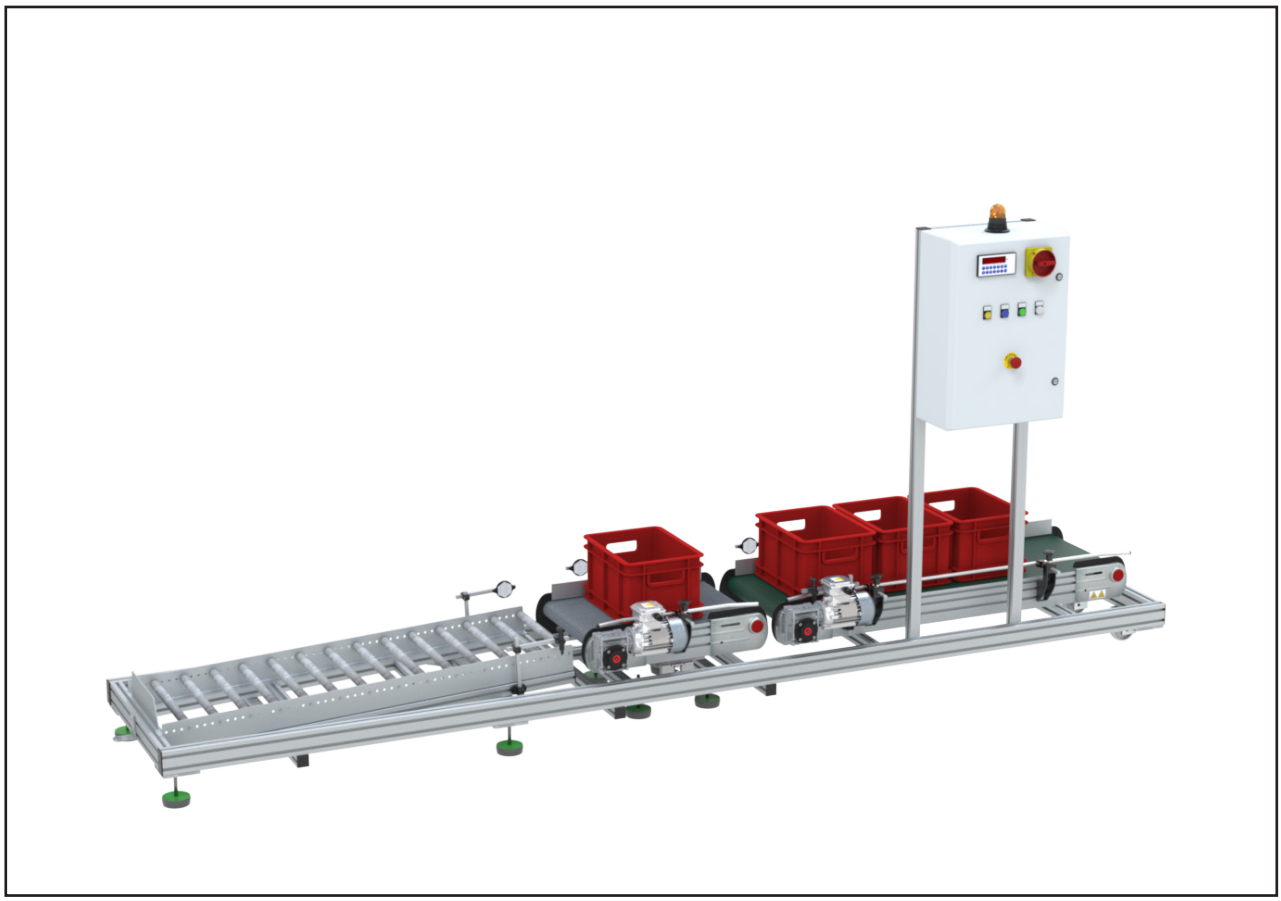
USE and MAINTENANCE MANUAL

F3210



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Crizaf®
CUSTOM CONVEYING SYSTEMS

GENERAL CONTENTS

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USE OF THE MANUAL

The use and maintenance manual is the document accompanying the equipment from its manufacture to its dismantling. Therefore, it is an integral part of the machine. The manual must be read before starting ANY ACTIVITY involving the machine including handling and unloading from the means of transport. For ease of reference, the instruction manual is divided into the following sections:

Section 1
Machine transport and handling.

Section 2
Description of the machine and of its field of application (i.e. the work it can perform). The technical features of the machine are also listed.

Section 3
Installation of the machine.

Section 4
Safety devices.

Section 5
Description of the machine controls and of the rules for its use.

Section 6
Ordinary and extraordinary maintenance.

Section 7
Dismantling.

Section 8
Wiring diagrams.

Section 9
Spare parts.

SYMBOLS


Table of contents of the USE and MAINTENANCE manual


Transport


Description of the machine


Installation


Safety devices


Normal use


Maintenance


Putting out of service

GENERAL CONDITIONS

The supervisor acting on behalf of the machine-owning company is obliged to respect the general conditions below in order to comply with safety regulations.

CAUTION

The instructions in this manual are binding conditions for the safe use of the machine. Failure to comply with the conditions of use implies the status of 'improper use' by the operator, thus removing the employer's responsibility to comply with the essential safety requirements

The operator and maintenance personnel must be thoroughly familiar with the contents of this "operating and maintenance manual". It IS the obligation of the above-mentioned operators to read it carefully and, in case of doubt, to consult the employer's service network personnel for clarification before operating the machine.

The machine operating and maintenance manual must always be at the disposal of the operator.

The operator is obliged to prevent untrained personnel from using the machine when moving away. It is advisable to affix a sign on the control panel stating "only authorized persons may use this machine".

The employer, through the supervisor of his company, must ensure compliance with these requirements.

The responsible personnel acting on behalf of the company must comply with the following provisions:
- Ensure that the operators have good psychophysical characteristics.
- Make sure that the operators know how to use of the forklift and have read this user manual.

The operator and the maintenance technician must perform routine maintenance as indicated in this manual in the dedicated chapter.

The operator and the maintenance technician have the obligation to ask the supervisor the intervention of the employer technical assistance for the extraordinary maintenance indicated in this manual.
The operator is obliged not to use the machine if any malfunction occurs.
It is forbidden to perform extraordinary repairs. Any repairs or extraordinary maintenance performed on one's own or in unauthorized workshops can cause malfunctions which can consequently cause damage to people or property. In such cases, the manufacturer is relieved of any responsibility for compliance with general safety regulations.
The repairer or maintenance technician (other than the employer) assumes responsibility for compliance with the safety regulations for the whole machine and the technical file held by the manufacturer is not to be considered representative of the machine in its

entire context. Any repairs or extraordinary maintenance performed on one's own or in unauthorized workshops, during the entire warranty period, automatically invalidate the warranty.

The user of the machine who uses equipment, devices or systems combined with the Crizaf production machine must draw up the technical and safety documentation of such systems and, if necessary, submit the necessary certificates.

SECTION 1
TRANSPORT

1.1 TRANSPORT

To transport the machine only the methods below can be used:
- Fastening to the pallet.
- Transport in wooden case and container (in case of sea transport).
- Transport by means of lift truck.

Make sure the means of transport and the lifting device can bear the weight of the machine with its packaging (about 1750 Kg).
The weight of the packaging depends on the type used.
For further information about the weight, the dimensions and the characteristics of the packaging, please contact Crizaf before the delivery.

The handling of the crates or containers containing the machines or any other type of packaging is defined when the contract is drawn up. Customer organizes and manages delivery to the factory. The customer is generally responsible for the subsequent handling, storage or transport of the crates to the place of installation.

CAUTION
The staff in charge of handling must use protective gloves with performance level 3 or 4 in compliance with standard EN407 or another equivalent standard.

CAUTION
While lifting or handling the machine or any of its parts, clear the working area, by leaving a sufficient safety area around it to avoid injuring people or damaging objects that could be inside it.
It is essential that the security officer is on site to coordinate operations during the unloading and handling operations.

1.2 TRANSPORT IN WOODEN CASE OR CAGE

The machine is wrapped in thermoplastic material, a barrier shroud, to ensure its protection. It is then packed in a wooden cage or case to protect it from impacts and bad weather. To lift it use a fork lift truck or a bridge crane with ropes and hooks (figure 1).

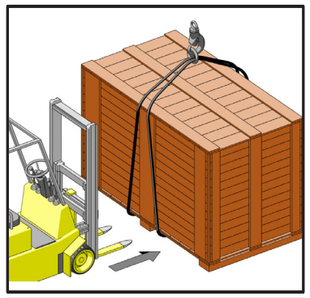


Figure 1

SAFETY INSTRUCTIONS

Before opening and handling it, follow the instructions on the package.

SAFETY INSTRUCTIONS

Always position the forks in a barycentric position, as shown in figure 2.

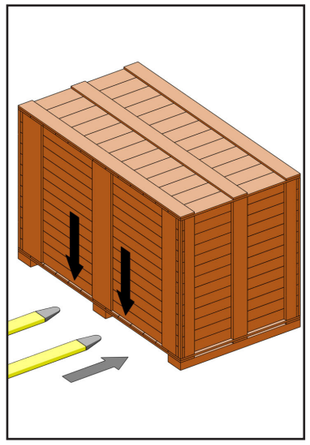


Figure 2

SAFETY INSTRUCTIONS

Once the machine is loaded on a lorry, cover it with a tarpaulin and tie it down with ropes.

SAFETY INSTRUCTIONS

In the case of transport by sea, once the machine is loaded on a covered lorry, it is transported to the shipping port and then placed in a container.
Once the container is loaded on the ship, it is the company in charge of transport which is responsible for its handling, storage and management.

1.3 STORAGE

During transport and storage of the equipment, make sure that the temperature is between 5 and 40° C and that the relative humidity is not more than 60%.
If the machine must be stored, make sure that it is not placed in areas with an excessive relative humidity.

SAFETY INSTRUCTIONS

During storage, never overlap the cases containing the machine.

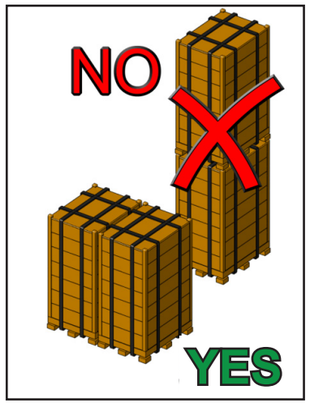


Figure 3

1.4 UNPACKING

If not contractually agreed otherwise, the responsibility for the unpacking of the machine lies with the machine user.
After positioning the machine in the installation area, open and unpack it using a hammer with nail puller. The crates will have to be opened starting from the upper covering, then remove the side walls (figure 4).

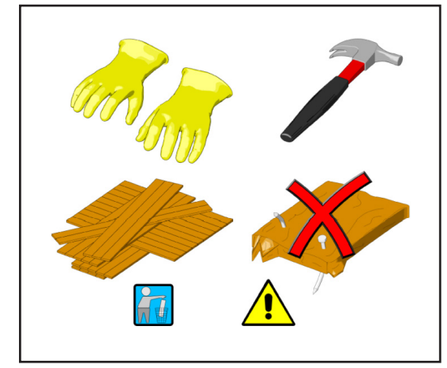


Figure 4

SAFETY INSTRUCTIONS

Check from above to see if any units or accessories have been inserted into the sides of the packaging, then decide which wall of the packaging to remove first so as not to damage the contents of the cage.

CAUTION

Always use protective gloves with performance level 3 or 4 in compliance with standard EN407 or another equivalent standard.
Always pay attention to any protruding nails.

NOTICE

The packing (usually a wooden one) must be delivered to associations in charge of its disposal and recycling. The Customer, through the figure of the supervisor, will coordinate the use of lift trucks, bridge cranes or of what is necessary to handle the machines and position them in the installation area.

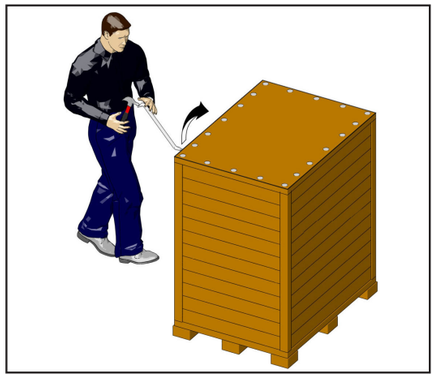


Figure 5

1.5 HANDLING

After unpacking as described in chapter 1.4, it is possible to move the machine from the pallet using a bridge crane equipped with cables or belts with a capacity adequate to the machine weight.

⚠ Do not use lift trucks equipped with forks in order to lift the machine.

Istruzioni di sicurezza

During the handling phase, always proceed very slowly and verify no operator is present in the areas where the handling is taking place.

SAFETY INSTRUCTIONS

During handling, avoid swinging the machine: move it carefully and lift it slightly from the ground.

1.6 POSITIONING

To move the machine within departments, or to insert it in production lines already present on site, proceed using the special trolley **A**, which is supplied with the machine and insert the tip into the appropriate seat **B** shown in the detail of figure 6. Lift the machine and move it as required.

⚠ The wheels are only mounted on the back of the machine

⚠ Raise the machine only a few inches, enough to allow movement.

⚠ Prepare the loading zone so that the transported materials move smoothly on the belt, without any risk of falling.

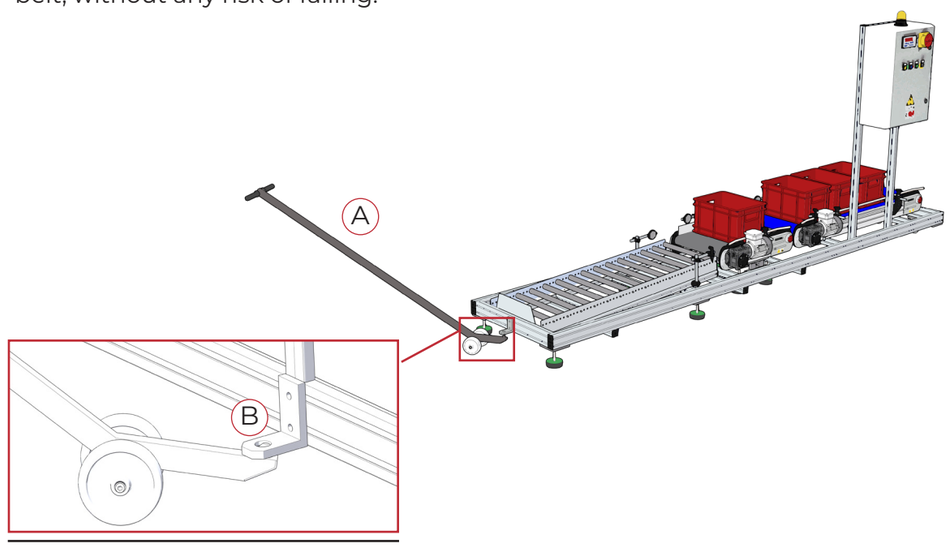


Figure 6

SECTION 2
TECHNICAL FEATURES

2.1 PLATE AND LABELLING DATA

The manufacturer's identification and Machinery Directive 2006/42/EC are indicated on the machine conformity plate which is shown below. The plate must not be removed at all, even if the machine is resold. Always refer to the serial number (written on the plate itself) when contacting the manufacturer. Some safety warnings are also placed on the machine (see the picture below); they must be strictly observed. The company is not to be held responsible for damage to property or accidents to people which might occur if the above-mentioned warnings are not observed. In such case, the operator is the only person responsible.

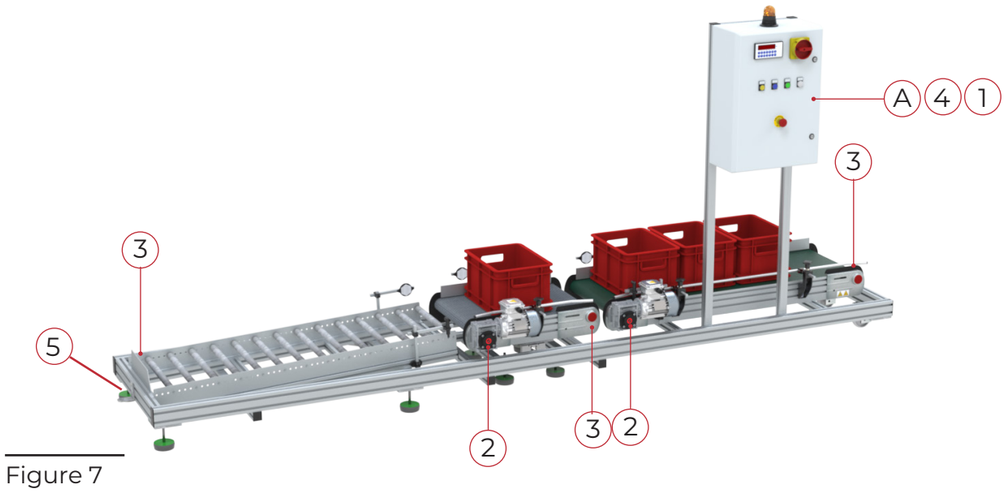
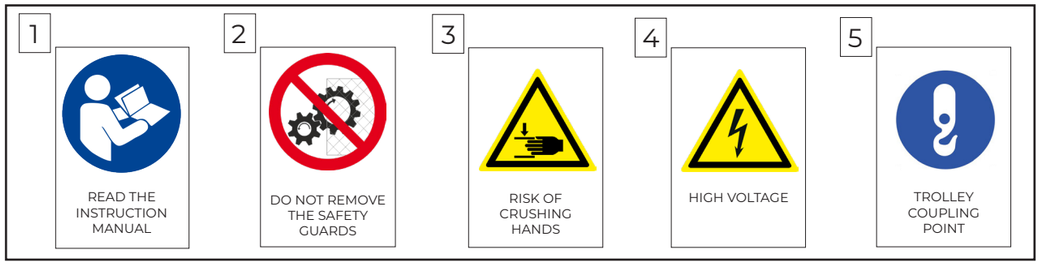
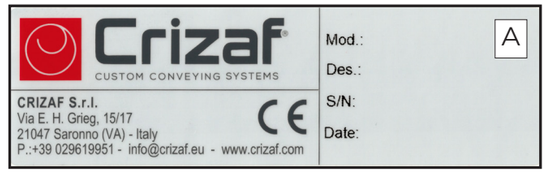


Figure 7





2.2 DESCRIPTION OF DEL SISTEMA F3210

The F3210 system, designed for the storage and filling of boxes, is particularly well-suited for use alongside a press thanks to its compact size and ease of use. Custom-built to meet the customer's production needs, it is equipped with a control system that enables full automation of the filling cycle. The filling station is also equipped with a weighing system that allows for adjustment of the quantity of parts dispensed into the boxes. It also offers extensive customization options thanks to a wide range of accessories and standardized solutions.

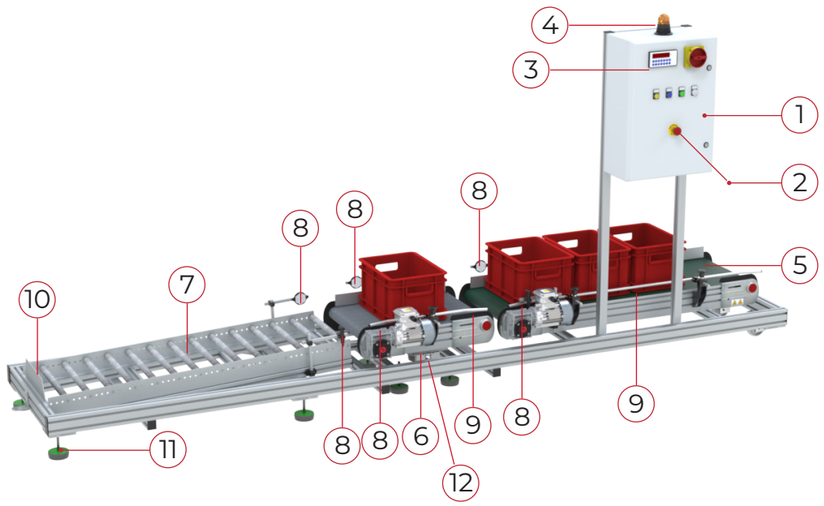


Figure 8

POS.	DESCRIPTION	POS.	DESCRIPTION
1	Electrical cabinet	7	Unloading roller conveyor for filled boxes
2	Emergency button	8	Photocell
3	Weighing control panel WIN13	9	Pneumatic cylinder covering
4	Light and sound signal	10	Side boards
5	Feeding conveyor boxes to fill	11	Lock stop filled boxes
6	Pneumatic translation arm	12	Adjustable feet

All machines are equipped with high precision components and are accurately assembled. Every phase of the assembly process is repeatedly checked by specialised personnel in order to ensure high quality standards during each phase of the cycle.
Crizaf carries out the necessary tests on the machine before delivery. Thereby, the machine is tested and calibrated for the type of working required.

The machine is supplied with the following standard documents:

- Use and maintenance manual
- Declaration of conformity
- Machine technical sheet
- Assembly drawings and lists of components
- Wiring diagram
- Spare parts

NOTICE

For other options or further information, contact Crizaf customer support.

2.3 FIELD OF APPLICATION

The machine is designed and built for filling cardboard boxes/plastic containers with small-sized plastic parts.
The system is made of a feeding belt, a weighing belt and an unloading roller conveyor. The first box on the feeding belt advances until it reaches the weighing belt, stopping against the barrier in the loading position of the pieces. The empty box is weighed and calculated as tare value. Then, it is filled until it reaches the set weight (configured through the WIN13 unit placed on the control panel). At this point, the pneumatic translation arm pushes the box on the roller conveyor parallel to the belt. The filled box is then evacuated. This cycle repeats until the end of the production lot.

It is forbidden to use the machine to handle heavy components and materials (consult technical specifications). The machine is not suitable for handling food products.

The loading and unloading of empty/filled boxes must always be carried out once the machine has stopped and is safe.

CAUTION

The functioning of the belt C1100 and of the conveyor cannot be separate from the functioning of the F3210 machine. For this reason, they cannot be used independently, freely or autonomously, without the system F3210.

CAUTION

The machine will be installed in a work island. Any safety repairs will be made by the customer incorporating the system provided within the island itself.

2.4 TECHNICAL FEATURES

The main technical features of the machine are listed below:

FRAME	extruded profile in anodized aluminium alloy with T slots and PVC covering die cast aluminium alloy crossbar die cast aluminium alloy head and bearings supports
INTERMEDIATE SHEET	Stainless steel
ROLLERS	Ø60 mm extruded section in aluminium alloy
FEEDING BELT MODEL	C1100
BELT	Antistatic surface in polyurethane or PVC, continuous maximum temperature respectively 110 and 100° C.
MAXIMUM LOAD	Feeding belt: 30 kg Weighing belt: 30 kg
WEIGHING PRECISION	10 g
SIDEWALLS	Fixed sidewalls: 2 pcs extruded profile in anodized aluminium alloy Mobile sidewalls: adjustable stainless steel tube with 100 m stroke
TRANSMISSION	Direct pull (right side) asynchronous gear motor 400Vac/50Hz/3F – 0.18kW speed: 3.4 m/minute speed: 6.8 m/minute (belt with weighing)
MAXIMUM LOAD OVER THE ENTIRE LENGHT	60 kg
TEMPERATURE	Min: -10°C (±10°) Max (continuous work): +100°C
SENSORS	1 photocell / reflector to detect the box presence on the feeding belt 1 limit switch to detect the box presence in the filling position
DEGREE OF PROTECTION	IP55
APPROXIMATE WEIGHT	100 kg
CONTROL AND OVERLOAD CUTOUT	
CONTROL PANEL	0/1 switch, ON/OFF, E-stop, motor thermal protection, PLC, lamp, buzzer, digital display, control panel WIN13, dry contact, 16A socket for feeding conveyor

DEGREE OF BOX PROTECTION	IP65
ADJUSTMENT FIELD	0.6 - 1A
SUPPLY VOLTAGE	
VOLTAGE	See test sheet
MAXIMUM VARIATION OF MAINS VOLTAGE	±10% of the nominal voltage ±2% frequency
FREQUENCY	See test sheet
NOMINAL POWER	See test sheet
SUPPLY CABLE	See test sheet
SPEED	
ADVANCEMENT SPEED	See test sheet
WORKING ENVIRONMENT	
WORKING ENVIRONMENT	Indoor use
OPERATING TEMPERATURE	minimum 5° C – maximum 40°C
RELATIVE HUMIDITY	maximum 85% not condensing with T ≤ 40°C.
STORAGE ENVIRONMENT	
TEMPERATURE	minimum 5° C – maximum 40°C
RELATIVE HUMIDITY	maximum 80% with T ≤ 40°C.

2.5 DIMENSIONS AND POSITIONING

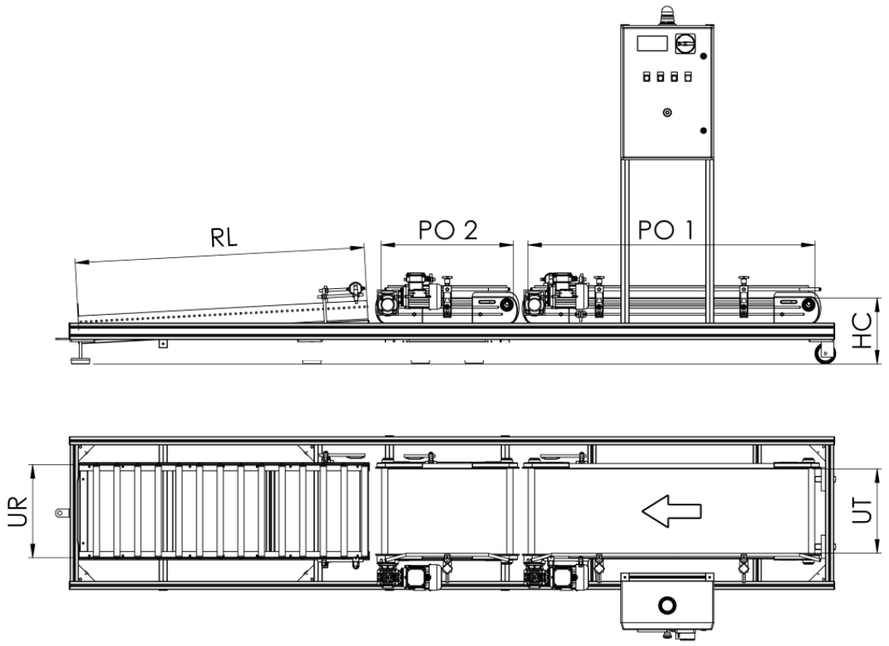


Figure 9

Machine dimensions and its configurations may vary.

MINIMUM LIGHT FOR WORKING OPERATIONS: Lux 400
Maximum noise: db (A) 65 dB*

*Noise tests have been carried out in compliance with UNI EN ISO 11202:2010.

2.6 LEVELLING

The machine must be levelled by means of the levelling feet (see the following figure)

1. The surfaces of the frame structure must be aligned and levelled both horizontally and vertically.
2. If necessary, place some steel shims, at the load transmissions points, between the frame and the floor.

CAUTION
A good levelling is necessary for a correct operation of the weighing system with which the machine is equipped.

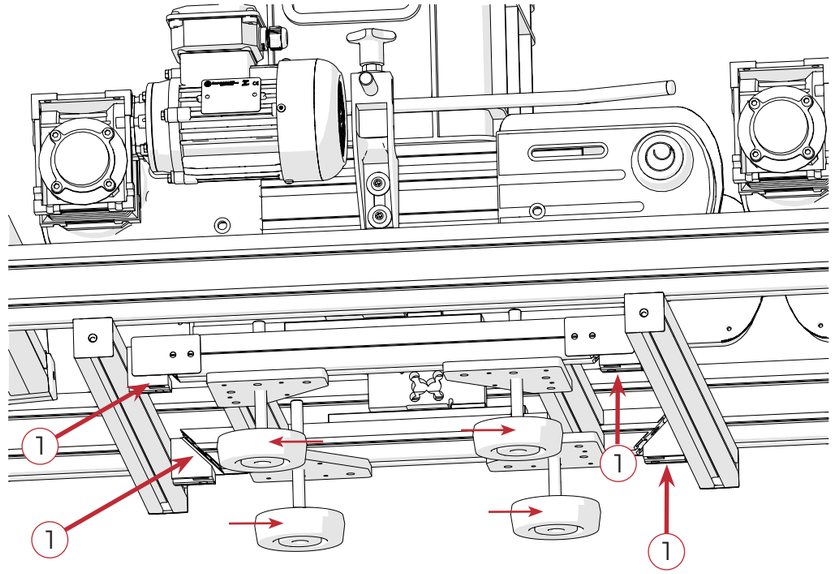


Figure 10

CAUTION
Once the leveling process is complete, there should be a gap at the four points indicated by arrow 1.

SECTION 3
INSTALLATION

3.1 ELECTRICAL CONNECTION

The electric cabinet is situated in a suitable position, according to the ergonomics and accessibility requirements as agreed with the client.
The electric system of the machine is designed accordingly to the current European CENELEC standards, with electrical panel in IP54 protection.
The electric cables for the connection between the cabinet and the other electric components are wrapped in a spiral sheath resistant to oils, shocks and crushes.

For the electric connection between the machine and the network, it is recommended to use a **four-pole cable (3P + Neutral + PE)** at least of the double-insulated type with conductors dimensioned according to the power required by the machine.

1. Connect any disconnected electrical cables according to the number shown on them.
2. Connect the power cable conductors inside the control panel (figure 11) to the respective terminals of the main switch, after connecting to the differential switch (if installed - optional).
3. Connect the protection conductor to the connection point identified by plate (PE).

CAUTION
An 'earth leakage circuit breaker' must be installed upstream of the system.

CAUTION
The connection to power sources must be carried out only by specialised personnel, in full compliance with all the current regulations on electrical safety. All the connections must be carried out in the absence of mains tension.

CAUTION
All electrical connections must be made by authorised personnel who can issue certification.

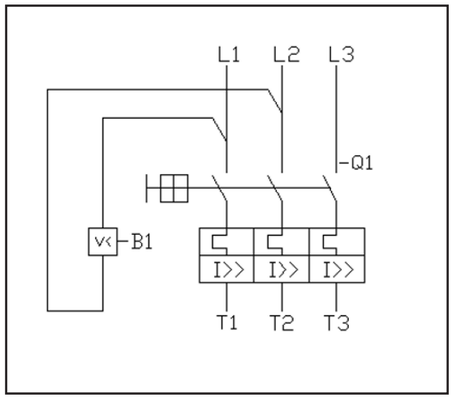


Figure 11A - Three-phase connection

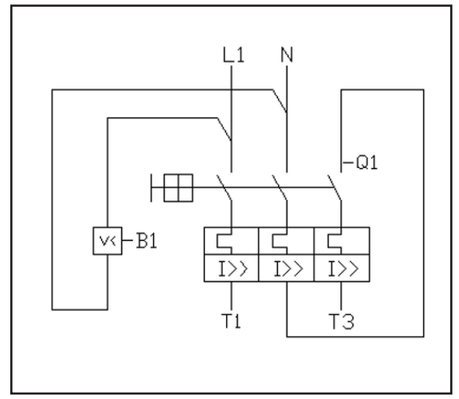


Figure 11B - Single-phase connection

SECTION 4
SAFETY DEVICES

4.1 SAFETY AREA

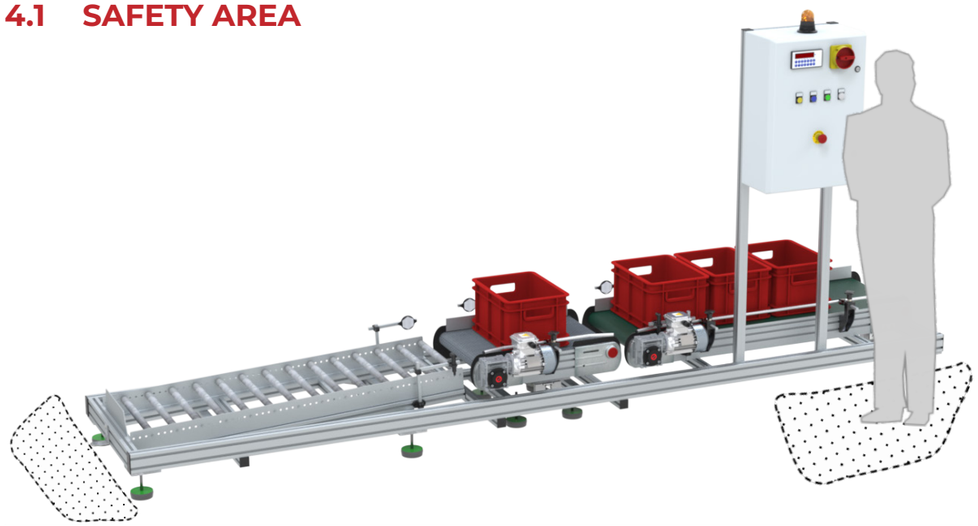


Figure 12

Figure 12 shows the operator's working area
Normally the machine is sold and installed ready to accommodate the type of boxes to be transported. Do not stay at a distance less than 500 mm from the machine.

4.2 MACHINE SAFETY

MECHANICAL SAFETY DEVICES
All moving parts of the machine are guarded by panels screwed to the structure.
The electrical system is contained within a cabinet, which can only be opened with a special key. Moreover, with the machine switched on, it is not possible to access the electrical components.

PASSIVE SAFETY DEVICES
On every belt, there are fixed protections aimed to prevent the limbs from entering the moving and dangerous parts:

- Bearing support
- Bearing support covering
- Fixed external perimeter protection
- Protection carter for the pneumatic translation piston

ACTIVE SAFETY DEVICES
On the machine are installed:

CAUTION
Always keep a distance not less of 500 mm from the loading and unloading area.

CAUTION
Never bring the body and/or clothing in contact with the belt, its moving parts, the rotating belt, the travelling arm or the rollers of the idle conveyor.

4.3 SAFETY PRECAUTIONS

It is recommended to operate the machine by scrupulously following the instructions indicated:

- It is absolutely **FORBIDDEN TO SMOKE** near the machine, both during work and maintenance operations.
- Use gloves, safety shoes and **protective clothing** in compliance with the regulations in force.
- It is absolutely **FORBIDDEN** to use water in the event of fire. Use CO_2 POWDER fire extinguishers.
- Unauthorized personnel is **strictly forbidden to approach the machine.**
- **Only ONE operator can work on the machine.**
- It is strictly **forbidden to remove or place boxes on the machine while it is still operating**.

4.4 EMERGENCY SITUATIONS

FIRE:
Always use powder fire extinguishers, which must be in the area close to the machine as required by **LAW**: do not use water. Staff members should be trained to deal with such accidents.

ELECTRICAL SYSTEM BLACKOUT:
The conveyor belt motor stops immediately.
When the electric energy comes back, after having rearmed the main switch of the system, the operation of the belt will NOT resume automatically.

EMERGENCY STOP:
The conveyor belt motor stops immediately.
After having rearmed the emergency button, the operation of the belt will NOT resume automatically.

4.5 RESIDUAL RISKS

During the normal working cycle and during maintenance, the operators are exposed to some residual risks which, due to the nature of the operations themselves, cannot be totally eliminated.

- It is possible to touch the boxes during the filling phase;
- It is possible to touch the filled boxes while they are descending towards the withdrawal area.

SECTION 5
NORMAL USE

5.1 SAFETY RULES DURING USE

The purpose of this section is to illustrate all the controls that the operator has at his disposal in order to be able to use the machine correctly in each work phase.
All the controls related to the use of the machine are located on the control panel and can be accessed easily by the operator.

CAUTION
The machine has numerous controls and a programmable pieces counter. It is recommended to read this section very carefully and to provide a copy of it to the operators in charge of operation and maintenance.

TO WORK ON THE machine, **STRICTLY FOLLOW** the provisions and the safety criteria that are listed below.

Crizaf declines any responsibility in case the user does not follow them. The company is not responsible for any type of carelessness while using the machine either.

It is forbidden to:

- Fill the boxes with heavy materials.
- Climb on any part of the machine.
- Transport products containing concentrations of inflammable substances.
- Use the machine in a potentially explosive atmosphere or at risk of fire.
- Use the machine in an aggressive atmosphere or with a high concentration of dust or oily substances suspended in the air or to chemical agents.
- Use the machine outdoors, exposing it to weather conditions such as rain, snow or other.
- Use the machine with electrical jumpers and/or mechanical means excluding the user or parts of the machine itself.
- Transport non plastic materials (unless specified in this manual).
- Transport food powders and/or their unsealed containers which disperse their contents.
- Transport materials with temperatures higher than those indicated in the present manual.

Load the machine with unfitting boxes/containers.

- Use the machine immersed in or in close contact with water or other fluid substances.
- Make adjustments or interventions when the belt is moving or with the power plug plugged into the power outlet.
- Move the machine when the belt is moving or with the power plug plugged into the power outlet.
- Modify the configuration of the machinery built by Crizaf.
- Incorporate the machine into an automatic production system without making the appropriate changes to the safety and programming systems.
- Remove the fixed guards.
- Disable or damage the safety devices in any way.
- Change or add devices to the electric cabinet without written consent or technical intervention of Crizaf confirming the change introduced in the description of the intervention.
- Use the machine for purposes different from the one it is destined to and which is specified in the use and maintenance manual.
- Use the machine while unqualified operators are in the work area.

Please observe the following guidelines in order to work safely.

CAUTION
The processing must be carried out in strict compliance with Italian safety regulations. Delimit and restrict the entry only to authorised personnel in the working area.

CAUTION
It is STRICTLY FORBIDDEN to smoke during the installation or adjustment operations of the machine. Some of the materials used may catch fire.

CAUTION
The user undertakes to observe and to make his employees and those people he is responsible for observe all the standards and regulations about safety, accidents prevention and hygiene at work in force.
The customer has to follow strictly the standards and regulations in force, and all the special provisions inside the plants and storehouses.

CAUTION
The use of any tool, equipment or machinery will be wholly at Customer's risk who, in any case, will be obliged to check, before and during the use, the compliance of these tools, equipment and machineries with all the prescriptions for the operations relating to equipment or parts of the plant at high risk of accident.

CAUTION

The user will provide its personnel with the necessary PPE in order to carry out the work.

5.2 CONTROLS

The machine is equipped with the controls shown below.

CONTROLS ON THE ELECTRIC CABINET

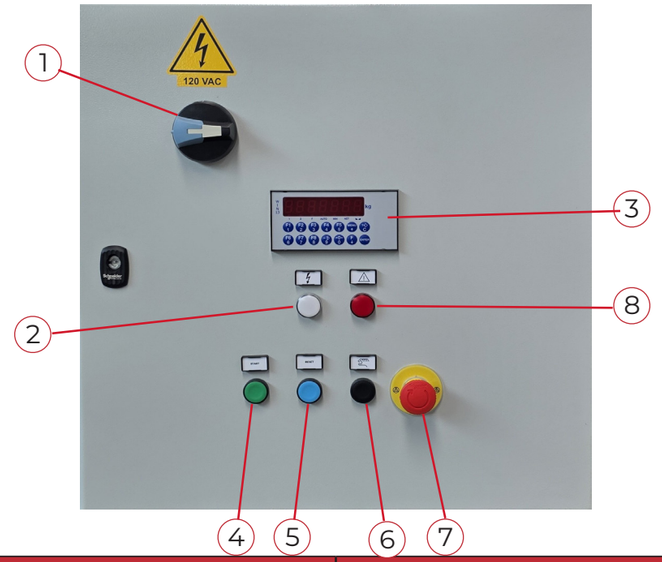


Figure 13

POS.	DESCRIPTION	FUNCTION
1	Padlockable main switch ON/OFF	Allows the machine to be electrically supplied.
2	Power light	Switching ON the machine the light up white.
3	Weighing control panel WIN13	Stops the feeding belt once the set number of pieces has been reached.
4	Cycle start	Starts the automatic working cycle.
5	Reset button	Resets the alarms or the cycle
6	Manual	Press to manually act the weighing conveyor
7	Emergency button	If pressed, the machine immediately stops.
8	Emergency light	Pressing the emergency button the light up

The empty box filling belt is connected via the electrical outlet located on the side of the control panel.

5.2.1 SWITCHING ON THE CONTROL PANEL

In order to switch on the control panel, verify that the emergency button (8, figure 15) is unlocked. Turn the ON/OFF selector to ON, in order to power up the machine. The light indicating the presence of voltage (2, figure 25) will turn on.

5.2.2 START

To start the machine, proceed as follows:
1. Enter the target weight on the WIN13 panel (3, p. 13);
2. Turn on the devices that power the connected external conveyors (if present).
3. Press and hold the Reset button for 3 second (5, fig. 13)
4. Press and hold the Cycle Start button (4, fig. 13) for 5 seconds to move the empty box onto the weighing conveyor.
5. When the box reaches the set weight, the conveyor belt will discharge the box onto the discharge roller conveyor.

NOTE: When powering ON the F3210 system, also power ON the IBox devices that supply power to the connected conveyors (if present). The same procedure must be performed after pressing the emergency stop button and every time the system is shut down.

NOTE: If the full box remains in front of the roller conveyor's photocell without moving forward, the system triggers an alarm and the light and siren both activate. The same occurs if the conveyor belt feeding the empty boxes runs out of boxes.

CAUTION
If the system is switched off with a container still in the loading position, which has not been fully filled, when the cycle restarts, the loading belt will restart loading the missing pieces.

5.3 WEIGHING UNIT CONTROL SYSTEM PROGRAMMING WIN13

On the 7-segment display you can view the weight detected by the weighing belt and set the target weight. In addition, it is possible to store different parameters, for example the appearance of messages indicating the operation in progress.

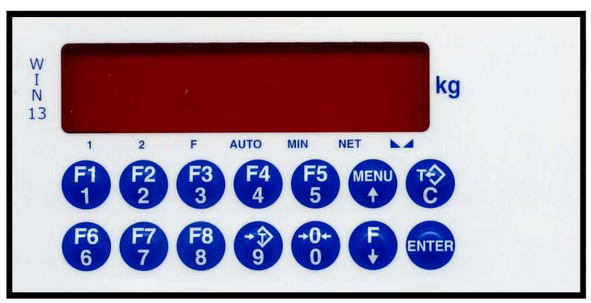


Figure 14

5.3.1 DESCRIPTION

LED
There are 7 LED indicators below the display:

LED	FUNZIONE
1	In multi-range mode, it indicates range 1 (when LED 2 is on, it indicates range 3).
2	In multi-range mode, it indicates range 2 (when LED 1 is on, it indicates range 3).
F	It indicates the activation of the timed key F.
AUTO	It indicates the activation of the automatic weight aggregation function.
MIN	It indicates that the gross weight is within the minimum weighing threshold.
NET	It indicates that a tare weight is inserted and the displayed weight is net.
◣◢	It indicates the stable weight condition.

KEYBOARD
The instrument is programmed and controlled via the keyboard made of 14 keys, 13 of which have a dual function. The selection of one of the two functions of these keys is established automatically by the instrument based on the operation in progress.

The management of programming menus occurs via the buttons ↑ and ↓ to scroll through the entries, the **ENTER** key to access the relevant submenu or a programmable parameter and the **C** key to exit the menu or return to the higher level.

The flashing display means the programming is in progress. The **C** key resets the value to zero during the programming phase, while the **ENTER** key allows to confirm the value displayed and to enter it into the instrument memory.

The selection of parameters amongst the preset values occurs by pressing the keys ↑ and ↓. By pressing the **ENTER** key, the value displayed is confirmed and entered in the instrument memory, while the **C** key allows to cancel the operation and exit the selection phase. The display is flashing to indicate the current selection status.

5.3.2 USE

POWER ON

8888888

When the instrument is turned on, the displays are tested, with all led segments turned on, followed by the display being turned off completely.

P21 R05

After the display test, the identification code of the software and its version are displayed. Communicate this code in case of request for assistance.

TARGET WEIGHT PROGRAMMING

1. Press the **F1** key in order to programme the threshold 1 (weight of the content to be reached for every box).
2. To confirm the value without changing it, press **ENTER**. To modify the threshold, press **C** first to delete the old value, then set the new threshold value via the numeric keys and finally confirm the programming with **ENTER**.

TARE WEIGHT RESET

Press the →**0**← key to delete the tare weight stored in the memory.
This operation can be carried out only when the weight is stable (timeout 2 seconds). The maximum resettable weight corresponds to 2% of the total load capacity of the weighing system compared to the zero established during the calibration phase.

In the case of free (non-metric) use of the equipment, the reset operation is stored when the equipment is turned off.

5.3.3 WEIGHT INDICATIONS

The display shows the weight present on the scale. The LEDs placed below it give information about the displayed weight.

INVALID WEIGHT AT POWER ON WARNING
When the instrument is powered on, if the conditions for performing automatic weight reset do not occur, the display shows this warning of invalid weight.

— — — — —

OVERLOAD WARNING
When the gross weight on the scale exceeds 9 divisions (maximum capacity of the weighing system), the display shows this warning.

NO CAL

O-L

OFF-SCALE WARNING
When the signal of the load cells is outside the measuring field of the instrument (from –3.9mV/V to +3.9mV/V), or if there is no signal, the display shows this warning.

CALIBRATION NOT PERFORMED WARNING
If the instrument is not calibrated, the following message is displayed alternating with the weight. In addition, the functioning of the serials is deactivated.

5.3.4 ERROR INDICATIONS

NO CONN	Load cells not connected.
SEG 1NF	Detected signal less than the minimum measurable value (< -3.9mV/V).
NO SEGN	Load cell signal not connected or greater than the maximum measurable value (> +3.9mV/V).
ERR ADC	Internal interface error with ADC (AD7730).

5.3.5 MULTIRANGE INDICATIONS

The selected weighing range is indicated by the LEDs 1 and 2. If both the LEDs are on, the selected range is 3. The transition from a lower to a higher range occurs automatically when the load capacity relating to the range is exceeded; the weight is then indicated with the immediately higher division value.
The automatic passage from a higher range to range 1 occurs only when the gross weight is zero and stable and there is no stored tare weight.

5.4 ALARMS

The system is equipped with an audible and visual alarm to indicate alarm situations. The visual alarm features a flashing red light, whilst the audible alarm emits beeps in sync with the visual signal.
The alarm is triggered when there are no containers on the feed conveyor or when the roller conveyor is full of containers.

If the emergency button is pressed, the red indicator light on the control panel will illuminate.

5.4.1 RESETTING ALARMS

SECTION 6
MAINTENANCE

6.1 MAINTENANCE RULES

This section describes how to carry out routine maintenance operations, i.e. operations to be performed at set intervals. The preventive maintenance table (par. 6.4) indicates the frequency of maintenance operations.

Maintenance operations must be performed by trained and qualified personnel. Observe the following **precautions** during maintenance operations:

◊ Protective gloves.
◊ Safety shoes.
◊ Protective overalls.
◊ Protective goggles.

The **main precautions** to be taken when carrying out maintenance work on the machine are:

◊ Never touch exposed connections and components without first disconnecting the power supply (power switch must be OFF).
◊ Disconnect the power supply before removing any protective panel or replace any electrical component.
◊ Do not wear rings, watches, chains, bracelets etc. during maintenance operations.
◊ Use an insulating rubber mat (if possible) underfoot when carrying out maintenance work; avoid working on wet floors or in very humid environments.
◊ Do not smoke 
◊ Do not use open flames, points or pins for cleaning.

Most of the problems that may arise when using the machine have simple solutions.
However, if you are unable to solve the problem, please contact Crizaf Technical Service, where qualified personnel are at your disposal. It is absolutely forbidden, also for the person in charge of maintenance, to operate the machine while remaining in the dangerous restricted area.

6.2 ORDINARY MAINTENANCE

MACHINE CLEANING

To clean the belts, proceed as follows:
◊ Remove dust that settles on the surface of the conveyor belt with a vacuum cleaner. Never use compressed air to clean the belt.
◊ Clean the surface of belt in and of metal parts with a sponge lightly soaked in a solution of clean water and a water-based cleaning agent. Always use a cleaner that is compatible with the belt material.
◊ Dry surfaces with clean, lint-free cotton rags.

CAUTION
ALWAYS carry out periodic maintenance activities with the machine non-operating and disconnected from the power supply.

◊ Clean the photocell monthly as indicated below:
◊ Remove traces of dust on the optical surfaces of the device, including the reflector, with a vacuum cleaner.
◊ Clean the surface with a natural sponge lightly soaked in a solution of clean water with neutral detergent.
◊ Dry surfaces with clean, lint-free cotton rags.

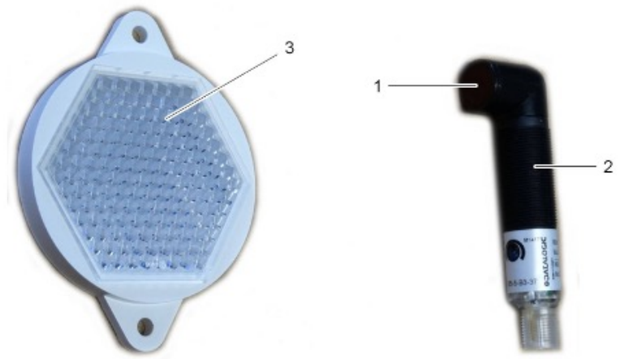


Figure 15

1. Optical surfaces.
2. Photocell.
3. Reflective surface.

6.3 EXTRAORDINARY MAINTENANCE

Extraordinary maintenance includes all operations necessary to replace a defective or failed component that cannot guarantee perfect operation. Correct preventive maintenance drastically reduces the need for extraordinary maintenance.

CAUTION
When replacing a component, ensure that it conforms to the original in order to avoid personal injury and damage to the machine.

BELT REPLACEMENT

The following pages of the manual explain how to carry out the belt replacement (removal and installation of the belt). However, before proceeding it is important to note that:

- This procedure must be performed by at least two operators.
- During disassembly operations, the maintenance technician is exposed to the risk of falling objects on the side opposite the gear motor.
- It is necessary to unplug the power supply.

NOTE: Place the machine in a spacious, well-lit room that is convenient for disassembly and assembly operations.

NOTE: Disassembly operations concern the mechanical components installed on the side opposite the gear motor.

BELT REMOVAL

Taking figure 16 as a reference, to remove the belt proceed as follows:

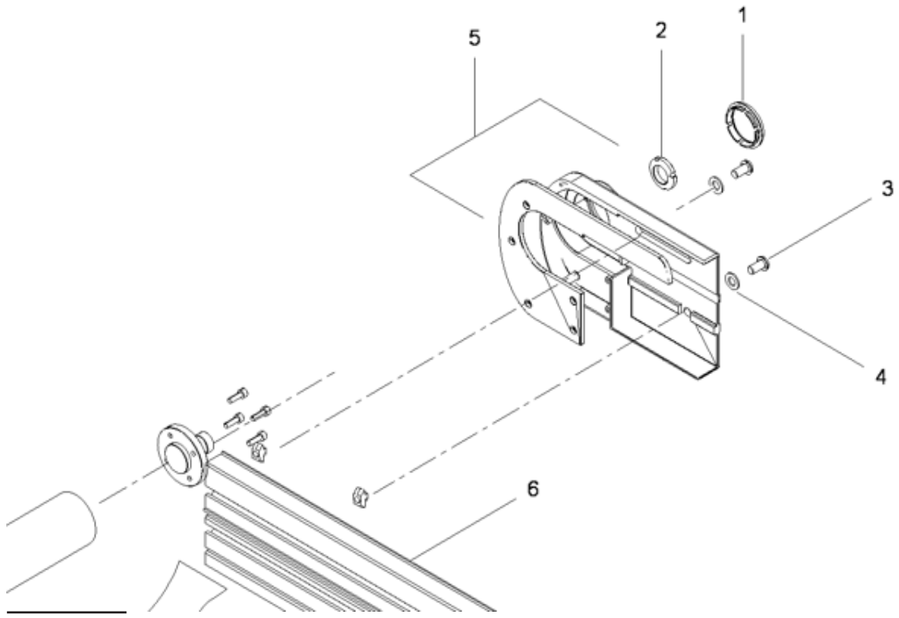


Figure 16

1. On the side opposite the gear motor, remove the plastic cap (1) from the bearing housings (5) of the idler roller and the drive roller.
2. Remove the locking nuts (2) on the side of the belt opposite the gear motor. Use an SKF TMFS4 ½” spanner on the drive roller and two spanners for the idler roller. On this roller, the second spanner must hold the nut on the opposite side in place.
3. Loosen the belt tension.
4. Remove the bearing supports from the flange (6): loosen and remove the two fixing screws (3) and the two washers (4) of the support (5) (idler roller and drive roller) using a 5 mm hex key (Allen key).
5. Remove the bearing housings (5) from the drive roller and the idler roller.

Taking figure 17 as a reference, proceed as follows:

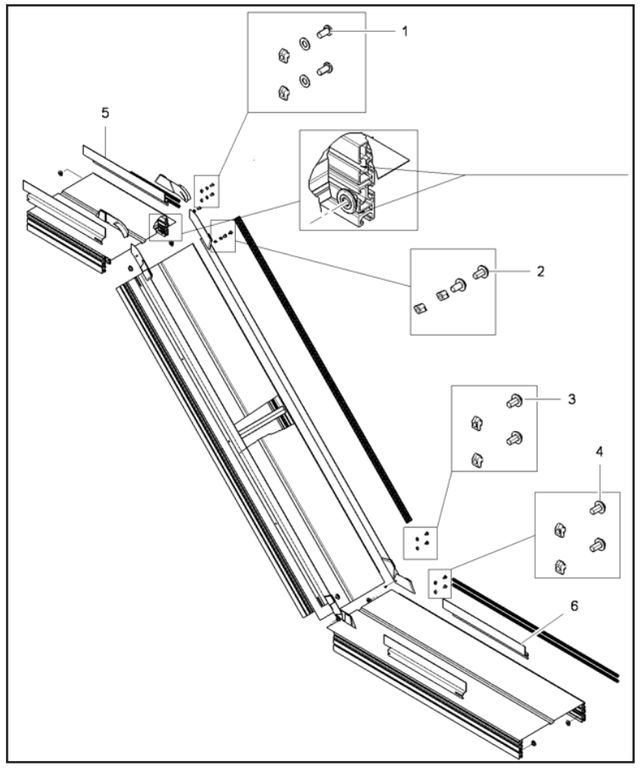


Figure 17

6. Loosen the fixing screws (1 and 4) on the side panels (5 and 6) on the side opposite the gear motor as much as possible using a 5 mm hex key (Allen key).

7. Remove the side panels (5 and 6) from the frame by unscrewing the remaining fixing screws.

8. Pull the belt out of the frame guides on the side opposite the gear motor.

9. Pull the belt out of the frame guide on the middle section of the frame (for models with more than two levels).

10. Pull the belt out completely towards the side where the side panels have been removed.

BELT INSTALLATION

Taking figure 18 as a reference, in order to install the belt, proceed as follows:

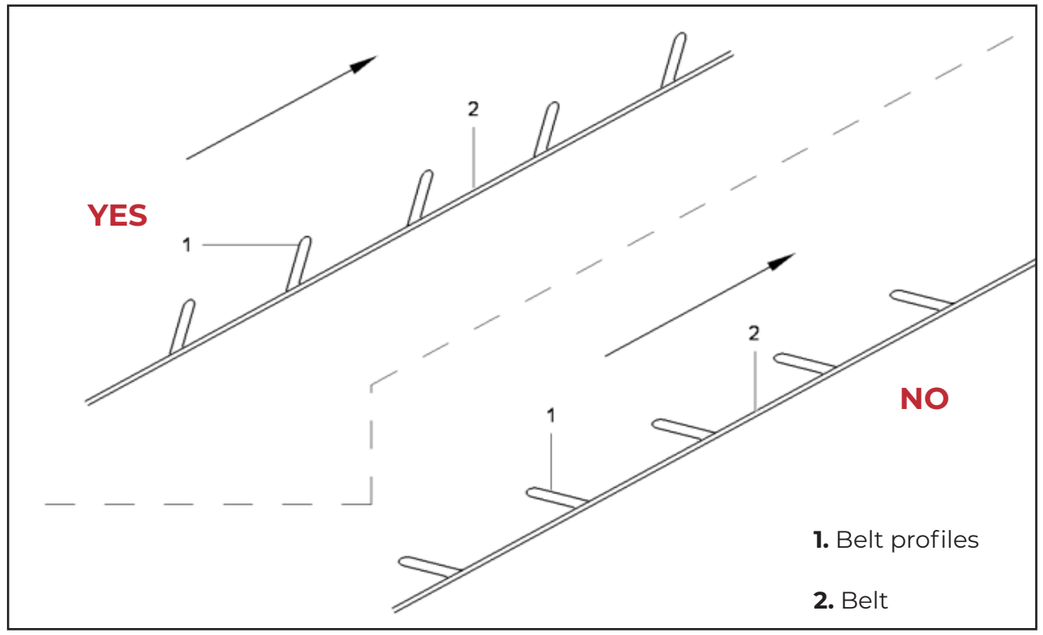


Figure 18

1. Insert the belt into the belt frame along the side opposite the gear motor, taking care to ensure the cross-conveyor sections are facing the correct direction.

2. On the gear motor side, position the belt in the guides of the frame's end sections.

3. Insert the belt into the spaces between the rollers and the supports.

4. Insert the belt into the spaces between the rollers and the intermediate supports corresponding to the hinges.

5. On the side opposite the gear motor, position the belt in the belt guides formed in the end and side profiles of the intermediate frame (for models with more than two levels, e.g. C1500).

6. Position the belt in the belt guides machined into the side and end profiles of the drive frame and idler frame.

7. Repeat the reverse procedure described in the previous paragraph and

tighten the screws.

8. Tension the belt.

NOTE: To facilitate the operation, curve the belt outwards and crosswise until it can be easily inserted into the guides

MECHANICAL TENSIONING OF THE BELT

⚠ Be very careful because too much or not enough tension indicates the presence of an abnormality in the machinery.

NOTE: Perform the procedure set out below on both sides of the idle roller.

LOOSENING THE MECHANICAL TENSIONING OF THE BELT

Taking figure 19 as a reference, proceed as follows:

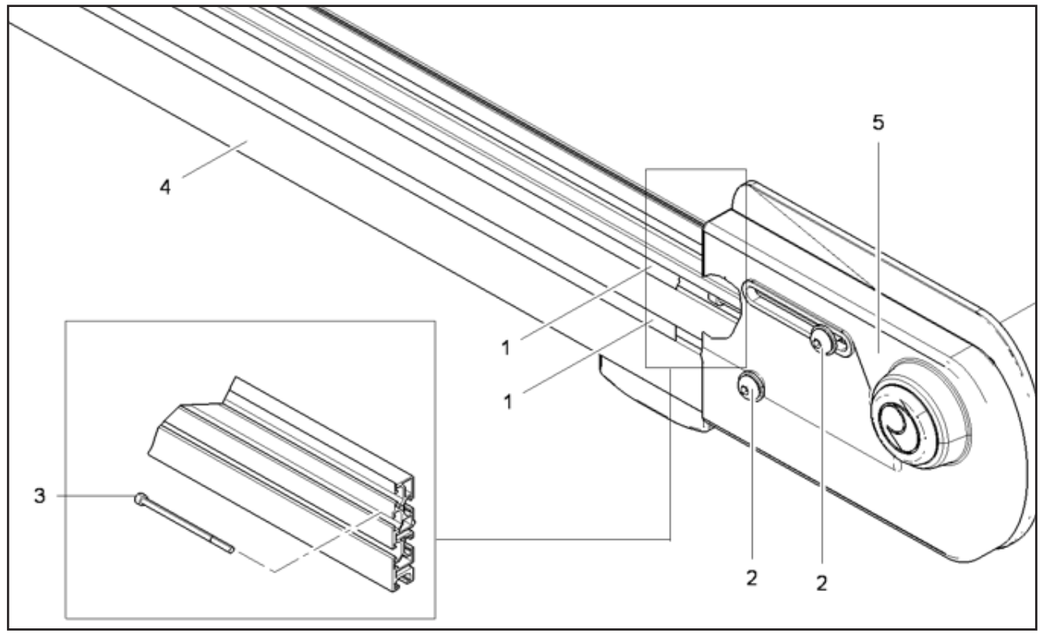


Figure 19

1. At the idler roller, remove just enough of the upper rubber cover strip fitted to the side rail (4).

2. Loosen the two fixing screws (2) on the bearing bracket attached to the side rail (4) using a 5 mm hex key (Allen key).

3. Loosen the screw (3) using a 5 mm hex key (Allen key) to reduce the belt tension.

4. Use the ruler provided to check that the tension is correct.

BELT TENSIONING ADJUSTMENT

Taking figure 20 as a reference, proceed as follows:

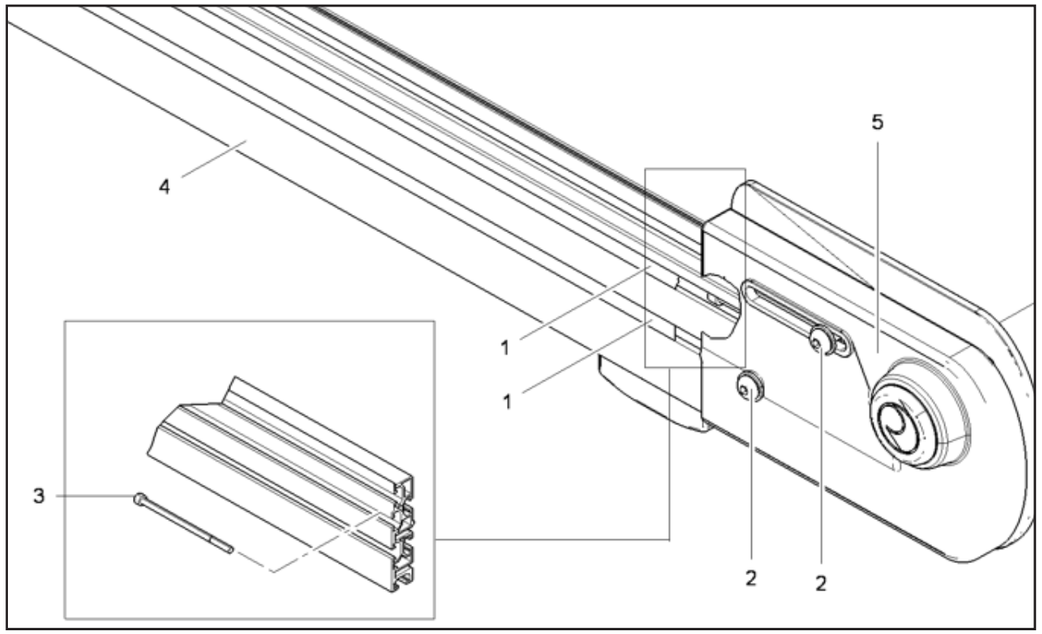


Figure 20

1. At the idler roller, remove as much of the upper rubber cable cover (1) fitted to the side bracket (4) as necessary.

2. Loosen the two fixing screws (2) on the bearing bracket attached to the side bracket (4) using a 5 mm hex key (Allen key).

3. Adjust the belt tension by turning the screw (3) with a 5 mm hex key (Allen key) so that the belt tension is uniform on both the right and left sides (use the rulers).

4. Tightening the screw (3) tightens the belt; conversely, loosening the screw (3) loosens the belt.

5. Tighten the two fixing screws (2) of the bearing support on the side section of the shoulder (4) using a 5 mm hex key (Allen key).

6. Refit the rubber cable cover profile installed in the shoulder section.

NOTE: The millimetre scales are located on the top surface of the side rails, near the idler roller bearing mounts. Ensure that the tension is even on both sides.

⚠ The mechanical tensioning of the belt must be carried out avoiding abnormalities such as excessive noise or squeaking, mechanical interference, failure of advance the belt.

⚠ The belt must not be excessively tensioned in order not to overstress the bearings and the belt support structure. Excessive tensioning can cause damage to the belt in a short time.

REPLACEMENT OF BEARING SUPPORT (IDLE ROLLER AND DRIVE ROLLER)

Taking figure 21 as a reference, proceed as follows:

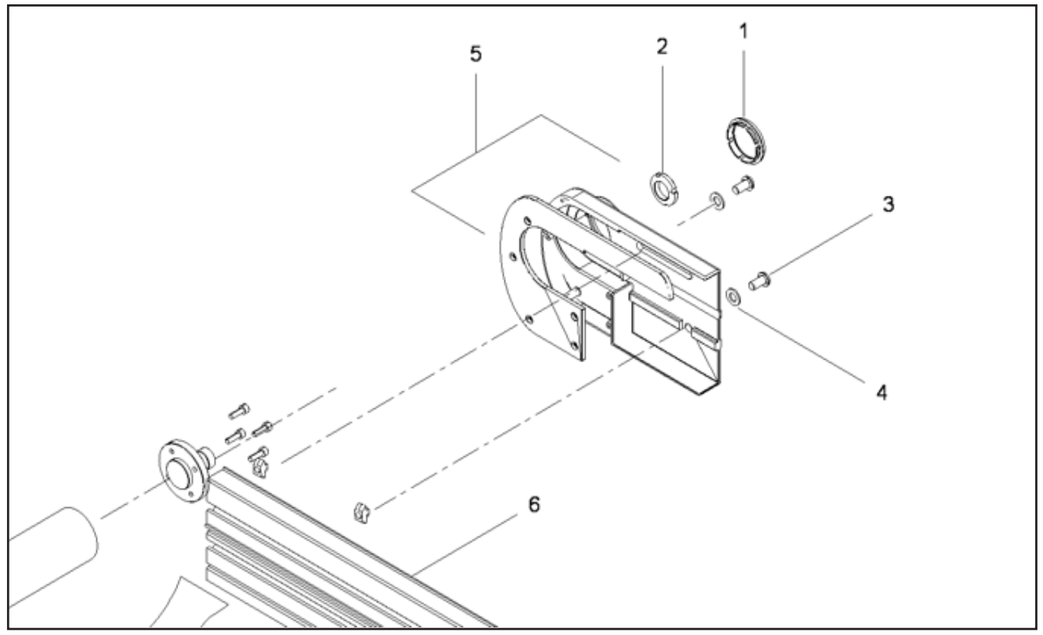


Figure 21

1. Remove the hopper (if installed) and any other accessory that could interfere with the following operations.
2. Remove the plastic cap to be replaced (1) from the bearing support (5) and the opposite one, if present (e.g. on the axes of the idle rollers). Remove the locking nut (2) on the roller. Use a SKF spanner TMES4 1/2” on the drive roller and two spanners as set out above for the idle roller. On this roller, the second spanner must keep the ring nut locked on the opposite side.
3. Loosen the belt tension.
4. Remove the bearing support from the shoulder section (6): loosen and remove the two fastening screws (3) and the two washers (4) on the bearing support (5) with a 5 mm hex key (Allen wrench).
5. Reassemble the new bearing support (5) by inserting the roller pin into the bearing seat and the belt into the space between the roller and the circular bearing seat.

6. Couple the inner bands of the bearing with the slots of the shoulder section (6).
7. Repeat the operations described in the first four steps in reverse order, re-tensioning the belt. Tighten the screws.

6.4 PREVENTIVE MAINTENANCE TABLE

FREQUENCY	INTERVENTION	PROCEDURE
Visual inspection at standstill to check the physical integrity of the machine and its main components.		
Every day	Safety devices	Ensure that all the machine's safety systems are functioning: emergency stop buttons, supports, covers and that the user-supplied means of removal are fully effective.
	Tightness of the screws	Check the tightness of the frame screws, hinges and supports.
	Unusual noises	Ensure that all moving devices are in good condition, without obstacles or poor environmental conditions.
Every week	Presence of obstacles on the belt	Make sure that there are no obstacles on the belt sides (e.g. residues in the space between the belt and the sides) If there are obstacles in the belt rotation, it is advisable to remove them Immediately before the belt deteriorates.
	General cleaning	Clean the machine, especially the belt, the control panel and the belt drive rollers. Remove the dust on the belt.
	Make sure that there are no objects under the surface of the belt	If there are, loosen the belt tension accordingly. Check carefully for foreign matters and remove them.
Every month	Inspect the belt surface	Replace the belt if there are clear signs of wear or damage.
Every six month	Electrical signal, power and control lines	There must be no uninsulated sections, cuts or bends with too tight a radius.

6.5 TROUBLESHOOTING

These are some of the most typical faults and with them the appropriate action to take to solve the issue. Proceed as follows:

Problem	Cause	Operation
Noise from the drive unit	Bearing failure	Replace the bearing support.
	Motor failure	Replace the gear unit.
	Incorrect fixing of the gear motor	Tighten the fastening screws.
	Residues under the belt surface	Disassemble the belt and remove conveyed material residues
	Worn belt side edge	Replace the belt only if the edge is no longer concealed under the sides
Belt does not rotate	Incorrect electrical connection	Check the wiring diagram.
	Motor burnout	Replace the motor.
	The belt is not correctly tensioned	Tension the belt again.
Boxes get stuck on the conveyor belt	Incorrectly adjusted side walls	Adjust side walls correctly.
		Check the container dimensions.
The system do not weigh	Weighing conveyor not correctly levelled	Check the adjustment of the vibration-damping feet as described in section 2.6
	Presence of excessive environmental vibrations	Eliminate the vibrations cause.

SECTION 7
DISMANTLING

7.1 MACHINE STORAGE

- If the machine is not to be used for a certain period, carry out the following operations:
- Turn off the machine;
- Cut the power supply off;
- Check very carefully that the supply pipes are not damaged or cracked, otherwise they must be replaced;
- Clean both visible and internal parts;
- Coat all parts prone to oxidation with varnish oil;
- Cover the entire machine with a waterproof sheet;
- Keep the machine in a dry place. To preserve electrical parts, the ambient temperature must be within the range of 0 °C and 40 °C.

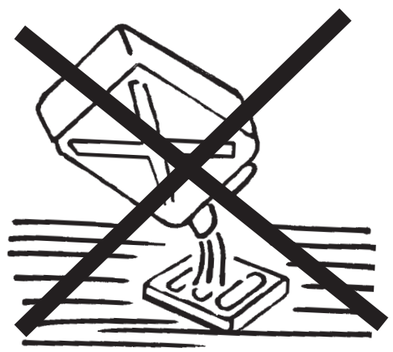
7.2 PUTTING OUT OF SERVICE

If, for any reason, the machine must be put out of service, follow some important rules to safeguard the environment.

Sheaths, flexible ducts, plastic or non-metal components will have to be disassembled and disposed of separately.

The electric components must be dismantled to be reused if they are in good conditions or, if possible, overhauled and recycled.

The machine contains **pollutant oils** (bearings, couplings, gearboxes, etc.) which must be **STRICTLY** disposed of at the appropriate collection points.



SECTION 8
SCHEMATICS

8.1 WIRING DIAGRAMS

SEE ANNEXES

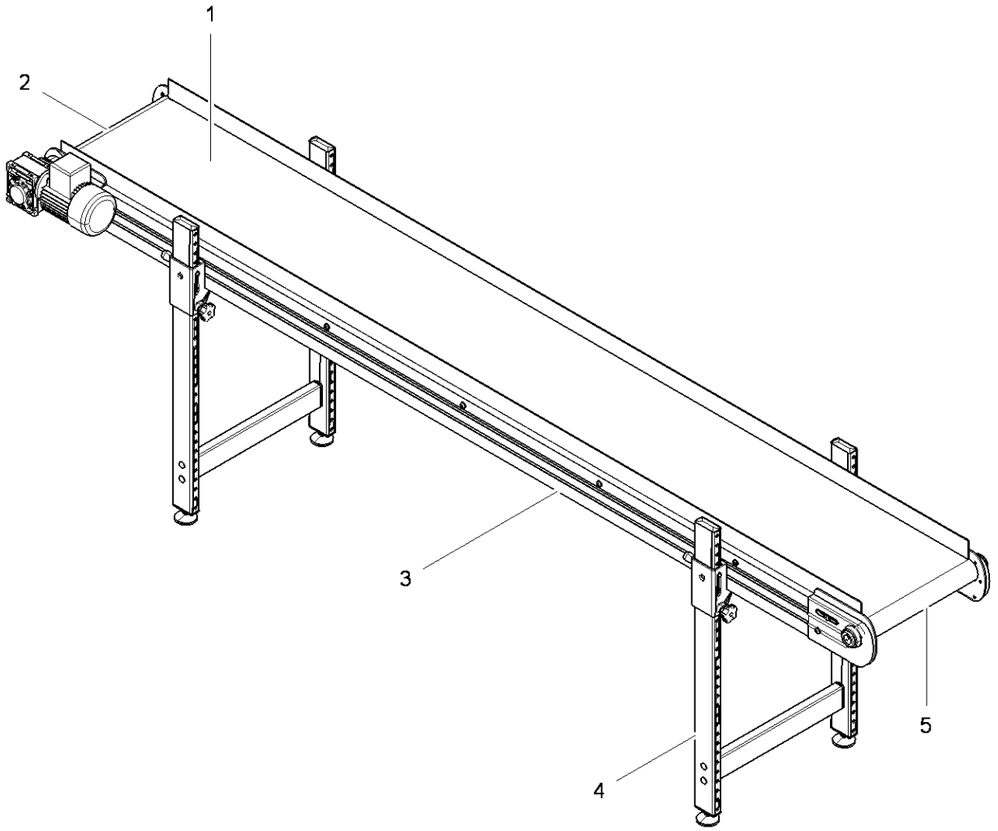
USE and MAINTENANCE MANUAL

SEE ANNEXES

SECTION 9
SPARE PARTS

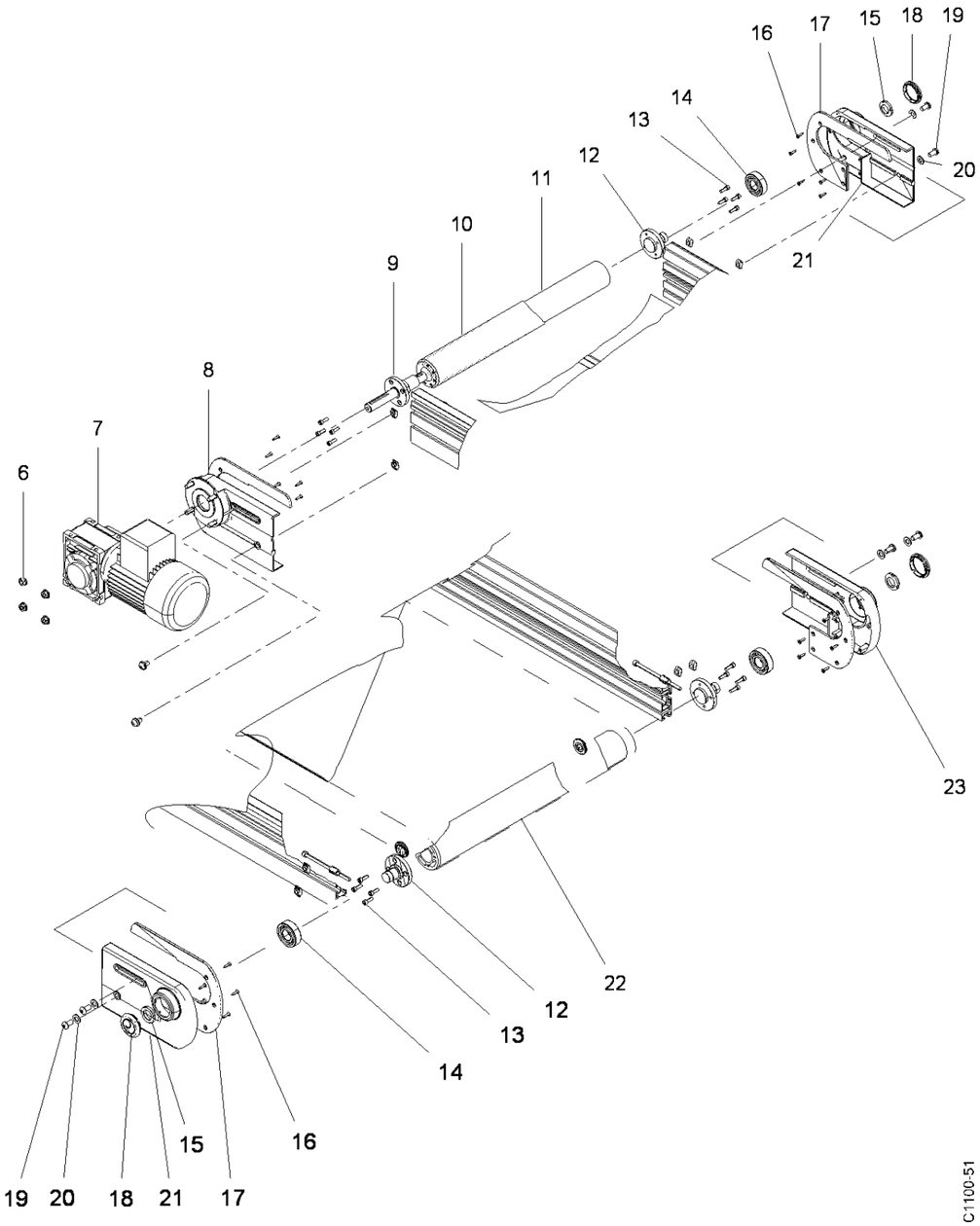
9.1 LIST OF RECOMMENDED SPARE PARTS

C1100 SERIES - ASSEMBLY

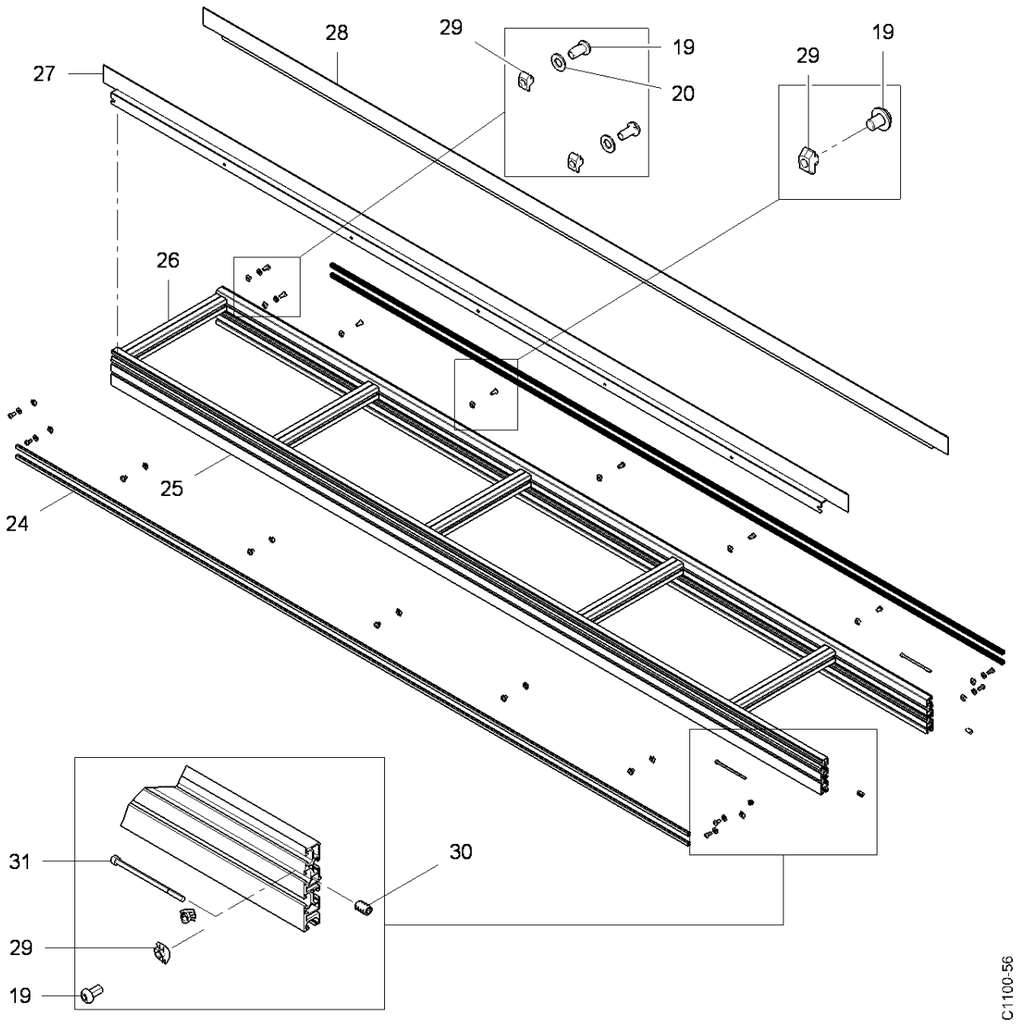


1	Belt
2	Drive axis assembly
3	Frame assembly
4	Leg assembly
5	Idle axis assembly

C1100 SERIES - DRIVE AXIS ASSEMBLY AND IDLE AXIS ASSEMBLY



C1100 - FRAME ASSEMBLY



USE and MAINTENANCE MANUAL

REF.	CODE
1	BELT
2	ARTC1059
3	ATEC0592290
4	AGSC1118059090
5	ARFC1059
6	DAD08U6923Z
7	MRD01880-0001
8	000007-P4006
9	000015-P4014-02, 000013-P4012-02
10	000107-P4105
11	000126-P4201
12	000014-P4013-01
13	VEI0516U5931Z
14	CSC62042RS
15	ACV554
16	VAUTF3513D7504Z
17	000020-P4019
18	000019-P4018
19	VBTC0812U7380Z
20	RON08U6592Z
21	000005-P4004
22	000127-P4202
23	000006-P4005
24	000128-P4203
25	000001-P4000
26	000132-P4225
27	000003-P4002
28	000003-P4002
29	000180
30	000178
31	000179