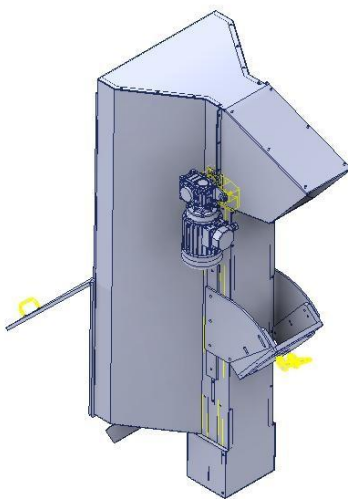
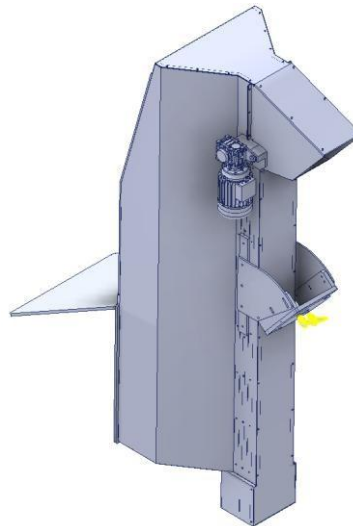


MOTORISED HOPPERS

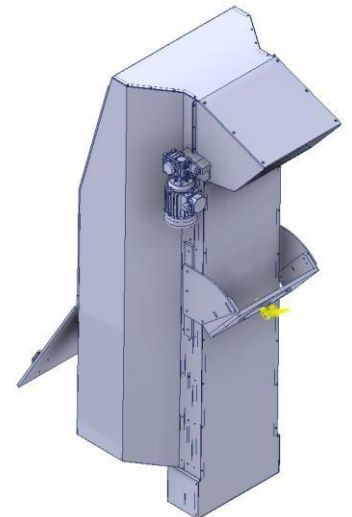
50L / 100L / 150L



50L



100L



150L

ASSEMBLY INSTRUCTION

MANUAL

Models: **TRM/MOT 50/100/150 D/S**

Version:

00

Year of construction: **2024**

REVISION

REVISION				
MODEL	LANGUAGE	DATE	VERSION	NOTES
TRM/MOT 50/100/150 D/S	English	02/2025	01	

The information contained in this manual is property of **ARS S.r.l.**

The drawings and other documents accompanying the partly completed machinery are property of **ARS S.r.l.**

It is forbidden to distribute, and / or duplicate, in any form, this manual, even partially, without the written permission of **ARS S.r.l.**

ARS S.r.l. reserves the right to change, without notice, the characteristics of the product described in this manual.

In case of doubts or difficulties in understanding or interpretation of the manual, the original / official version referred to as "ORIGINAL INSTRUCTIONS" on the cover, must be considered as the valid version.

Some of the images included in this manual should only be considered as an example, as they may not refer to the partly completed machinery described here.

ADDITIONAL INFORMATION



The **MOTORISED HOPPERS 50L / 100L / 150L**, described in this manual, hereinafter will be called "**partly completed machinery**".

STRUCTURE OF THE MANUAL

The manual is divided into 9 chapters.

CHAPTER 1 – GENERAL INFORMATION

This chapter contains general information about the partly completed machinery and the manufacturer's data.

CHAPTER 2 – SAFETY

This chapter contains a description regarding the foreseen use of the partly completed machinery, the type of certification applied, working environment conditions, the safety functions applied, the residual risks and the monitor plates applied to the partly completed machinery.

CHAPTER 3 – GENERAL DESCRIPTION

This chapter contains a description of the principles of operation of the partly completed machinery, the working cycle, the general technical specifications and description of the mechanical and electrical units constituting the same.

CHAPTER 4 – PACKAGING AND TRANSPORT

This chapter contains instructions for correctly performing the packaging, handling, transport and unloading at the user's establishment.

CHAPTER 5 – INSTALLATION

This chapter contains instructions for the proper installation at the user's site, the power connections to the facility, checks, inspections, and any adjustments to be performed before starting .

CHAPTER 6 – USE

This chapter contains instructions to perform the start-up and use of the partly completed machinery at the various stages of operation, description of the commands available to the operator, of the most important operating sequences and use of diagnostic systems.

CHAPTER 7 – DISPOSAL

This chapter contains the warnings and instructions to properly decommission and dismantle the partly completed machinery at the end-of its operational life.

CHAPTER 8 – MAINTENANCE

This chapter contains the maintenance plan of the partly completed machinery. It provides warnings, precautions and instructions to correctly perform maintenance operations on the partly completed machinery.

CHAPTER 9 – ATTACHMENTS

TABLE OF CONTENTS

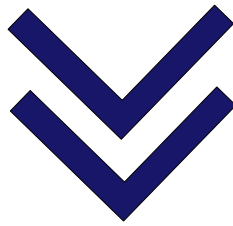
1. GENERAL INFORMATION	1-1
1.1 INTRODUCTION	1-1
1.2 SERVICE DEPARTMENT	1-1
1.3 GLOSSARY	1-2
1.4 SYMBOLS	1-4
1.5 MANUFACTURER'S ADDRESS	1-5
1.6 SAFETY STANDARDS	1-6
1.7 MANUFACTURER'S RESPONSIBILITY	1-6
1.8 MANAGEMENT OF THE PARTLY COMPLETED MACHINERY	1-7
1.9 WARRANTY	1-7
2. SAFETY	2-1
2.1 GENERAL INFORMATION	2-1
2.1.1 Partly completed machinery certification	2-2
2.1.2 Foreseen and unforeseen uses	2-3
2.2 OPERATING ENVIRONMENTAL CONDITIONS	2-4
2.2.1 Installation of fire protection	2-4
2.2.2 Explosive atmosphere	2-4
2.2.3 Lighting	2-4
2.2.4 Noise	2-4
2.2.5 Electromagnetic emissions	2-5
2.2.6 Vibrations	2-5
2.3 SAFETY FUNCTIONS	2-6
2.3.1 Fixed guards	2-7
2.4 PERSONAL PROTECTIVE EQUIPMENT	2-8
2.5 RESIDUAL RISKS	2-8
2.5.1 Residual risks	2-8
2.5.2 Plates on the partly completed machinery	2-8
3. GENERAL DESCRIPTION	3-1
3.1 LAYOUT	3-1
3.2 TECHNICAL DATA	3-2
3.2.1 Overall dimensions	3-4
3.3 DESCRIPTION OF THE PARTLY COMPLETED MACHINERY	3-10
4. PACKAGING AND TRANSPORT	4-1
4.1 PACKAGING	4-1
4.2 TRANSPORT	4-1
4.3 LIFTING AND HANDLING	4-2
4.3.1 Weight of the partly completed machinery	4-2
4.3.2 Partly completed machinery lifting with bridge crane	4-4
5. INSTALLATION	5-1
5.1 INTACTNESS CHECK	Errore. Il segnalibro non è definito.
5.2 INSTALLATION OF THE PARTLY COMPLETED MACHINERY	5-1
5.2.1 General safety precautions	5-1
5.2.2 Choice of place of use and check on installation requirements	5-2
5.2.3 Positioning of the partly completed machinery	5-2

MOTORISED HOPPERS

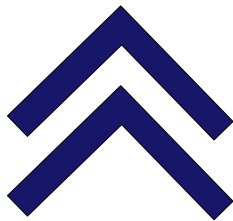
50L / 100L / 150L



5.3	CONNECTIONS.....	5-3
5.4	CHECKS AND INSPECTIONS.....	5-3
5.4.1	Overall checks on mechanical units.....	5-4
5.4.2	Tightening torques.....	5-4
5.4.3	Commercial devices check.....	5-5
5.4.4	Check on security systems.....	5-5
5.5	UNIVERSAL INTERNATIONAL RECYCLING CODES FOLLOWING INSTALLATION.....	5-6
6.	USE.....	6-1
6.1	INITIAL CHECKS.....	6-1
6.2	WORKING CYCLE OF THE PARTLY COMPLETED MACHINERY.....	6-1
7.	DISPOSAL.....	7-1
7.1	STORAGE.....	7-2
7.2	RECYCLING.....	7-2
8.	MAINTENANCE.....	8-1
8.1	GENERAL PRECAUTIONS FOR SAFETY.....	8-1
8.1.1	General danger notes.....	8-1
8.1.2	General warnings.....	8-2
8.2	QUALIFICATION OF SERVICE PERSONNEL.....	8-3
8.2.1	General skills.....	8-3
8.3	CONTROL PLAN ON SAFETY.....	8-4
8.3.1	Controls and functional tests on security devices.....	8-4
8.4	PROCEDURE TO STOP PARTLY COMPLETED MACHINERY.....	8-5
8.5	SAFETY RULES FOR MAINTENANCE.....	8-5
8.6	MAINTENANCE TABLE.....	8-6
8.7	LUBRICATION TABLE.....	8-6
8.8	MECHANICAL ADJUSTMENTS.....	8-7
8.8.1	Belt tensioning ad adjustment.....	8-7
8.8.2	Replacement of the paddled belt.....	8-8
8.9	MECHANICAL FAULTS DIAGNOSIS.....	8-14
8.10	EXTRAORDINARY MAINTENANCE.....	8-15
8.11	SPARE PARTS.....	8-17
9.	ATTACHED DOCUMENTATION.....	9-1



GENERAL INFORMATION



MOTORISED HOPPERS
50L / 100L / 150L



1. GENERAL INFORMATION

1.1 INTRODUCTION

ADDITIONAL INFORMATION



ARS S.r.l., the manufacturer of the partly completed machinery, is referred to in this manual as 'the Manufacturer.

ADDITIONAL INFORMATION



The Company purchasing the partly completed machinery will be indicated in the handbook with the name **Customer**.

This manual contains all the information needed to correctly install, use, and maintain the partly completed machinery.

The manufacturer requires all personnel responsible for operating, maintaining, transporting, or assembling the partly completed machinery to read this document.

This document is the assembly instruction manual of:

MOTORISED HOPPERS 50L / 100L / 150L

Models: TRM/MOT 50/100/150 D/S

and has been drawn up in conformity with 2006/42/EC Machinery Directive.

The Assembly Instruction Manual is to be considered an integral part of the partly completed machinery and is to be kept until final dismantling. It must be kept by the person responsible for the partly completed machinery after final installation.

1.2 SERVICE DEPARTMENT

Contact the manufacturer for technical assistance:

ARS S.r.l.

Via Aretina Nord 157

52100 Arezzo (AR) Italia

Tel. +39 0575 398611

Fax +39 0575 398620

E-mail: info@arsautomation.com

Website: www.arsautomation.com

1.3 GLOSSARY

Emergency stop; Emergency stop function: function which is intended to:

- Avert arising or reduce existing hazard to person, damage to machinery or to work in progress, and
- Be initiated by a single human action.

Safety component: means a component:

- which serves to fulfil a safety function;
- which is independently placed on the market;
- the failure and/or malfunction of which endangers the safety of persons, and
- which is not necessary in order for the partly completed machinery or for which normal components may be substituted in order for the machinery to function.

Machinery Directive: the DIRECTIVE 2006/42/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on the approximation of the laws of the Member States relating to machinery.

Protection device: means of protection (other than a guard).

Supplier: entity (Manufacturer, installer, systems integrator) that provides equipment or services associated with the partly completed machinery (the user can also act as a manufacturer for himself).

Safety function: function of the partly completed machinery whose failure can result in an immediate increase of the risks.

Failure: end of an element's ability to perform the requested function.

Information for use: Protective measure consisting of a means of communication (for example, a text, wording, signs, signals, symbols, diagrams) used separately or in combination to transmit information to the user.

Malfunctioning: inability of a partly completed machinery to perform the foreseen function.

Marking: symbol and wording for the partly completed machinery identification, which is affixed by the manufacturer.

Material: product to be handled.

Protection means: guard or protective device.

Safety measure: means that eliminate or reduce a hazard.

Operator: person assigned to run the partly completed machinery.

Hazard: Potential source of harm.

Qualified technician or skilled maintenance technician: the persons who have attended specialisation courses, vocational training, etc. and have experience regarding installation, putting into service and maintenance operations, repairs, transport and handling of the partly completed machinery.

Protections (protection criteria): protection measures that use means of protection to safeguard persons against hazards that cannot be rationally removed from the risks in a manner sufficiently effective by the protection measures integrated in the project design.

Safety Protection: Shelter or protective device used as a safety measure for the protection of persons from a present or latent danger.

Partly completed machinery: assemblies that form a partly completed machinery, that, alone is unable to ensure a specifically defined application. Partly-completed machinery are only designed to be incorporated or assembled with other machines or other partly completed machinery or equipment to constitute a machine regulated by this directive.

Guard: physical barrier, designed as part of the partly completed machinery, to provide protection.

Risk: combination of the probability of occurrence of harm and the severity of that harm.

Residual risk: risk remaining after protective measures have been implemented.

Emergency situation: hazardous situation needing to be urgently ended or averted.

Transport: set of operations for transferring the partly completed machinery from the constructor assembly site to the definitive one of the customer's work.

Intended use: use of the partly completed machinery in accordance with the information for use provided in the instructions.

Reasonably foreseeable misuse: use of the partly completed machinery in way not intended by the designers, but which can result from readily predictable human behaviour.

User: entity using the partly completed machinery and the associated electrical equipment.

Work Zone: volume bounded by the accident-prevention guards and intended for operation of the partly completed machinery.

Hazard zone: Dangerous zone: any spaces within and/or around machinery in which a person can be exposed to a hazard.

1.4 SYMBOLS

The manual uses a number of symbols that are meant to draw the reader's attention and highlight some aspects that are particularly important.

The explanations follow below for each indication.

DANGER



Indicates a situation of imminent hazard that, if not avoided, could cause serious injuries or death for the operator.

Identifies operations that are strictly forbidden and the obligatory procedures to be applied to avoid serious injuries or death for the operator.

WARNING



Indicates a situation in which there is a potential hazard that if not avoided, could cause serious injuries or death for the operator.

Describes operations that require special attention to avoid serious injuries or death for the operator.

CAUTION



Indicates a situation in which there is a hazard which is not immediate or potential but, if not avoided, could cause injuries or slight injuries, or damage to the health of the operator.

Describes operations that require special attention to avoid injuries for the operator.

NOTE



Indicates important information and/or describes procedures that, if ignored or only partially observed, could cause damage to the partly completed machinery or the connected fixtures.

ADDITIONAL INFORMATION



Provides useful information and/or cross references to other additional documentation, for example attached instructions for use manuals, technical documents or other sections of this manual.

1.5 MANUFACTURER'S ADDRESS

The Technical Office of the Manufacturer is always available to the customer requirements for any kind of information or clarifications regarding the use, maintenance, installation, etc.

It is appropriate that the latter puts the questions in clear, with references to this manual, always indicating the data shown on the identification plate of the partly completed machinery in question.

Any request for assistance, service at the client, or clarification regarding the technical aspects of this document should be addressed to:



1.6 SAFETY STANDARDS

Prescriptions, instructions, regulations and related safety notes described in the various chapters of the manual are intended to define a set of behaviours and rules which must be followed in performing the various activities that constitute the mode of intended use of the partly completed machinery, in order to operate safely for personnel, for the equipment and the surrounding environment.

The safety instructions are intended to all authorized personnel, trained and delegate to perform the various activities and operations of:

- Transport
- Installation
- Use
- Management
- Maintenance
- Cleaning
- Decommissioning and dismantling.

1.7 MANUFACTURER'S RESPONSIBILITY

The Manufacturer declines any liability arising from the incorrect or improper use of the partly completed machinery in question and from any damage caused by the use of non-prescribed spare parts, by maintenance operations not properly carried out and by tampering with circuits and components .

The responsibility for what concerns the application of safety requirements, mentioned below, it is the responsibility of the technical staff responsible for the activities provided by the partly completed machinery. They should ensure that operators, authorized to carry out the required activities, are qualified, that respect and are aware of the requirements contained in this document and the safety regulations of a general nature applied to the partly completed machinery itself.

Failure to follow the safety instructions can cause injury to persons and damage to equipment .

1.8 MANAGEMENT OF THE PARTLY COMPLETED MACHINERY

The partly completed machinery management is allowed only to authorized and properly trained persons, or at least with adequate technical expertise.

Operators in charge of using and maintaining the partly completed machinery must be aware that knowledge and application of safety regulations is an integral part of their work .

Do the following operations before starting the partly completed machinery:

- Read this manual carefully;
- Know what protections and emergency stop devices are present on the partly completed machinery, where they are located and how they work.

Removal, even only partial, of the protections, safety devices and warning plates applied on the partly completed machinery is strictly forbidden. In the event of malfunction or failure of such devices, they should be immediately repaired or replaced.

1.9 WARRANTY

The manufacturer guarantees that its machines are without material and/or manufacturing defects. For any clarification, see the contractual terms stipulated.

The buyer is only entitled to replacement of parts recognized as defective: the costs of packaging and transport, as well as any installation, are against him. In this case, must be specified:

- Date and number of the purchase document
- Partly completed machinery model
- Serial number.

Will not be recognized claims for damages for loss of production caused by any periods of inactivity of the partly completed machinery.

Damages caused by improper use than is content in this "Assembly instruction manual" which is an integral part of the partly completed machinery, are excluded from the damage warranty, including the maintenance if not conforming to the instructions provided.

The warranty will not be recognized for the partly completed machinery on which were performed unauthorized modifications. Modifications or tampering of safety devices are in every way strictly prohibited.

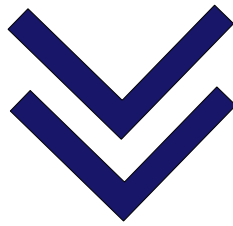
If damages occur during warranty period, the warranty is valid only using original spare parts.

Repair work may only be performed by skilled operators, who are familiar with the partly completed machinery.

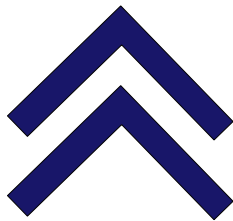
MOTORISED HOPPERS

50L / 100L / 150L





SAFETY



MOTORISED HOPPERS
50L / 100L / 150L



2. SAFETY

2.1 GENERAL INFORMATION

The Customer must instruct the operators about the risks of injury, safety devices installed on the partly completed machinery and the general rules regarding accident prevention provided for by the Community directives and by from the legislation of the country where the partly completed machinery is installed.

The operators must know the location and operation of all controls of the partly completed machinery and its characteristics.

Tampering, or unauthorized replacement of one or more components of the partly completed machinery, the adoption of accessories and the use of particular parts other than those recommended may cause injury risks.

WARNING



It is absolutely forbidden to exclude/tamper the safety devices on the partly completed machinery. The Manufacturer declines all responsibility regarding the safety of partly completed machinery in case of failure to comply with this prohibition.

CAUTION



It is responsibility of the operator using the partly completed machinery ensure that the area is safe and free by persons and/or objects.

2.1.1 Partly completed machinery certification

The partly completed machinery is supplied with the Declaration of Incorporation in accordance with the essential safety requirements as specified in Machines Directive 2006/42/CE (annex II B) and the Electromagnetic Compatibility Directive 2014/30/UE.

ADDITIONAL INFORMATION

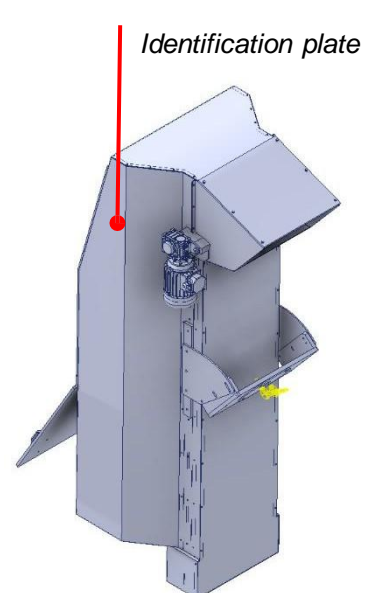
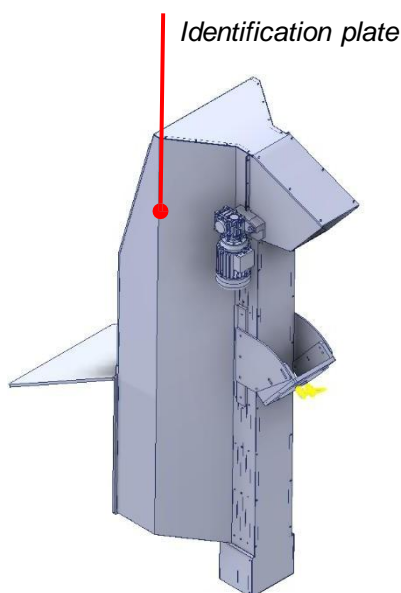
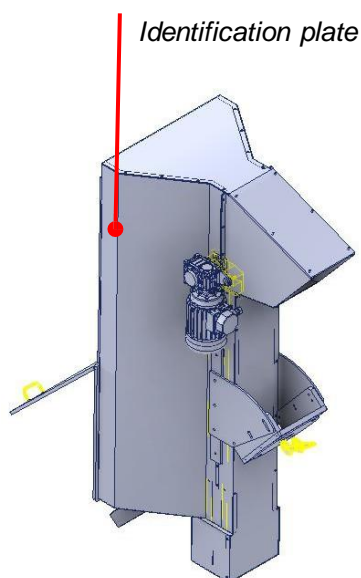


Any changes made to the partly completed machinery will immediately annul the Incorporation Certification issued by the Manufacturer.

ADDITIONAL INFORMATION



The purpose of the following image is only to indicate the position of the identity plate with the main data of the partly completed machinery.



2.1.2 Foreseen and unforeseen uses

The partly completed machinery has been designed and constructed to transport material from the bottom to the top by means of a paddle belt.

The partly completed machinery cannot be used for a use that differs from that foreseen or for the processing of parts over the limit of those agreed.

DANGER



The partly completed machinery for processing purposes not described in this manual is **IMPROPER USE**. The Manufacturer declines all responsibility for any damage caused to things and / or people, believes fallen every kind and type of guarantee of the partly completed machinery. The Manufacturer disclaims all responsibility in case of tampering of the partly completed machinery, unauthorized modifications or maintenance operations performed by untrained personnel.

CAUTION



The partly completed machinery is only to be used by skilled and qualified operators, who have read and understood the contents of this document.

NOTE



It is forbidden to carry out any movement in the event of abnormal behaviour of the partly completed machinery, or lack of power, because is specific competence of maintenance personnel.

2.2 OPERATING ENVIRONMENTAL CONDITIONS

The partly completed machinery is to be installed in a covered environment equipped with all the safety provisions specified by the laws in force in the user country.

2.2.1 Installation of fire protection

The partly completed machinery is not equipped with its own fire prevention system.

2.2.2 Explosive atmosphere

The partly completed machinery has not been designed or constructed to work in explosive or partially explosive atmospheres.

2.2.3 Lighting

The partly completed machinery does not have its own lighting system.

NOTE



It is the duty and responsibility of the customer to place the partly completed machinery in an adequately lit area for its use.

2.2.4 Noise

Noise measurement has been carried out in conformity with the specifications of acoustic standards. The typical sound data are filed by the manufacturer.

The partly completed machinery operating features are such that, with no load, the overall noise generated is less than 75 dB (A), measured in the work station of the relevant operator.

NOTE



The noise level pressure under the actual working conditions will depend on the type of processing performed.

NOTE



The measurements of the levels of noise exposure of workers should be carried out by the user, in accordance with the legislation in force in your country.

2.2.5 Electromagnetic emissions

The partly completed machinery contains electronic components subject to the regulations on Electromagnetic Compatibility (EMC), affected by radiated and conducted emissions .

Emission values are in accordance with regulations thanks to the use of EMC compatible components, suitable connections and installation of filters where necessary.

NOTE



Any maintenance on electrical equipment made in a non-compliant manner, or wrong replacement of components, can impair the effectiveness of the equipment.

2.2.6 Vibrations

The partly completed machinery does not produce vibrations that are dangerous for the health of the personnel working there.

CAUTION



Excessive vibration can only be caused by a mechanical failure, that is to be immediately reported and eliminated.

2.3 SAFETY FUNCTIONS

The partly completed machinery is equipped with the following safeties:

TYPE OF DEVICE	FUNCTION
Fixed guards	Segregation of partly completed machinery hazardous zones.

2.3.1 Fixed guards

Function: Segregates the hazardous zones of the partly completed machinery.

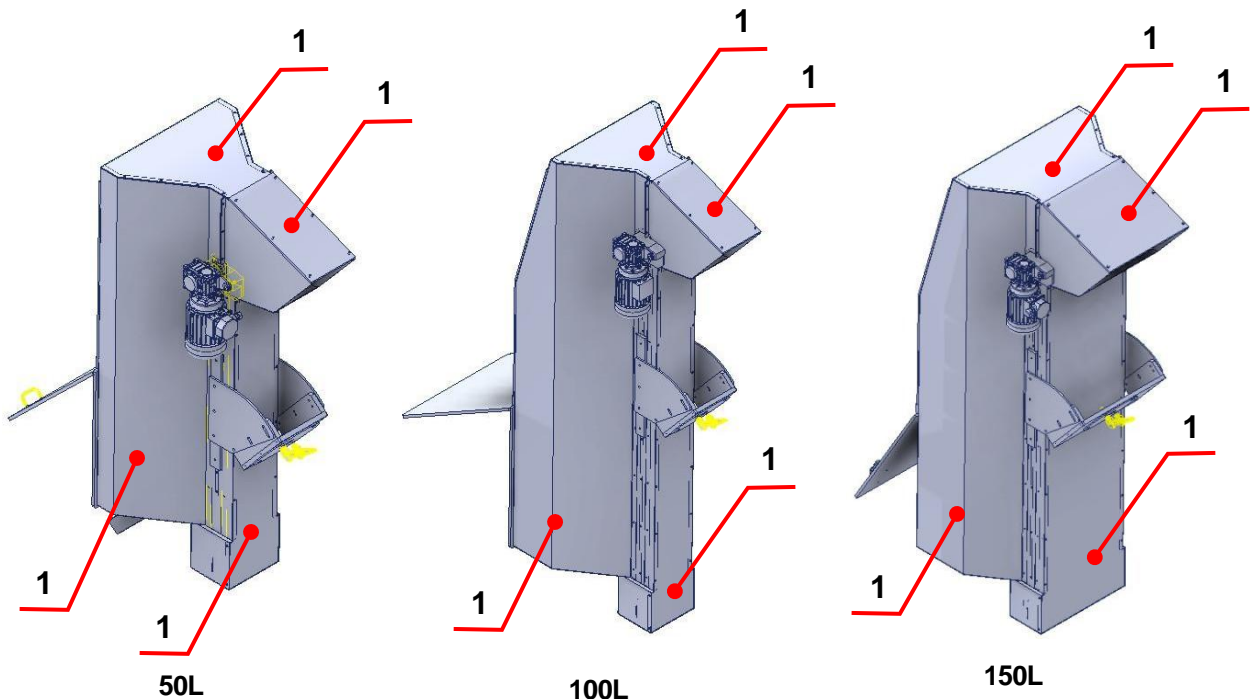
Characteristics and methods: The protections are fixed **(1)** and have the function of preventing access to moving parts of the partly completed machinery when functioning.

These protections are not controlled, and removal is only to take place for maintenance operations, with the partly completed machinery energy sources disconnected.

WARNING



The Manufacturer shall not be held in any way liable if the partly completed machinery is used with guards that are incomplete, open and/or not installed.



2.4 PERSONAL PROTECTIVE EQUIPMENT

The partly completed machinery operator is to use the personal protection devices to reduce the possibility of risks to a minimum.

CAUTION



Personnel should wear appropriate work clothing so as to prevent the occurrence of accidents.

To avoid mechanical risks, such as dragging, entrapment, etc, keep hair gathered up and do not wear bracelets, wrist-watches, rings or chains.

NOTE



The clothing of those who work or perform maintenance on the partly completed machinery, must comply with the essential safety requirements set by EU Directives and laws in the country where the partly completed machinery is installed.

2.5 RESIDUAL RISKS

In the design phase have been assessed all zones or high-risk parts and were taken as a result all necessary precautions to avoid risks to persons and damage to partly completed machinery components.

WARNING



Periodically check the operation of all safety devices.

Do not remove the protections installed.

2.5.1 Residual risks

After carefully examining all possible partly completed machinery risks, all the necessary solutions have been applied to eliminate the risks and limit hazards for exposed persons.

From the risks analysis carried out and kept in the Technical Folder of the Manufacturer, no residual risks result.

2.5.2 Plates on the partly completed machinery

The Manufacturer has installed a series of warning plate on the partly completed machinery defined in accordance with the European standards regarding the graphic symbols to be used. The plates in question are located in a prominent position.

The maintenance service is required to immediately replace all the plates which, due to wear, they should become illegible.

CAUTION



It is absolutely forbidden to remove the warning notices on the partly completed machinery.

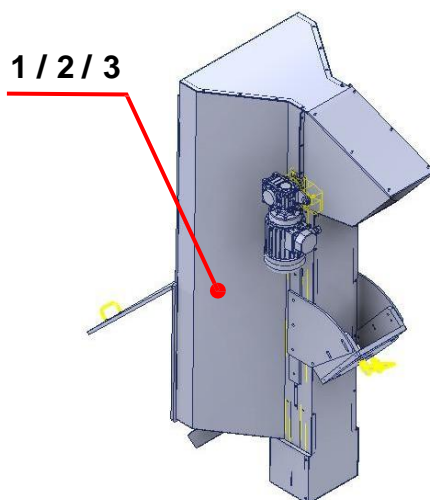
The manufacturer declines all responsibility for the safety of the partly completed machinery in case of failure to comply with this prohibition.

ADDITIONAL INFORMATION

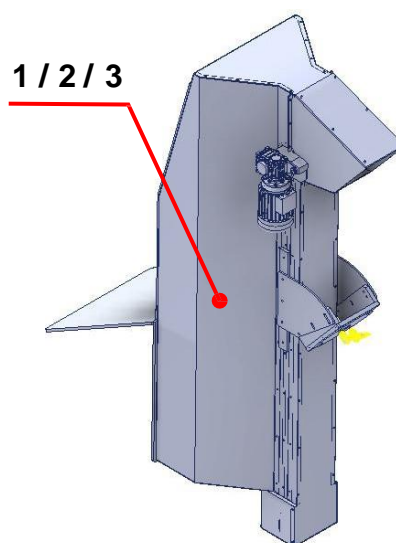


For information on the warning plates installed on the incorporated parts of the partly completed machinery, consult the specific manuals.

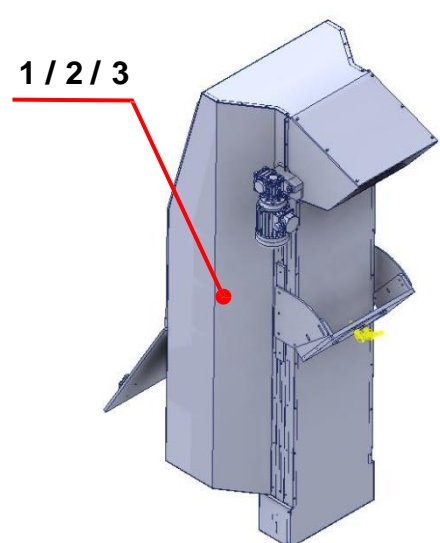
PLATES ON THE PARTLY COMPLETED MACHINERY		
Plate 1		<u>Prohibition</u> of working on moving parts
Plate 2		<u>Prohibition</u> to remove safety devices.
Plate 3		<u>Obligation</u> to read the user and maintenance manual



50L



100L



150L

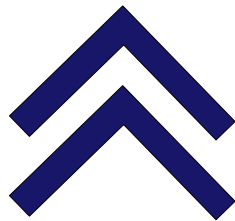
MOTORISED HOPPERS

50L / 100L / 150L





GENERAL DESCRIPTION



MOTORISED HOPPERS
50L / 100L / 150L



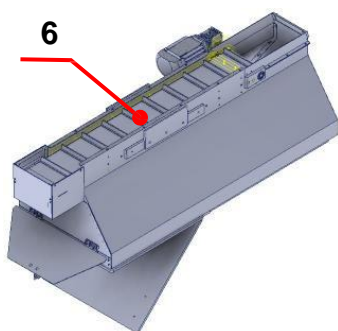
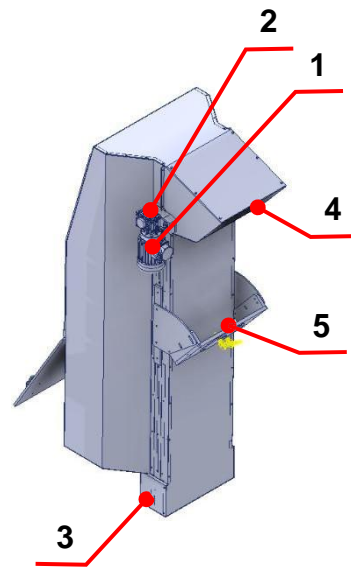
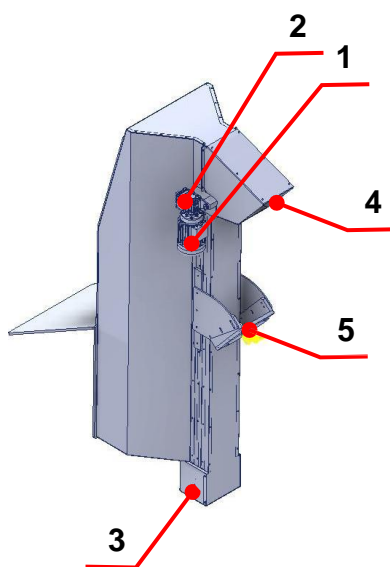
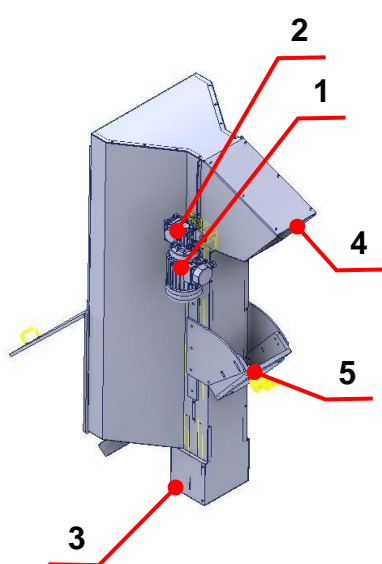
3. GENERAL DESCRIPTION

The partly completed machinery has been designed and constructed to transport material from the bottom to the top by means of a paddle belt.

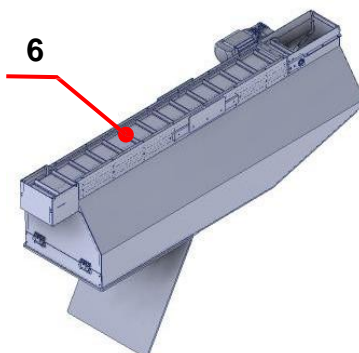
3.1 LAYOUT

N.	DESCRIPTION
1	Electric motor
2	Gearbox
3	Filling hatch

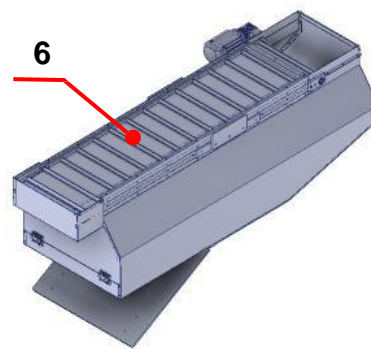
N.	DESCRIPTION
4	Emptying hatch
5	Adjustable support
6	Paddle belt



50L



100L



150L

3.2 TECHNICAL DATA

The following table shows the main technical features of the partly completed machinery.

MOTORISED HOPPER SIZE 50 LITRES	
Belt material	Ammega FLEXAM ETM12 DG AS FG
Paddle material	PCV
Maximum / minimum tilting	50° / 34°
Hopper weight	75 kg
Belt dragging roller diameter	50 mm
Belt dragging motor	Pam63 0.18kW 4poles flange B14 - Current 0.75A with Y wiring 400Vac Nominal torque 1.2 Nm
Belt dragging gearbox	Motovario NMRV 030 ratio 1:50
Maximum loas allowed	Volume = 50 litres / Weight = 30 kg

MOTORISED HOPPER SIZE 100 LITRES	
Belt material	Ammega FLEXAM ETM12 DG AS FG
Paddle material	PCV
Maximum / minimum tilting	50° / 34°
Hopper weight	100 kg
Belt dragging roller diameter	50 mm
Belt dragging motor	Pam63 0.18kW 4poles flange B14 - Current 0.75A with Y wiring 400Vac Nominal torque 1.2 Nm
Belt dragging gearbox	Motovario NMRV 030 ratio 1:50
Maximum loas allowed	Volume = 100 litres / Weight = 30 kg

MOTORISED HOPPER SIZE 150 LITRES	
Belt material	Ammega FLEXAM ETM12 DG AS FG
Paddle material	PCV
Maximum / minimum tilting	50° / 34°
Hopper weight	125 kg
Belt dragging roller diameter	50 mm
Belt dragging motor	Pam63 0.18kW 4poles flange B14 - Current 0.75A with Y wiring 400Vac Nominal torque 1.2 Nm
Belt dragging gearbox	Motovario NMRV 030 ratio 1:50
Maximum loas allowed	Volume = 150 litres / Weight = 30 kg

ADDITIONAL INFORMATION

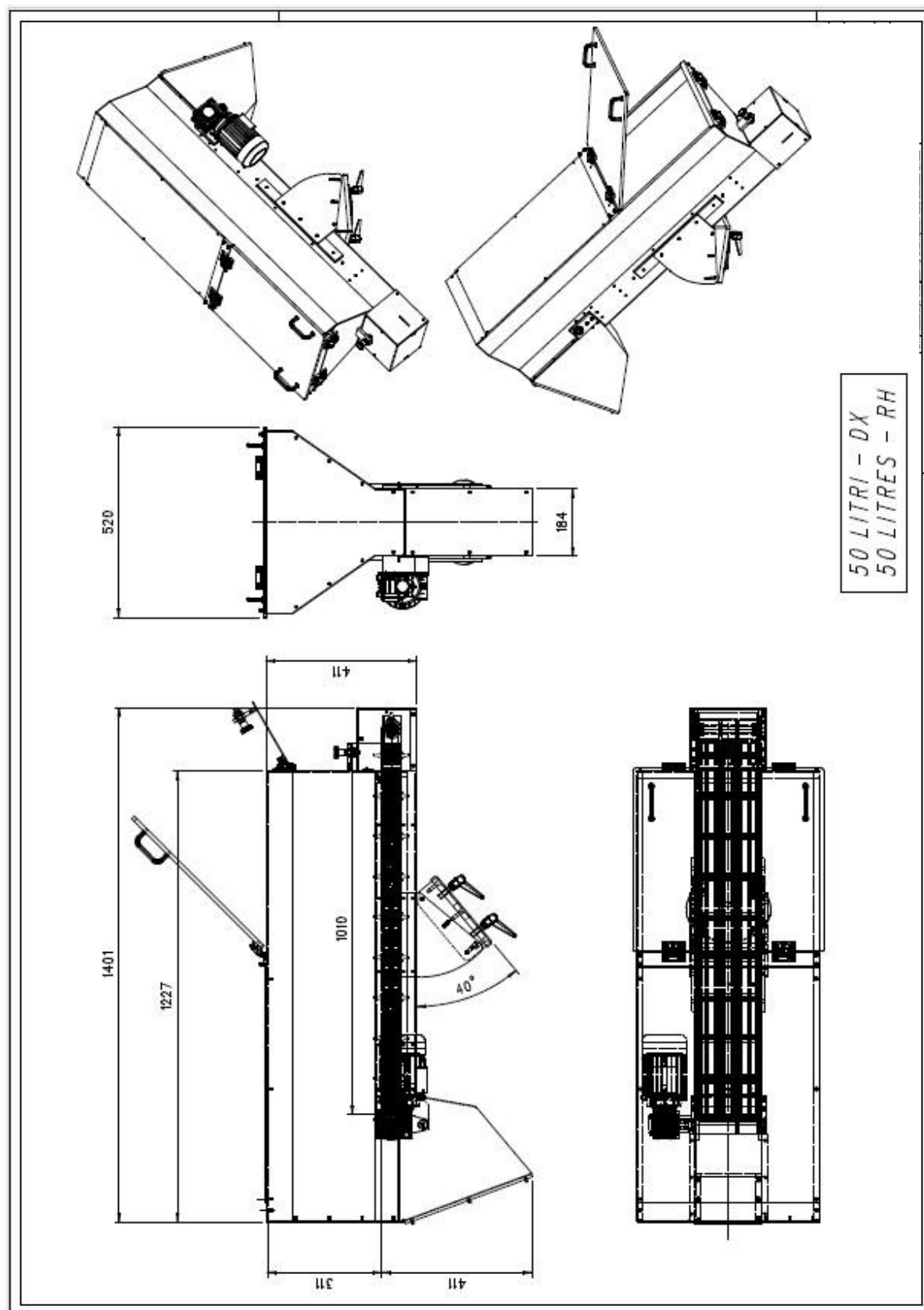


The characteristics listed in the tables above may be changed; therefore, for greater accuracy or verifications relating to the partly completed machinery characteristics refer to the attached diagrams.

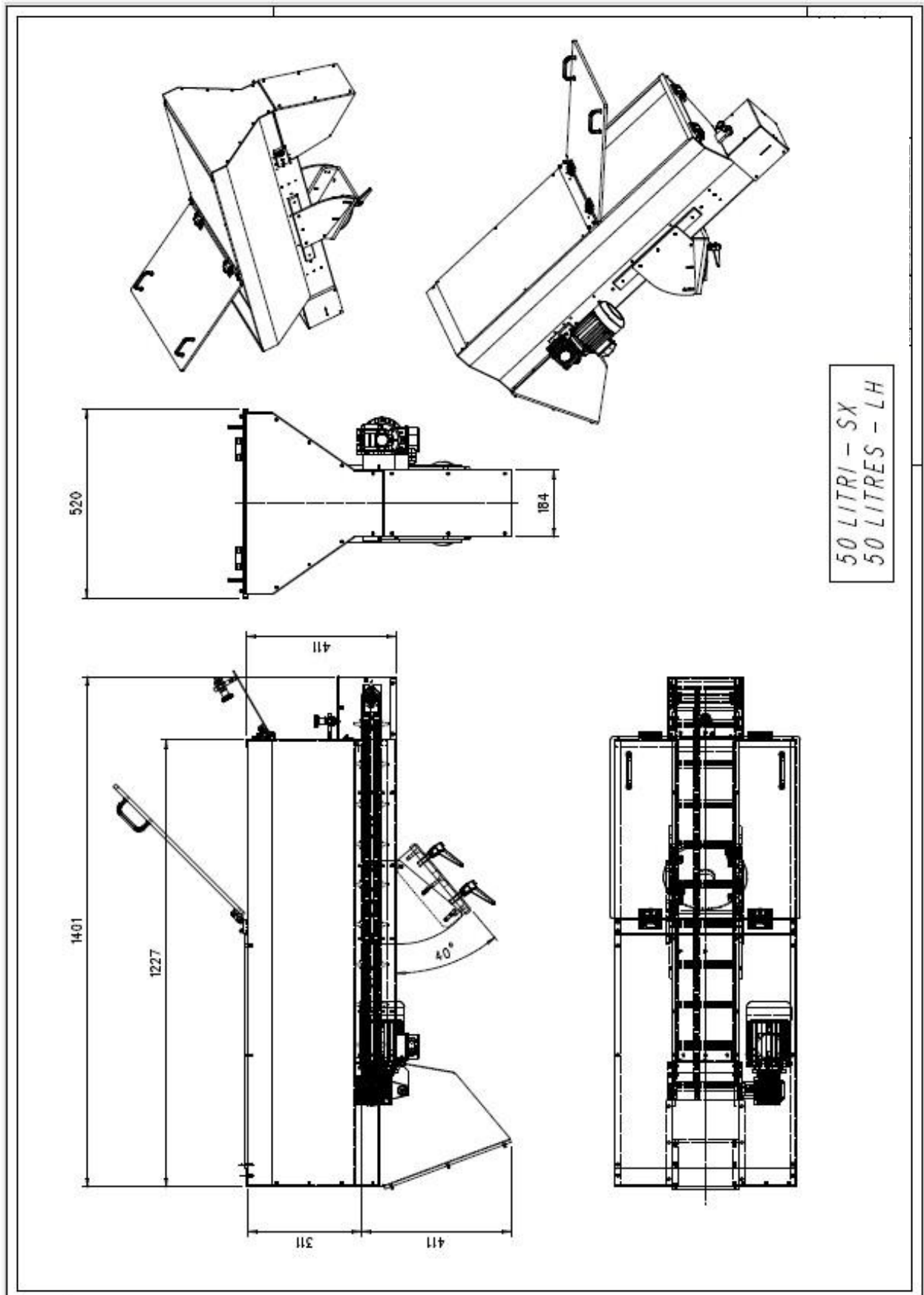
MOTORISED HOPPERS 50L / 100L / 150L

3.2.1 Overall dimensions

Hopper 50 litres right



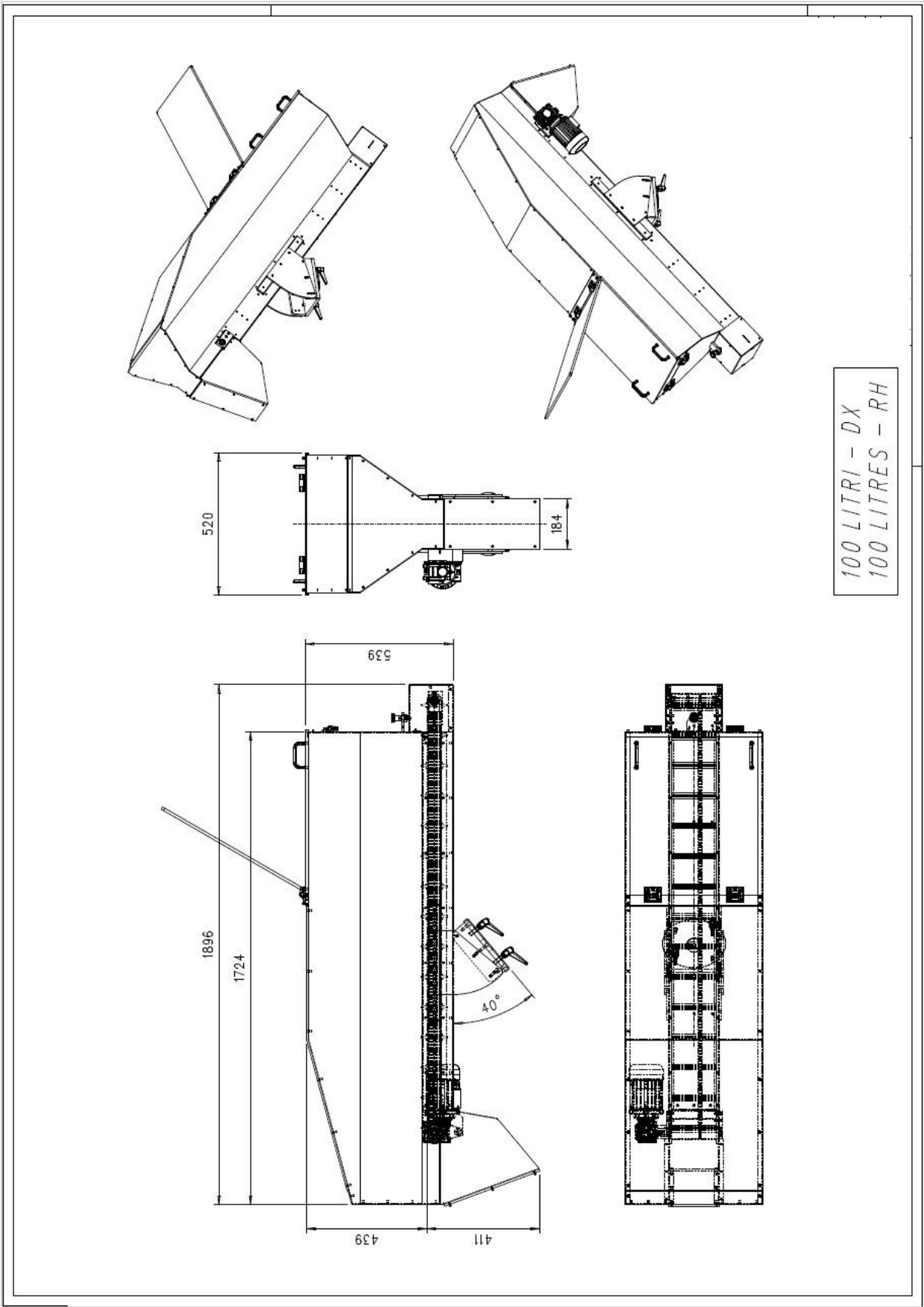
Hopper 50 litres left



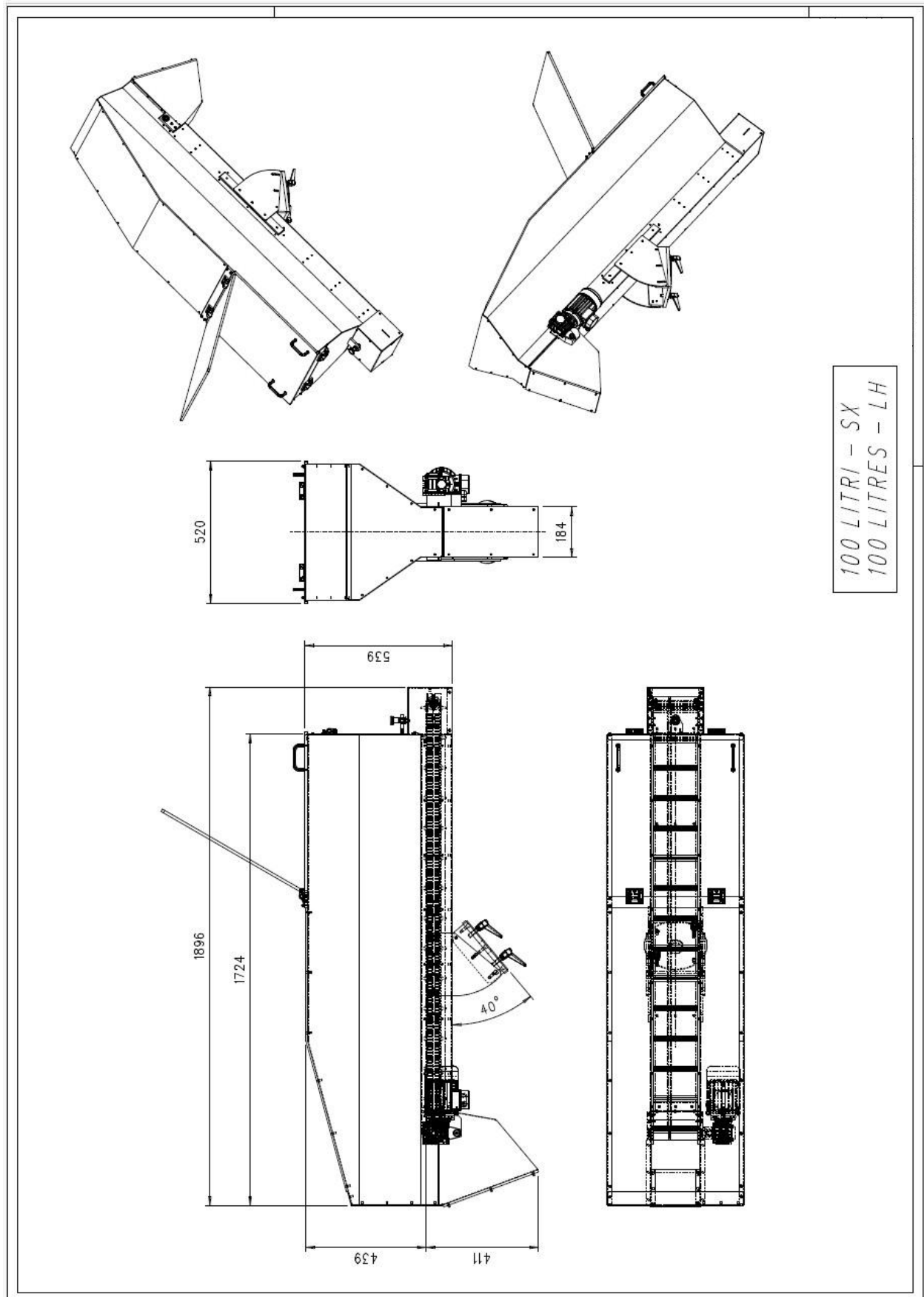
MOTORISED HOPPERS
50L / 100L / 150L



Hopper 100 litres right



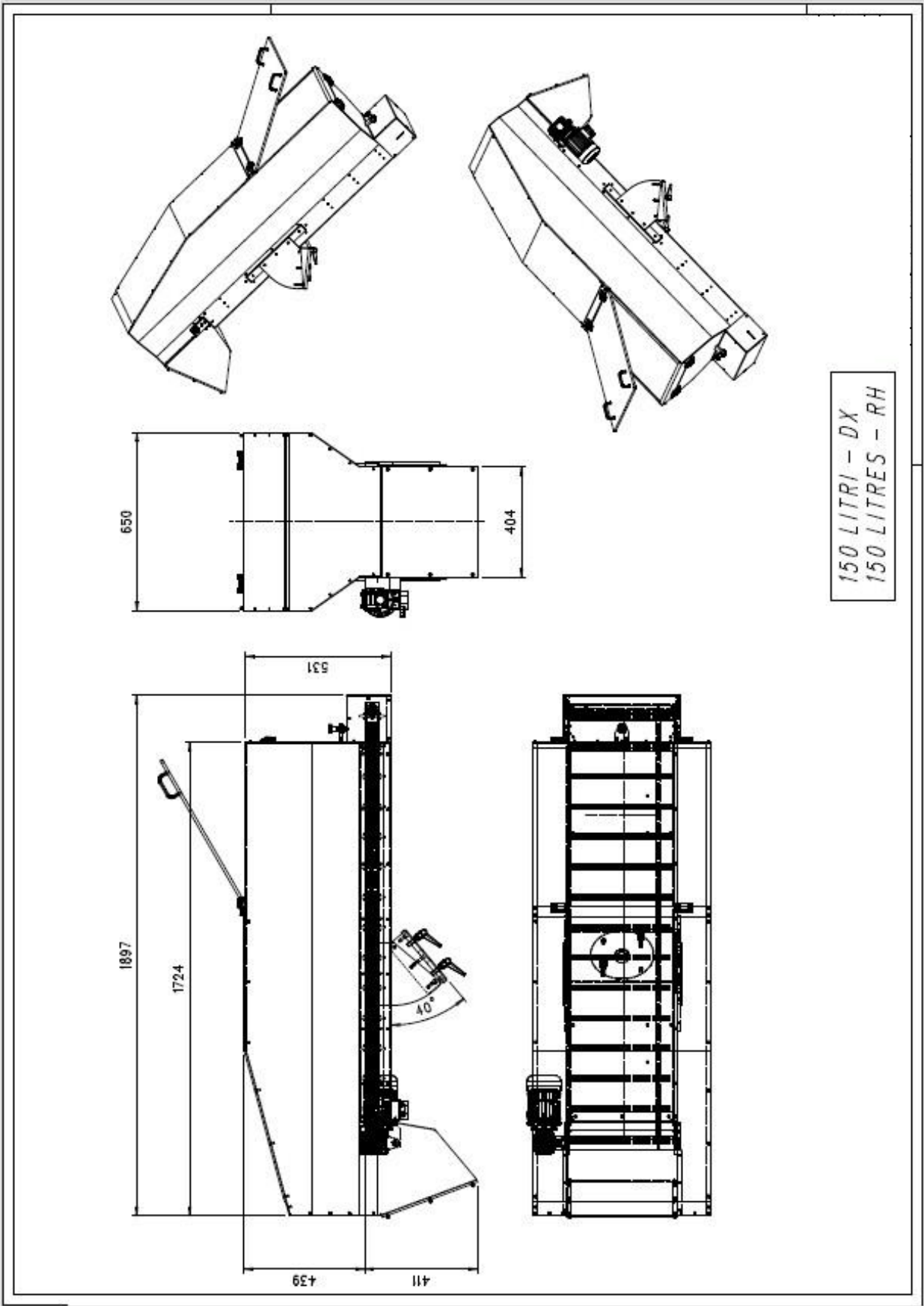
Hopper 100 litres left



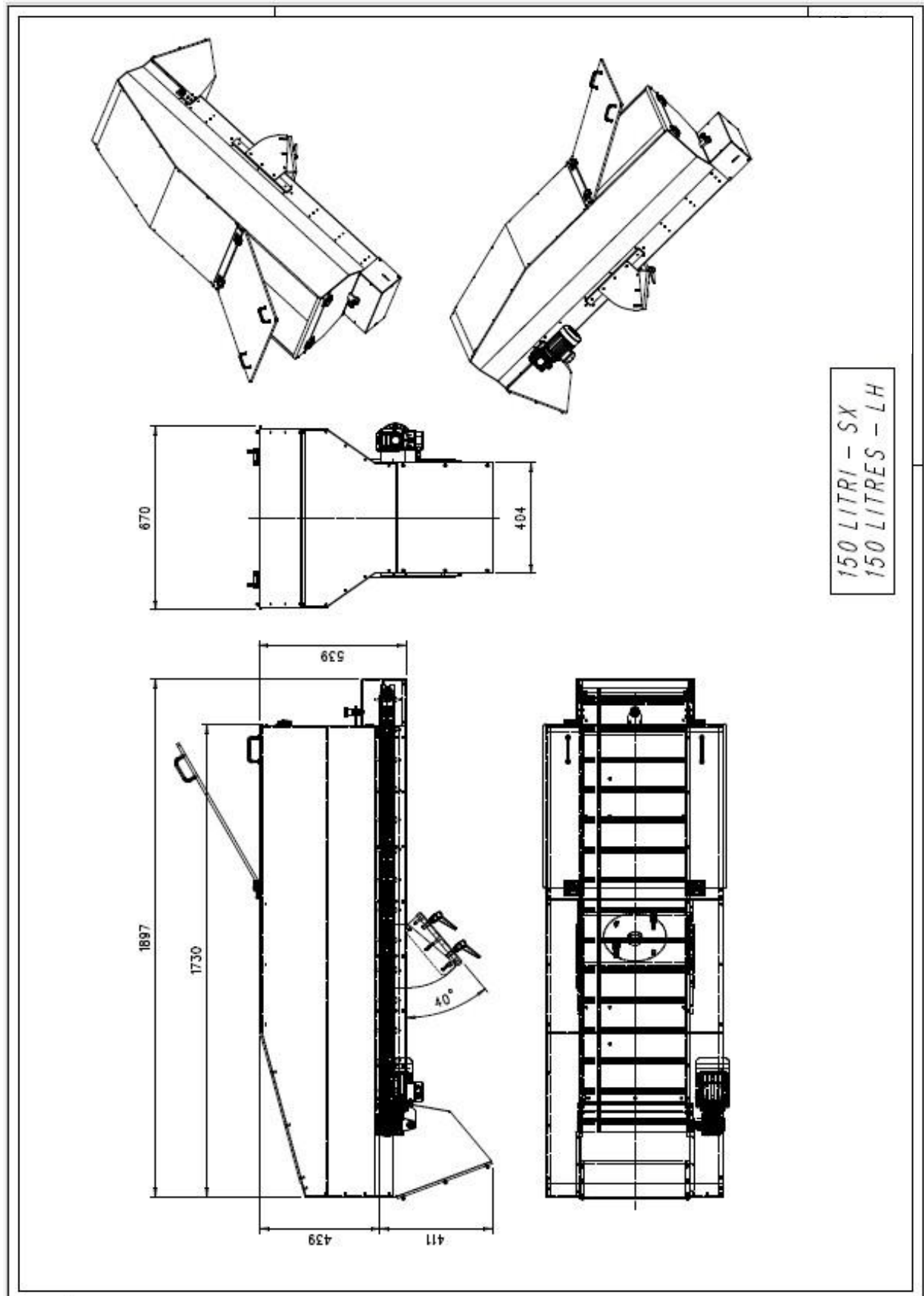
MOTORISED HOPPERS
50L / 100L / 150L



Hopper 150 litres right



Hopper 150 litres left



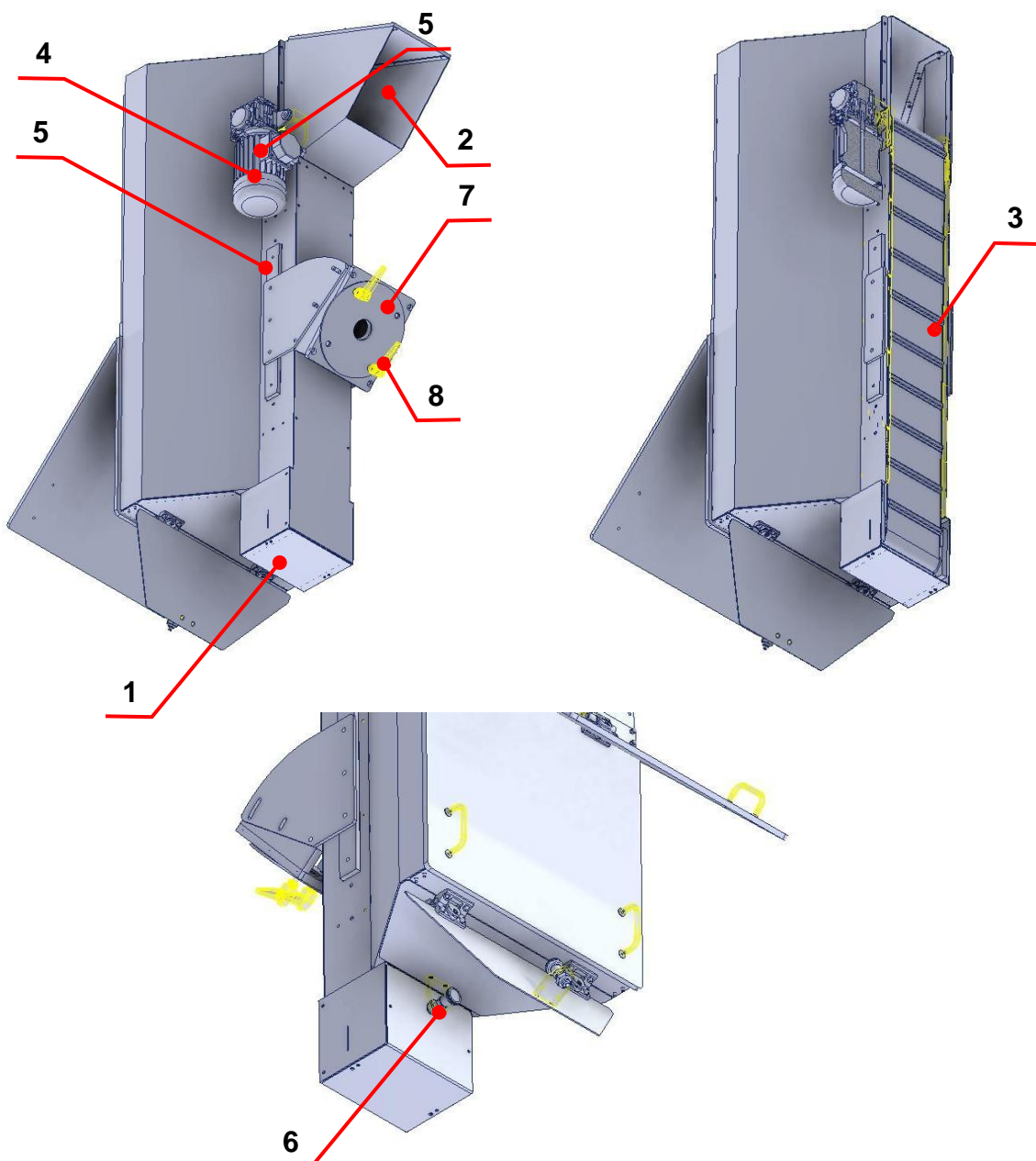
3.3 DESCRIPTION OF THE PARTLY COMPLETED MACHINERY

The partly completed machinery is equipped with a support structure on which there is a filling door **(1)** from which the material is introduced and an emptying door **(2)** for the exit of the material.

Inside the hopper there is a paddle belt **(3)** moved by an electric motor **(4)** and a gearbox **(5)** to move the material within the partly completed machine.

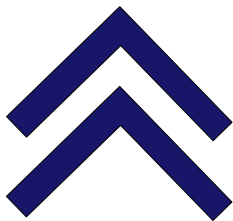
At the bottom there is a filling door, the closing and opening of which is regulated by a special indexing plunger **(6)**.

In order to hold the partly completed machine in place, there is an adjustable stand **(7)** by means of special handles **(8)**.





PACKAGING AND TRANSPORT



MOTORISED HOPPERS
50L / 100L / 150L



4. PACKAGING AND TRANSPORT

4.1 PACKAGING

The partly completed machinery is shipped by the Manufacturer from the production plant to the works of the Customer packaged in cellophane film.

The packaging does not protect against external weather conditions such as rain, snow, hail, etc. Therefore, if they remain exposed to weather conditions it is necessary that they remain in closed containers until the final storage.

All external parts subject to oxidation (machined surfaces, unpainted parts. etc.) are protected by a film of protective anti-oxidant oil.

NOTE



The load is always to be kept in vertical position.

4.2 TRANSPORT

The anchorage points for lifting are indicated on the shipped package.

Furthermore, externally on the packages there are all the indications to identify the contents and for the safe handling:

- Address of the receiver and the sender.
- Dimensions (length, width, height).
- Gross, net weight and tare.
- Centre of gravity.
- Notes and symbols (e.g. fragile, this way up, etc.)
- Packing list holder plate

4.3 LIFTING AND HANDLING

Before any handling and/or lifting operations, it is important to know the weight.

NOTE



All handling and lifting operations are to be carried out by qualified operators, who know the standards regarding lifting and handling of loads, and fully observe the same.

NOTE



Use suitable lifting equipment, appropriate for the weight and overall dimensions of the load to be loop.

NOTE



Always check the correct balancing of the load. If it is unbalanced, rest it immediately on the ground and reposition the forks/slings.

CAUTION



When the load is lifted by more than 50 cm from the ground, the operators are to remain at a safe distance of more than 2 m from the perimeter.

An uncontrolled movement of the load is, in fact, a serious hazard for the safety of the operators.

NOTE



For the transport of the partly completed machinery on long distances, it is recommended to place the hopper on a pallet and to tie it to the pallet with appropriate belts. The pallet should then be handled through trans pallet carriages or forklifts.

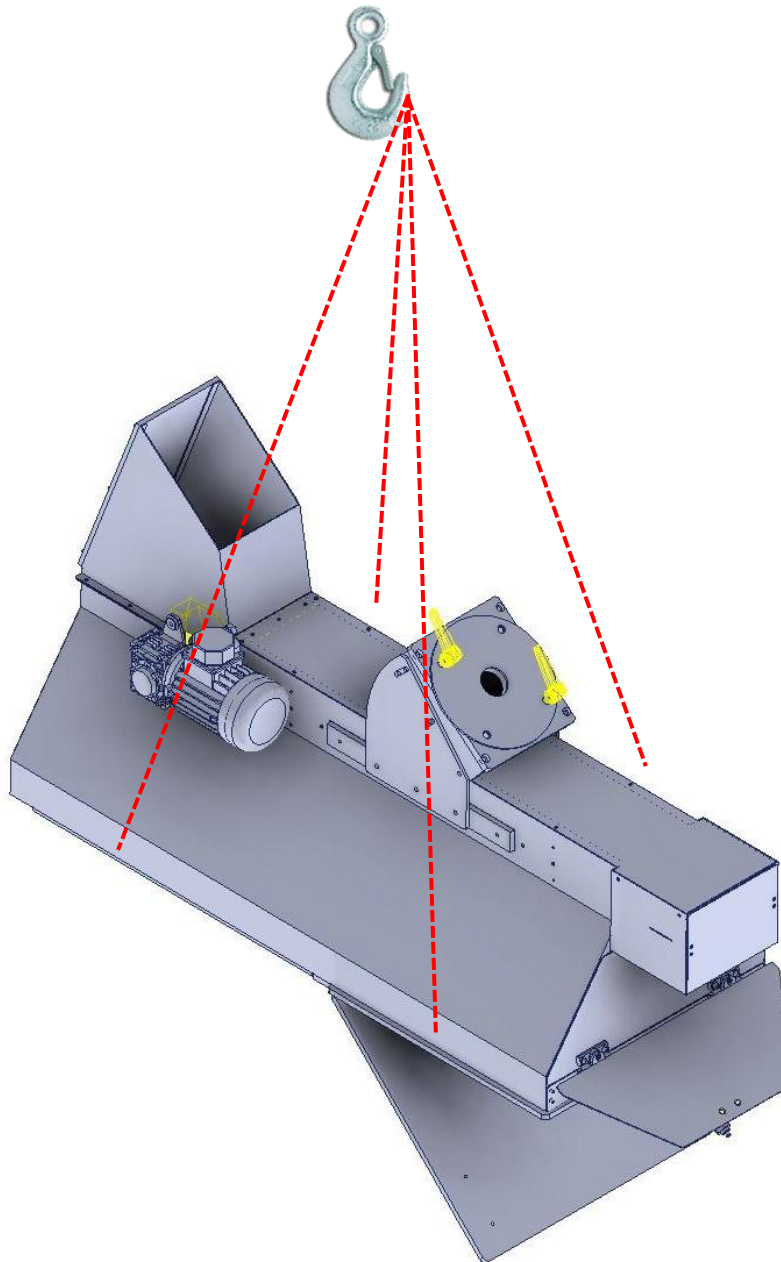
4.3.1 Weight of the partly completed machinery

DESCRIPTION	WEIGHT
Hopper 50 litres	75 kg approx.
Hopper 100 litres	100 kg approx.
Hopper 150 litres	125 kg approx.

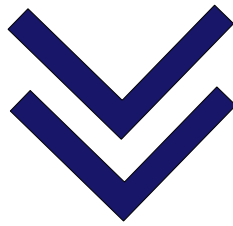
4.3.2 Partly completed machinery lifting with bridge crane

To lift and handle of the partly completed machinery proceed as follows:

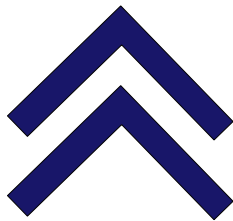
- Appropriately sling the partly completed machinery in the points indicated.
- Secure the straps to the hooks of the lifting equipment.
- Slowly lift the load avoiding abrupt movements. Transfer it, keeping it as close as possible to the ground.
- Once you reach your destination, lower the load slowly and grad.
- Only remove the straps after the load is resting perfectly on the ground.



Example of hopper 50 litres lifting



INSTALLATION



MOTORISED HOPPERS
50L / 100L / 150L



5. INSTALLATION

Before installing the partly completed machinery it is necessary remove the protective packaging and any constraints fixing used to transport.

5.1 CHECK FOR INTEGRITY

Check that the partly completed machinery has not been damaged during transport. In the case of accidents or visible damage (signs or traces of impacts) please notify as follows:

- Written note on Delivery Note.
- Informing the carrier and the manufacturer company of the damage found by means of registered letter, within 48 hours from receipt of the partly completed machinery.

5.2 INSTALLATION OF THE PARTLY COMPLETED MACHINERY

5.2.1 General safety precautions

The operations described in this chapter must be performed by authorized personnel. Unauthorised persons are to remain outside the installation area.

CAUTION



Make sure there is nothing around the area during the installation of the partly completed machinery parts (cables, pipes, etc.) that could cause interference or hazards for the operators.

NOTE



The operators assigned to installation, connection, checks and inspections are to be well trained, to avoid incorrect operations that could damage the partly completed machinery.

ADDITIONAL INFORMATION



See the specific manuals for information regarding incorporated devices.

5.2.2 Choice of place of use and check on installation requirements

The Customer **MUST** provide:

- A sufficiently spacious area, free of obstacles, equipped in accordance with the safety standards in force in the user country.
- Correct ventilation and lighting.
- Operational spaces.
- Passageways.
- Escape routes.
- Flooring able to sustain the weight of the partly completed machinery.
- General power supply, including ground conductor, in accordance with the characteristics and tolerances required.
- Pneumatic supply in accordance with the characteristics and tolerances required.

5.2.3 Positioning of the partly completed machinery

Before you start operating with the partly completed machinery, be sure to mount the machinery on a steady supporting structure with sufficient stiffness and resistance. The maximum load of the supporting structure must be at least 2 times greater than the weight shown on the machinery plate.

Subsequently check correct levelling, placing a spirit level on a flat surface, checking both lengthwise and crosswise.

Contact the technical service of the Manufacturer for further information.

5.3 CONNECTIONS

CAUTION



The operations to connect power supplies are only to be carried out by skilled technicians who are to use the necessary personal protection devices.

NOTE



All connections of the external power supply of the partly completed machinery must be carried out during the installation phase under supervision of the Manufacturer. It is strictly prohibited to connect the partly completed machinery to external supply sources before the arrival of the Manufacturer's technicians.

NOTE



The electrical connection the partly completed machinery needs for its operation is the responsibility of the Customer.

5.4 CHECKS AND INSPECTIONS

Before starting up, a series of general checks and inspections are to be carried out, so as to avoid problems during the the partly completed machinery functioning.

CAUTION



The first start-up is to be carried out by a skilled technician of the Manufacturer.

NOTE



Before starting any movement, make sure there are no fault to avoid damage to the partly completed machinery.

ADDITIONAL INFORMATION



The checks and inspections listed below are to be considered normal maintenance operations.

5.4.1 Overall checks on mechanical units

- Perform a general visual inspection of the various groups that make up the partly completed machinery, making sure that there are no special mechanical abnormalities or foreign bodies .
- Check that the partly completed machinery parts and its guards have been anchored correctly.
- Check the tightness of the screws and nuts of the main components of the partly completed machinery.

NOTE



Should problems arise, contact the Manufacturer immediately.

5.4.2 Tightening torques

The following table indicates the tightening torques of each screw size.

Ø Screw	Screw pitch	Pre-tightening torque [kgm]	Tightening torque [kgm]
M6	1	0,75	1
M8	1,25	1,8	2,4
M10	1,5	3,6	4,8
M12	1,75	6,5	8,5
M14	2	10	13
M16	2	15	20,5
M18	2,5	22	29
M20	2,5	30	40
M22	2,5	42	56
M24	3	50	70
M27	3	80	105
M30	3,5	95	130

ADDITIONAL INFORMATION



To tighten, use a torque wrench.

5.4.3 Commercial devices check

Generally, check the commercial groups installed, in particular:

- Check correct connection to the power supply sources.
- Check that they are correctly installed and function correctly.

ADDITIONAL INFORMATION



For further information, see the attached documentation of each device.

5.4.4 Check on security systems

Check that the guards and safety devices installed are correctly mounted and functioning.

WARNING



We cannot guarantee the safety of the partly completed machinery in the event of removal or tampering with the safety devices.

CAUTION
















Carry out the functional, tightening and positioning checks of the safety systems indicated in chapter 2.







NOTE



This procedure should be adopted as a normal maintenance procedure.

5.5 UNIVERSAL INTERNATIONAL RECYCLING CODES FOLLOWING INSTALLATION

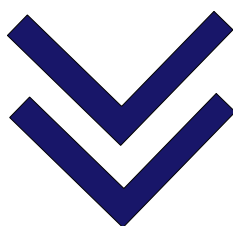
Symbol	Code	Description
Plastics		
	#1 PET o PETE	Polyethylene terephthalate or arnite: water bottles, soft drink bottles, shampoo bottles
	#2 HDPE	High-density polyethylene: containers of yogurt, detergent bottles
	#3 PVC o V	Polyvinyl chloride: food containers
	#4 LDPE	Low Density Polyethylene: frozen food bags, squeezable bottles
	#5 PP	Polypropylene or MOPLen: bottles
	#6 PS	Polystyrene or Styrofoam: Disposable glasses
	#7-#19 O	Any other plastics
Paper		
	#20 PAP	Corrugated Cardboard: boxes of furniture to assemble
	#21 PAP	Paperboard, not corrugated: packaging of sandwiches in fast-food
	#22 PAP	Paper: pack of fries in fast-food, newsprint, paper bags
	#23-#39	Other Types of paper
Metals		
	#40 FE	Steel
	#41 ALU	Aluminum: cans
	#42-#49	Other Types of metal
Wooden materials		
	#50 FOR	Wood

Symbol	Code	Description
	#51 FOR	Cork
	#52-#59	Other Types
Textiles		
	#60 TEX	Cotton
	#61 TEX	Jute
	#60-69	Other textile materials.
Glass		
	#70	Transparent / colorless glass: water bottles
	#71	Green glass: wine bottles
	#72	Brown glass: bottles of beer
	#73-79	Other materials in glass and cans
Composite materials		
	#80	Paper and cardboard / various metals
	#81	Paper and cardboard / plastic
	#82	Paper and cardboard / aluminium: bag of packed biscuits
	#83	Paper and cardboard / tin
	#84	Paper and cardboard / plastic / aluminium
	#85	Paper and cardboard / plastic / aluminium / tin
	#86-#89	Other composite materials
	#90	Plastic / aluminium
	#91	Plastic / tin
	#92	Plastic / various metals
	#93-#94	Other composed materials
	#95	Glass / plastic
	#96	Glass / aluminium
	#97	Glass / tin
	#98	Glass / various metals
	#99	Other composite materials

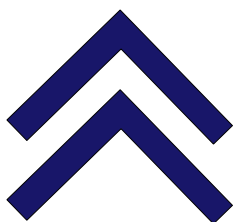
MOTORISED HOPPERS

50L / 100L / 150L





USE



MOTORISED HOPPERS
50L / 100L / 150L



6. USE

6.1 INITIAL CHECKS

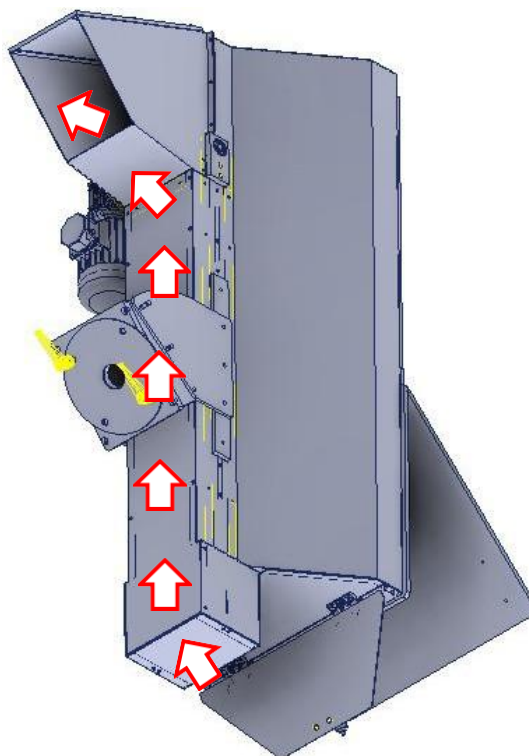
Before starting up the partly completed machinery, the operator is to check the following:

- that all the power supply sources are correctly connected to the relevant supply lines ;
- that there are no foreign bodies inside the partly completed machinery;
- the correct functioning of the security apparatus present;
- that the partly completed machinery is not in the state of repair / cleaning ;
- that all guards are correctly positioned and secured.

6.2 WORKING CYCLE OF THE PARTLY COMPLETED MACHINERY

Following the start-up of the party completed machinery, at the controls performed by the operator, the work cycle is as follows:

- The material is lifted by a paddle belt moved by the electric motor to the outlet.

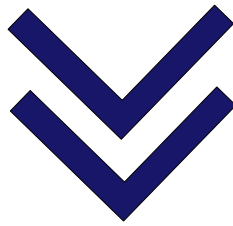


Schematic representation of the work cycle

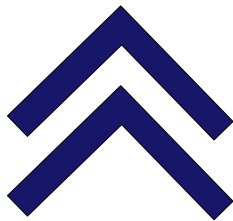
MOTORISED HOPPERS

50L / 100L / 150L





DISPOSAL



MOTORISED HOPPERS
50L / 100L / 150L



7. DISPOSAL

The following paragraph contains some suggestions and indications to correctly carry out the operations for putting out of service, dismantling and removal of the partly completed machinery at the end of its operating life.

CAUTION



The following operations are the responsibility of authorized personnel.

- Make sure that around the partly completed machinery there is sufficient space to allow the operators to make all necessary movements without risks.
- Deactivate the partly completed machinery main electric power supply (borne by the Costumer) and lock it in position OFF.
- Disassemblare la quasi-macchina procedendo, per ogni gruppo, dall'alto verso il basso.
- Disassemble the partly completed machinery proceeding from top to bottom for each group.

WARNING



Pay careful attention to the possibility of partly completed machinery parts or components falling during removal. This could cause serious hazards for the operators.

- Remove the moving parts and separate, as far as possible, the various components for the type of materials (plastic, metal, etc.), in order to be able to be disposed of through a separate collection.
- Remove and move the partly completed machinery parts from the work area by taking all the necessary precautions.
- Before lifting components of considerable size and / or weight, check the correct fastening of the lifting devices and use only suitable slings and equipment.

ADDITIONAL INFORMATION



Disposal operations must be carried out in accordance with the provisions of the regulations in force in the country where the partly completed machinery is installed.

NOTE



If there are difficulties in the dismantling and disposal operations of the partly completed machinery or for major safety, contact the Manufacturer and indicate the cause for removal and serial number of the partly completed machinery.

- The partly completed machinery is built with various materials, recyclable and not. For this reason, its removal involves adequate separation of the materials: steel, aluminium, copper, bronze, special alloys, plastic, etc.
- The manufacturer assumes no liability for any damage caused by any use of the individual components other than the one prescribed.

NOTE



The dismantling must be done in accordance with applicable laws.

7.1 STORAGE

In the event that you don't want to use the partly completed machinery for a long time, for instance for a time longer than a month, we suggest you carry out the following operations:

- Switch off the partly completed machinery;
- Disconnect the electrically power supply;
- Clean all visible parts with an air jet;
- Open any motor protective guards and clean with an air jet;
- Cover all parts which could rust (rollers, chains, rails, etc.) with a thin layer of lubricant oil;
- Cover the entire partly completed machinery with a waterproof canvas;
- Store the partly completed machinery in a dry environment. In order to prevent damage to any electrical parts, make sure you place the machinery in an environment with a temperature always included in the range 4°C - 40°C and where there is no risk of water condensation nor fast corrosion (caused for instance by salty air).

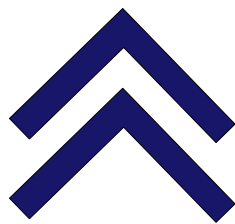
7.2 RECYCLING

Some of the materials resulting from dismantling can be recycled.

For this provision, please refer to the table in Chapter 5 "UNIVERSAL INTERNATIONAL RECYCLING CODES".



MAINTENANCE



MOTORISED HOPPERS
50L / 100L / 150L



8. MAINTENANCE

8.1 GENERAL PRECAUTIONS FOR SAFETY

The maintenance, troubleshooting and repair, are only to authorized personnel.

The personnel in charge of the running and maintenance of the partly completed machinery are to be well - trained and have complete knowledge of the accident-prevention standards. unauthorized personnel must remain outside of the work area during operations.

The safety precautions contained in this paragraph shall always be strictly observed during the conduct and maintenance of the partly completed machinery, in order to avoid damage to personnel and equipment.

At the end of each maintenance operation is required to restore the protections, verifying the correct functioning.

8.1.1 General danger notes

- High voltages can cause death to the contact. Always operate with the utmost caution and according to safety regulations in force in the country.
- On the partly completed machinery in operation there are moving parts that can cause serious harm to people. In this regard, specialist cleaning and maintenance operations, related to removing or replacing components on the partly completed machinery or control units must be performed with the power off and with the facilities not under pressure.
- The main power circuit breakers are to be in OFF position and locked with the safety padlock.
- Place specific warning signs ("PARTLY COMPLETED MACHINERY BEING SERVICED - DO NOT POWER-ON") on the electric panel and on the air treatment group.
- Keep away from bleed holes and taps during system pressure discharge operations .
- Always use protective goggles and protective gloves during maintenance operations on equipment.
- Make sure that the tools in use are in perfect condition and are fitted with insulating grips, where required.
- Check that the insulation of cables and conductors of test equipment do not show the slightest sign of breakage or damage.
- The non-grounded equipment can result in serious personal injury. Always be sure of the presence of ground connections and their compliance with the standards.
- In case of fire, never use water jets on the equipment, disconnect all power and use CO2 extinguishers.
- Before making connections, carefully check all connections and ensure the absence of defects or dirt on the threads.
- Before applying pressure to the plant after a repair, check the tightness of fittings and joints.
- Always make sure, before starting up the equipment, that the maintenance personnel is outside the protected space and tools or materials have not been left in the vicinity of the equipment .

- The failures research must as far as possible, be made staying outside the protected area; whenever necessary, during trouble-shooting, intervene with the control unit and the system powered, must be taken every precaution required by safety regulations to operate in the presence of hazardous voltages and groups moved under tension.
- Do not wear anything that could get caught in equipment or act as conductors (necklaces, bracelets, etc...).
- The maintenance, repair and troubleshooting must end with the verification of the correct functioning of the partly completed machinery and with the restoration of all its safety devices.

8.1.2 General warnings

- The maximum partly completed machinery reliability and minimum maintenance costs are the result of a program of maintenance and planned inspection and scrupulously followed during the entire life of the same. Adhere stated maintenance time intervals and program interventions according to the specific needs in relation to the production cycle of the partly completed machinery.
- It is recommended that, in the case operations of a certain size would be necessary, please contact the manufacturer for any questions regarding this project or technical assistance.
- Before starting any operation control and maintenance, you should remove the dirt on the partly completed machinery.
- Always use air perfectly dry while cleaning with pressure not exceeding 0.2 MPa.
- Always use tools in a perfect state of preservation and specially made for the operation to be performed; use of improper and inefficient tools can cause serious damages.
- During disassembly, mark with a nameplate the individual parts, to make sure, subsequently, their correct replacement.
- After any maintenance that involves disconnection of wiring and / or fixed and moving parts, proceed to the verification of the consistency of the number / license plate of the fixed and moving parts .
- Before putting the equipment into operation after a failure, the same must be carefully inspected and monitored to detect any damage.
- To complete the traditional maintenance activities, maintenance technician must perform, when expected, even predictive maintenance operations consisting of instrumental analysis and specialized controls designed to provide, in time, the occurrence of faults in some of the components' whole partly completed machinery.

8.2 QUALIFICATION OF SERVICE PERSONNEL

CAUTION



The Security Officer will ensure that all persons operating the partly completed machinery has received all their instructions contained in this manual, including the initial operations of installation and commissioning.

8.2.1 General skills

To be up to the ever-increasing qualification need in the field of maintenance, the maintenance personnel must:

- have knowledge of the directives in force relating to the prevention of accidents during work carried out on machines, and be able to apply them,
- have read and understood the chapter regarding Safety,
- know the basic construction and functions of the handling systems,
- know how to use and refer to the papers of manufacturing and partly completed machinery documentation,
- take responsibility for making their own decisions about interventions on the partly completed machinery.
- be willing to adapt to technological changes on the partly completed machinery.
- observe irregularities in the production process and, where appropriate, take the necessary measures.

8.3 CONTROL PLAN ON SAFETY

CAUTION



Periodically check the efficiency of security systems on the partly completed machinery.

This procedure must be repeated as normal maintenance practices

8.3.1 Controls and functional tests on security devices

The maintenance staff has obligation to periodically check the operation of the safety devices.

The operation must be carried out by competent personnel with specific knowledge on the uses of the safety devices.

CAUTION



Carry out the functional, tightening and positioning checks of the safety systems indicated in chapter 2.

8.4 PROCEDURE TO STOP PARTLY COMPLETED MACHINERY

Before carrying out the maintenance procedures described in the next chapter, the operator has to stop the partly completed machinery and set it in maintenance status following this procedure:

- Check for residual energy and if necessary, discharge before operating on the devices .
- Place the notice “DO NOT EXECUTE MOVEMENTS - MACHINE IN MAINTENANCE” near the main circuit breaker.



- After the maintenance operations, restore the previously deactivated energy sources.
- Before resuming normal partly completed machinery, functioning, check the entire system again, as described in this manual.

8.5 SAFETY RULES FOR MAINTENANCE

The main precautions operators should take when performing maintenance work on the partly completed machinery are the following:

- Specialised operators only are allowed to carry out any complex intervention on the partly completed machinery;
- Never touch naked terminals or any electrical devices before disconnecting the electrical power supply (the main switch must be in the OFF position);
- Make sure you disconnect the electrical power supply before removing any fixed guard or replacing any electrical component;
- Do not wear rings, wrist watches, necklaces or bracelets during maintenance operations;
- Place a high-impedance rubber carpet under your feet while executing any maintenance work; Do not operate on wet floors or in environments with high moisture. Avoid the accumulation of static electricity which might damage the electrical components;
- Always wear protective gloves and clothes which cover as many body parts as possible;
- Do not use naked flames, sharp tools or pins for cleaning;
- Do not smoke

8.6 MAINTENANCE TABLE

To guarantee the reliability of the partly completed machinery it is necessary to ensure regular and effective maintenance and constant control of the parameters of the indicator instruments. Maintenance, troubleshooting and repair operations are allowed only to authorized personnel.

FREQUENCY	DESCRIPTION	MEAN
Daily	Perform a thorough cleaning of the partly completed machinery.	Cloth + Alcohol
Monthly	Check the correct tensioning of the paddle belt.	Manual
Monthly	Check the tightness of screws and bolts of moving parts.	Dynamometric wrench
Monthly	Check the motion parts for wear.	Visual check

8.7 LUBRICATION TABLE

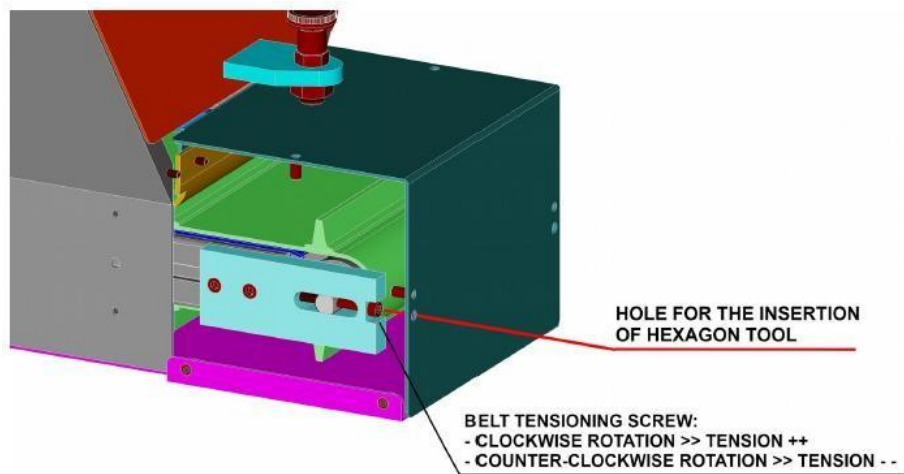
COMPONENT	RECOMMENDED LUBRICANT
Rotating disks	AGIP BLASIA 320
Hydraulic brakes	AGIP OSO 46
Moving parts in general	AGIP GRASSO GR MU/EP

8.8 MECHANICAL ADJUSTMENTS

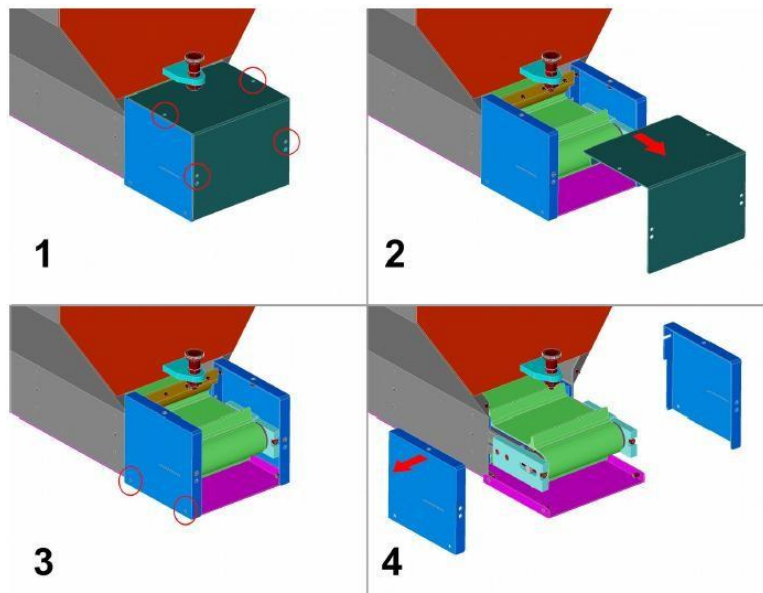
8.8.1 Belt tensioning and adjustment

The partly completed machinery includes a paddled belt that lifts parts from the loading tank to the exit chute. In order to make this belt run properly, it is necessary to tension and adjust it properly, working on the screws.

Tensioning is necessary to prevent any slip between the belt and the dragging roller, while the adjustment guarantees that the belt remains in the right position while running and does not drift on the left or right side. Tensioning and adjustment can be carried out by screwing or unscrewing the M8 screws while the belt is running, then you have to check the belt behaviour on both sides of the roller. The adjustment must be carried out simultaneously on both left and right side, because the right balance between the two screws must be found.



Screw for the tensioning and adjustment of the belt



Side guard that has to be removed to access to the belt tensioning system

8.8.2 Replacement of the paddled belt

CAUTION

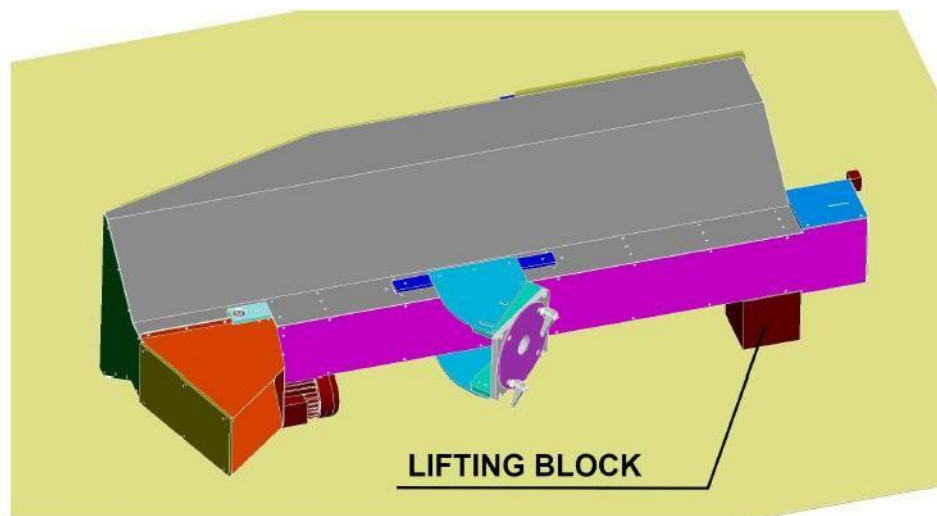


This operation must be carried out only by expert technicians, with appropriate knowledge and tools.

In case of any doubt, contact ARS technicians.

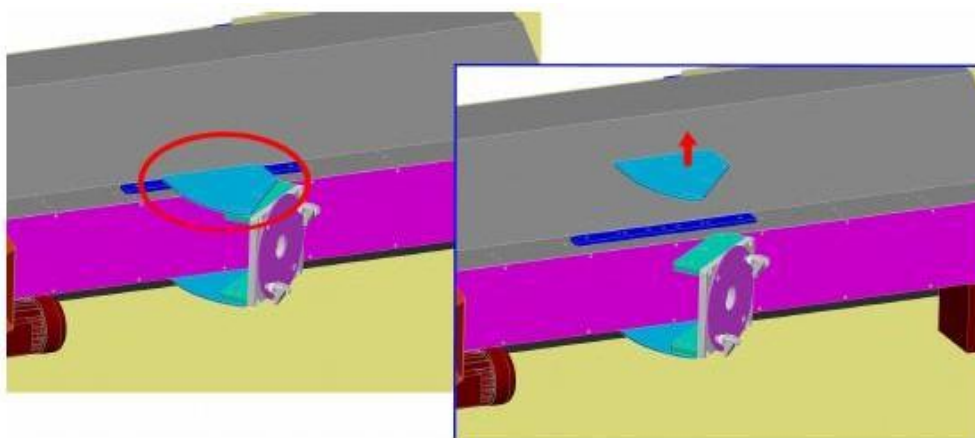
To replace the paddled belt, proceed as follows:

1. Disconnect the hopper from the power supply sources, in order to prevent any unintentional movement of the belt;
2. Separate the hopper from the supporting structure (not included in the supply): it is recommended to use appropriate lifting tool (i.e. harnesses) to prevent any sudden movement of the load during handling operations. Once the separation is complete, place the hopper on a planar surface, lying it on its side and with the motor looking downward (see picture 3). In order to keep the hopper in position, insert a block between the floor and the hopper side, as shown in the picture;

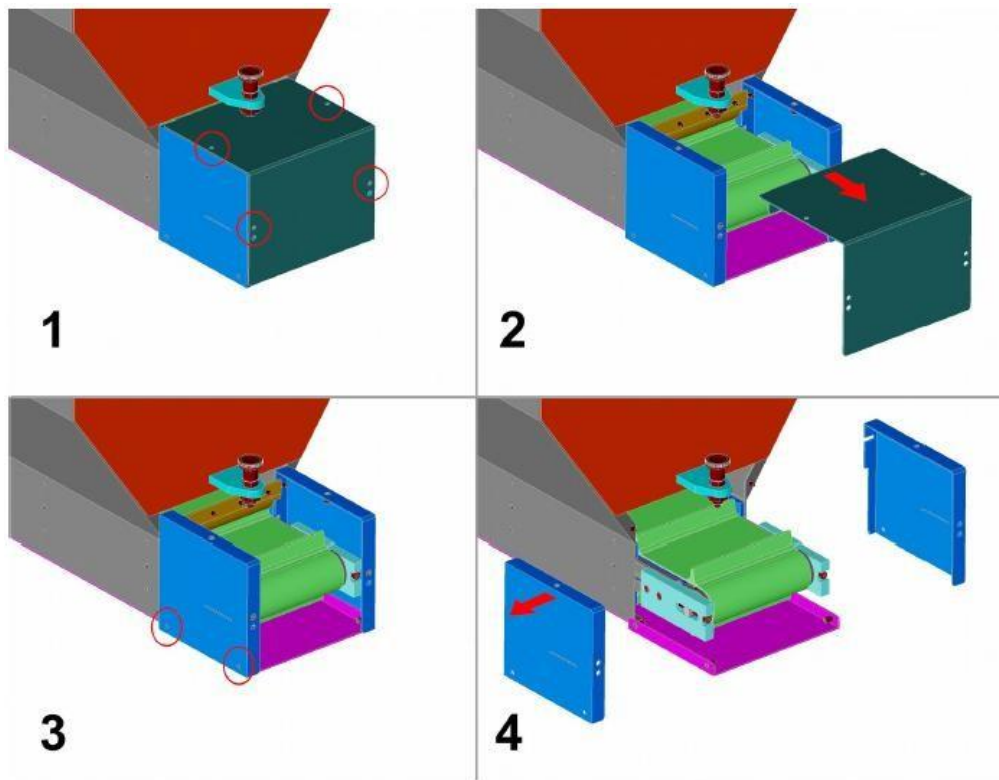


Starting position of the hopper, with the motor looking downward

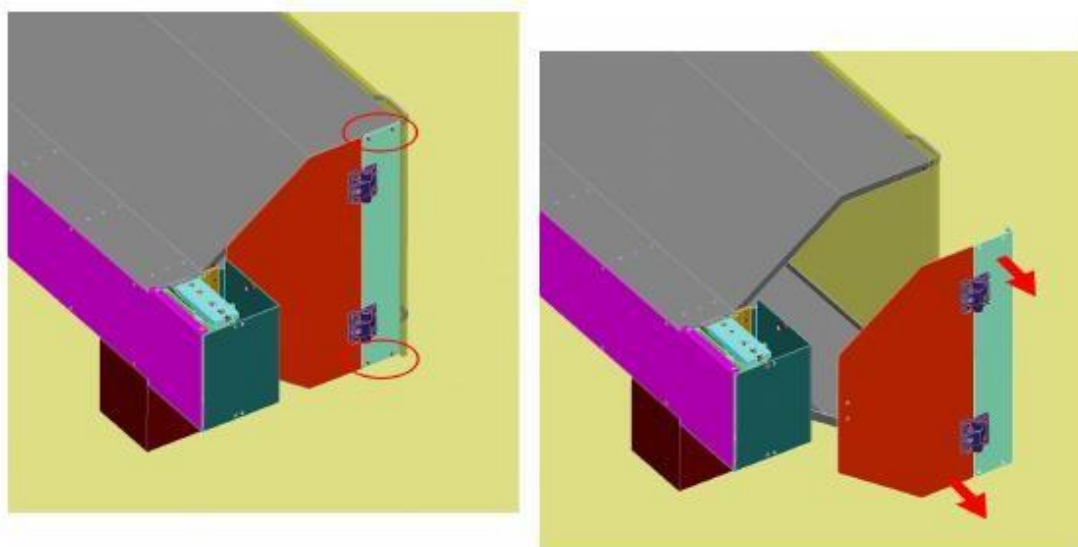
3. Separate the side plate from the body of the hopper;



4. separate the bottom cover (made of 3 parts: middle part + right side + left side) from the body of the hopper;

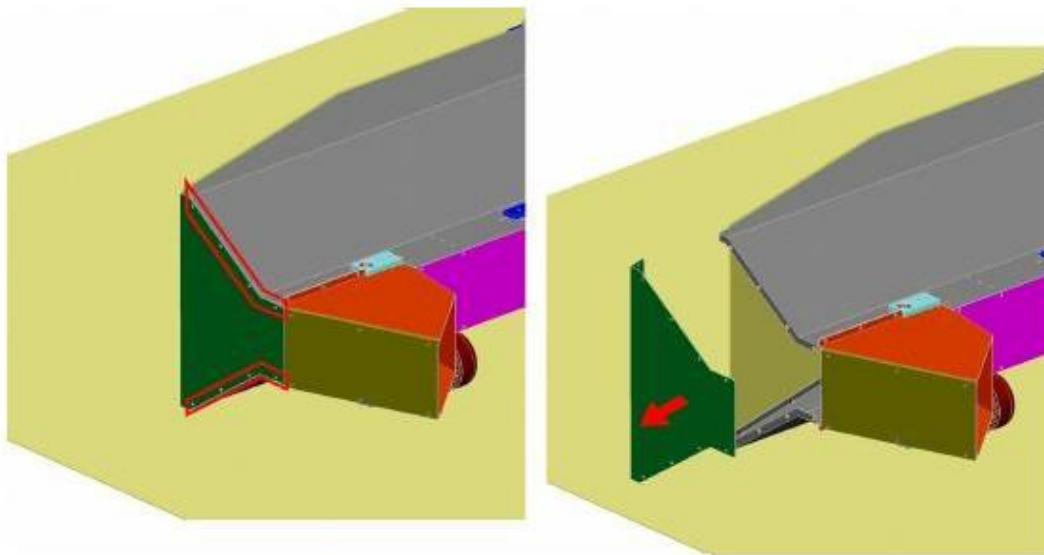


5. Separate the emptying hatch from the body of the hopper;

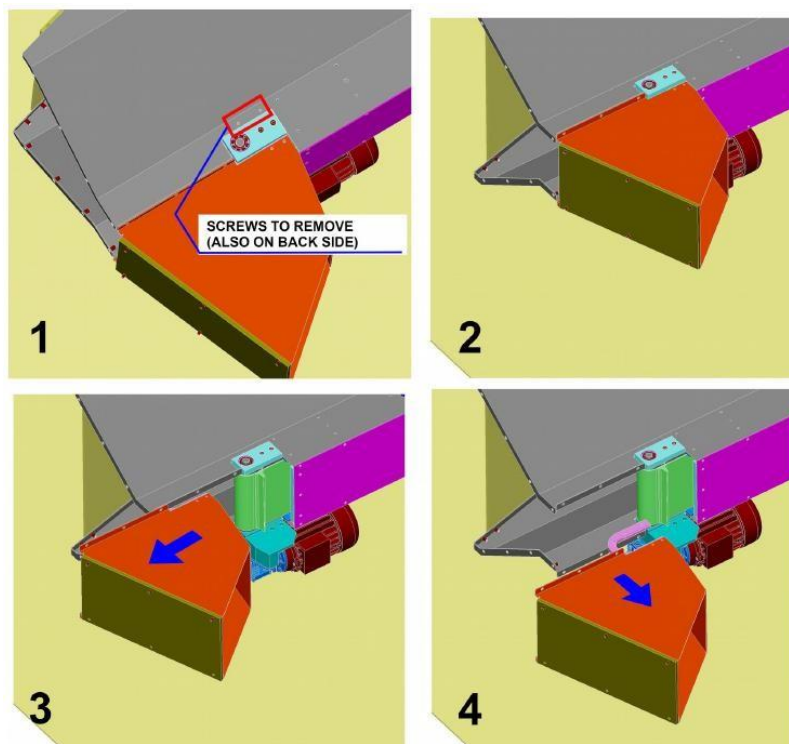


MOTORISED HOPPERS 50L / 100L / 150L

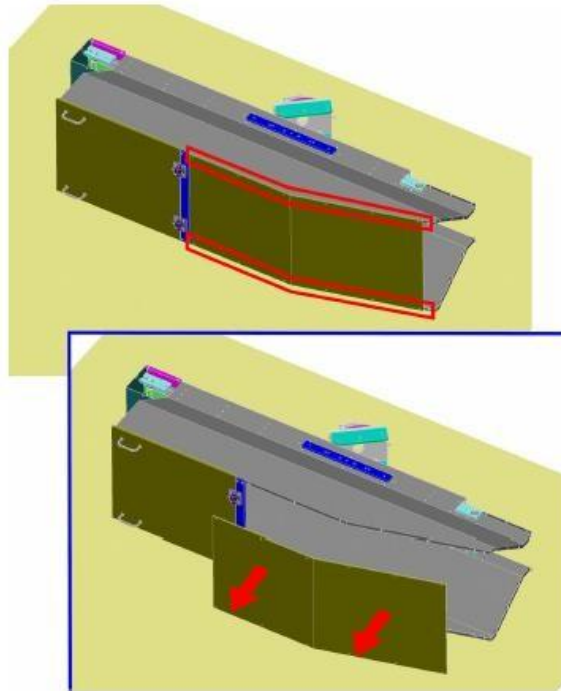
6. Separate the steady guard on the top side of the hopper from its main body;



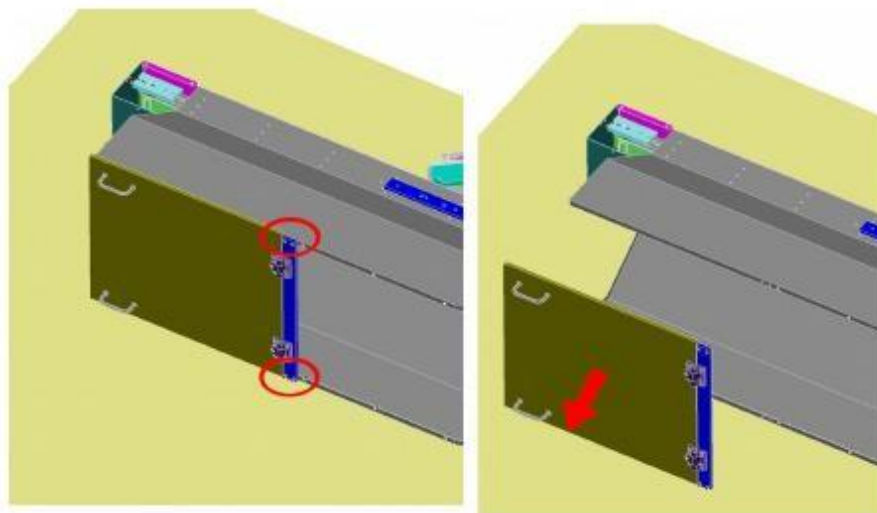
7. Separate the exit chute from the body of the hopper (see picture 7). First of all, it is necessary to remove the 4 screws highlighted in the first box (two on the top side + 2 on the bottom side). Later you can proceed removing the other screws that join the external parts of the sheets;



8. Separate the transparent steady guard from the top side of the hopper body;

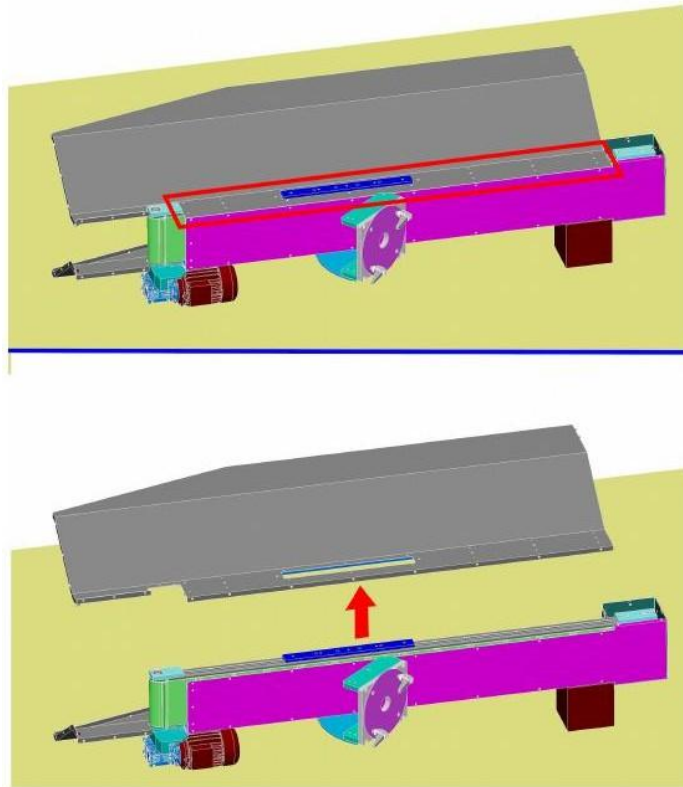


9. Separate the filling hatch from the body of the hopper;



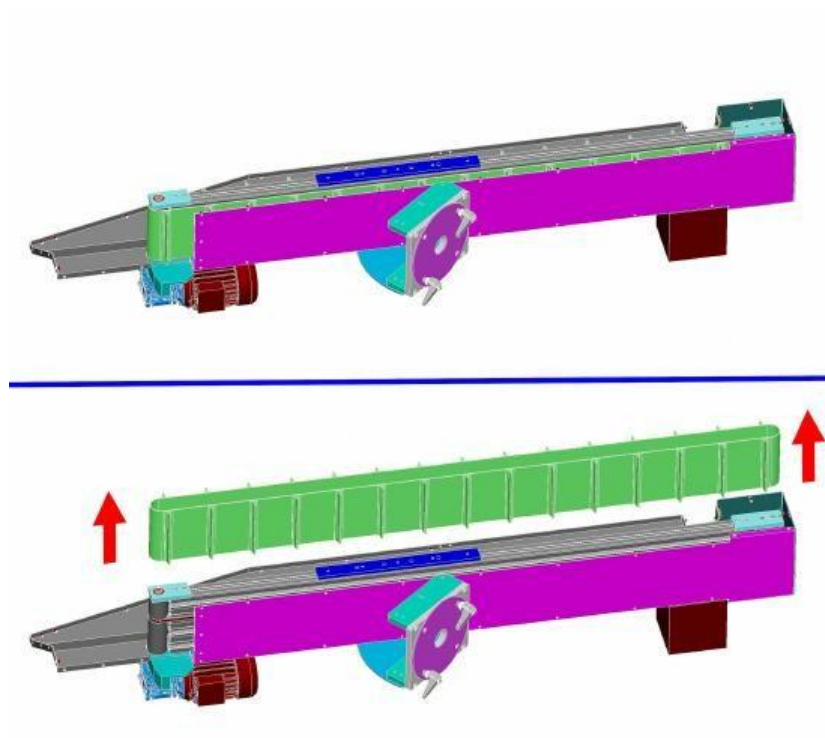
MOTORISED HOPPERS 50L / 100L / 150L

10. Separate the side sheet from the body of the hopper;



11. Completely loosen the belt as shown in section 8.7.1;

12. Remove the belt by pulling it toward the top. If the loosening is not enough to overcome the side plates that drive the belt, it will be necessary to remove them.



- 13.** Insert the new belt, letting it fall from above;
- 14.** Carry out a first tensioning of the belt, to guarantee a good grip between the dragging roller and the belt.
The fine adjustment of the tensioning will be carried out later, once it is possible to get the belt running;
- 15.** Remount the side sheet on the body of the hopper (see picture point 10);
- 16.** Remount the filling hatch on the body of the hopper (see picture point 9);
- 17.** Remount the transparent steady guard on the top side of the hopper (see picture point 8);
- 18.** remount the unloading chute on the body of the hopper (see picture point 7). First of all, it is necessary to re-insert the screws between the external parts of the sheets. Then you can insert the four screws highlighted in the first box (two from the top + two from below);
- 19.** Remount the top steady guard on the body of the hopper (see picture 6);
- 20.** Remount the emptying hatch on the body of the hopper (see picture point 5);
- 21.** Remount the bottom cover (made of 3 parts: middle part + right side + left side) on the body of the hopper (see picture point 2);
- 22.** Remount the side plate on the body of the hopper (see picture point 4);
- 23.** Remount the hopper on the supporting structure. It is recommended to use appropriate lifting tool (i.e. harnesses) to prevent any sudden movement of the load during handling operations.
- 24.** Reconnect the hopper to the power supply sources;
- 25.** Start the hopper with no parts inside of it and carry out the fine adjustment of the belt tensioning .

8.9 MECHANICAL FAULTS DIAGNOSIS

Fault: **lubricant oil leak**

- Cause 1: wear of seal;
- Cause 2: excessive amount of lubricant oil.

Solutions:

- Action 1: replace the worn component;
- Action 2: reduce the amount of lubricant oil.

Fault: **scratches or backlash on guide systems (rods, sleeves, rails)**

- Cause 1: wear of components;
- Cause 2: need for adjustment;
- Cause 3: insufficient lubrication.

Solutions:

- Action 1: replace the worn component;
- Action 2: adjust the component;
- Action 3: restore the correct lubricant level.

8.10 EXTRAORDINARY MAINTENANCE

Extraordinary maintenance operations are those which are not routine, regarding replacement of components subject to wear / breakage and disassembly of partly completed machinery parts.

Furthermore, these operations:

- Can lengthen the useful life and / or subordinately improve the efficiency, reliability, throughput, maintainability and inspection procedures.
- Do not change the original characteristics (plate data, dimensioning, construction values, etc.) and the essential structure.
- Do not create variations in the destination of use.

CAUTION



The extraordinary maintenance operations are only to be carried out by qualified technicians, skilled in the various sectors (electrical or mechanical).

ADDITIONAL INFORMATION



To proceed with extraordinary maintenance operations, contact the manufacturer company, as indicated in paragraph 1.2 of this manual.

MAINTENANCE INTERVENTIONS CARDS

DATE	OPERATOR	INTERVENTION DESCRIPTION

8.11 SPARE PARTS

Hopper 50 litres left / right

Description	Code	Quantity
HEAVY ALUMINIUM PROFILE 45x180 MCH SLOT 10 L=1010 code PR045180P-1010	B.PR045180P1010	1
AMMERAAL BELTECH BELT Width 160 Length 2310 +/- 10 MATERIAL FLEXAM ETM12 DG AS FG with finger junction type A + 21 WELDED PROFILES LT20 material PVC Width 160 Pitch 110 + V-SHAPED WELDED GUIDE 8x5 (22.5 off-center from the middle of the belt)	C.40-COM-NAT-008A	1
FRICTION HINGE ELESA CFU.60 CH 6 code 427522	CER.427522	4
BALL BEARING SKF code 6202-2RS1	CUS.62022RS	4
CHROME PLATED HANDLE ELESA M5 L88 GN 425-10-88-CR code GN.26501	ELM.GN4251088	2
ADJUSTABLE HANDLES ELESA MR80P-M12x40-C9 code 42331	ELM.MR80P1240	4
INDEXING PLUNGER ELESA PMT100-8-M16x1.5-AK code 51531	GRA.PMT1008M16	1
PARALLEL KEY 5x5x60	LIN.5x5x60	1
3-PHASE INDUCTION MOTOR Pam63 T63B4 flange B14 4Poles 0.18 kW (0.25 hp) 230/400V 50 Hz	MOE.025B14	1
REACTION ARM for Motovario gearbox NMRV30 / SW30	RID.BRNMRV30	1
COVER for Motovario gearbox NMRV 030	RID.NMRV30	1
MOTOVARIO GEARBOX NMRV 030 1:50 for motor Pam63 B14	RID.NMRV3050P63	1
SEEGER E15	SEG.E15	2
SEEGER I35	SEG.I35	2

MOTORISED HOPPERS

50L / 100L / 150L



Hopper 100 litres left / right

Description	Code	Quantity
HEAVY ALUMINIUM PROFILE 45x180 MCH SLOT 10 L=1505 code PR045180P-1505	B.PR045180P1505	1
AMMERAAL BELTECH BELT Width 160 Length 3300 +/- 10 MATERIAL FLEXAM ETM12 DG AS FG with finger junction type A + 30 WELDED PROFILES LT20 material PVC Width 160 Pitch 110 + V-SHAPED WELDED GUIDE 8x5 (22.5 off-center from the middle of the belt)	C.40-COM-NAT-005A	1
FRICTION HINGE ELESA CFU.60 CH 6 code 427522	CER.427522	4
BALL BEARING SKF code 6202-2RS1	CUS.62022RS	4
CHROME PLATED HANDLE ELESA M5 L88 GN 425-10-88-CR code GN.26501	ELM.GN4251088	2
ADJUSTABLE HANDLES ELESA MR80P-M12x40-C9 code 42331	ELM.MR80P1240	4
INDEXING PLUNGER ELESA PMT100-8-M16x1.5-AK code 51531	GRA.PMT1008M16	1
PARALLEL KEY 5x5x60	LIN.5x5x60	1
3-PHASE INDUCTION MOTOR Pam63 T63B4 flange B14 4Poles 0.18 kW (0.25 hp) 230/400V 50 Hz	MOE.025B14	1
REACTION ARM for Motovario gearbox NMRV30 / SW30	RID.BRNMRV30	1
COVER for Motovario gearbox NMRV 030	RID.NMRV30	1
MOTOVARIO GEARBOX NMRV 030 1:50 for motor Pam63 B14	RID.NMRV3050P63	1
SEEGER E15	SEG.E15	2
SEEGER I35	SEG.I35	2

Hopper 150 litres left / right

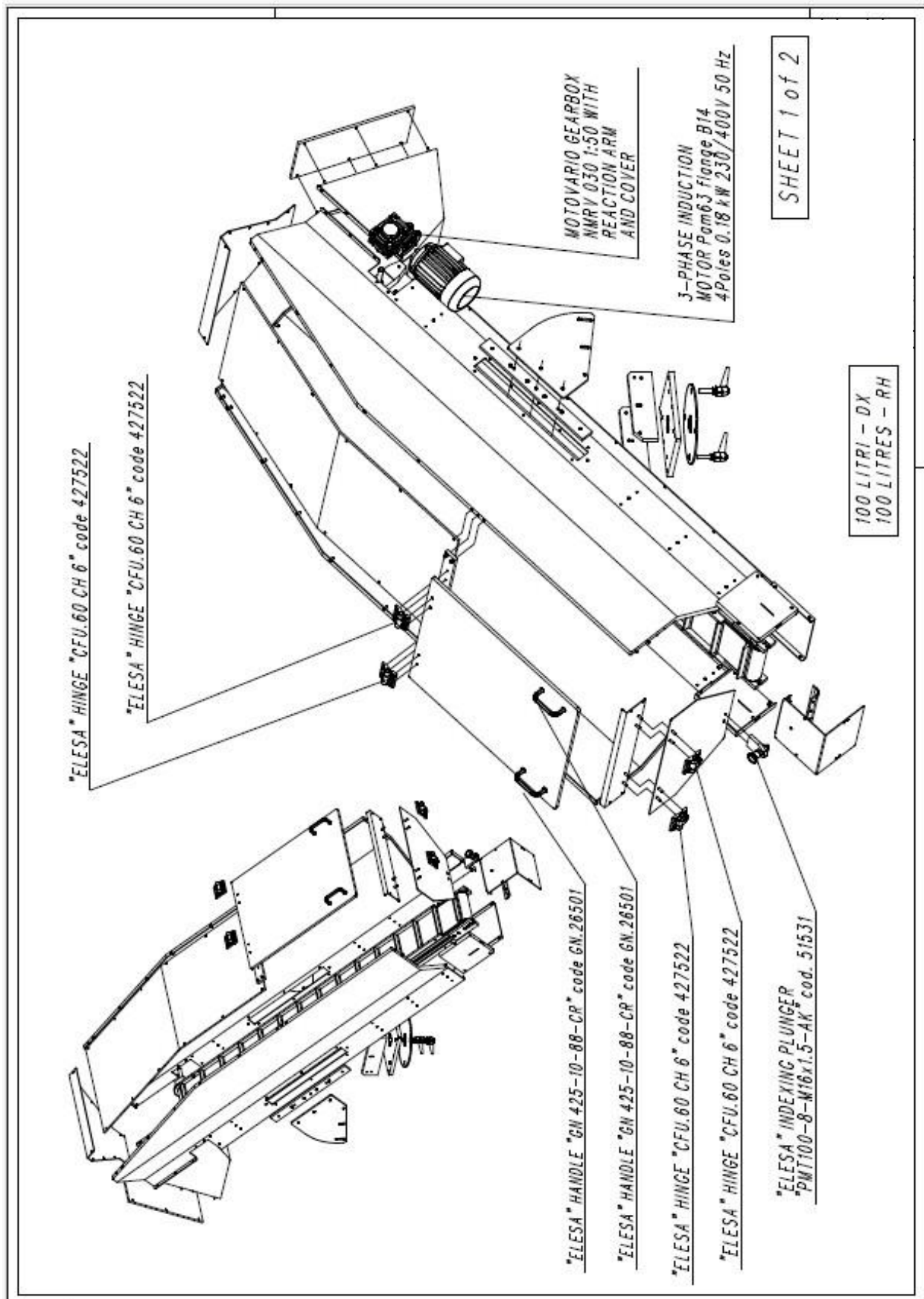
Description	Code	Quantity
HEAVY ALUMINIUM PROFILE 45x180 MCH SLOT 10 L=1505 code PR045180P-1505	B.PR045180P1505	2
HEAVY ALUMINIUM PROFILE 45x180 MCH SLOT 10 L=225 code PR045180P-225	B.PR045180P225	2
90° JUNCTION 87x87x43 MCH cod. SQ087042	B.SQ087042	8
AMMERAAL BELTECH BELT Width 380 Length 3300 +/- 10 MATERIAL FLEXAM ETM12 DG AS FG with finger junction type A + 30 WELDED PROFILES LT20 material PVC Width 160 Pitch 110 + V-SHAPED WELDED GUIDE 8x5 (132.5 off-center from the middle of the belt)	C.40-COM-NAT-007A	1
FRICTION HINGE ELESA CFU.60 CH 6 code 427522	CER.427522	4
BALL BEARING SKF code 6202-2RS1	CUS.62022RS	4
CHROME PLATED HANDLE ELESA M5 L88 GN 425-10-88-CR code GN.26501	ELM.GN4251088	2
ADJUSTABLE HANDLES ELESA MR80P-M12x40-C9 code 42331	ELM.MR80P1240	4
INDEXING PLUNGER ELESA PMT100-8-M16x1.5-AK code 51531	GRA.PMT1008M16	1
PARALLEL KEY 5x5x60	LIN.5x5x60	1
3-PHASE INDUCTION MOTOR Pam63 T63B4 flange B14 4Poles 0.18 kW (0.25 hp) 230/400V 50 Hz	MOE.025B14	1
REACTION ARM for Motovario gearbox NMRV30 / SW30	RID.BRNMRV30	1
COVER for Motovario gearbox NMRV 030	RID.NMRV30	1
MOTOVARIO GEARBOX NMRV 030 1:50 for motor Pam63 B14	RID.NMRV3050P63	1

MOTORISED HOPPERS
50L / 100L / 150L

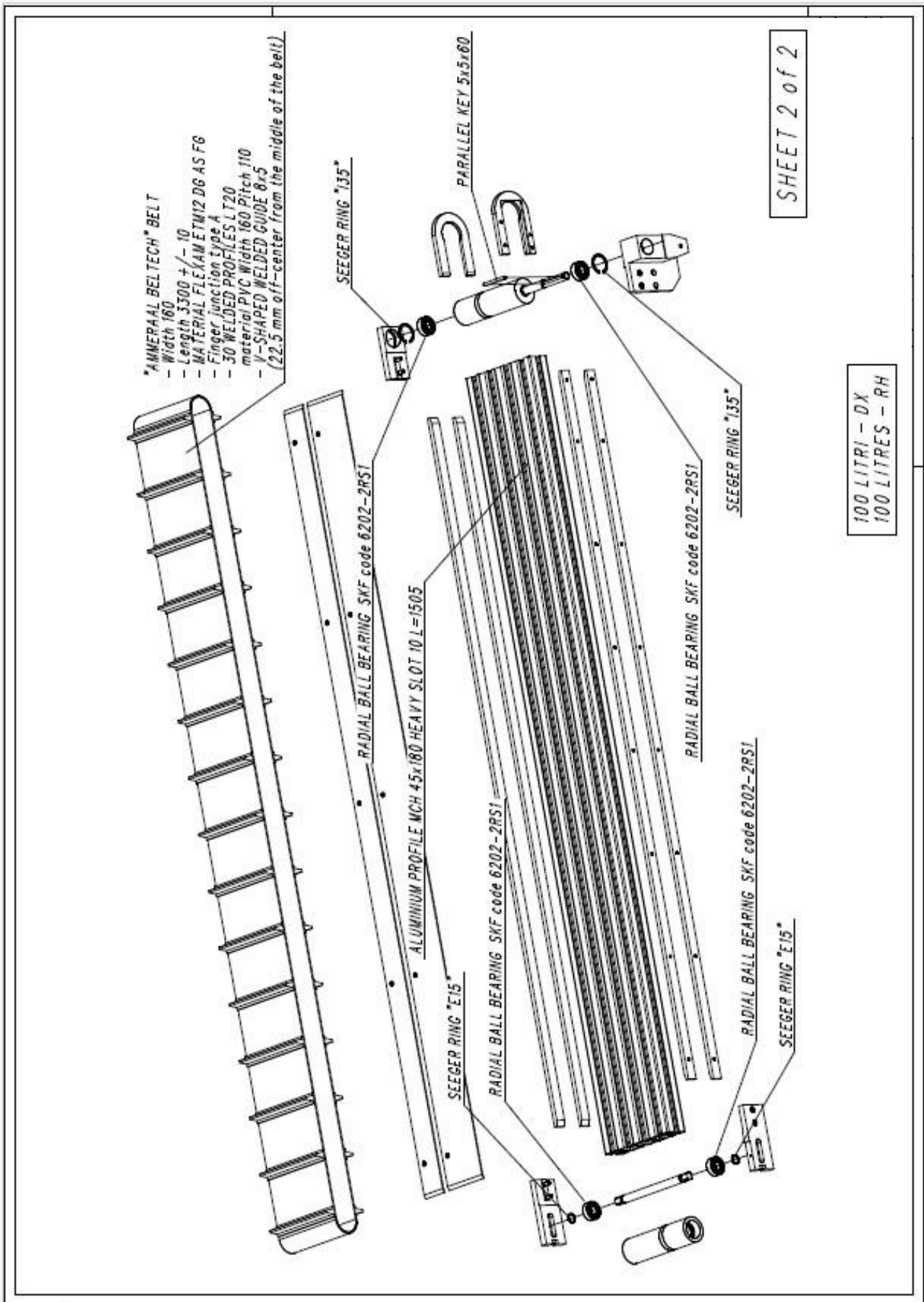


Description	Code	Quantity
SEEGER E15	SEG.E15	2
SEEGER I35	SEG.I35	2

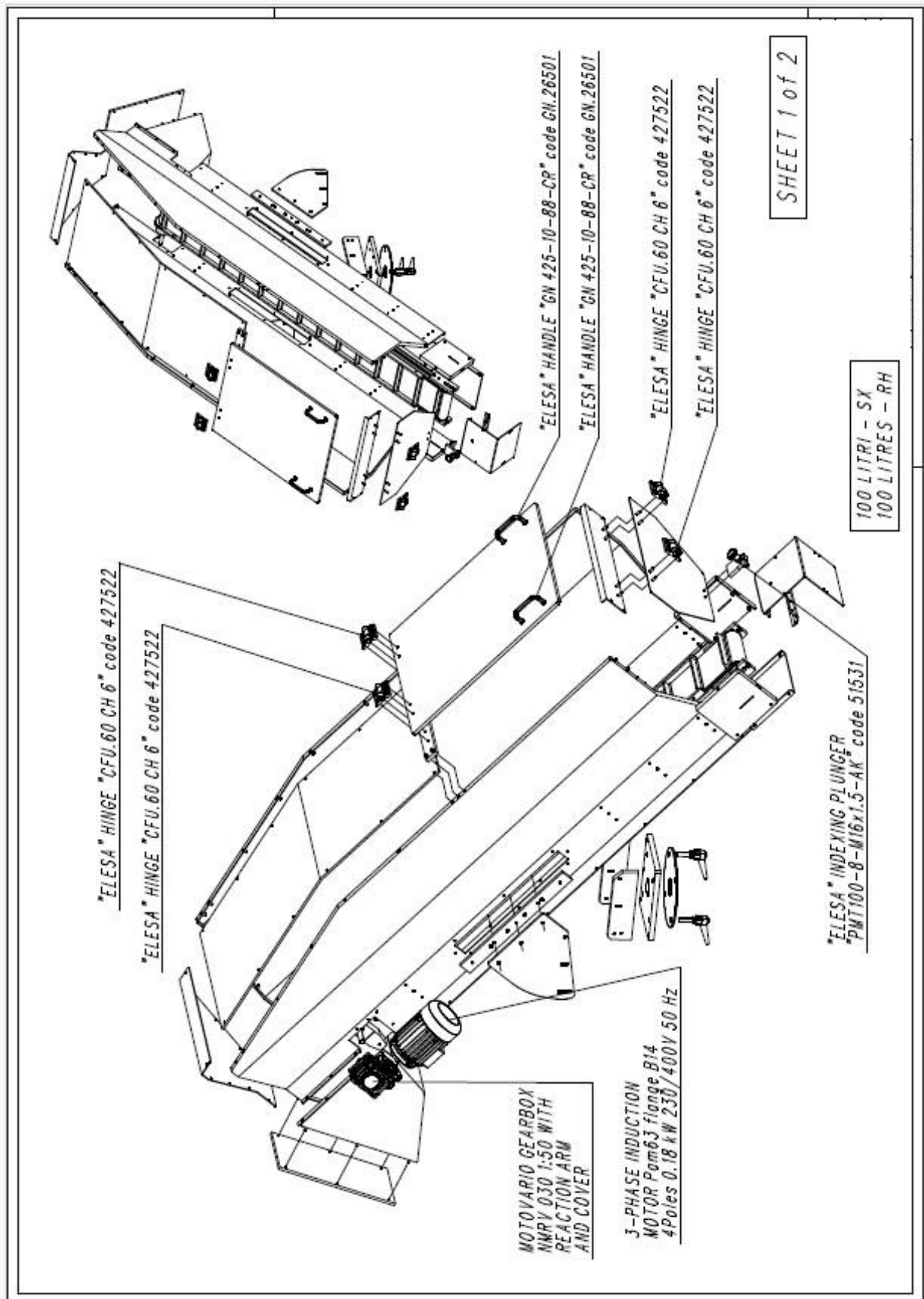
Hopper 100 litres right



MOTORISED HOPPERS 50L / 100L / 150L

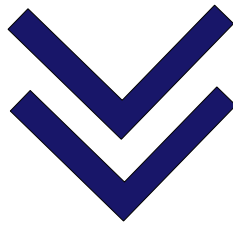


Hopper 100 litres left

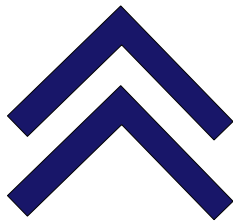


ars
automation





ATTACHMENTS



MOTORISED HOPPERS
50L / 100L / 150L



9. ATTACHED DOCUMENTATION

The documents below will be inserted at the end of this manual.

DESCRIPTION	
1	Partly completed machinery layout
2	Declaration of incorporation
3	Commercial components manuals