



# SANDING DRY MACHINES FALSTAFF GM06-STIFFELIO GM11

**SERIAL NUMBER:  
SEE IDENTIFICATION PLATE**

## **INSTRUCTIONS FOR USE AND MAINTENANCE**

**LANGUAGE: ENGLISH  
EDITION 0.0  
YEAR: 2016**



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## INTRODUCTION

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The Manufacturer is in no way responsible for any consequences resulting from incorrect operations performed by the User.

## NOTE

This documentation is specifically aimed at technicians and, therefore, some information can easily be inferred from the reading of the texts and the examination of the drawings may not have been further specified.

The Manufacturer is in no way responsible for the consequences of any incorrect operations performed by the User.

## GENERAL CONSIDERATIONS

All the operating and maintenance instructions as well as the recommendations described in this manual must be followed.

For getting the best results, the Manufacturer recommends that you perform regular cleaning and maintenance to keep your machine in top condition.

It's particularly important the training of personnel responsible for the machine, so with regard to its use as well as its maintenance and the monitoring of the compliance with the operating procedures and all the safety rules in this manual.



### ATTENTION

**BEFORE YOU STARTING UP THE MACHINE, CAREFULLY READ THIS  
MANUAL AND FOLLOW THE INSTRUCTIONS BELOW.**

**KEEP THIS MANUAL AND ALL THE DOCUMENTS ENCLOSED IN A KNOWN  
PLACE, ACCESSIBLE TO ALL USERS  
(Operators and Maintenance Personnel).**

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## 1 Identification of the machine

### 1.1 Identification data of the Manufacturer

#### MANUFACTURER

GECAM s.r.l.

#### HEADQUARTERS AND CONTACTS

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tel. +39 0521-798353 fax +39 0521-799505

[www.gecam.com](http://www.gecam.com)

[gecam@gecam.com](mailto:gecam@gecam.com)

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### 1.2 Identification data of the model

#### MACHINE

DEBURRING MACHINE

#### MODELS

GM06-GM11

#### SERIAL NUMBER

SEE IDENTIFICATION PLATE MACHINE

#### CUSTOMER

.....

#### MANUFACTURE YEAR

SEE IDENTIFICATION PLARE MACHINE

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This manual contains information and drawings owned by the GECAM s.r.l.

The production, even partial, of this manual without the written permission of the GECAM s.r.l. is prohibited.

### 1.3 Identification plates

The CE plate that shows the identification data of the machine is fixed on the machine.



PHOTO 1-1

The plate that shows the electrical data of the machine is fixed on the inside the electric cabinet.



1.4 Declaration of conformity (FACSIMILE)



EC DECLARATION OF CONFORMITY  
(Annex IIA DIR. 2006/42/EC)

THE MANUFACTURER

Gecam s.r.l.

Via M. Sacchi 3 Vicofertile

43126

Parma

Parma

Italy

AUTHORIZES THE PREPARATION OF THE TECHNICAL FILE

PABLO GIOVAGNOLI

Via M. Sacchi 3 Vicofertile

43126

Parma

Parma

Italy

IT DECLARES THAT

DEBURRING MACHINE

GM.....

Serial number: .....

Manufacture year: .....

Trade name

DEBURRING AND FINISHING MACHINE

COMPLIES WITH THE FOLLOWING DIRECTIVES

Directive 2006/42/CE of European Parliament and Council of 17 May 2006 referred to machines and modifications of directive 95/16/CE.

Directive 2014/35/EU of European Parliament and Council of 26 February 2014 on the harmonization of the Member States relating to the making available on the market of electrical equipment intended for use within certain voltage limits – LVD (=Low Voltage Directive)

Directive 2014/30 / EU of the European Parliament and of the Council of 26 February 2014 on the harmonization of the Member States relating to electromagnetic compatibility – EMCD (=Electromagnetic Compatibility Directive).

Applied tuned rules:

EN ISO 12100; EN 60204-1; EN ISO 13849-1

Parma, \_\_\_\_\_

Gecam srl  
Camisa Alessandro







## 2 Description of the instructions for use

### 2.1 Purpose of the manual

The purpose of this manual is to promote a safe and proper use of the machine.

Please comply with the following guidelines:

- Read and understand all the instructions in the manual before installing the machine and put it into operation.
- The instructions in the manual are able to carry out their task to the extent that they are in close proximity to the machine Operator. Therefore, make sure that the User always remains in the immediate vicinity of the machine.
- The specifications and drawings published here are and remain the exclusive property of the GECAM S.r.l. It is forbidden the reproduction and dissemination to third parties even if only partial.
- This manual is an integral part of the machine and it is recommended its storage, in the case you need consultation. Please note that, when the machine has been sold to third parties, the manual must be delivered to the new owner.
- The machine is tested at our factory to check the proper operation of the electrical system and all the mechanical parts. The final test will be performed after the installation at the Customer company.
- The terms of contract and warranty are shown in the sales contract. The warranty is void if parts are replaced with other that do not comply with the data sheets of the GECAM or if some drawing parts are not provided by the Manufacturer and if the machine is operated and maintained by procedures other than those specified in this manual.
- To highlight important information for the safety and general type information for the correct operation of the machine, the manual shows the following symbols.

	ATTENTION:	Accident prevention rules for the Operator
	WARNING:	There is the possibility to damage the machine and/or its components.
	CAUTION:	Important information regarding the current operation.
	NOTE:	It provides useful information.



**The GECAM S.r.l. accepts no responsibility for operations performed on the machine with procedures other than those specified in this manual and for operations not described in this manual.**



**It is not allowed to operate in the event of doubt on the correct interpretation of the instructions.**

**If translations into the language of original instructions are not clear or errors, please call the manufacturer directly with reporting, without using the machine.**

Gecam srl of rule provides a copy of the electronic file with the manual of this machine onto your usb stick and place in the electrical panel. This manual will serve for all transactions related to the life of the machine. All dimensions indicated here Gecam srl can change at any time without notice. Gecam srl reserves the right to update or modify one or more chapters and/or sections of the manual without being obliged to apply such updates and/or changes to manuals of machines already installed.

## 2.2 Structure of the manual

This manual is intended for operators and specialized personnel in order to allow a correct use of the machine.

Inside of the manual, the Operator finds:









- a functional description of the machine and all its parts;
  - the instructions and directions to make the adjustments during the set-up and start-up;
  - the instructions and guidelines for the proper scheduled maintenance;
  - the instructions and directions to put attention on the most elementary rules of safety and accident prevention.
- The Operator will thus have to know the issues related to the machine and the product being processed.





OPERATOR	CHAPTERS OF THE MANUAL THAT THEY MUST KNOW
<b>INSTALLER</b>	<ul style="list-style-type: none"> <li>➤ DESCRIPTION OF THE INSTRUCTIONS FOR USE</li> <li>➤ MACHINE DESCRIPTION</li> <li>➤ TRANSPORT AND INSTALLATION</li> <li>➤ SAFETY AND ACCIDENT PREVENTION</li> <li>➤ CONTROLS AND USE</li> </ul>
<b>OPERATOR</b>	<ul style="list-style-type: none"> <li>➤ DESCRIPTION OF THE INSTRUCTIONS FOR USE</li> <li>➤ MACHINE DESCRIPTION</li> <li>➤ SAFETY AND ACCIDENT PREVENTION</li> <li>➤ CONTROLS AND USE</li> </ul>
<b>MAINTAINER</b>	<ul style="list-style-type: none"> <li>➤ DESCRIPTION OF THE INSTRUCTIONS FOR USE</li> <li>➤ MACHINE DESCRIPTION</li> <li>➤ SAFETY AND ACCIDENT PREVENTION</li> <li>➤ CONTROLS AND USE</li> <li>➤ MAINTENANCE</li> <li>➤ SPARE PARTS</li> </ul>

## 2.3 Personal Protective Equipment

The Operators in charge of the operation and maintenance should wear work clothes with possibly with elastic sleeve cuffs and personal protective equipment in accordance with the applicable laws and safety standards in force in the Country of use.

Below please find the following symbols that are used in later chapters, for the identification of the devices to be used in carrying out the activities described.

SYMBOL	DESCRIPTION
	Use protective glasses
	Use protective respiratory devices
	Use a helmet with visor
	Use a protective shield
	Use work gloves
	Use shoes for work
	Use protective clothing
	Use earmuffs

SYMBOL	DESCRIPTION
	Use a protective helmet
	Check for the proper operation of the guards
	Carefully read the manual before any operation
	Disconnect the power supply before any maintenance work

## 2.4 Updating process

This manual reflects the state of the art at the time of marketing.

Where it is necessary to change the contents of the manual, the GECAM Srl will send the customer the technical documentation update.

### 3 Machine description

The sander machine has been designed and built to perform deburring and satin finish (in different degrees of finish) obtained with the tool changer (=WORK UNIT) on the surface of metal parts plans, manually loaded on the machine by the Operator, in compliance with applicable safety regulations in Europe (machinery Directive 42/2006 / EC and following updates).

The sanding machine is composed by:

- a painted steel frame
- the engine with the relative movement of the pulleys and drive belts to the upper tools of the WORK UNIT ABRASIVE BELT.

The motors are equipped with brakes, which allows the immediate stop in case of end processing or emergency.

- The speed reducer with the up-down movement of the catenary of tape transport of the work pieces.
- The work plane (= BELT CONVEYOR) in addition to the longitudinal rotational movement of advancement of the work pieces, with variable speed by inverter, also possesses a vertical movement of ascent / descent, with a worm screw gear motor. It 's also the relief of the tape position by means of a digital display, which indicates the front passage opening for the access to the workpiece WORK UNIT ABRASIVE BELT, equal to the thickness of the workpiece to be machined, by means of the synchronized movement of two support coupled with trapezoidal screws for model GM06 or two support coupled with trapezoidal screws for model GM11.

The conveying belt pieces has a centering system with pneumatic automatic tensioning.

- The tooling area of the work unit is accessible from the top left side of the door frame (with the observer standing in front of the electrical panel) and allows the installation of the following tool group:

#### **R = UNIT ABRASIVE BELT deburring or satin finish. ,**

It 's also present, a pneumatic control system of the abrasive belt pressure on the workpiece (= grit set). Device support and locking device of the working units abrasive belts, for their replacement as a result of wear.

System of centering the abrasive belt with electronic reading photocell presence and microswitches for transverse tilting adjustment of the same tape.

Sled device for the insertion and the extraction of the brushes work units.

- The pneumatic system at the top inner right part of the frame.
- The electrical cabinet with the control panel, including the emergency button, the front and upper position of the machine.
- The predisposition of connection to the suction unit powders, on top part of the machine frame.

### 3.1 Technical data

#### MACHINE

DEBURRING

#### MODELS

GM06-GM11

#### SERIAL NUMBER

SEE IDENTIFICATION PLATE MACHINE

#### ENVIRONMENTAL OPERATING FEATURES

TEMPERATURE

MIN: 5°C - MAX: 40°C

RELATIVE HUMIDITY

≤ 50% a 40 °C

#### ELECTRICAL FEATURES

POWER SUPPLY VOLTAGE

SEE IDENTIFICATION PLATE MACHINE  
V ±10%

FREQUENCY

SEE IDENTIFICATION PLATE MACHINE  
..Hz ± 2%

AUXILIARY ITEM VOLTAGE

SEE IDENTIFICATION PLATE ELECTRICAL PANEL  
..V DC

RATED CURRENT

SEE IDENTIFICATION PLATE ELECTRICAL PANEL  
..A

FULL LOAD CURRENT

SEE IDENTIFICATION PLATE ELECTRICAL PANEL  
..A

SHORT-CIRCUIT CURRENT

SEE IDENTIFICATION PLATE ELECTRICAL PANEL  
..kA

ELECTRICAL DIAGRAM

SEE ANNEX

POWER INSTALLED

SEE IDENTIFICATION PLATE MACHINE  
..kW

#### PNEUMATIC SUPPLY

COMPRESSED AIR PRESSURE

6 bar



#### CAUTION

If the machine is placed in a reverberant environment or in the presence of other sources of noise and the level of daily personal exposure is greater than 80 dB (A), there is a noise risk for the Operator. In this case, the Customer must provide personal protective equipment (=Dpe) to the Operator in accordance with the law of the Country in which it operates.

<b>TECHNICAL DATA MACHINE</b>	<b>GM06</b>	<b>GM11</b>
Working width (mm)	650	1100
Workpiece thickness min./max. (mm)	0,5-120	0,5-120
Workpiece width min (mm)	45	45
Workpiece width max. (mm)	650	1100
Recomended piece length min. (mm)	195	210
Commutator diameter exhaust hoods (mm)	150	150
Minimum air flow speed (m/sec)	25-30	25-30
Intake air flow (m <sup>3</sup> /h)	2500	4000
Machine weight * (kg.)	610	860
Max weight piece on the conveyor belt (kg.)	100	250
Sound pressure level [db(A)]	<78	<78
<b>ABRASIVE BELT GROUP "R"</b>		
Width (mm)	670	1120
Development (mm)	1524	1524
Usable abrasive grain	24-2000	24-2000
Contact roller diameter sanding belt (mm.)	125	150
Tape rotation speed (m/sec)	13	11,5
Motor power sanding belt (kW)	5.5	11
<b>SEE DATA PLATE ENGINES</b>		
<b>CONVEYOR PARTS</b>		
Feed rate speed workpiece (m/min)	2-8	2-8
Power advancement (kW)	0,37	0,37
Lifting power (kW)	0,11	0,11
<b>PNEUMATIC SYSTEM</b>		
Compressed air consumption machine (nl/min.)	5	15

\* = Data regarding weight of machines are approximate. Refer to the values on the rating plate installed on the machine.

It's forbidden to:



- use materials that give rise to rupture in the event of harmful and/or dangerous gas fumes;
- work pieces and using abrasive belts with different dimensions from those indicated;
- replace or modify the speed of the machine components;
- change the machine cycle;
- replace aftermarket with parts are not original;
- modify the electrical connections to be able to rule out the safety devices;
- remove or modify the protective casing;
- use the machine in an explosive environment or aggressive atmosphere.



A different use of the machine or the manipulation of a product that is not suitable for weight or size, would not only reduce the performance and reliability of the machine, but would affect its safety characteristics.

Modifications not authorized by the Manufacturer or use in conditions different from those mentioned would similarly adversely affect the safety of the machine and are therefore forbidden.

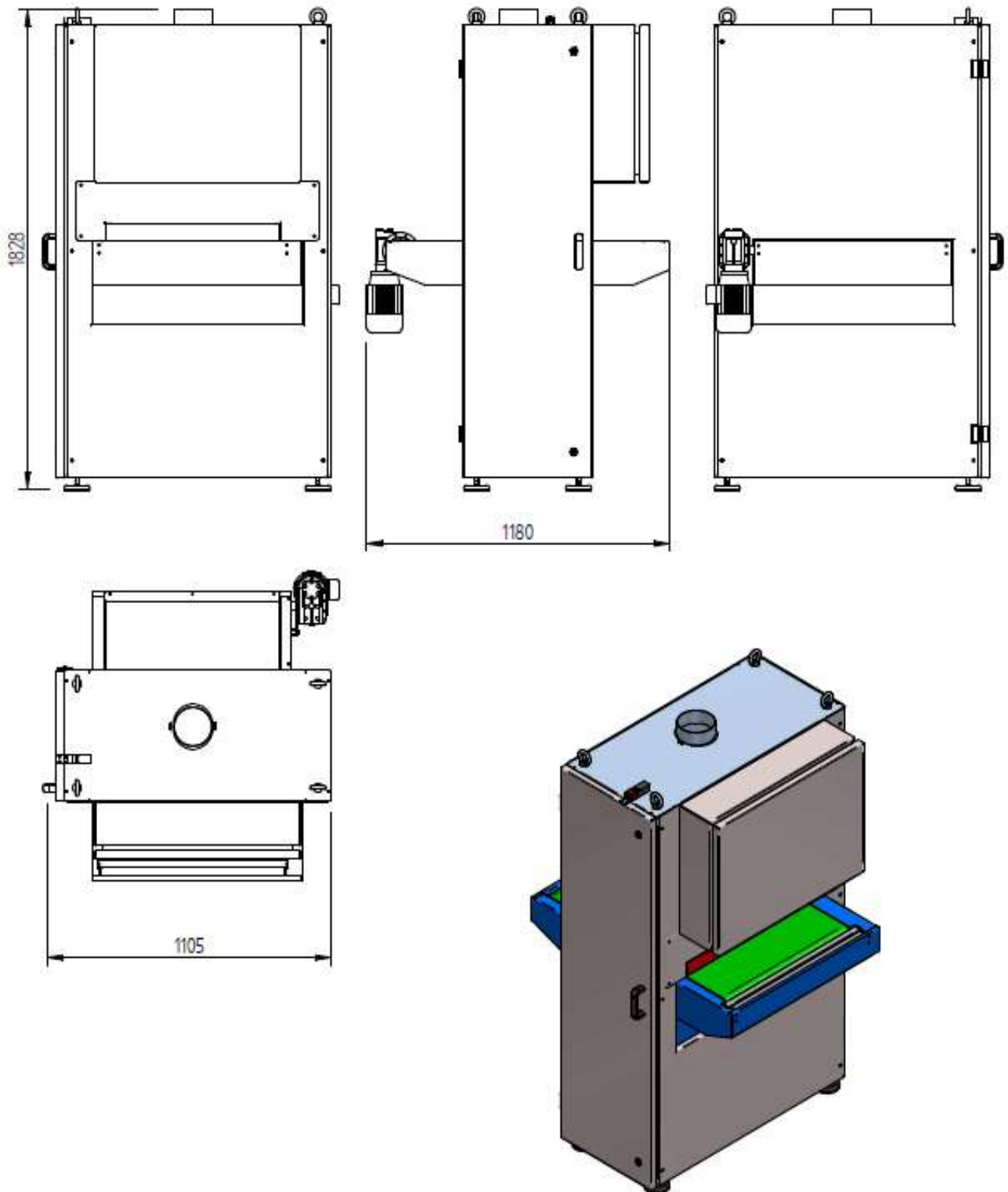


**IT IS OBLIGATORY TO CONNECT THE MACHINE TO A FILTRATION SYSTEM FOR FINE METALLIC POWDERS, BEFORE TO HER COMMISSIONING.**



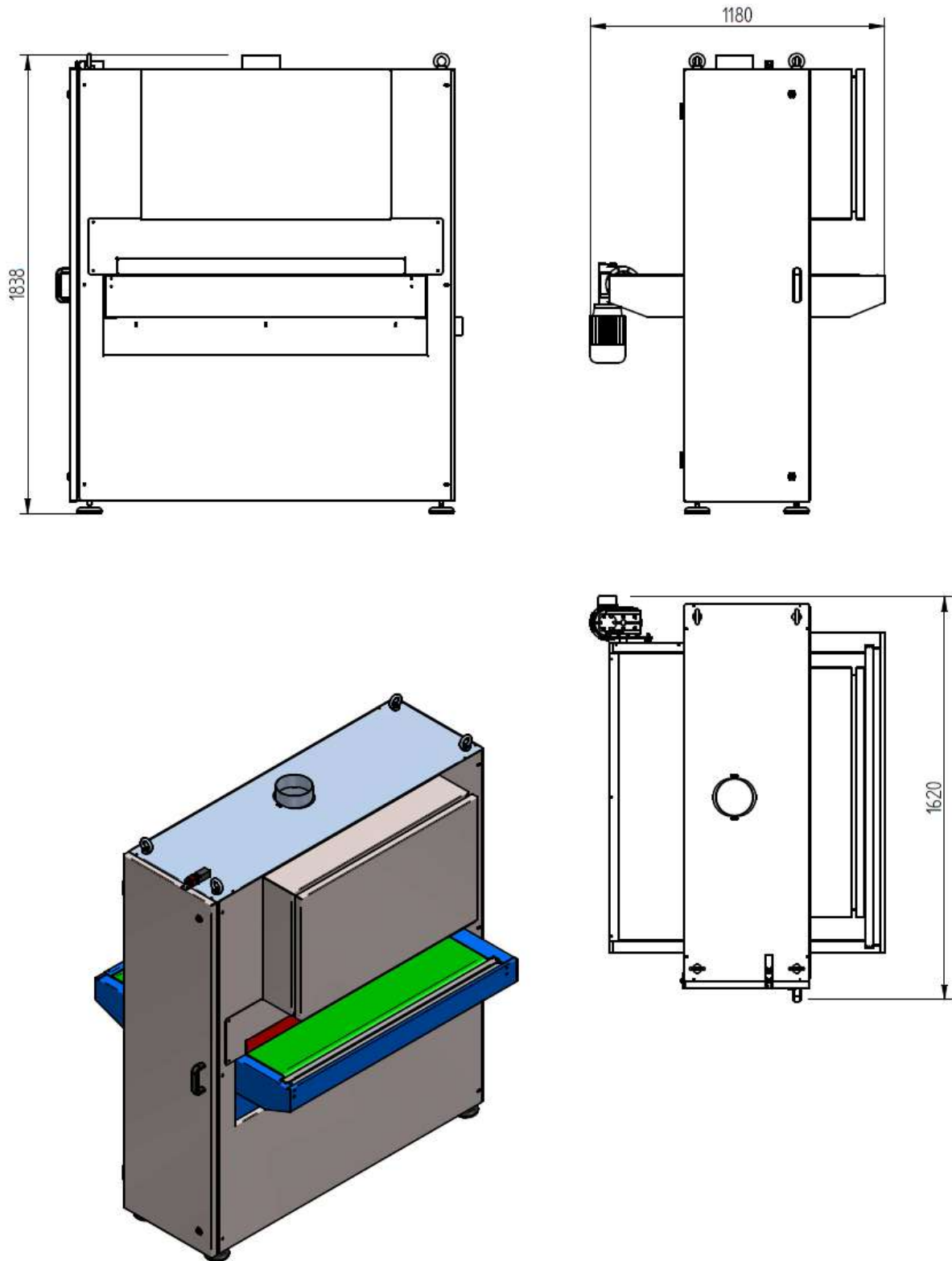
### 3.2 Overall dimensions

#### DEBURRING GM06



PICTURE 3-1

DEBURRING GM11



PICTURE 3-2

### 3.3 Components of the machine

The machine is made of the following main components (PHOTO 3-2):

1. Frame
2. Lateral protection right fixed
3. Lateral protection left mobile
4. Up-down workpiece conveyor belt group
5. Conveyor belt workpieces
6. Motorised WORK UNIT ABRASIVE BELT
7. Socket for metal powders suction
8. Electrical panel
9. Pneumatic panel
10. Use and maintenance manual on USB stick, housed inside the electric cabinet with copy wiring diagram.



FRONT VIEW

PHOTO 3-3



LEFT SIDE VIEW

PHOTO 3-4



9

PHOTO 3-5



RIGHT SIDE VIEW

PHOTO 3-6

### 3.4 Electric system

The plant is provided with an electrical panel installed on the machine, complete with a front panel where they are mounted all the control devices of the machine during normal operation, emergency situations and for maintenance.



**Caution: always remember that when opening the Control Panel on the electrical panel (position "0-OFF" of the door interlock switch), it remains supply voltage to terminals, upstream from the component itself.**

For more details refer to Chapter 6 and the wiring diagram.

### 3.5 Pneumatic system

The machine is equipped with a filtering circuit, pressure regulation, pressure gauge and distribution solenoid valves of the compressed air, to feed the pneumatic cylinder tensioning of the WORK UNIT ABRASIVE BELT, of transport of the tape tensioning work pieces, for the oscillation of the abrasive tape and the cylinder for the cylinder grip exclusion roll of abrasive tape contact. The compressed air circuit is powered by the distribution network of the Customer's premises to a pressure of 6 bar.



**ATTENTION: In case of emergency stop, the pneumatic circuit which powers the cylinder remains under pressure to keep in tension the sanding belts.**

For more details refer to chapter 7 and the pneumatic diagram attached.

## 4 Transport

### 4.1 Connections by the Customer

Without prejudice to any other contractual agreements, it is normally charged to the customer the preparation of:

- premises (including building works, such as foundations or ducts that may be required, etc.).
- electrical systems up to the supplying point of the machine, in accordance with the rules in force in the country of installation and/or requested by the Manufacturer of the machine;
- auxiliary services adapted to the needs of the machine (such as compressed air network, dust extraction and filtration, etc.).
- any security devices upstream and downstream of the lines supplying energy (such as circuit breakers, grounding systems, safety valves, etc.) under the laws in force in the country of installation;
- tools and consumables needed for the assembly and installation;
- appropriate means of lifting and handling equipment.

### 4.2 Transporto and handling



#### ATTENTION!

**The company GECAM S.r.l. is not liable for damages to property or persons due to accidents caused by failure to follow the instructions in this and subsequent chapters.**



**During the operations described below, the personnel should wear personal protective equipment: helmets, gloves, safety shoes, overalls.**



#### 4.2.1 Transport modes

The machine's weight varies depending on the model and its configuration. The values indicated in the technical data table are approximate. Always refer to the data plate installed on the machine. To transport the machine is positioned and fixed on a wooden stand or wooden crate, of suitable size. Check the weight of the machine indicated on nameplate. The transport of the machine may only be performed by qualified personnel. During transport it should be careful to always use the most suitable lifting means (example: crane, crane, forklift, forklifts) and no one will have to transit through or standing in range of that operation. Specific signs are affixed on the machine, indicating the possible coupling positions for lifting and handling in the same (eye bolts and insert forklift forks areas).

On the machine they are affixed specific signs, which indicate the possible attachment positions for the lifting and the handling of the same (eyebolts and zones insertion forks of the forklift).



**Upon receipt of the machine, check that there are no missing parts, comparing the supply with the pieces indicated in the transport document, and that the order specifications have been met.**



**Check that the machine components have not been damaged during transport.**

**If you discover damage or missing parts immediately inform, in detail, the GECAM S.r.l.**

#### 4.2.2 Unpacking

1. The packaging is an integral part of the supply and is not withdrawn, so the disposal of that is paid by the Buyer.
2. After delivery, check immediately for any damage to the packaging.
3. In the case of damages, leave the packaging in question in the state found and obtain immediate assessment of the damage by the shipping responsible company, then communicate the damage found to the competent transport insurance company with a certificate of failure and to the store.
4. If the machine is delivered on a pallet or a wooden crate with any protective thermo-retractable cellophane, initially remove any cover or packaging.
5. To free up the machine completely, remove the screws and metal strapping.

#### 4.2.3 Storage

If the machine is not installed immediately, store it in an environment having the following characteristics:

##### ENVIRONMENTAL FEATURES FOR THE STORAGE

TEMPERATURE	MIN: -10 °C - MAX: 70°C
RELATIVE HUMIDITY	MIN:25% - MAX: 85% -



**Do not expose the machine to the weather.**



#### 4.2.4 Lifting and handling



The lifting, handling, transportation and unpacking of the components must be entrusted only to personnel who are familiar with this type of operations (slingers, crane operators, forklift drivers, etc.) and that is supported by staff who are familiar with the machine.



The staff must comply with the following general rules:

- get away from the load prior to lifting and lowering;
- do not stand under suspended loads;
- keep away people extraneous to the works.

If you need to drive the load during lifting, use appropriate tools to still maintain safe distances from the raised items.



**Neglecting these precautions may result in serious damage or injury!**



Lifting must be performed continuously (pulse-and tear-free).

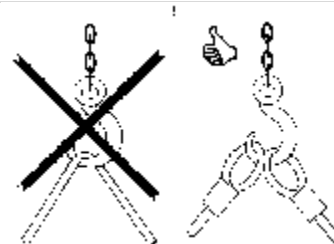
Keep the load as low as possible while handling it, for better stability of the load and for greater visibility.

Make sure that all the items that can change position during transport are securely fastened to avoid dangerous changes or accidental dropping of parts.

Procedure:

STEP	DESCRIPTION
1	Unscrew machine from pallet
2	Lift machine by forklift
3	Be careful when you put the machine on the ground because when lifting it is not perfectly horizontal

If you are using steel cables, always place the eyelet below the lifting hook as shown.



PICTURE 4-1



**ATTENTION:**

When lifting with slings or ropes, make sure the angle formed with the anchor eyelet plan is greater than 45°.



PICTURE 4-2



## G6-G11-G13

Procedure:

STEP	DESCRIPTION
1	Fasten using the special Eyebolts the ropes or bands adapted to the weight of the machine.
2	Start lifting being careful not to trigger swinging of the load.
3	Be careful when leaning the machine on the ground, when the machine it is not perfectly horizontal.

PHOTO 4-3



PHOTO 4-4

The machine can be lifted with a forklift: the points at which to insert the forks are designated with the letter B .

## 5 Installation

### 5.1.1 Installation area

- The machine must be placed in a covered premise, protected from direct contact with the weathering.
- The area for the installation and the access roads must be prepared freeing them from bulky materials or machines to be installed
- It's required for the installation to prepare an area suitable to the size of the machine and lifting equipment used, paying attention to any obstacles (other machines, walls or the like) along the way of the handling equipment.
- The installation must be in accordance with the layout agreed with the Manufacturer.

The place of installation must:

- be equipped with escape routes for emergencies;
- having a well leveled floor adapted to support the weight of the machine;
- have space on the sides enough to extract the abrasive belt.

The machine must be illuminated in accordance with the local laws and regulations in force.

### 5.1.2 Positioning

The work area must be provided with adequate space to feed and unload the machine according to the type of work to be done. You will have to provide enough space to open and remove the lateral doors, do the inspections, the change of equipment (WORK UNIT) and maintenance as described in this manual (see layout dimensions).

STEP	DESCRIPTION
1	Bring the machine on the pallet used for the transport as close as possible to the area of installation.
2	Stop the machine in the manner specified in the previous section.
3	Place the machine at the point indicated by the layout.
4	Fixed the machine, level it using the feet with the registry.



All feet must lie regularly on the floor.

## 5.2 Connections

For the commissioning of the machine, the necessary connections and links to the following shall be insured:

1. electrical connection
2. pneumatic connection
3. dust extraction and filtering system connection



PHOTO 5-1

The User must guarantee the characteristics of connection requested from Manufacteur.

## 5.2.1 Electrical connection



**For more details, refer to the wiring diagram enclosed.**



**All connection operations to the mains shall be made with the power line de-energized and by qualified and authorized staff explicitly, in full compliance with the regulations .**

**WARNING ELECTRIC SHOCK DANGER : with door interlock switch on position "0-OFF " is still present the voltage on upstream terminal of that component.**

- Check that the data on the plate of the control cabinet, related to the supply voltage, correspond to those in use at the plant.
- Refer to the wiring diagram which details all the features required for the correct supply of the electrical panel.
- It's essential the grounding of adequate section to protect the Operator from accidental contact with metal parts of the machine, conductors and live parts.
- Control the quality of the connection of grounding with the proper tool. An incorrect or ineffective connection missing of the circuit grounding is contrary to the rules of safety; it can be dangerous and can damage electronic equipment of the machine.
- The cables used to provide electrical energy must be of sufficient size and the insulation must be suitable for the voltage and temperature related to the device (see the wiring diagrams).
- For this sizing, read the general data of the machine and the max. power requested.
- To avoid fire hazard, use only fuses of suitable type and voltage. The fuses are specified in the appropriate parts list and in the wiring diagrams supplied.
- It's forbidden to wash the live electrical equipment.



**In conditions of particular danger is required the intervention of two Operators.**

### 5.2.2 Pneumatic connections



For more details refer to the wiring diagram pneumatic attached.



**All operations on the connection to the compressed air network shall be carried out with the power line without pressure and by qualified and authorized Staff, in full compliance with the regulations in force.**

The compressed air must be supplied by the factory's distribution network to a pressure of 6 bar.

The main line of the power supply to the machine is provided with a shut-off tap which allows the discharge of the pressure in the system and can be locked with a padlock (not included).

Ensure at the outset that in the compressed air delivery system there isn't condensation of water and/or impurities.

### 5.2.3 Aspiration of the metal powders in the work area

There is a connection point for external suction system supplied by us or Customer supply centralized.



**Before using the machine must be OBLIGATORY connected to the aspiration system of metallic powders.**

### 5.3 Commissioning of the machine

Before the first commissioning or after longer periods of stop, follow these steps:

STEP	DESCRIPTION
1	Check all lubrication points machine and if necessary lubricate them.
2	Check the operation of all safety devices.
3	Check the operation of the electrical items.
4	Test the machine.

**The first electrical tests are those that require the utmost attention and therefore must be performed by qualified personnel.**

**During their execution, take care that there are no people who work nearby or who have free access and therefore can arm or disarm voltage on the circuit under test.**



**Remember to apply the warning signs MANUTENZIONE IN CORSO / WORK IN PROGRESS provided at points where there is a possibility of sudden movements or maneuvers and let the staff know that you are performing the electrical testing.**

**Ask permission to the Manager for powering on the machine.**

### 5.4 Reinstalling



**The disassembly/reassembly for any reinstallation of the machine must be carried out after informing the GECAM S.r.l..**

## 5.5 Demolition and disposal of the machine

Please follow the procedure below:

STEP	DESCRIPTION
1	Unplug the machine from the power supply, all fluids and aspiration on the metal powders.
2	Dismantle the machine grouping the components according to their chemical nature.
3	Proceed to scrap in compliance with the laws in force.

## 5.6 Waste

Waste is any substance and object deriving from human activity or natural cycles, abandoned or destined to be abandoned.

### 5.6.1 Special waste

They are considered a hazardous waste:

- residues from industrial, agricultural, crafts, trade and service businesses which, in quality or quantity, are declared similar to municipal waste;
- deteriorated and obsolete machinery and equipment;
- motor vehicles and their parts out of order.

### 5.6.2 Toxic and dangerous waste

Toxic waste are considered all waste containing or contaminated by the substances indicated in specific laws or regulations of the country where the machine is installed.

Temporary storage of toxic and hazardous waste is allowed according to the expected disposal of the same by the treatment and/or permanent storage. In each case, laws of the country of the user must be observed to protect the environment.

The fixed and mobile recipients, designed to contain toxic and hazardous waste must possess adequate strength requirements in relation to the physico-chemical properties and the hazardous characteristics of the waste contained.

The containers in which products or hazardous or noxious materials are stored must, in order to disclose the nature of their contents, bring signs and markings.

### 5.6.3 Disposal of waste

The waste products must be disposed of in accordance with the laws of the country in which the machine is installed.

The disposal of the packing must comply with the regulations in force in the country of use, separating the various materials according to the following typology:

- metal strips, nails and metal parts;
- wooden planks and plywood;
- plastic materials (protective covers, protective barrier bag).

#### **5.6.4 Waste disposal for demolition/maintenance of the machine**

The waste products produced during demolition/maintenance of the machine must be disposed of in accordance with the laws of the country in which the machine is installed.

The substances produced are usually the following:

- lubricants, to be disposed of as prescribed by law, as the body responsible for inspection and subsequent recording of demolizione
- recovery materials (motors, reducers, pneumatic components, electrical components),
- plastic and rubber materials (air pipes, gaskets, fittings, handles, levers, shrouds, hinges, guide, tape, rollers, belts, etc.)
- painted steel (base, shelves, strengthen protections, sledges, work unit)
- stainless steel bearing
- galvanized steel (feet, bolts, brackets, rings, rods, slides, levers, etc.)
- brass (locks, fittings)
- Bronze (support for trapezoidal threaded screws)
- ceramic coating (feedback microswitches for buckling sanding belt)
- aluminum (distributors, plates, panels, rivets).

The polluting materials should be disposed of following the directions contained in the laws of the country of use of the machine.



## 6 Safety and accident prevention

### 6.1 Safety warnings



**Read this chapter carefully before proceeding to the start-up, use and maintenance or other work on the machine.**

The Manufacturer declines all and any responsibility for non observance of the safety and accident prevention regulations described hereafter. It also declines all and any responsibility for damage caused by an improper use of or for modifications made to the system.

The safety devices installed by the Manufacturer of the machine are only the basis for accident prevention.

The primary responsibility for the proper operation of the machine is the Company Owner and Operators in charge of maintenance, repair and execution of other work on the machine.

The Owner of the Company must ensure that:

- the people involved know their job well and are informed about safety.
- safety standards are met and are applied in the various working departments.



**All control, adjustment and maintenance operations must be performed with the following conditions:**

- **MACHINE "0-OFF"**
- **CURRENT OFF**
- **EMERGENCY STOP BUTTON PRESSED.**

When using maintenance equipment, adopt all necessary safety precautions to reduce the risk of possible injuries. Before using the machine, it will therefore be necessary to carefully read and remember the following safety standards:

- Keep the work area clean and tidy. Accidents are more likely to occur in untidy areas or environments.
- Carry out repairs, or have qualified personnel carry out repairs, with equipment complying to standards.
- Any check, verification, cleaning and maintenance operation, change or substitution of parts must be carried out with the machine turned off. Make sure that the power has been cut off from the main panel.
- Do not remove and/or open safety and protection devices while the machine is running. .
- Do not feed voltage to the machine by tempering with the main switch and the safety devices.
- When for certain operations it is necessary that the electric current is supplied, check that they are inserted or enter the appropriate safety devices.
- Insert the electric current only for the time strictly necessary, and with the utmost care for the people and for the machine.
- **During the repair work, the disarming operation of the safety devices must be performed only by qualified personnel, who will pay particular attention to avoid personal injury or machine damage. In case of repair or replacement of organs of security, it is indispensable to re-test the circuits on which you intervened.**
- Do not clean the electrical components with water or other fluids.
- The machine must be used by qualified personnel judged suitable and trained to carry out the work in a reliable way.
- The machine should be used only for the purpose for which it was manufactured, as specified by the proposed conditions of use.
- **Technical changes that affect the operation of the machine must only be carried out by staff of the Manufacturer or with its approval.**
- For the operation of the machine, it is scheduled the presence of an Operator, which takes the occurrence of faults under control.
- Before starting up the machine, the Operator must ensure that all safety devices are efficient.
- In case there are some faults, especially those which affect the safety, the Operator must inform his/her Supervisor or the person who takes his/her place at the end of the work shift.
- If the defects found compromise the safe operation of the machine, it must be stopped.



**Before performing work on the machine, always communicate your intentions to other Operators involved in the operation.**

The Manufacturer declines any liability on unauthorized changes and the damage they cause.



**The personnel in charge of the lifting and installation of the machine will have to follow the steps with the utmost caution to prevent damage to persons or property.**

**All operations of connection to the electrical network or other energy sources should be carried out with the power line without tension and/or pressure by qualified and authorized personnel.**

**During the installation, use and maintenance of the machine do not wear rings, watches, jewelry or dangling clothing, such as ties or blouses with open zipper that could get caught in the moving parts. Long hair should be collected in suitable retinas.**

In this chapter, with reference to safety, you will make use of the following terms:

TERM	DESCRIPTION
<b>SPECIALIZED OPERATOR</b>	person in charge of installation, operation, adjustment, maintenance, cleaning, repairing or transport of the machine
<b>EXPOSED PERSON</b>	any operator who is wholly or partially in a danger zone
<b>DANGER ZONE</b>	any zone within and/or around a machine in which a person is exposed to risk of injury or damage to health; here also the "point of control in an emergency situation" and "the station for maintenance" are included.
<b>CONTROL AREA</b>	any area where the Operators can perform the command and control of machine functions, by acting on the control panels.
<b>WORKING AREA</b>	any area where the Operators can pause during the startup and normal operation. From these areas, you may also intervene rapidly in case of need or emergency, always respecting the limits of the duties and procedures of intervention.
<b>GENERIC OPERATOR</b>	non-specialized person that can operate the machine through the use of the commands of the pushbutton and that can load and unload the materials used during the production as well as it can perform simple functions of start-up or recovery following an emergency stop.
<b>MECHANICAL TECHNICIAN</b>	qualified person able to perform the revision of the machines acting on their basic organs; he/she identifies faults and their causes, provides the disassembly of parts and assemblies and their replacement with the aid of technical drawings by performing calibration work, checks and adjustments.

TERM	DESCRIPTION
<b>ELECTRICAL TECHNICIAN</b>	qualified person capable of performing the research and the resolution of the faults by repairing and replacing the damaged parts of the plants and electrical equipment, knowing their operation and interpreting their wiring diagrams.
<b>GECAM TECHNICIAN</b>	qualified person made available by GECAM or its agent to carry out complicated operations

All the operators before starting work, must:

- know the layout and operation of the controls and the features of the machine and must have fully read this manual and the accompanying manuals;
- pay attention to all warning or ban signs on the machine;
- do not wear loose clothing or accessories that can be caught in moving parts of the machine;
- wear personal protective equipment in areas that require it.

**During the operations described below, the personnel should wear personal protective equipment: helmets, gloves, safety shoes, overalls, masks, goggles and ear defenders.**



**ATTENTION!**

**The company GECAM S.r.l. is not liable for damages to property or persons due to accidents caused by failure to follow the instructions in this and subsequent chapters.**

### 6.1.1 General safety warnings

- The machine may only be provided to persons who are physically and mentally capable, to ensure the execution of the task assigned to them.
- The service, maintenance and repair of the machine should never be entrusted to persons who are under the influence of alcohol, drugs or psychoactive medications that may alter the skills and reflexes to operate.
- For operation of the machine, it is provided an Operator. Other persons should therefore keep a safe distance.
- Before starting work, the Operator must check for any visible defects on the safety devices on the machine.
- The people in charge of the machine must be aware of the function of the emergency stop switch and must regularly check its proper operation.
- The Operator must notify his/her Supervisor and at shift change, even to those who succeeded him/her, all the defects, and in particular those of security, found on the machine.
- In the case of incidents that affect the proper operation of the safety devices of the machine, the latter shall be stopped until the resolution of the problems encountered.
- The technical changes that affect the operation or safety of the machine can only be made by the GECAM staff or with the explicit consent of the GECAM. Otherwise, GECAM assumes no responsibility for changes or for damages resulting therefrom.
- Do not operate in any case the controls if you are not allowed and if you do not know their operation.
- During normal working cycle of the machine, do not disable the protective devices for protection and safety.
- If, during the execution of works of installation, maintenance and repair, it is inevitable to disconnect the safety devices, this can be done by authorized persons, who must make sure that personal injury or machine damage do not arise.
- In particular for changing WORK UNITS and for the cleaning, maintenance and repair, wear suitable protective equipment. The clothes must be adherent and resistant to detergents. Depending on the operation to be carried out, wear safety glasses, hearing protection, safety helmet, safety shoes, gloves, masks, goggles, ear defender and and more considered essential by the Responsible of corporate security.
- Do not wear jewelry, rings, necklaces, bracelets etc.. that could become caught in the machine.

## 6.2 Intended, not intended and permitted use

The machine described in this manual is used for grinding metal parts and surface finishing of metal workpieces of various kinds, loaded manually by the Operator.

### 6.2.1 Posto di lavoro

The machine was designed to be operated by a single Operator, positioned in front of the input conveyor work pieces, with the observer placed before the electric cabinet.

The operator must load the pieces to work on the front side input on the carpet of the conveyor belt, then turn perimetrically around the machine, to reach the rear of the tape position, where he leave the machined pieces. To maximize productivity, in the absence of a transport system replacement at the exit of the machine, in function also of the type of processing (grinding or finishing) and the characteristics of the same pieces, it is advisable to use two Operators.



#### **ATTENTION!**

**Any use other than that for which the machine was designed and described in this manual is the cause of risk and is not compliant, so the Manufacturer shall not be liable.**



#### **ATTENTION!**

**It's not provided the possibility of use of the machine under the following conditions:**

- **use in the hazardous environment**
- **use with products that can give rise to explosive fumes or toxic gases.**

## 6.3 Reasonable foreseeable misuse

The machine has been designed so as to avoid risks in all its operational phases (installation, work, regulation and maintenance).

Based on the experience, it's however possible to predict the following misuses:

- using the machine with different dimensions from those tapes and pieces stated in this manual;
- execution of activities (such as commissioning, revision, moving and dismantling of the machine) by unqualified personnel;
- execution of maintenance and/or adjustment by non-equipped with the S required;
- execution of maintenance / adjustment by personnel lacking of the PPE required; tampering with safety devices (switching off use of safety microswitches or their circumvention);
- changes in the components of the machine;
- utilizzo della macchina in modo non conforme a quanto descritto nel presente manuale.

6.4 Working zones, control zones, hazardous areas

POSITION	DESCRIPTION
1	Work area: insertion work pieces on the belt conveyor.
1a	Entrance area pieces inside the machine under to WORK UNIT ABRASIVE BELT. Protection with safety microswitch.
2	Work area: output pieces from the belt conveyor.
3	Hazardous area left side - Replacement tool/UNITS WORK (specific procedure at standstill for replacing the abrasive belt). Access door with safety microswitch.
4	Hazardous area right side- Pneumatic adjustment and engine and transmission WORK UNIT ABRASIVE BELT. Installed fixed protection.
5	Control zone and hazardous area: Electric cabinet with the control panel and in the emergency stop button. Install isolating door lock switch.
6	Hazardous area front lower side: lifting/lowering conveyor motorization workpieces. Installed fixed protection.
7	Hazardous zone rear lower side: lifting/lowering conveyor motorization workpieces. Installed fixed protection.
8	Hazardous area: tension pneumatic device and aligning conveyor belt. Installed fixed protection.
9	Hazardous area: motorized roller conveyor belt. Installed fixed protection..



PHOTO 6-1



PHOTO 6-2





PHOTO 6-3

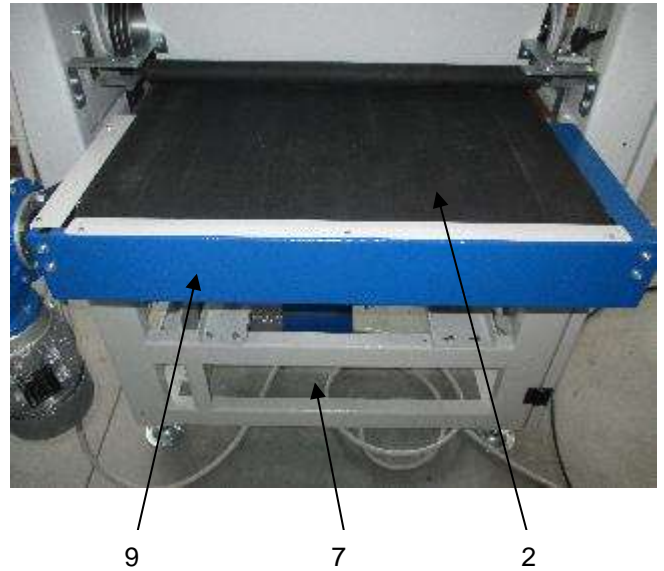


PHOTO 6-4



**In order to prevent the machine is accidentally started during access to hazardous areas, it is recommended to proceed as follows:**

- warn the other Operators;
- press an button **STOP**
- press an button **EMERGENCY**
- ruotare l'interruttore generale in posizione 0-"OFF" and secure it with a padlock (not included in scope of delivery), taking with him the key.
- Affix sign "WARNING: MANUTENZIONE IN CORSO / WORK IN PROGRESS".

## 6.5 Safety devices used

In the design phase, all the dangerous areas have been assessed and the necessary precautions have been taken to avoid personnel risk, equipping the machine with special security devices.



**The intervention of any of the safety devices stops the machine.**

### 6.5.1 General electrical switch

On the electrical cabinet it is mounted the master switch which cuts the electricity to the machine. The switch can be locked with a padlock in the open-switch position ("0-OFF").

The switch must be switched off in the case of:

- electrical danger on the machine or on the electrical panel;
- mechanical intervention on the machine;
- electrical work on the machine.

### 6.5.2 Emergency stop buttons

The machine is provided with an emergency circuit, which causes the safe shutdown of the operation. The intervention of the emergency overrides all other control systems.

The emergency stop buttons can be caused by a red mushroom button (a button located on the front control panel and the other on the rear of the machine. See PHOTO 7-1).

These devices are to be used:

- in case of imminent danger or accident
- with the machine already stopped to ensure the stop maintenance



**The intervention of an emergency stops the machine.**

### 6.5.3 Fixed and mobile guards

There are fixed guards to segregate hazardous areas of the machine.

There are also mobile guards, at the work units, operating devices equipped with interlock switches, which cause an emergency stop, if the door is opened.



**The removal of a fixed protection (in case of necessity) must always be performed by a mechanical technician with the machine stop (main switch in the "0-OFF" position").**





Do not delete the function of electrical or mechanical modifications interlock switches. Never use the machine without the guards (fixed and mobile) mounted and closed.



Opening a safety guard immediately stops the machine.



PHOTO 6-5

Microswitch that stops the machine at the left side door opening.

**Just in case the operator must never attempt to open a fixed and mobile guard during machining required.**

- 1 General electric box door interlock switch (QS1)
- 2 Rear (SE1) emergency button on the machine frame
- 3 fixed guard right side
- 4 mobile guard left side
- 5 fixed guard front lower
- 6 rear fixed guard
- 7 hands guard insertion pieces

FOTO 6-6




PHOTO 6-7




FOTO 6-8




3

### 6.5.4 Accident prevention plates




**The warning labels that perform the safety function must not be tampered with, removed, covered, damaged. They must always be visible and legible.**  
**Failure to comply with this requirement will void the warranty and will involve the full assumption of responsibility by the Buyer.**


**WARNING**  
**Periodically the safety labels must be replaced in order to keep them always legible.**

Here are provided the danger signals (triangular shape in yellow background), prohibition ones (red circular shape) and obligation ones (blue circular shape) that are applied on the machine (FOTO 6-4).

SYMBOL	MEANING
	<b>1- ATTENTION DISCONNECT SUPPLY BEFORE REMOVING THIS COVER</b>
	<b>2- CAUTION: RISK OF ELECTRIC SHOCK</b>
	<b>3- INSERTION POINT FORK LIFTING MACHINE FROM BELOW</b>
	<b>4- INDICATION EYEBOLT FOR LIFTING MACHINE FROM ABOVE</b>
	<b>5- SECTIONING MACHINE COMPRESSED AIR SUPPLY</b>
	<b>6- DO NOT OPEN WHILE THE MACHINE IS RUNNING</b>
	<b>7- OBLIGATION TO USE WORKING GLOVES</b>
	<b>7- OBLIGATION TO USE SAFETY GOGGLES</b>
	<b>7- OBLIGATION TO USE RESPIRATORY PROTECTIVE EQUIPMENT</b>
	<b>7- OBLIGATION TO USE EAR PROTECTION</b>

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	<b>8- WARNING DANGER HANDS</b>
	<b>9- WARNING DANGER MOVING PARTS</b>

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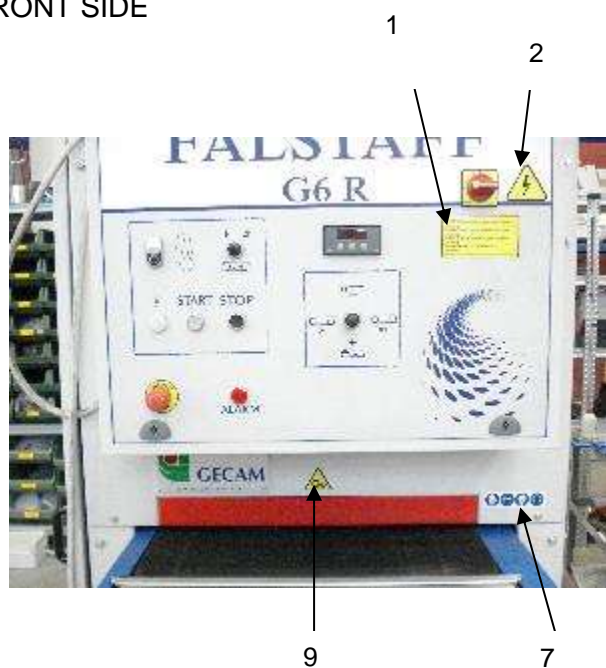
**CAUTION: DO NOT TOUCH THE MOVING PARTS OF THE MACHINE**



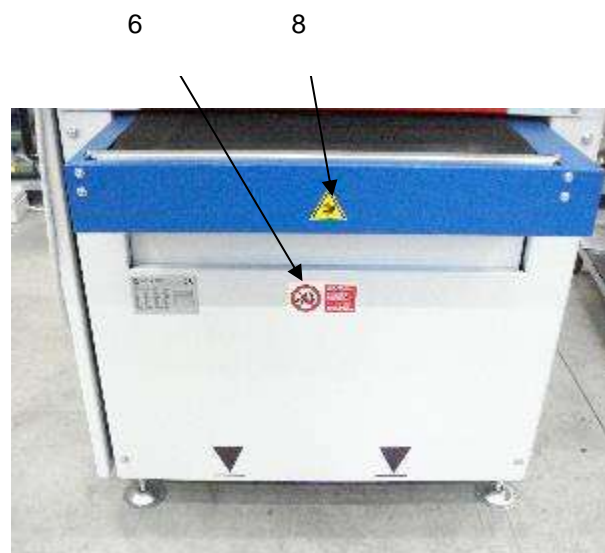
FRONT SIDE



BACK SIDE



DETAIL ELECTRIC CABINET  
FOTO 6-4



DETAIL BOTTOM FRONT SIDE

## 6.6 Residual risks

The machine has been designed so as to avoid risks in all its operational phases (transport, installation, work, regulation, maintenance and dismantling).

In the event that risks remain, have been affixed its warning plates (= safety pictograms).

The possible residual risks are listed below.

I possibili rischi residui sono elencati nel seguito.

### 6.6.1 Electrical panel



When the machine is electrically de-energized (switch in pos. "0-OFF"), remains the presence of tension inside the electrical panel.

### 6.6.2 Noise



The machine may only be used by Operators with personal protective equipment for your hearing.

In the event that the machine is introduced in a working environment in which other machinery are already installed, it will be up the Client of evaluated the total noise value. Then, if necessary, the Operator must wear all the necessary equipment to protect himself against noise pollution or set up adequate noise insulation devices.

### 6.6.3 Sanding belt



The machine may only be used by Operators with personal protective equipment for your hand (=gloves).

### 6.6.4 Dust and sparks



The machine may only be used by Operators with personal protective equipment for eyes and respiratory system.



- Special metal powders may cause a fire, so the user needs to ensure that appropriate fire protection systems, even with the use of portable fire extinguishers.
- There are still risks due to a rupture of the compressed air piping during maintenance inside the machine.
- During manual loading/unloading there is always a risk of crushing or cutting pieces to fall due to the contact with surfaces and edges: these risks need to be deleted by the user, that is responsible to provide operator and Maintainer appropriate personal protective equipment. These operations require a considerable degree of attention on the part of professionals, who must use appropriate means of individual protection: safety shoes, helmets, safety gloves and ear defender.
- If the illumination is insufficient, machine tooling phase it presents a risk for the operator who will be working in critical condition: provide adequate portable lamp brightness.

Please note that it is your responsibility to instruct the Operator and the Maintener and make sure that the instructions have been properly understand and transposed.

### 6.6.5 Heeling and/or abrasive belt breaking

There are two limit switches with ceramic coated rod (1), which limit the transversal position of the sanding belt to the direction of travel of the piece. The tape exceeding this limit causes the machine to stop, both in case of damage, how annoying.  
A lamp on the control panel of the electric cabinet signals the emergency occurred.  
If broken, the machine will start only after installed a new sanding belt.  
Replacement of the ceramic coating simply by removing the seeger retaining ring.



PHOTO 6-5

### 6.6.6 Lack of sanding belt tension

If the push-pull valve was operated and lacked the tension at the sanding belt, there are two sensors (2), which block the commissioning of the roller belt. CHECK CONTROL Panel indicates the emergency intervened with the lighting of its indicator light.  
A lamp (HE1) located on the control panel of the electric cabinet signals the emergency intervened



PHOTO 6-6

### 6.6.7 Protection piece thickness limit

Device red painted on the front of the machine. Moving the Strip operates the safety microswitch inside, causing the arrest of the conveyor belt. A lamp (HE1) located on the control panel on the electrical cabinet reports the emergency intervened with lighting.



PHOTO 6-7



## 7 Controls and use

### 7.1 General warnings



During the following operations, personnel should wear individual protective equipment: helmets, gloves, safety shoes, overalls, masks, glasses, ear defender.



#### ATTENTION!

The company GECAM S.r.l. is not liable for damages to property or persons due to accidents caused by failure to follow the instructions in this and subsequent chapters.

The first commissioning, start-up and adjustment will have to be carried out by technicians of the Manufacturer or under their direct supervision. The Supplier recommends that at this stage there is a close collaboration between the Supplier and the User, such as production and maintenance staff training.



#### WARNING!

It is **INDISPENSABLE** that you use **ONLY** the information and instructions in this manual

#### 7.1.1 Safety rules to be observed before and during operation

- Use only products in perfect condition.
- Before you start the machine, make sure that all foreign objects (cloths, tools, etc.) have been removed from it.
- Do not service the machine when in use, with tools, cleaning tools, etc.
- Use the machine within the limits of the values set for the technical performance.
- Do not use the machine for anything other than works and those for which it was manufactured.
- Avoid bending and stretching movements of the power supply cable, which could stop the wires if they are not protected by a conduit. Do not use the machine if it has defective equipment such as lamps or management components.
- Do not use the machine if it appears faulty instrumentation.
- During operation of the machine, pay attention to unusual noises. Identify the possible cause and remove it or warn those Responsible for Production.
- Warn those Responsible for the maintenance of any irregularities.



At the occurrence of a situation of actual or impending danger to the Operator or the machine, switch off and padlock the main switch to "0-OFF" position .

## 7.2 Machine controls

Before using the machine, it's important to know perfectly the controls and their main functions.

### 7.2.1 Electrical panel

On the electrical cabinet it is mounted the master switch (1):

in the open circuit position (0-OFF) the machine is off,  
in the closed-circuit position (1-ON) the machine is on.

The door lock switch is locked with padlock in the position "0 – OFF".



PHOTO 7-1

### 7.2.2 Control Panel

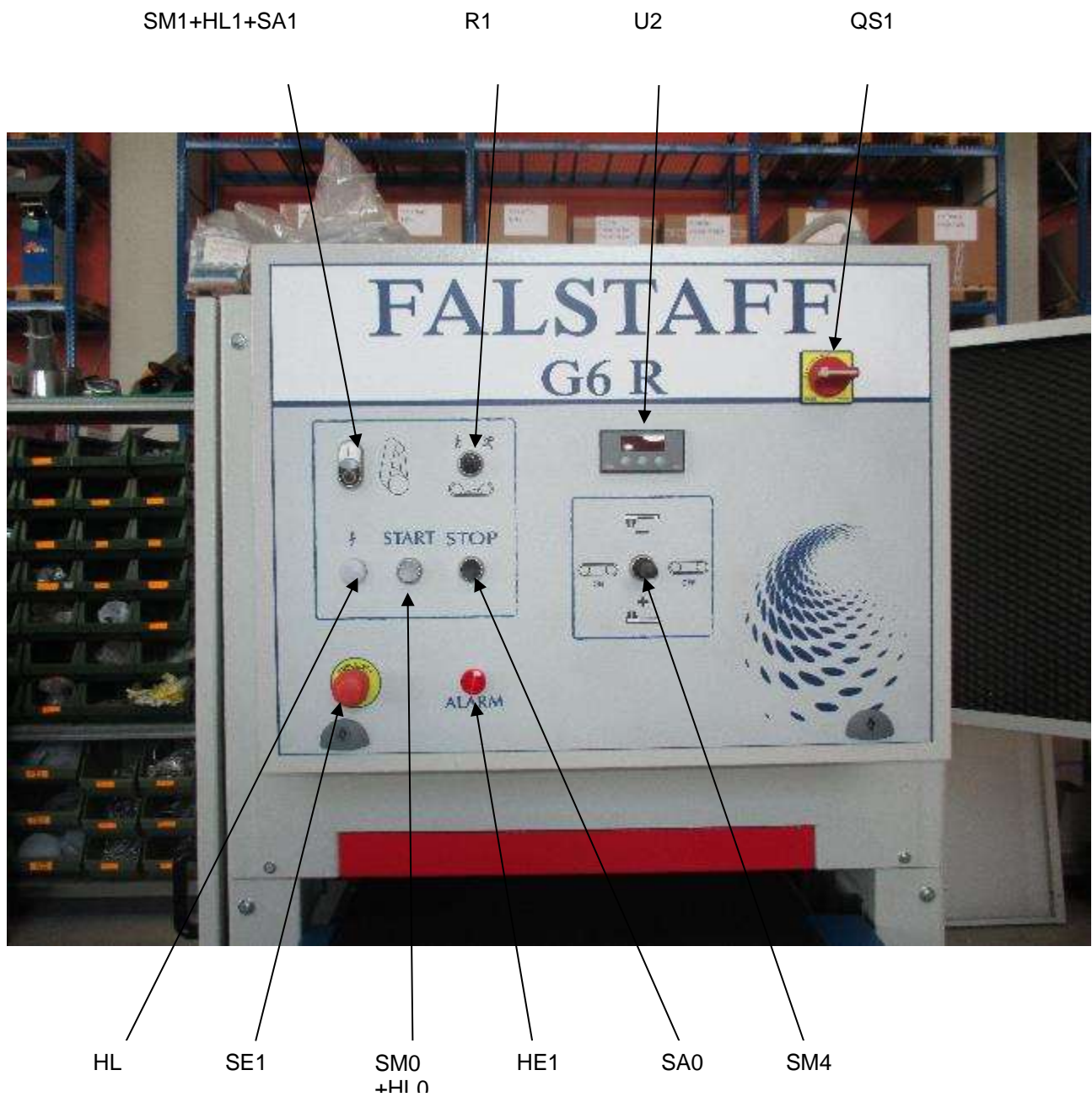


PHOTO 7-3  
The photo shows the model GM06 Falstaff, but the commands are identical to the GM11 STIFFELIO model.

<b>POSITION</b>	<b>DESCRIPTION</b>	<b>FUNCTION</b>
QS1	General interlock switch	"1-ON" insert the mains voltage "0-OFF" switch off the mains voltage
SE1	Emergency button	Emergency stop
SM1	Start button ABRASIVE BELT WORK UNIT	Performs a manual start of the conveyor belt of the work pieces.
HL1	Start lamp ABRASIVE BELT WORK UNIT	Report the manual start of the tape transport of the work pieces
SA1	Stop button ABRASIVE BELT WORK UNIT	Report the manual stopping of the tape transport of the work pieces.
HE1	Red lamp allarms	View all alarms that occur during the work cycle
HL	White lamp	Lights signaling voltage electrical panel
U2	Electronic display of altitude conveyor belt movement parts	Displays the dimension of workpiece thickness adjusted by means of joystick lever
SM0/HL0	"START" button	Enable the machine to start work
SA0	"STOP" button	Stop the machine at the end of the work cycle.
SM4	Joy-stick	The command to Joy-stick has 4 positions: LEFT position actuates the motion of the belt conveyor of handling of the work pieces. RIGHT position stops the tape handling conveyor of the work pieces. Location HIGH vertical ascent conveyor belt, that is, decreases the passage opening (= thickness of the workpiece). Location BACKGROUND vertical descent conveyor belt, that is, increases the passage opening (= thickness) of the workpiece.
R1	Conveyor belt potentiometer	Acts on the inverter and adjusts the speed of the conveyor belt carpet engine longitudinal pieces.

Also on the inside panel of the electric cabinet there are two controls:

### **SFPC-EXCLUSION KEY MICROSWITCH**

Selector which allows to exclude the function of the safety microswitch for opening the left protection of the machine.

The Operator that must replace the abrasive belt and / or the Maintainer who must perform repairs, must rotate that component to position 1.

After installation, return the switch to position 0.

### **SFM1-BRAKE RELEASE ENGINE**

Selector which allows the manual release of the rotation of the engine brake WORK UNIT ABRASIVE BELT.

The Maintainer must position the selector to position 1.

At the end of work will have to return the switch to position 0.

### **ATTENTION:**

**The Manufacturer does not assume any liability for negligence the use of these commands by non-qualified personnel.**



PHOTO 7-3



7.2.3 Pneumatic panel

POSITION	DESCRIPTION	FUNCTION
1	Reducer + filter + pressure gauge	Filter and allows you to adjust and view the air pressure input machine
2	Pressure regulator with gauge	Setting and displaying of the value of air pressure which feeds the pneumatic cylinder that tends <u>the roller of the sanding belt</u> . To make the adjustment pull the handle of the regulator upward and press to lock.
3	Solenoid valve	Solenoid valve activation/deactivation command roller belt on the piece. Control valve piston movement of abrasive belt oscillation
4	By distributor	Command operating pneumatic cylinder and micro pneumatic valve of the transport belt centering.

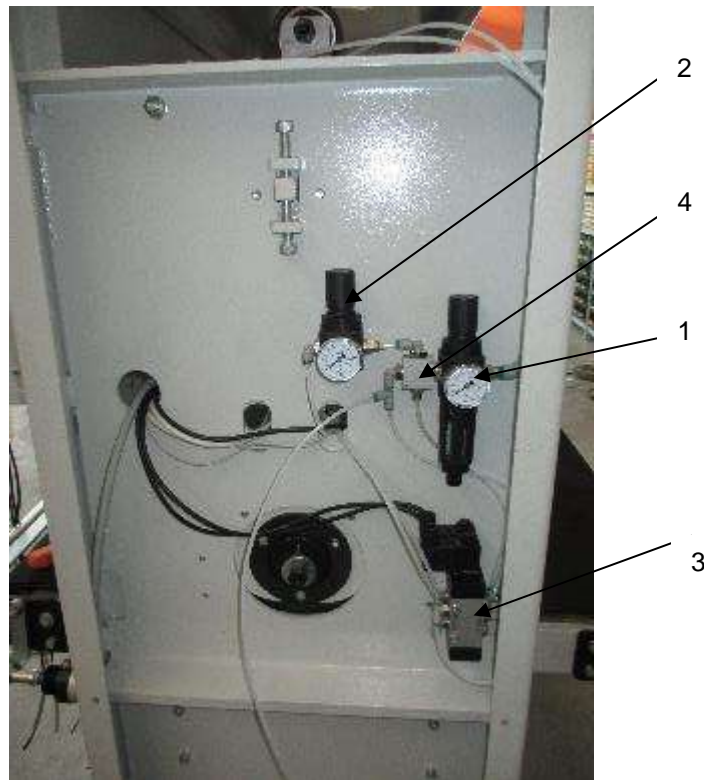


PHOTO 7-4

## 7.3 Starting procedure

### 7.3.1 Preliminary procedures

STEP	DESCRIPTION
1	Make sure there are no maintenance ongoing operations.
2	Turn the main switch located on the control panel to position "1-ON".
3	Open the main tap of compressed air supply to the machine.
4	Check on the Control Panel, that is not illuminated in the presence of emergencies lamp. Reset mushroom head emergency stop buttons, when they pressed earlier.

### 7.3.2 Processing Procedure

#### 7.3.2.1 Deburring with working unit "R"

Fit for this kind of processing the WORKING UNIT "R" with the suitable tool (see table grit sanding belts). The abrasive belt rotates in the direction of feeding of the workpiece. The working unit is equipped with a pneumatic system of abrasive belt centering and oscillation, rubber contact wheel with helical groove, hardness choice (30/45/55° shore), assembled on eccentric shaft. This system is controlled by a pneumatic cylinder, which allows the automatic insertion of the work unit (to press START CYCLE) and in an emergency and/or machine shutdown (to press STOP CYCLE), the immediate removal of the sanding belt from the working area.

STEP	DESCRIPTION
0	Press the bright white button (SM0 / HL0) to START. CYCLE
1	Adjust the height of the conveyor belt by ABRASIVE BELT THE WORK UNIT with the vertical movement of the joystick, depending on the thickness of workpieces, checking measure on an electronic screen.
2	Turn on/off selector insertion belt, checking and if necessary by adjusting the pressure abrasive belt roller on the workpiece.
3	Make sure the belt is taut enough for work to be done: by increasing the air pressure with the regulator installed on the pneumatic plant increases the tension of the belt.
4	Press the bright white button (SM1 / HL1) to START ABRASIVE BELT WORK UNIT
5	Make sure the dust extraction system is working.
6	Press on/off button to start the speed of abrasive belt.
7	Operate the joystick (SM4) to start the running of tape conveyor, by selecting the desired speed with the potentiometer (R1). Joystick lever movements to the left START conveyor belt. Joystick lever movements to the right STOP conveyor belt. More the value of the advancement of the tape is down, the better the result of processing.
8	Insert the first sample piece, making sure that the size of this is appropriate to the machine, and verify the finish obtained.

The quality of processing is the perfect compromise of the following parameters:

- nature of the material to be machined,
- degree of abrasiveness of the tools,
- work pressure,
- feed speed of the workpiece on the conveyor belt..

**Note:** do not exceed speed of the piece and the working pressure in order to avoid excessive usury of tools and risk overheating of the piece itself. Adjust the parameters first described to optimize quality and productivity.

**IMPORTANT: WE RECOMMEND THAT YOU PLACE THE PIECES FROM THE LONGEST SIDE. NEVER PUT OVERLAPPING PIECES.**

**ATTENTION:** Any small differences in thickness do not guarantee the sockets by the mordant roller during processing, with the risk of ejection of the piece to the outside of the machine.

## 7.4 Stop

### 7.4.1 Stopping the operating cycle

STEP	DESCRIPTION
1	Press the black button STOP: the WORK UNIT ABRASIVE BELT stops.

### 7.4.2 Emergency stop

The emergency stop can be performed by pressing the red mushroom pushbutton (SE1) installed on the control panel.

Furthermore, the machine stops automatically in an emergency when:

- a safety protection is open;
- In the presence of an alarm.

After the stop, before restarting the plant, you must:

- verify the cause of the stop and proceed with its removal;
- release the emergency button that caused the shutdown, when pressed;
- close the protection, if open (driving safety micro-switches from side doors).

To restart the system, follow the procedures outlined in the preceding paragraphs.

### 7.4.3 Stop at the end of the shift

STEP	DESCRIPTION
1	Press the black STOP button (SA0): the current cycle is completed and the components take the initial position.
2	Turn the power switch (QS1) located on the electrical or on the back of the frame machine, to the position "0 -OFF".



**At the end of the work session, we recommend that you always clean the machine. The cleaning operation must be carried out when the machine is stopped, powered off by electric energy and compressed air. It is recommended to remove any deposits of dusty material from the surface of cooling of the engines. We recommend the use of the vacuum cleaner.**



## 7.5 Alarms

Activating an alarm during operation is signalled by a red led on the control panel of the electric cabinet and the machine stops.

To reset the alarms you must do the following:

- 1) eliminate the cause that created them;
- 2) turn the button clockwise and return him to the out position or just pull it.



PHOTO 7-5

**DURING NORMAL USE OF THE MACHINE DOES NOT STOP THE WORK CYCLE WITH THE EMERGENCY BUTTON, BUT OPERATE THE STOP BUTTON.**


## 7.6 Abrasive belt replacement




**Take care when replacing the sanding belts.**

**Risk of hand injuries.**

**Use personal protective equipment (P.P. E = gloves).**

STEP	DESCRIPTION
1	Recommended turn the main switch (SE1) placed on the control panel of the electrical cabinet to the position "0-OFF".
2	<p>From the front left side of the frame machine, with mobile guards open:</p> <ul style="list-style-type: none"> <li>-operate push-pull valve (1).</li> <li>In so doing you remove tension to the sanding belt (3).</li> <li>- Loosen the knob (2) counterclockwise to remove the anchor pin which locks the WORK UNIT to the group frame, that would prevent the release of the abrasive belt.</li> <li>-Remove the sanding belt by pulling the same outwards and simultaneously turning it gently.</li> </ul> <p>In the same way back, insert a new sanding belt, doing attention to the direction of rotation (see arrow on the inside) and making sure that once in place does not touch the rod microswitches heeling (4). Tension the sanding belt by pressing the push-pull valve (1).</p>
3	<p>PHOTO 7-6</p> 
3	Close the left side safety protection.
4	Turn the main switch (QS1) placed on the control panel of the electrical cabinet to the position "1-ON".
5	Press the white START CYCLE button (SM0/HL0).
6	Once these step are completed, restart the cycle, as described above.

 **Caution: a non-electrically powered machine (with main switch into position "0-OFF") remains the presence of compressed air for abrasive belt tension.**

## 7.7 Working pressure adjustment of the sanding belt on the piece

(=“Grit-set” or sanding belt thickness compensation system)

From inside the front left of the frame machine, with mobile left side protection open, proceed loosening the lower knurled lockring (position 1) by turning it counterclockwise and then rotate clockwise the upper knurled lockring (position 2) up to bring the index (3) in correspondence of the strip thickness value used on the reference scale (the machine is built, tested and sold with belt thickness 1 mm, unless otherwise requested by the customer).

After this adjustment, insert a sample piece of known thickness (for example 10 mm) below the belt, while lowering the conveyor belt of the same size, until it reaches the overflow of the piece. After working the piece and see if the result matches the one you want. Otherwise acting always on the knurled lockring earlier, move decimal of preload (standard 0.3-0.5mm.) on the surface of the workpiece to obtain the expected result.

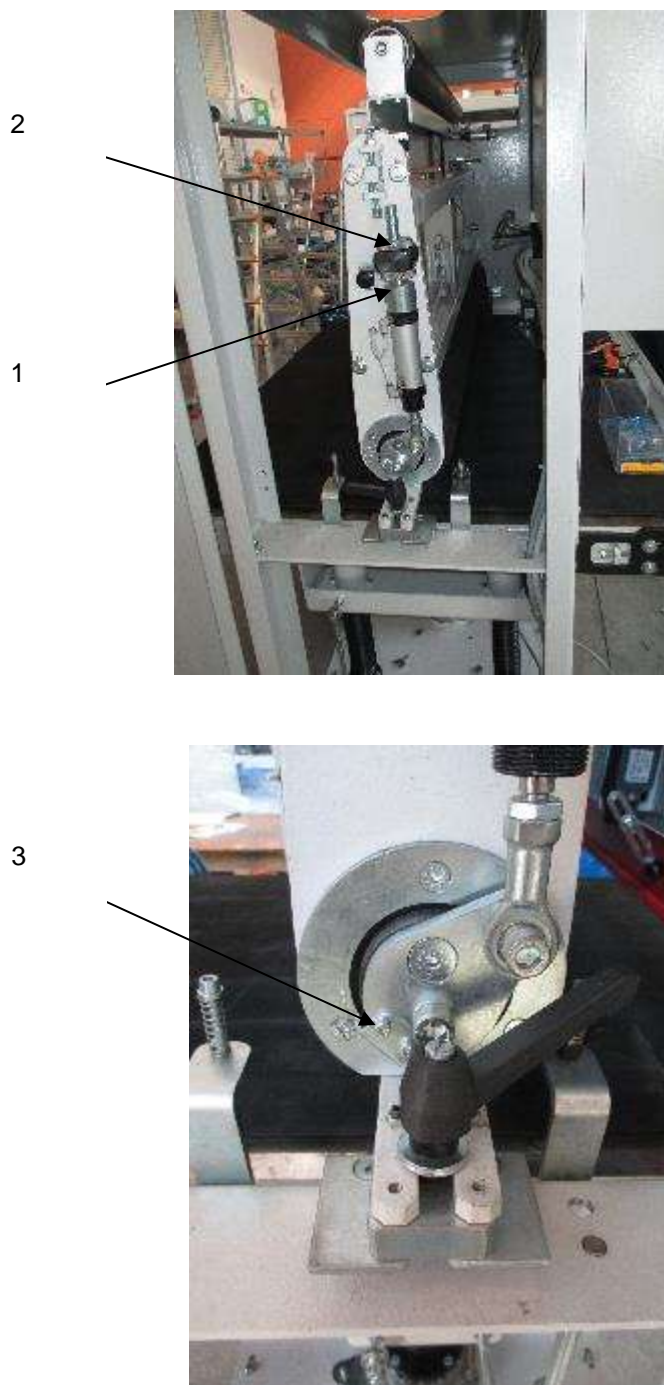


PHOTO 7-7

## 7.8 Centering adjustment group WORK UNIT SANDING BELT

**ATTENTION:** it is important to make the following adjustment, only when the machine is stopped, through attempts.

Adjust the fixing nut of the sensor on the support, to increase or decrease the field of transverse oscillation of the sanding belt.

A constant and careful cleaning of the photocell lens (1), with a solution of water and ethyl alcohol, improves the performance and life of the sanding belts.

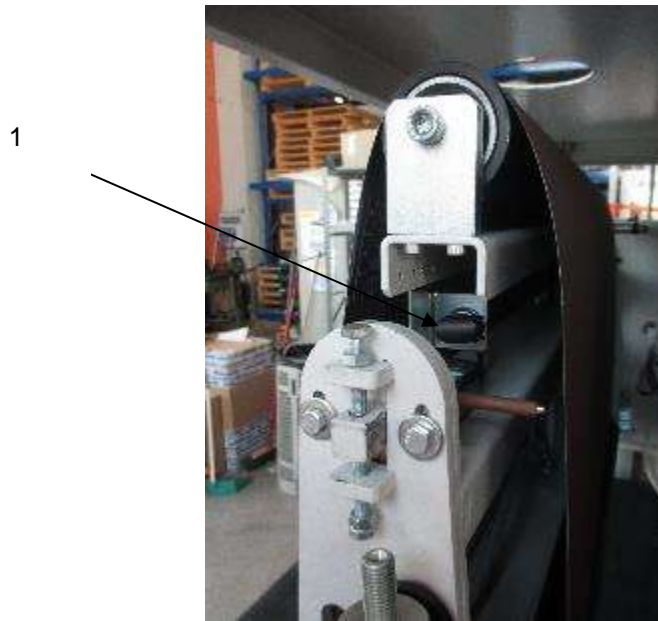


PHOTO 7-8

Adjust the speed of oscillation of the abrasive belt by acting on the two controllers (1-2) of compressed air flow rate installed on the pneumatic cylinder (3).

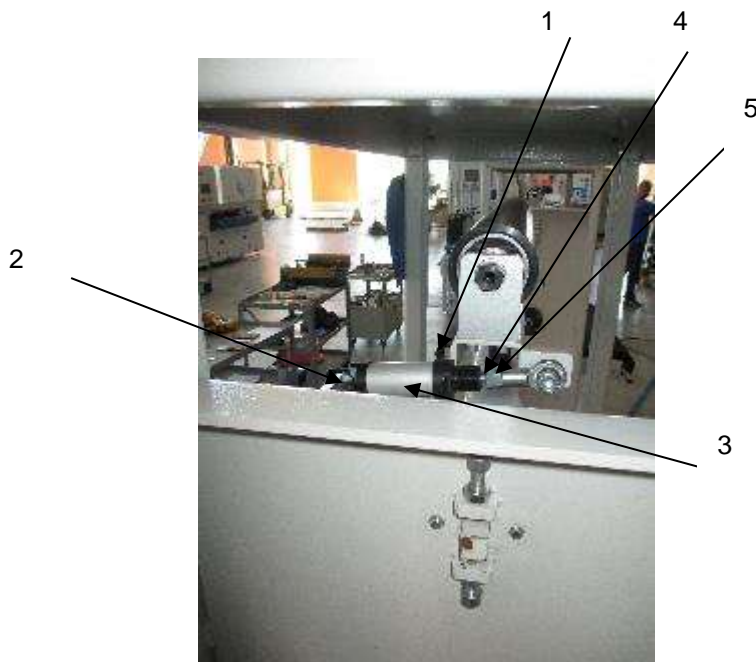


PHOTO 7-9

FLOWRATE REGULATOR 1= reduce speed of piston rod while pushing.

FLOWRATE REGULATOR 2= reduce speed of piston rod while pulling.

KEY KEEPER 4= change length of stroke.

NUT 5= safety thigteen nut.

Switch on and off fast bel motor and look abrasive belt direction.

Try to regulate flowrate regulator then piston row work slowly and at same speed in both directions, is important that piston have same oscillating time in both direction.

Unthight nut 5 and turn piston row by key keeper 4. For example: if piston row stay a little time inside cylinder and long time outside, in this case you need to increase the length (unscrewig).

Try to screw and unscrew piston row verifying if oscillation start to moving better.

If now ascillation moving better, tight nut 5.

-Having checked homogeneity in the heel of the sanding belt tighten nut 5.

**ATTENTION:** In case you need to replace the cylinder be sure to connect air tubes at same original position.

ANY PROBLEMS: faulty Photocell; Defective solenoid valves; Sanding belt excessively conical or with too dark.

### 7.9 Automatic centering workpiece conveyor belt tension adjustment

The tape in the conveyor is tensioned by the Manufacturer during the test phase.

The adjustment and alignment tape of the conveyor always get into boost, after loosening the lockring (4) and screws (5) fixing the support plates to the frame of the work plan, acting on the rotating side screws (1), with the observer in front of the machine, the side entrance workpieces.

With the moving conveyor belt, if the tape swerves on the left side, need to adjust the maximum speed the tape with the potentiometer (R1) on the control panel, than rotate clockwise the screw (1) the left side, while if it swerves to the right side, rotate counterclockwise bolt (1) the right side.

Make the adjustment so that the tape always preferentially move to the left side; then the tire will microswitch (2) to provide for automatic centering by means of the action of the pneumatic cylinder (detail 1 photo 7-10).

On the left side there is a support with an oscillating bearing (6).

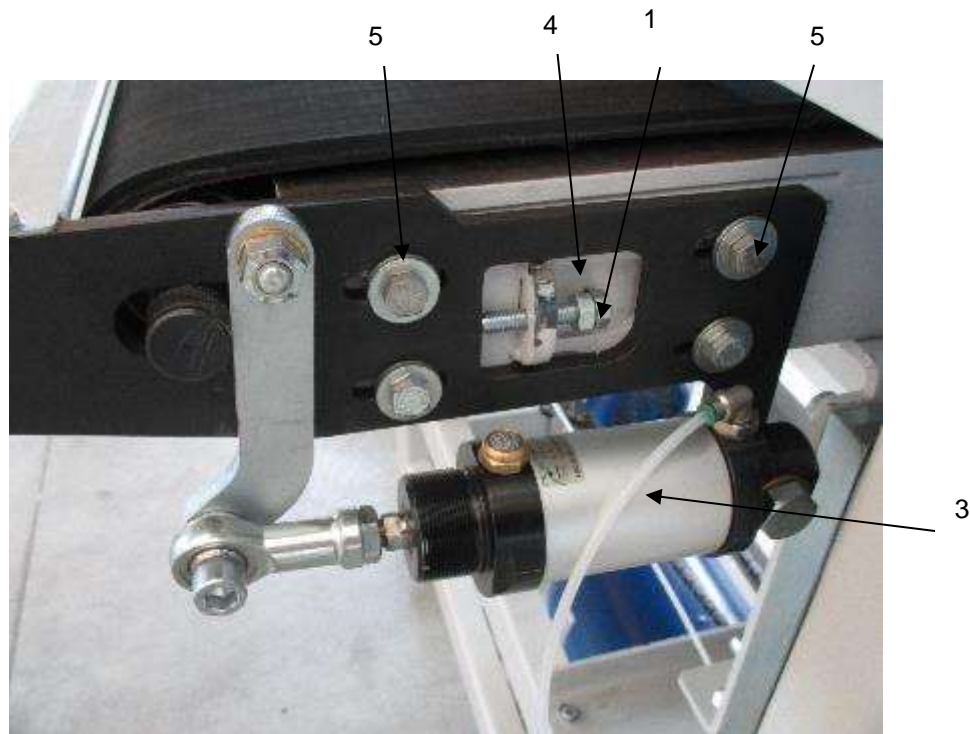


PHOTO 7-10

RIGHT SIDE



FIG. 7-11

LEFT SIDE



## 8 Maintenance

### 8.1 Maintainer tasks

The maintainer performs all maintenance, which take place in the hazardous areas of the machine and can be accessed inside the electrical panel. The maintainer makes setup, alignments, adjustments, cleaning of internal parts of the machine (possibly by performing disassembly of components), servicing, troubleshooting, replacement of worn parts or deteriorated.

### 8.2 Precautions for proper maintenance

During the operations described below, the personnel should wear personal protective equipment: helmets, gloves, safety shoes, overalls, masks and goggles.



#### ATTENTION!

The company GECAM S.r.l. is not liable for damages to property or persons due to accidents caused by failure to follow the instructions in this and subsequent



#### ATTENTION!

Do not allow unqualified or unauthorized personnel to work on the machine. Never perform any adjustment with the machine in motion, or powered by any source of energy (for example electrical, etc.).

To perform maintenance:

- use only original spare parts, tools suitable for the purpose and in good condition;
- comply with the frequencies of action outlined in the manual for preventive and periodic maintenance; the distance (indicated in time or cycles) between an intervention and the other is to be understood as maximum and must not be exceeded. If necessary, it can be shortened;
- proper preventive maintenance requires constant attention and continuous monitoring of the machine. Promptly check the cause of any anomalies such as excessive noise, overheating, leakage of fluids, etc.. and remedy;
- in case of doubt, consult the Manufacturer.

To perform maintenance correctly, refer to the documents provided in Annex, such as:

- functional diagrams of the electrical equipment and subsidiary equipment, with the signs of the power connections;
- drawings with the necessary data for ordering spare parts.
- From the point of view of construction, the operations also relates to mechanical, electrical and pneumatic items.
- For practical reasons, the planned interventions are grouped according to criteria of time and complexity. Any intervention or group of interventions can then deal with mechanical, electrical, fluidic aspects.

Yet for practical reasons there is a distinction between ordinary and extraordinary maintenance.

Routine maintenance is divided into two categories:

- programmed routine (or periodic or preventive) maintenance, which includes inspections and interventions to be performed according to predetermined time intervals with the purpose of keeping under control systematically the state of wear parts in order to prevent failures and stops;

- Condition-based maintenance, which covers parts of the machine that are not subject to periodic checks and wear classified a priori (i.e. due to wear). These components should be checked or replaced depending on their state.

### 8.3 Security, precautions and maintenance of the entire system

To carry out any maintenance work, you must first disconnect the system from the power supply line taking the necessary measures to prevent the accidental starting.

This condition is achieved through the maintenance process



**ATTENTION!  
MAINTENANCE**

**BEFORE PERFORMING THE MAINTENANCE, THE MACHINE MUST BE PLACED UNDER SAFETY CONDITIONS IN ORDER TO AVOID DANGERS OF UNINTENDED OPERATION AND/OR ELECTRIC SHOCK.**

The maintenance should be performed by maintainers and occurs according to this procedure:

- the emergency button must be pressed;
- the general switch on the cabinet must be on the "0-OFF" (ELECTRICAL CIRCUIT OPEN) position, so it must be locked at that position through the special lock (NOT SUPPLIED);



**WARNING!**

**The padlock key should be removed and kept by the Technical Maintainer for the full duration.**

- the compressed air shut-off valve must be closed and you must discharge the residual pressure in the machine.



**When the machine is not electrically powered remains the presence of compressed air for abrasive belt tension.**

- on the machine it should be shown a sign indicating **“Maintenance in progress / Manutenzione in corso”**;

After the maintenance work, and before restarting the machine, you should always:

- check that the parts have been replaced and/or the tools used have been removed from the machine;
- check that all the guards and safety devices that may have been removed during the intervention have been reassembled correctly and are working.



**ATTENTION!**

**Only after completion of the intervention and after inspection, the normal operating conditions may be reset (see how to start the cycle described in Chapter 6 of this manual).**



## 8.4 Lubrication



**ATTENTION!** It is important that those who must handle the lubricants read the information contained herein.



**ATTENTION!** Prolonged contact of oil with the skin can cause irritation. Observe personal hygiene and working rules.

- → The recommended lubricants are not a hygienic risk if used properly and the purpose for which they are employed.
- → Do not keep lubricants outdoor areas, too wet zones, too hot or perishable containers.
- → All products and waste containers must be disposed of according to current regulations.
- → collection and disposal of all oils must be in conformity with the laws in force in the Country where the machine is installed. Never pour used oil into sewers, drains or on the ground.

For each intervention of lubrication, it shows the frequency in hours of work to permit a programming. Only after a certain period, it is possible to evaluate the actual needs of the machine in the work environment.

## 8.5 Cleaning

The machine performs a process that causes contamination, so it's good that the cleaning procedures listed here must be done daily and after the maintenance operations:

- remove metal debris that accumulated on the machine and around it; always clean the machine at a rate of working with different materials;
- clean the filters of the fans on the electrical panel; drain condensation in the compressed air filter regulators groups;
- empty containers of extraction.  
The conveyor belt must be kept clean in order to exploit the maximum grip possible (= adherence of the piece), avoiding in process defects. Every 200 hours to clean the outer surface of the rollers using a solution composed of 90% water and 10% alcohol.  
During prolonged periods of inactivity of the machine is good to protect the belt and rollers by light, using a non-transparent tarpaulin or cardboard.



**ATTENTION:** Do not clean electrical components with water or other liquids.

## 8.6 Ordinary maintenance

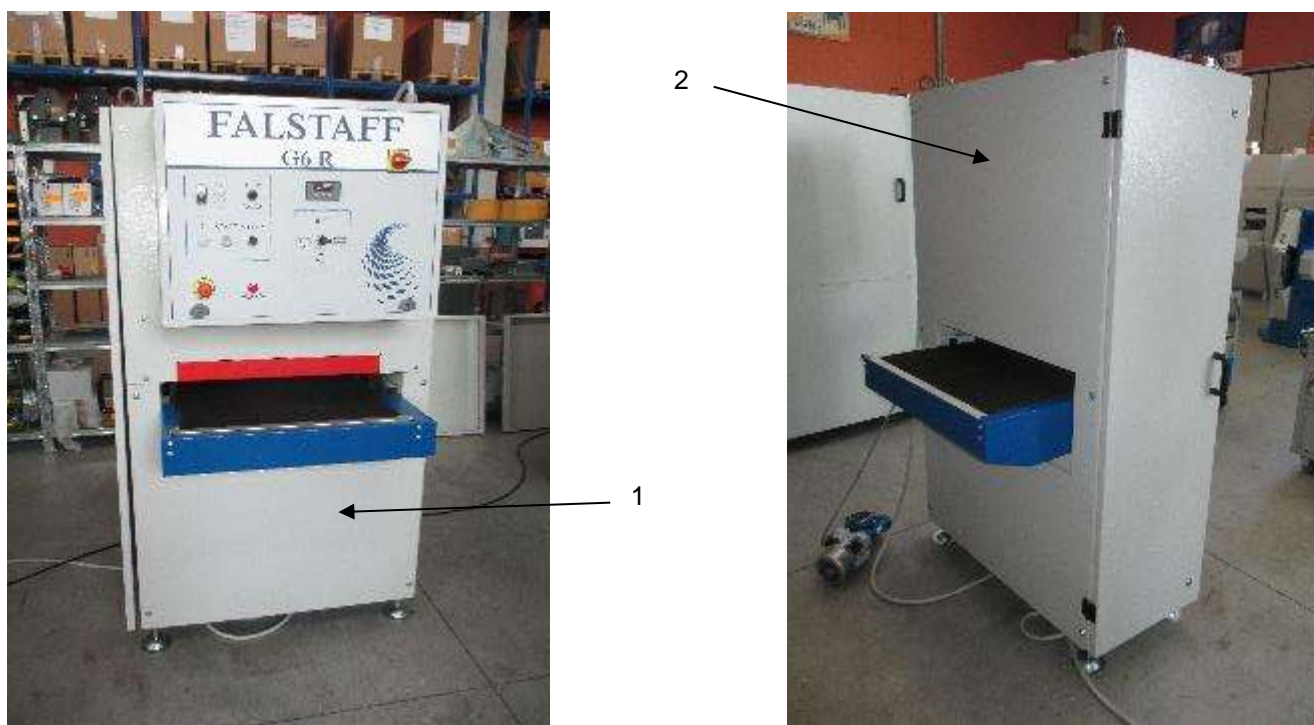
### 8.6.1 Substitution tape conveyor belt work pieces and its leveling

**To perform this maintenance requires two operators:**

-A Machine stops with interrupted power supply, obtained by turning main disconnect in the "0-OFF" switch (padlocked) and intercepted air supply (valve closed and locked with a padlock), remove the front lower fixed protection ( 1 ) and fixed back protection ( 2 ), after removing the screws.-lower the conveyor belt pieces at a stroke of about 60 mm. (equal to half of its total trip ).

-At standstill with electric power supply interrupted, obtained by turning the main switch to position "0-OFF" sectioning (locked with lock) and with compressed air supply intercepted (closed valve), remove the lower front fixed guard (1) and rear fixed protection (2), after removing the screws.

PHOTO 8.1



-Remove the front protective tape conveyor workpieces (3) and (4) by removing screws (position 5 position 4 pieces and -6 amount amount 2 pieces).

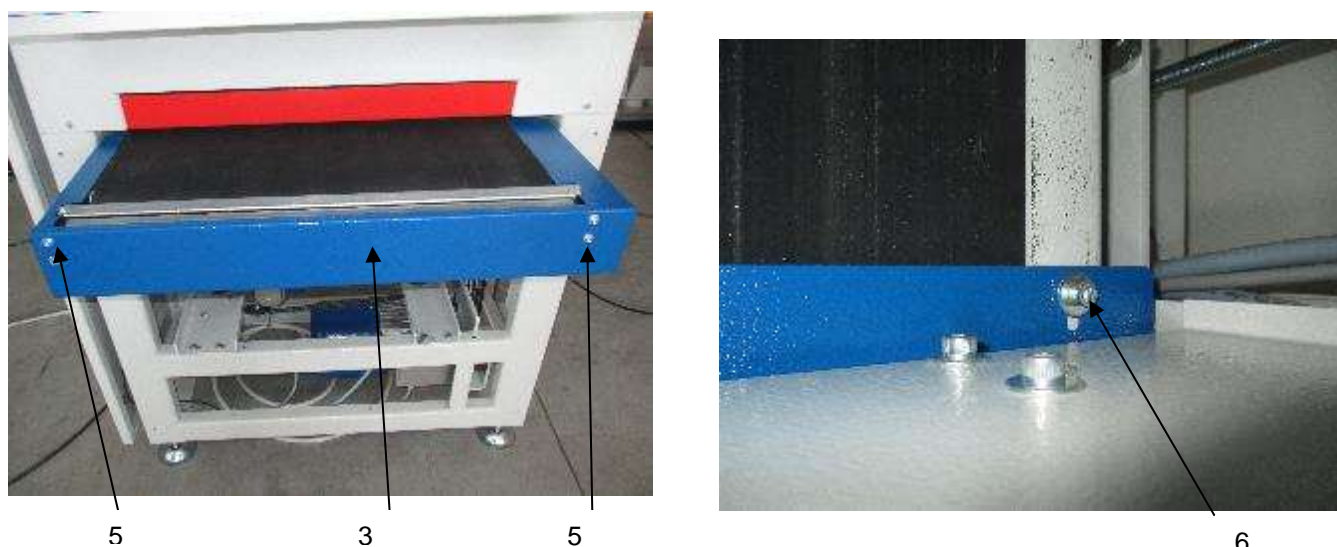


PHOTO 8-2 VIEW FRONT MACHINE

BOTTOM VIEW INSIDE MACHINE

-Remove the rear protection (4) conveyor belt by removing the screws (position 5 position 4 pieces and -6 amount amount 2 pieces).

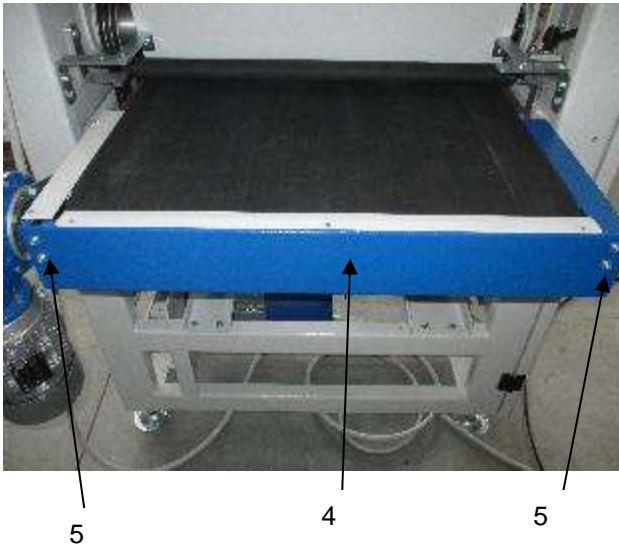
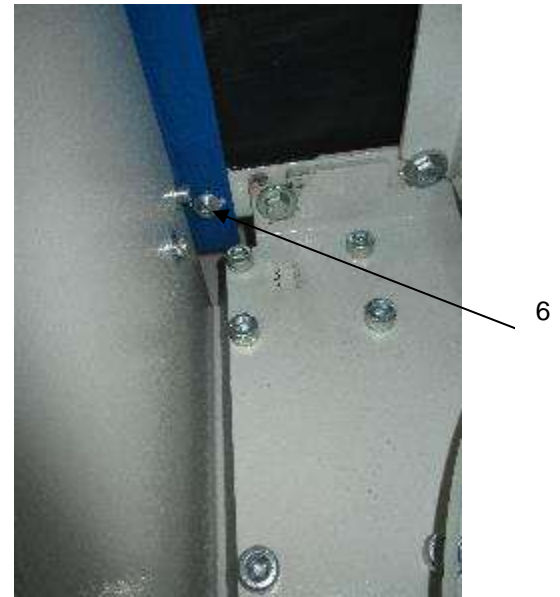


PHOTO 8-3 REAR VIEW



BOTTOM VIEW INSIDE MACHINE

-Loosen the mechanical tension of the tape belt conveyor (14) of work pieces, turning counterclockwise the screws (7) located on the side plates to support rollers (8) on both sides

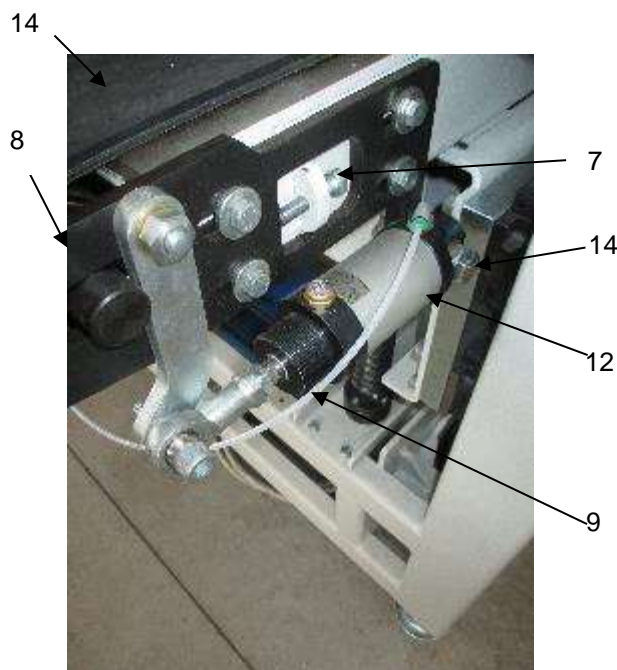
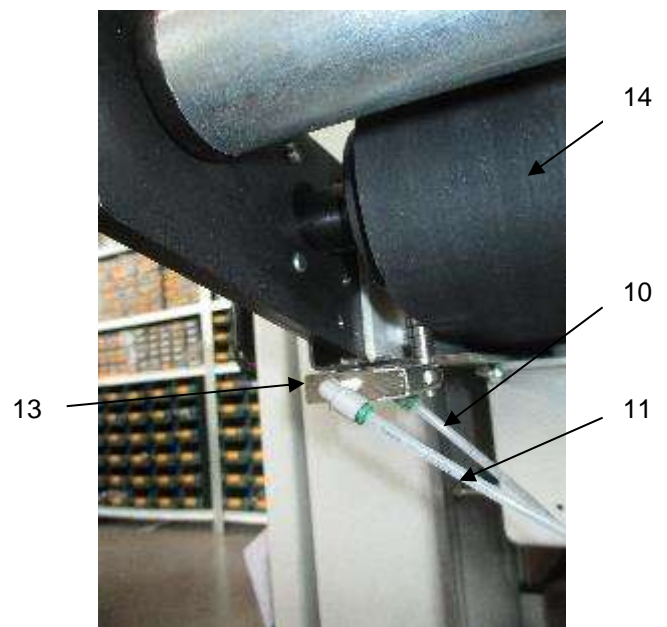


PHOTO 8-4 FRONT RIGHT MACHINE



LEFT FRONT MACHINE

-Disconnect the compressed air piping (9-10-11), which feed the single-acting pneumatic cylinder (12) tension tape and micro valve connection (13) which controls the transversal alignment of the same tape.  
-Remove the air cylinder (12) from the rear fixing (14), by turning it down.



- Remove the screws (16) and remove the protections (17) of the tape (14).
- From the rear side of the machine remove the screw with gearmotor locking washer (18) on the roller (19).



PHOTO 8-5 LATERAL REAR VIEW CAR

REAR LEFT SIDE CAR



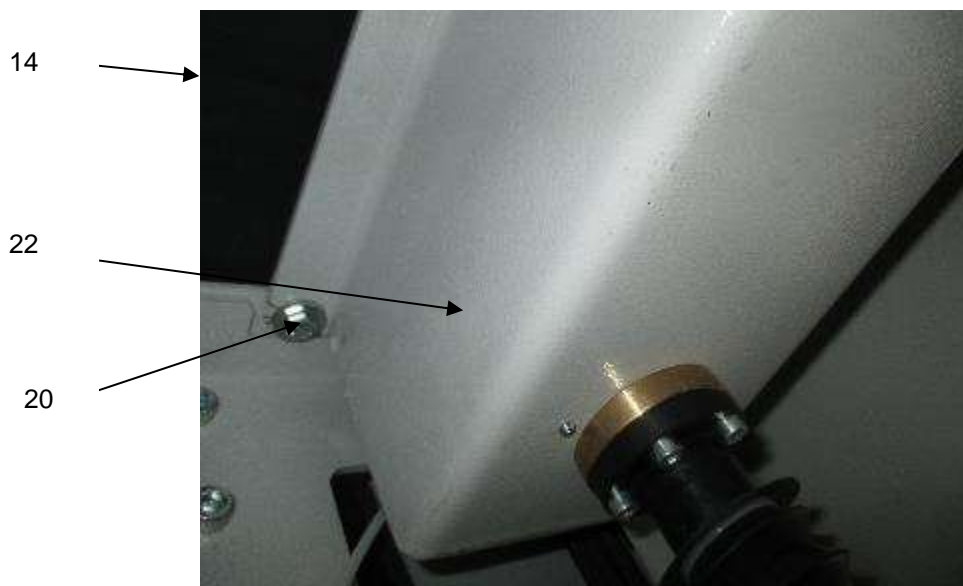
PHOTO 8-6

- Remove the four screws (18) and remove only the side plate (8) that you see in the picture.
- On the same side of the gearmotor remove the roller (19).
- To extract the tape belt conveyor pieces you must now remove the fixing screws (20-21) up-down motor group.

**ATTENTION:**

-While an Operator maneuver the forklift approaching with the forks under the tape of the conveyor belt (21), the other Operator guides the colleague so as to avoid bumping into the support of the group up/down (22). Once in position he locks the forklift with the parking brake.

**PHOTO 8-7**



- The two Operators must then move the conveyor belt sliding on forklift, being careful not to bump up against the frame of the machine during the exit motion.
- Position the conveyor belt on the workbench, then remove the side plate (8) of the front right car (same side of the gearmotor already removed) and remove the worn tape.
- Replace the tape (14) with a new one of equal size and replace the component by following the instructions above in reverse sequence.
- Tighten the tape with the machine turned "1-ON", moving at full speed, as described in previous paragraph

### 8.6.2 Pneumatic system

INDICATION	OPERATOR	FREQUENCY
Clean the air filter	Mechanical Technician	Each week

### 8.6.3 Safety device

To keep the machine in perfect working order from a security perspective, you must regularly perform the following checks:

INDICAZIONI	OPERATORE	FREQUENZA
Check that the opening of the guards to access the machine stops the machine immediately.	Generic Operator	At the beginning of each work shift
Check that the emergency stop button stops the machine immediately.	Generic Operator	At the beginning of each work shift
Check that the safety signs affixed to the machine is present, undamaged and readable.	Generic Operator	Each week
Check that the fixed guards are in perfect conditions and does not allow uncontrolled access to the machine.	Generic Operator	Each week

#### 8.6.4 Electrical system

INDICATION	OPERATOR	FREQUENCY
The electrical installation must be kept in good condition by preventing excess liquids and dust to settle on the boxes and seams of pipelines.	Electrical technician	Each week
Check the sheaths and their fittings and replace if defective (for example a crushing action). If the fittings are removed (example for a cause of vibrations) these should be immediately replaced the box or the tube.	Electrical technician	Each week
Check that the electric cables have not been damaged by collisions with mechanical parts.	Electrical technician	Each week
Clean the Cabinet, after removing tension, with vacuum cleaner; help for particularly difficult spots with a soft brush.	Electrical technician	Each week
Check that the two limit switches up-down movement conveyor belt are in good condition and clean.	Electrical technician	Each week

#### 8.6.5 Mechanical components

INDICATION	OPERATOR	FREQUENCY
Clean the machine as described in paragraph 7.4	generic Operator	each week
Grease the chain and supports up-down conveyor belt transmission pieces.	generic Operator	each 6 months (more frequently, if necessary)
Grease the 4 of the lifting guide shoes	generic Operator	each 6 months (more frequently, if necessary)

### 8.6.6 Change engine belts WORK UNIT "R" ABRASIVE BELT

To work abrasive roller proceed as follows (we recommend the use of two Operators):

place on the tape of the conveyor belt, in correspondence of the left side of the abrasive belt, a metal piece having dimensions 200x300x15 millimeters, then bring the lower roller of the sanding belt group, in the contact position on the sample surface.

Isolate electrically and pneumatically the machine, blocking both feeds with Its padlocks (EXCLUDED FROM SUPPLY).

-remove the stationary guard right sidebar of the frame, which allows access to the underside of the machine where is the motorization.

PHOTO 8-8



-Turn clockwise the lower hexagonal nut (1) coupled to the threaded rod to preload; so this will compress the spring (2).

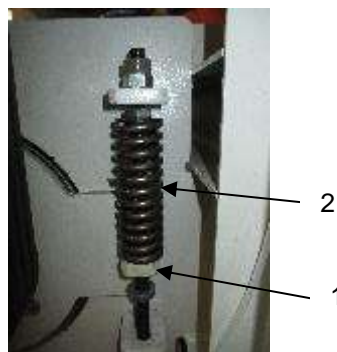


PHOTO 8-9

-Insert a lever in space (4), by turning the slide motor than the fulcrum (5) by removing tension to the drive belts (3) and while allowing the extraction of the same by the rim pulley (6).of the lower engine

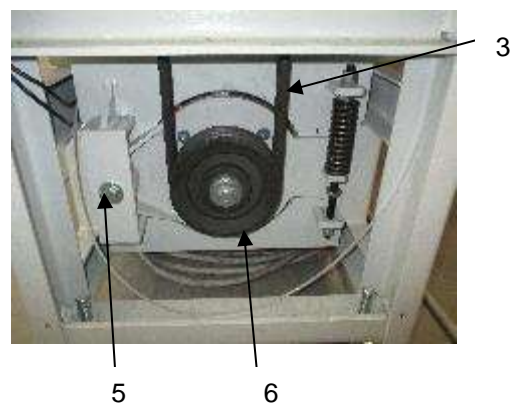
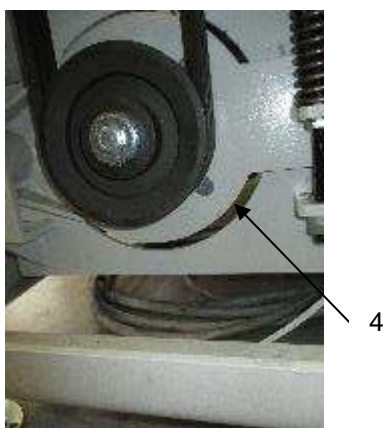


PHOTO 8-10



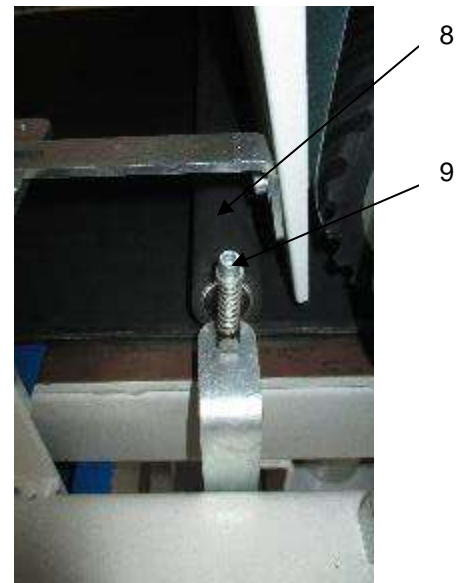
-Remove the rear guard fixing the frame to remove the belts (3) from the rim of the upper pulley (7) placed at the end of the abrasive contact roller.



**PHOTO 8-11**

7

-Open the left side door.  
-Remove the rear pressure roller (8) by removing the screws (9).



**PHOTO 8-12**

-Remove the extractor hood (10) by removing the screws (11).

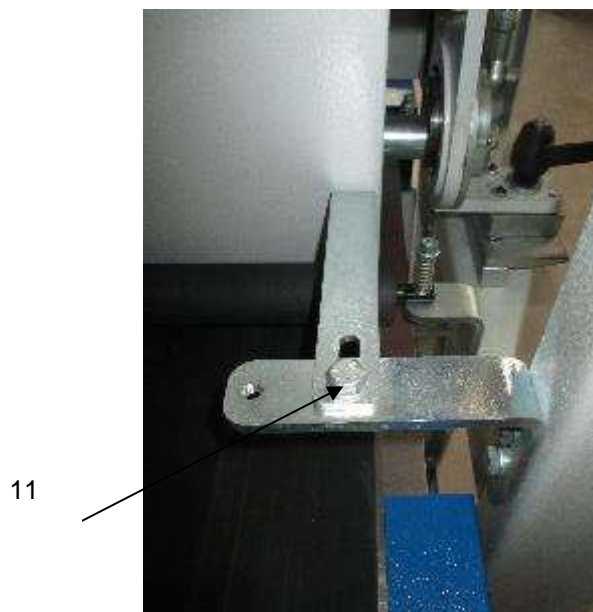


PHOTO 8-13

-Loosen the lever handle (12) and possibly even screw (13), which make solidarity fence (14) abrasive roller chassis base contact (15).

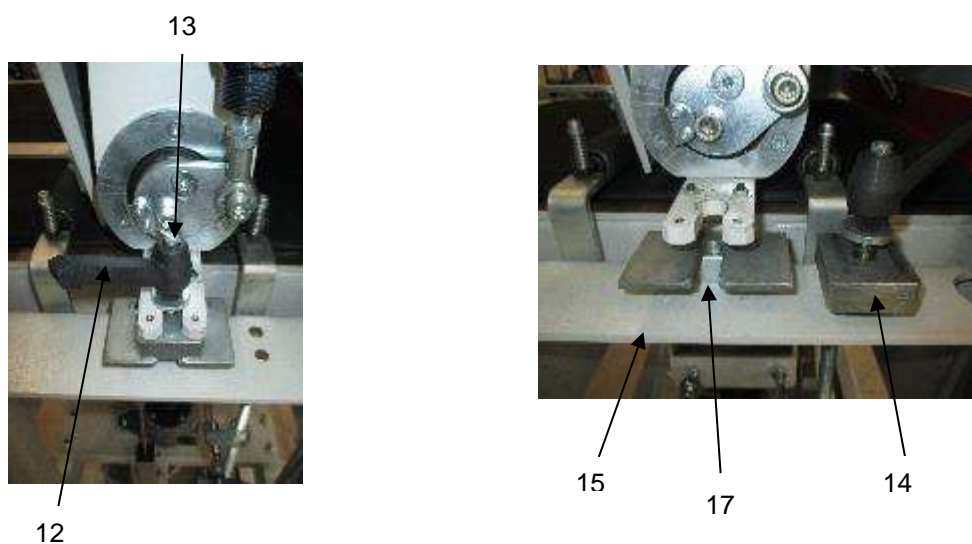
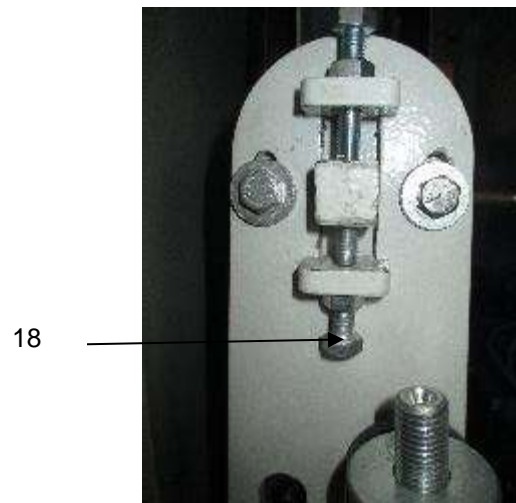


PHOTO 8-14

-Remove the plate (16) by removing the 4 screws (19). If it is difficult to remove the plate (16), **slightly loosen counterclockwise only the lower screw (18)**, so that the replacement be able to maintain the tension settings are performed during the factory testing.



#### PHOTO 8-15

-At This point remove from under the contact roller of the sanding belt the sample piece, thus creating the space (17) necessary to the extraction of the worn belts outside the machine. The belts are removed one at a time.

Change the belts with new features that having the same size as the original and reassemble by following this pcedura backwards.

When finished, return the tension belts.

**Caution:** Do not over tighten the belts to reduce the duration of the same.

Check the belt tension after the first few hours of operation, possibly by increasing the tensioning.

**After adjusting the working pressure of the sanding belt on the piece, described in section 7.7**

### 8.6.7 Tension and lubrication transmission up-down work pieces

To adjust tension of the chain of the transmission of the conveyor up-down pieces, act on tensioner circled in red.

**Attention:**

Do not tension the chain to avoid creating abnormal forces on the bearings.  
Lubricate the chain with grease.



DETAIL SCREW LOCKING IN SLOTS - BOTTOM VIEW

PHOTO 8-316

## 9 Troubleshooting

Abstract: here are some simple steps that often allow you to restore the machine. If the inconvenience does not resolve the User must contact the Local Dealer or the Manufacturer.

### Causes-solutions problem

#### **DRAWBACK:**

**BY PRESSING THE BUTTON THE CYCLE OF ENABLING TO GEAR THE MACHINE WON'T START.**

#### **CAUSE**

Lack of electricity on one or more phases.

#### **REMEDY**

Check that the main switch is engaged.  
Check with a tester for the right voltage value on all phases.

#### **CAUSE**

Thermal protection engine/s intervened.

#### **REMEDY**

Reset by pressing the red button on the component (s) place/s inside the electrical panel. Then checked by an electrician, there are no electrical or mechanical engine failure attached to it.

#### **CAUSE**

Emergency mushroom push button pressed.

#### **REMEDY**

Restore the emergency mushroom push button reset with.

#### **CAUSE**

Sanding belt WORK UNIT not tense, broken or off-court work.

#### **REMEDY**

Tighten the belt through push-pull pneumatic valve;  
Replace the belt if it is damaged;  
Center the belt by acting on the photocell. Check the lateral deviation switches belt.

#### **CAUSE**

Incorrect belt development.

#### **REMEDY**

Replace the belt with a prescribed development.

#### **CAUSE**

Lack of air pressure or too low.

#### **REMEDY**

Verify on the relative pneumatic system pressure gauge, that the operating pressure is 6 bar.

#### **CAUSE**

Side left door frame open.  
Left side of the frame door open.

#### **REMEDY**

Close the doors.

#### **CAUSE**

Inverter in alarm.

#### **REMEDY**

Do a reset of the inverter and check the motor and the supply voltage which must be +/-5% of the nominal value. (See the manual of the inverter using an electrician.)

---

**DRAWBACK:**

**THE MACHINE STOPS DURING PROCESSING**

**CAUSE**

Inverter in alarm.

**REMEDY**

Do a reset of the inverter and check the motor and the supply voltage which must be +/-5% of the nominal value. (See the manual of the inverter using an electrician.)

**CAUSE**

Thermal protection intervened (INVERTER OVERLOAD)

**REMEDY**

Reset by pressing the red button on the component (s) place/s inside the electrical panel.

Then checked by an electrician, there are no electrical or mechanical engine failure attached to it.

**CAUSE**

Lack of air pressure or too low.

**REMEDY**

Restore the operating pressure of 6 bar.

**CAUSE**

A power failure or voltage drop (even instantaneous).

**REMEDY**

Restore the electricity. Start the route through the cycle button start.

**DRAWBACK:**

**BREAKING TRANSMISSION BELTS TO WORK SANDING BELTS**

**CAUSE**

Lack of air pressure or too low.

**REMEDY**

Verify that its gauge signals about 2.5 bar.

**CAUSE**

Conical sanding belt or defective.

**REMEDY**

Replace the belt.



## 10 Spare parts

### 10.1 How to buy the spare parts

For information and spare parts should contact your local vendor.  
The technical support of the manufacturer is:

**Tel. +39-0521-798353**

**Fax. +39-0521-799505**

**gecam@gecam.it**



**ATTENTION!**

**The customer must purchase only original spare parts.**

The disassembly and reassembly must be performed according to the Manufacturer's instructions.



**ATTENTION!**

**It is recommended the periodic replacement of the parts subject to wear.**

To order spare parts communicate GECAM srl the following data:

1. Serial number of the machine
2. Unit
3. Number of the workpiece position and identification code
4. Description
5. Number of pieces

### 10.2 Safety warnings



**ATTENTION!**

**The operations for the replacement of the spare parts must be carried out by specialized technicians, who must follow ALL PROCEDURES AND SAFETY STANDARDS defined in the chapters of the Manual.**

**The machine must be set so as to prevent accidental operation during maintenance operations.**

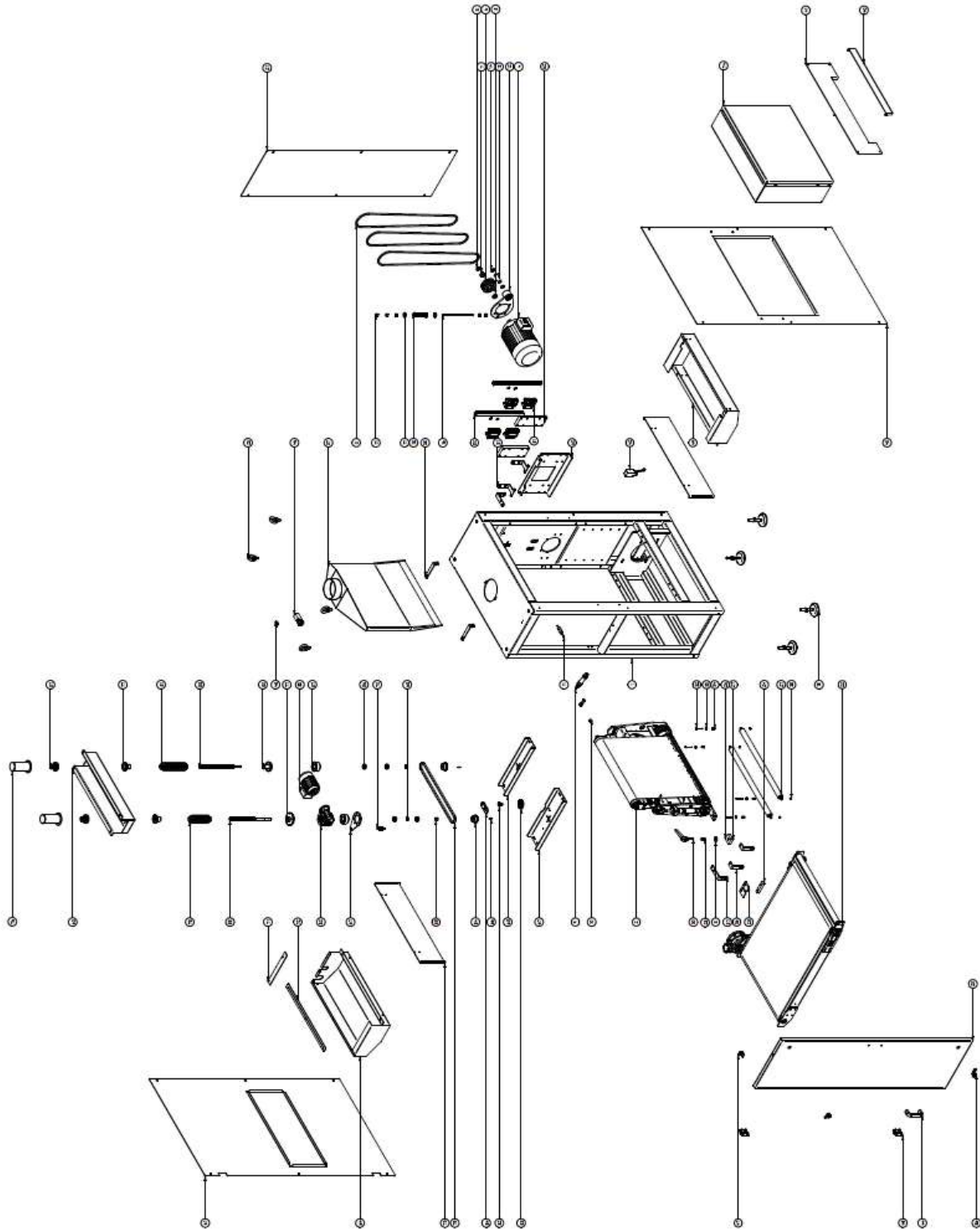


**When you replace a safety component (sensors, photocells, etc), make sure that the new component is in the same class as the original.**

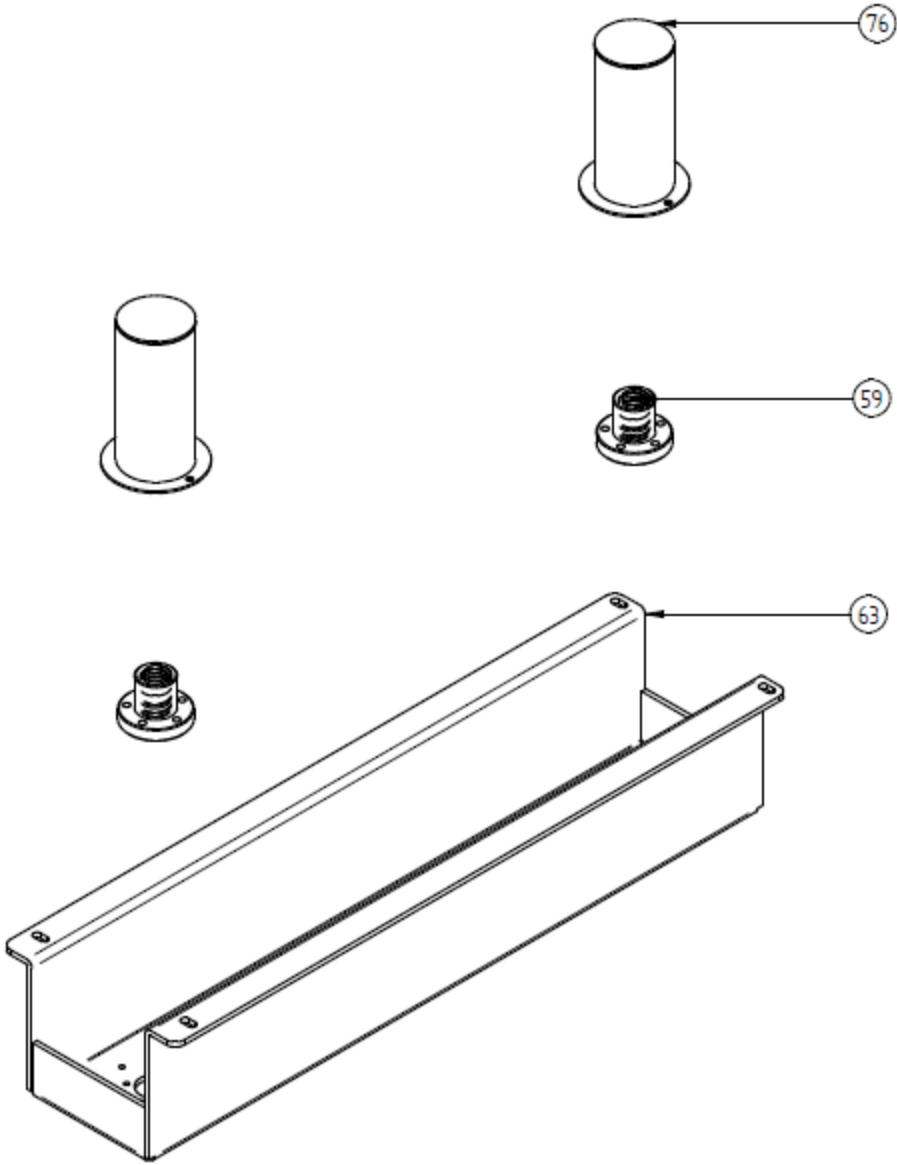


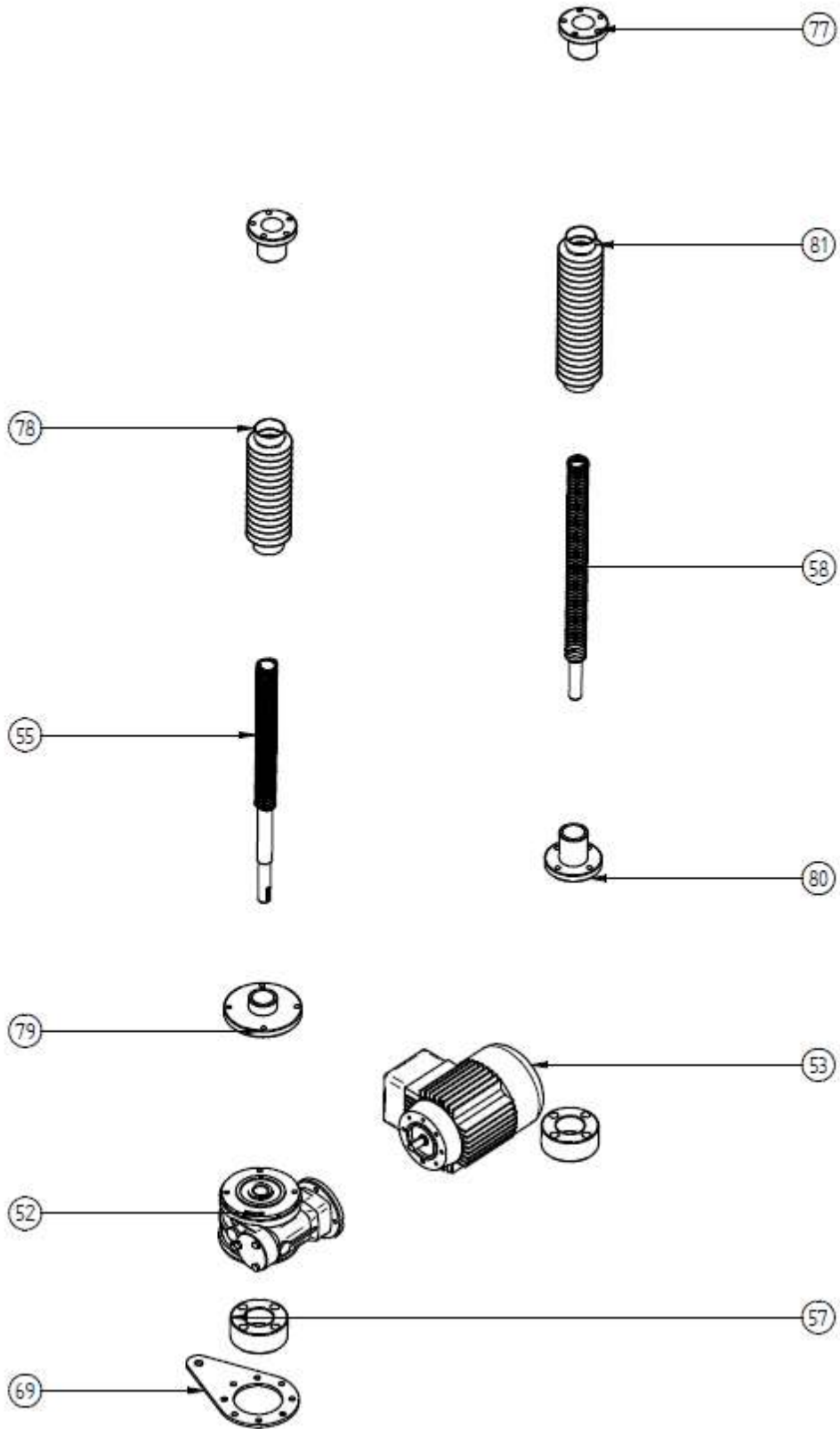


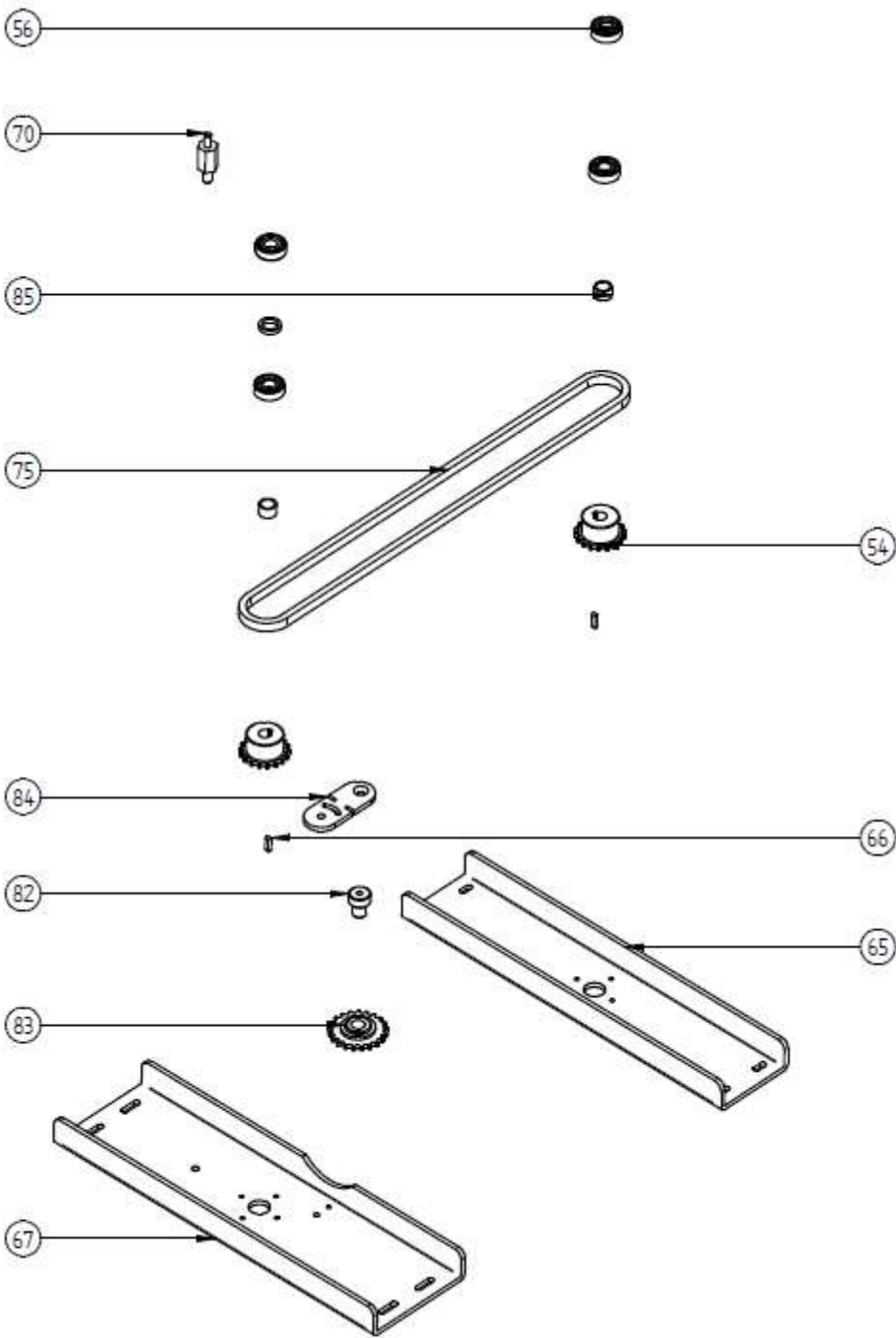
**10.3 Table showing the spare parts GM06:  
G00189 SANDING MACHINE GM06R**

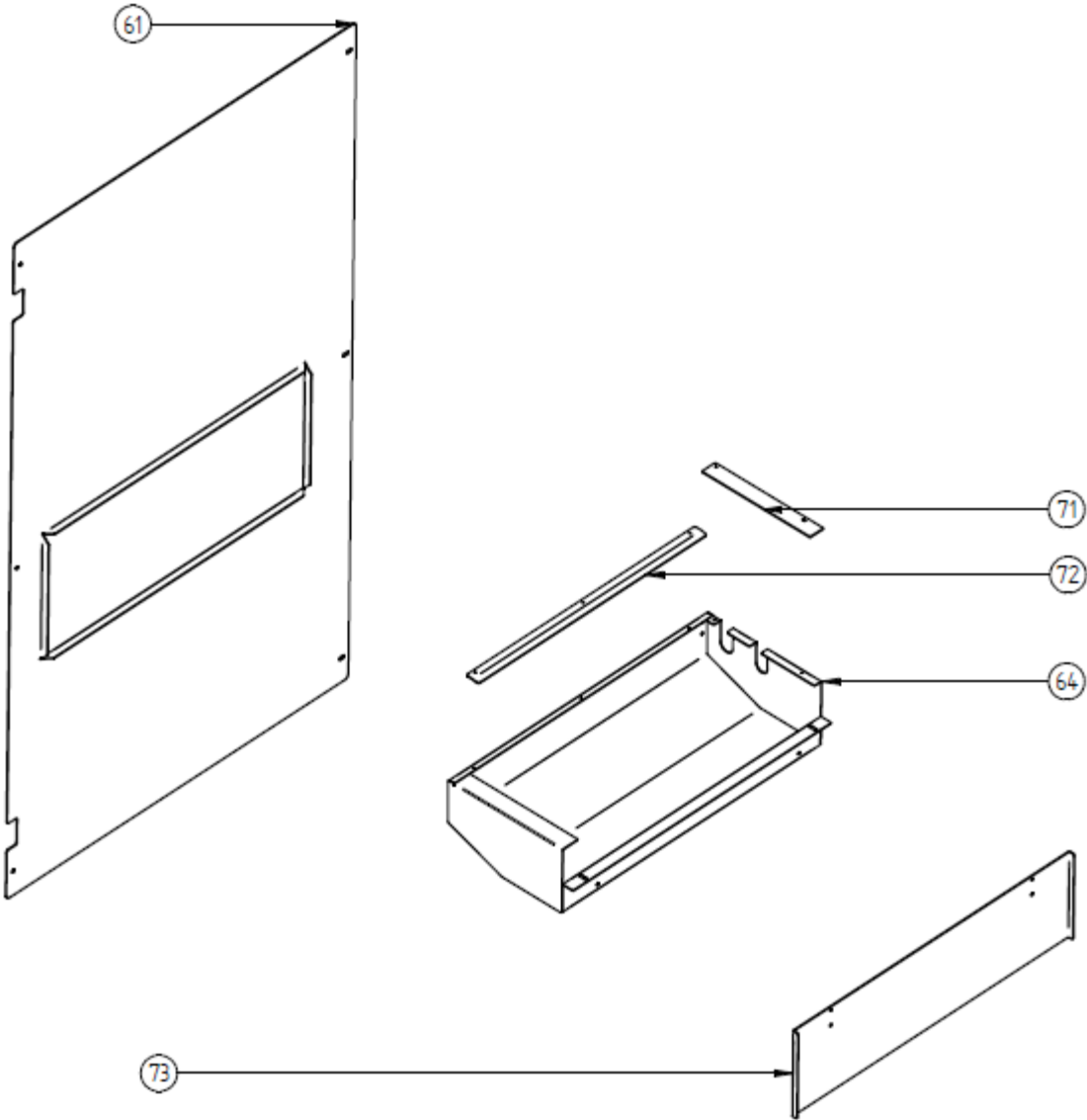


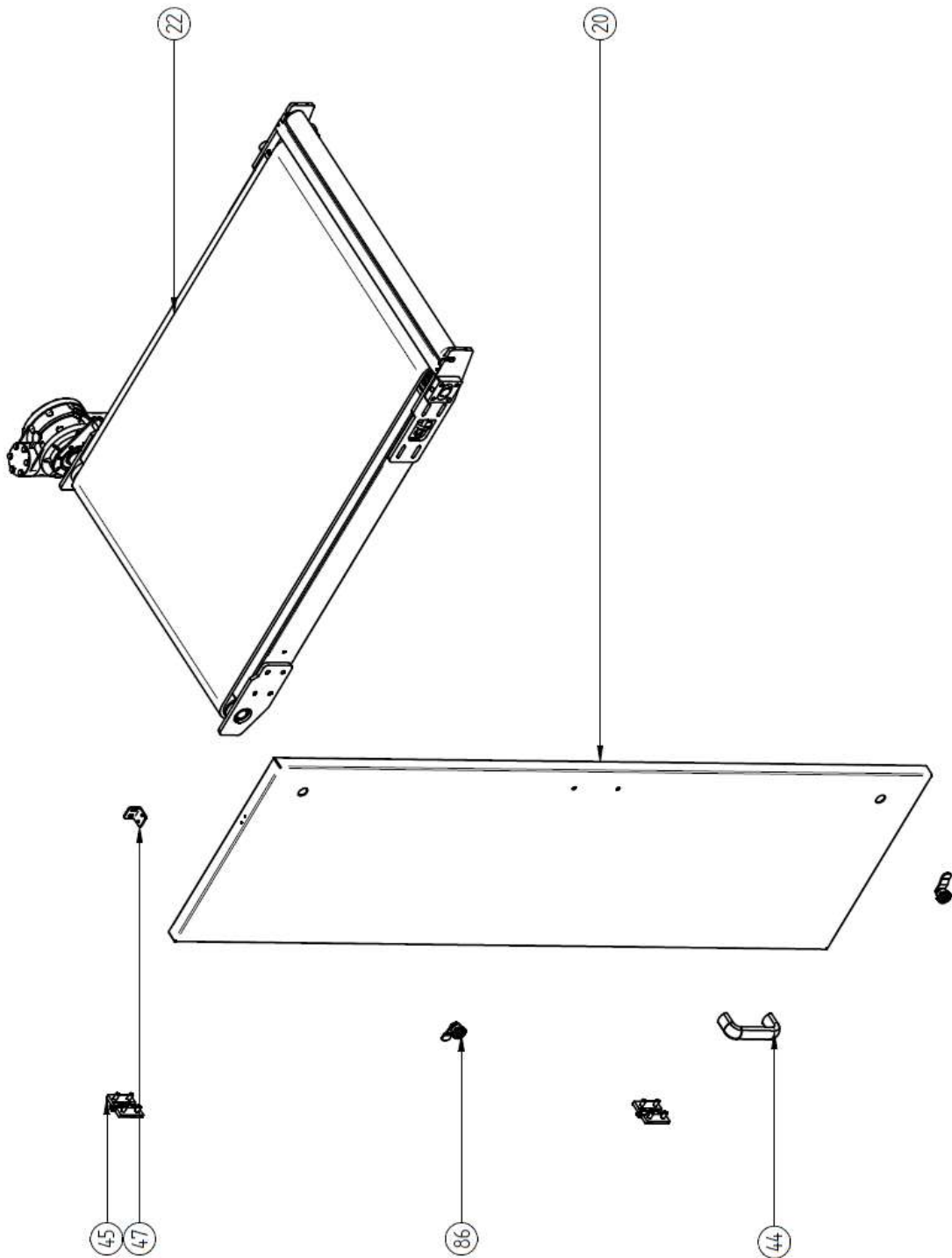


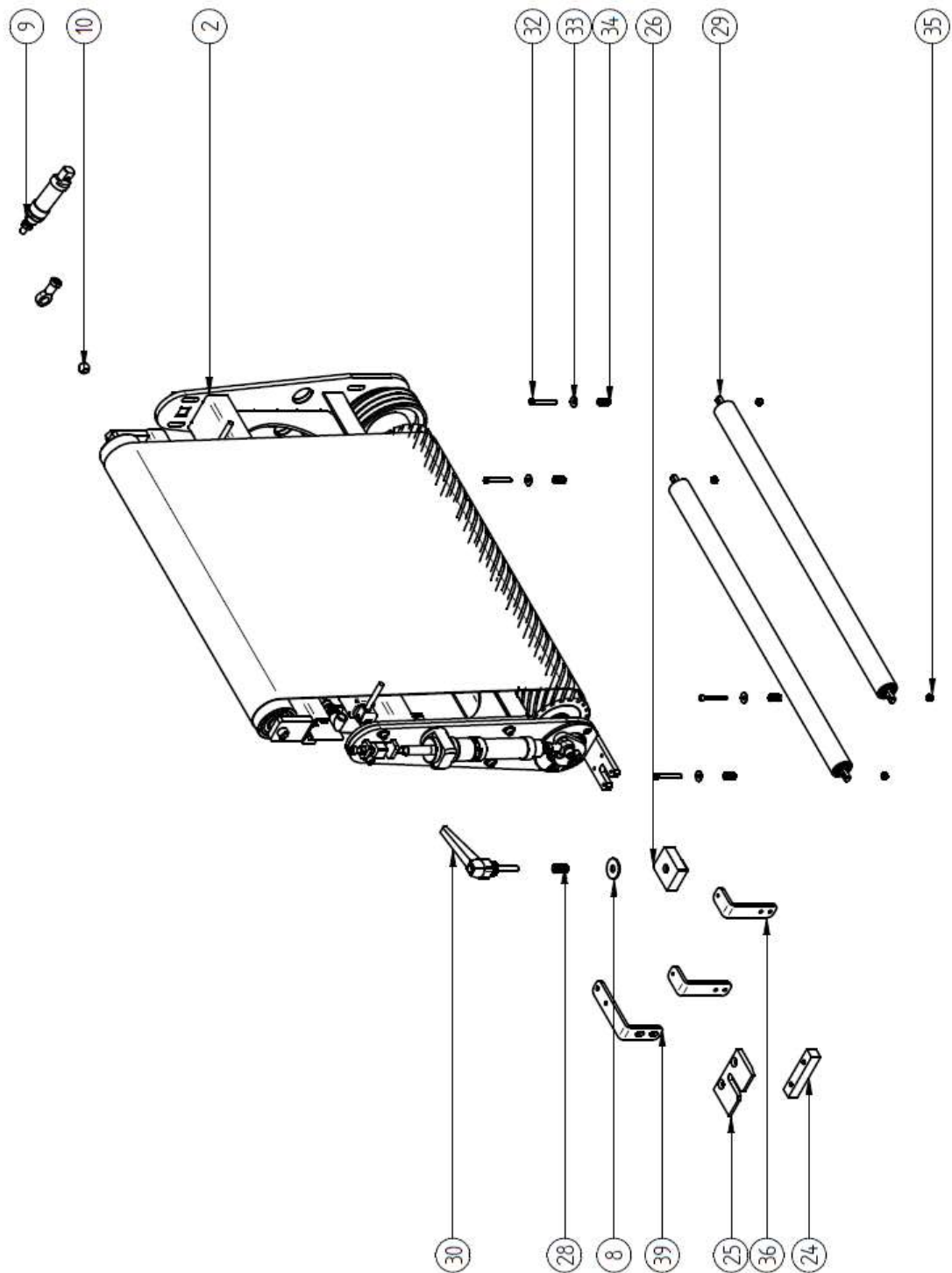


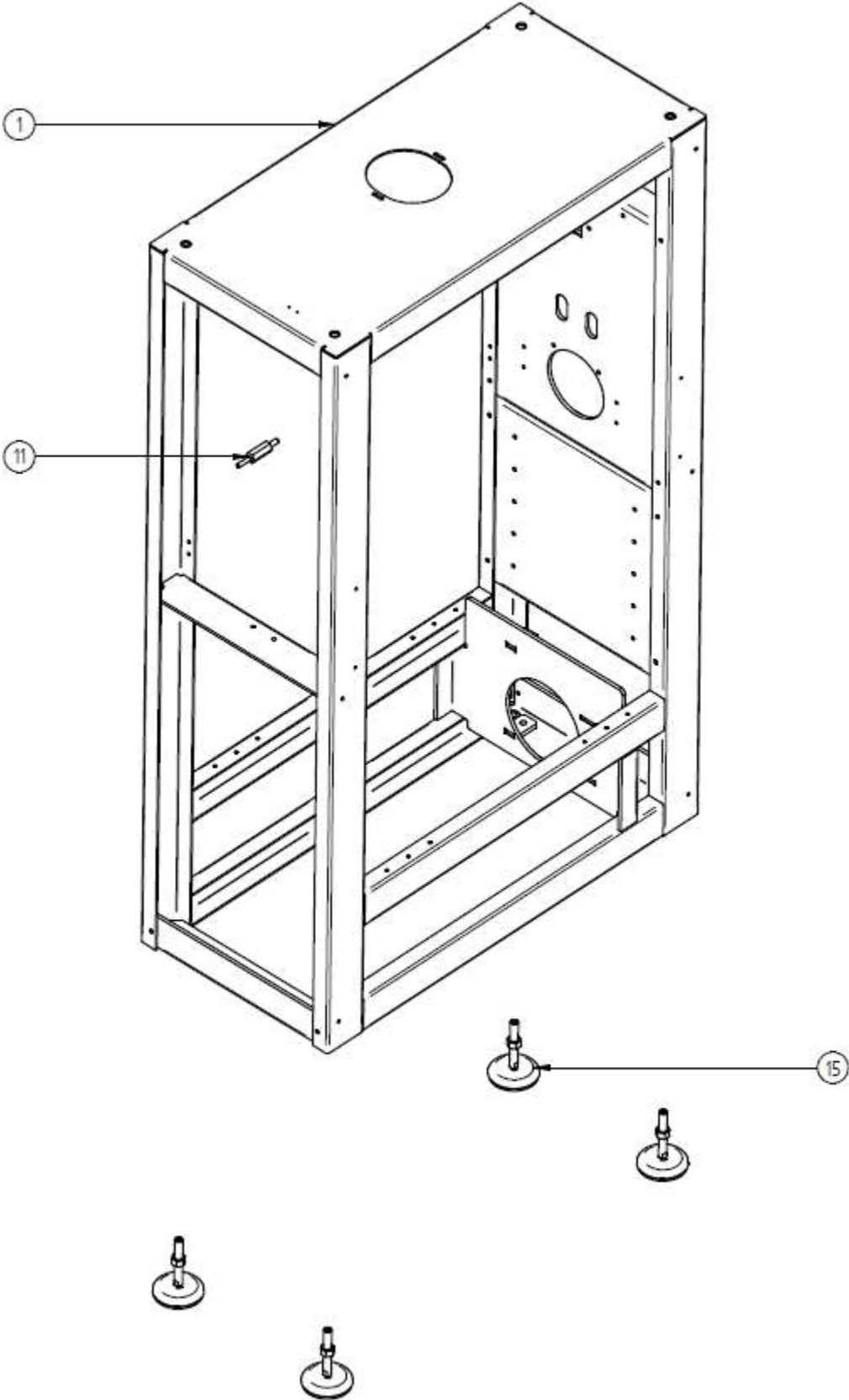


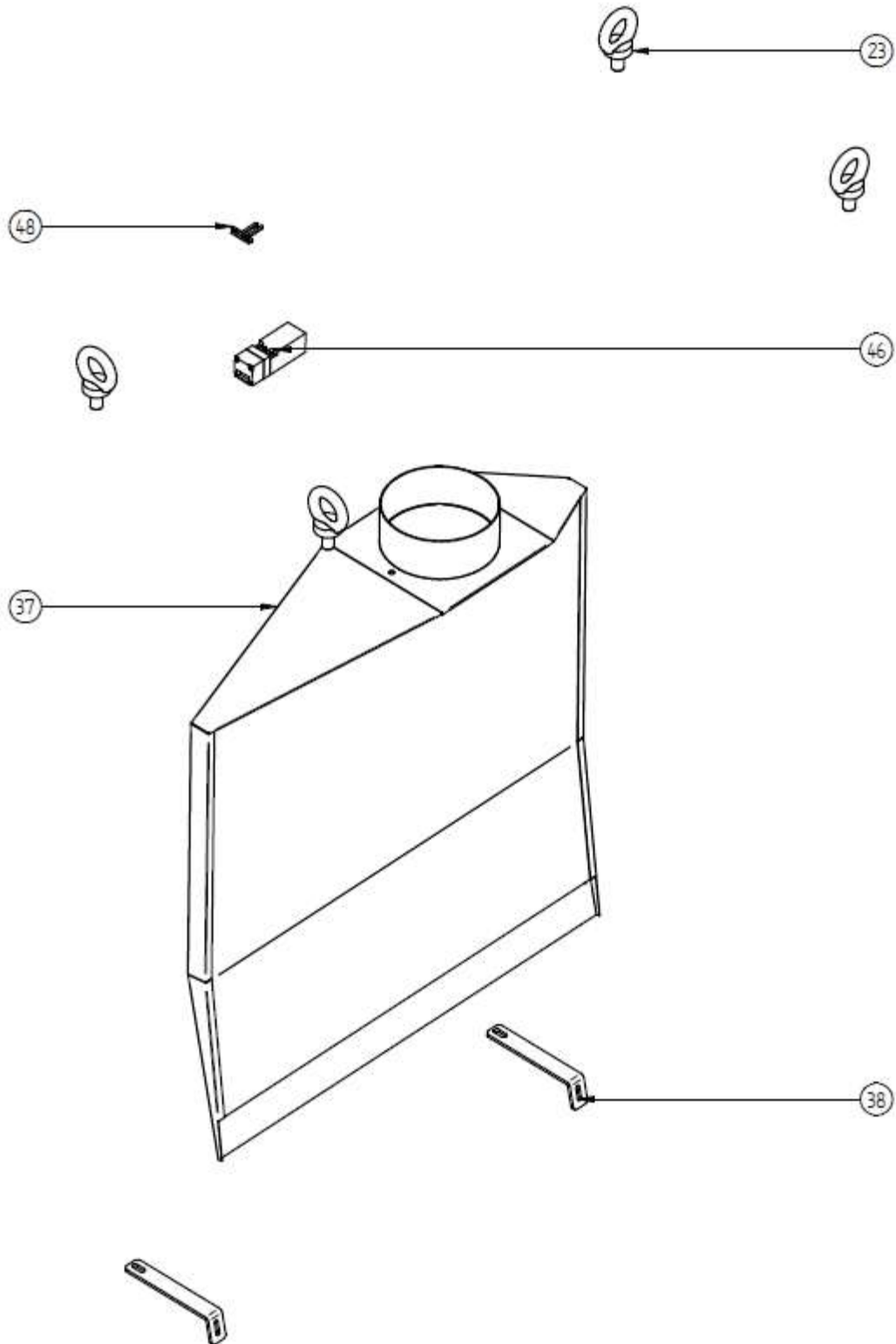




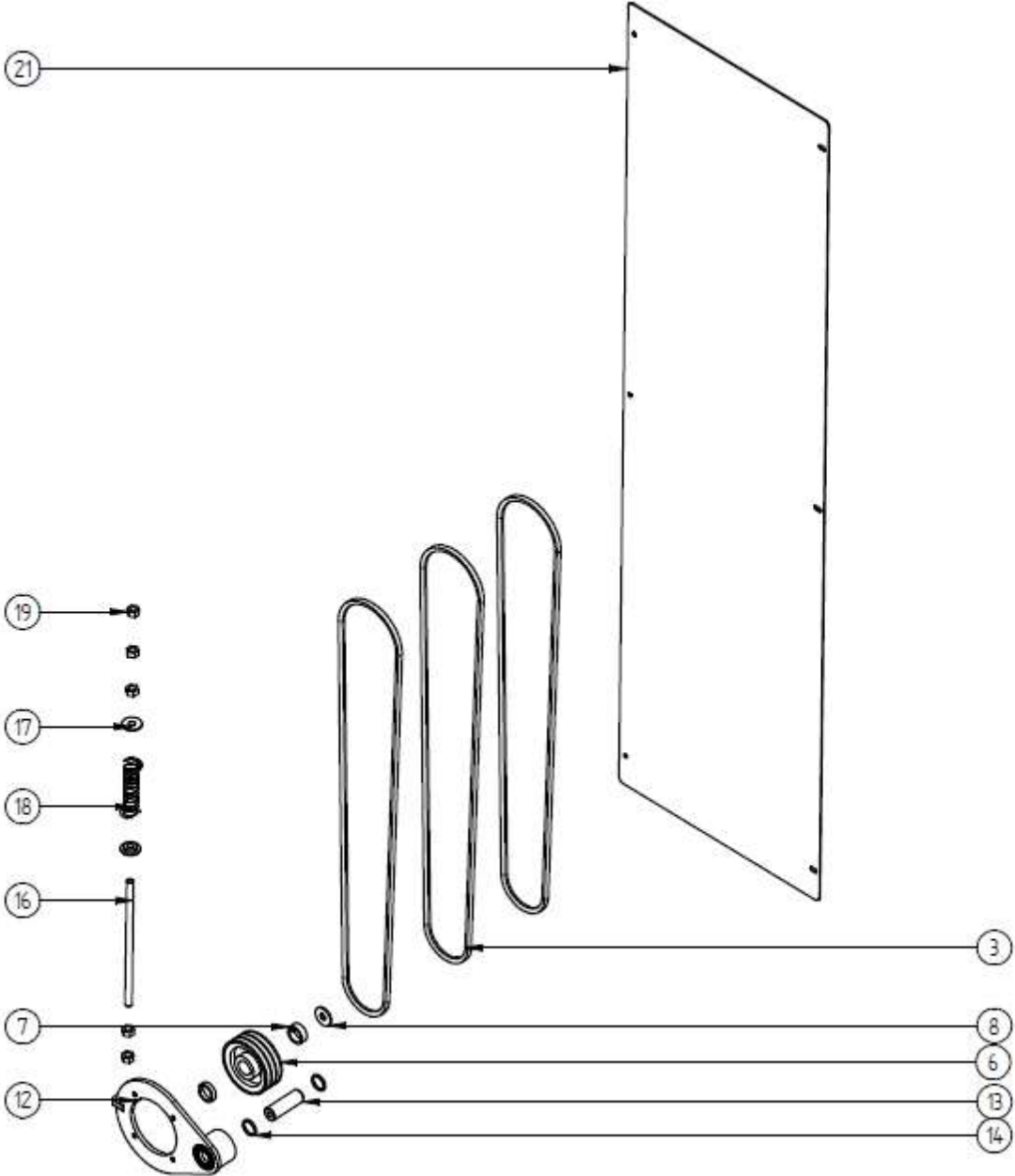


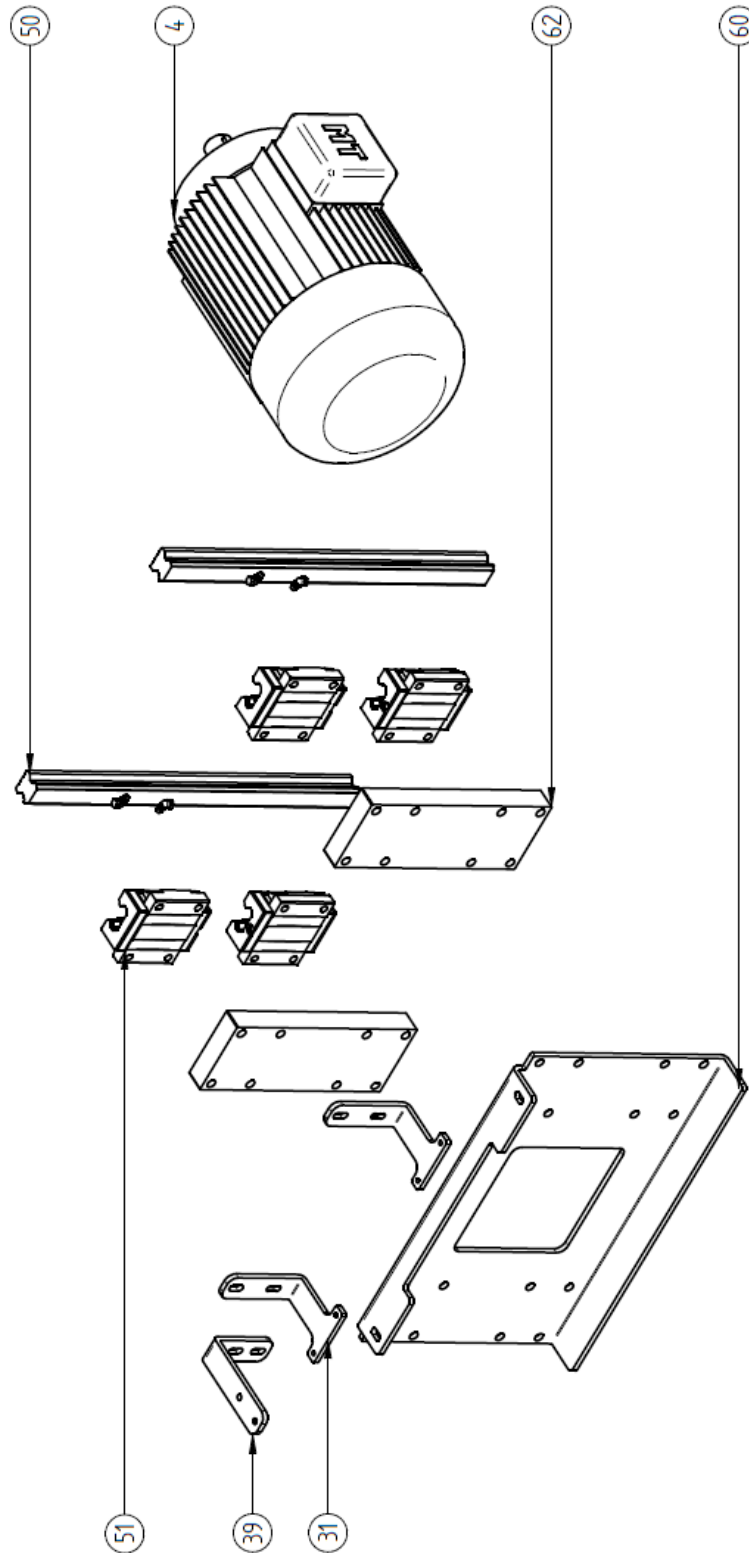


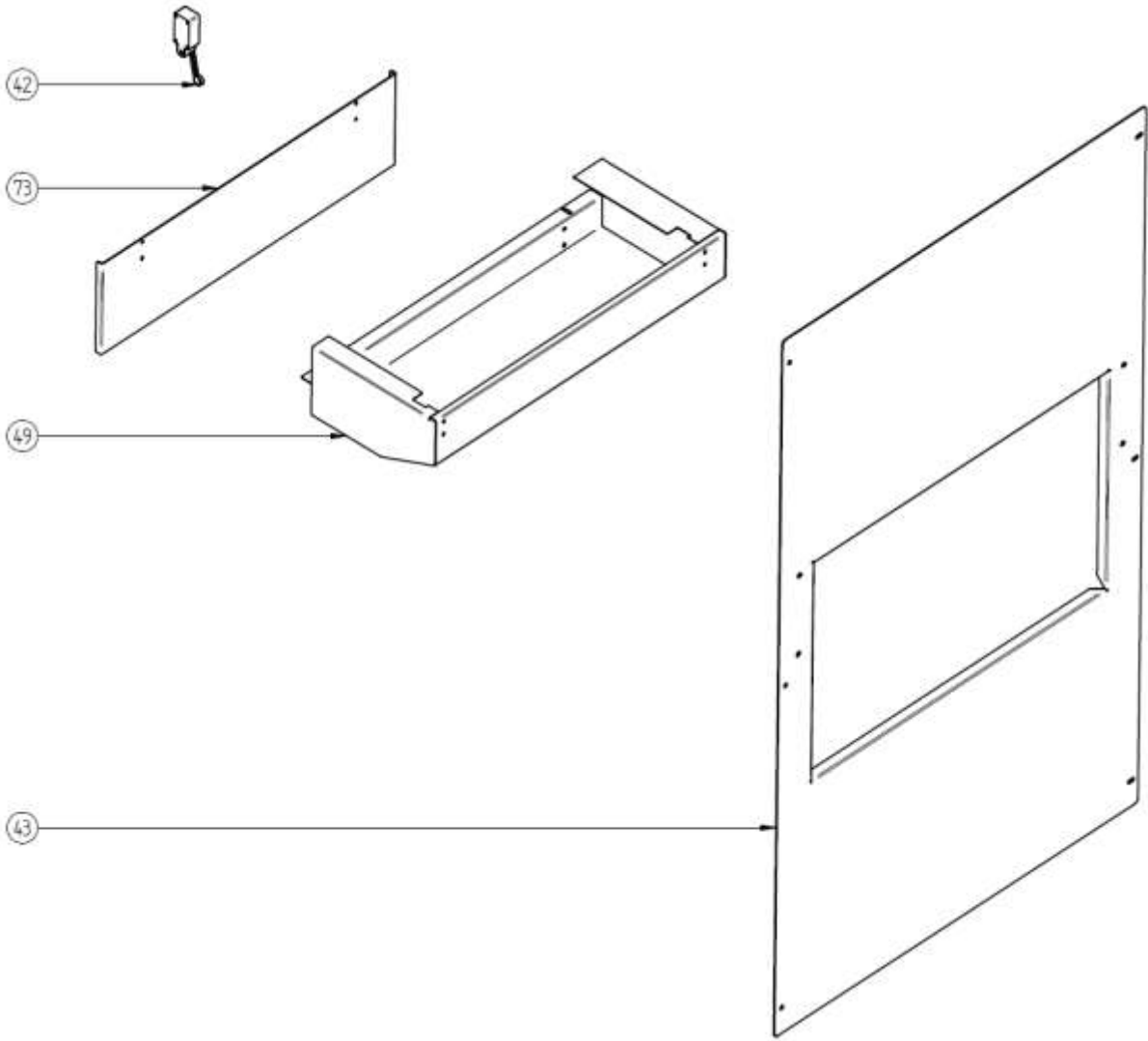


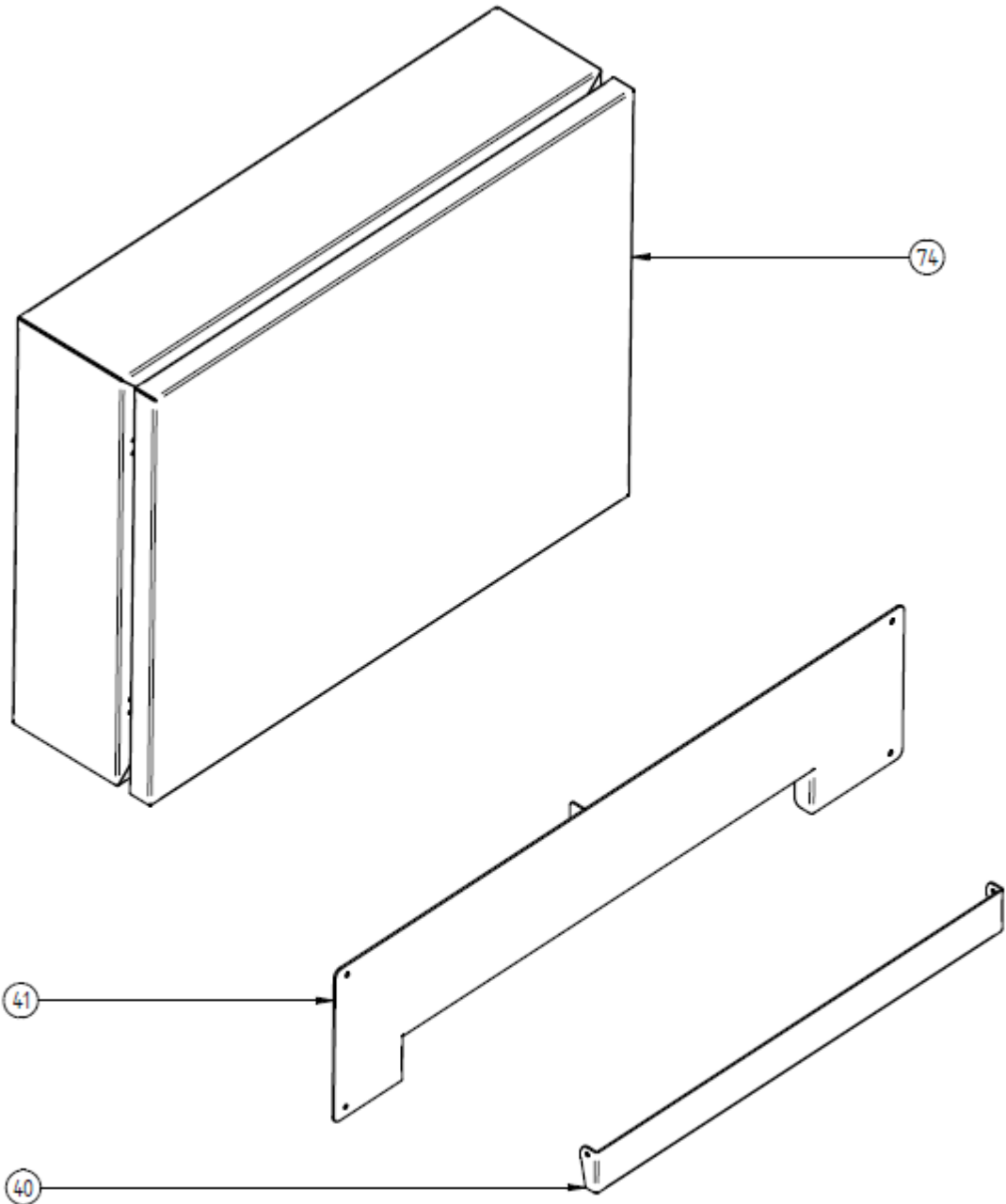










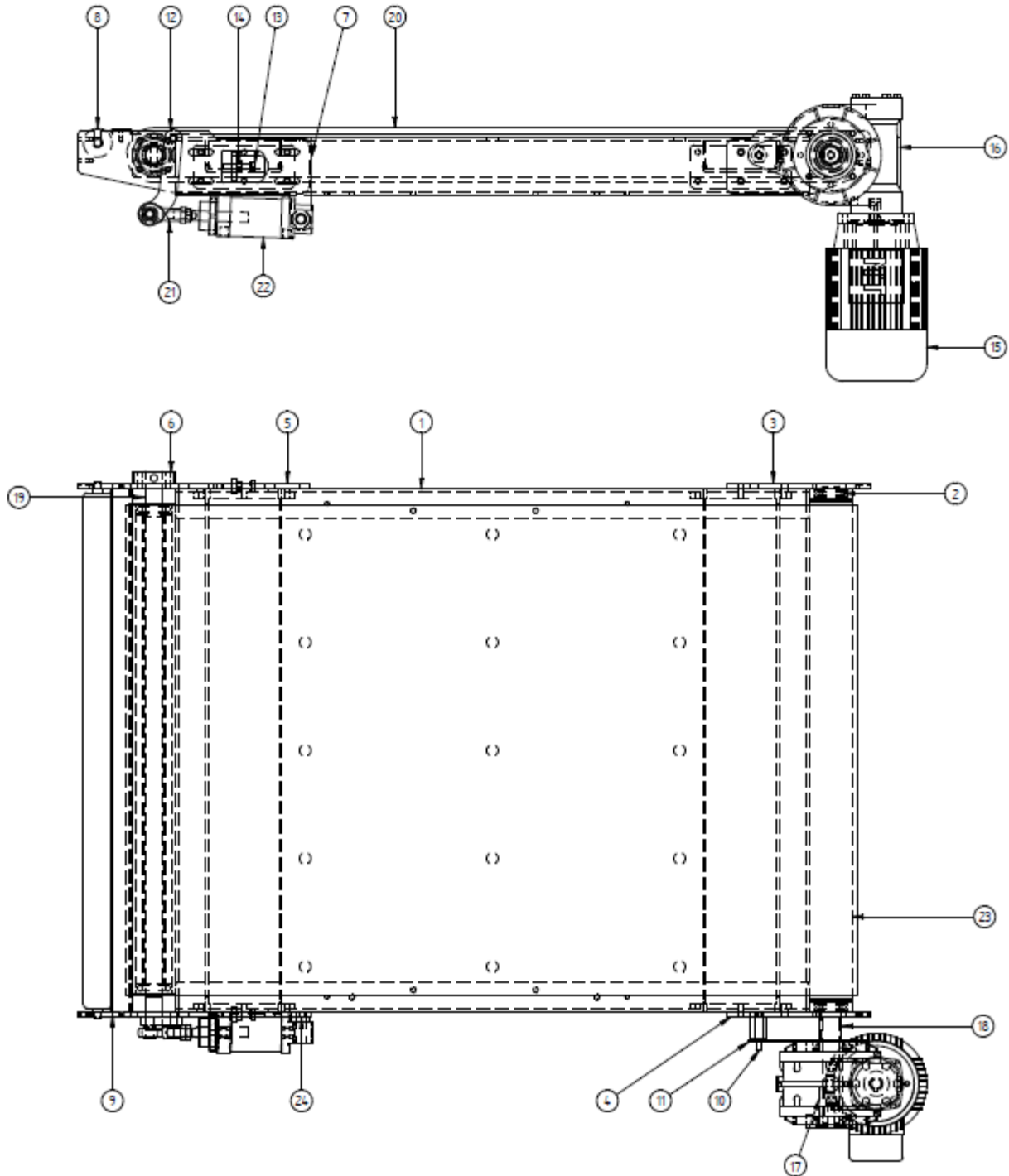


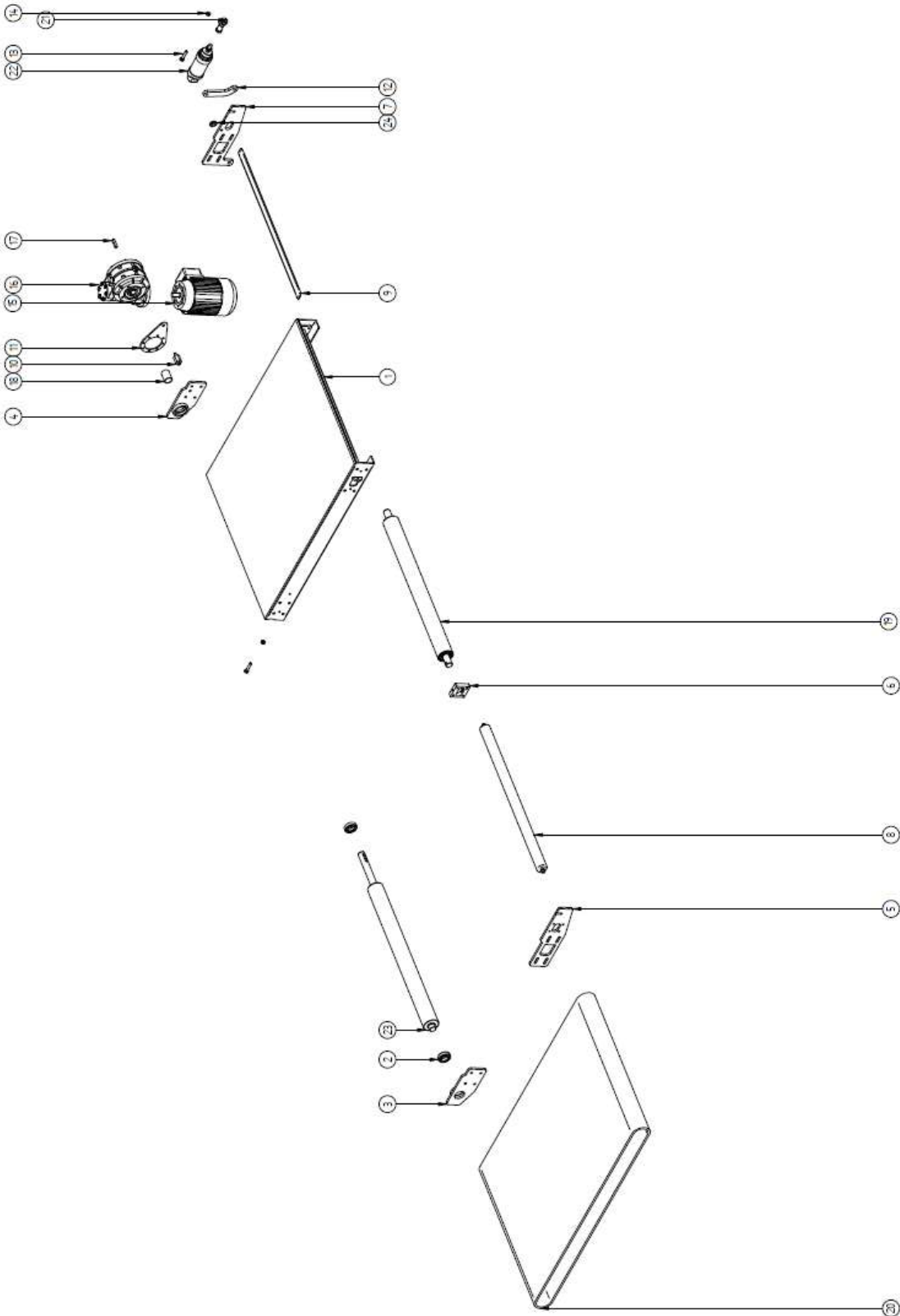


POS.	CODICE	DISEGNO	Q.TA'	DESCRIZIONE	DESIGNATION
	<b>GM06R</b>	<b>G00189</b>		<b>LEVIGATRICE GM06R</b>	<b>SANDING MACHINE GM06R</b>
2	FN6329	G10265	1	GRUPPO NASTRO ABRASIVO	GROUP ROLLER ABRASIVE BELT
3	YY2201	.	3	CINGHIA	BELT
4	YY2346	.	1	MOTORE KW 5.5	ELECTRIC MOTOR
6	FN4895	G41185	1	PULEGGIA MOTORE	MOTOR PULLEY
9	YY2189	.	1	CILINDRO PNEUMATICO	PNEUMATIC CYLINDER
10	YY0984	.	1	SNODO SFERICO	JOINT
15	YY2197	.	4	PIEDE	FOOT
18	FN4050	41430	1	MOLLA	SPRING
22	FN6328	G20805	1	GRUPPO TRASPORTO	TRANSPORTATION GROUP
23	YY4018	.	4	GOLFARE	EYE BOLT
28	YY2531	.	1	MOLLA	SPRING
29	FN6301	G31512	2	RULLO PRESSORE	PRESSURE ROLLER
30	YY0460	.	1	MANIGLIA	HANDLE
34	YY2200	.	4	MOLLA	SPRING
42	YY2198	.	1	MICRO INTERRUETTORE	MICROSWITCH
44	YY1070	.	1	MANIGLIA	HANDLE
45	YY2193	.	2	CERNIERA	HINGE
46	YY8028	.	1	MICRO INTERRUETTORE	MICROSWITCH
50	YY2533	.	2	GUIDA LINEARE	LINEAR GUIDE
51	YY1201	.	4	PATTINO	BATCH
52	YY2363	.	1	RIDUTTORE i= 1:100	SPEED REDUCER
53	YY0541	.	1	MOTORE HP 0.14	ELECTRIC MOTOR
54	FN6226	G41499	2	PIGNONE	PINION
55	FN6300	G31511	1	VITE TRAPEZOIDALE	TRAPEZOID THREAD
56	YY0750	.	4	CUSCINETTO	BEARING
59	YY1005	.	2	CHIOCCIOLA IN BRONZO	LEADNUT
60	FN6144	G10254	1	CARRELLO VERTICALE	VERTICAL CART
66	YY4242	.	2	LINGUETTA	FEATHER
75	YY2543	.	1	CATENA	CHAIN
78	YY2353	.	1	SOFFIETTO DI PROTEZIONE	PROTECTIVE BELLOWS
81	YY2353	.	1	SOFFIETTO DI PROTEZIONE	PROTECTIVE BELLOWS
83	YY2535	.	1	TENDICATENA	TENSIONER
86	YY2532	.	2	CHIUSURA A CHIAVE	LOCK

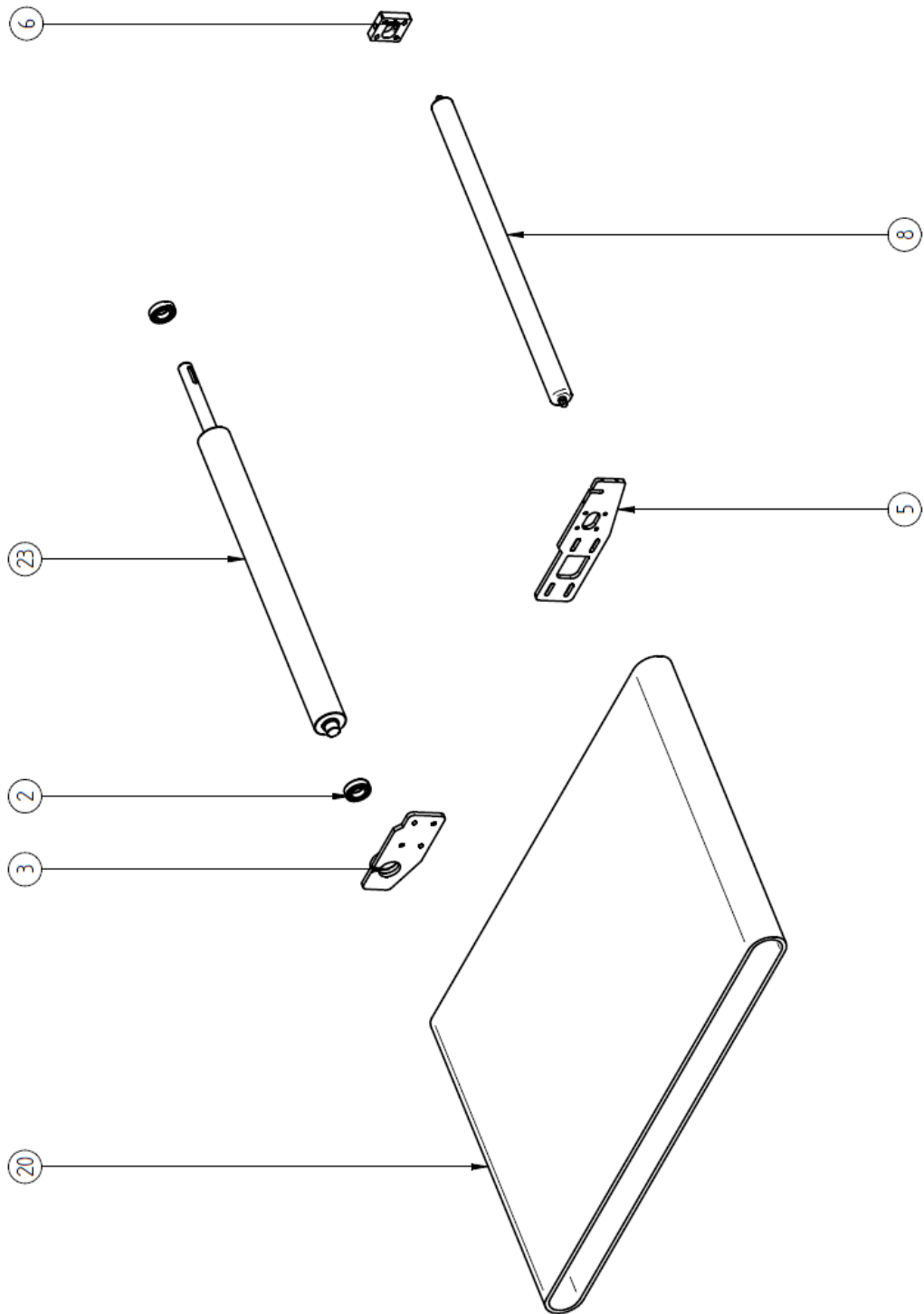


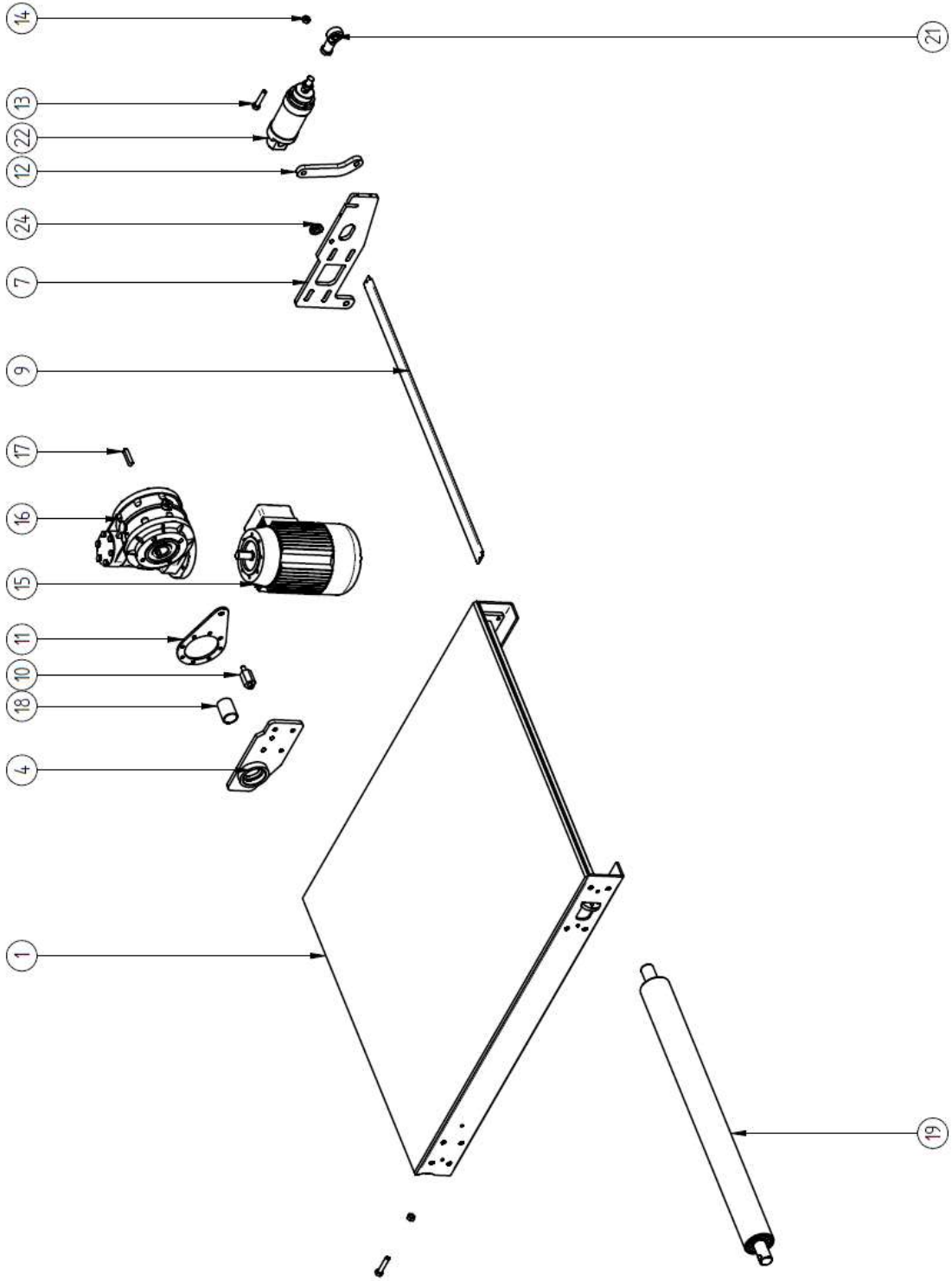
G20805 GROUP CONVEYOR BELT GM06









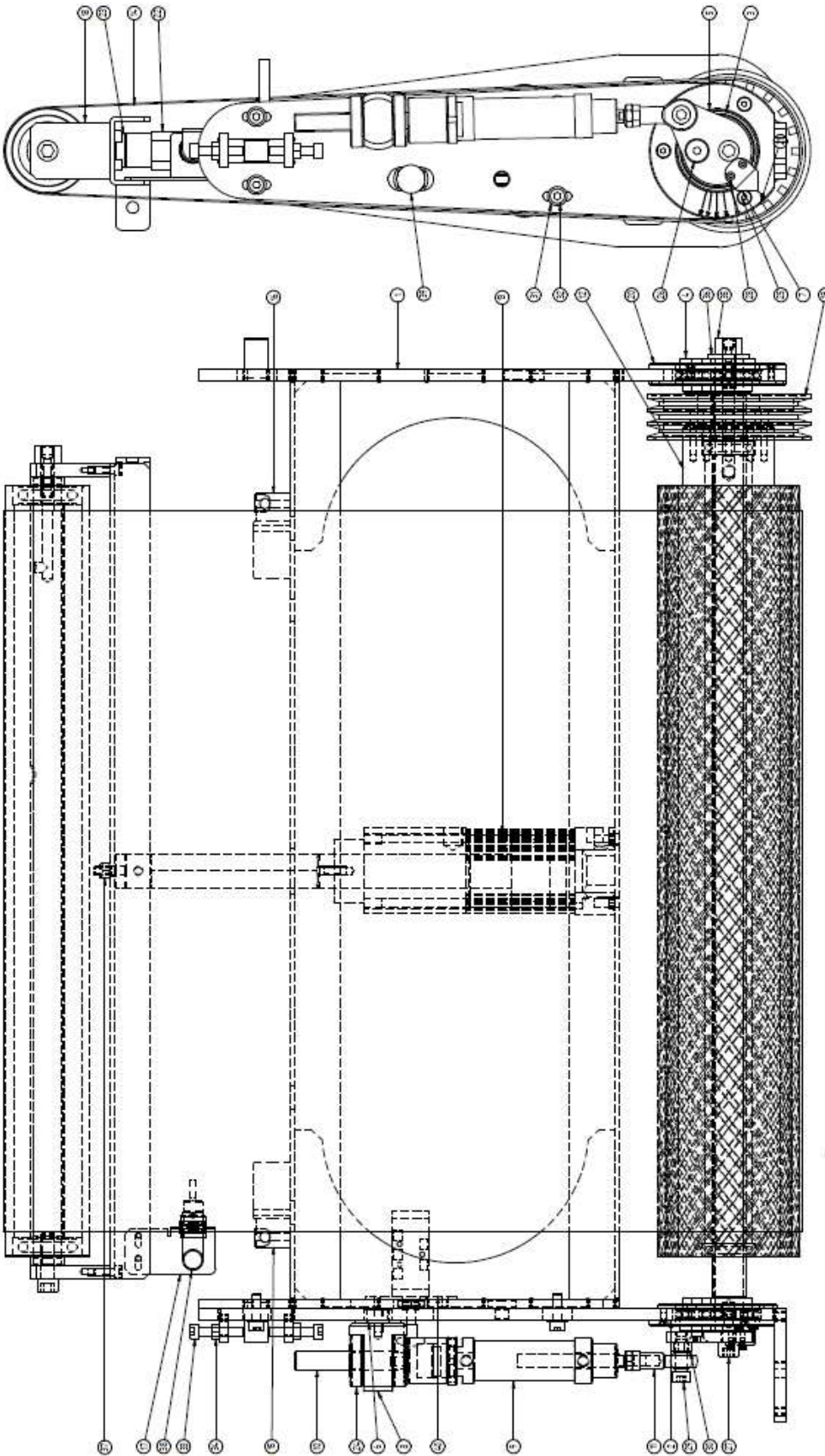


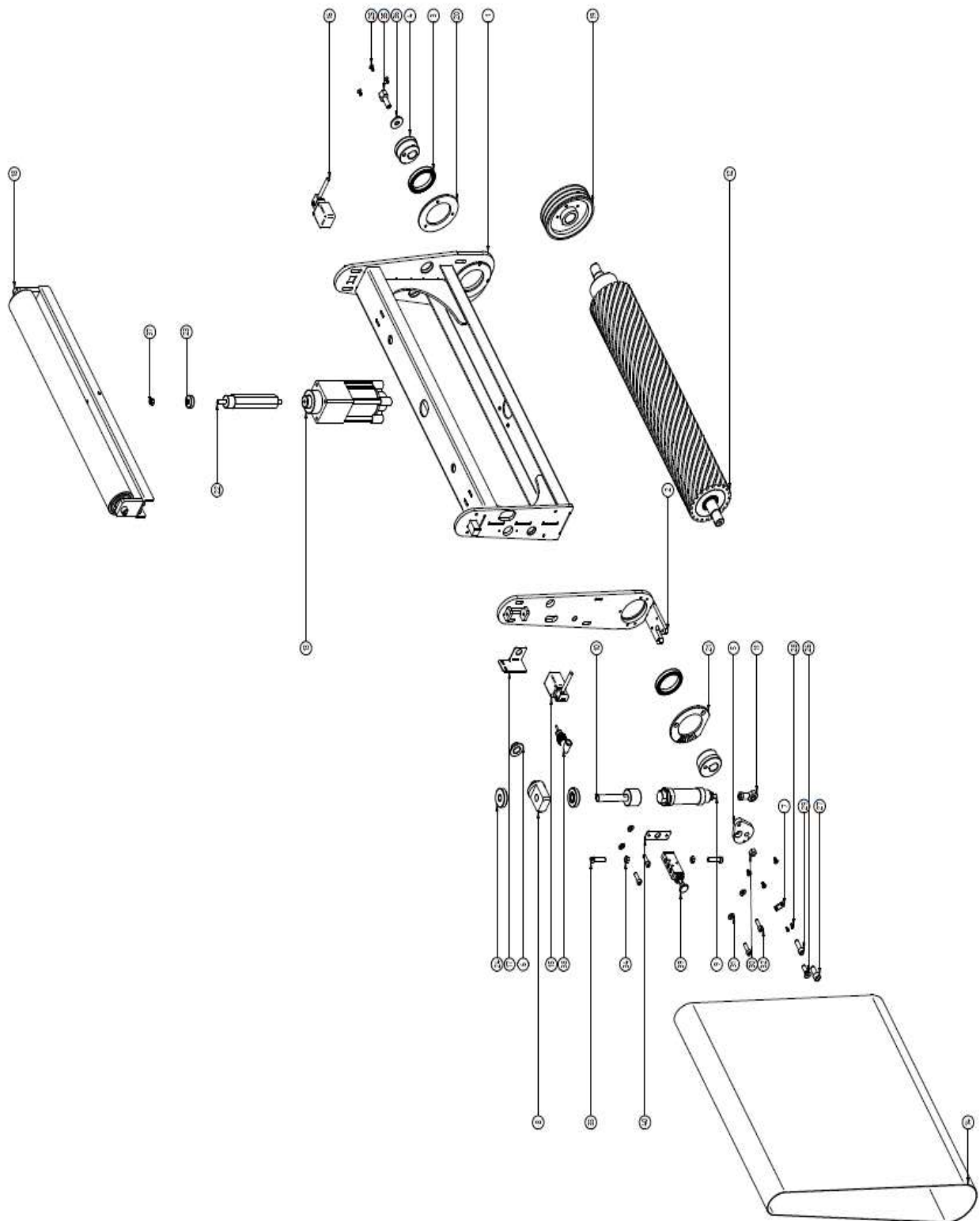


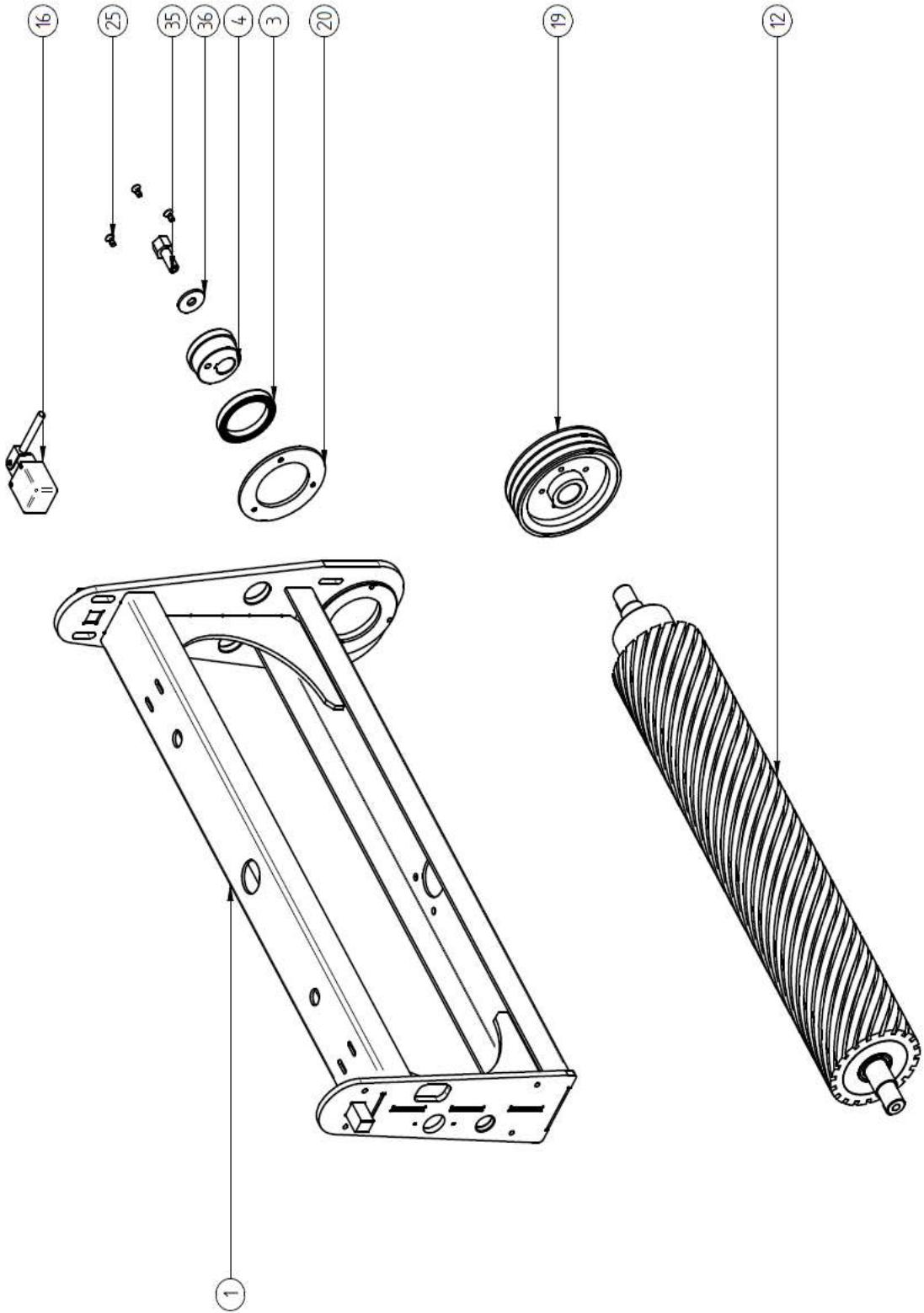
POS.	CODICE	DISEGNO	Q.TA'	DESCRIZIONE	DESIGNATION
	FN6328	G20805		GRUPPO NASTRO DI TRASPORTO GM06	GROUP CONVEYOR BELT GM06
2	YY0532		2	CUSCINETTO	BEARING
8	YY2343		1	RULLO FOLLE	ROLLER
15	YY1779		1	MOTORE ELETTRICO	ELECTRIC MOTOR
16	YY2530		1	RIDUTTORE DI VELOCITA'	SPEED REDUCER
17	YY3178		1	LINGUETTA	FEATHER
19	FN6327	G31515	1	RULLO CONDOTTO	DRIVEN ROLLER
20	YY2542		1	NASTRO	BELT
21	YY3342		1	SNODO SFERICO	JOINT
22	YY2453		1	CILINDRO PNEUMATICO	PNEUMATIC CYLINDER
23	FN6303	G31514	1	RULLO CONDUTTORE	CONDUCTOR ROLLER

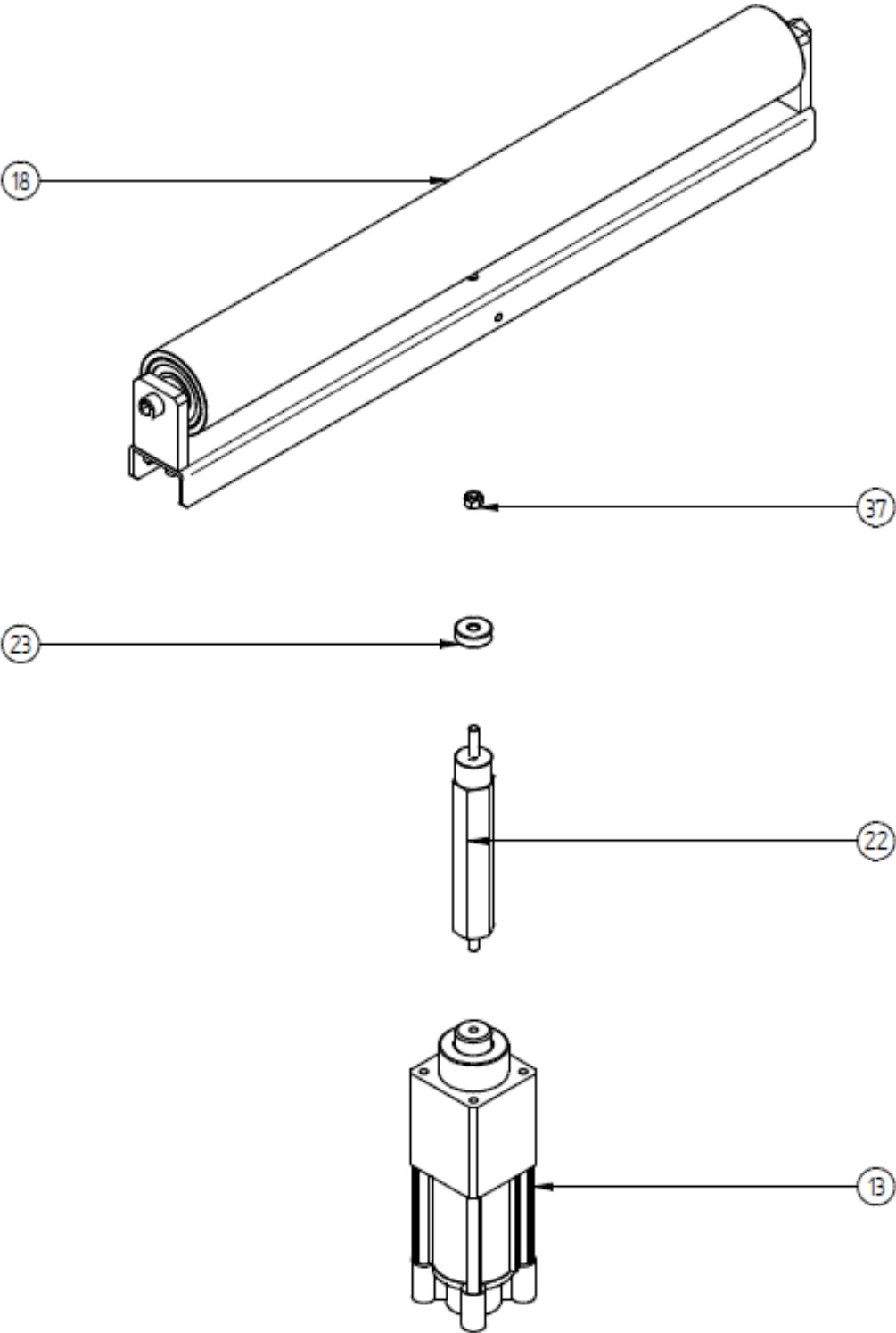


G10265 GROUP ROLLER ABRASIVE BELT GM06R

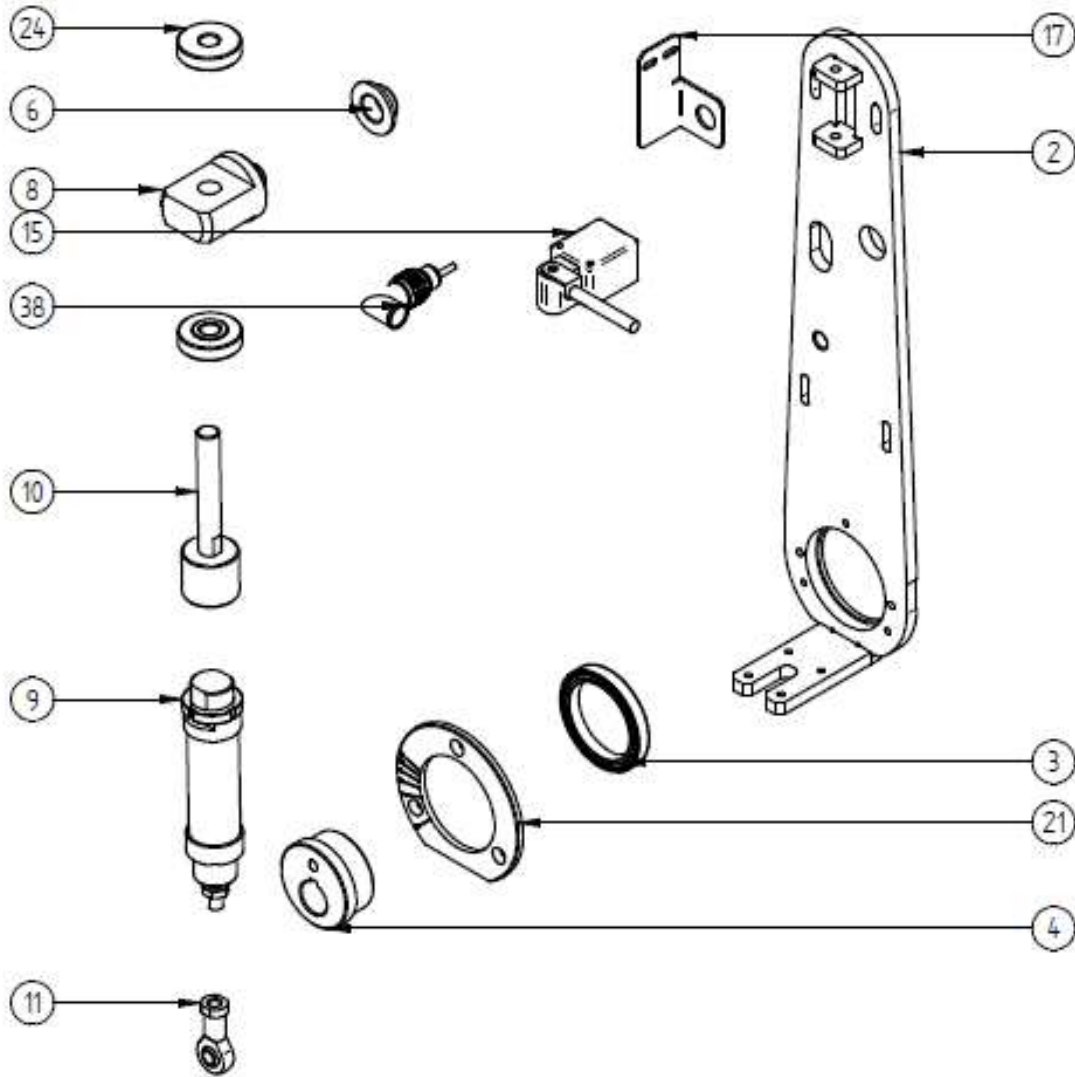


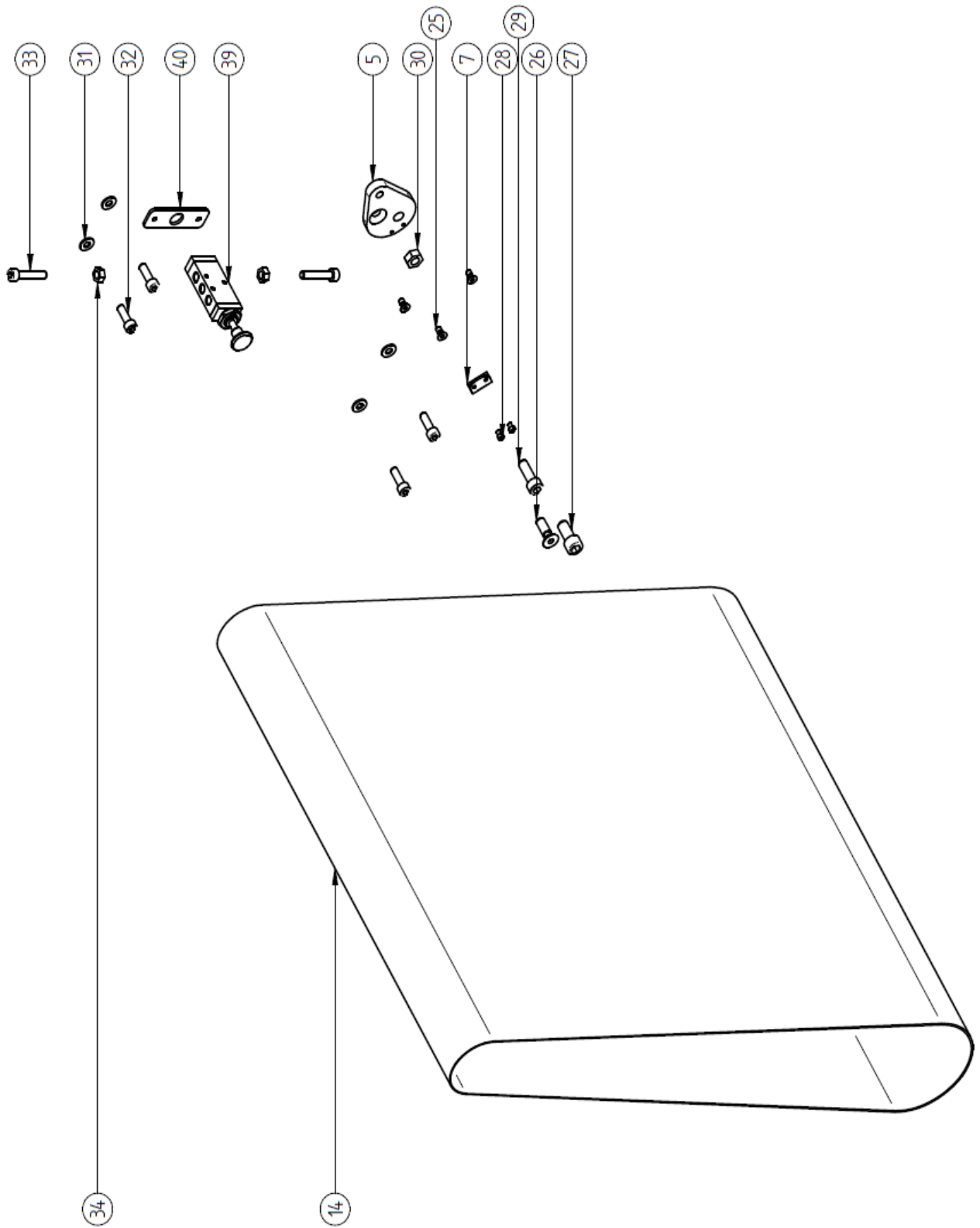










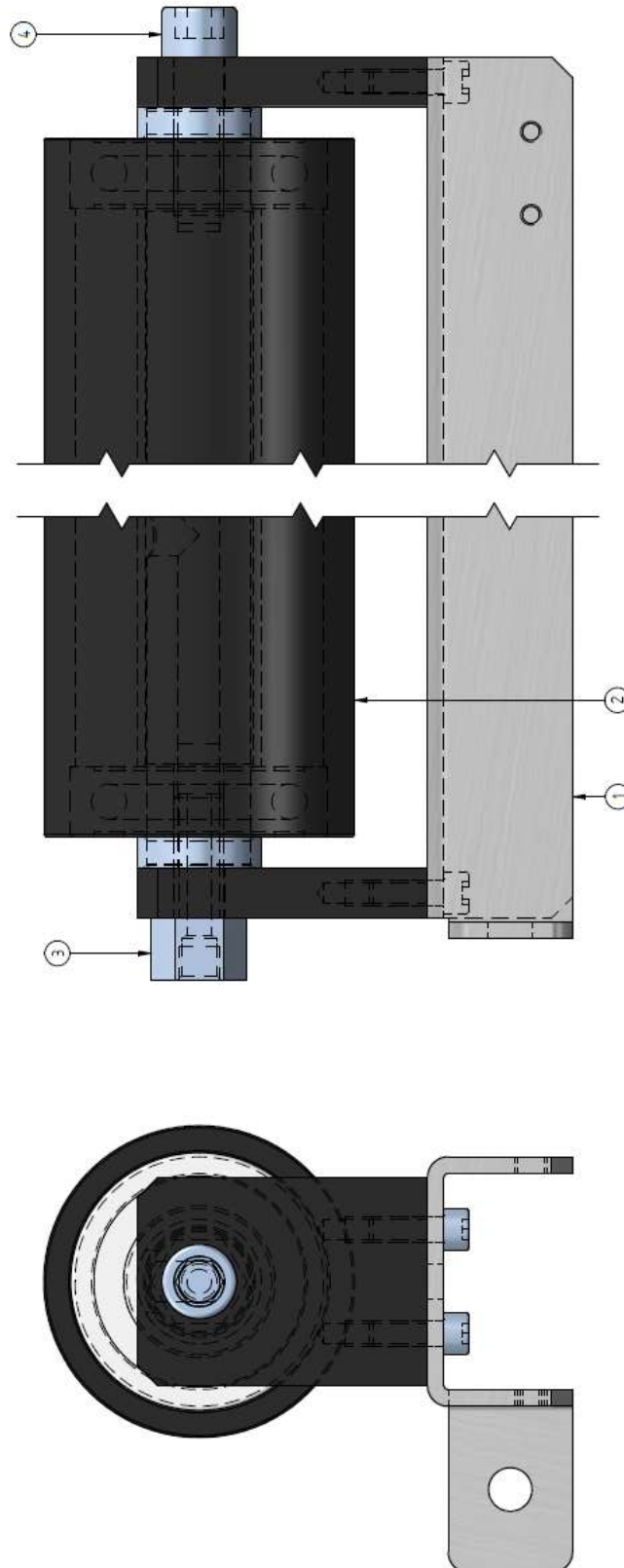


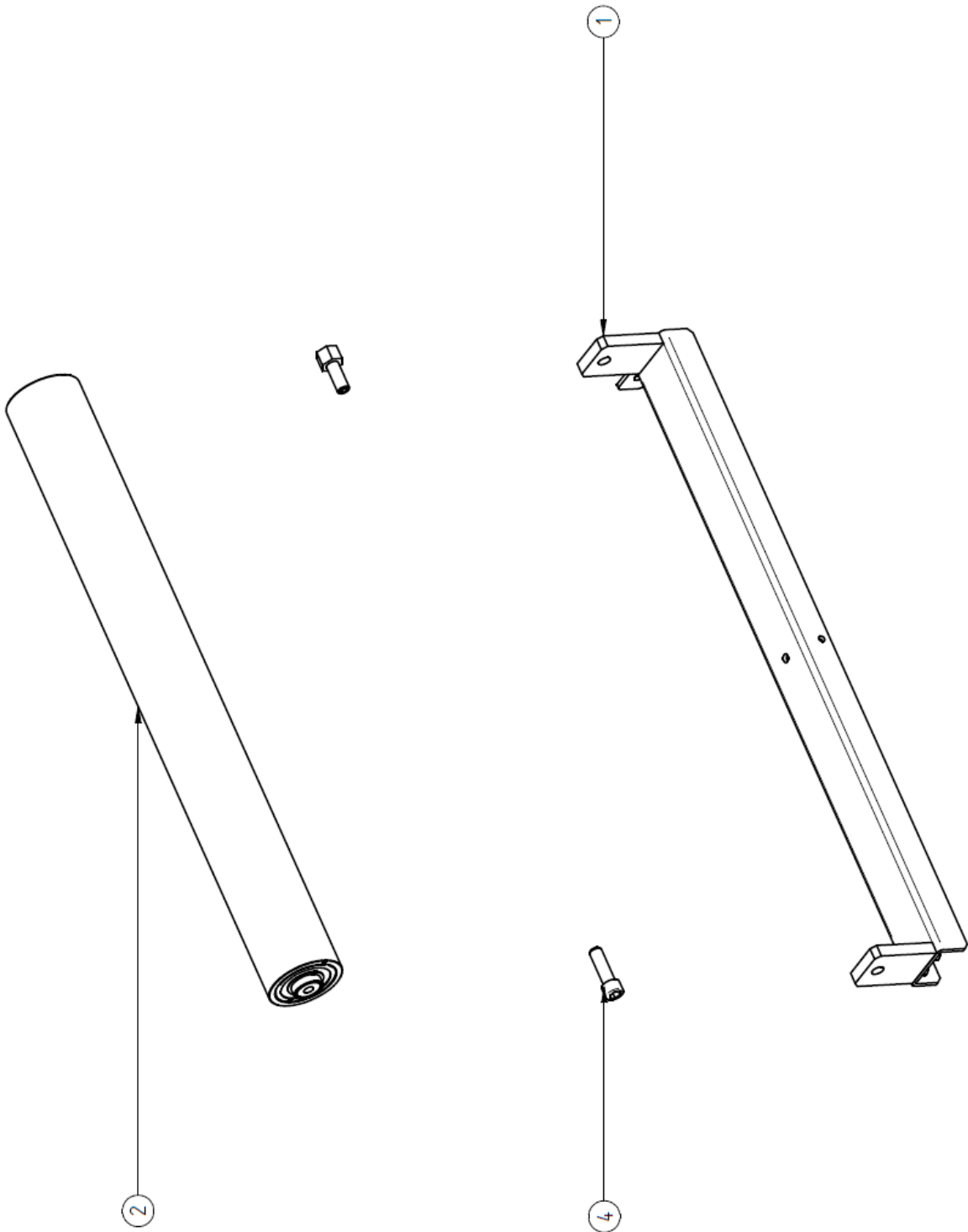


POS.	CODICE	DISEGNO	Q.TA'	DESCRIZIONE	DESIGNATION
	<b>FN6329</b>	<b>G10265</b>		<b>GRUPPO RULLO NASTRO ABRASIVO GM06R</b>	<b>GROUP ROLLER ABRASIVE BELT GM06R</b>
3	YY2187		2	CUSCINETTO	BEARING
4	FN4841	G41173	2	ECCENTRICO	ECCENTRIC
6	FN4802	G41176	1	BOCCOLA	BUSH
7	FN4866	G41175	1	INDICE	INDEX
9	YY2188		1	CILINDRO PNEUMATICO	PNEUMATIC CYLINDER
11	YY0984		1	SNODO SFERICO	JOINT
12	FN6291	G31521	1	RULLO CONTATTO	
13	YY2186		1	CILINDRO PNEUMATICO	PNEUMATIC CYLINDER
14	08511J190671		1	NASTRO ABRASIVO	ABRASIVE BELT
15	YY2184		1	MICROINTERRUTTORE	MICROSWITCH
16	YY2184		1	MICROINTERRUTTORE	MICROSWITCH
18	FN5573	G31306	1	GRUPPO RULLO TENSIONAMENTO	ROLLER GROUP
19	FN4894	G31228	1	PULEGGIA RULLO	ROLLER PULLEY
24	FN5223	G41342	2	GHIERA	LOCKRING
38	YY2461		1	SENSORE	SENSOR
39	YY4516		1	VALVOLA TIRETTO	PNEUMATIC VALVE



G31306 TENSION ROLLER GROUP GM06



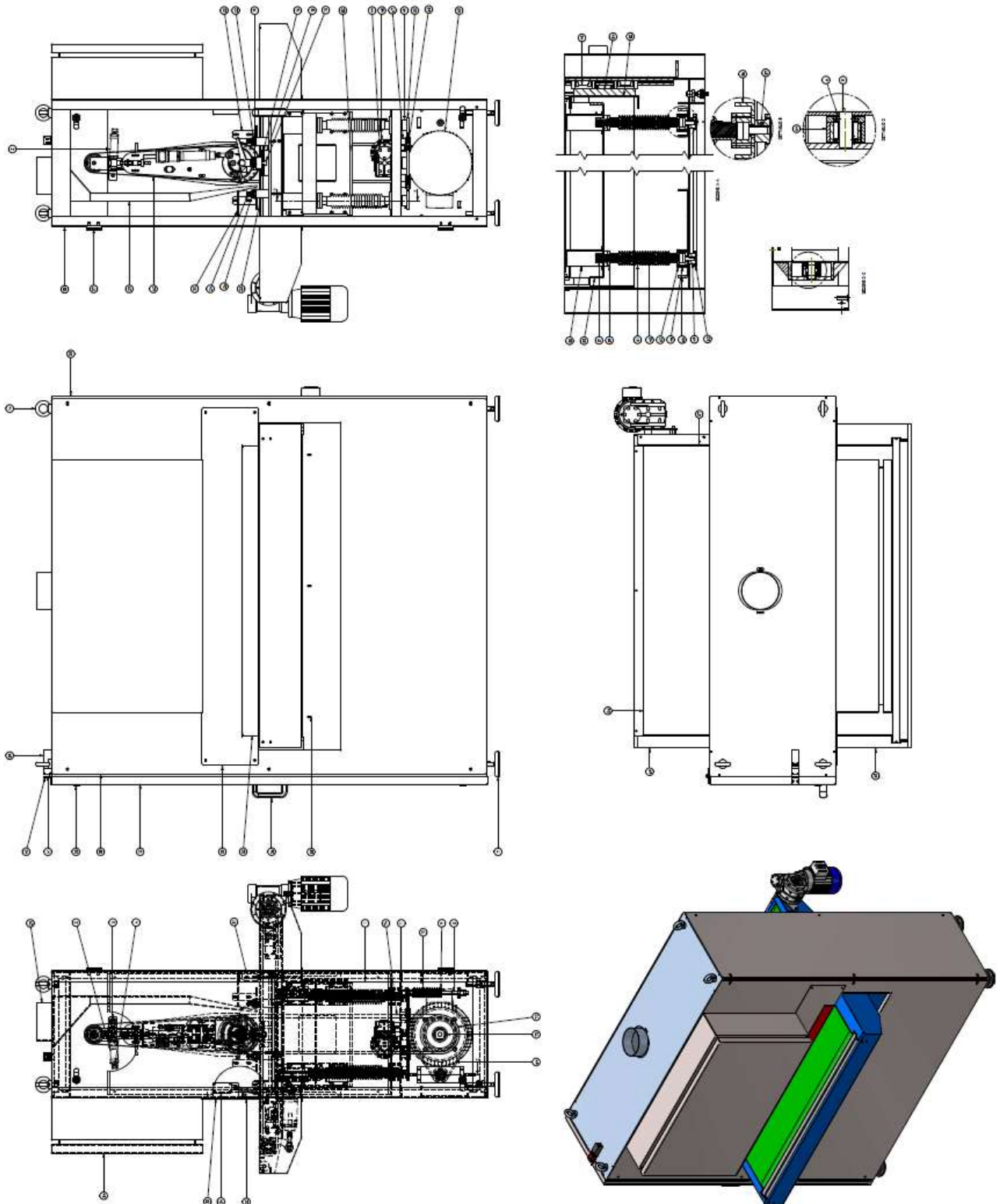




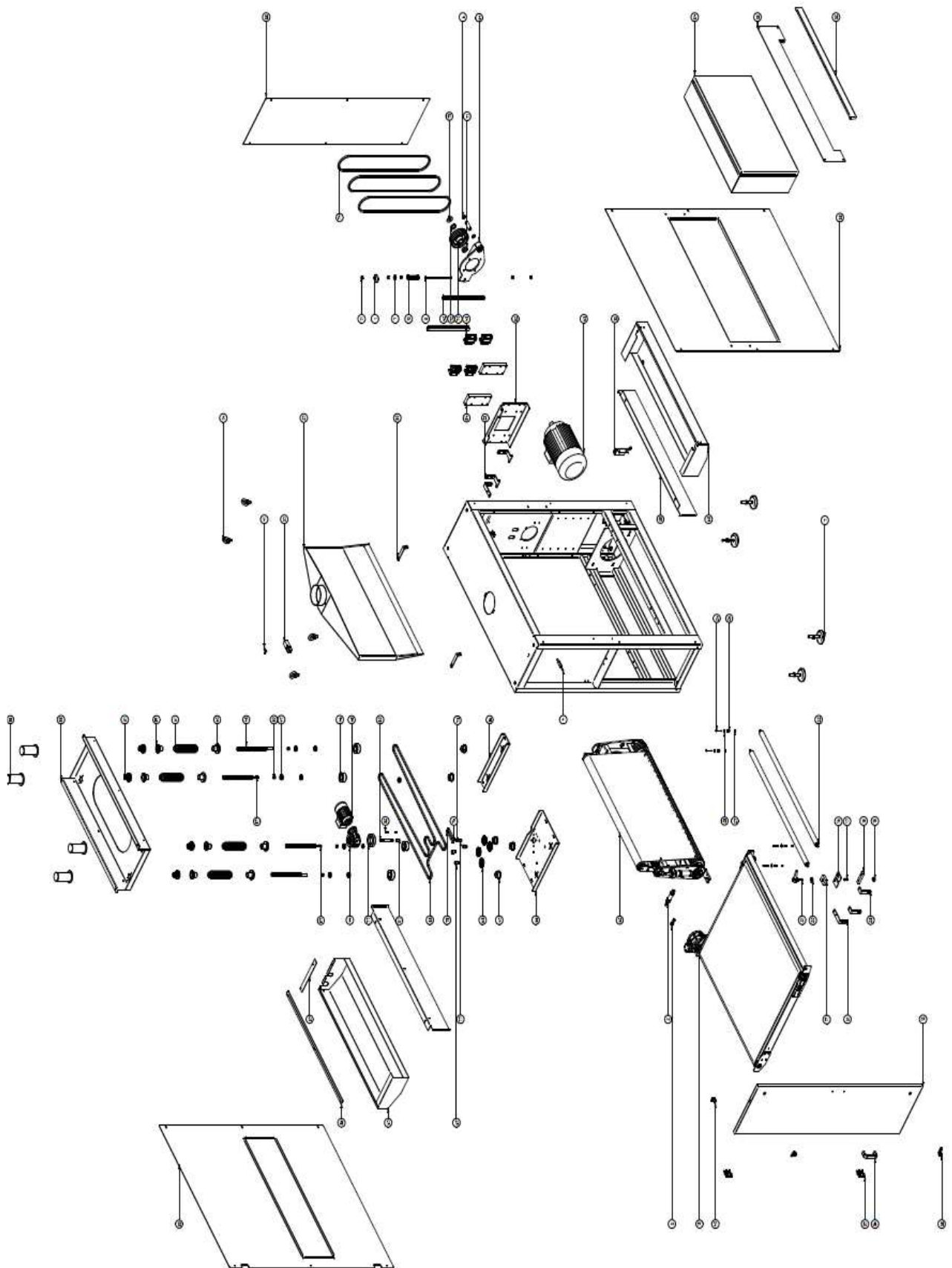
<b>P O S.</b>	<b>CODICE</b>	<b>DISEGNO</b>	<b>Q.TA'</b>	<b>DESCRIZIONE</b>	<b>DESIGNATION</b>
	<b>FN5573</b>	<b>G31306</b>		<b>GRUPPO RULLO DI TENSIONAMENTO GM06</b>	<b>TENSION ROLLER GROUP GM06</b>
2	FN5266	G31305	1	RULLO	ROLLER

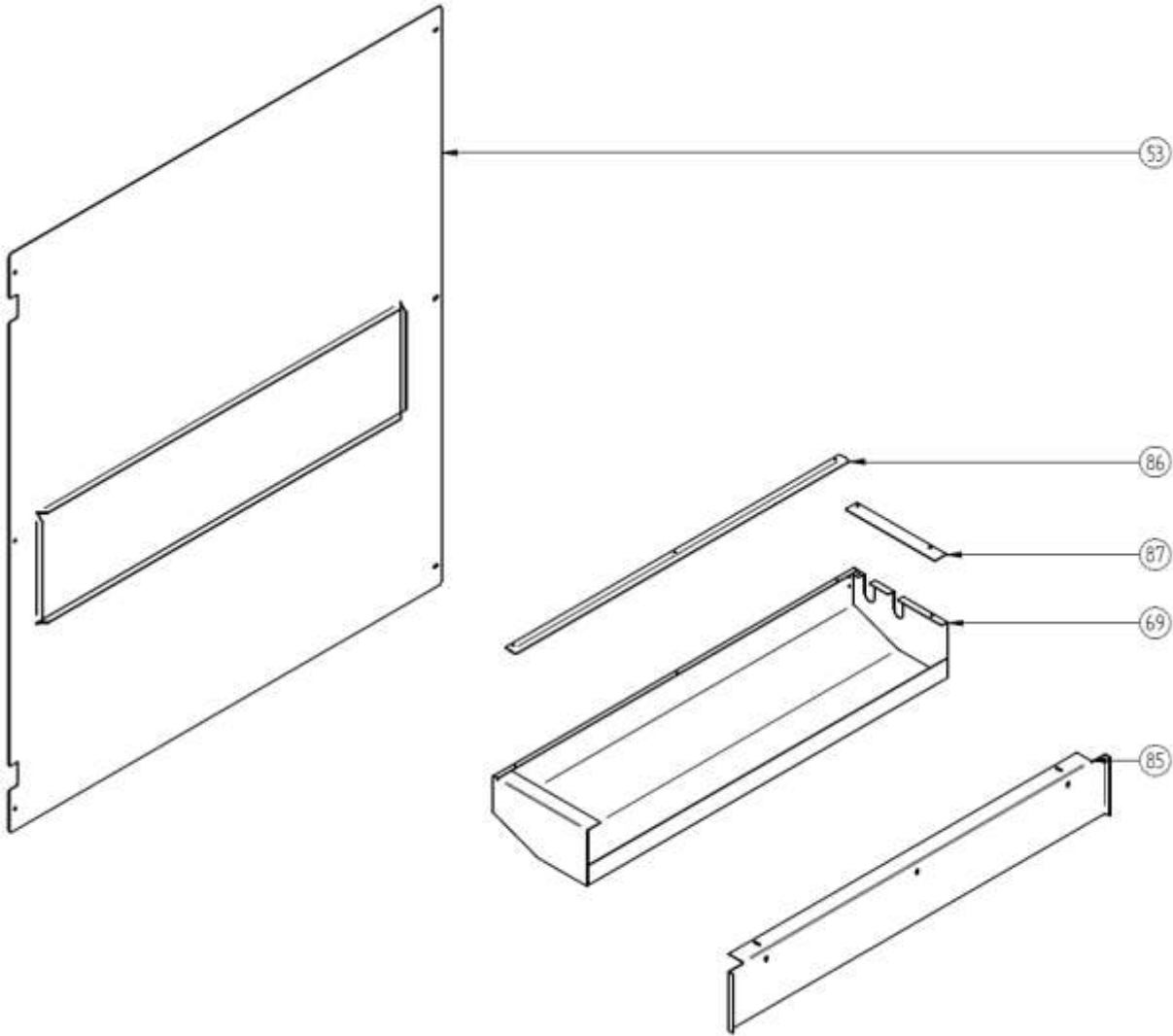


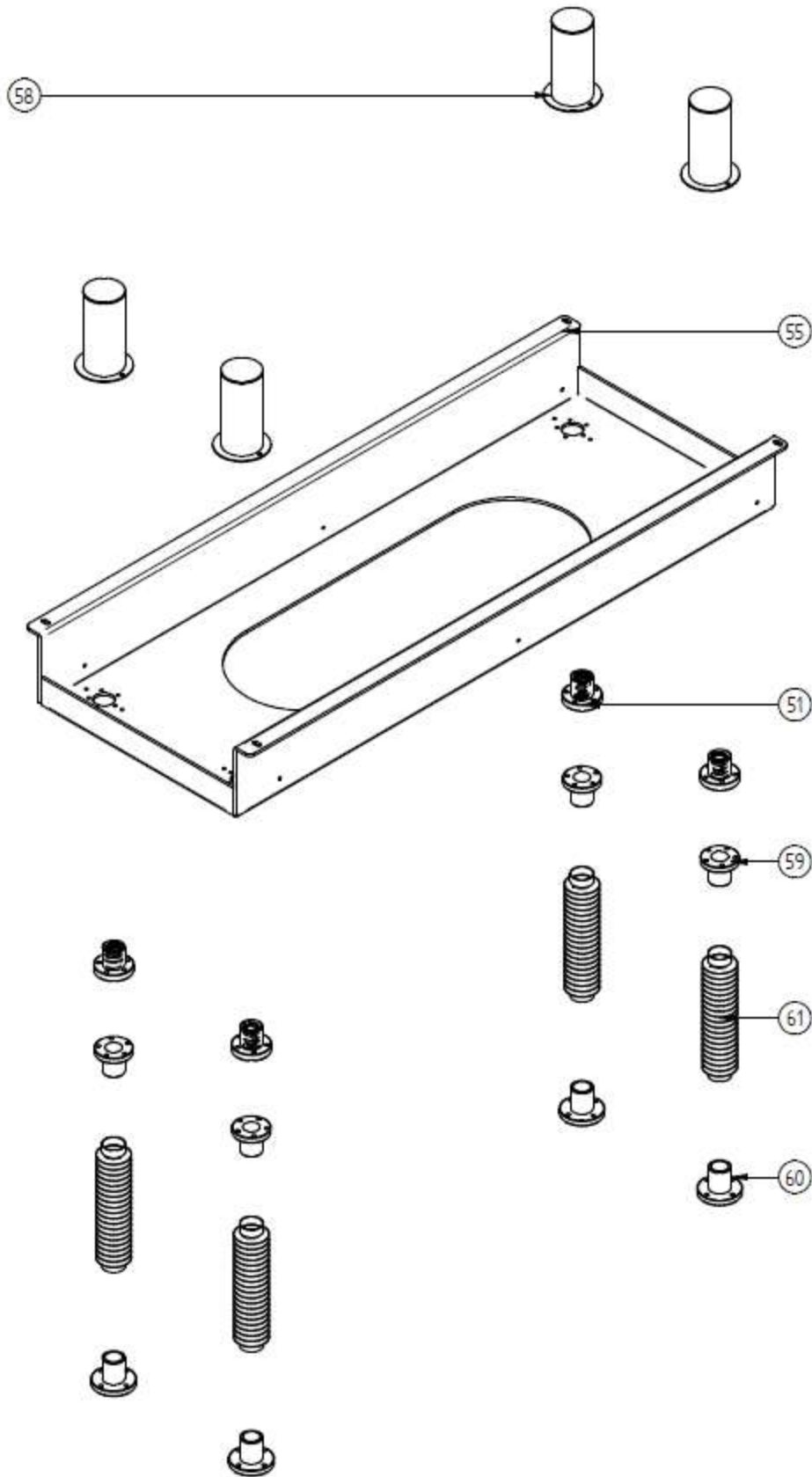
**10.4 Table showing the spare parts GM11  
G00188 SANDING MACHINE GM11R**

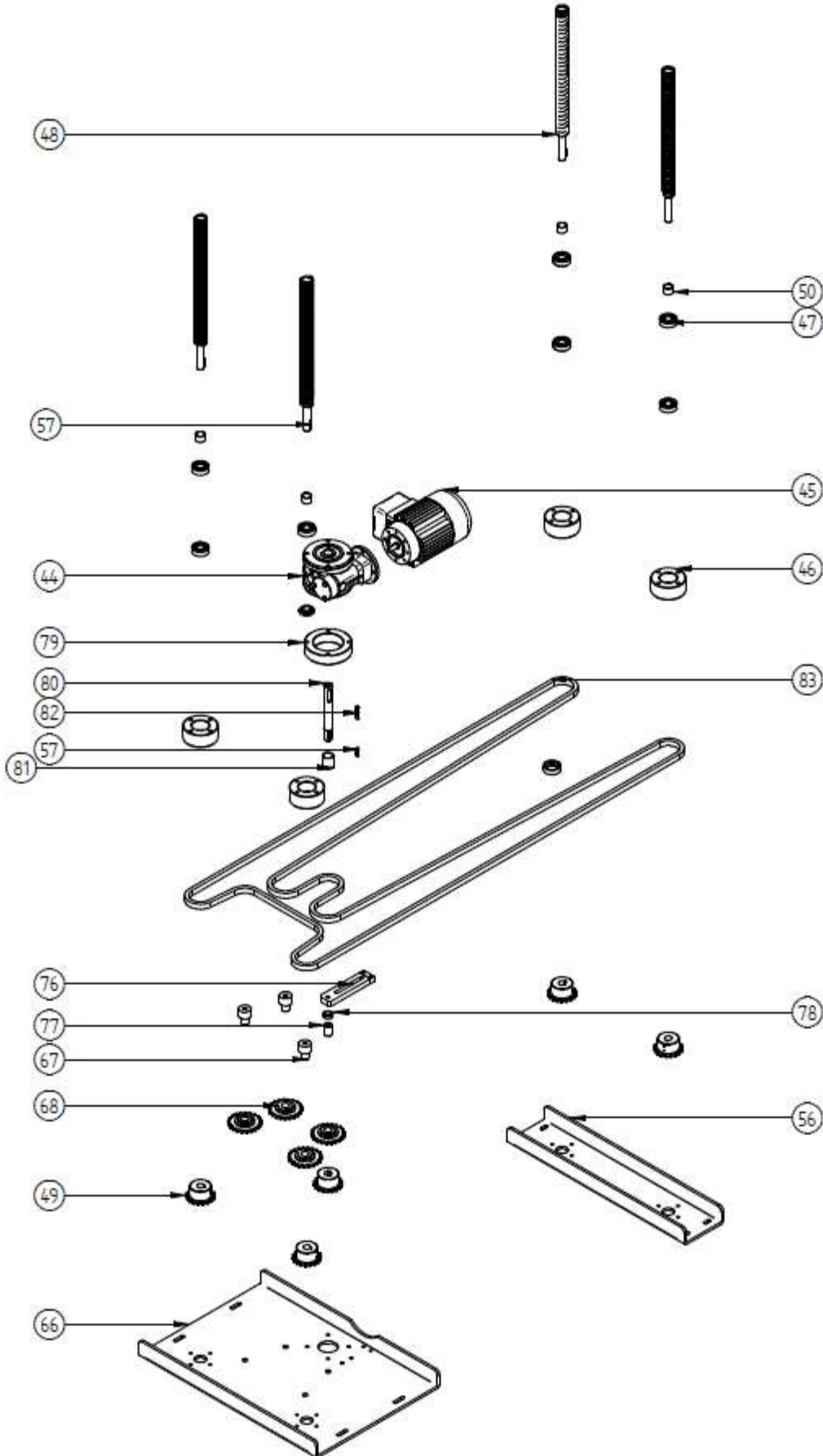


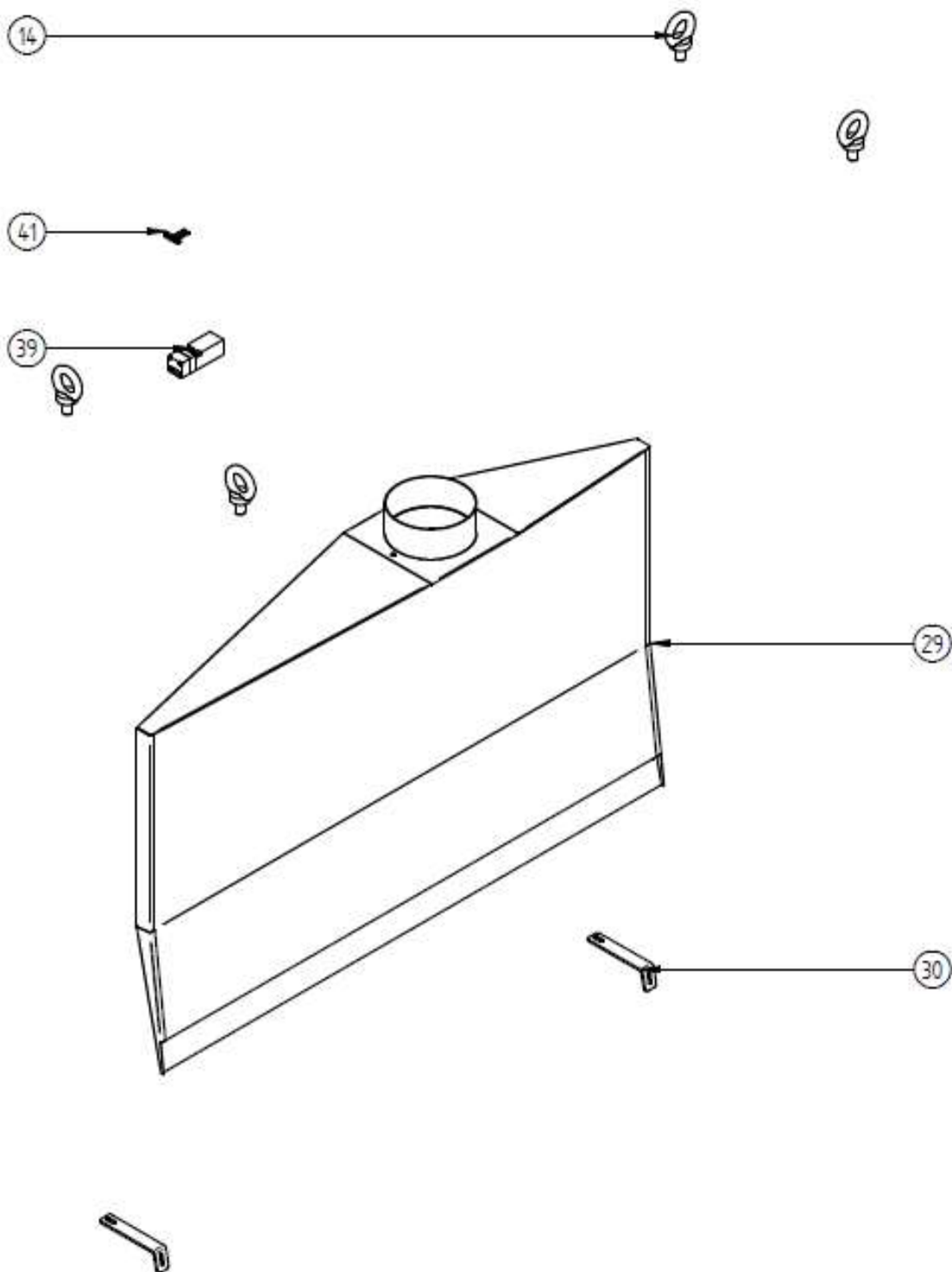


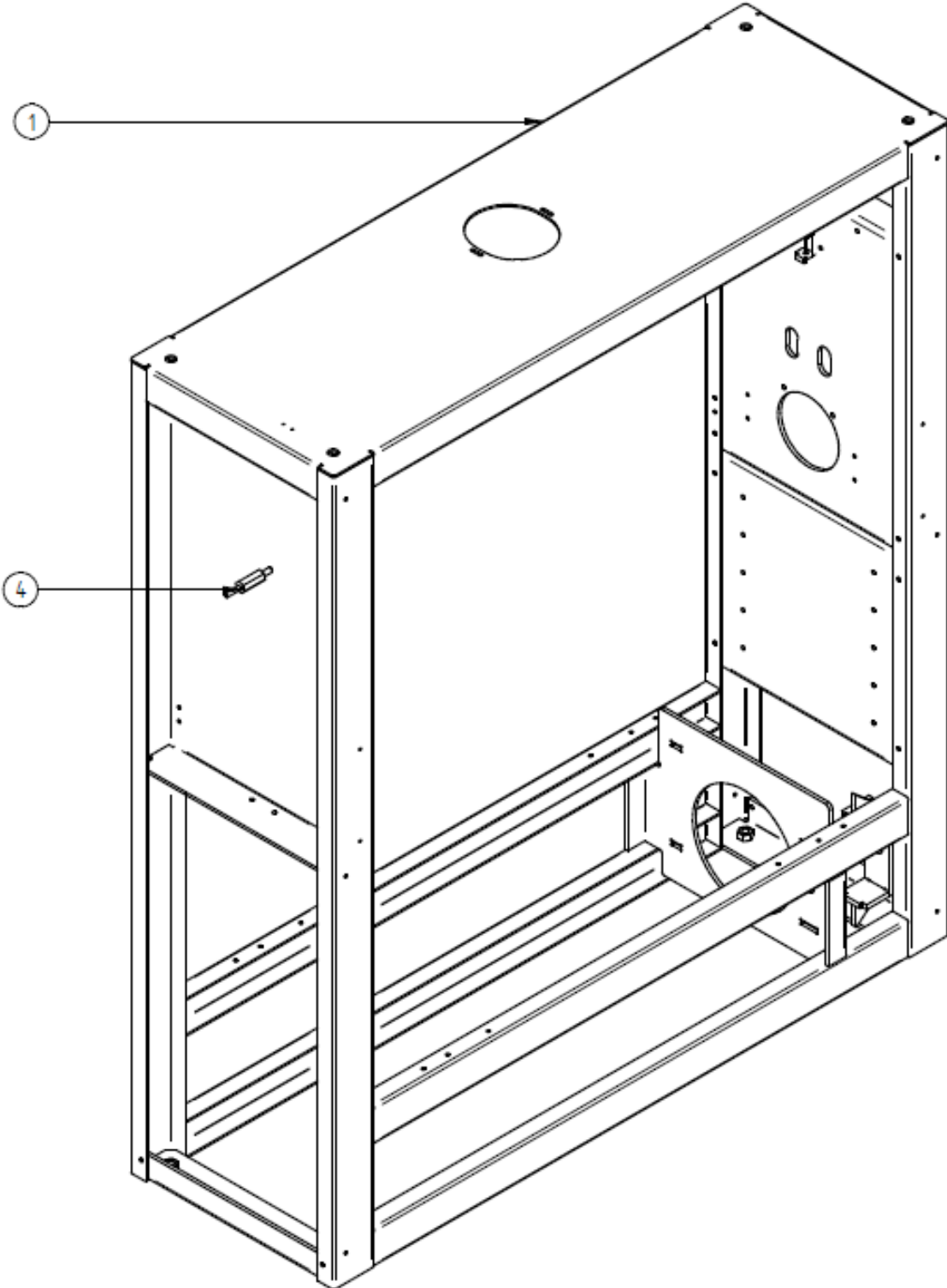


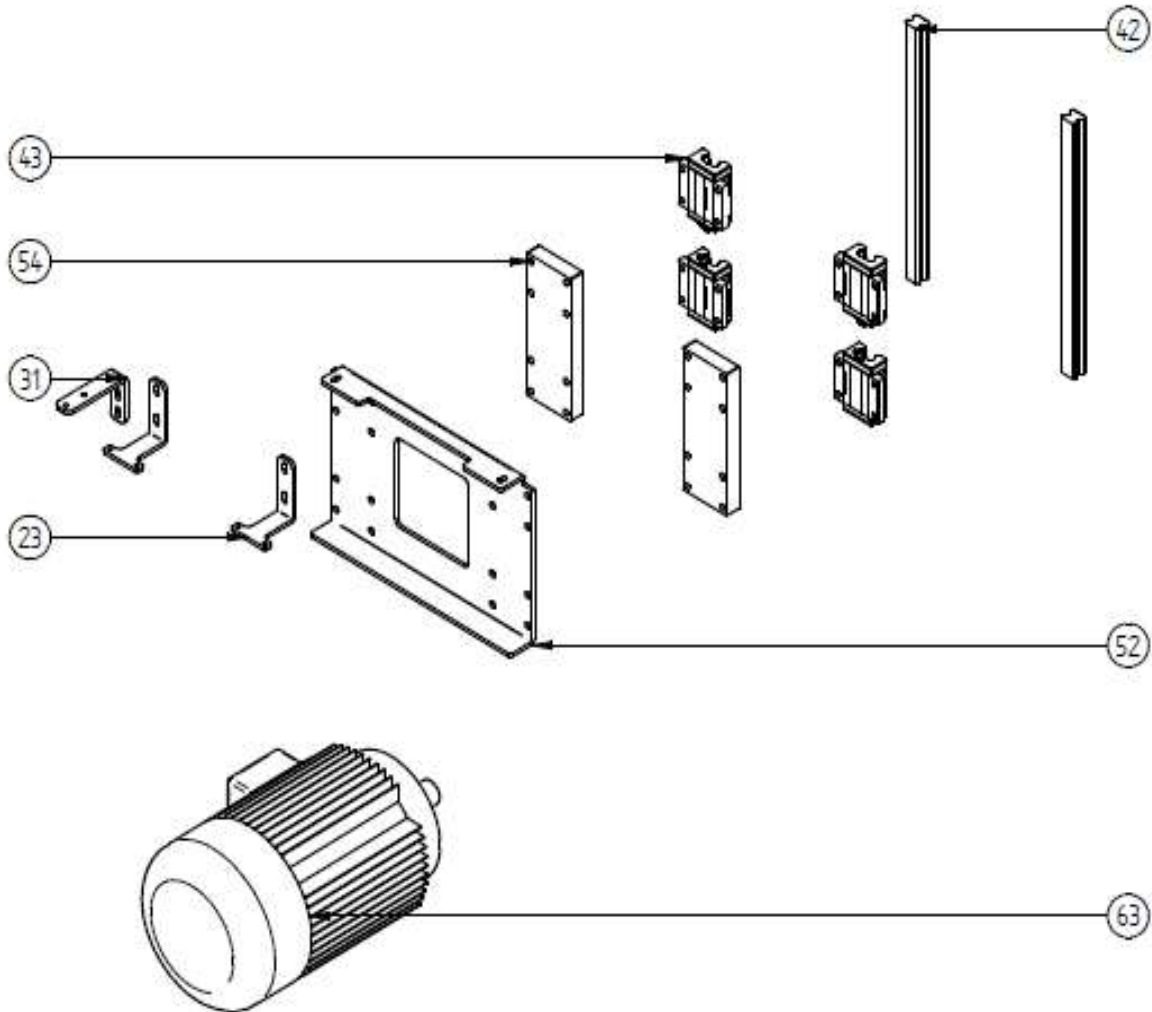




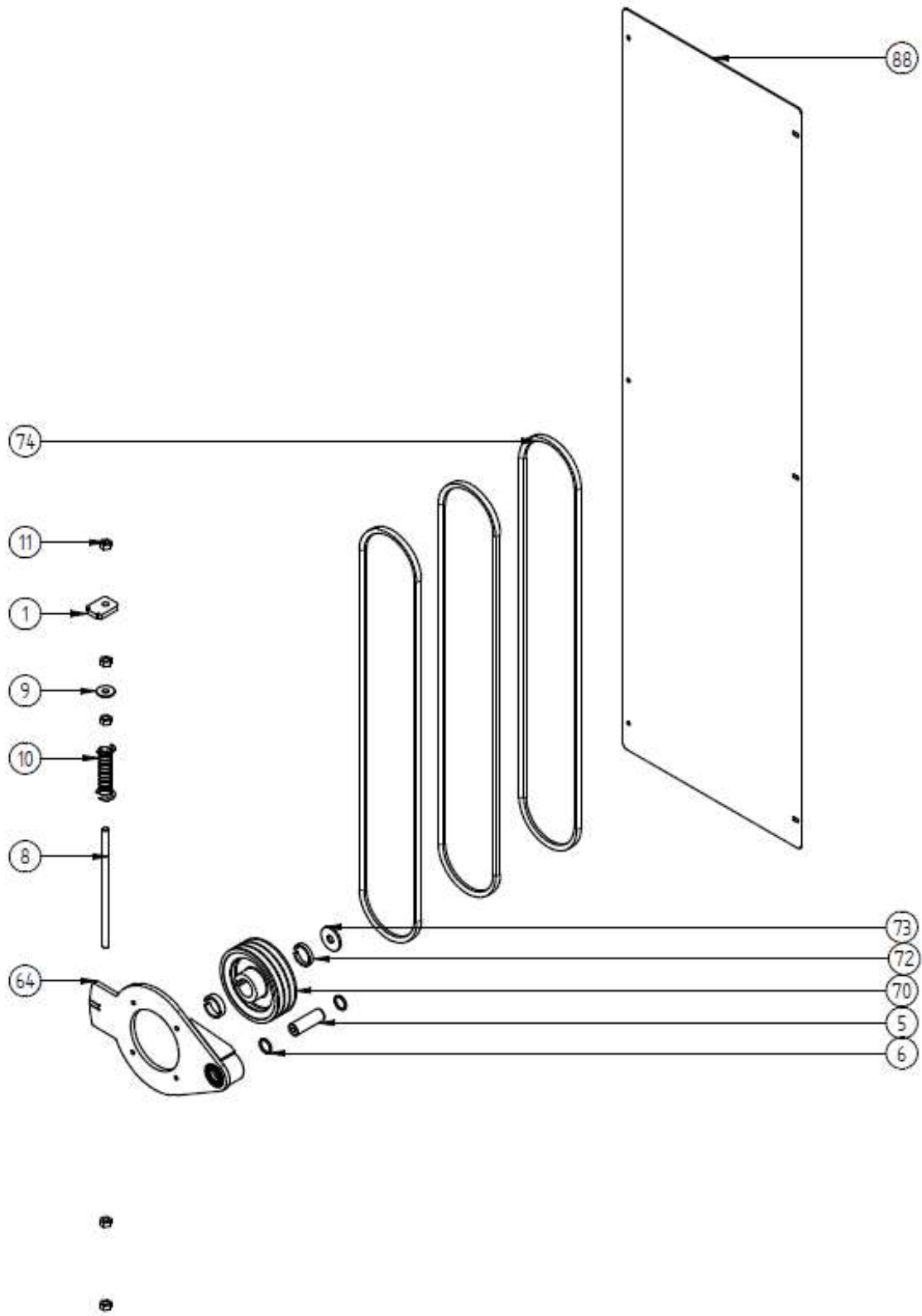


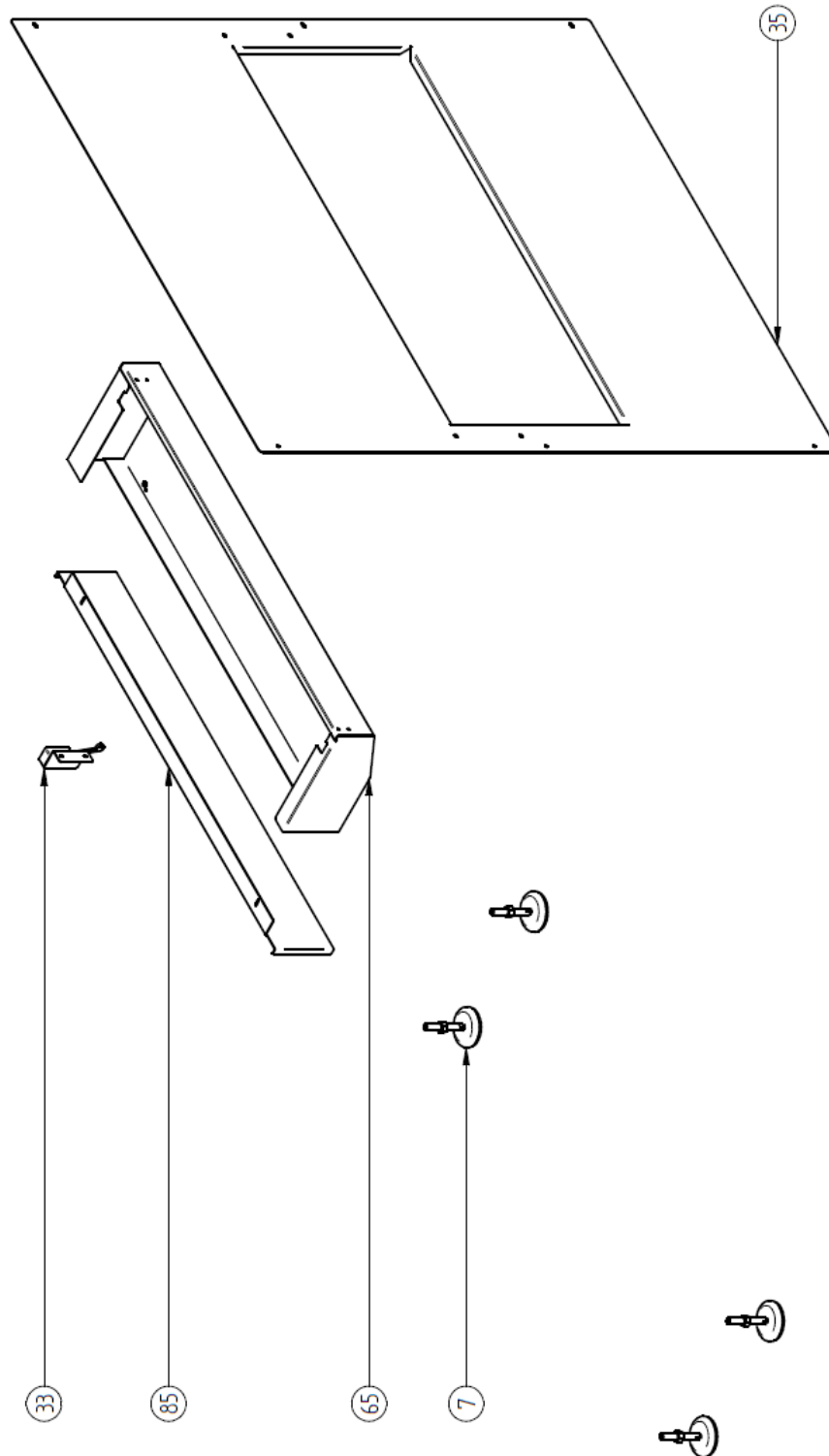


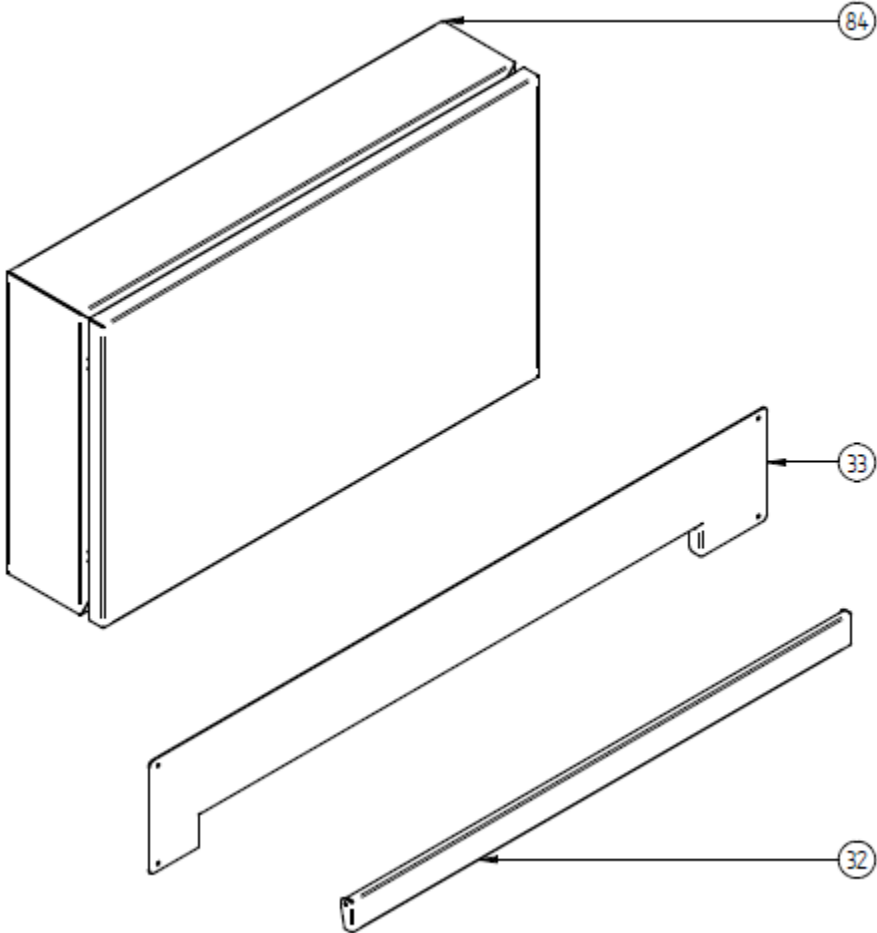


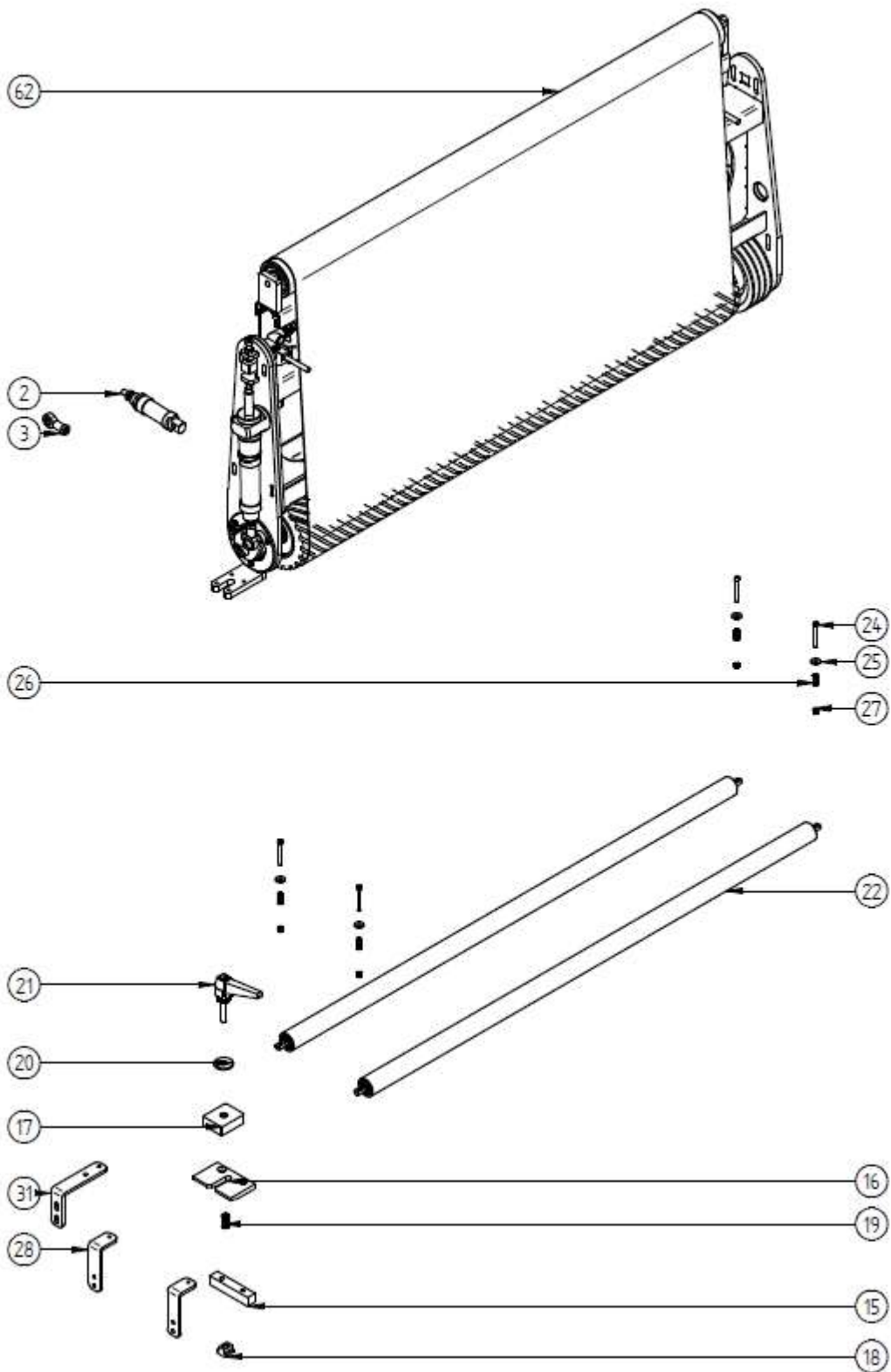


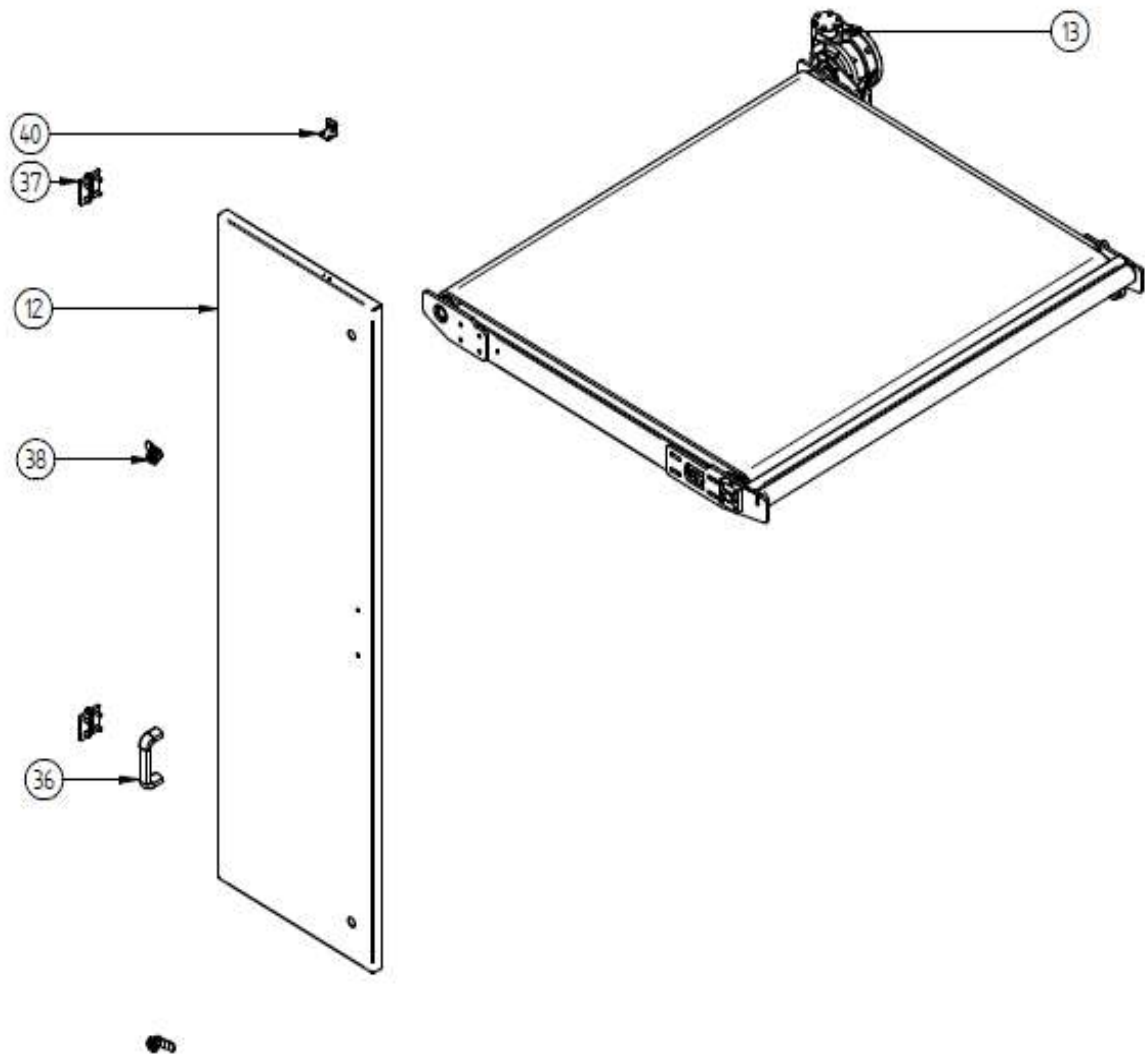










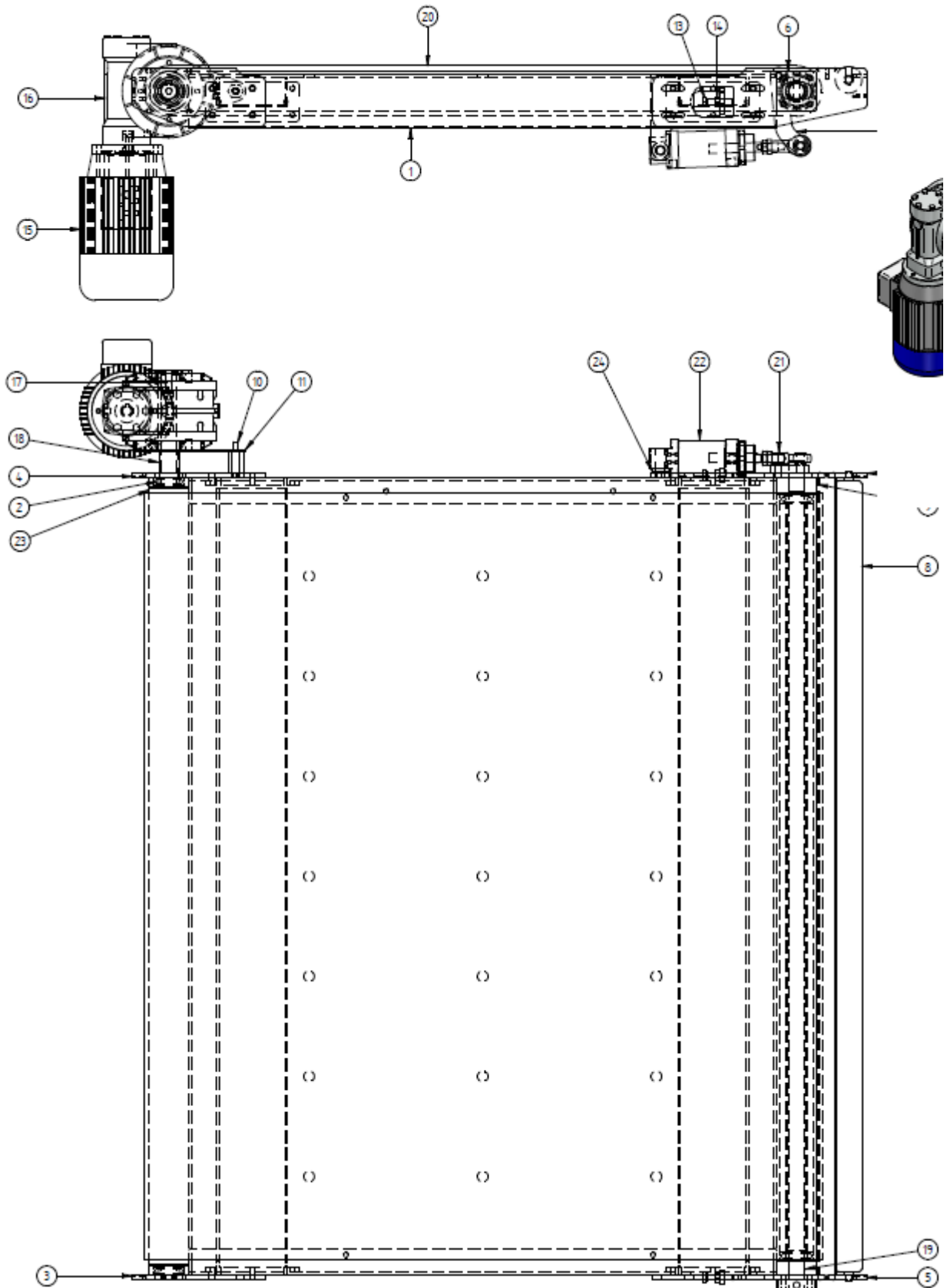




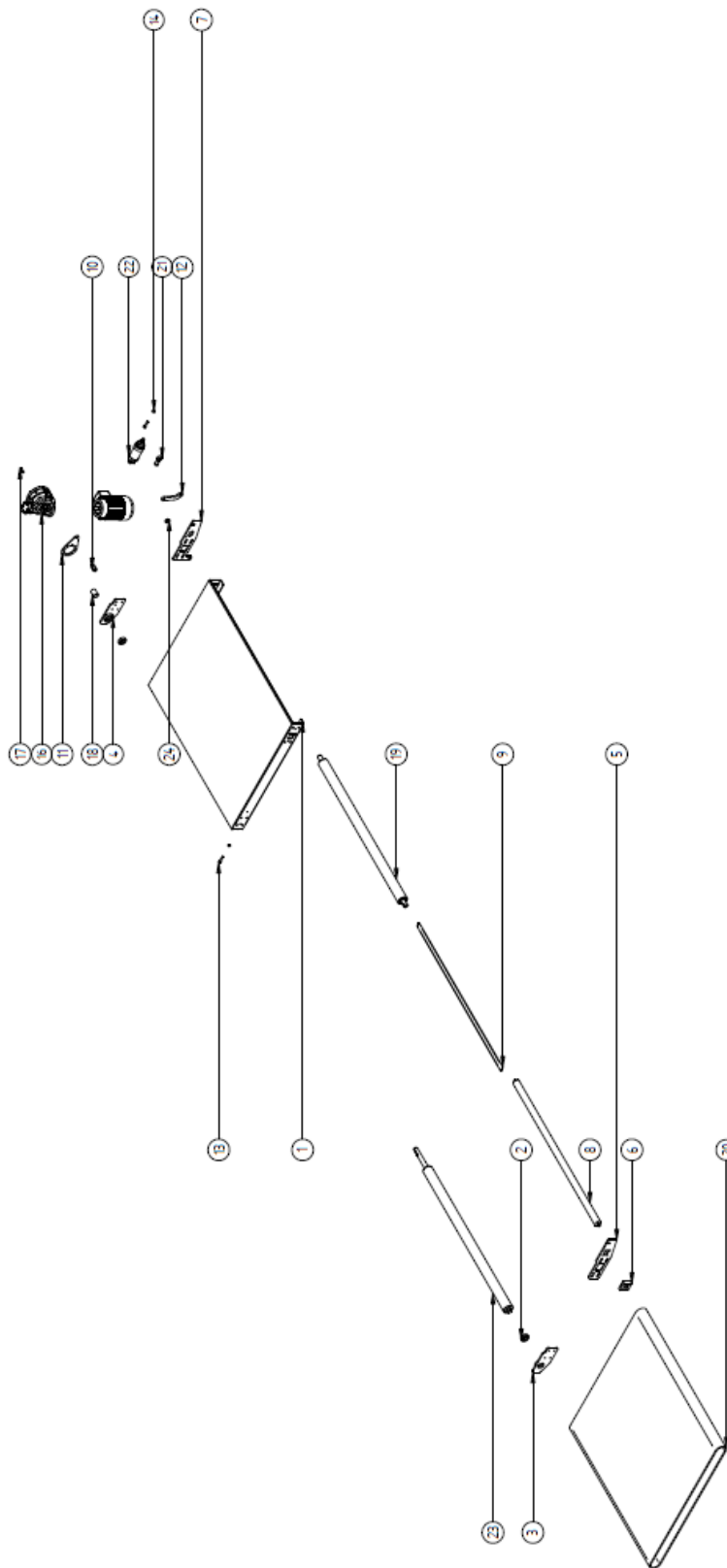
POS.	CODICE	DISEGNO	Q.TA'	DESCRIZIONE	DESIGNATION
	<b>GM11R</b>	<b>G00188</b>		<b>LEVIGATRICE GM11R</b>	<b>SANDING MACHINE GM11R</b>
2	YY2189	.	1	CILINDRO PNEUMATICO	PNEUMATIC CYLINDER
3	YY0984	.	1	SNODO SFERICO	JOINT
7	YY2197		4	PIEDE	FOOT
10	FN4050	41430	1	MOLLA	SPRING
13	FN6266	G20795	1	GRUPPO TRASPORTO	TRANSPORTATION GROUP
14	YY4018	.	4	GOLFARE	EYE BOLT
19	YY2531	.	1	MOLLA	SPRING
21	YY0460	.	1	MANIGLIA	HANDLE
22	FN6263	G31498	2	RULLO PRESSORE	PRESSURE ROLLER
26	YY2200		4	MOLLA	SPRING
34	YY2198		1	MICRO INTERRUTTORE	MICROSWITCH
36	YY1070	.	1	MANIGLIA	HANDLE
37	YY2193		2	CERNIERA	HINGE
38	YY2532		2	CHIUSURA A CHIAVE	LOCK
39	YY8028	.	1	MICRO INTERRUTTORE	MICROSWITCH
42	YY2533	.	2	GUIDA LINEARE	LINEAR GUIDE
43	YY1201	.	4	PATTINO	BATCH
44	YY2363		1	RIDUTTORE $i= 1:100$	SPEED REDUCER
45	YY0541		1	MOTORE HP 0.14	ELECTRIC MOTOR
47	YY0750		4	CUSCINETTO	BEARING
48	FN6185	G31493	1	VITE TRAPEZOIDALE	TRAPEZOID THREAD
49	FN6226	G41499	2	PIGNONE	PINION
51	YY1005		2	CHIOCCIOLA IN BRONZO	LEADNUT
52	FN6144	G10254	1	CARRELLO VERTICALE	VERTICAL CART
61	YY2353	.	1	SOFFIETTO DI PROTEZIONE	PROTECTIVE BELLOWS
62	FN6254	G00187	1	GRUPPO NASTRO ABRASIVO	GROUP ROLLER ABRASIVE BELT
63	YY2534	.	1	MOTORE KW 5.5	ELECTRIC MOTOR
64	FN6265	G20796	1	SUPPORTO MOTORE	MOTOR SUPPORT
68	YY2535	.	1	TENDICATENA	TENSIONER
70	FN5675	G31366	1	PULEGGIA MOTORE	MOTOR PULLEY
74	YY2536	.	3	CINGHIA	BELT
82	YY6364	.	2	LINGUETTA	FEATHER
83	YY2538		1	CATENA	CHAIN

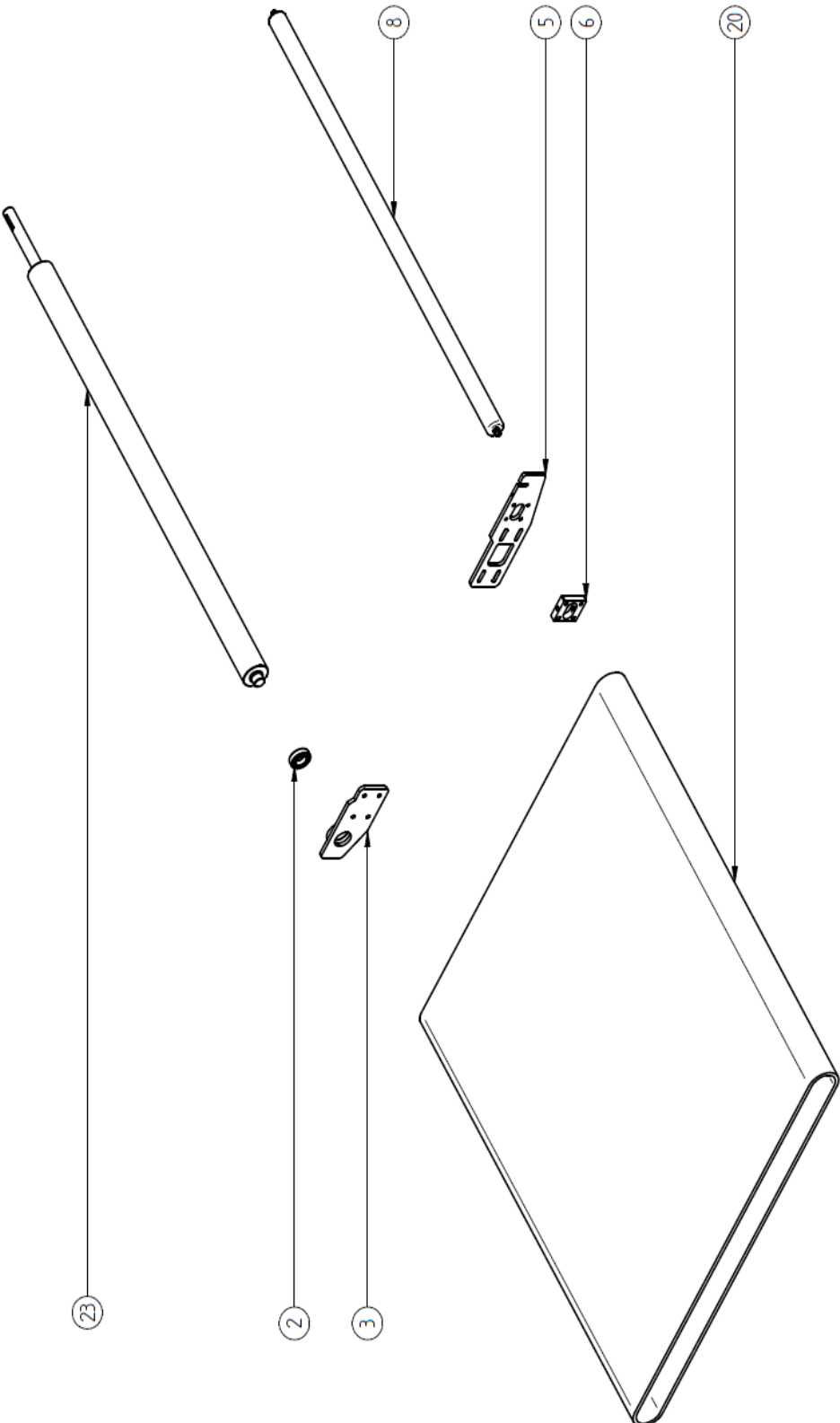


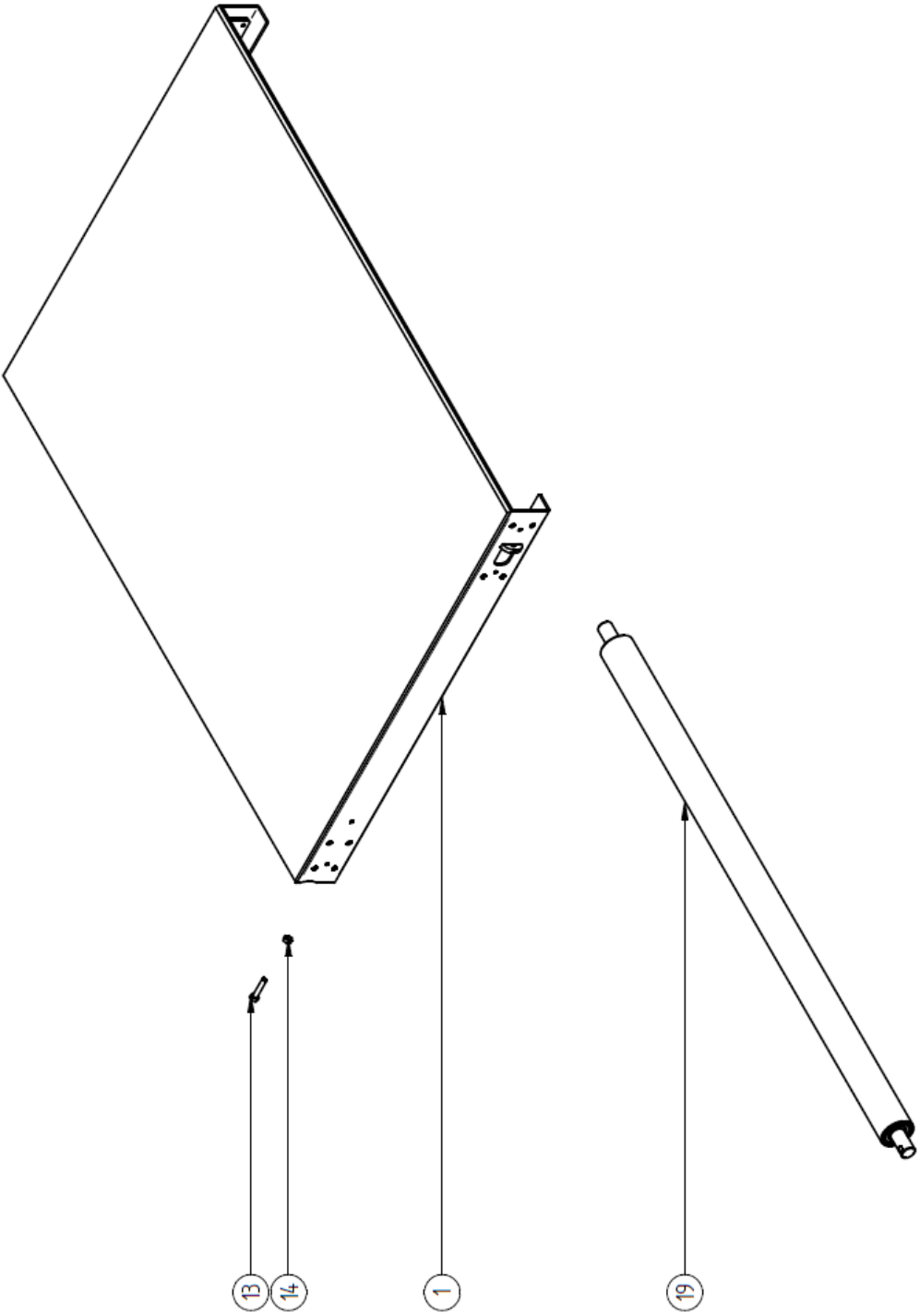
G20795 GROUP CONVEYOR BELT GM11

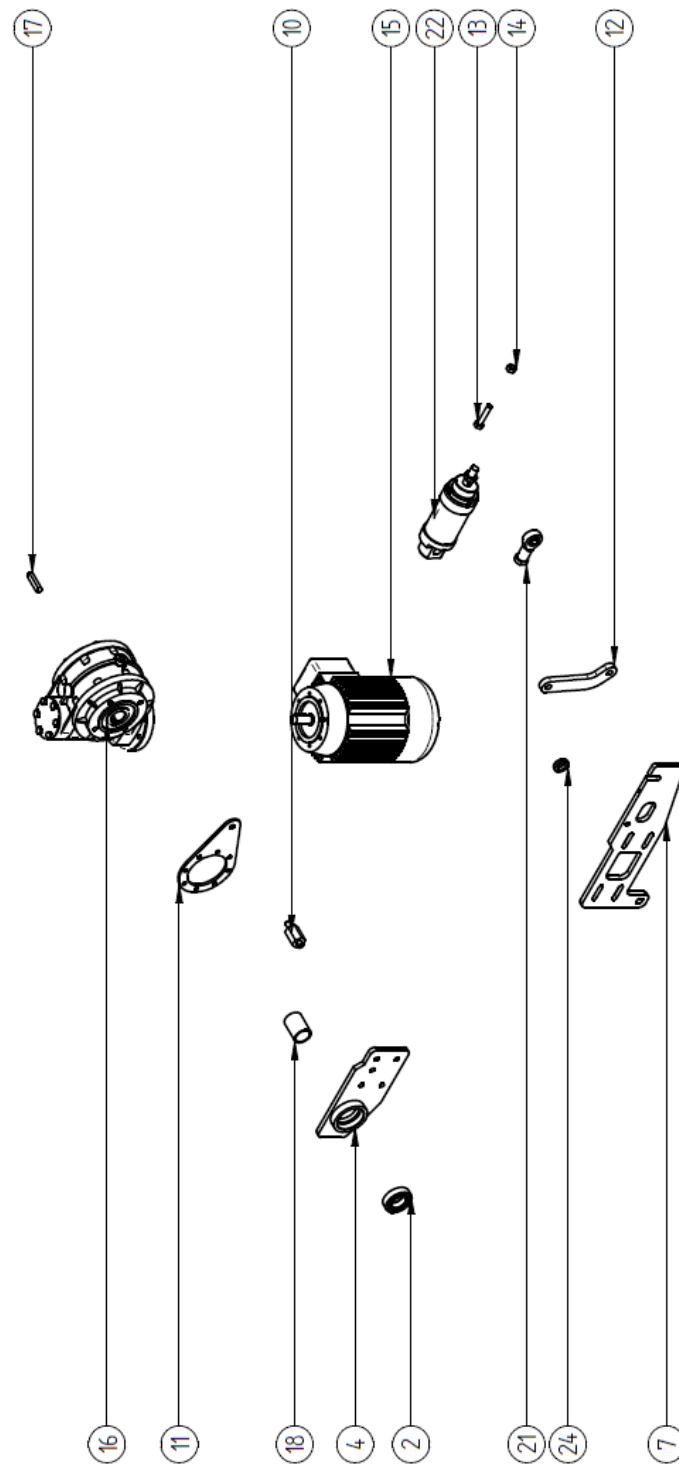










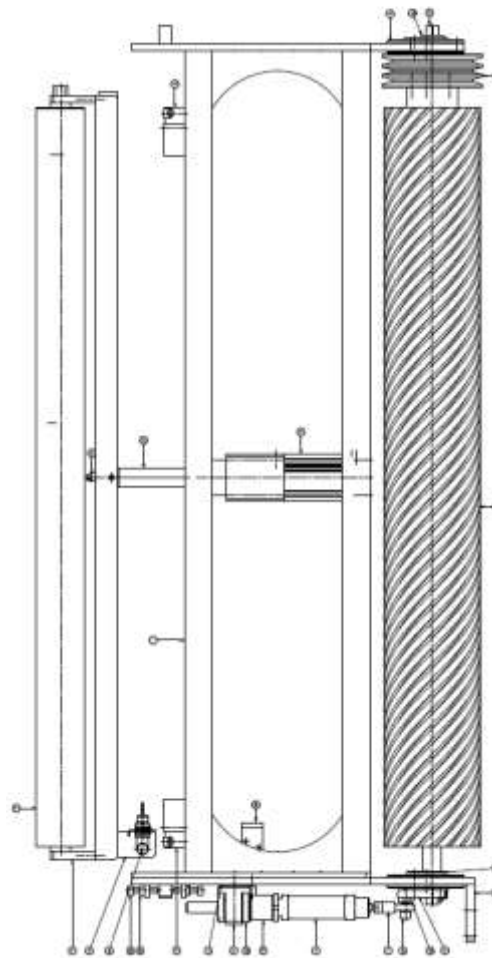
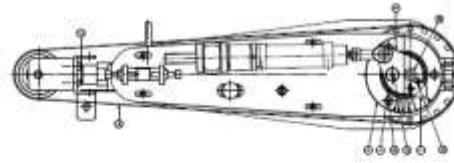


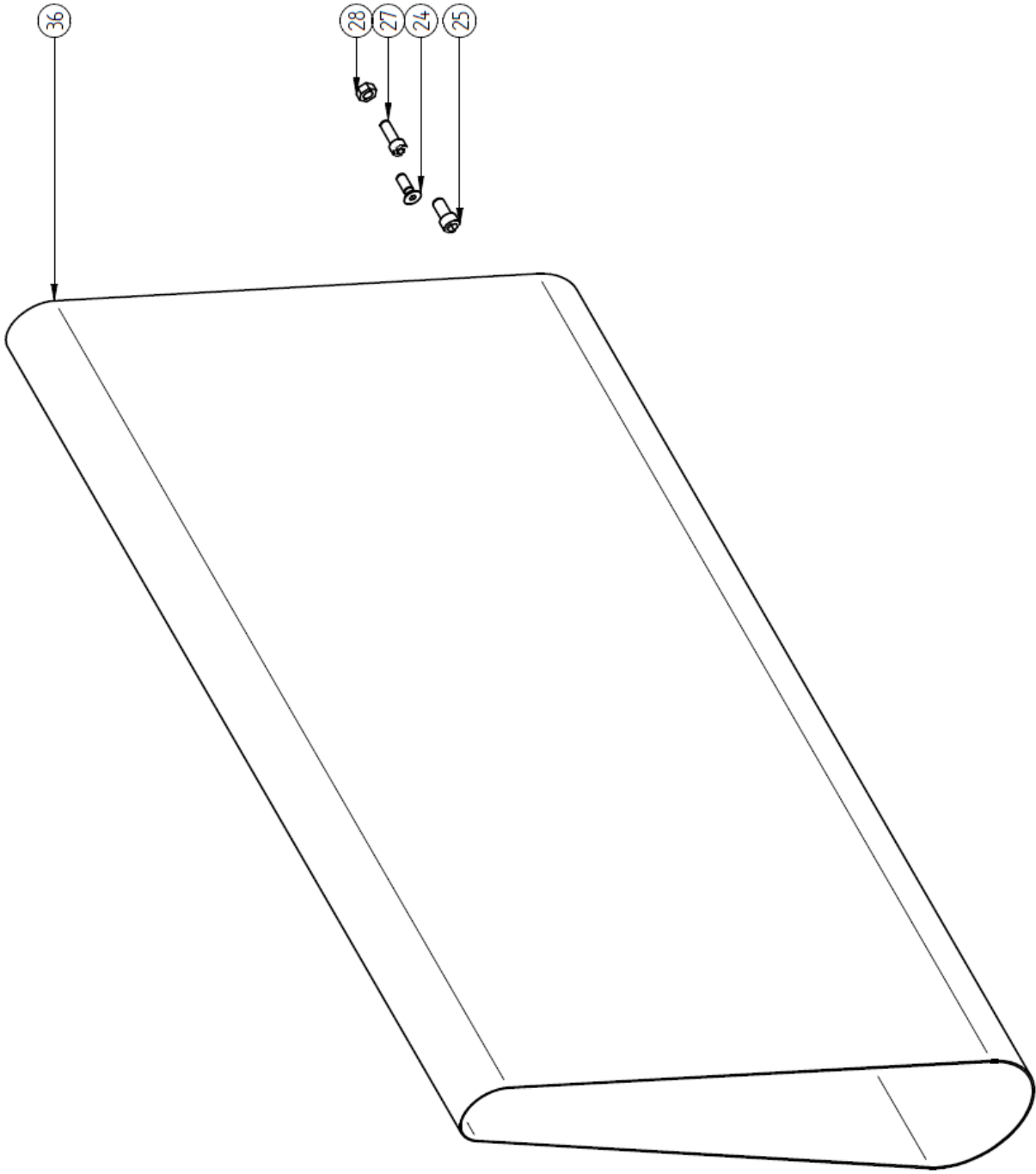


POS.	CODICE	DISEGNO	Q.TA'	DESCRIZIONE	DESIGNATION
	FN6266	G20795		GRUPPO NASTRO DI TRASPORTO GM11	G11 GROUP CONVEYOR BELT
2	YY0532		2	CUSCINETTO	BEARING
8	YY2529		1	RULLO FOLLE	ROLLER
15	YY1779		1	MOTORE ELETTRICO	ELECTRIC MOTOR
16	YY2530		1	RIDUTTORE DI VELOCITA'	SPEED REDUCER
17	YY3178		1	LINGUETTA	FEATHER
19	FN6264	G31491	1	RULLO CONDOTTO	DRIVEN ROLLER
20	YY2528		1	NASTRO	BELT
21	YY3342		1	SNODO SFERICO	JOINT
22	YY2453		1	CILINDRO PNEUMATICO	PNEUMATIC CYLINDER
23	FN6571	G31488	1	RULLO CONDUTTORE	CONDUCTOR ROLLER



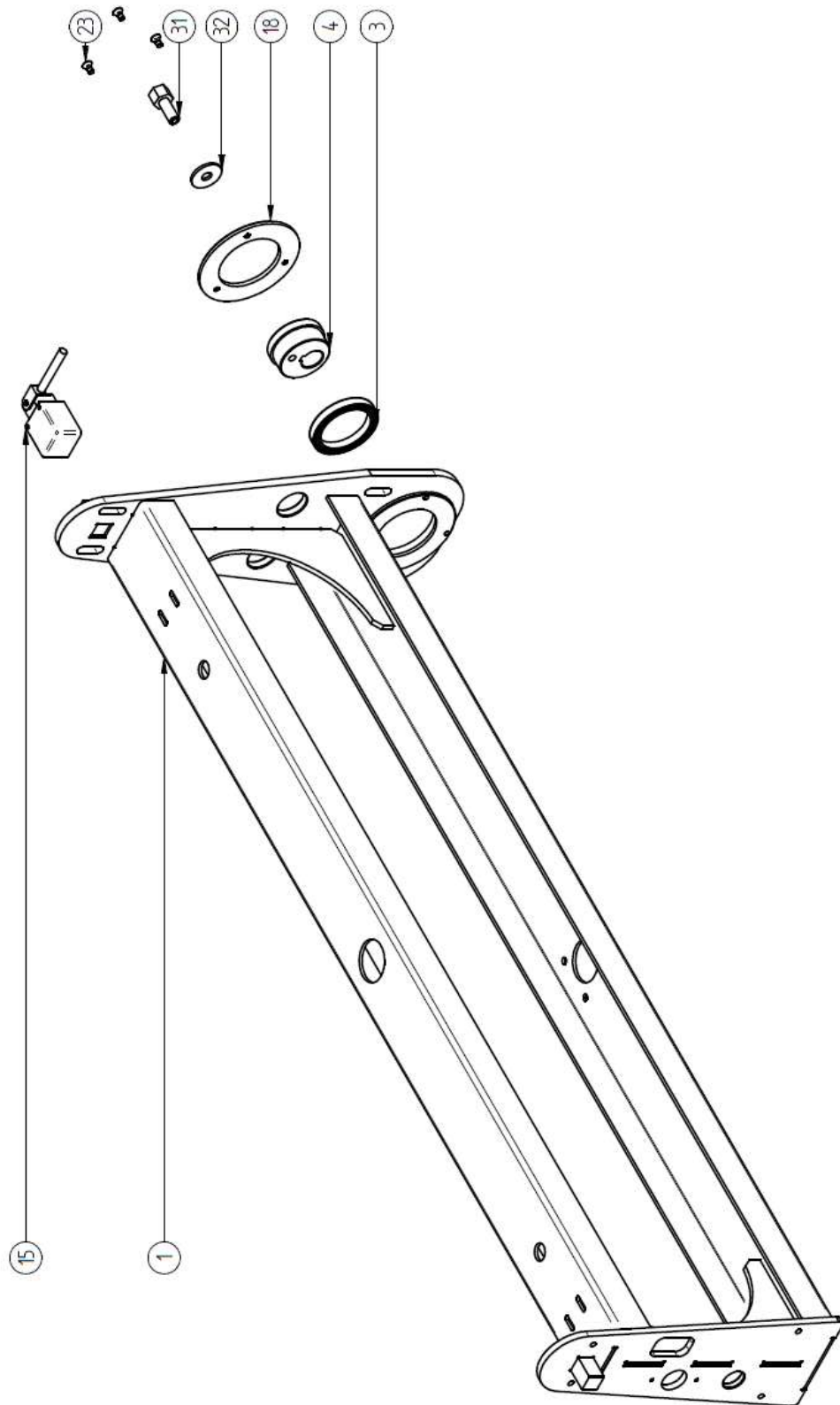
G00187 GROUP ROLLER ABRASIVE BELT GM11

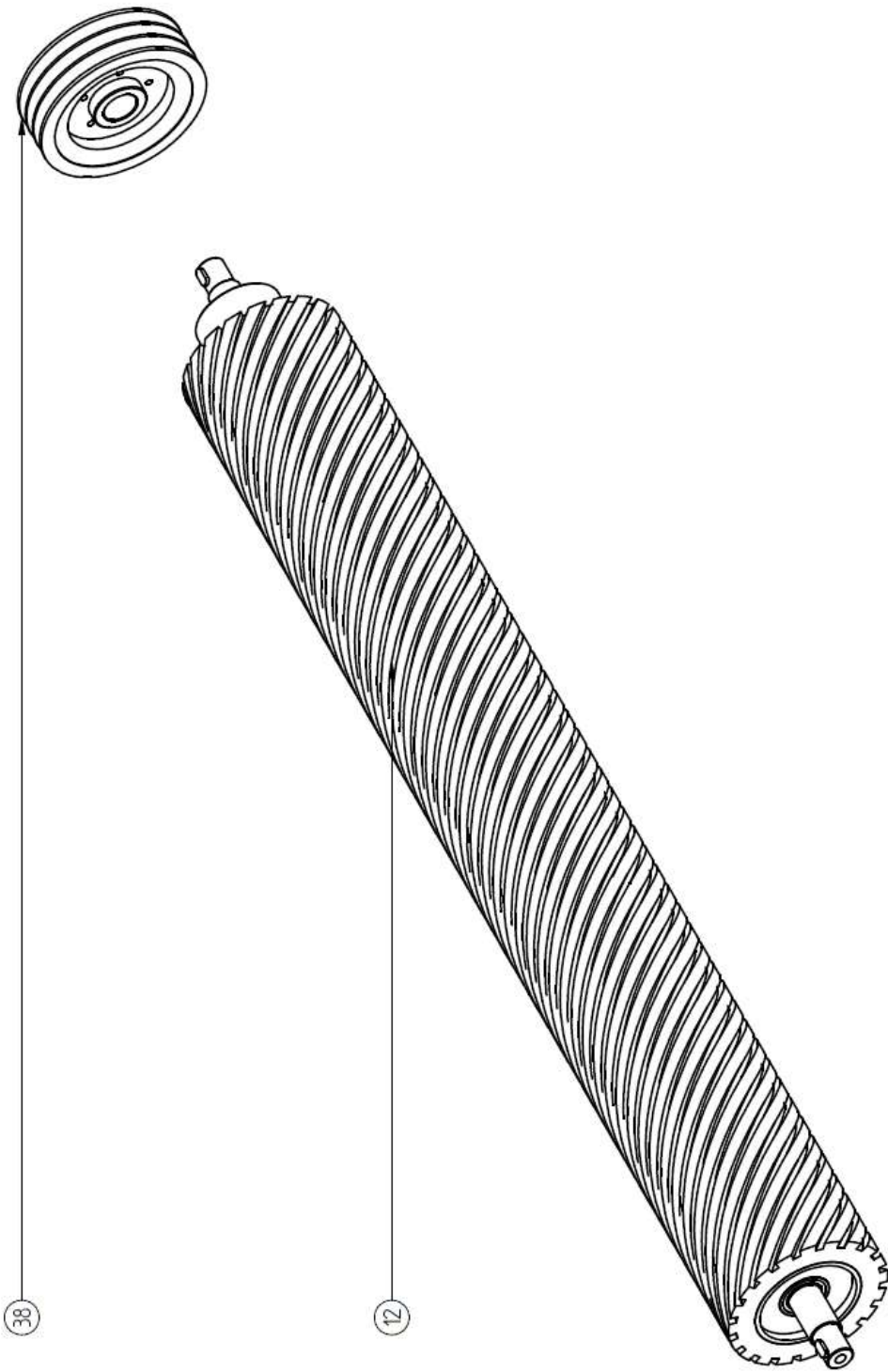


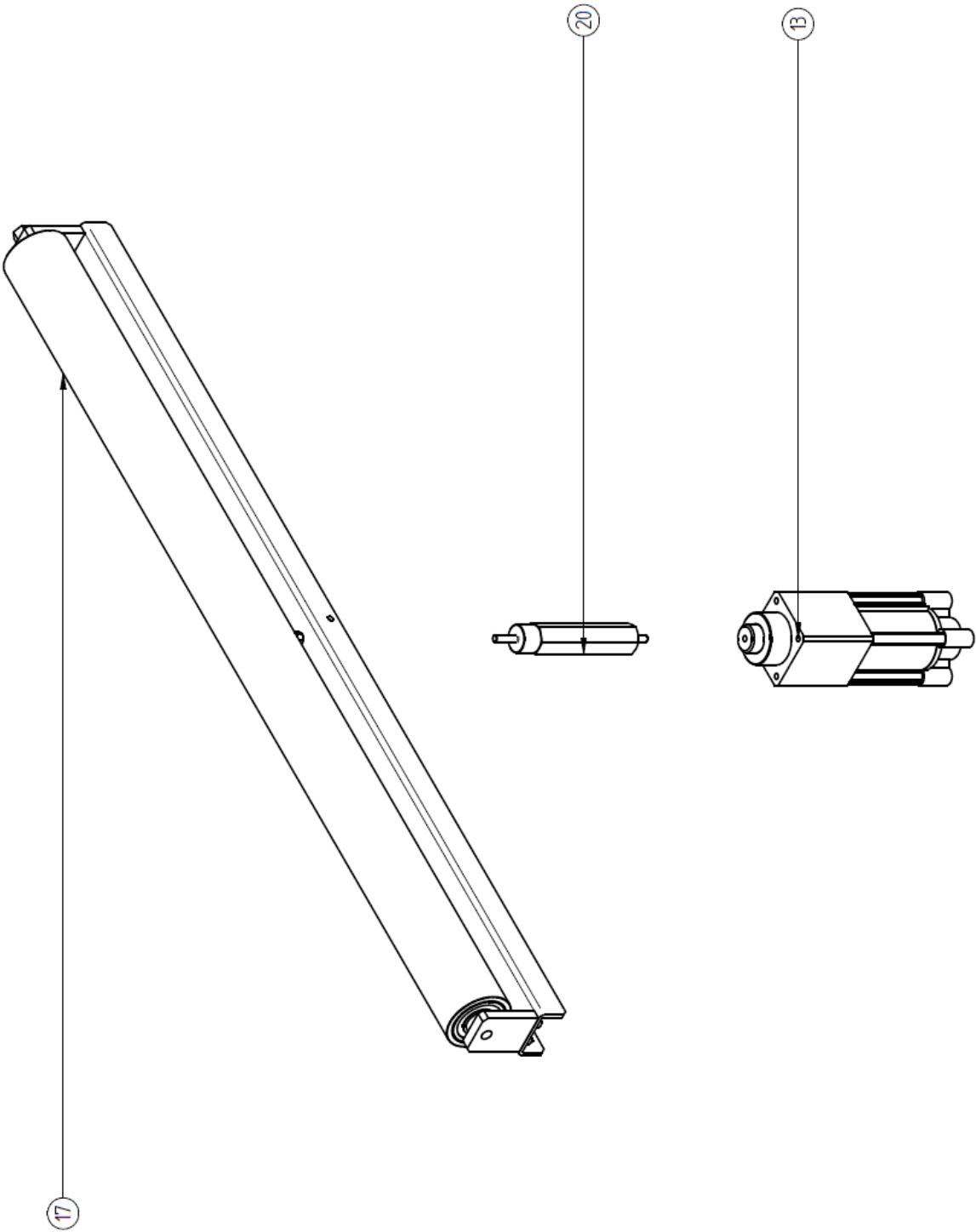










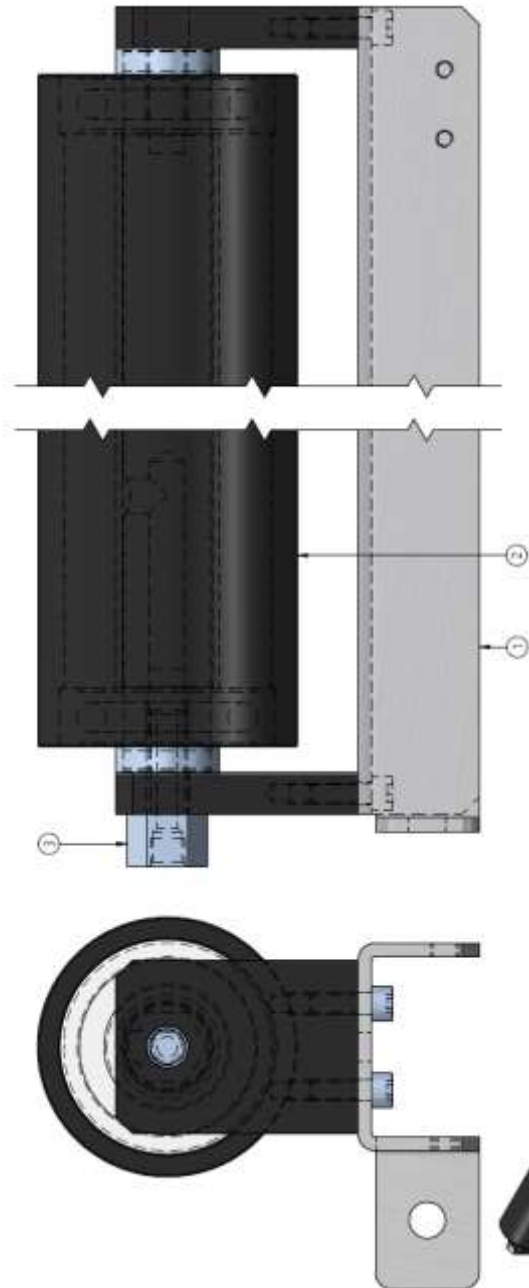


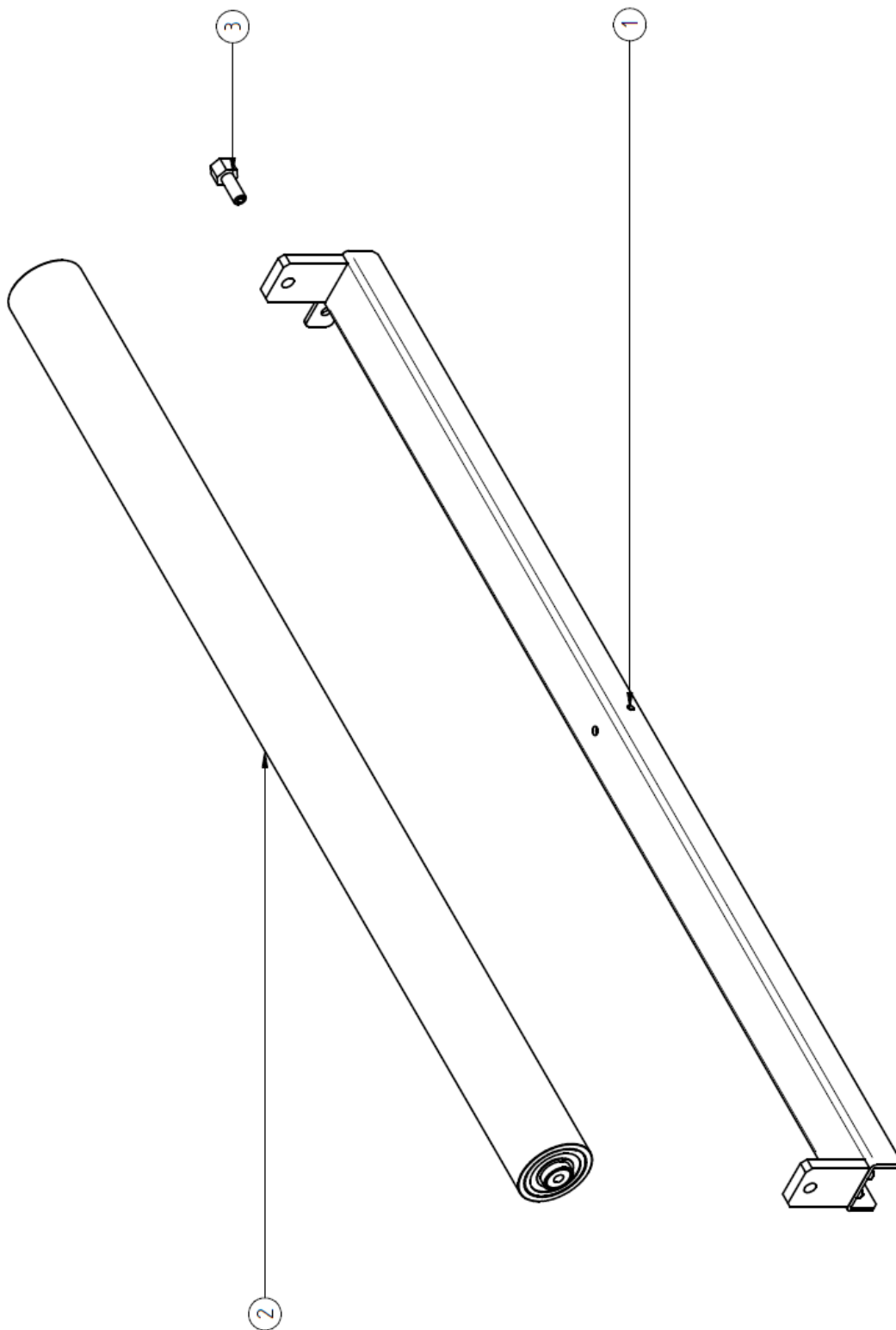


POS.	CODICE	DISEGNO	Q.TA'	DESCRIZIONE	DESIGNATION
	<b>FN6254</b>	<b>G00187</b>		<b>GRUPPO RULLO NASTRO ABRASIVO GM11</b>	<b>GROUP ROLLER ABRASIVE BELT GM11</b>
3	YY2187		2	CUSCINETTO	BEARING
4	FN4841	G41173	2	ECCENTRICO	ECCENTRIC
6	FN4802	G41176	1	BOCCOLA	BUSH
7	FN4866	G41175	1	INDICE	INDEX
9	YY2188		1	CILINDRO PNEUMATICO	PNEUMATIC CYLINDER
11	YY0984		1	SNODO SFERICO	JOINT
12	FN6260	G31508	1	RULLO CONTATTO	
13	YY2186		1	CILINDRO PNEUMATICO	PNEUMATIC CYLINDER
14	YY2184		1	MICROINTERRUTTORE	MICROSWITCH
15	YY2184		1	MICROINTERRUTTORE	MICROSWITCH
17	FN6258	G31505	1	GRUPPO RULLO TENSIONAMENTO	ROLLER GROUP
22	FN5223	G41342	2	GHIERA	LOCKRING
34	YY2461		1	SENSORE	SENSOR
35	YY4516		1	VALVOLA TIRETTO	PNEUMATIC VALVE
36	08511J191121		1	NASTRO ABRASIVO	ABRASIVE BELT
38	FN6199	G31509	1	PULEGGIA RULLO	ROLLER PULLEY



G31505 TENSION ROLLER GROUP GM11







<b>P O S.</b>	<b>CODICE</b>	<b>DISEGNO</b>	<b>Q.TA'</b>	<b>DESCRIZIONE</b>	<b>DESIGNATION</b>
	<b>FN6258</b>	<b>G31505</b>		<b>GRUPPO RULLO DI TENSIONAMENTO GM11</b>	<b>GM11 TENSION ROLLER GROUP</b>
2	FN6256	G31502	1	RULLO	ROLLER



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## 11 Annexes

### 11.1 Wiring diagram

See attachments.





La ringraziamo per aver scelto un nostro prodotto.

La sua fiducia è ben riposta: il nostro marchio garantisce prodotti di qualità, risultanti dall'esperienza pratica e dall'attenzione che l'azienda pone sempre nei confronti dei problemi del settore, impegnandosi a studiare nuove soluzioni che ne rendano i prodotti più efficienti e facilitino il lavoro dell'operatore.

La soddisfazione dei nostri clienti è il nostro principale obiettivo. Grazie!

Thank you for choosing our product.

Your confidence is well placed: our brand guarantees quality products, resulting from practical experience and the attention that the company always puts on the issues of the industry, working to develop new solutions that make the most efficient products and facilitate the Operator's work.

The satisfaction of our customers is our main objective. Thank you!

Vielen Dank, dass Sie sich für unser Produkt.

Sein Vertrauen ist gut aufgestellt: unsere Marke garantiert Qualität, aus der Praxis und die Aufmerksamkeit, die das Unternehmen setzt immer auf die Themen der Branche, zusammen, um neue Lösungen, die die effizientesten Produkte zu entwickeln und daraus resultierende erleichtern die Arbeit des Bedieners.

Die Zufriedenheit unserer Kunden ist unser Hauptziel. Danke!

Merci d'avoir choisi notre produit.

Sa confiance est bien placée: notre marque garantit des produits de qualité, résultant de l'expérience pratique et l'attention que la société met toujours sur les questions de l'industrie, de travailler à développer de nouvelles solutions qui rendent les produits les plus efficaces et faciliter le travail de l'opérateur.

La satisfaction de nos clients est notre objectif principal. Merci!

Gracias por elegir nuestro producto.

Su confianza está en buena posición: nuestra marca garantiza productos de calidad, fruto de la experiencia práctica y la atención que la empresa siempre pone los temas de la industria, trabajando para desarrollar nuevas soluciones que hacen que los productos más eficientes y facilitar el trabajo del operador.

La satisfacción de nuestros clientes es nuestro principal objetivo. Gracia