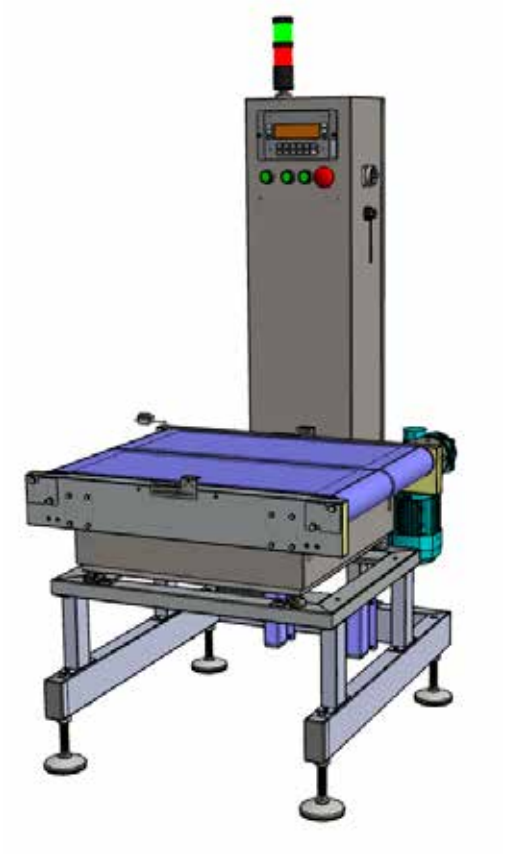
SOCIETA' COOPERATIVA
BILANCIAI
Strumenti e Tecnologie per Pesare

USE AND WARNING INSTRUCTIONS

TRANSLATION OF THE ORIGINAL INSTRUCTIONS



SEL700 WEIGHING SYSTEM



Serial number	-
Client	-
Year of manufacture	2020

Soc. Coop. Bilanciai Campogalliano

Campogalliano (MO) - 41011 - Via S.Ferrari, 16
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Revision 00 - Edition 12/2020

INTRODUCTION

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The Manufacturer shall not be held liable under any circumstances for the consequences resulting from any incorrect operations by the user.

PUBLISHER'S NOTE

This documentation is expressly intended for technicians; therefore, some information that can be easily drawn from reading the texts and examining the drawings may not have been specified further.
The Publisher shall not be held liable under any circumstances for the information and data contained in this manual, all of which was provided, checked and approved by the Manufacturer during verification.
The Publisher shall not be held liable under any circumstances for the consequences resulting from any incorrect operations by the user.

GENERAL REMARKS

All operating and maintenance instructions, as well as recommendations described in this manual, must be complied with. For best results, the manufacturer recommends that cleaning and maintenance be performed regularly to keep the system in the best working order.
Training the personnel in charge of the machine to properly use and service it, as well as checking compliance with the operating procedures and all the safety standards set forth in this manual is particularly important.

REVISION INDEX

REV.	PUBLICATION NOTES	FINAL PAGE NO.	DATE
00	First version	-	11/2020
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02			

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1. IDENTIFICATION

1.1 Manufacturer identification

Manufacturer	**SOCIETÀ COOPERATIVA BILANCIAI**
Address	Via S.Ferrari, 16 Campogalliano (MO) - Italy Tel. +39 059.893611 info@coopbilanciai.it - www.coopbilanciai.com

1.2 Machine identification

Machine	SEL 700
Serial number	-
Client	-
Year of manufacture	2020

1.3 Identification plate

The machine identification details to be submitted to **SOCIETÀ COOPERATIVA BILANCIAI** in case of need are shown on the nameplate.





CAUTION!
Removing the EC nameplate and/or replacing it with other plates IS STRICTLY FORBIDDEN.
Should the plate be accidentally damaged or removed, the Customer must inform the Manufacturer.

1.4 EC Declaration of Conformity

SOCIETA' COOPERATIVA BILANCIAI Strumenti e Tecnologie per Pesare

Dichiarazione di conformità UE

(Allegato II, parte 1, sezione A della Direttiva 2006/42/CE sulle Macchine)

1. **Strumento per pesare a funzionamento automatico**

TIPO/MODELLO	**SEL700**
N° di serie	XXXXXX

2.

FABBRICANTE:	SOCIETÀ COOPERATIVA BILANCIAI CAMPOGALLIANO Via S. Ferrari,16 41011 Campogalliano MO (ITALIA)

3. La presente dichiarazione di conformità è rilasciata sotto la responsabilità esclusiva del fabbricante.

4. Oggetto della dichiarazione: vedi 1.

5. L'oggetto della dichiarazione di cui sopra è conforme alle pertinenti direttive e normative di armonizzazione dell'Unione:

- **2014/30/UE (EMC) :** Norme EN 61000-6-2:2006, EN 61000-6-4:2007, EN 61000-4-3:2006, EN 61000-4-4:2014, EN 61000-4-5:2014, EN 61000-4-6:2014, EN 61000-4-11:2004
- **2014/35/UE (LVD):** Norme EN 61439-1:2010, EN 60204-1:2006
- **2006/42/CE (MD) :** Norma EN 12100:2010

8. Informazioni aggiuntive:
nell'utilizzo devono essere rispettate tutte le istruzioni riportate nel manuale d'uso a corredo dello strumento, nonché tutte le norme in materia di sicurezza e prevenzione degli infortuni vigenti nel paese di utilizzo.
Sul prodotto è stata apposta la marcatura CE.
Nel caso in cui lo strumento venga inserito in un impianto, ne è VIETATA la messa in servizio e l'immissione sul mercato prima che il medesimo impianto, in cui lo strumento è destinato ad essere incorporato, sia messo in condizioni di sicurezza e dichiarato, in base alla prescritte valutazioni di conformità da svolgersi sotto la responsabilità del fabbricante dell'impianto, conforme ai requisiti di sicurezza ed ai requisiti essenziali previsti dalle pertinenti normative legislative e regolamentari, specie di natura comunitaria, applicabili in materia in base ai paesi di destinazione
Si dichiara inoltre che la persona autorizzata a costituire il fascicolo tecnico della macchina è:
SOCIETÀ COOPERATIVA BILANCIAI CAMPOGALLIANO

Firmato a nome e per conto del fabbricante:

Luogo e Data: [Luogo]

XX/XX/XXXX

SOCIETÀ COOPERATIVA BILANCIAI CAMPOGALLIANO
IL PRESIDENTE
Dr. Enrico Messori

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1.5 Reference directives

The machine supplied by **SOCIETÀ COOPERATIVA BILANCIAI** does not fall into any of the machinery categories listed in Annex IV of the Directive; therefore, with a view to proving its compliance with the provisions of this directive, **SOCIETÀ COOPERATIVA BILANCIAI** applies the conformity assessment procedure with internal checks on the manufacture of machinery, provided for in Annex VIII.
To certify machine compliance with the Machinery Directive provisions, before placing the machine on the market, **SOCIETÀ COOPERATIVA BILANCIAI** carried out a risk assessment in order to check compliance with the essential health and safety requirements of the Directive, as well as the tests and checks set out in the applied reference standards.
The technical construction file was drawn up in accordance with the provisions of Annex VII of **Directive 2006/42/EC** and can be checked by supervisory bodies upon reasoned request, as provided for by current relevant legislation.

Then, the machine will be placed on the market by **SOCIETÀ COOPERATIVA BILANCIAI**

CE marking	
EC Declaration of Conformity	
Instruction and warning manual	(Documentation drawn up as provided for under 1.7.4 of the Machinery Directive 2006/42/EC)

please also note that the machine was designed in accordance with the following Directives:

2006/42/EC	Machinery Directive
2014/30/EU	Electromagnetic Compatibility (EMC) Directive
2014/35/EU	Low Voltage Directive

And that the following harmonised standards have been applied:

UNI EN ISO 12100:2010	Safety of machinery - General principles for design - Risk assessment and risk reduction
EN 61000-4-11:2004	Electromagnetic compatibility (EMC) - Testing and measurement techniques - Voltage dips, short interruptions and voltage variations immunity tests
EN 61000-4-6:2014	Electromagnetic compatibility (EMC) - Testing and measurement techniques - Immunity to conducted disturbances, induced by radio-frequency fields
EN 61000-4-5:2014	Electromagnetic compatibility (EMC) - Testing and measurement techniques - Surge immunity test
EN 61000-4-4:2014	
EN 61000-4-3:2006	Electromagnetic compatibility (EMC) - Testing and measurement techniques - Radiated, radio-frequency, electromagnetic field immunity test
EN 61000-6-4:2007	Electromagnetic compatibility (EMC) - Emission standard for industrial environments
EN 61000-6-2:2006	Electromagnetic compatibility (EMC) - Immunity for industrial environments
EN 60204-1:2006	Safety of machinery
EN 61439-1:2010	Low-voltage switchgear and control gear assemblies



CAUTION!
The operating conditions of the electronic terminal for weighing instruments are regulated by the standards in force in the country of use. Any use which does not comply with these standards is prohibited.

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Chapter 2
PRELIMINARY INFORMATION

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2. PRELIMINARY INFORMATION

2.1 Recipients

The manual is intended for operators in charge of using and managing the machine throughout its service life.
It deals with any subjects related to proper use of the machine, in order to keep its operating and quality features unchanged over time. All information and warnings about how to properly and safely use the machine are also provided.
The manual, like the EC certificate of conformity, is an integral part of the product and must always accompany it whenever it is transferred or resold. The user is required to keep the documentation intact so that it can be referred to throughout the service life of the machine.

2.2 Supply and storage

The manual is provided in both **hard and soft copies.**
All additional documentation (pneumatic and electrical diagrams, sub-supplier manuals) is attached to this manual.
Keep this manual with the machine, so that it can be easily referred to by the operator.
The manual is an integral part for safety purposes, therefore:

- **it must be kept intact** (in all its parts). If it is lost or damaged, a copy must be requested immediately.
- **must follow the machine until demolition** (even in the case of transfer, sale, leasing, rental, etc.);
- **The attached manuals are an integral part of this documentation**, and the same recommendations/requirements set out in this manual apply to them.

The **Manufacturer** shall not be held liable for any misuse of the machine and/or damage caused as a result of operations not provided for in the technical documentation.



IMPORTANT!

- **All the technical information contained in this manual is the exclusive property of the Manufacturer and must be considered as being of a reserved nature.**
- **The reproduction and disclosure, even partial, of this manual on paper, digital support or on the WEB without written consent from the Manufacturer is prohibited.**

2.3 Updates

If the machine requires functional changes or replacements, the revision or updating of the manual shall be the Manufacturer's responsibility. The Manufacturer undertakes to deliver any manual update.
If any changes are made to this document by the Manufacturer, the user shall ensure that only the updated versions of the manual are actually available at the points of use.

2.4 Language

The original manual was drawn up in **Italian.**
Any translations into additional languages shall be done from the original instructions.
The Manufacturer is responsible for the information contained in the original instructions; translations into different languages cannot be fully verified, therefore if any inconsistencies are found, please refer to the original text, or contact our Technical Documentation Department.

2.5 Operators

In order to establish with certainty what the skills and qualifications of the operators assigned to the various tasks (start-up, cleaning, routine maintenance) are, please refer to the following table:

Job description	Definition
Machine operator	Personnel entrusted with the operational management of the machine - switch-on, start-up, shutdown, proper product feeding. **Note:** not allowed to perform any maintenance.
Machine programmer	Personnel entrusted with machine programming, a task that does not entail any hazards for persons or property. Special carefulness is required from the person performing this task, as some programming operations can damage previously memorised data. The person must also be familiar with the company's productive organisation so as to enter the appropriate information.
Lifting and handling equipment operator	operator authorised to use equipment for lifting and handling materials and machines (strictly following the Manufacturer's instructions) in accordance with the laws in force in the machine user's country.
Maintenance technician Mechanic	Qualified technician who is entrusted with checking mechanical components for cleanliness and proper preservation as well as adjustment and maintenance conditions. **Note:** he/she is not authorised to operate on live electrical systems (if any).
Maintenance technician Electricity	Qualified technician who is entrusted with managing maintenance work and any electrical malfunctions, in addition to being able to conduct work in the control panel if needed.
After-sales service	Skilled technician who deals with all complex adjustments, maintenance, repairs, or other operations to be carried out in particular conditions.

The qualifications shown in the table on this page necessarily fall within the **"trained person"** category.

Type	Definition
Trained person	One who has been informed, instructed and trained in the job, and is acquainted with any dangers resulting from misuse. The person is also aware of the importance of safety devices, accident-prevention regulations and safe working conditions.

2.6 Symbols used within the manual

In order to establish with certainty what the skills and qualifications of the operators assigned to the various tasks (start-up, cleaning, routine maintenance) are, please refer to the following table:

Symbol	Term	Definition
	**CAUTION!**	Identifies situations that could lead to product damage if not adhered to.
	**CAUTION!**	Identifies situations that could result in personal injury or adversely affect machine performance if not properly adhered to.
	**DANGER!**	Identifies situations that could result in severe injury or death if not adhered to.
	**IMPORTANT!**	Identifies particularly important information in the manual that is not related to safety.
	**PROHIBITION!**	Identifies prohibited situations
	**RESPECT THE ENVIRON-MENT!**	Identifies information and precautions on how to dispose of contaminated waste and respect the environment.

2.7 Glossary

Technical terms or with a meaning other than the common are used in the manuals.
The used terms and abbreviations are explained below:

Term	Definition
Up-down	function that allows an automatic device to be activated in order to mechanically isolate the scale plate - product system when this is in the weighing position for the time that weighing lasts (static), thus enabling it to weigh products that are longer than the scale belt.
Autoreset	the scale's automatic periodical resetting system. It can only be enabled during an automatic weighing phase. The scale is automatically reset at established intervals, and only when the plate is unloaded, guaranteeing that it will not be loaded automatically with a weight during the resetting procedure. The autozero managing logic is described in the domain rules.
Resetting	process with which the weight indication is returned to zero, annulling the load bearing on the cell, within the preset limits.
Barcode	data structure formed by fixed and variable fields of the process able to be printed on the label. Each barcode must therefore be able to indicate the data of the process in relation to which it is created
BcRead	indicates the format of a barcode that the system can read during the process (by means of a scanner) in order to automatically modify a sub-group of data pertaining to the current process. Each bcread must be described by the sequence of fields it contains and unambiguously identified within the sequence of characters of the barcode itself.
Scale	component that processes the data from the load cell and that provides weighing functions (obtainment of a gross weight value and calculation of the relative entities derived). It also memorises a group of information representing the calibration data and which is the result of the calibration processes.
Braid	component that processes the data from the load cell and that provides weighing functions (obtainment of a gross weight value and calculation of the relative entities derived). It also memorises a group of information representing the calibration data and which is the result of the calibration processes.
Sampling (1) (also calibration)	process with which a bond is established between the intensity of the signal leaving the load cell and the weight bearing on it. Sampling can be: • linear: the bond between the signal and weight is considered to be linear and thus described by means of the equation of a straight line; • non-linear: the bond between the signal and weight is considered to be describable by means of a second-degree equation.
Sampling (2)	group of information that describes the bond obtained during calibration.
Zero sampling	process by which the load bearing on the cell is annulled the moment in which it is activated, thus modifying the sampling data.
Center Zero	defines a weight range around the zero mark between ± 1/4 of a division.
Connector	plug or socket for connecting the terminal to the external equipment.

Term	Definition
Counters	they are global consecutives associated with the equipment. Some express information which, although global, are modified during the process and therefore need to be handled according to the pipeline logic of the process itself (namely, information that must be historicised so that it can be recovered according to the instant in which it was produced). Some pertain to the actual system and cannot be reset during the life of the machine. Others, as they pertain to parts that are liable to be replaced, must include a resetting mechanism.
Default	value provided by the data memory in the absence of an entry via the keyboard. The data entered by the manufacturer are retrieved as default values.
Key-in	press the command that needs to be activated or the character to be retrieved on the display, using the keyboard.
Display	lit screen on which the numeric data and symbols transmitted by the system appear, so that they can be immediately consulted.
Division	appreciable minimum weight variation.
Zero division	this is the division (1/2 before and 1/2 after) spanning the scale resetting value.
Multiple divisions	automatic system for changing the division depending on the weighed load. It works when the scale is either loading or unloading.
Multiple extensions	automatic system for changing the weighing range in systems with several ranges and different maximum capacities. Once the scale has been loaded, return to zero occurs within the last range switched.
Label	group of graphic elements that express the forms and data of the process in a printable form. The following elements can be included in a label: • fixed texts • variable texts • barcodes • images • lines • rectangles The sequence in which the elements are transmitted to the printer is significant, since, in the case of overlapping, each element overwrites the previously transmitted one which partially or totally occupies the same area.
Labelling	process whereby the label is applied to the product and totalising of the same within the process is performed. If the product label (or printer) is not present, the process will deal with totalising alone. If the piece is not to be totalized (namely rejected), the process is annulled.
Full scale	this is the maximum weighing capacity of the instrument, which does not necessarily coincide with the max. structural capacity of the weighing platform.
Host	Remote system that connects to the Weighing-pricing system in order to handle and program it.
Image	graphic element that must be able to be stored in the system so that it can be displayed and printed.
Interface	group of circuits and channels that connect the terminal with the external devices to which it is linked.
IP xx	protection degree for casings and enclosures containing electrical or electronic components. The IP rating indicates the protection class of electronic equipment against solid matters (the first number) and liquid (the second number).
Process (1)	status of the system in which, if appropriately stimulated (cell loading, photocell obscuring, command from the interface), it is able to process the individual products.

Term	Definition
Process (2)	weighing, labelling, weight /price data calculation, totalising and possible handling process, the subject of which is a group of products pertaining to a specific PLU.
Process (3)	group of information that characterises the process of a specific PLU. It consists of the group of data of the PLU in question with the addition of the following elements: • the weighing-pricing data of the last product weighed; • the consecutives linked to the totals.
Traceability lot	group of information that identifies and describes a production lot (typically refers to the livestock market) used to obtain different products to process. The information that identifies and describes the traceability lot can be configured as described in the relative section of the Supplementary Specifications.
Mask	graphic representation of data, characters or symbols on the display, according to the modes established by the manufacturer.
Multi-division	see "Multiple divisions".
Multi-extension	see "Multiple extensions".
Operator	person who uses the system. This is therefore the person who must have read this manual and who is fully familiar with the operating controls.
Option	the equipment that is not part of the standard supply.
Minimum weighing operation	corresponds to the interval between 0 (zero) and a pre-established number of divisions. A high relative error can occur in this zone.
Weighing	Process by which the weight bearing on the load cell during the actual process is measured.
Automatic weighing	Automatic weight measuring process that does not require the intervention of an operator
Dynamic weighing	Automatic weighing process in which weight measurement occurs without stopping the product on the scale plate.
Manual weighing	Weight measuring process that requires the intervention of an operator. It can activate in automatic mode as soon as the operator loads a product on the scale plate or in manual mode, when the operator starts up the process itself.
Static weighing	Automatic weighing process in which the product handling system that regulates the way the product is loaded onto the scale, stops the piece on the scale plate so that the weight can be measured.
Weighing platform	part of the set-up on which the goods are placed for weighing.
PIN	pin, rheophore or pole to which the cable connects.
PLC	freely programmable electronic component containing the program that controls the machine on which it is installed.
PLU	acronym of PRICE LOOK UP, or search (identification) unit of the product. It collects all the specific information about every product that can be processed, or supplies the group of data required to guide the transport, handling, weighing, labelling and totalising process. Additional information expressing the PLUs relation with other elements in the system can be associated with each PLU.
Pole	see PIN.

Term	Definition
Maximum capacity	maximum weighing capacity
Transmission protocol	data encoding and sorting system in a transmission towards an external device.
Stopping position by a belt	a position (target) must be identified on each belt on a level with which the products stop in order to be subjected to the process pertaining to that particular belt (stopping while waiting for events, enabling, confirmation from the user, weighing, labelling).
Weighing range	weighing range between the minimum weight and maximum capacity.
Load receiver	part of the instrument where the load is positioned for weighing.
Scanner	barcode reader
Serialisation	data transmission, character by character.
Slot	position or housing for the board in the terminal.
Stopped status	machine condition in which all the belts are at a standstill or being stopped, and in which they stop as soon as the pieces in the machine reach the stopped position on the individual belts.
Belt consent status	a belt "is enabled" if the next belt (or the next machine relative to the last belt in the line) is able to accept pieces. This means that if a belt has not been enabled, a piece in transit on it must stop at the relative stopping position, or that it cannot start again until its processing status in that position has been completed.
Processing status	condition in which the line is to be found that allows the conveying system to accept pieces, move them, weigh them, label and totalize them. The opposite situation is called "off process".
Running status	machine condition in which the pieces must be able to be moved continuously, in compliance with the downstream enabling conditions.
Store	reservoir of information, which can contain: • the code of a process; • information that guides the process of the specified code (if present) in relation to weighing, handling, characteristics associated with the process.
String	sequence of alphanumerical characters exchanged during a serial transmission between the terminal and external equipment.
Weighing instrument	measuring instrument that determines the "weight" entity of a body.
Preset tare	Tare value associated with a product (PLU), the origin of which is a known value that is entered in the system. It is used for calculating the net weight at the time the weight data of a PLU being processed are calculated. Since the scale that measures the gross weight can have a different capacity and division each time, the value of the tare associated with the PLU must not be rounded-off in any way.
Percentage tare (also weight drop)	Percentage value that expresses an additional tare element equal to the actual percentage value of the net weight, which is consequently decreased to a further extent by the tare value thus obtained.
Printhead (single head, double head)	The printhead consists of a printer and an applicator that can be the air-jet, arm or piston type. An Automatic weighing-pricing system can have one or two printheads (double head). If there are two heads, they are either positioned in line or above and below.
Fixed text	text element filed in the system and unambiguously identified by a numeric code. Each text must belong to a category (ingredients, products, label texts)

Term	Definition
Variable text (or Variable field)	data item of each process which can be included in labels, barcodes, reports. The variable texts include: • fields of the actual process; • information bound to the traceability lot currently set in the system; • general totals.
General total	totalising element that sums the values created by processing the individual pieces across the actual process itself.
Data transmission	exchange of information between two or more devices via electric cables.
Zero tracking	automatic zero tracking system. It can only be enabled during a manual weighing phase and corrects the zero value progressively when the weight value recorded in the cell has been subjected to a smaller variation than a settable value (generically 0.5 g) within a preset period of time (generically 0.5 s). The correction is made by resetting the scale again. It is used in a practical way in applications where progressive accumulations of liquid or dirt tend to shift the scale from its zero position.

2.8 Personal protective equipment

When performing assembly and maintenance work and/or adjustments near the machine, strictly comply with general accident prevention rules; to do so, it is important to use the personal protective equipment (PPE) required for each operation.
Below is the complete list of **personal protective equipment (P.P.E.)** that may be required for various procedures:

Symbol	Description
	**Obligation to use protective or insulating gloves.** Indicates a requirement for personnel to use protective or insulating gloves.
	**Obligation to use safety goggles.** Requires personnel to use safety goggles.
	**Obligation to use safety shoes.** Requires personnel to use safety shoes to protect their feet.
	**Obligation to use noise protection devices.** Requires personnel to use earmuffs or earplugs.
	**Obligation to use protective clothing.** Requires personnel to wear adequate protective clothing.

Those performing maintenance work on the line must wear clothes complying with the essential safety requirements provided for under **Reg. (EU) 2016/425** and the laws in force in the countries where the machine is installed.

2.9 User safety area

The **areas around the machine** are divided as follows:

Term	Description
Control areas	These are areas where the user and other operators can perform command and control operations on the cyclical functions of the machine (**"driving position"**), both automatically and semi-automatically, through the appropriate control panels, or to perform manual operations.
Maintenance /adjustment areas	These are areas where mechanical maintenance technicians can perform maintenance or adjustment operations. These areas are considered at risk and may not be accessed during normal machine operation. Operators must be fully aware of the safety-related warnings and of those about the personal protective equipment to be worn.
Hazardous areas	All machine areas that can cause personal injury are considered hazardous.

To protect against the dangers and risks existing in these areas, as far as possible, **guards** (casings, doors) and **safety devices** (sensors, microswitches, light curtains) are installed, which, if activated, can fully stop the machine.
However, when the machine is running, operating in hazardous areas **IS STRICTLY FORBIDDEN, as some risks may not have been totally eliminated.**

2.10 Warranty

The full warranty clauses are incorporated in the sales contract.

The conditions set out in the commercial contract (if different) shall take priority over the provisions in this section.

The warranty **is subject to** the following general conditions:

- **package opening and installation** must be supervised by technicians authorised by the Manufacturer;
- the **first start-up and successful test** of the installed machine must be monitored and supervised by the manufacturer's technicians; the installation/testing sheet must be completed.
- **the machine must be used within the limits stated** in the contract and the technical documentation.
- **maintenance** must be performed in the times and ways provided for in the manual, using original spare parts **SOCIETÀ COOPERATIVA BILANCIAI**and having qualified personnel conduct the work.

The warranty **shall lapse** in the event of:

- failure to comply with the **safety standards**;
- **removal of, or tampering with** the control and safety devices (guards, photocells, sensors, micro switches, etc.);
- **changes to the safety conditions** established by the Manufacturer in the machine management software;
- **misuse** of the machine;
- use of the machine by **untrained and/or unauthorised personnel**, or failure to adhere to the various operators' skills, as indicated in the manual;
- **modifications or repairs** made by the user without the Manufacturer's written approval;
- partial or total non-compliance with the instructions;
- energy supply defects (electricity, compressed air, etc.);
- poor maintenance;
- use of non-original spare parts;
- exceptional events such as floods, fires (if not caused by machines).



IMPORTANT!
Further details can be found in the commercial contract.
The conditions set out in the commercial contract (if different) shall take priority over the provisions in this section.

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Chapter 3
SAFETY DEVICES

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3. SAFETY DEVICES

3.1 Safety warnings

This section is aimed at informing operators about any particularly significant risks and dangers that may occur on the machine, and about the general and specific precautions to be taken to eliminate or neutralise them.



IMPORTANT!
Before operating on the machine, the operator must be perfectly familiar with:
- **the operating and safety instructions in this manual;**
- **the position, function, and use of all the controls on the machine.**



IMPORTANT!
The managers of the company departments where this machine is to be installed are required to carefully read the contents of this document and to have it read by all operators and maintenance technicians, in accordance with current regulations.



CAUTION!
The appliance must only be installed by specialist personnel after having read and understood this manual.



CAUTION!
Contact your nearest Service Centre if problems occur.



PROHIBITION!
The user or any unauthorised personnel MAY IN NO WAY attempt to disassemble or modify the system, nor tamper with it; this would make the warranty immediately null and void, and the Manufacturer would not be held liable for any resulting personal harm or property damage.



PROHIBITION!
Changing or deleting details on the nameplates, as well as removing the terminal's closing seals or official stamps IS NOT ALLOWED; therefore, make sure that all the nameplates are in place and legible, or else contact the After-Sales Service.



IMPORTANT!
The Manufacturer will not be held liable for damage resulting from careless handling of the machine.



PROHIBITION!
Using the machine without safety guards IS NOT ALLOWED. Remove the safety guards after switching off the machine and disabling the electrical disconnector, only for the time strictly necessary to perform the required repairs or maintenance, then restore them immediately.



IMPORTANT!
If changes are made to this document by the Manufacturer, the Customer shall make sure that only the updated versions of the manual are actually available at the points of use.



PROHIBITION!

- **IT IS FORBIDDEN to wear loose-fitting garments that may get caught up in parts of the machine;**
- **it is forbidden to wear ties or other items that hang loosely;**
- **do not wear bulky rings that could get your hands caught in machine parts.**



PROHIBITION!

- **IT IS FORBIDDEN to run the machine in automatic mode with its fixed and/or movable guards removed;**
- **It is forbidden to disable the safety devices installed on the machine;**
- **It is forbidden to perform any operation with the safety devices deactivated.**



CAUTION!

Perform cleaning after disabling the electrical or pneumatic separating devices.



CAUTION!

Never modify any part of the machine for any reason whatsoever. In the event of malfunctioning due to failure to adhere to the above, the manufacturer cannot be held liable for any consequences. We recommend requesting any changes directly from the manufacturer.



IMPORTANT!

Clean the machine casings, panels and controls using soft dry cloths or cloths dampened with a non-toxic mild detergent; do not use any type of solvents such as alcohol or petrol since it may damage the surfaces.



PROHIBITION!

No unauthorised personnelARE ALLOWED to conduct any work on the machine.



CAUTION!

Before using the machine, make sure that:

- **any dangerous conditions for safety has been appropriately eliminated;**
- **all guards and other protective and safety devices are in place and in working order;**
- **Make sure there are no foreign objects in the operator control area.**



CAUTION!

ELECTRICAL EQUIPMENT

Connection work, commissioning, maintenance, measurements or adjustments of the electrical equipment and its components must be performed by qualified electricians only.

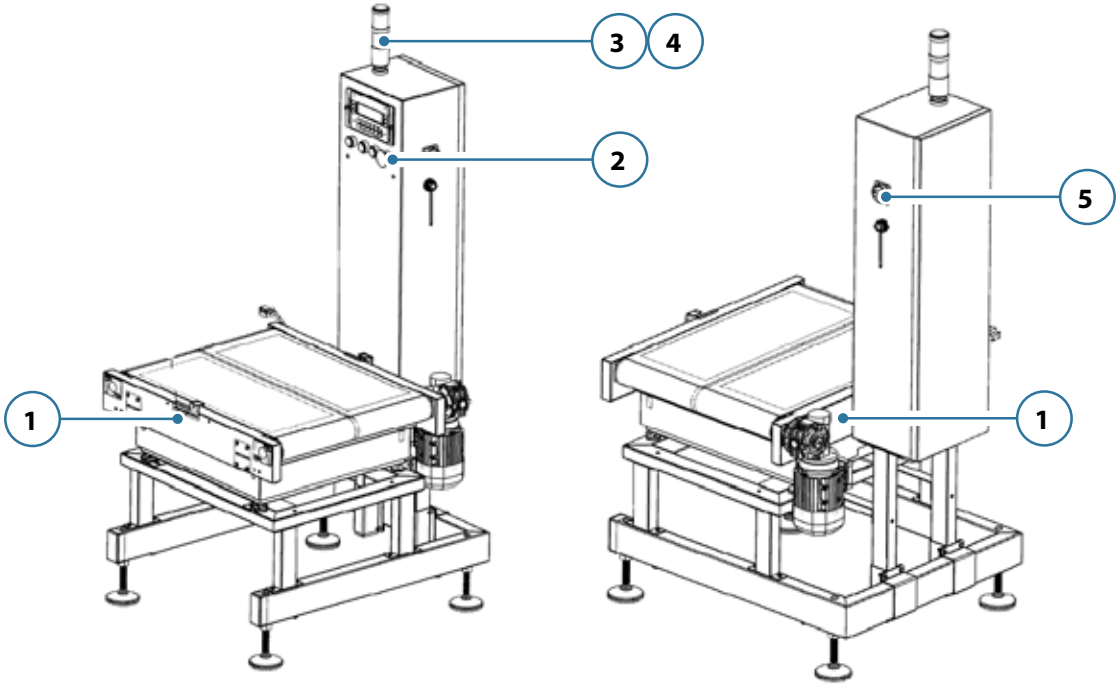
Remember that, frequency converters (also known as 'inverters') generate voltage levels that are dangerous for the life of operators. Before working on these devices, if present, read the relative documentation provided by the manufacturer of the device itself. When working on live electrical components, strictly observe the provisions in force

3.2 Safety devices

To ensure total operator safety and prevent access to the inside of the machine when it is running, the machine has been equipped with a series of **safety devices** that can stop it, if enabled.
The machine has been designed and equipped with safety systems to minimise operator risks.

The machine is equipped with the safety devices described in the table below. For the positions of these devices, refer to the drawing on the following pages.

Pos.	Term	Description
1	**Metal or plexiglass casing**	These are fixed perimeter guards used to prevent access to the drives of various parts of the machine and its units during the operating cycle. The machine is equipped with fixed guards located in the areas with exclusive access for maintenance purposes; these require specific tools for their removal.
2	**Emergency pushbutton**	The red mushroom button must be pressed to interrupt the operation of the machine in case of: • danger to the safety of the operator; • dangers for the machine itself.
3	**Tower stack lights**	It is located in the control areas of the machine; it identifies the following conditions: • red light = dangerous condition, machine stopped in emergency condition; • yellow light = abnormal condition, machine in manual mode; • green light = normal condition, machine in automatic cycle.
4	**Buzzer**	Acoustic signal activating before starting the machine.
5	**Electric general switch**	Located outside the electrical cabinet, allows to manage the power supply of the machine. The switch can be locked with a padlock in the open position.



3.2.1 Fixed and shaped guards

These are protective casings that can be disassembled and disabled by means of special mechanical tools. These do not feature safety devices for checking that they are closed since they must always be fitted before and during machine operation.

Here below is a list of the guards:

- stainless steel casing;
- plexiglass guards.



CAUTION!
Before starting the machine, check all fixed panels for proper installation. Ignoring this may result in severe consequences for the operator and/or third parties.



PROHIBITION!
Never remove the fixed casings when the machine is running. Always refit fixed casings after performing any maintenance work.
Stop the machine completely before removing these guards.



CAUTION!
The casings that can be opened only with tools are not protected by micro switches. Opening them, therefore, will not stop machine operation. Before opening these casings, always stop the machine by pressing an emergency stop button and cutting off power from it.



PROHIBITION!
Tampering with or electrically disconnecting the safety devices installed on the mobile guards IS STRICTLY FORBIDDEN. Ignoring this may result in severe consequences for the operator and/or third parties.



CAUTION!
Whenever disassembling them to perform any checks or maintenance work, it is essential to cut off power through the main electrical switch.



CAUTION!
During all maintenance operations, repair work or adjustments, it is MANDATORY to lock the interlocked switch IN POSITION "0" by means of the padlock provided for this purpose. It is advisable to affix a sign to the control panel on the machine or to the main power supply switch.

3.2.2 Emergency pushbutton

Red mushroom-head button on a yellow background with restraint placed in the front part of the machine's electrical panel:

- press the button at any time to stop the machine instantly.



CAUTION!
The button must be used exclusively to stop the machine during an actual emergency condition; continuous improper use of the button can cause unpredictable damage to the mechanical and electronic system.

3.2.3 Tower stack lights

A light signaling device is positioned on the electrical cabinet which, depending on the type of signaling, communicates the following machine conditions to the operator:

- red light = dangerous condition, machine stopped in emergency condition;
- light yellow = abnormal condition, machine in manual mode;
- light green = normal condition, machine in automatic cycle.

3.2.4 Buzzer

Connected to the flashing device there is an acoustic signal, to signal any anomalies in the operation of the line or emergency situations.

3.2.5 Power switch (with padlock)

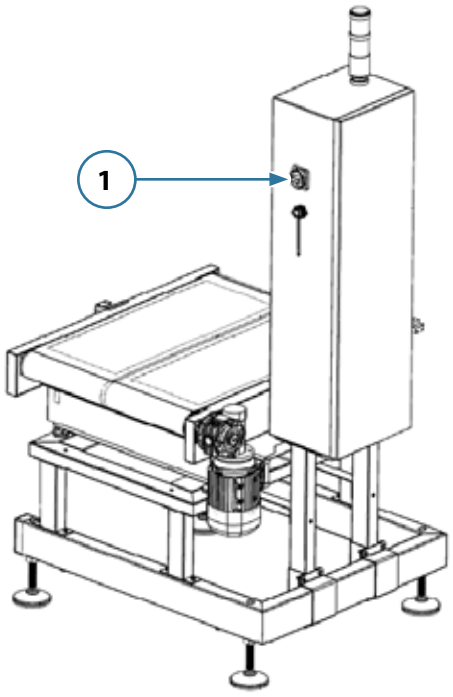
The machine must be connected to a main electrical panel and equipped with a power supply switch (pos1.) installed on the outer side of the cabinet's mobile guard to cut off power from it.

The main switch must be set to "**0-OFF**" in the event of:

- electrical hazard;
- electrical or mechanical maintenance on the machine (padlock the switch);
- impending danger of mechanical accident;
- fires;
- machine inactivity.

By setting the main switch to "**1-ON**":

- power is supplied to the downstream electrical system;
- the doors of the electrical cabinet remain locked in a closed position to prevent access to the live system.



3.3 Noise

The noise level was measured in accordance with the provisions of the **UNI EN 11200** and **UNI EN ISO 3746** standards.
During operating cycles, **staff noise exposure is less than 70 dB.**

The actual noise level of the machine running on-site during a production process is different from that detected since noise is affected by some factors such as:

- type and features of the site;
- other adjacent running machines.

It is the user's responsibility to apply any resulting preventive and protective measures, in accordance with the legislation applicable in the country where the line is installed and used.

3.4 Vibrations

The vibrations produced by the machine, depending on its operating mode, **are not dangerous** for the operators' health.



CAUTION!
Excessive vibration can only be caused by a mechanical failure that must be immediately reported and rectified, so as not to endanger the operators and the line.

3.5 Electromagnetic compatibility

The supplied machine contains electronic components that are affected by conducted and radiated emissions and subject to Electromagnetic Compatibility regulations.
The emission values comply with regulatory requirements as a result of components in line with the Electromagnetic Compatibility Directive, suitable connections and installation of filters as required.
Therefore, the machine complies with the Electromagnetic Compatibility Directive (EMC).



CAUTION!
Non-compliant maintenance carried out on the electrical equipment or improperly replacing components may undermine the effectiveness of the adopted solutions.

3.6 Residual risks

The machine was designed in such a way as to guarantee the essential safety requirements for the operator.

Safety has been as far as possible integrated into the design and construction of the machine; however, risks persist from which operators must be protected, especially during:

- transport and installation;
- normal operation;
- adjustment and fine-tuning,
- maintenance and cleaning;
- disassembly and dismantling.

For each residual risk, a description of the risk and the area or part of the machine subject to the residual risk is provided (unless it is a risk affecting the whole machine). Procedural information is also provided on how to avoid the risk and properly use the personal protective equipment provided and required by the Manufacturer.

Risk	Description and procedural information
Unexpected/accidental machine starting	• isolate the electricity supply by acting on the power switch and by applying a padlock on it; • in the event of any maintenance work, inform the person in charge so as to prevent any accidental starting of the machine.
Danger moving parts	Keep at a safe distance from the work area of the belt and from its drive motor to prevent any contact.



CAUTION!
Do not carry out any maintenance work unless you have previously de-energised any power sources.

The user will take care of:

- **assessing the risks that could occur during handling and installation at its premises** (handling was analysed only by taking the machine characteristics into account);
- **delimit the path of the forklifts** and/or laser vehicles used with signs on the floor;
- **sensitise and train the personnel in charge of performing operations at the workstations,** and of running the machine;
- **apply visual safety signs in the workplace** after assessing the risks in transit or control areas.

3.7 Safety pictograms applied to the machine

The machine features a series of pictograms warning the operator of the existing residual risks.

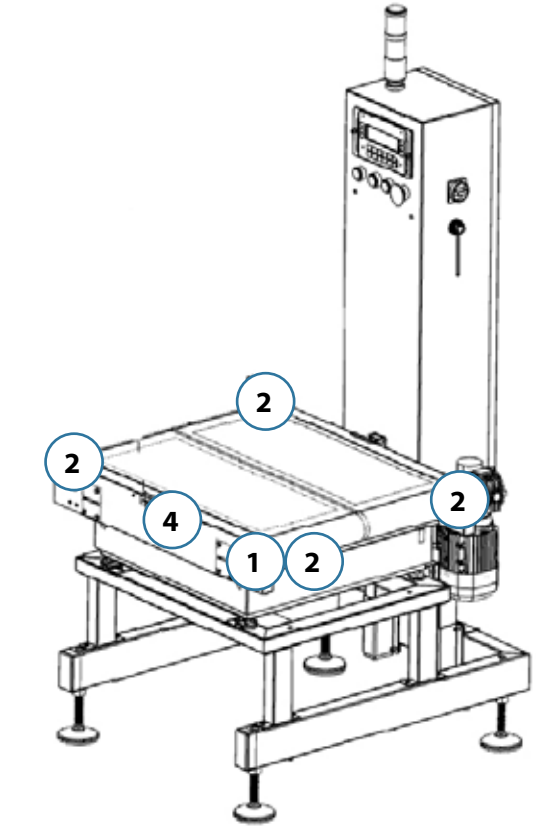
CAUTION!
Removing the warning signs on the machine is strictly forbidden.
SOCIETÀ COOPERATIVA BILANCIAI shall not be held liable whatsoever for the safety of the machine if this prohibition is not complied with.

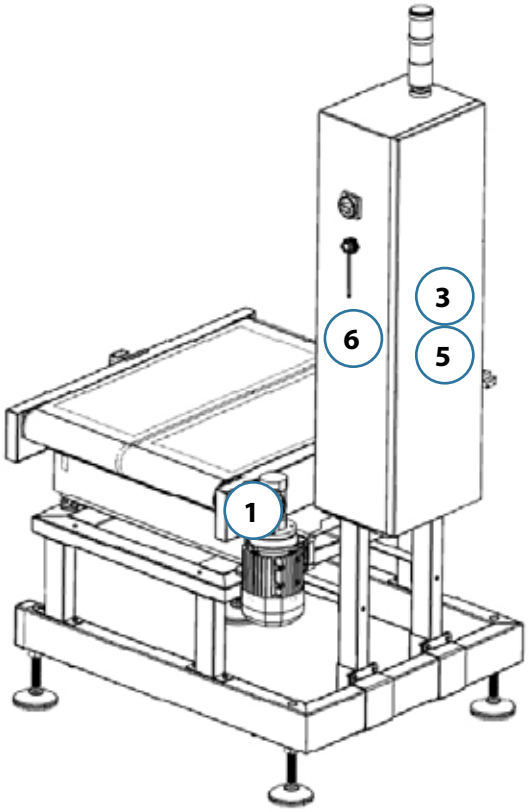
CAUTION!
The user is required to replace the warning signs if they are illegible due to wear.

The table below shows the pictograms on the machine.

For their positions, please refer to the picture below.

Pos.	Pictogram	Description
1		**DANGER DUE TO MOVING PARTS!** Removing any guards and/or safety devices is not allowed.
2		**HAND CRUSHING DANGER!** Refers to the presence of components that may be dangerous for your hands and fingers.
3		**ELECTRICAL HAZARD!**
4		**NO MAINTENANCE ON MOVING MACHINE** This warns operators that it is necessary to stop the machine before performing any maintenance work.
5		**DO NOT USE WATER TO PUT OUT FIRES** Do not put out fires with water. Panel live.
6		**READ THE MANUAL** Indicates the need of reading the manual to be able to operate in safety.


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Chapter 4
MACHINE DESCRIPTION

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4. MACHINE DESCRIPTION

4.1 Proper intended use

The machine referred to here is intended for industrial use for:

Operation	Allowed	Not allowed	Processing environment
Product weighing	Weight check within a set range - weight check in transit	Any use other than that described as intended	Food industry

The machine was created to:

- meet the specific needs mentioned in the sales contract;
- be used according to the instructions and limits of use given in this manual.

The machine is designed and manufactured to work safely if:

- it is used within the limits stated in the contract and in this manual;
- the user manual procedures are adhered to;
- routine maintenance is performed as recommended;
- extraordinary maintenance is promptly performed in case of need;
- safety devices are not removed and/or bypassed.

4.2 Reasonably foreseeable misuse

Reasonably foreseeable misuse is listed below:

- handling and weighing of persons;
- using the machine as a foothold;
- use for direct sales to the public or in the presence of the purchaser;
- using the machine to obtain production values higher than the prescribed limits;
- using the machine to convey unpacked food products;
- using the machine other than envisaged under **"Proper intended use"**.

Any other use of the machine other than that intended must be previously authorised in writing by the Manufacturer. Lacking that written authorisation, the use shall be considered **"misuse"**; therefore, the manufacturer shall not be held liable for any harm to people or damage property, and any type of warranty on the machine shall be deemed to be invalid.



IMPORTANT!
Improperly using the machine rules out any liability of the Manufacturer.



CAUTION!
It is prohibited to use the terminal in a potentially explosive atmosphere or in places with a risk of fire.



IMPORTANT!
The conditions of use of the machine are governed by the metric and safety standards in force in the country of use. Any use which does not comply with these standards is prohibited.

4.3 Obligations and prohibitions

4.3.1 Users' obligations

The user (contractor or employer) must:

- take the operators' skills and conditions into account in relation to their health and safety;
- provide suitable personal protective equipment for each procedure;
- provide standard lifting equipment and procedures;
- require each worker to comply with company rules and regulations regarding safety and how to use the collective and personal protective equipment made available to them;
- instruct staff on accident procedures;
- instruct staff on the devices designed for operator safety;
- instruct staff on the risks of noise emissions in the workplace;
- instruct staff on the general accident prevention rules set forth by the European directives and the legislation in the country of destination of the machine.

Only have staff operating the machine who have read this manual and are properly trained.

4.3.2 Operators' obligations

The operator **must**:

- Always perform maintenance work with the machines off. Not lubricate moving parts.
- When the machine is running, do not operate near it wearing chains, bracelets, ties, or other clothing that can get caught in the mechanisms.
- Operators with long hair shall tie it up to prevent it from getting caught.
- Always perform work on the electrical panel, junction boxes, cables and all electrical system components with the main switch turned off.
- When starting the machine, make sure that there is no one inside the hazardous areas.
- During operation, be extremely careful to check that no one can directly access the moving parts.
- Properly use the protective equipment made available by the employer.
- Immediately report any deficiencies of the safety devices to the employer, manager or supervisor.

4.3.3 Operators' prohibitions

In particular, operators **shall not**:

- use the machine improperly, i.e. for uses other than referred to under "Intended Use";
- remove or tamper with the safety or warning devices without authorisation;
- perform, on their own initiative, operations or activities that do not fall within their competence or may jeopardise their own and other people's safety;
- wear dangling bracelets, rings or chains that can be dragged by moving parts, thus endangering the operator;
- replace machine components or change their speed without being allowed by a manager;
- change the machine cycle;
- change the electrical connections to disable the internal safety devices;
- use the machine if it has not been installed according to current regulations;
- use the machine as a foothold even if it is not running (under risk of falling and/or damaging the very machines);
- use the machine outside the permitted environmental conditions (refer to "chapter 5").

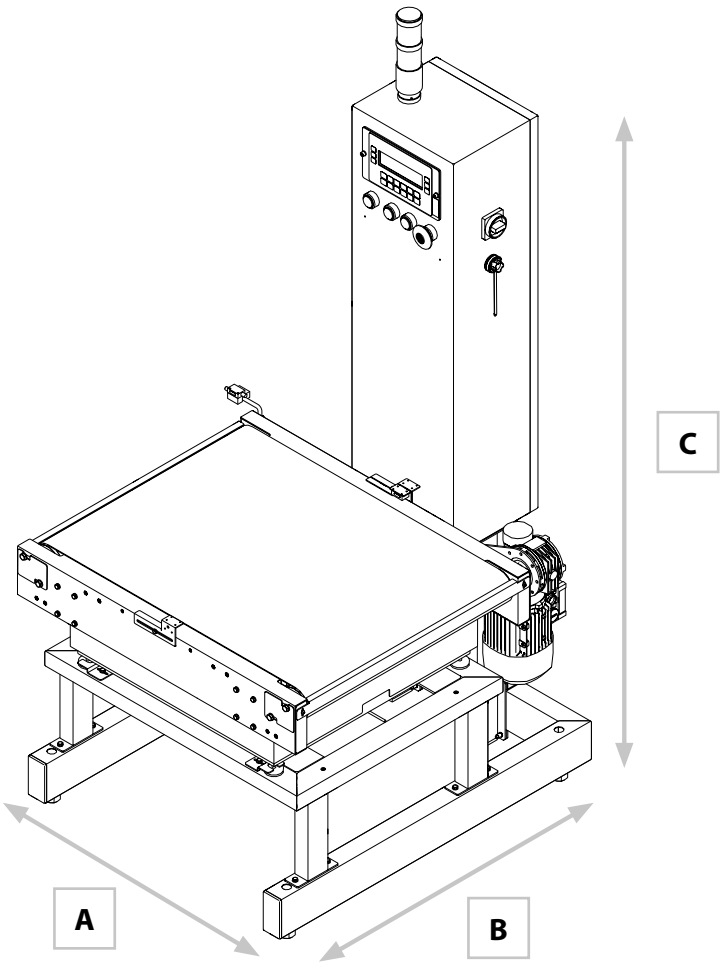


CAUTION!
SOCIETÀ COOPERATIVA BILANCIAI shall not be held liable for any damage to people or things, should it be ascertained that the machine has been used in one of the forbidden areas.

4.4 Technical data

Power supply data	
Voltage	230 VAC single-phase with earth (PE)
Phases	Continuous voltage
Frequency	50 / 60 Hz
Current	4.5 A max
Auxiliaries voltage	24-30 V DC
Power	-
Load capacity	up to 60 kg

4.5 Layout measurements

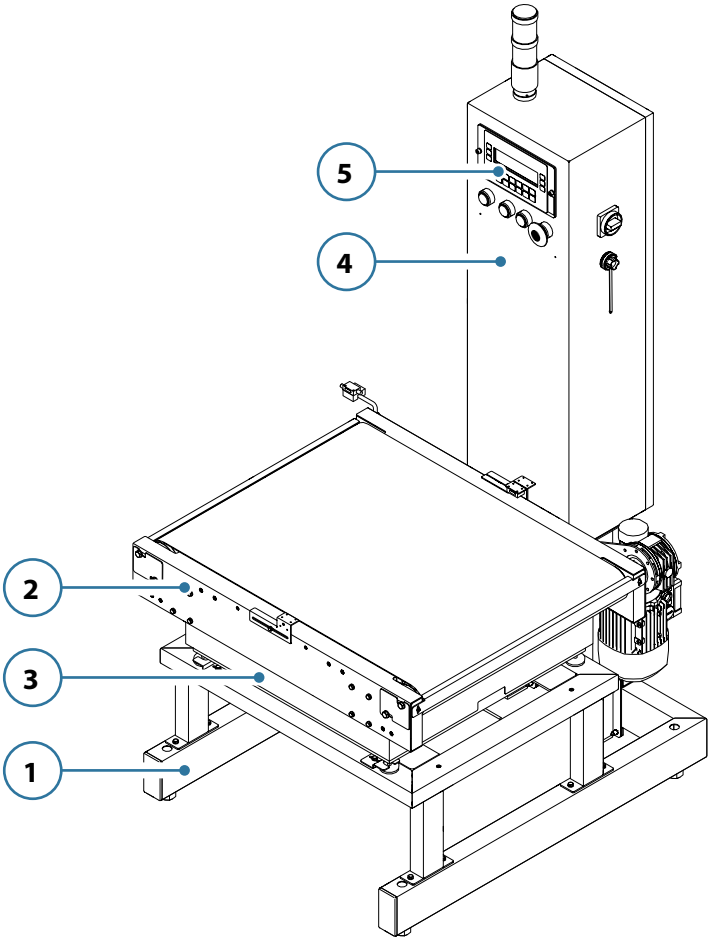


Overall dimensions	
Length (A)	815 mm
Width (B)	950 mm
Height (C)	1850 mm

4.6 Main components

The machine consists of the following main parts:

Pos.	Description
1	Frame
2	Conveyor module
3	Scale module
4	Electrical panel
5	Operator interface



4.7 Operating cycle

The ejector module is composed of a metal structure carrying a conveyor belt and a piston (or air-jet) ejector. The belt conveys the product to the ejector, which - if necessary - ejects the product.

The processing cycle is described in a simplified way below.

The cycle is divided into the following steps:

Step	Description
1	The input photocell reads the incoming product.
2	The product advances up to the second photocell, which stops the belt movement.
3	The machine verifies the weight; according to the weighing result, the operator selects the product according to the specifications.

Chapter 5
TRANSPORT AND INSTALLATION

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5. TRANSPORT AND INSTALLATION



IMPORTANT!
Lifting and handling must be performed by skilled, trained personnel only, who are qualified to carry out these tasks.

During installation, **SOCIETÀ COOPERATIVA BILANCIAI** technicians must be assisted by the operators assigned to service and operate the machine in the future.
The machine was designed in such a way that using a forklift truck is required during packaging, transport and assembly.

5.1 Packaging

The machine is shipped by **SOCIETÀ COOPERATIVA BILANCIAI** from the manufacturing plant to the customer's premises. Depending on the transport distance, the Customer's specific requests, and the time the load remains packaged, the machine is shipped as follows:

- machine delivered by the manufacturer's personnel (without packaging);
- machine packed in a wooden crate on a pallet.

The machine must be shipped on protected vehicles or covered with a tarpaulin, depending on the type of load.

Upon receipt of the machine, the customer must check it for any damage due to transport or caused by the personnel in charge of specific operations.

- **If any damage is ascertained**, leave the packaging untouched and immediately request that the damage be ascertained by the responsible shipping company, then complete a surveyor's report and notify the competent transport insurance and the point of sale of any damage found.
- **If the machine is delivered in a crate on a pallet or wooden brackets** in any heat-shrink cellophane wrap, first remove the packaging or any cover. To completely unpack the machine, remove any packaging fixing parts (screws, nails, metal strapping). Then use a crane or forklift truck to lift the machine, as described in the specific table, and remove the pallet used for transport.

When the line is transported in a wooden crate, it is duly fixed and protected with some of the more sensitive parts being locked in place (terminal, display and printer).

5.1.1 Packaging removal

To **remove the packaging**, proceed as described:

Step	Action
1	Position the machine in the place intended for it.
2	Unpack the machine parts delivered **in a crate**, as follows: • remove the heat-shrink cellophane; • remove the strapping; • remove the crate; • remove any fastening systems to the wooden pallet.
3	Unpack the machine parts delivered **on a pallet**, as follows: • remove the strapping; • remove the heat-shrink cellophane; • remove any fastening systems to the wooden pallet.



IMPORTANT!
Check the "Unit and weight division table" to see which and how many separate parts of the machine will be transported.

To handle the machine and/or its parts, refer to the **"Transport and handling"** section.

5.1.2 Disposal of packaging

The packaging is an integral part of the supply and is not collected as normal waste, so disposing of it is the purchaser's responsibility. Waste must be disposed of or destroyed in compliance with the regulations in force in the user's country, taking the type of materials into account:

- crate timber;
- plastic films for machine protection and adhesive tapes for fixing them;
- moisture absorbing bags.
- etc.

5.2 Transport and handling

Depending on the type of transport, **SOCIETÀ COOPERATIVA BILANCIAI** uses suitable packaging and fixings to guarantee intactness and proper storage during transport.

Upon receipt of the machine, check that no part has been damaged during transport and/or handling.

If damage is found, it must be immediately notified to the Manufacturer.

The handling activities described in this section must be carried out by personnel qualified for these operations: personnel specially trained to safely load, unload and handle using lifting equipment, and aware of accident prevention rules.



CAUTION!
SOCIETÀ COOPERATIVA BILANCIAI shall not be held liable for any harm to people or damage to property caused by accidents resulting from failure to comply with the instructions given in this manual.

5.2.1 Unit and weight division table

Check the following table to see which and how many separate parts of the machine will be transported.

Unit	Weight	Size
WEIGHING SYSTEM	see transport documents	see transport documents

5.2.2 Transport operations



CAUTION!
SOCIETÀ COOPERATIVA BILANCIAI shall not be held liable for any damage to the machine resulting from failure to comply with the instructions provided.



IMPORTANT!
Lifting personnel must be authorised and trained to use the lifting equipment, and comply with the provisions in force for personal protection.

Transport with a forklift truck	
Operator qualification	Lifting and handling equipment operator
Required PPE	
Lifting equipment	Forklift truck
Weight	Based on the component to be handled

CAUTION!
Only use suitable, approved lifting equipment, complying with the size and weight of the machine.

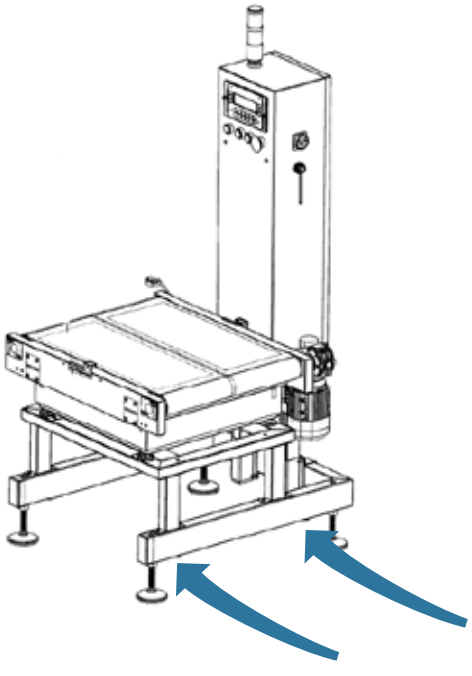
CAUTION!
Make sure that no one is standing below the operating range of the lifting device.

CAUTION!
Remove any covers or casings that may be damaged during installation and handling.

To properly transport the machine with a **forklift truck**, follow the procedure below:

Step	Action
1	Position the forks of the forklift under the part of the machine to be carried.
2	Make sure that the forks protrude enough from the front of the load to eliminate any risk of overturning the transported part.
3	Lift slowly, making sure that the centre of gravity of the section being carried is in the middle of the lifting forks.





5.3 Installation

5.3.1 Set-ups to be provided by the customer

As a general rule, without prejudice to any other contractual agreements, **the Customer shall be responsible** for setting up:

- **premises** (including masonry, such as foundations, or any required ducts, lighting);
- **electrical systems** up to the machine power supply points, in compliance with the standards in force in the country of installation and/or as required by the machine Manufacturer. All the technical specifications required by the manufacturer are provided in the sales contract. The Manufacturer shall not be held liable under any circumstances if the customer fails to guarantee the technical features of the electrical system required in the sales contract.
- the **power supply for the machine**, including the earthing conductor, according to the characteristics and tolerances required and specified in this manual.
- auxiliary services in line with the machine requirements;
- **tools and consumables** needed for assembly and installation;
- **lubricants** necessary for starting the machine;
- the **pneumatic supply** suitable for the machine as specified under **"Technical data"**;
- the **hydraulic power supply** suitable for the machine as specified under **"Technical data"**;
- Appropriate lifting and handling equipment.

5.3.2 Permitted environmental conditions

The machine is installed indoors, protected from atmospheric agents such as rain, hail, snow, fog, suspended and combustible dust, as well as aggressive agents such as corrosive vapours or sources of excessive heat, but not in a classified environment.
Using the machine, the associated control systems and the drive equipment under conditions other than those listed, is not allowed.
In particular, the installation and use environment must not be exposed to:

- corrosive fumes;
- excessive humidity (above 85%) and rapid changes in relative humidity (above 0.005 p.u./h);
- excessive dust;
- Exposure to abrasive dust;
- oily vapours;
- dust or gas mixtures;
- brackish air;
- vibrations, impacts or abnormal shocks;
- bad weather outside the allowed limits or dripping;
- unusual transport or storage conditions;
- high or rapid thermal changes (above 5K/h);
- nuclear radiation.

The machine is designed and built to operate safely in the following environmental conditions:

Permitted environmental conditions	
Room temperature	0 - 40°C
Maximum relative humidity	from 10 to 85% non-condensing
Installation place	the machine must be positioned away from vibration sources
Environment lighting	Neon light
Resting surface	Concrete industrial floor

CAUTION!
Environmental conditions other than those specified may cause severe damage to the machine.
Installing the machine in environments other than those recommended will void the warranty for the parts to be replaced.

IMPORTANT!
The work surface must be sufficiently illuminated. Should there be any shaded areas or level differences in the workplace, the user will be responsible for setting up suitable lighting devices.

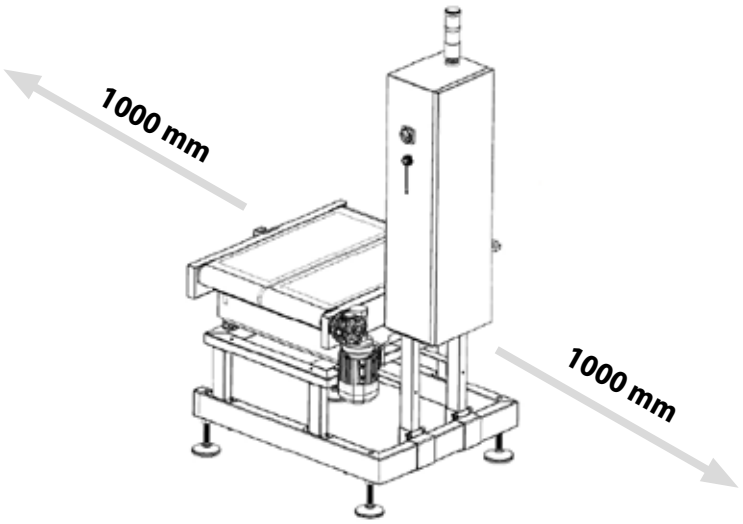
If these instructions are not adhered to, the Manufacturer shall not be held liable under any circumstances.

5.3.3 Installation place

For installation, an area suitable for the size of the machine and the lifting equipment used must be provided, paying attention to any obstacles (other machines, walls or the like) along the path to be covered by the handling equipment.

The machine must be installed according to the layout agreed with the Manufacturer.

The picture below shows the minimum side distance needed to conduct normal maintenance and repair work.



CAUTION!
Make sure that the clearance around the machine is enough to allow for easy and comfortable maintenance operations.

5.3.4 Positioning

Before removing the packaging, place the machine in its intended place.



CAUTION!

The customer who manages the line and/or machine is responsible for making sure that the other pieces of equipment installed near the line comply with the standard requirements for electromagnetic emissions, so as to prevent pollution sources with values higher than normal from causing malfunctions or damaging the machine.

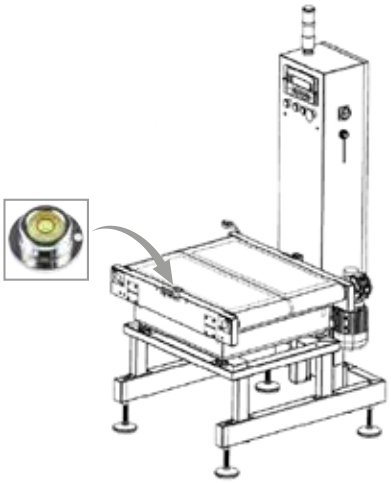
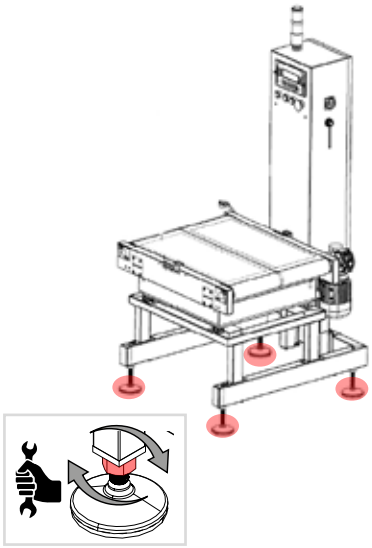
5.3.5 Installation

To properly perform the procedure, proceed as described below:

Step	Action
1	Level the machine (if required).
2	Make the electrical connection (if required).
3	Make the pneumatic connection (if required).
4	Adjust the positions of the adjustment handwheels.
5	Adjust the photocells (they are arranged in 3 positions) by acting on the respective screws.
6	Make sure that safety pictograms and the plate with the line's identification data are affixed and in a perfect condition.
7	Make sure that the supply voltage corresponds to the value given on the identification plate of the line.
8	Make sure that the front panel and the casing housing the electronic components are in good conditions.
9	Conduct a functional test to check that all the components inside the line operate correctly and that the display functions in the right way
10	Connect the machine to the other machines both downstream and upstream (if arranged along a line).

5.3.6 Levelling

To properly perform the procedure, proceed as described below:

Step	Action	Image
1	Check the spirit level on the external plane of the machine.	
2	Adjust the height of the support feet by loosening the safety nut.	
3	Do/undo the screw using a wrench.	
4	Re-tighten the safety nut once the machine has been properly levelled.	

IMPORTANT!
DO NOT act on the adjustable feet of the scale support

5.3.7 SEL700 + 4 I/O terminal installation

All of the differences between the SEL700 terminal and the one described in the"Use and maintenance manual"for standard DD700 terminals are described below.

IMPORTANT!
For the final users of the SEL700 terminal in the single weight version for management of a weighing line driven by the terminal itself.

The handling line is composed by the following **input contacts**:

Pos.	Description
1	Load photocell.
2	Product presence photocell.
3	Downstream consent (optional).
4	Emergency.
5	Transport or manual.
6	Line start (optional).

The handling line is composed by the following **output contacts**:

Pos.	Description
7	load belt
8	scale belt
9	active line indicator light (optional)
10	within range indicator light (optional),
11	out of range indicator light (optional)
12	below range indicator light (optional)
13	ejector control for out of range product (optional)

5.3.7.1 Scale parameters (path: \\ Setup\ Scale\ Configurations\ General\ )

Act as described below to set the scale parameters:

Step	Parameter	Description
1	Enable (recommended) **"Tare lock" at "Yes" value.**	to prevent the scale from returning to zero which automatically deletes any stored tare of the scale. NOTE: The acquisition or setting of the tare is done by the operator
For example: Let us suppose that for the product code 1 a package with tare equal to 0.150kg is used and that the content must weigh between 0.480kg and 0.505kg, to be conforming. If the operator uses the tare device, he must associate a weighing range with a lower limit of 0.480 and an upper limit of 0.505 to the product code "1"; before starting the line, he must select the product code "1" and set the scale at a tare of 0.150. Whereas if the operator does not use the tare device, he must associate a weighing range with a lower limit of 0.630 (0.480+0.150) and an upper limit of 0.655 (0.505+0.150) to the product code 1; afterwards, before starting the line, he must select the product code 1 and delete any tare found on the scale.		

IMPORTANT!
When using the tare device, the weighing range associated to each product code must be expressed as "net", whereas otherwise it must be expressed as "gross".

5.3.7.2 Weighing management parameters (path:\\ Setup \ Customisations \ Work modes \ Operation \ Single weighing \ Standard\)

Act as described below to set the scale parameters:

Step	Parameter	Description
1	**"Stable weight timeout"**	The parameter expresses the maximum time waiting for the weight stability condition before proceeding anyhow with its acquisition. The data is expressed in tenths of a second and can take on a value from 0 to 99. Value 0 means no standby for stability, immediate acquisition.
2	**"Initial reset" to value "Sampled zero"**	Enable (recommended) to prevent resetting the weight of a product already on the scale at start-up, which would alter the weighing of the following products.
3	**"Weight not stable, continue ?"**	Establish whether, in case the "stable weight timeout" elapses, the terminal must: • weigh the product; • or momentarily stop production and wait for the intervention of the operator who will decide what to do with the piece. In this case, the operator may decide to: • weigh the product by removing it manually, • weigh the product again.

Step	Parameter	Description
4	**"Weight out of range, continue?"**	Establish whether: • the terminal must also weigh the pieces with out-of-weighing range weight (these will then be discarded through the ejector); • or momentarily stop the weighing and production, and wait for the intervention of the operator In this case, the operator may decide to: • not weigh the product by removing it manually; • weigh the product again, adding or removing material from the package to reach the range.
5	**"Start when range is reached"**	Used to establish whether: after a line stop caused by an out of range error, the terminal must automatically start the line when the weight of the piece on the scale reaches the associated weighing range, or if must start only when the operator presses the START button. Setting the parameter on YES, when the piece on the scale generates a line stop because it is outside the associated weighing range, the operator may leave the piece where it is and automatically resume weighing operations starting from the same piece, by simply adding or removing material from the package in order to reach the weighing range; setting the parameter on NO, the line start is not automatic but must be requested by pressing the START button.
6	**"Minimum net"**	Minimum net weight necessary to be able to perform a weighing operation. Below this threshold, the scale is considered unloaded, namely empty. If the "minimum net" is set at 0 (zero), the scale will be considered unloaded when the weight is less than or equal to 0 (zero).
7	**"Indicator lights output duration"**	Duration of indicator light activation (e.g. within range indicator light, out of range indicator light, etc). The parameter is expressed in tenths of a second and can have a value ranging from 0 to 99; the value 0 means output not managed.
8	**"Ejector output duration".**	"Ejector command" activation duration. The parameter is expressed in tenths of a second and can have a value ranging from 0 to 99; the value 0 means output not managed. NOTE: The duration is adjusted based on the electrical and mechanical features of the ejector.
9	**"Scale belt saving time"**	Belt maximum activation time from the activation of the scale motor, weighing, and load photocell reading. Set a value ranging from 0 to 999 seconds; the value 0 means no saving management, the scale motor remains on and, therefore, the belt keeps running.

Step	Parameter	Description
10	**"START input START/STOP function"**	Used to establish whether: The "Line start" input can also perform "Line stop". By setting the parameter ="YES", if the terminal is NOT running, the input will trigger the LINE START operations; however, if the terminal is running, it will trigger LINE STOP operations. When the terminal is running, this input has the same function as the STOP hotkey of the terminal. Setting the parameter="NO" the input will only perform "line start". The default setting for this parameter is "NO"

5.3.7.3 Parameters for input contacts (path: \\ Setup\ Customisations\ Outputs\ Inputs)

To set the input parameters proceed as following:

Step	Parameter	Description
1	**Load photocell**	With dark photocell, product presence, scale belt motor activation to bring the product in the weighing area. If the photocell is engaged before the prior piece has correctly finished its weighing operation and its sorting has begun (namely the downstream consent input, if defined, has been detected active), the terminal deactivates the load motor output to block the queued piece and remains in this status until the previous piece has been sorted and any reactivation delay set by the operator has elapsed (setting from user menu).
2	**Product presence photocell**	With dark photocell, product weighing start. Dark photocell and product to be weighed, the scale motor output is deactivated and weighing is engaged. At the end of a correct weighing operation, wait for the Downstream consent input to be active (only if the input has been defined) and then reactivate the scale motor output to move the piece down and to be again available for another weighing operation. If the weighing operation ends with an error condition (e.g.: invalid weight, unstable weight, and unacceptable condition, weight out of range and condition
3	**Downstream consent (optional)**	Once the weighing is completed, the belt motor is reactivated and the product continues along the line. Consent comes if there is space to accommodate at leas one piece, avoiding the simultaneous presence of too much product output.
4	**Emergency (optional)**	If active, the text "EMERGENCY" appears on the left of the display. When the terminal is under emergency, any line start request is rejected. The terminal stops the line if activated when the weighing line is active; to restart the line: • deactivate the emergency input; • manually empty the section of the line from the load photocell to the positioning of the ejector. NOTE: the product presence photocell must be free and the scale must be empty.

Step	Parameter	Description
5	**Transport or manual (optional)**	If active, the text "TRANSPORT" appears on the left of the display. When the terminal is in transport, any line start request is rejected. If the input is activated when the weighing line is active, the terminal stops the line and to be able to resume production, the operator, in addition to the activating the transport input, must manually empty the line section starting immediately after the load photocell and ending in front of the position of the ejector (this is because the emergency also cancels management of the ejector, therefore if the last weighed piece is out of range, it would not be ejected); the product presence photocell must be clear and the scale unloaded. Keep in mind that during this particular operation, the line will not take account of any built-in consents, but will start the conveyor belt regardless of the logic conceived during normal operation. NOTE: The text TRANSPORT is only visible if the terminal is not under emergency, as that warning would override everything else.
6	**Line start (optional)**	This input has the same function as the START hotkey of the terminal. If the line is empty in the section starting immediately after the load photocell and includes the entire scale belt (namely the scale is unloaded and the product presence photocell clear), the terminal is neither in emergency or transport and the data selected for production are correct (e.g. product code valid, line speed percentage over 0%, etc.) the load motor output is activated and the weighing line becomes active.

5.3.7.4 Parameters for output contacts (path: \\ Setup\ Customisations\ Outputs\ Output)

To set the output parameters proceed as following:

Step	Parameter	Description
1	**Scale belt motor**	The scale belt must run when the output is active.
2	**Active line indicator light (optional)**	When the weighing line is active the output is on.
3	**Within range indicator light (optional)**	The duration is defined at installation; it is activated during the weighing operation to indicate that the weight acquired for the piece on the scale is within the weighing range of the selected product.
4	**Out of range indicator light (optional)**	The duration is defined at installation; it is activated during the weighing operation to indicate that the weight acquired for the piece on the scale is outside the weighing range of the selected product.
5	**Below range indicator light (optional)**	The duration is defined at installation; it is activated during the weighing operation to indicate that the weight acquired for the piece on the scale is below the minimum limit the weighing range of the selected product
6	**Above range indicator light (optional)**	The duration is defined at installation; it is activated during the weighing operation to indicate that the weight acquired for the piece on the scale is above the maximum limit the weighing range of the selected product.
7	**Ejector control for out of range product (optional)**	The duration is defined at installation; it is activated after a weighing operation, if the weight of the product is out of the weighing range. The possible activation of the contact is delayed for a specific time associated to the selected product to allow the piece on the scale to move down and to reach the ejector. The time in question is called "ejector output delay" and belongs to the data associated to the product and can be set from the user menu.

Step	Parameter	Description
8	**PC reject (optional)**	In case the transmission to PC of the "printed data string" in "single mode" and with"ack/nak protocol" is enabled. Is enabled: • upon receiving the first BEL character (or ETX character) sent by PC as an answer to the string of printed data related to the product on the scale; Is disabled: • after receiving the next ACK character; • if set to START; • if set to EMERGENCY; • if set to TRANSPORT; • if transmission of the following product starts; • if the operator presses the "EN" button (buzzer deactivation for lines with buzzer instead of indicator light.

5.3.7.5 Parameters for analogue output (path: \\ Setup\ Customisations\ Outputs\ Analogue Output\)

The terminal allows you to express the value of a parameter on an analogue scale in voltage or in current.
The parameter can be selected from the menu "Output datum"; either the gross weight, net weight or speed of the weighing line can be selected.

The gross and net represent a weight value of the scale, therefore the analogue scale should be calibrated, setting the minimum limit at 0 and the maximum limit at the capacity value of the scale.

The speed of the weighing line represents a percentage value. Therefore the analogue scale should be calibrated, setting the minimum limit at 0% and the maximum limit at 100%.

5.3.7.6 Default programming

The terminal is normally supplied with a 4 I/O board (mounted on slot 1) with the following default programming:

Parameter	Status
Tare lock	Yes
"Initial reset"	Sampled zero
Stable weight timeout	30 dec/sec
Weight not stable, continue ?	Yes
Weight out of range, continue ?	Yes
Minimum net	0
Indicator lights output duration	0 dec/sec
Ejector output duration	0 dec/sec
Scale belt saving time	0 sec

Parameter	Status
Input 01: Load photocell	Normally open
Input 02: Product presence photocell	Normally open
Input 11: Downstream consent	Normally open
Input 12: Transport or manual	Normally open
Input 13: Emergency	Normally closed
Input 14: Line start	Normally open
Output 01: Scale motor	Normally open
Output 02: Load motor	Normally open
Output 11: Out of range indicator light	Normally open
Output 12: Within range indicator light	Normally open
Output 13: Ejector for out of range	Normally open
Output 14: Weighing line active	Normally open

Analogue output enabled in voltage 0-10V; output datum = line speed (%)

NOTE
I/O numbering:
- if the first digit is 0 it indicates the internal slot, if 1 it indicates slot 1, if 2 it indicates slot 2;
- the second digit indicates the position of the contact on its slot

5.3.8 Data available from user menu

In addition to the data listed in the "Use and maintenance manual" for standard DD700 terminals, this terminal also provides the following data:

Step	Parameter	Description
1		The parameter ranges from 0% to 100% with 1% increments: • 0%: line stopped; • 100%: is interpreted as the line at maximum speed. Remember that this parameter is important for two reasons: • based on that defined during installation, its value could be supplied on the analogue output; • its value implicates, at Line start, the recalculation of most of the processing times NOTE A "Line start" request with line speed equal to 0% is rejected. The parameter can be accessed, only with line not active, using the "%VELOC" hotkey or following the path "\User menu\ Data management\ Line speed (%)".
2		Scale motor reactivation time after correct weighing, during reactivation of the loading motor: • 0 dec/sec = no delay; • 99 dec/sec = maximum delay. The set data must refer to 100% of the line speed. At start up, based on the selected speed %, the terminal will perform a recalculation to get the right value to use in the process.
For example: Loading activation delay = 10 dec/sec. If at line start the selected speed % is 50%, the terminal will use a load reactivation delay time of 20 dec/sec for the process. Working times and Speed percentage are inversely proportional, namely if the speed is cut in half, the times double. The parameter can be accessed, only with line not active, using the "RITCAR" hotkey or following the path "\User menu\ Data management\ Load react. delay (1/10s)".		
3		Load photocell maximum transfer time - product presence photocell (when the belts are moving). Beyond this interval, the terminal checks the presence of the queued product: • product presence scale and loading belt motors active to move the queued product on the scale belt to perform weighing; • no product: deactivation of scale motor to prevent belt wear. The value is numeric and can be from 0 dec/sec (no management) to 999 dec/sec. The parameter must also always be set referring to a line speed of 100%; at Line start, based on the selected speed %, the terminal will perform a recalculation to get the right value to use in the process. NOTE If a product is blocked in front of the photocell, when the time elapses it is not considered as a product stopped in queue. Therefore the terminal immediately deactivates the scale motor to prevent the scale belt from wearing but also from scuffing. The operator must exit the process, release the piece, making sure to position it before the load photocell and then command Line start again. The parameter can be accessed, only with line not active, using the "MAXSAL" hotkey or following the path "\User menu\ Data management\ Maximum upstroke time (1/10s)".

Step	Parameter	Description
Example: Maximum ascent time = 10 dec/sec. If at line start the selected speed % is 50%, the terminal will use a maximum upstroke time of 20 dec/sec for the process. Working times and Speed percentage are inversely proportional, namely if the speed is cut in half, the times double.		
4		Numeric parameter with a maximum of six figures to which the following data may be associated: • description; • weight range; • piece transit time; • scale stop delay; • ejector output delay. The terminal is capable of managing a product code archive. The maximum size of the archive is variable and depends on the size and overall amount of data in use on the terminal. When a new code is generated, the data are proposed in cascade, and it is possible to pass on to the next parameter after having pressed "EN" on the previous parameter (for further information on the use of the keyboard, see the "Use and maintenance manual" for standard DD700 terminals). NOTE A Line start request with product code equal to 0 (zero) or not present in the product archive is rejected. The parameter can be accessed, only with line not active, using the "CMERC" hotkey or following the path "\User menu\ Data management\ Product code"
4.1	**Description**	This is an alphanumerical parameter with a maximum of 20 characters; it helps to describe the selected product. Example: Product code = 1; Associated description = Chicken, pack 500gr
4.2	**Weight range**	is composed by two numeric parameters: • ***lower limit***: set the minimum acceptable weight value for a piece of this product to be considered valid; • ***upper limit***: set the maximum acceptable weight value for a piece of this product to be considered valid. NOTE • if using a tare device, the weight range limits must be set referring to the "net" i.e. to the contents of the package; • if a tare device is not used, the weight range limits must be set referring to the "gross" i.e. referring to the overall weight of the package (package tare + contents of the package). The terminal will check at each weighing operation whether or not the weight acquired for the piece on the scale is within the weight range relative to the selected product. A specific message will be shown on the display and an indicator light output corresponding to the outcome of the check will be activated

Step	Parameter	Description
4.3	**Piece Time**	It expresses the time it takes a piece of this product to completely transit in front of the photocell. This is both to avoid interpreting multiple openings and closings of photocells due to bounces or due to particular pieces (e.g cases rather than boxes, etc.); after the initial engagement of the photocell, its status is ignored for the entire transit time (obviously the transit time is only calculated with the belt in motion). The parameter is numerical and can take on a value from 0 dec/sec (no management) to 99 dec/sec. The parameter must also always be set referring to a line speed of 100%; at Line start, based on the selected speed %, the terminal will perform a recalculation to get the right value to use in the process.
Example: Piece time = 10 dec/sec. If at the line start the selected speed % is equal to 50%, the terminal will use a piece time equal to 20 dec/sec for processing. Processing times and Speed % are inversely proportional, i.e. if the speed halves, the times double. NOTE If the Piece Time is used, remember that: • a Line start request made with Piece Time shorter than the Scale Stop Delay is rejected, as the piece to be weighed must stop on the scale belt in order to keep the product presence photocell engaged.		
4.4	**Scale stop delay**	It expresses the time that must elapse from when the product presence photocell is engaged to when the terminal deactivates the scale motor to trigger the weighing operation. If the product presence photocell is not positioned at the end of the scale belt, the scale stop delay could be used so that long pieces can move up completely on the scale before triggering the weighing operation. The parameter is numerical and can take on a value between: • 0 dec/sec (no delay management) and 99 dec/sec. The parameter must also always be set referring to a line speed of 100%; at Line start, based on the selected speed %, the terminal will perform a recalculation to get the right value to use in the process.
Example: Scale stop delay = 10 dec/sec. If at the line start the selected speed % is equal to 50%, the terminal will use a piece time equal to 20 dec/sec for processing. Processing times and Speed % are inversely proportional, i.e. if the speed halves, the times double.		
4.5	**Ejector output delay**	Expressed the time that must elapse from when the scale motor is reactivated following a correct weighing of a piece out of range, to when the "Ejector command" output is activated; this allows the piece out of range, present on the scale, to move down and to reach the ejector to be ejected from the normal route. The parameter is numerical and can take on a value between: • 0 dec/sec (no delay, immediate ejection) and 99 dec/sec. The parameter must also always be set referring to a line speed of 100%; at Line start, based on the selected speed %, the terminal will perform a recalculation to get the right value to use in the process.
Example: Ejector output delay = 10 dec/sec. If at the line start the selected speed % is equal to 50%, the terminal will use a piece time equal to 20 dec/sec for processing. Processing times and Speed % are inversely proportional, i.e. if the speed halves, the times double		

5.3.8.1 How to calculate the piece time to associate to the product

- Measure the length of the piece corresponding to the product in millimetres;
- establish how many m/sec a line speed of 100% corresponds to.

Called:
1. Lpiece the length in mm
2. Vline the line speed in m/sec
3. "X" the Piece time to se tin dec/sec

apply the following formula:

X = ((Lpiece / 1000) / Vline) x 10

and round off the result "X" to the lower or higher unit as needed

Numeric example:
- Lpiece = 300 mm
- Vline = 4 m/sec

X = ((300 /1000) / 4) x 10 X = 0.75 d/sec **set 1 dec/sec**

Numeric example:
- Lpiece = 500 mm
- Vline = 2.5 m/sec

X = ((500 /1000) / 2.5) x 10 X = 2 d/sec **set 2 dec/sec**

5.3.9 Main page

The terminal shows this page at start up and 'exits' this page only after the intervention of an operator:
- pressing the "2°F" hotkey;
- pressing the "START" hotkey;
- "Line start" input activation to start production.

5.3.9.1 Data displayed on main page

The display is mostly engaged by the weight present on the scale together with all of its metrological messages.

On the second to last line of the display, on the left side, there could be a message regarding the current status of the terminal:

- EMERGENCY if the terminal is in emergency;
- TRANSPORT if the terminal is not in emergency and is in transport;
- SERVE INT. if the terminal is neither in emergency or transport and has temporarily suspended weighing due to an error requiring the intervention of an operator.

If the terminal is not in any of the above-mentioned conditions, there will be no status message.

Next to the status message of the terminal, if any, there usually is:

- the selected product code + alphanumerical description.

In specific cases, an error message which has a variable duration based on its contents is displayed instead of these data.
(e.g. if the terminal has momentarily stopped weighing due to an error which requires the intervention of an operator, a message indicating the type of error is shown and the error remains displayed until a key is pressed; if a Line start request is made under incorrect conditions, the incorrect condition is shown for a few seconds).

The meaning of the hotkeys enabled is shown on the last row of the display.

5.3.9.2 Functions available on the main page (keys and inputs)

- **"EN"** key: deactivates "PC reject" output, if any.

- **"Scale zero reset", "tare acquisition/deletion", "tare view/setting" metrological keys**: enabled only if the weighing line is not active and no stop is in progress.

- **"Weight printout"** metrological key: enabled only if the terminal is neither in emergency or transport, the weighing line is not active, no stop is in progress and the terminal is not waiting for an intervention by the operator following a weighing operation temporarily suspended due to an error. If the key is enabled, when pressed, the piece on the scale is weighed, signalled both on the display and by means of indicator light outputs, whether or not they belong to the weight range of the selected product; this type of weighing is extemporaneous respective production, therefore the weight is not controlled respect to the "minimum net", the status of any "Downstream consent" is not tested, the outputs of the load and scale motors are not managed, any "Ejector consent" output is not managed.

- **"2°F"**: allows to "quit" the home page to have access to other functional keys.

NOTE: The Line start command can only be given from the main page.

- **"%VELOC"**: this is the key that allows you to view and/or set the Line speed in percentage.
- **"RITCAR"**: this is the key that allows you to view and/or set the Load reactivation delay.

- **"CMERC"**: this is the key that allows you to view and/or set the product code both for any entry or editing in the product codes archive, and to select the product to send for processing.

- **"LISTAM"**: this is the key that allows you to view the product codes with the relative description currently present in the product codes archive.

- **"START"**: this is the key that allows you to make a production start request, namely to activate the weighing line.

The production start request is accepted only if all these conditions are met:

1. terminal not in emergency,
2. terminal not in transport,
3. product code different from 0 (zero) and present in the product code archive, if Piece Time is higher than 0 (zero) Piece Time lower than Scale Stop Delay, line Speed higher than 0%.

Furthermore, if the Line start is not pressed to release a situation of terminal waiting for an intervention by the operator but to start a brand new production (after switch on of the terminal, after exiting an emergency or transport status), the following conditions must also be met:

- product presence photocell clear, if "Minimum net" greater than 0 (zero) net weight present in scale lower than "minimum net".

Failure to accept the Start entails causes the display of a specific error message for a few seconds; otherwise the terminal will start production and go to the "work page".

NOTE
During installation, inputs can be defined with the same function as the Start key.

- **"EMERGENCY"**: this is the input which when activated places the terminal in emergency status; if activated during production, production is immediately stopped and the weighing line deactivated.

The emergency status remains until the input is deactivated; in emergency status, any Line start request is rejected.

- **"TRANSPORT"**: this is the input which when activated places the terminal in transport status; if activated during production, production is immediately stopped and the weighing line deactivated.

The transport status remains until the input is deactivated; in transport status, any Line start request is rejected.

NOTE
The terminal can be simultaneously both in emergency and transport status; for a question of space, the display will only show "EMERGENCY" as it has priority.

The START, EMERGENCY, TRANSPORT keys also deactivate any "PC Reject" output.

5.3.10 Working page

The terminal shows this page after accepting a line Start request and 'exits' this page automatically after a weighing operation ended with an error:

- which requires the intervention of an operator;
- or due to a direct intervention of the operator who pressed the "STOP" hotkey or because they activated the "EMERGENCY" input;
- or because they activated the "TRANSPORT" input.
- or after a direct intervention of the operator who pressed the "STOP" input (optional and managed only if enabled from setup parameter).

5.3.10.1 Data displayed on work page

The display is mostly engaged by the weight present on the scale together with all of its metrological messages.

On the next-to-last row of the display:

- on the left side there is a message regarding the current status of the terminal: RUNNING if the weighing line is active, (START) if the STOP or STOP Input (optional) key was pressed and the terminal is finishing the operations necessary to be able to make the stop effective.

- the selected product code with its alphanumeric description is usually found next to the terminal status message,

In specific moments, an error or warning message which has a variable duration based on its contents is displayed instead of these data (e.g.: "Weighing in progress" for the time waiting for the stability of the weight; "Waiting for downstream consent" for the time waiting for the "Downstream consent" to activate).

The meaning of the hotkeys enabled are shown on the last row of the display.

5.3.10.2 Functions available on the working page (keys and inputs)

- **"EN"** key: deactivates "PC reject" output, if any
- **"STOP"**: allows you to make a production stop request, namely to immediately stop the load motor and to execute and/or finish the weighing operation of the piece already in upstroke or already on the scale before deactivating the weighing line and going back to "home page". In this case, for the stop to take effect, the weighed piece must descend from the scale until the net weight is less than "Minimum net" if the "Minimum net" is greater than 0, or net weight less than or equal to 0 if the "Minimum net" is equal to 0. After pressing the STOP key, if the command is accepted (see (START) message on left of display), the STOP key is deleted from the page.

NOTE
The same functions of the "STOP" key are also available from the input (if enabled from setup, the LINE START input can both start and stop the line).

With stop in progress, the weighing operation to be finished is temporarily suspended due to an error requiring the intervention of the operator, the stop procedure will only resume after the operator has eliminated the cause of the problem and re-commanded Line start.

NOTE
If the Stop command is given while the piece upstroke time is in progress, it will take effect only when the upstroke time has elapsed.

NOTE
If the Stop command is given while the scale belt saving time is in progress, it will take effect as soon as the scale unloads (the net weight becomes lower than any Minimum Net or lower than or equal to 0); if for some reason the scale does not drop below

the above-mentioned threshold, the stop command remains in progress and the operator needs to intervene by pressing the emergency pushbutton.

- **"EMERGENCY":** this is the input which when activated places the terminal in emergency status; the weighing line is deactivated and the terminal goes back to the "home page".

- **"TRANSPORT":** this is the input which when activated places the terminal in transport status; the weighing line is deactivated and the terminal goes back to the "home page".

NOTE
The EMERGENCY and TRANSPORT inputs also deactivate any "PC Reject" output.

5.3.11 Weight printout and transmission to pc (optional)

5.3.11.1 Printer

During installation, the terminal can be connected to a printer; in this case, the printer can be used to put every weighing operation and possibly the various totalisation forms enabled on the terminal on paper (e.g. partial total, general total).

However keep in mind that the printing time would extend the time of the weighing operation, thus slowing down production and, in case of a printer failure, the terminal would stop the weighing line and wait for the intervention of the operator. This is why if a printer is available, the operator has the option of bypassing the weight printout, namely he may perform the weighing operation without putting anything on paper; the printer will only be used to print the totals and/or the archive of the product codes.

NOTE
The weight printout displays the header only in the first print performed after at least one of these conditions: switch-on the terminal, setting/confirmation of a product code, setting/confirmation of a generic code, printing of a total.

5.3.11.2 Transmission to PC

At the installation stage you can enable the transmission of weighing data to a PC; to do this you must choose the type of "Printed data string". The printed data string can be managed in different ways:

- if enabled on a serial: COM1, COM2, COM11, COM21 or ETHERNET is transmitted with the following methods: SPOOL, ARCHIVE or SINGLE;
- If enabled in CSV weigh management, it can be transmitted/saved on USB pen drive or saved as a backup.

NOTE
If remote controls are used, keep in mind that any value setting request BY the "XI" remote control performed with the line active is rejected; the terminal will respond with the usual two question marks "??".

NOTE
If a transmission string is enabled with ack/nak protocol, keep in mind that the protocol time would increase the time of the weighing operation thus slowing down production. The result of the transmission never affects the outcome of the weighing operation, except for the printed data string in "single mode" as it is possible to define the parameter as to whether or not the fault is negligible.

5.3.11.3 Printed data string

ENABLED ON SERIAL. This string has four transmission modes:

- **Single**: the weighing data is first transmitted and then printed. With ack/nak protocol, if the transmission finishes with a failure,

a line is added at the bottom of the printout reading "DATA NOT TRANSMITTED"; if the transmission finishes with a failure only because the PC rejected the piece, the weighing operation continues and a line is added at the bottom of the printout reading "NONCONFORMING PIECE". With ack/nak protocol and NON negligible failure: regardless of whether transmission finishes with an actual failure or with failure simply because the PC rejected the piece, the terminal interrupts the weighing operation, shows the appropriate message on the display and waits for the intervention of the operator.

With these methods the strings experiencing a transmission fault are permanently lost.

This mode is recommended only if the PC is always available for interaction.

- **A Spool:**the weighing data is first printed and then, if the printing process is completed successfully, it is transmitted. With the ack/nak protocol, in the event of a transmission failure, the string that was due to be transmitted is stored in a queue (to be able to recover it when possible). The transmission of queued strings is attempted whenever the weighing operation in progress must be transmitted: if there are strings already in the queue, they are transmitted first and then when the queue has been cleared, the string corresponding the current operation is transmitted (in practice, the transmission takes place in chronological order, from the oldest string up to the current one). Every string is deleted from the queue only when it has been successfully transmitted.

This way, the weighing operation in progress is slowed down according to the number of strings in the queue. Indeed, the current weighing process is completed only when they have been transmitted.

This mode is recommended only if the PC is always or almost always available for interaction

- **Archive on-demand**. The weighing data is first printed and then, if the printing process is completed successfully, it is saved in a queue in a special archive. When the PC wants to receive all the saved weighing processes from the terminal, it must send the ENQ character (05 hexadecimal) to the terminal.

If the terminal accepts the transmission request received from the PC by sending the ENQ character, it extracts from the "Table of weighing processes" archive the figures the data for the first weighing process in the archive (basically, the transmission takes place in chronological order, from the oldest to the most recent string). Every string is deleted from the archive only when it has been successfully transmitted. After the last string contained in the archive has been successfully transmitted, the terminal sends the EOT character (04 hexadecimal) to the PC to inform it that the archive is now empty.

This way the PC must send its request when the terminal is not engaged in weighing operations; otherwise the weighing operation in progress may be slowed down.

This mode is recommended if the PC is available for interaction only at the end of the shift or the day of work.

- **Parallel spool**: Weighing data are first printed, and then, if printing ends correctly, they are stored in queue in a specific archive for which transmission start is also controlled. However, after doing so the weighing operation in progress continues without waiting for the transmission to end. With ack/nak protocol, if the transmission ends in failure, the string in transmission remains stored in the archive (to be able to retrieve it when possible). The transmission of the archive strings is attempted at each weighing operation and always starts from the first weighing contained in the archive (in practice, the transmission takes place in chronological order, from the oldest string up to the current one). Every string is deleted from the queue only when it has been successfully transmitted.

With this mode, the weighing operation in progress is not slowed down.

This mode is recommended only if the PC is usually available for interaction.

NOTE
If the archive cannot be completely emptied with the last weighing of the work shift or day, it is possible to do so without carrying out an additional weighing operation. In fact, it is sufficient for the PC to send the ENQ character (05 hexadecimal) to the terminal and the archive will be emptied by temporarily adopting the transmission mode "Archive".

5.3.11.4 Additional transmission parameters

- **String delay time (seconds)** :transmission delay between the strings extracted from the archive. Used with the Spool or Archive or Parallel spool mode.
- **ack/nak waiting time**. with the Ack/Nak protocol, it sets the maximum waiting time for the reply character due to come from the PC on each string.
- **Negligible M.S. malfunction**: with string in M.S. (Single Mode) and Ack/Nak protocol, set YES to define any transmission failure as negligible and to continue the weighing operation, set NO to define the failure as not negligible and to interrupt weighing.

5.3.11.5 Notes on the composition of the string

1. All fields are transmitted in the maximum size that can be set from the terminal.
2. If the data to be entered in the field is smaller than the field's data, spaces (20H character) are inserted to the left to reach the required size
3. The operation type field is used to indicate, through a numerical code, the type of operation to which the transmitted string refers.
4. Depending on the operation performed some fields may not be featured: in the latter case, the field will consist of a number of spaces (20H) equal to the length of assumed data

5.3.11.6 String of printed data of this terminal

The weighing data is organised in a 104 or 106-character string composed as follows:

- **$**: string start (24hex)
- **Operation type:** operation type (2 numbers).This number can take on the following values:
  "09" (30hex and 39hex):weight in range
  "99" (39hex and 39hex):weight above range
  "98" (39hex e 38hex): weight below range operation type (2 numbers), here always equal to 09 (30hex and 39hex)
- **date**: weighing date (dd/mm/yyyy)
- **time**: weighing time (hh:mm:ss)
- **progressive no.**: progressive number of weighing operation (6 digits)
- **product cod.**: product code (6 digits)
- **description**: description associated to product code (20 character)
- **generic code**: generic code (8 characters)
- **result**: result value (net * coefficient) or (net / coefficient) (6 digits)
- **gross**: gross weight (12 characters, 9 of which for the weight, one space and 2 characters for the unit of measurement)
- **tare**: tare (12 characters, 9 of which for the weight, one space and 2 characters for the unit of measurement)
- **net**: net weight (12 characters, 9 of which for the weight, one space and 2 characters for the unit of measurement)
- **checksum**: string control characters (2 characters).This field is only available if the use of the checksum was enabled at installation.
- **CR** : string end character (0DH)

5.3.11.7 ACK/NAK protocol

If the string is not received correctly, the PC must send, within a time defined in seconds during installation, a single character: NAK (15Hex). In this case the terminal sends back the data string. The maximum number of retransmissions is two, after which if the response is still negative, the terminal interrupts the protocol. If time runs out without having received a response, the terminal interrupts the protocol.

If the string is received correctly, the PC must send, within a time defined in seconds during installation, a single character: ACK (06Hex). If the "printed data string" was enabled in "single mode", the ack/nak protocol can also manage the character BEL (07Hex): the PC must send the character BEL, within the time (in seconds) defined during installation, when it received the data string correctly but is not yet capable of authorising the weighing operation. When the terminal receives BEL, it again waits for a subsequent response without retransmitting the string and without incrementing the number of attempts already performed; this way the PC has all the time necessary for providing the terminal with the final response, as long as during this time it continues to send at least one BEL character within the time in seconds defined at installation. When the PC is finally capable of authorising the weighing operation, it must send the character ACK (06Hex) as the final response; whereas if it realises that it can no longer authorise the weighing operation, it must be stop any type of response so that the dialogue closes automatically when time runs out. N.B.: The character ETX (03hex) is also managed. When the terminal receives ETX, it immediately closes the dialogue and reports the failure condition due to lack of the PC's authorisation for the weighing operation. This option was added so that the operator could interrupt the weighing operation in progress by acting on the keys or peripheral devices controlled directly by the PC (e.g.: using a scanner connected to the PC, the operator could read a specific "Interrupt" barcode and, with this reading, the PC could send ETX to the terminal to interrupt the weighing operation).

NOTE
Remember that if the transmission failure was defined negligible at installation, the weighing operation continues regardless of the outcome of the transmission; otherwise a failure interrupts the weighing operation and requires the intervention of the operator who must decide what to do. N.B.: Remember that if an output was defined at installation as "PC Reject", this output is activated upon reception of the first BEL and deactivated upon reception of the next ACK; if no ACK arrives, the output is deactivated by pressing a key or at the start of a subsequent data transmission. The "PC Reject" output can also be activated by reception of the character ETX.

5.3.11.8 Calculating the checksum

The checksum is calculated as an exclusive OR of all characters in the string (from $ to the less significant character of the 'net weight' field). It is expressed with two ASCII characters.

Example: if the checksum is 2A, the following values will be transmitted:

character 1: 32H --> 2
character 2: 41H --> A

CSV WEIGHING PROCESSES MANAGEMENT ENABLED
Setup Menu/Customisation/Operating modes/Weighing/CSV Weighing Management

Possibility of enabling the creation of the Printed Data archive in a CSV format. These weighing processes can be saved with a backup on a USB HOST pen drive. In particular:

CSV Weighing Mem.	NO	Printed Data archive in a CSV format not enabled.
	YES	Printed Data archive in a CSV format enabled. The printed data archive is hosted on the terminal's memory.
	EVERY WEIGHING PROCESS ON THE DISK	Printed Data archive in a CSV format enabled. Part of the printed data archive can be hosted on the USB HOST and part on the terminal's memory. Weighing processes with the USB HOST inserted are automatically saved on a USB HOST, while those with a USB HOST not inserted are saved in the terminal's memory. NOTE Upon insertion of the USB HOST any weighing processes in the terminal's memory are automatically exported to the USB HOST.

Save weighing processes	OUTGOING	If in the double weighing mode, you can only save outgoing weighing processes.
	ALWAYS	If in the double weighing mode, you can save both incoming and outgoing weighing processes.

The data string saved in the CSV format contains the same data of the "printed data string" in serial (see the advanced operating manual), but with fields separated with ";".
A STRI.CSV file is created on the USB pen drive. If opened with a suitable editor (like Excel), it shows all the weighing processes in columns.
The name of the file can contain up to 8 characters.
Storage on a pen drive is highlighted on the DD700 display with an image, a flashing USB pen drive at the bottom right above the bar with the keys.
The visibility of view/operation depends on how many weighing operations must be saved. The image of the USB pen drive will remain on the display for a short time if the key is left inserted during weighing operations /weight check. It remains on the display for longer if inserted at a later stage (when the weighing operations have already been performed).

5.3.12 Important notes and limits of the terminal

1. At Start with the correct conditions met, the terminal only activates the load motor; when the load photocell is engaged, then it also activates the scale motor.
2. When a piece engages the load photocell, the previous piece must already have arrived at least partly on the scale belt so that, when the load motor stops to keep the queued piece still, the previous piece can be pulled by the scale belt in front of the product presence photocell to be weighed. The queued piece remains still until the scale motor restarts at the end of the weighing operation.
3. Limit: the piece being weighed must always stop to keep the product presence photocell engaged.
4. Limit: a piece must not arrive to be weighed before the previous piece has completely moved off the scale belt and, possibly, already reached the ejector.
5. Limit: at every Start following a switch on or following an emergency or a transport or a Stop, the line section from immediately after the load photocell until the entire scale belt must be empty (namely the scale unloaded and the product presence photocell clear).

5.3.13 Example of new production start

1. Make sure that the terminal is not already under production, namely that the line is not already active.
2. Clear the terminal for many emergency and/or transport status.
3. Select the product code, other than zero and already present in the product code archive, to be used in production.
4. Select the Line speed in %, other than zero, to be used in production.
5. Empty the line section which goes from immediately after the load photocell until in front of the ejector, if any.
6. Press the START hotkey or activate the "Line start" input, if any.

The production start request is accepted only if all these conditions are met:
- terminal not in emergency;
- terminal not in transport;
- Product code other than 0 (zero) and present in product code archive, in case of Piece Time greater than 0 (zero) Piece Time less than Scale Stop Delay, Line speed greater than 0%, product presence photocell clear, if "Minimum net" greater than 0 (zero) net weight present in scale lower than "minimum net".

Failure to accept the Start request causes the display of a specific error message for a few seconds; otherwise the terminal will start production and go to the "working page".

Step	Action
1	The load belt starts to run and the first piece reaches the load photocell also starting the scale belt.
2	The first piece continues on its way until it arrives in front of the piece presence photocell, thus stopping the scale belt to be able to perform the weighing operation.
3	When the weighing operation finishes correctly, which also allowed to establish whether the piece complies with the weight range relative to the type of product selected, the terminal waits for activation of the "downstream consent" input to reactivate the scale belt and thus move the weighed piece off the scale which continues along its way and can either be ejected from its normal line path or not, depending on what was recorded in the weighing operation.

If a second piece obscures the load photocell, while the first piece is still on the scale in high position (after a correct weighing), the loading belt stops, and the new piece remains queued.
The loading belt restarts together with the scale belt, so when the weighed piece starts its descent from the scale, the queues piece starts ascending on the scale.

5.3.14 Error messages and warnings

In addition to the messages and warnings listed in the "Use and maintenance manual" for standard DD700 terminals, this terminal also supplies those indicated below.

The time the messages remain displayed varies based on the type of warning and the conditions of the terminal; some of them might not always be visible.

(above)
The weight of the piece being weighed is higher than the upper limit of the weight range relative to the type of product selected.

(within)
The weight of the piece being weighed is within the weight range relative to the type of product selected.

(below)
The weight of the piece being weighed is lower than the lower limit of the weight range relative to the type of product selected.

Waiting downstream cons.
The terminal is waiting for the "downstream consent" input to become active to be able to reactivate the scale motor and move down the piece just weighed.

TX failure
The weighing operation was interrupted because an actual NON-negligible failure condition occurred on the PC/Terminal dialogue. The operator must fix the dialogue problems, then can decide whether to leave the piece on the scale and press START to resume production, trying again to weigh the same piece, or to remove the piece from the scale and press START to resume production from the next piece.

Line in emergency
A Line start request was made with the terminal in emergency status: the request was rejected.

Line in transport
A Line start request was made with the terminal in transport status: the request was rejected.

Line NOT empty
A new Line start request was made with the product presence photocell already closed and/or with the scale still loaded (net

weight higher than zero and net weight in scale already higher than minimum net): the request is rejected.

Product code missing
A Line start request was made with the selected product code equal to zero or not present in product codes archive: the request is rejected.

Net lower than threshold
The weight of the piece being weighed is lower than the "Minimum net" (with minimum net higher than zero): the terminal interrupts the weighing operation and waits for the intervention by the operator.

Nonconforming piece
Weighing was interrupted because a failure condition occurred simply due to the fact that the PC rejected the piece. The operator must fix the failed PC authorisation issues, then can decide whether to leave the piece on the scale and press START to resume production, trying again to weigh the same piece, or to remove the piece from the scale and press START to resume production from the next piece.

Scale stop del. >= piece t.
A Line start request was made with Piece Time greater than zero and with Scale Stop Delay equal to or greater than Piece Time, therefore the piece would definitely stop for weighing beyond the product presence photocell, which is not acceptable for this terminal: the request is rejected.

Stop executed
This is a simple note to inform the operator that his STOP request, previously accepted, has taken effect; the line has been deactivated.

Speed equal to 0%
A Line start request was made with Line speed % equal to zero: the request was rejected

5.4 Connections

To start the machine, the necessary connections to the local mains must be ensured:

- electrical connection (including earthing connection),

in compliance with the regulations in force in the country of installation.

Guaranteeing the required connection characteristics is the user's responsibility.



CAUTION!
The required connections must be made by qualified and authorised personnel.

5.4.1 Electrical connection



CAUTION!
Before performing any electrical connection, make sure that the machine is turned off. Then set the main switch on the electrical panel to "0" - "OFF".



CAUTION!
Make sure that the customer's power supply line has been previously disconnected.

The compliance of the connection between the machine and the earthing system is the purchaser's responsibility.



CAUTION!
This operation must be carried out by specialised and authorised personnel (electrical maintenance technician) only.

Before proceeding with the **electrical connection**, check that:

- the maintenance technician is aware of the regulations in force in the country of installation;
- the frequency and voltage values of the machine match those of the power supply
- network;
- the section of the electrical cables used is suitable for the power consumption;
- the power supply line is suitable for withstanding the machine's maximum consumption;
- the circuit earthing complies with the **EN 60204-1** standards;
- the materials used in the earthing system are sturdy enough or have suitable mechanical protection.



CAUTION!
Do not work with wet hands and objects. In case of fire, do not use water on electrical components.

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Chapter 6
CONTROLS AND HOW TO USE THEM

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6. CONTROLS AND HOW TO USE THEM

During operation, the machine requires to be manned continuously by an operator.

For all the control procedures and on/off modes, see the use and maintenance manual for the main machine.

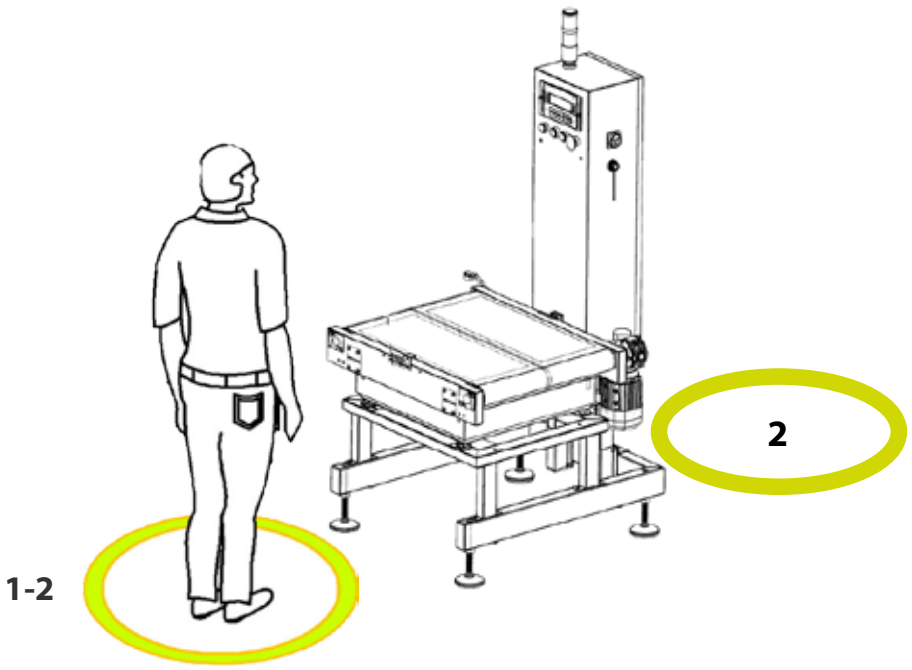
ATTENTION!
Using the machine for a purpose other than that envisaged by the Manufacturer could cause severe damage to people and/or things and/or animals.
SOCIETA' COOPERATIVA BILANCIAI shall not be held liable for any damage caused by improper use of the machine.

IMPORTANT!
Do not exceed the recommended weights. The scale could be damaged. If you are in doubt about the carrying capacity, check the data plate on the weighing terminal.

6.1 Operator workstation

The locations of the workstations near and in close proximity to the machine (A) connected to the system's main machine are shown below:

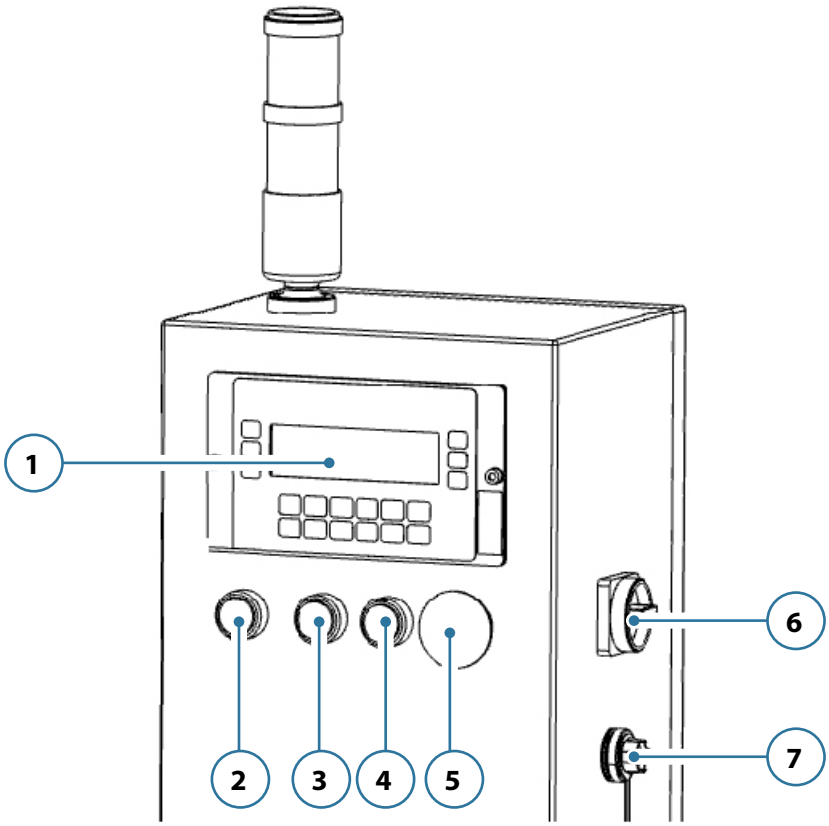
Area	Activity
1	Switch on / Switch off - Adjustment - Cleaning
2	Adjustment - Cleaning - Maintenance - Repairs



6.2 Command pushbutton panel

The buttons of the pushbutton panel are described below.

Pos.	Element	Description
1	Operator panel	(See paragraph 6.3)
2	Bypass selector	Deactivates the weighing function to allow the products to pass without check
3	START button	Activates the machine operating cycle
4	Power supply	Indicates that the machine is powered
5	Emergency pushbutton	Red mushroom shaped button with latching to be pressed when needed to stop the machine.
6	Main switch	(see CHAP. 6.3.2)
7	USB port	USB type A port for local storage of weighing data



6.3 Operator panel

The machine is intended to be controlled by an operator through an operator interface with all the controls required to run and control the machine.

For information on the operation of the operator panel, please refer to the attached documentation.

6.4 Operational procedures

6.4.1 Preliminary checks

The following checks must be carried out before commissioning the machine.

- Check that the machine is standing on a surface that can support its weight.
- Check the operation of the safety devices.
- Check that the emergency mushrooms are not pressed.
- Make sure that no one is standing in the danger area.
- Check that the clearance around the machine is free from obstructions and/or gaps.
- Check that the machine has been connected to the mains.
- Check that the power supply phases are correct.
- Check that the machine is not in **"Maintenance"** status.

6.4.2 Machine setup operations

Before commissioning the machine, the checks of the following setups must be carried out.

Step	Action
1	Make sure that the terminal is not already under production, namely that the line is not active.
2	Empty the section of the line from the load photocell to the ejector, if any.
3	Set the belt speed (% VELOC,%SPEED). ATTENTION: The value is a percentage of the maximum speed of 45m/min
4	Select the product code to be used in production. If the codes are not present in the archive, create a product code (CMERC,PROCOD). NOTE: the code must be other than zero and already present in the "product codes" archive.
5	Make sure that the maximum upstroke time (MAXSAL,TIME_L) is other than zero.
6	The "Transport" selector must be placed at zero.

If the codes are not present in the archive, create a product code (CMERC,PROCOD) by setting: description, weight range, piece time, scale stop delay and ejector output delay

6.4.3 Start up

Proceed as described to **start up the machine**:

Step	Action
1	Press the START button on the terminal or the Button on the electric panel.
2	The message "running" appears on the terminal.
3	Have the product move on the belt, engaging the saving photocell.
4	The machine is ready to weigh and select the product.

6.4.4 Restart after an emergency stop

Follow the procedure below to **restart the machine after an emergency stop**:

Step	Action
1	Find and eliminate the cause of the machine emergency stop.
2	Check to make sure that there is no one inside the dangerous area of the machine.
3	Reset the emergency pushbutton that has been pressed.
4	Press the **"reset"** button from the command pushbutton panel to reset all the other safety devices and reset alarm logs stored by the PLC.

6.4.5 Restart after alarm intervention

Follow the procedure below to **restart the machine after an alarm intervention**:

Step	Action
1	Solve the cause of the alarm.
2	Reset the alarm from the operator panel.
3	Press the START button to restart the work cycle.

6.4.6 Shutdown

Proceed as described to **shut down the machine**:

Step	Action
1	After the machine working or programming stages, exit the archives menu and go to the main menu.
2	Turn the master switch to "0".
3	Disengage the disconnector upstream of the machine.



CAUTION!
Do not use emergency pushbuttons for normal machine shutdown.

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Chapter 7
MAINTENANCE

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7. MAINTENANCE



CAUTION!
Perform maintenance work when the machine is off (main switch set to "0"- "OFF").



CAUTION!
Maintenance work must be performed by qualified, authorised personnel.

Servicing the machine includes performing the operations (inspections, examinations, checks, adjustments and replacements) that are required after normal use.

For proper maintenance:

- use only original spare parts as well as tools suitable for the purpose and in good working order.
- comply with the frequency intervals recommended in the manual for scheduled maintenance (preventive and periodic). The distance (indicated in time or work cycles) between one maintenance job and another is to be understood as an acceptable maximum; therefore, it must not be exceeded; it can instead be shortened.
- proper preventive maintenance requires constant attention and continuous surveillance of the machine. Promptly check the causes of any anomalies such as excessive noise, overheating, leakage of fluids, etc. ... and rectify them.
- timely removing any causes of anomaly or malfunction prevents further damage to the equipment and ensures operator safety.

The staff in charge of machine maintenance must be properly trained and have thorough knowledge of accident prevention regulations; unauthorised personnel must remain outside the work area during operations.
The machine/system is also cleaned and adjusted only and exclusively during maintenance. It must be stopped and de-energised, with the electrical panel disconnected, as specified in the use and maintenance manual.



IMPORTANT!
If in doubt, do not conduct any work. Contact the Manufacturer for the necessary clarifications.



CAUTION!
Any repair or maintenance work that is not described in this manual may only be carried out with SOCIETA' COOPERATIVA BILANCIAI approval.

SOCIETA' COOPERATIVA BILANCIAI shall not be held liable for any harm to people or damage to property due to maintenance operations other than those described or performed in ways other than those specified.

Machine maintenance work is divided, from an operational point of view, into two main categories:

Routine maintenance	All those operations that the operator must preventively perform to ensure the machine's proper operation over time; routine maintenance includes inspections, checks, adjustments, cleaning and lubrication.
Extraordinary maintenance	All those operations to be performed by the operator when the machine needs them. Extraordinary maintenance includes overhauls, repairs as well as restoring nominal operating conditions or replacing a faulty, defective or worn unit.

7.1 Safety warnings



CAUTION!
Before starting any maintenance work on the machine, disconnect and padlock all energy sources, and put the moving units that comprise it in a safe lock condition. Place a "Machine under maintenance - do not switch on" sign close to the main switch.



CAUTION!
When the machine is being serviced, to prevent it from being accidentally started, press the mushroom-head emergency button and place signs reading:
"CAUTION! MACHINE UNDER MAINTENANCE".

- Maintenance technicians must wear all the necessary personal protective equipment (gloves, goggles, all other items) for the operation to be performed.
- During maintenance work, unauthorised personnel must remain outside the operating area.
- If the operation involves removing guards, block access to the operating area and place prohibition signs to prevent any people who are not related to maintenance work from getting into the area.

The need to put the machine in operating conditions and/or with disabled guards requires adequate skills and experience, as well as special attention by the maintenance technician, who must be properly trained to tackle any risks.

The accident prevention precautions referred to in this section must be always strictly adhered to while maintenance work is conducted on the machine/system, for personal injury and equipment damage to be prevented.

Before carrying out any maintenance work, make sure all energy sources (electricity, compressed air, hydraulic energy, etc.) have been disconnected.

- Conduct work only and exclusively with the machine/system off and de-energised.
- Padlock the electrical panels and the pneumatic supply valve.
- Place specific warning signs such as: **EQUIPMENT UNDER MAINTENANCE - DO NOT SWITCH ON, WORK IN PROGRESS - DO NOT OPERATE** or **DO NOT START** close to the main switch and the access areas to the machine.
- After disconnecting the electrical panel, fence it off whenever you need to perform work on it with open doors.
- Conduct the work falling within your skill range (Mechanical, Electrical, Fluidic), and which you are authorised to perform.
- Being able to use the most suitable tools for troubleshooting, and being familiar with the most appropriate equipment for maintenance work is required.

7.2 Routine maintenance

When the machine is delivered to the user, it is already adjusted to work properly; however, to ensure its proper operation over time, periodic and preventive checks as well as maintenance work must be carried out.

Routine maintenance includes inspections, checks and operations which, to prevent failures, keep the following under control:

- machine mechanical conditions,
- machine lubrication,
- machine cleanliness.

The tables below list a number of checks and operations to be performed following a recommended schedule. The frequency intervals specified for routine maintenance refer to normal operating conditions, i.e. meeting the expected conditions of use.
The following table lists a number of routine maintenance procedures applicable to all types of machines manufactured by **SOCIETA' COOPERATIVA BILANCIAI**.

The operator must take only the procedures relating to the machine covered by this manual into account.

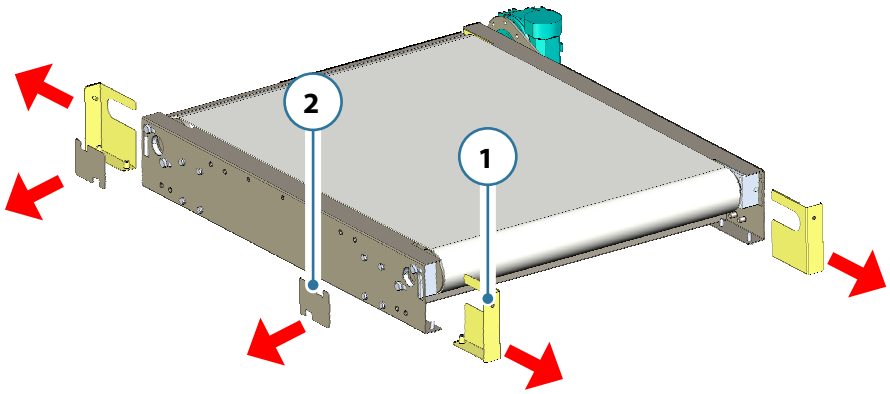
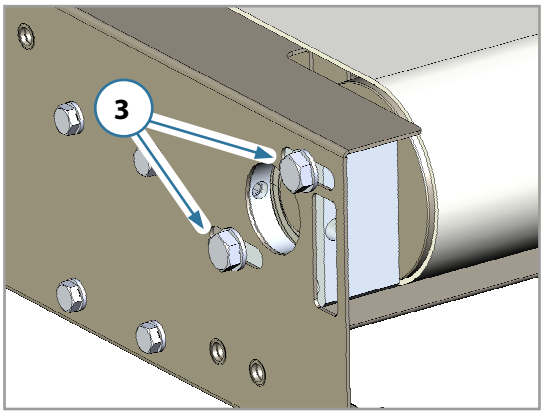
7.2.1 Checks and inspections

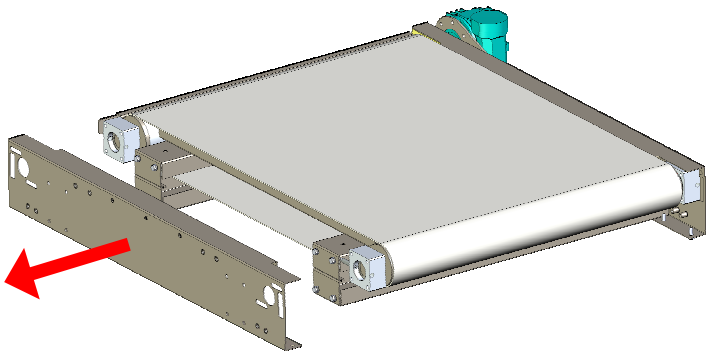
Operation	Frequency				
	Daily	Weekly	Monthly	Half-yearly	Yearly
Replacing conveyor belts				◈	
Tensioning conveyor belts		◈			
How to check the weighing system					
Cleaning				◈	

7.2.1.1 Replacing the conveyor belt

Operator qualification	Mechanical maintenance technician
Required PPE	
Tools to be used	Manual tools

To **replace the conveyor belt**, proceed as described below:

Step	Action	Image
1	Switch off the machine and disconnect it from the mains.	
2	Remove the 4 front (pos.1) and side (pos.2) protective guards.	
		
3	Slacken the belt by acting on the specific adjustment screws (pos.3).	
		
4	Disassemble the front panel (pos.4)	
5	Forcibly remove the belt from the rollers. NOTE: if the belt must be replaced due to wear, cut it to facilitate its removal.	

Step	Action	Image
		
6	Fit the new elastic belt and proceed with tensioning.	
7	Refit the front panel of the belt.	
8	Refit the front and side protective guards.	

7.2.1.2 Conveyor belt tensioning

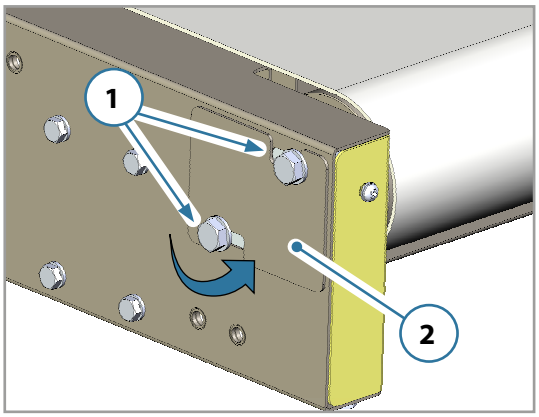
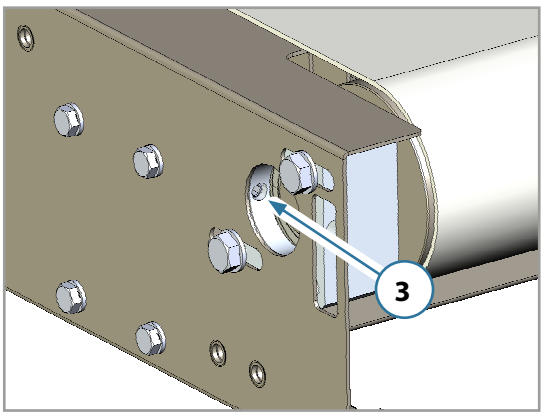
Operator qualification	Mechanical maintenance technician
Required PPE	
Tools to be used	Manual tools

CAUTION!
Do not tension the belts more than necessary since it reduces its service life and increases wearing of the driving system.

IMPORTANT!
Always adjust the tensioning screws in a balanced way to prevent the belt from moving sideways, touching the metal sheets.

The elastic belts of the conveyors require tensioning after assembly or after a period of use.

To **tension the belt**, proceed as described below:

Step	Action
1	Loosen the fixing screws of the protective guards from the side of the driven roller (pos.1) (NO motor). ATTENTION: DO NOT REMOVE THE FIXING SCREWS COMPLETELY. The screws must be loosened as much as needed to remove the closing guards (pos.2).
2	Disassemble the closing guards (pos.2).
3	Act alternately on the two screws at the end of the belt (pos.3).
	 
4	When adjusted, refit the closing guards (pos.2).
5	Tighten the front fixing screws of the protective guards of the driven roller that were previously loosened.

IMPORTANT!
If the tensioning screws are not regulated in a balanced way, the belt will tend to shift to one side and could touch the side structures and become worn.
Let the belt run for at least one minute. In case of sliding, gradually increase tensioning of the part the belt slides to, and repeat the test.

7.2.1.3 How to check the weighing system



IMPORTANT!
Contact the Manufacturer's After-sales Service if the tests are beyond the tolerated error margin.



IMPORTANT!
Never attempt to tamper with the weighing system or its parts.



IMPORTANT!
Removal of the seals will immediately void the approval of the system and the warranty provided by the manufacturer.

7.2.2 Cleaning



CAUTION!
Cleaning operations must be performed by qualified, authorised personnel only.



CAUTION!
Adhere to the wash water treatment regulations in force in the country of installation.

Operation	Frequency				
	Daily	Weekly	Monthly	Half-yearly	Yearly
Cleaning conveyor belts	◈				
Cleaning photocells	◈				
Cleaning the compressed air filter			◈		

7.2.2.1 Cleaning conveyor belts

To **clean conveyor belts**, proceed as described below:

Step	Action
1	Disconnect the machine from the electricity mains.
2	Dampen a clean cloth with water and a detergent solution, dosing the detergent as recommended by its manufacturer.
3	Thoroughly clean all the belt parts.



IMPORTANT!
Only use neutral detergents that do not need to be rinsed (non-foaming).



CAUTION!
Turn off the machine and disable the disconnector (padlockable) upstream. Carefully clean the conveyor belts by manually turning them. Prevent water from dripping onto the parts underneath.

7.2.2.2 Cleaning photocells

To **clean photocells**, proceed as described below:

Step	Action
1	Disconnect the machine from the electricity mains.
2	Use a cotton cloth moistened with alcohol.
3	Carefully clean the photocell lenses.
4	Also clean the reflector in front of the photocell.
5	Dry with a dry cloth.



CAUTION!
Never ever use metal or pointed tools for cleaning purposes, as they can irreparably damage the sensor. Never use petrol or solvents.

7.2.2.3 Cleaning the compressed air filter (main machine)

To **clean the compressed air filter**, proceed as described below:

Step	Action
1	Disconnect the machine from the electricity mains.
2	Get a container to collect condensate liquids.
3	Place the container under the filter's transparent bulb.
4	Press the small button under the transparent bulb with a finger until all the liquid inside has flowed out.



CAUTION!
The condensate liquid can spurt out violently. Therefore, move the edges of the container as near as possible. Keep your face and eyes away and always use suitable clothing and personal protective equipment.

7.3 Extraordinary maintenance



CAUTION!
Extraordinary maintenance and repair work may be performed on the machine by qualified, instructed and authorised technicians only, employed by the Manufacturer or an authorised service centre.
This type of work requires in-depth, specific knowledge of the machines, necessary operations, associated risks and proper procedures to operate safely.

If exceptional events occur, which require extraordinary maintenance, the user's routine maintenance personnel must follow these procedures:

- check the condition of damaged or out-of-phase units;
- perform the operations described in this section;
- if the operations to be performed are not covered in this manual, please send the Manufacturer a report of the events that have occurred, the result of the inspection and any remarks.

The Manufacturer or the authorised service centre will assess the situation on a case-by-case basis. Then they will agree on the type of work to be conducted with the routine maintenance technicians, choosing the most suitable solution between those listed below:

- the Manufacturer sends an authorised, trained and qualified technician to carry out the necessary operations;
- or the Manufacturer authorises the user's routine maintenance personnel to carry out the operations needed, sending any additional instructions.



ATTENTION!
The spare parts to be replaced must be ordered from SOCIETA' COOPERATIVA BILANCIAI.
If the customer does not use original spare parts or those approved in writing by the Manufacturer, the latter shall not be held liable for the operation of the machine and the safety of the operators.
Any approval and/or instructions must always be provided in writing. If no written approval is granted, no work may be conducted on the machine and the Manufacturer declines all responsibility.



CAUTION!
Maintenance work must be performed by qualified, authorised personnel only.

Chapter 8
DECOMMISSIONING AND DISPOSAL

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8. DECOMMISSIONING AND DISPOSAL



CAUTION!

Decommissioning and dismantling must be entrusted to personnel specialised in performing these activities. In particular, only the person in charge of dismantling and end-of-life disposal may:

- **mechanically and electrically disconnect parts according to disassembly instructions and project plans.**
- **carry parts from their location at the plant to the disposal centre where they will be sorted out.**

The machine essentially consists of the following materials:

- painted, plasticised or galvanised ferritic steel;
- 300/400 series stainless steel;
- polyethylene plastic material;
- elastomers, PTFE, graphite;
- gear oil;
- lubrication grease;
- electric motors;
- electrical cables with their sheaths;
- Electronic control and actuation devices.
- etc.



CAUTION!

The machine does not contain any dangerous components or substances that require special removal procedures.

8.1 Disposal

The machine must be secured before **being disposed of**.



ATTENTION!

For the disassembly of commercial parts or sub-supply material which are part of the machine supplied by SOCIETA' COOPERATIVA BILANCIAI, please refer to the relative manual of the supplier.

Pursuant to the **"WEEE" Directive 2012/19/EU**, if the purchased component/equipment is marked with the following crossed-out wheeled bin symbol, it means that the product must be collected separately from other waste at the end of its service life.



CAUTION!

Remember to comply with the disposal laws in force in the country where the machine is installed.

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Chapter 9
ANNEXES

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9. ANNEXES

This chapter contains the documentation annexed to the machine.

The annexed documentation is an integral part of the "INSTRUCTION, USE AND MAINTENANCE MANUAL" of the machine supplied by **SOCIETA' COOPERATIVA BILANCIAI** and must be referred to when using, operating and servicing the equipment and its components.

Below please find the list of annexes:

Code	Description
	Wiring diagram
	Gearmotor manual
	DD700 operator panel manual (on-demand)

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SOCIETA' COOPERATIVA
BILANCIAI
Strumenti e Tecnologie per Pesare

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