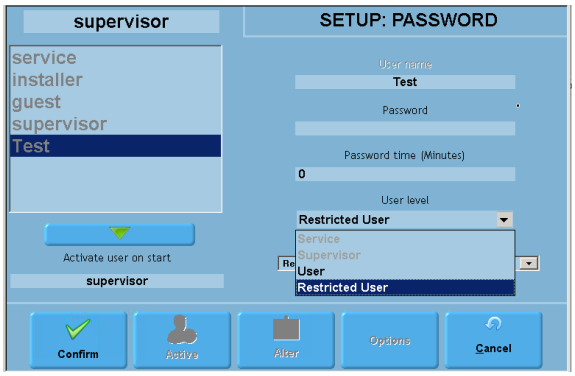
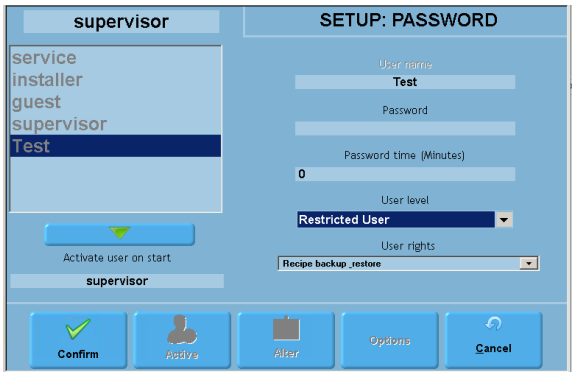
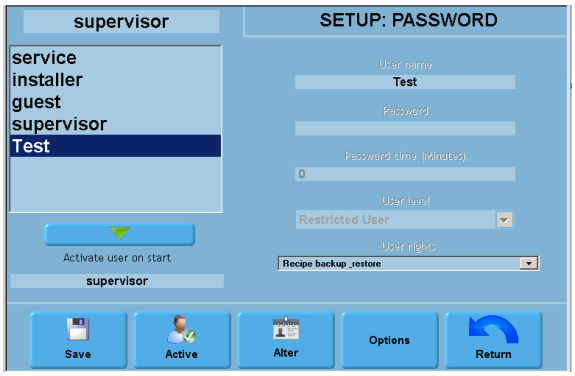
- The list of users: the first three users are fixed and cannot be modified:
  - *service*: this user can be used only by the manufacturer;
  - *installer*: this user can be used only by the machine's installer;
  - *guest*: this user offers the possibility of stopping the machine and changing user. Whenever a user profile needs to be closed without specifying a new user, the machine automatically switches to *guest* mode. There is no password associated with the guest user profile;

  The fourth user profile is called *supervisor.* By default, this user profile is not associated with a password, but a password can be set.

  The fifth user profile is called *operator*. By default, this user profile is not associated to a password, but the latter can be set at any time.
- Activate user on start: it determines the user profile to be used when the machine is turned on. If the user profile in question is associated with a password, the user will be prompted to enter the password when the machine is activated;
- Username: the selected username;
- Password: encrypted password for the selected user;
- Password time: time expressed in seconds. Once this time has expired, the guest user profile will be automatically selected. If the value is set to “0”, the password will never expire;
- User level*:* defines the level associated with the password. The four available user levels are the following (in descending order):
  - *service*: the highest level;
  - *user supervisor*: the level associated with the installer and supervisor profiles;
  - *user*: normal user;
  - *restricted user*: the level associated with a lower-level user (guest and operator);
- User rights: the table in which the user credentials are entered. At most, each new user profile can have the same credentials as the user that created it.

4.5.5.3.1. Creating a new user

Press the “**Options**” button.	
Press the “**New**” button.	
Enter the new user's username, password, and validity time. If the validity time is set to zero seconds, the password will never expire. **<u>WARNING: THE USERNAME CAN ONLY CONTAIN ALPHANUMERIC CHARACTERS.</u>**	
Enable all the privileges to be associated with the new user profile. After having selected all the options, click outside the table to close it.	

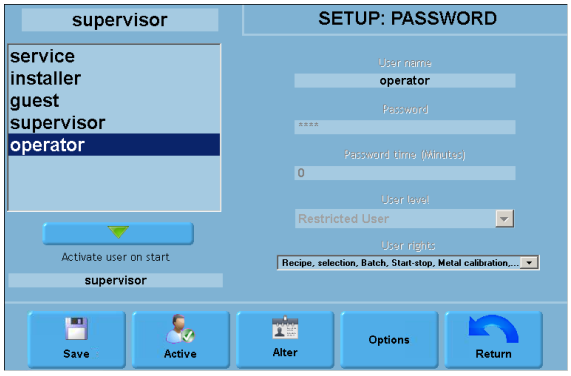
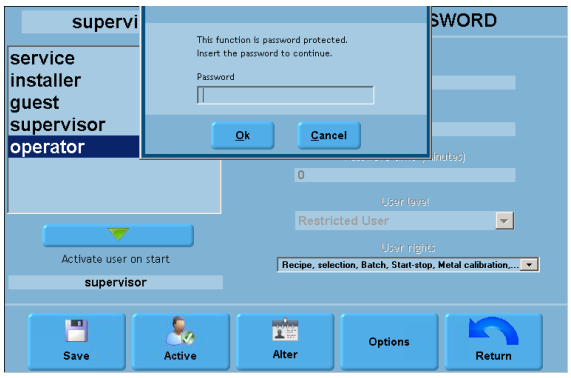
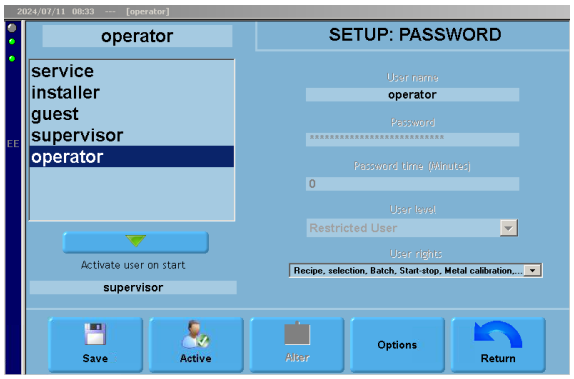
Select the user level to be assigned to the new user profile (choose between User and Restricted User). It is not possible to create a user profile with a User level that's higher than the user who has created it.	
Press the “**Confirm**” button.	
Press “**Save**” to save all the changes that have been made. If you exit without saving, all the changes will be lost. Press the “**Return**” button until the main screen is displayed.	

4.5.5.3.2. List of user privileges:

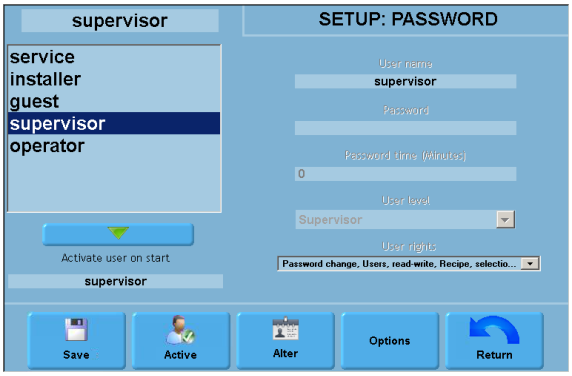
RIGHT	DESCRIPTION
Users, Equal level modification	Allows modification of all users of equal or lower level
Password change	User enabled to change his/her own password
Users, read-write	Enables access to the user page
Recipe, selection	The user can activate a recipe
Recipe, modification	The user can modify a recipe
Batch, start-stop	User enabled to open and close a batch
Batch, export	The user is authorized to export production reports
Dynamic calibration, diagnostics	Rights reserved
Dynamic calibration, advanced commands	Rights reserved
Metal calibration, Save	Enables the saving of the metal detector's calibration settings
General setup, save	Allows the user to save the general setup data
Ejectors, machine data	Command reserved
Ejectors, save	Allows the user to modify the ejectors' settings
Alarm settings, save	Allows modifications to be saved in the “Alarms setup” page
General machine data, save	Rights reserved
Machine data, save	Rights reserved
I/O data, save	Rights reserved
Diagnostics	Rights reserved
Test report	Allows the user to generate machine test reports
Metal Test	Allows the user to perform the metal detector test
Start	Allows the user to activate the checkweigher
Password page	Allows the user to access the password page
Metrological calibration	Allows the user to access the metrological calibration screen
Service, advanced	Rights reserved
Relay setup, advanced alarms	Rights reserved
Recipe backup _restore	Allows recipes backup and restore
Completed backup _restore	Allows a complete backup and restore
Backup & restore maintenance	Rights reserved
Electric lock	Allows electric lock to be opened
Reset errors	Allows error present to be reset
Weigher mode	Rights reserved
Modification of tare	Allows the tare in the recipe to be changed via the static balance page

Advanced tools (CM)	Rights reserved
Change remote connection mode	Allows the work mode to be changed with remote connection (See 4.3.1.3)
Metal test refusal	Allows the metal test to be refused where necessary
Peripherals management	Rights reserved

4.5.5.3.3. Changing user

Select the user profile to be enabled and press the “**Active**” button.	
A password prompt dialogue box will appear.	
Once activated, the username will appear at the top of the screen.	

4.5.5.3.4. Import/Export users

Press the “**Options**” button.	
Select "**Export E:**" to export the users into pendrive or select "**Import E:**" to export the users from the pendrive.	
If a USB pendrive is not connected, the import and export buttons do not state “**E:**” and the procedure is not possible.	

To exit your own user profile and leave the machine with the least number of privileges, select the *guest* user profile.

<u>ATTENTION, IF THE USER PASSWORD IS LOST, ONCE MODIFIED, CONTACT THE MANUFACTURER TO RE-SET IT!!!</u>

4.5.5.4. Output relay and Stop machine Setup

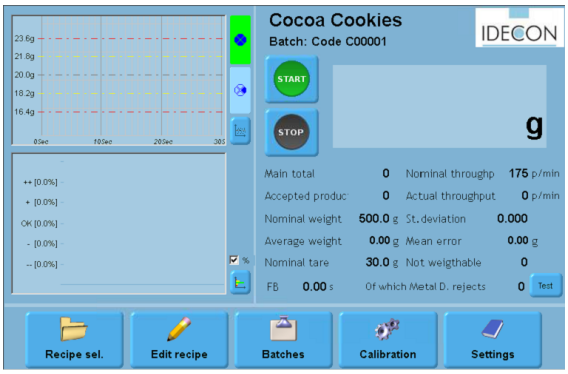
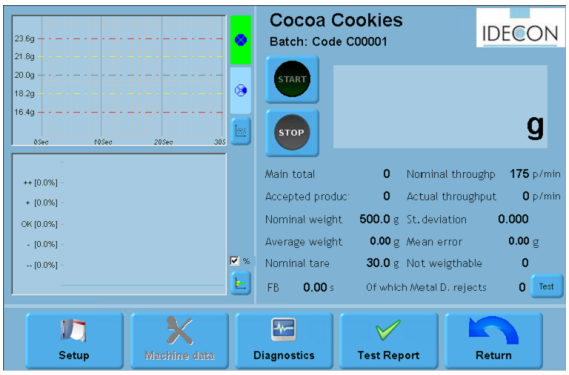
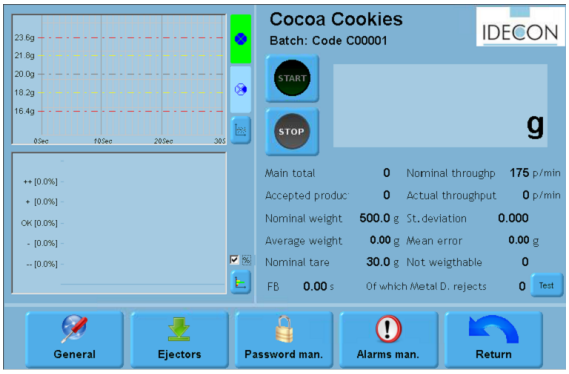
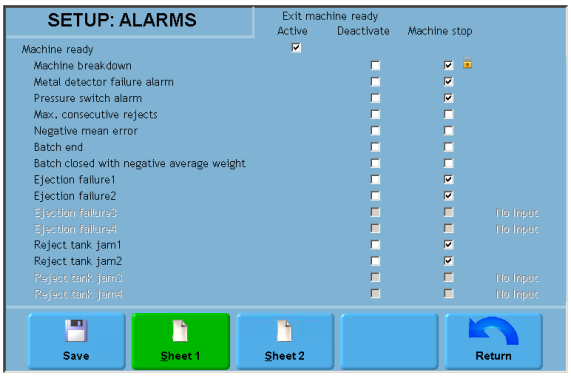
This paragraph contains information and references just for the personnel authorised and assigned to operate on the electric plants. IDECON declines all liability for damage to persons, animals or objects whenever modifications have been made by unauthorised personnel or different to that indicated in this manual.

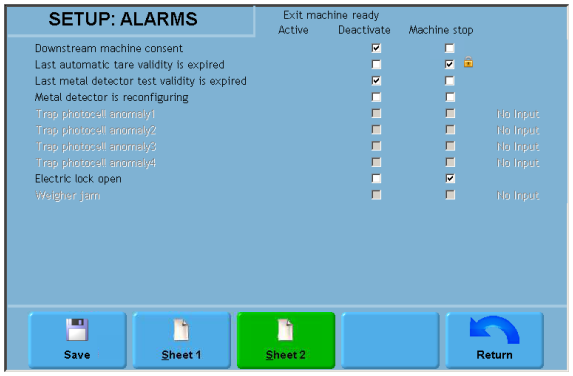
The machine is supplied already set-up for connections to the "line consents cascade". In particular, the machine envisions two signals:

- Consent FOR the **UPSTREAM** machine: by consulting the "Auxiliaries" section of the wiring diagram it is possible to find a pair of contacts named "Machine ready" (Normally Open (NO) and Normally Closed (NC). These connections are referred to the "KA1" relay, situated directly in the "Terminal Board (X1)"). Use one contact rather than the other, according to the desired communication logic. Based on the working mode activated on the checkweigher, it will be raised or not the consent. Here below a description about the different modalities:
    - Weighing mode: Active;
    - Dynamic Calibration: Active;
    - Metal Detector Calibration: Active;
    - Metal Detector sensor test: Active;
    - Only transport mode (via software): Active;
    - Test report: Active;
    - Test Metal Detector: Not active;
    - Washing: Not active;
    - Only trasport mode (via Bypass[7] board): Active.
- Consent FROM the **DOWNSTREAM** machine: In the "Terminal board (X1)" section, in the wiring diagram, it is possible to find the two contacts for the signal coming from the downstream machine. Looking for "Downstream machine consent", into the electric diagram, it will be possible to see the described contacts. To keep piezoelectric separation among different machines, use a clean contact between a 24V contact in the "Terminal board (X1)" and the related input.

Furthermore, specifically for each type of alarm, it is possible to choose whether to deactivate the KA1 relay or stop the machine (with the consequent unexcitement of KA1).

[7] Also indicated as CN – motors interface board. See **Errore. L'origine riferimento non è stata trovata.**.

Press “**Settings**”.	
Press “**Setup**”.	
Press “**Alarms man.**”.	
Set the desired preferences and press “**Save**”. Press “**Sheet 1**” or “**Sheet 2**” to see all the settings.	

Press “**Return**” to return back to the main page.	

“Active” Settings

By activating the “Machine ready” flag, the relay KA1 will always be energized when the machine is running and de-energized when the machine is stopped.

“Deactivate” Settings

For all the options with the exception of “Machine ready” option, the relay KA1 will always be energized during the normal functioning of the machine. When one or more faulty conditions among the listed ones are detected, the relay will be de-energized.

“Stop” Settings

When one or more faulty conditions among the listed ones will occur, the machine will automatically stop and relay KA1 will be de-excited. It will be necessary to remove the faulty condition and press “Start” to restart the machine.

4.5.5.4.1. List of alarms

Alarms with "**No Config**" or "**No Input**" are not selectable because the associated functionality is not active or is not properly configured.

ALARM	DESCRIPTION
Machine Ready	Indicates that the machine can receive packets to weigh
Machine breakdown	Indicates that the machine has a very serious internal error, such to affect operation
Metal detector failure alarm	Indicates that the machine metal detector is in alarm mode
Pressure switch alarm	Indicates that the machine pressure switch is in alarm mode
Max. consecutive rejects	Indicates that the number of rejects of the same type, indicated in the recipe, has been reached
Negative mean error	Indicates that the average mean error of the CURRENT batch remains negative for longer than the "negative average error delay time" (See 4.5.5.1.4)
Batch End	Indicates the batch has ended
Batch closed with negative average weight	Indicates that the GLOBAL batch ends with a negative average error
Ejection Failure 1 (2,3,4)	Indicates that the ejector 1 (2,3,4) could not eject the product correctly
Reject tank jam 1 (2,3,4)	Indicates that the tray associated to ejector 1 (2,3,4) is full
Downstream machine consent	Indicates that consent has not been given by the successive machine in line
Last automatic tare validity expired	Indicates that the maximum time passed between one tare and the other has exceeded the limit established by certification
Last metal detector test validity expired	Indicates the time passed between one metal test and the other has exceeded the limit set
Metal Detector is configuring	Indicates that the metal detector is undergoing configuration
Trap Photocell Anomaly 1(2,3,4)	Indicates that the photocell 1 (2,3,4) set-up for swing is faulty
Electric lock open	Indicates that the electric lock that closes the assigned tray is open
Weigher jam	Indicates that the photocell at the end of the output belt has been occupied for an excessive time

In particular:

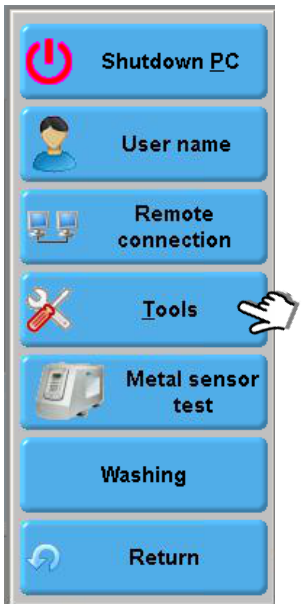
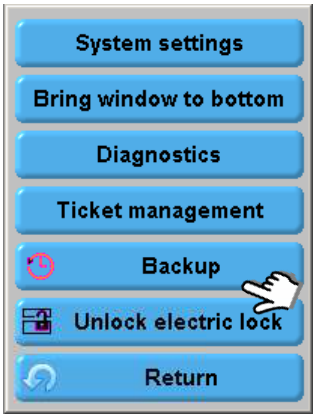
- The “Machine breakdown” error depends on the following conditions:
  - Machine in tare warning status;
  - External alarm (only if previously configured);
  - Infeed photocell jamming (for L/T models only);
  - Weigher jamming (only if previously configured and for L/T models only);
  - Weigher infeed photocell jamming (for U/S/D models only);
  - Weigher outfeed photocell jamming (for U/S/D models only).
- The “Metal detector failure alarm” error, only with Metal Detector present and configured, depends on the following conditions:
  - No communication;
  - Antenna malfunctioning;
  - Ejection Check photocell failure (if present and configured).

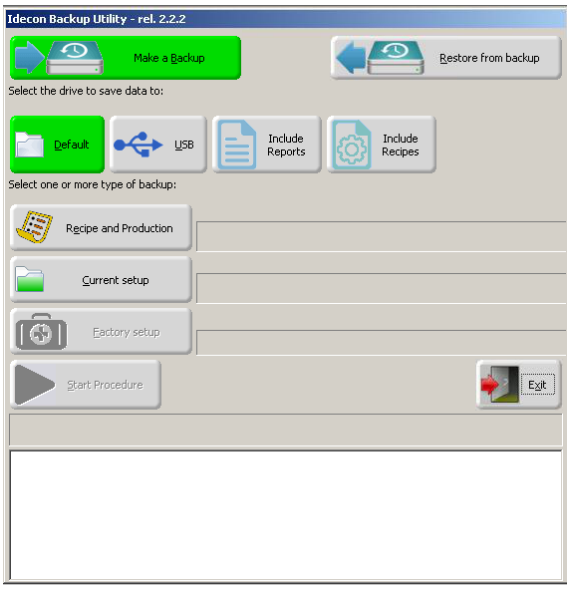
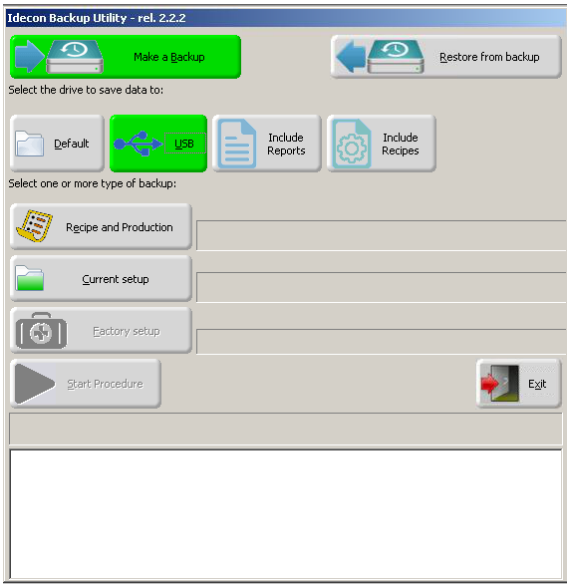
4.6. Backup & Restore

This procedure allows recipes or the current status of the machine to be saved and to be restored at a given time.

4.6.1. Backup execution

The backup procedure can be done only if all the open batches were previously closed. Check that all the batches are closed before starting the procedure (See 4.5.1.1).

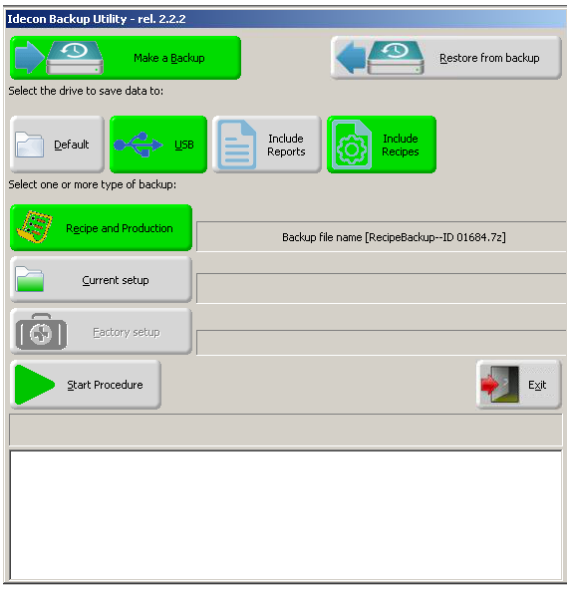
Press the "**Utility**" button in the bottom left of the screen.	
Press "**Tools**".	
Press "**Backup**" and the program for carrying out backup will be launched. **Note**: the same program can also be reached by pressing "**Backup & Restore**" via "**System Settings**", chapter 4.8.	

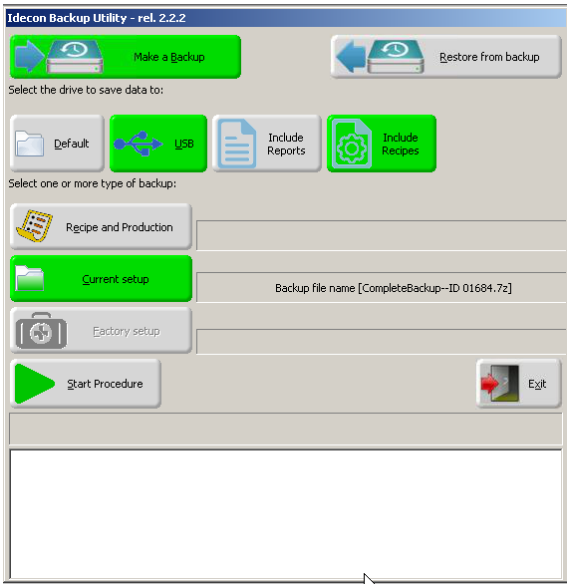
Press “**Make a Backup**” on the top left corner of the new window, which will become green.	
Choose the backup destination: • USB (it is possible if a device has been plugged into the USB port); • Default (internal folder of the machine d:\Backup). It is suggested to save the backup in a USB device. If the destination is changed, the description inside the grey field will change too.	

Choose the type of backup:

- "**Recipe and Production**" to save the recipes and the PDFs;
- "**Current Set up**" to save all data.

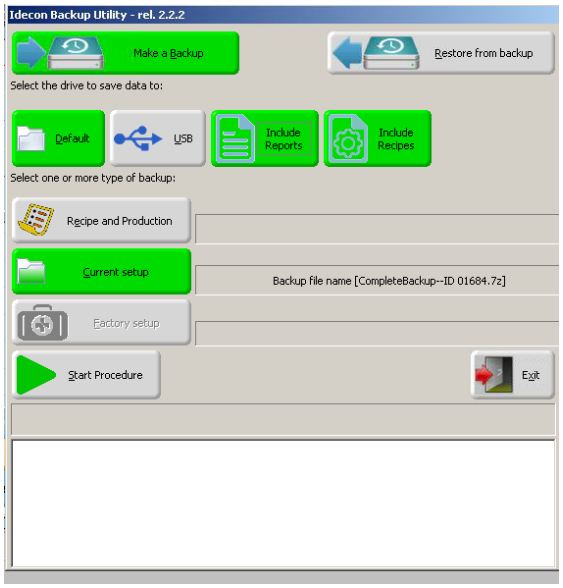
Upon selection, the destination path appears in the grey box next to the relevant selection.

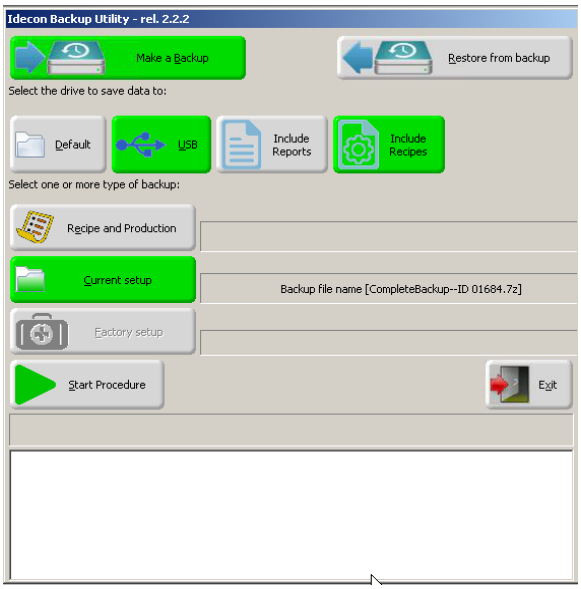
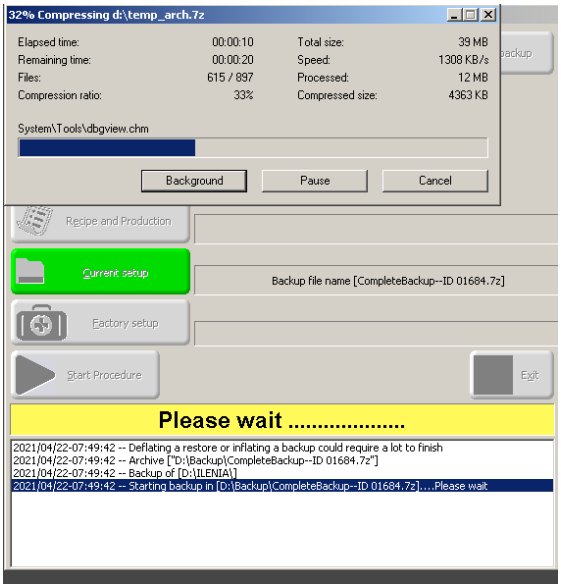
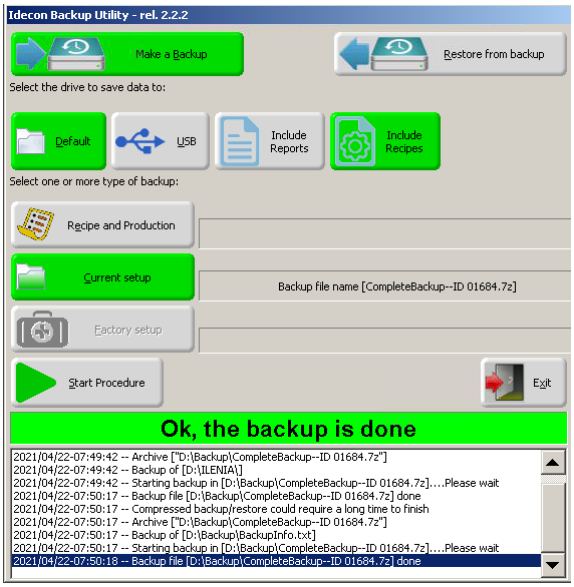


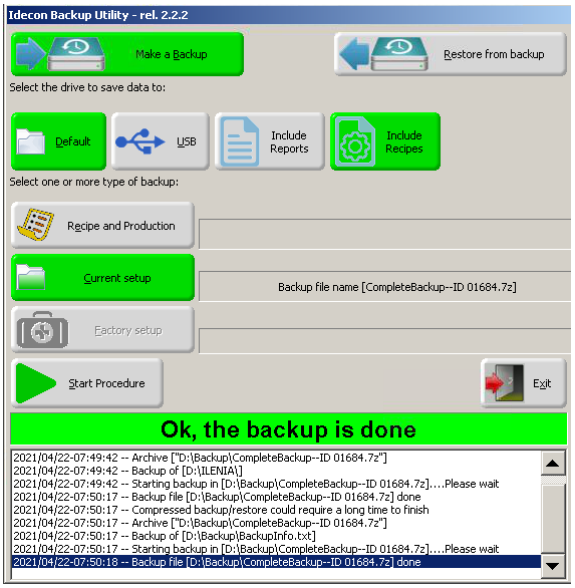


In all cases (backup and destination type), one can decide whether or not to include production reports and/or recipes.
To do this, just press the corresponding button, which will turn green.

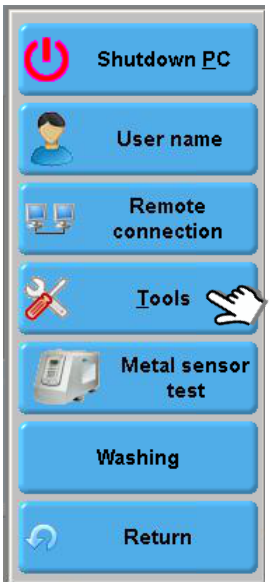
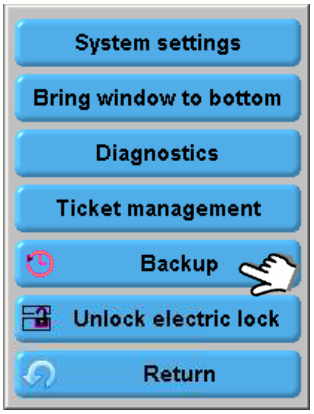
- "**Include Reports**" to add production reports;
- "**Include Recipes**" to add the recipes.

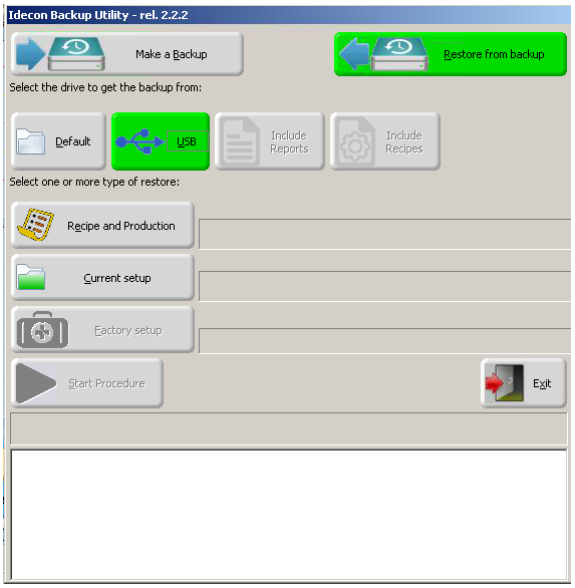
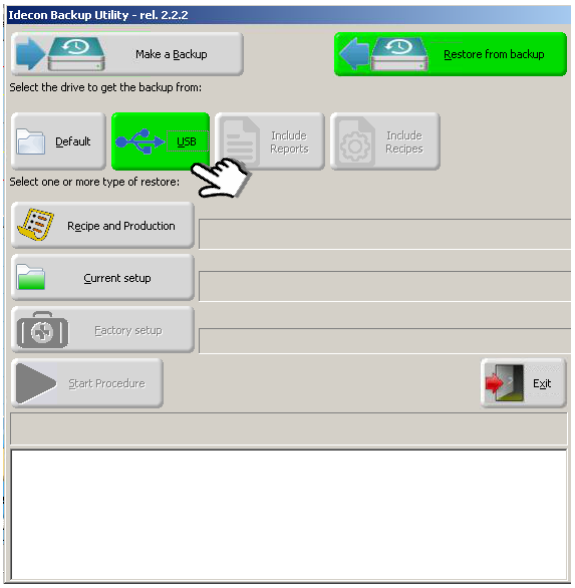
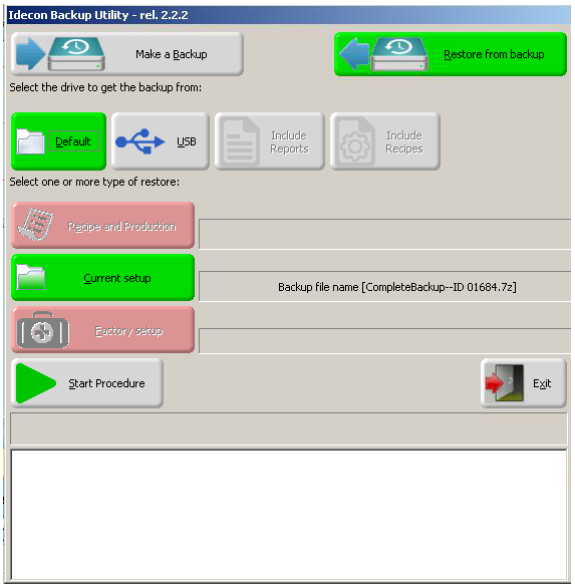


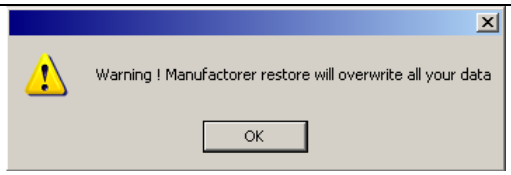
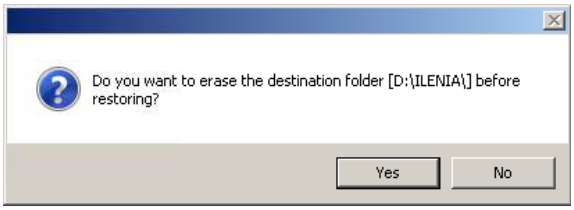
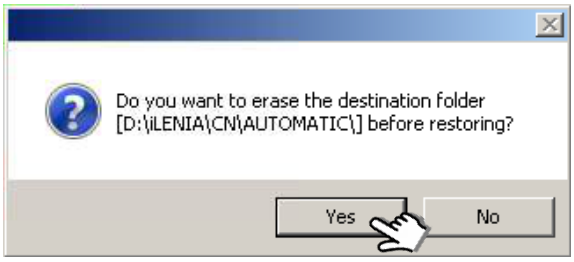
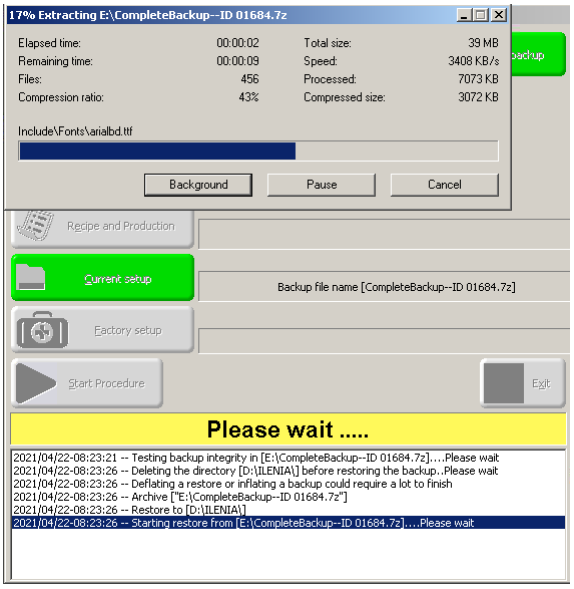
Press “**Start**”.	
Wait until the backup process has completed. During this phase don’t touch the screen.	
When the backup process has completed, this message will be displayed “**Ok, the backup is done**” on a green background.	

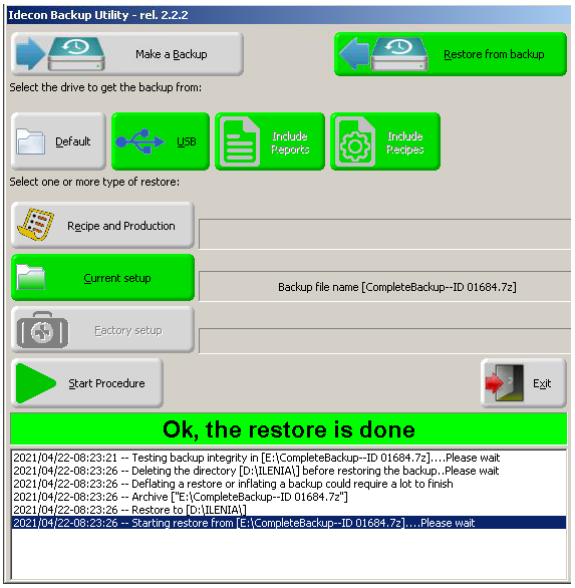
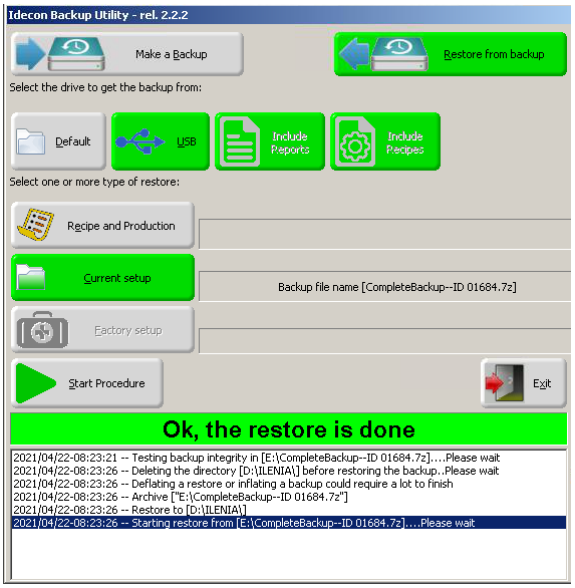
Press “**Exit**”. At this point, the checkweigher software will be re-started automatically. If, after a few seconds, it still hasn't started, it can be performed manually by clicking twice on the “**Ilenia**” icon present on the desktop.	

4.6.2. Restore a backup

Press the "**Utility**" button in the bottom left of the screen.	
Press “**Tools**”.	
Press “**Backup**”.	

Press “**Restore from backup**” on the top right corner, which will become green.	
Choose the folder where the backup has been saved: • USB (it is possible if a device has been plugged into the USB port); • Default (internal folder of the machine d:\Backup). The button of the relative selection will turn green.	
Choose the type of restore: • “**Recipe and Production**” for saving all the data; • “**Current setup**” for saving the recipes only; • “**Factory setup**” to return at the manufacturer data (with this choice, press “ok” in the box). Depending on the backups available in the chosen destination, some buttons will have a grey background and can be used, others will have a red background and cannot be used. Choose the type of backup by pressing the relevant button, which will turn green. The name of the selected backup will appear in the grey box next to it. **NOTE: To restore, the backup to be used must not have been renamed when created.**	

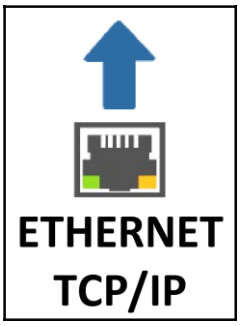
	
According to the restore choice, one of these messages will appear: 1) The first one if you selected “Completed” or “Manufacturer” restore. 2) The second one if you selected the “Recipes” restore. In both cases press “**YES**”.	 
Wait until the restore process has completed. During this phase don’t touch the screen.	

When the restore process has completed, this green message will be displayed “**Ok, the restore is done**”.	
Press “**Exit**”. The scale software will now automatically restart. If it still does not start after a few seconds, you can run it manually by clicking twice on the “**Ilenia**” icon found on the desktop.	

4.7. IP address setting and network files mapping

To use all the network data sharing functions, you must first set the checkweigher correctly, assigning an IP address to it. Before setting the checkweigher, open the board and connect the network cable to the network outlet, as indicated by the arrow.

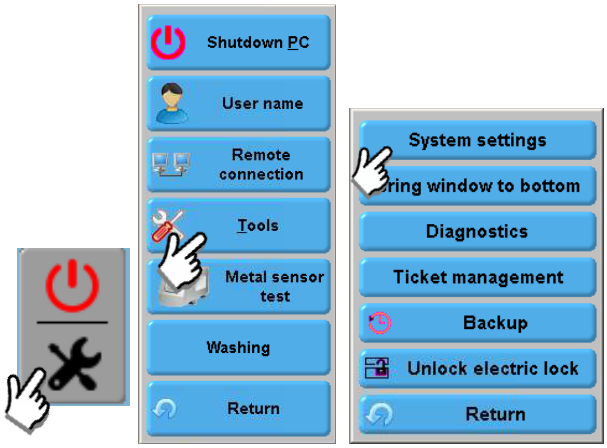
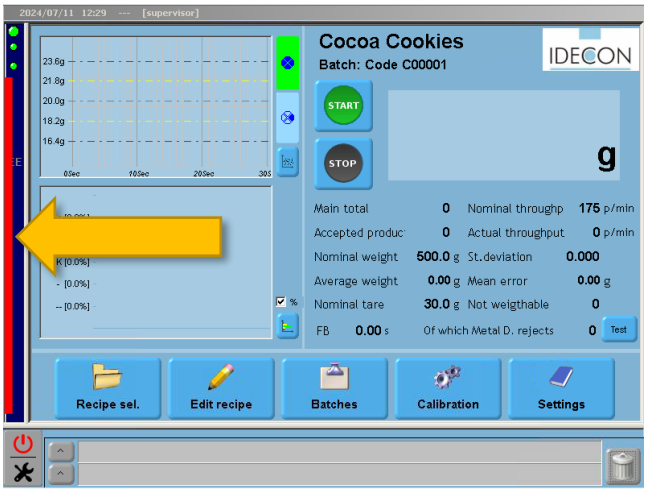
Do not unplug the Ethernet cable marked with ETH-W label already wired into the electric board, neither swap the two ethernet cables. Unplugging this cable makes the checkweigher unusable.

Panel B	Panel C
Panel D	Whenever present, follow the label applied.
	

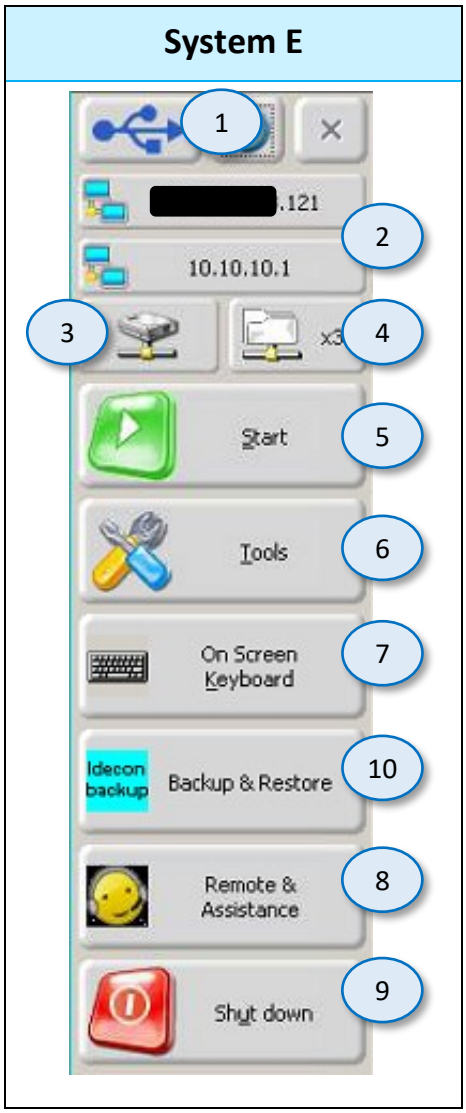
Once the cable is connected, proceed with the configuration. Open the drop-down settings/configuration menu and select one of these two modes suggested in the following paragraph (4.8).

4.8. System Settings

If no of these methods manages to make the afore-mentioned menu appear, use the mouse by taking the cursor fully to the left of the central area (as indicated in “Method C”).

Method A	
a) Press “**Utility Menu**”; b) “**Tools**"; c) “**System Settings**”.	
Method B	
Press four times in the bottom side on the screen, in the middle.	
Method C	
Touch on the left side on the touchscreen, to let appear the left hide bar. If this couldn’t be done, restart the checkweigher and repeat the operation. Even if this situation does not show the bar, plug a USB mouse in the external USB port and move the mouse close to the left side of the touchscreen.	

The hidden menu that will appear looks like this:



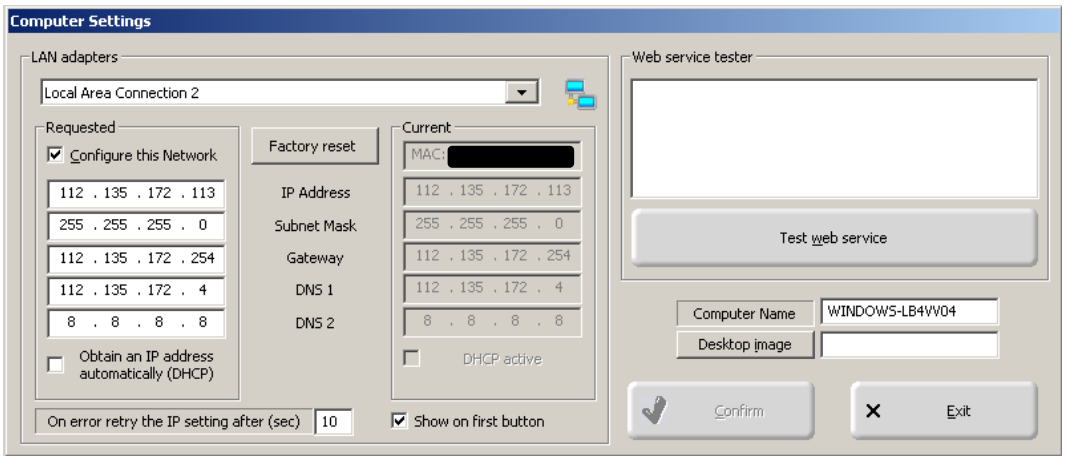
4.8.1. USB window

Allows the display of USB disks connected to the scales and, if necessary, safe removal is possible by selecting the desired letter and pressing "**Eject**". If the letter disappears from the list, it means that the operation was successful and that the peripheral can be extracted. If the letter remains, it means that an application is using it. It is therefore recommended to attempt the operation after a few minutes. If this is not sufficient, it is recommended to switch the scales off.

4.8.2. IP addresses page

Allows the IP address currently set to be displayed and modified and to check the connection to the external network.

System E



In all systems it is possible to consult the properties of the PC network. To configure these parameters, unblock the user level as explained in chapter 4.8.6.

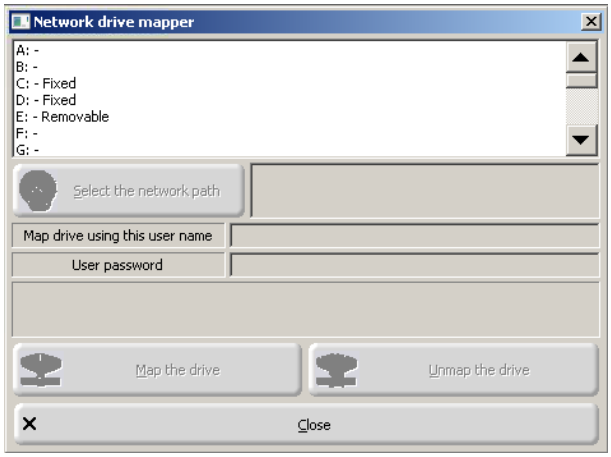
System E

- "**LAN adapters**": Section for configuration of the boards:
  - "**Local Area Connection N**": Allows selection of the network board to be configured;
  - "**Requested**": New configuration to be set:
    - "**Configure this Network**": Flag for forcing configuration of the network selected in this menu. If not selected, the PC uses its native configuration;
    - "**IP Address**": IP address to be assigned to the scales;
    - "**Subnet Mask**": Mask to be assigned;
    - "**Gateway**": Gateway to be assigned;
    - "**DNS 1**": DNS to be assigned. If not available, the pre-defined ones of Google can be used (8.8.8.8 and 8.8.4.4);
    - "**DNS 2**": See DNS 1;
    - "**Obtain an IP address automatically (DHCP)**": If selected. ignore the IP/Mask/Gw configuration and enter "Dynamic Address" mode;
  - "**Current**": Current settings on the checkweigher:
    - MAC: Device MAC address;
    - See "**Requested**" for the single parameter description;
  - "**Factory reset**": Resetta tutte le configurazioni a quelle di fabbrica;
  - "**On error retry the IP setting after (sec)**": If the setting of the new network configuration fails, the system will make a second attempt after the time (seconds) set;
  - "**Show on first button**": If the board currently being modified is selected, it will be shown as before at the top;
- "**Web service tester**":
  - "**Log box (white box)**": Box in which it is possible to read the outcomes of the test;
  - "**Test web service (button)**": Using this button it is possible to check that the connection permits to exit outside the company network. This possibility is necessary whenever a VPN is not available and remote assistance is required;
- "**Computer Name**": Name of the PC (Reserved);
- "**Desktop Image**": Reserved;
- "**Confirm**": Confirms the parameters set and attempts to configure the PC with the same;
- "**Exit**": Annuls any modification and goes back to the previous menu.

4.8.3. Networks unit menu

Displays the network units currently connected. If you wish to export the production data to the network, you must first map the networks directory shared in the server as a network unit of the checkweigher.

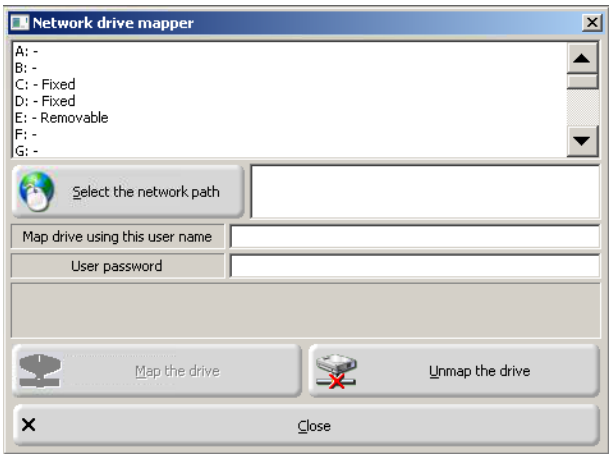
System E



To enable the modification of these parameters, unblock the user level as explained in chapter 4.8.6.

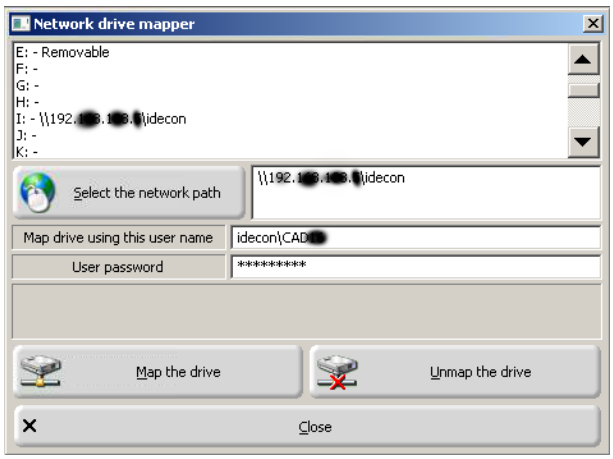
Once unblocked, the network units can be mapped:

System E



- Select the drive you wish to associate to the network directories from among those available;
- Select the network directory by clicking on the "**Select network path**" button or by typing the path directly in the field beneath;
- Enter the username to access the directory in the "**Map drive using this user name**" field;
- Enter the access password in the "**User Password**" field;
- Click on "**Map Drive**";
- If the mapping is successful, the network path will be displayed near the mapped unit.

System E



WARNING! This procedure does not ensure it is possible to write in the mapped directory. Make sure enabling is active by trying to export a batch to the network, as described in chapter 4.5.2.9.

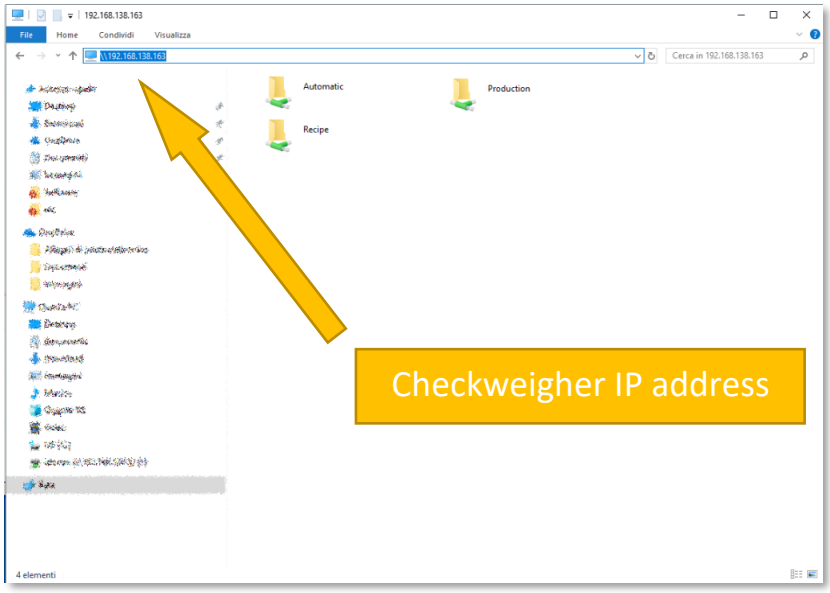
4.8.4. Shared directories menu

Displays the directories shared by the checkweigher.

- System E:
  - **Recipe**: Reading Only. Folder containing the recipes saved on the scales;
  - **Automatic**: Reading Only. The production reports can be found;
  - **Production**: Reading/Writing. The production reports can be found.

As an alternative to chapter 4.8.3, once the checkweigher is connected to the network it is possible to locate production data by connecting to the checkweigher:

- Open an "**Explore Resources**" page on the PC from where connection is to be made;
- In the pathway, indicate the IP address, preceded by "\\", of the scales, the sharing of which is to be seen. Example: \\192.168.173.154;
- Press Enter;
- At this point, if the network configuration of the scales is correct, it will be possible to see that shared by those precise scales.

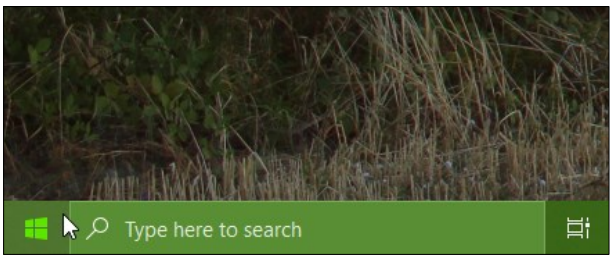
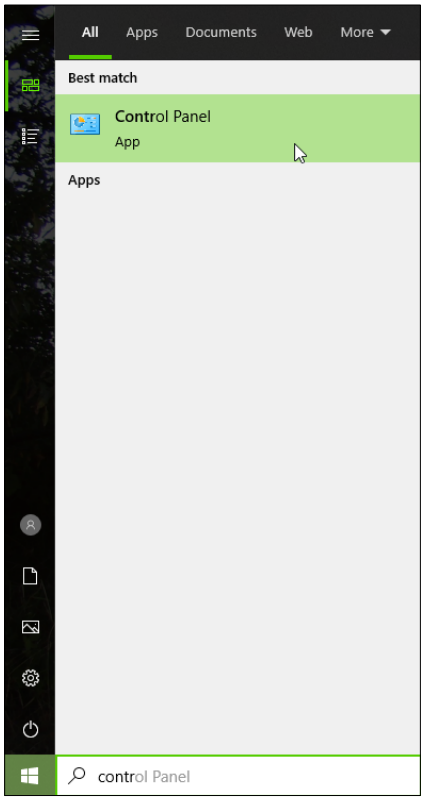


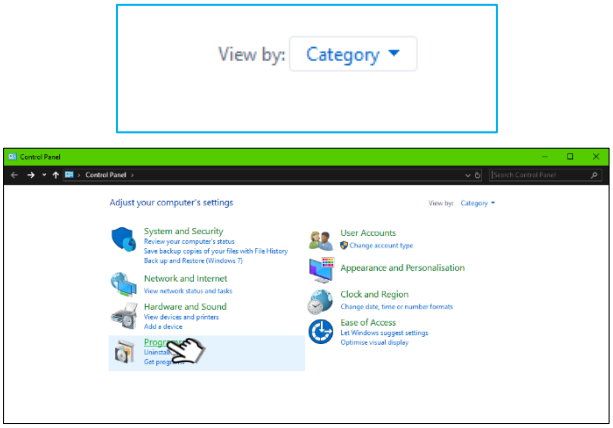
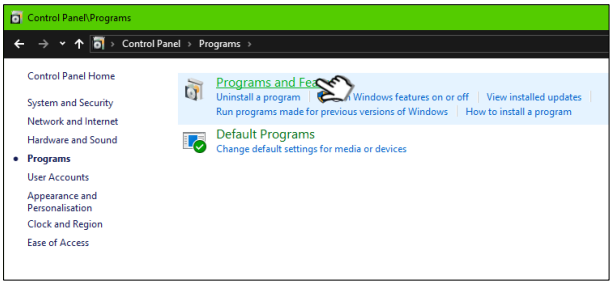
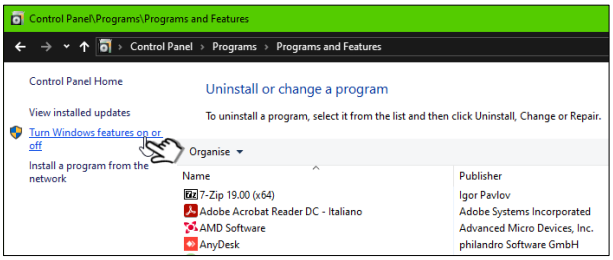
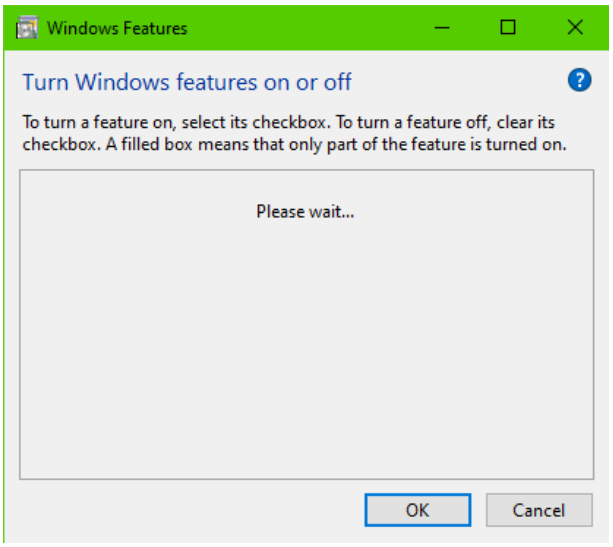
4.8.4.1. *Troubleshooting regarding access to the Scales Directory*

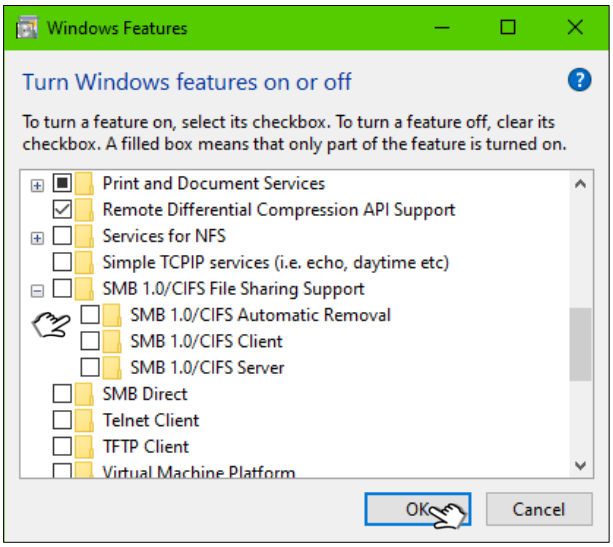
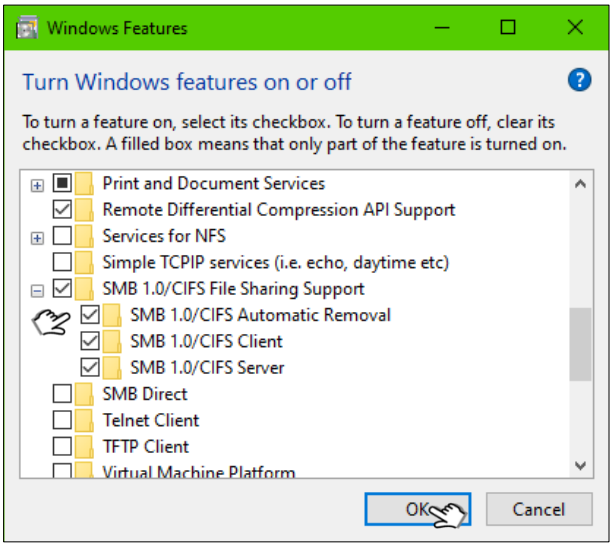
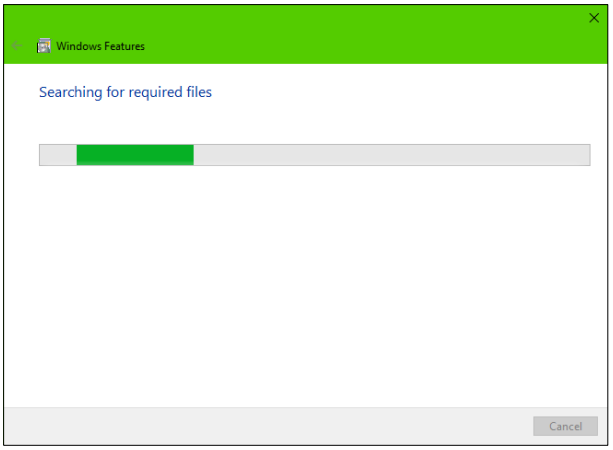
Depending on the device from which access is being attempted to the checkweigher, several problems may occur. Below find the most common with the relative solution:

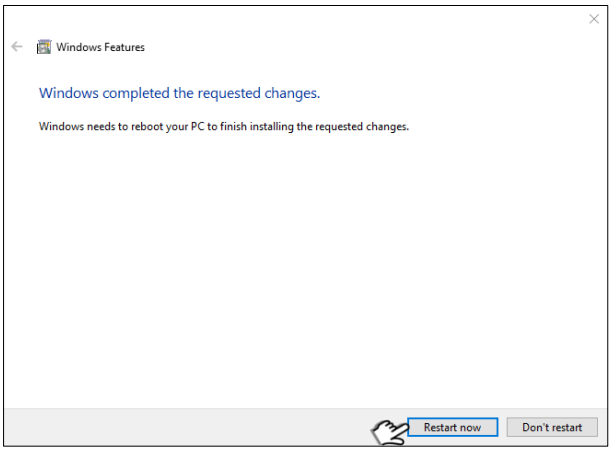
ALARM	DESCRIPTION
"Impossible to access the pathway indicated"	If a Computer is being used with Windows 10, for safety reasons, it is possible that the "SMB1" protocol is deactivated by default. To reactivate it, follow the indications in paragraph 4.8.4.1.1.
	Check that the Computer and Scales are under the same sub-network or, if this is not the case, that the PC can however reach the scales.
The scales can be reached but the sharing cannot be seen and it is not possible to navigate.	Contact the IDECON after-sales assistance.

4.8.4.1.1. *SMB1 Protocol Activation*

Press/Click the "**Start**" button.	
Enter "**Control Panel**" and select the relative icon (as shown in the figure).	

Selecting “**View by: Category**” select the “**Programs**” menu.	
Select “**Programs and functionality**”.	
In the menu on the left, select "**Turn Windows features on or off**".	
Wait for the window to be uploaded.	

Expand the “**SMB 1.08CIFS File Sharing Support**” menu.	
Activate all the options in this section. In particular: • SMB 1.08/CIFS Automatic Removal; • SMB 1.08/CIFS Client; • SMB 1.08/CIFS Server. Press the “**OK**” button.	
Wait for Windows to configure the new functionalities.	

Re-start is necessary to complete the procedure. Save/Close all the programs currently open and select "**Re-start now**". After re-starting, success of the operation can be verified by attempting to access the Scales. If the outcome is negative, consult paragraph 4.8.4.1 for the other problems. If even this is not enough, contact the after-sales assistance.	

4.8.5. Start Menu

Starts the weighing software. Not necessary for the user, the software is always launched automatically when the checkweigher is started.

4.8.6. Tools Menu

Opens an advanced tools window. From this menu it is possible to unblock user modification level, by clicking on the "**Select User**" button in Systems E; then enter "useracc" as password. In this way, the menu will enable the use of some functions that are normally inhibited:

System E

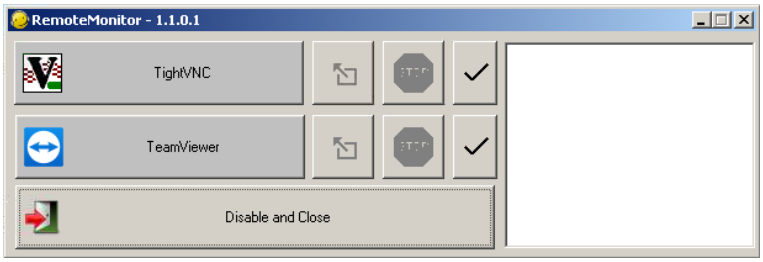
Once the user level is enabled, it is possible to return to the IP address configuration menu (See 4.8.2) and / or network units menu (4.8.3) and map the directory.

4.8.7. OSK keyboard

Clicking this button will open the screen display to allow text editing, if the software had not launched it automatically before or if it had been closed by mistake.

4.8.8. Remote Assistance Menu

Once the button is pressed, the following window will appear:

Version 2	

This menu launches remote assistance. There are 3 additional buttons for every software. From left to right:

- Bring to foreground: allows the windows of the relative program to be taken to the foreground;
- Close program [version 2 only]: allows just one of the two programs to be closed;

- Automatic execution: the relative program can be configured in a way that it is performed autonomously when the remote assistance menu is started.

Finally, the "**Disable and Close**" button in the lower part. When pressed, it just stops all remote assistance software that is launched, and closes the remote assistance menu.

According to the systems, it is possible to use two different assistance software:

- VNC: allows the scales to be connected via IP address, as long as the PC from which connection is made is in the same local network as the scales; necessary in the case of networks with VPN;
- Teamviewer™: known remote assistance software. Allows connection also if the PC with which the scales are reached is outside the company network. In order to allow the connection, the IP address of the scales must be able to have specific ports, in particular:
    - 5938 in output, TCP and UDP protocol;
    - If this is not possible, open the port above, enable port 443, TCP protocol;
    - If it cannot be opened even in this case, use port 80, TCP protocol (the worst in terms of performance).

Check that the following domains and sub-domains can be reached:

- teamviewer.com
- dyngate.com

If an IDECON technician is required remotely, just press the desired software button, which will turn green. Some system information regarding the connection status can be read in the white box on the right.

- Once Tight VNC has been selected, provide the IP Address to the technician which will support remotely;
- Selecting TeamViewer ™ will appear a windows containing the TeamViewer ID that must be provided to the technician which will support remotely;

  If the TeamViewer ID does not appear, press "**Bring to foreground**" to bring the software foreground (See the paragraph beginning). If the TeamViewer ID does not appear, check the IP configuration and the network / firewall settings and restart the checkweigher.

4.8.8.1. Creation of a connection via a customer pc

Whenever the scales are not connected to a network in a stable manner, or use of a network different to that of production is selected, for remote assistance purposes, it is possible to use a PC that acts as a bridge between the scales, onto which our service will connect and from there will reach the scales themselves. To do this:

- Create a “point-to-point” connection between the pc and checkweigher, connecting an Ethernet cable between them;
- Configure the two devices in order to set them on the same network (Example Configuration):

	PC	Checkweigher
IP	192.168.0.1	192.168.0.2
Netmask	255.255.255.0	255.255.255.0
Gateway	192.168.0.1	192.168.0.1
DNS1	8.8.8.8	8.8.8.8
DNS2	8.8.4.4	8.8.4.4

(if the same IP structure is present on the second network card, replace 192.168.0 with 192.168.1)

- Enable VNC connection on the Checkweigher (refer to the previous chapter);
- Connect the PC so that it can reach Internet;
- Allow a Remote PC Connection, for example using a Software like “TeamViewer™”.

4.8.9. Shutdown PC button

When you click this button, the system will ask you whether you would like to shut down or restart your PC. If you have clicked on this button by mistake, select “**NO**”.

4.8.10. Backup button

This button launches the backup software (See 4.6.1).

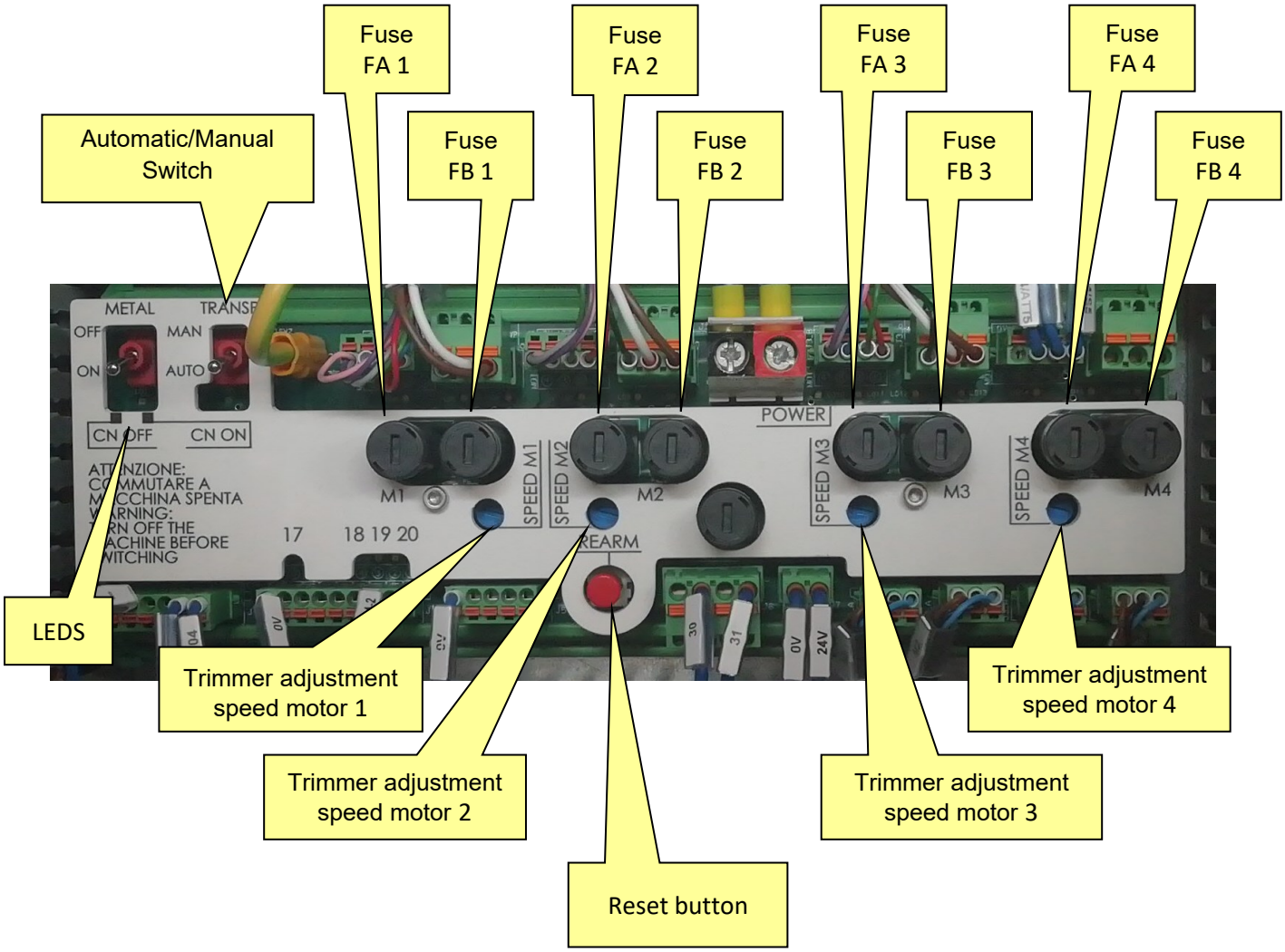
5. CN – motors interface board

DANGER!

Electrical shock caused by high voltage!

Access to the electrical panel must be carried out by qualified and authorized personnel.

The maintenance of the CN- motors interface board fuses must be carried out in the absence of electrical voltage.



The previous image is the interface board between CN and motors. This board allows activation of the manual mode functioning (operation in Transport only mode) when an anomaly on the PLC or on the operator panel impedes the normal functioning of the checkweigher.

On the electrical board there are the following components:

- Trimmer adjustment speed motors 1 ÷ 4: These trimmers allow adjustment of the motors speed and are set in factory so that the conveyor belts run at the same speed. If it is necessary to calibrate the conveyor belts speed again, rotate the trimmer position clockwise to increase the belt speed and anti-clockwise to decrease it;
- Fuses FA 1, FA 2, FA 3 and FA 4: These fuses intervene in case of failure or short-circuit on the power circuit of the respective motors 1, 2, 3, 4;
- Fuses FB 1, FB 2, FB 3 and FB 4: These fuses intervene in case of failure or short-circuit on the logic circuit of the respective motors 1, 2, 3 and 4;
- Automatic/Manual Switch It allows selection between the automatic and the manual functioning mode;
- LEDS: The middle LED (orange) indicates that the CN is turned off. This happens when the switch is in MAN position. The right LED (green) indicates that the CN in turned on. There are also the following LEDs:
    - POWER: Colour blue. It indicates that the weighing system is supplied;
    - 17: Colour green. It indicates that the metal detector is turned off, a contaminated product must be ejected or, alternatively, the metal detector is faulty;
    - 18: Colour green. It indicates that the metal detector is enabled;
    - 19: Colour green. It indicates that the downstream machine consent is active;
    - 20: Colour green. It indicates that the motors are activated.
- Reset: Reset: this button allows reset and activation of the rotation of conveyor rollers.

5.1. Activation procedure of manual mode functioning

If it is necessary to activate the manual mode functioning, proceed as follows:

1) Activating the checkweigher;
2) Access to the electrical panel placed on the back of the machine;
3) Shift the switch of the CN-motors interface board in “MAN” position. The orange CN OFF LED indicator light turns on;
4) Press the “reset” button. **When in manual mode functioning, it is necessary to press RESET at every starting**;
5) If it is necessary to adjust the speed of a conveyor belt, adjust the relative trimmer;
6) Close the door of the electrical panel.

When the operator switches the machine from automatic to manual mode, the following message appears on the panel:

The message warns that the PLC has lost control on the weighing system as the machine is in manual mode.

WARNING: In manual mode, the checkweigher works just in transit mode. Weighing products, production reports, products transit photocell, ejector and possible communication with downstream/upstream machines are deactivated.

OPERATE ON THE RED EMERGENCY STOP PUSH BUTTON TO STOP THE CONVEYOR ROLLERS.

5.2. Activation procedure of automatic mode

In case you want to shift from manual to automatic mode, proceed as follows:

1) Shutdown the checkweigher;
2) Access to the electrical panel placed on the back of the machine;
3) Shift the switch of the CN-motors interface board to “AUTO” position. The green CN ON LED is on;
4) Close the door of the electrical panel;
5) Power the checkweigher.

5.3. Fuses specifications

FUSE CODE	FUNCTION	FEATURES
FA 1	Motor 1 power supply	F 6.3A 5x20 (for bg45 motor) F 10A 5x20 (for bg65 motor)
FA 2	Motor 2 power supply	F 6.3A 5x20 (for bg45 motor) F 10A 5x20 (for bg65 motor)
FA 3	Motor 3 power supply	F 6.3A 5x20 (for bg45 motor) F 10A 5x20 (for bg65 motor)
FA 4	Motor 4 power supply	F 6.3A 5x20 (for bg45 motor) F 10A 5x20 (for bg65 motor)
FB 1	Motor 1 logic power supply	F 1A 5x20
FB 2	Motor 2 logic power supply	F 1A 5x20
FB 3	Motor 3 logic power supply	F 1A 5x20
FB 4	Motor 4 logic power supply	F 1A 5x20

6. Maintenance and repairs

Maintenance and cleaning operations should only be carried out while the machine is off.

Guards may only be removed to carry out maintenance operations, if necessary, by skilled or authorized personnel.

6.1. Transport components

6.1.1. Conveyor rollers

The conveyor rollers consist of several parts, assembled and balanced before machine start-up.

We therefore recommend not to try to repair or replace any of their parts, because their imperfect balancing could have an effect on machine operation.

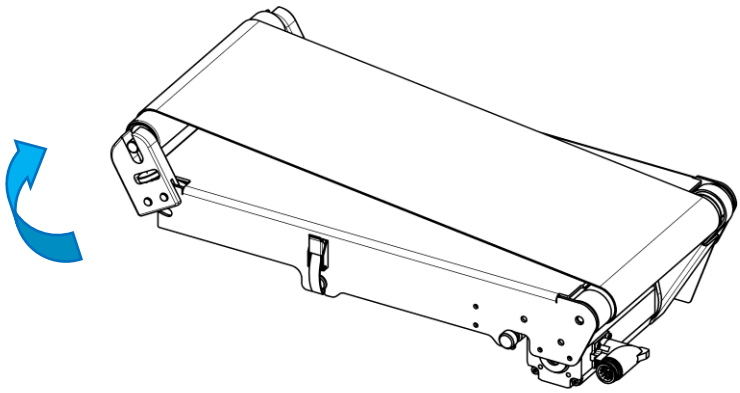
To replace parts contact the manufacturer.

6.1.2. Replacing the conveyor belts

The conveyor belts are easy to replace thanks to their quick lock and removal system.

To replace, proceed as follows:

- Remove the entire conveyor belt, following the procedure explained at the end of paragraph 2.6;
- Loosen the belt by turning the idle roller upwards; (See figure)
- Lift the front head, which tensions the roller;

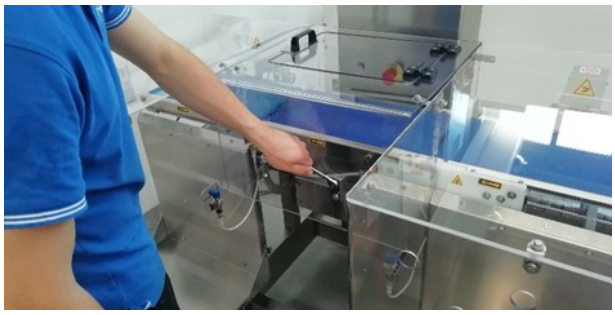
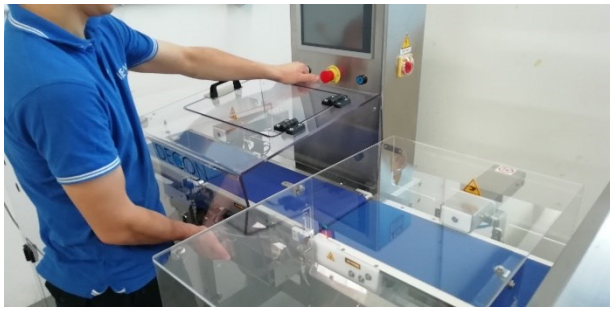


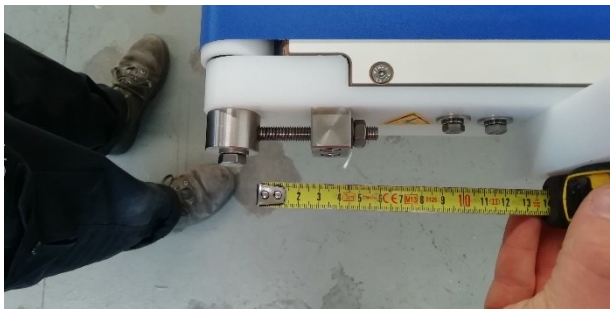
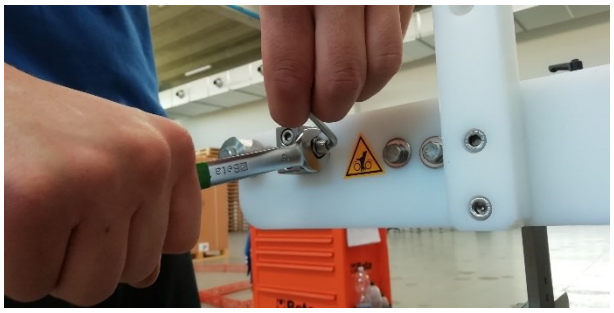
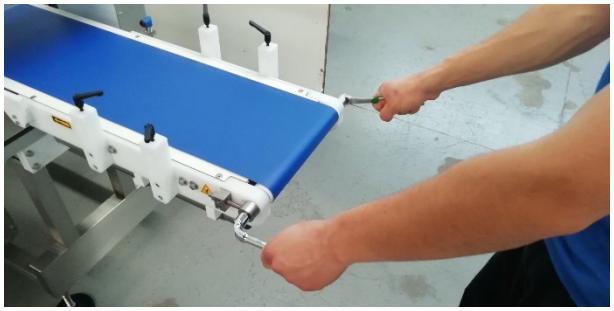
- Extract the lateral belt and replace it with a new one;
- Centre the belt with respect to the running surface;
- Rotate the idle roller downwards to tension the belt;
- Check correct tensioning and, if necessary, operate on the lock-nuts positioned to adjust the roller ring nuts;
- Approach the conveyor and insert the drive belt onto the motor pinion;
- Rest the conveyor and place it in the correct position (the grooves of the pins must enter into the relevant seats);

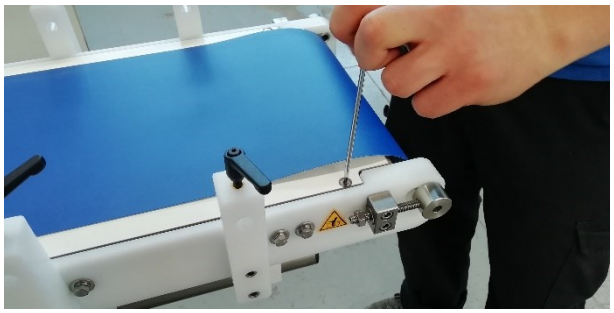
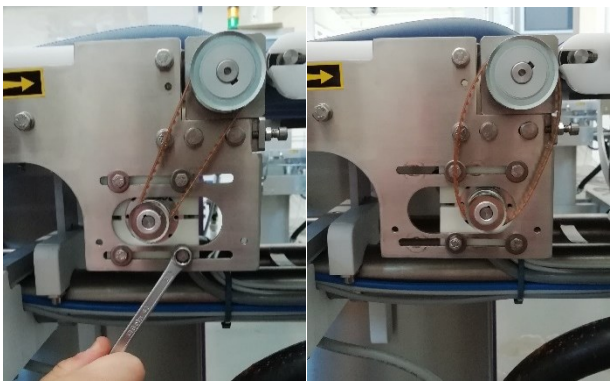
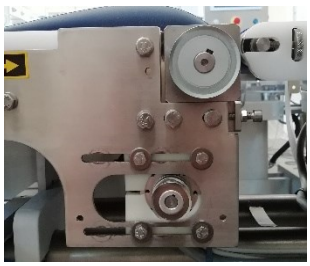
- Lock the conveyor in place by fixing the side locks again.

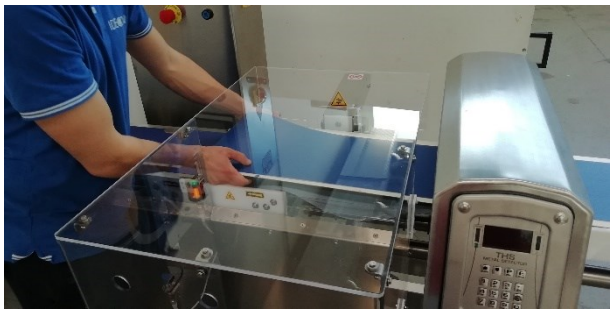
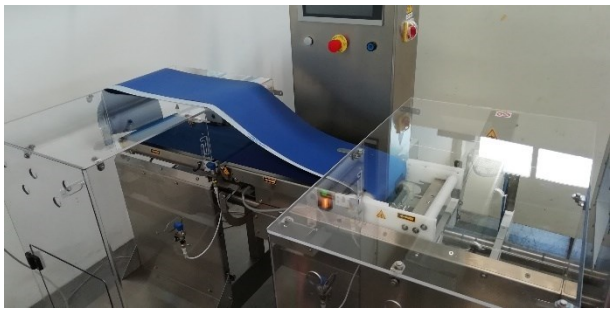
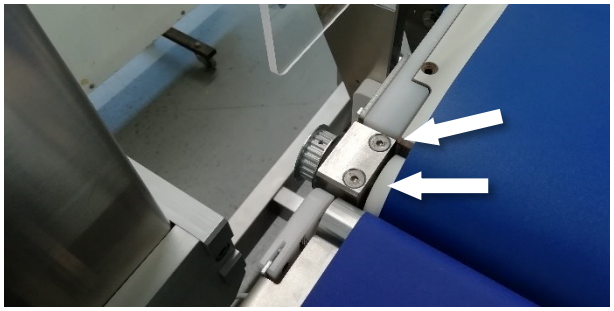
ATTENTION!
In the initial start-up phase, monitor the belt until stable operation is detected, without slipping towards one of the two edges of the plate.

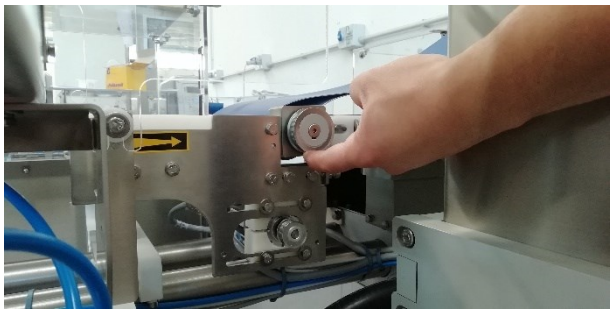
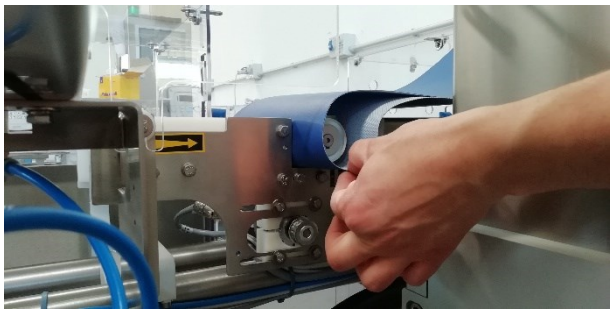
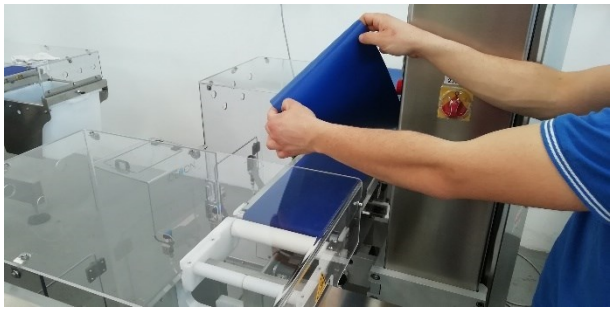
6.1.2.1. Metal Detector Belt Replacement

Remove any guides present on the Metal Detector belt.	
If present, remove the central guard (of the weighing plate). Pay particular attention during any intervention performed in the vicinity of the weighing plate, **any blow or pressure could damage the load cell, thus making new calibration necessary!!!**	 
Loosen (WITHOUT completely unscrewing) the 4 screws that fix the ejector (in the case of bellows, the number of screws may vary and their removal may not be necessary).	

Pull the ejector backwards in a way not to obstruct the removal of the polyphenolic multilayer.	
The Metal detector belt tensioning screws can be identified from the side of the idle roller. It is recommended to make note of the position reference in a way to successively facilitate the re-mounting and alignment operations. Loosen the tension of the idle roller.	 
Continue by disassembling the idle roller. **SIMULTANEOUSLY** loosen the screws that fix them.	
Remove the idle roller.	

Remove the 8 countersunk screws, which fix the multilayer.	
Successively remove the protective guard of the metal detector belt by loosening the 3 clamping screws.	
Loosen the 4 tensioning screws of the motor to remove the tension at the belt and remove the same	 
PAY ATTENTION TO THE NEXT STEPS!! **IF ATTENTION IS NOT PAID, SEVERAL PARTS OF THE SCALES MAY BE DAMAGED (AMONG WHICH THE WEIGHING PLATE, MOTOR ROLLER AND THE RELATIVE BEARING)**	

Lift the multilayer and extract it from the motor roller side, always paying particular attention to the weighing belt.	
When it is out completely, it can be extracted. Position the belt as shown in the figure, in a way to facilitate the next step.	
Remove the two countersunk screws COMPLETELY, which block the motor roller from the side of the notched wheel.	

SLIGHTLY lift the side of the motor roller that is now free just enough to allow extraction of the belt (operation to be carried out with absolute delicacy since, by lifting this part too much the respective mobile bearing could be damaged).	
Extract the belt delicately, which must exit without tension.	
Remove the belt to be replaced and introduce the new one.	
Re-mount everything, performing the same steps in reverse order, paying particular ATTENTION to: • Weighing belt; • Mobile bearing of the idle roller; • Orientation of the multilayer: the side with the nearest 4 holes must face the motor roller.	

6.1.3. Belts Centring

WARNING

The adjustment and tightening operations of the conveyor belts must be executed exclusively on a machine that is switched-off.

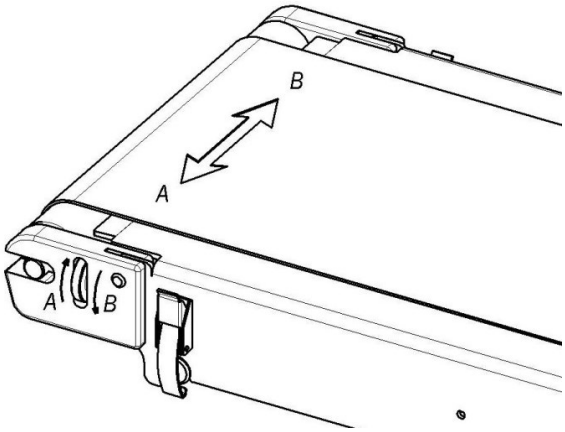
The machine is delivered with the conveyor belts tightened and adjusted for correct operation.

During the first machine commissioning phases, it is however preferable to control that these adjustments remain stable over time.

Therefore, after commissioning, check that the belts remain in a central position during operation.

If you notice that the belts are moving during operation, proceed as follows:

- Lift the front head, which tensions the roller;
- Turn the belt centring tension adjusters individually, 1 position at a time (the tension adjusters have 8 positions/turn);
- Tighten the tension adjuster on the side where you notice that the belt has moved closer to the lateral panel, or:
- Loosen the tension adjuster on the side where you notice that the belt has moved away from the lateral panel.



ATTENTION!

Belt centring operations must be carried out with the greatest accuracy and in small steps and must be repeated regularly.

The result of the operation will not be immediate but It will be effective after approx. one minute. After each adjustment, wait for the stabilisation of the belt before making the next adjustment.

Adjusting the tension controls, belt repositioning will not be immediately seen.

During the early adjustment phases, keep the belts monitored until operation without lateral movement is observed.

6.1.3.1. Belt alignment and levelling

Check that the machine has been correctly aligned with the systems located upstream/downstream.

Check that the products are fed along the conveyor belt centre line and that they remain stable during infeed and outfeed.

To guarantee correct machine operation, the conveyed product progress must be perfectly in line: the products should not move out of line, turn or bounce.

6.1.4. Replacing the transmission belts

To replace, proceed as follows:

- Remove the entire conveyor belt, following the procedure explained at the end of paragraph 2.6;
- Loosen the belt by rotating the idle roller upwards;
- Loosen the screws that support the motor roller;
- Extract the motor roller;
- Replace the belt;
- Re-mount the motor roller;
- Re-mount the conveyor with the same procedure described above.

6.1.5. Replacing the gear motors

The installed gear motors are made up from epicyclical reduction gears and brushless motors.

A special connection bracket is provided to fix gear motor parts. This operation should be carried out with the greatest care because the assembled gear motor must be well calibrated so as not to affect loading cell sensitivity, which would alter the weighing values.

Contact the manufacturer for the supply of assembled parts.

To replace, proceed as follows:

- Disconnect power;
- Disconnect the motor electrically;
- Remove the driving belt guards;
- Loosen the gear motor from its fixing support after removing the weighing belt;
- Replace the gear motor carefully making sure it is locked in the correct position;
- Install the guards again;
- Connect the gear motor;
- Start the machine and check that the driving belt is correctly positioned and taught;
- Keep the unit monitored during early operation phases.

6.2. Replacing batteries

The machine comes with batteries used to keep data in the memory storage; they will last for about 3 years and do not require any special maintenance.

If batteries need to be replaced, disconnect power to the machine first.

To dispose of discharged batteries, refer to the applicable regulations in force.

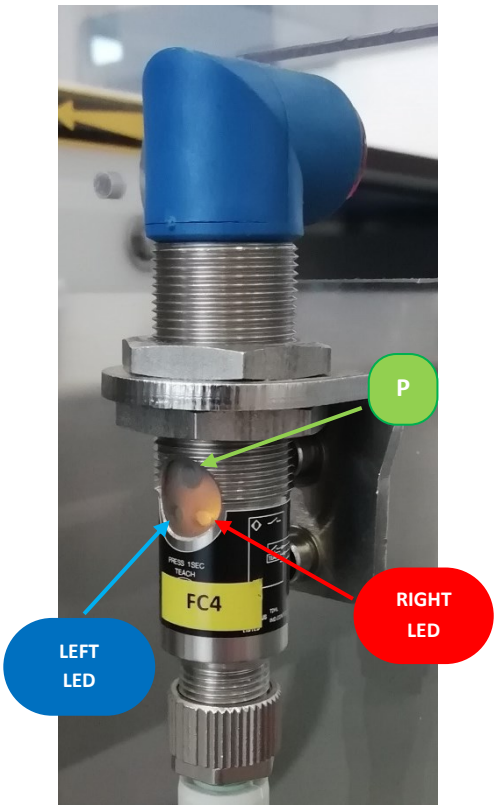
6.3. Sensitive Components

6.3.1. Photocell calibration

According to the type of photocell installed, it is necessary to calibrate it to obtain the best possible detection performance.

6.3.1.1. Teach-In photocell

The Teach-In photocell has a self-learning button, located above the two indicating LEDs.



1) Calibration procedure

To tare this type of photocell:

- Make sure it is properly aligned with the reflective mirror;
- Hold the button down for at least 1 second, until the LED starts to flash rapidly;
- Release the button to calibrate the photocell.

If the left LED is red, or if the right LED is off, the photocell is **NOT** calibrated correctly.

2) Configuration procedure

To select the default work mode (NO):

- Hold the button down for 10 seconds or at least until the RH LED flashes slower;
- At this point, the photocell will flash N times according to the mode at which it is currently set (see table);
- Press lightly to change the mode until “NO Minimal” is selected (2 flashes);
- After 15 seconds without being pressed, the photocell will automatically go back to display mode;
- Proceed with new tare process (see photo 1).

N° Flashes	NC/NO	Teach Mode
1	NO	Normal
2		Minimal
3[8]	NC[8]	Normal[8]
4[8]		Minimal[8]

[8] Not used!

6.3.1.2. *Photocell with Trimmer*

The trimmer photocell can adjust sensitivity using its trimmer, at its bottom.

	To calibrate the photocell, simply make sure it is aligned, as it is installed and adjusted for maximum sensitivity.

6.3.1.3. *Barrier photocell*

	This type of photocell can be modified in 2 ways: Coarse and Fine. Since Fine is very sensitive to vibrations, it is advised to use Coarse calibration. The procedure is given below: • Check that the 4 lights are aligned correctly with the reflecting mirror; • Keep the button above pressed until the light turns red; • Release and check the correct detection of the product. If not detected, repeat the procedure.

	If the product continues not to be detected correctly, proceed with fine calibration: • Check that the 4 lights are aligned correctly with the reflecting mirror; • Keep the button above pressed until the light turns red and then green; • Release and check the correct detection of the product. If not detected, repeat the procedure. If the photocell green and yellow LEDs are on simultaneously, or if the red LED is on, repeat the calibration process.

6.3.2. Digital Pressure Sensor

To tare the digital pressure sensor, it must be instructed to which pressure it must change over. For this purpose, follow the steps given below:

- Use the pressure switch to set the pressure at which the sensor trips, causing the checkweigher to go into alarm mode;
- Hold the blue “Edit” button down for self-learning (at least 2 seconds), until the LED starts to flash;
- Release the “Edit” button. The current pressure is saved as switch over pressure;
- Ensure that the sensor is powered for at least 10 seconds after self-learning;
- Run a test functioning of the SDE5 aimed at ascertaining the precision of the same on variation of the pressure. With the electric signal output, the LED also lights up.

After self-learning, the values are written in the internal memory. If the saving process is interrupted unexpectedly (e.g. due to voltage cut-out), writing is not complete in the memory and the device becomes unusable.

- **Guarantee the voltage power supply of the unit for at least 10 s after self-learning.**

7. Analytic index

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8. General data and attachments