

TRANSPORT AND INSTALLATION

Description of the packaging

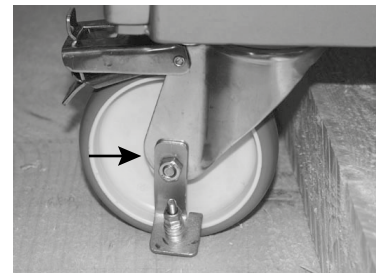
The machine is secured to a special pallet with bolts and protected with clear packaging film and cardboard. Open the cardboard box and remove the film.

Inside, in addition to the machine, there is a box which contains, as well as this manual:

- 1 pack of lubricant
- 1 mushroom adjustment tool (MS475-P)
- 1 13mm spanners (MS600-P - MS800-P)
- 3 blade holder closure screws (MS600-P - MS800-P)
- 3 spare blades
- 1 spare comb return spring
- 1 screwdriver
- 1 accessory carry-bag
- 1 accessory sack

With CLO system installed (optional)

- 1 CLO conductive gloves
- 1 pair of insulating gloves
- 1 CLO belt



If other accessories are provided (special versions or with optional extras) they are included in the same box.

Make sure that all machine parts, including any accessories, have been supplied and are undamaged.

Dispose of the packaging material in compliance with the regulations in force.

Storage

The packaging is made of material suitable for storing the machine in an environment protected from direct light, excessive heat or humidity. It must be stored at a temperature ranging from -15°C to +45°C.

Transport

Use a forklift or a pallet truck to carry the machine.

Before transporting the machine, make sure that:

- the transport device is able to withstand the load (see technical data of the machine)
- the machine is stable on the forks
- the adjacent area is clear of obstacles, people or animals that may create dangerous situations

Release the machine from the pallet, loosening the screws that secure it, and lift the machine inserting the forks of the forklift in the point shown in the picture.

Place the machine in the designated work area.



Before starting any movement, always check whether the machine is stable and make sure the area where the movement is conducted is clear of obstacles such as objects, animals or people.

Before moving the machine, it must be turned off (master switch at 0-OFF) and unplugged.

During machine displacement, the power supply cable must not be damaged.



6.3 Positioning

6.3.1 Characteristics of the work area

Provide for a work area large enough to perform all the manoeuvres safely (see technical data).
The machine must be placed on a flat and smooth floor.



IT IS FORBIDDEN TO INSTALL THE MACHINE ON SLOPING FLOORS

Via Salvo D'Acquisto 2/C - 42020 Albinea (RE) Italy
Tel. +39 0522 599745 Fax +39 0522 598147 - Web: www.grasselli.com E-mail: info@grasselli.com

USE AND MAINTENANCE INSTRUCTIONS

MANUAL SKINNING MACHINE

MS475-P

MS600-P

MS800-P



This manual must be kept carefully and accompany the machine throughout its life cycle. Carefully read the manual in its entirety before conducting any operation on the machine.

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CERTIFICATE OF CONFORMITY



In accordance with Machinery Directive 2006/42/EC and subsequent amendments and integrations, annex II section A

GRASELLI S.P.A.

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Tel. + 39 0522 599745 (PBX) Fax + 39 0522 59.81.47
[http:// www.grasselli.com](http://www.grasselli.com) E-mail info@grasselli.com

declares under its sole responsibility, that the machine

Type: **SKINNING MACHINE**

Model: **MS.....-P**

Serial number:

Year of Manufacture:

complies with all relevant provisions of Directive 2006/42/EC and subsequent amendments and additions, implemented in Italy by Legislative Decree no. 17/2010 - Machinery Directive and also complies with the following directives:

- 2014/30/EU Electromagnetic compatibility
- 2014/35/EU Low voltage
- 1999/05/CE Radio Equipment and Telecommunications Terminal Equipment Directive and also complies with European Standards

and also complies with European Standards

- EN 12355 Food processing machinery - Derinding, skinning and membrane removal machines - Safety and hygiene requirements

The manufacturer also declares that the technical construction dossier is held by:

GRASELLI S.P.A. Via S. D'Acquisto, 2/C - 42020 Albinea (RE) Italy

The person in charge of composing the technical file is:

Luca Panciroli - Certifications Manager

Via I. Calvino 10

42010 Quattro Castella (RE) - Italy

Albinea (RE) (Date) ,

Giuliano Gemmi
Product Compliance
Grasselli S.p.A.

Giuliano Gemmi

Declaration of conformity

« AGRIFOOD »

In compliance with regulations and decrees in force

Date : _____

We hereby declare that the whole machine

model: MS.....-P with serial number: _____

has been constructed in conformity with :

Regulation No. 1935/2004 of 27 October 2004


Decree No. 2007-766 of 10 May 2007

We also declare that all materials and objects intended to come into direct or indirect contact with food products are in conformity with Ministerial Decree 21/03/1973.

Signature


Gianni Giuliano

Stamp

 **GRASSELLI**
EXCELLENCE THROUGH TECHNOLOGY
Via S. D'Acquisto, 2/c
42020 Albinea (RE) Italy (A)

DECLARATION OF CONFORMITY FOR FOODSTUFFS IN CONTACT WITH COMPOSITE STEEL / PLASTIC SURFACES

We hereby declare that the components intended to come into contact with foodstuffs used on all models of **GRASSELLI spa SLICERS and SKINNERS**

comply:

PLASTIC PARTS: with all relevant legislation, with particular reference to the following European community regulations:

- Regulation EC N.1935/04
- Regulation EC N.1895/05
- Regulation EC No.2023/2006
- Regulation EC N.10/2011 and subsequent amendments

and with the following Italian legislation:

- Italian Ministerial Decree 21/3/73 and subsequent amendments and modifications
- Italian Presidential Decree 777/82 and subsequent amendments and modifications

Plastic components destined to come into contact with foodstuffs are manufactured using the following materials:

- POM-C (Acetal copolymer grade C)

We hereby declare that:

the material contains substances subject to restrictions in the legislations cited and respects the global migration limits and specific restrictions.

The global migration limit, as well as the other specific restrictions that may apply to the monomers and/or additives contained in the material, are respected in the conditions of use stated above. The statement is supported by analytical tests conducted in accordance with the above specifications or based on calculations assuming that 1kg of foodstuff comes in contact with 6 dm² of packaging material.

STEEL PARTS: with all relevant legislation, with particular reference to the following European community regulations:

- Regulation EC N.1935/04
- Regulation EC No.2023/2006

and with the following Italian legislation:

- Italian Ministerial Decree 21/3/73 and subsequent amendments and modifications
- Italian Presidential Decree 777/82 and subsequent amendments and modifications

Metal components intended to come into contact with foodstuffs are manufactured using the following materials:

- AISI 420 steel - 1.4028 mod. (X35Cr14)
- AISI 630 steel - 1.4542 (X5CrNiCuNb16.4)
- AISI 304 steel - 1.4301 (X5CrNi 18-10)

We hereby declare that:

the material does not contain substances subject to restrictions under the legislations cited above and respects the global migration limits.

The global migration limits, together with the specific restrictions that may be applied to the articles, have indicated that the articles are suitable for contact with foodstuffs, under the conditions described by the legal method, in compliance with the limits defined by decree 777/1992 and 21/03/73 and subsequent amendments and integrations.

The conditions of use of the stainless steel product are as follows:

Wash thoroughly with hot water and soap, rinse and dry before use. Do not leave foodstuffs containing citric, acetic or lactic acid in contact with the product for long periods of time.

When cleaning, avoid using detergents containing chlorine (such as bleach).

Avoid strong impacts and extreme changes in temperature. To eliminate iridescent rings caused by overheating, use products specifically produced for stainless steel; to eliminate white marks caused by calcium build up, boil a solution of water and vinegar, let cool and wash as normal. Articles with steel grips require particular attention as the heat is conveyed to all steel parts. For this reason, it is advisable to use hand protection.

Warning!

It is good practice to advise the writer if the conditions of use of the article do not comply with the instructions provided.

The company declares that the material is technically suitable for the intended use, i.e. for use with fresh refrigerated meat for a period greater than the shelf-life assigned by the client.

The company declares that all necessary supporting documentation required under Regulation Framework 1935/2004 CE article 16 comma 1, is available to the competent legal authority.

This declaration is valid as of the date shown below and will be replaced in the event of significant changes in the production of the material that may alter the product's ability to meet the requirements of conformity or if the legislations cited are amended or updated in such a way that further verification of conformity is required.

Date **Albinea**,

Signature.....



Surname and name: Panciroli Luca

Position: Safety Manager

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MANUAL RESERVED FOR TECHNICAL SUPPORT OR EXPRESSLY AUTHORISED PERSONNEL

SPARE PARTS MANUAL

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1 GENERAL INFORMATION

1.1 Machine Description

The MS....-P skinning machines are designed to remove very thick membranes on round products that rotate during processing.

The machine is powered electrically with three-phase voltages from 220V to 480V, 50Hz or 60Hz upon request.

1.1.1 CLO Safety system (optional)

The machine can be equipped with the CLO safety system that increases operator safety during processing.

In the event the glove make contact with any part of machine, the machine stops immediately.

1.2 Definitions

The manual defines certain individuals who are authorised to operate on the machine in different ways:

Operator: person in charge of running the machine with operational knowledge about how it works

Specialised personnel: person with specific knowledge about the routine maintenance of the machine

Technical assistance: person in charge of special maintenance and repairing the machine, expressly appointed by the manufacturer.

2 FIELD OF APPLICATION

2.1 Intended use

The MS....-P skinning machines are designed to remove very thick membranes on round products that rotate during processing.

Only round products (e.g. pig trotters or rear legs) may be processed on open skinning machines.

Flat products must only be processed with automatic skinning machines.

The product (fresh meat or fish) must weigh less than 15 Kg and is processed manually.

2.2 Reasonably foreseeable misuse

- Incorrect installation of the skinning machine
- Processing flat-shaped products on an open machine
- Processing on an open machine without using the recommended gloves
- Tampering with safety systems
- the use of cleaning solvents or detergents not recommended in the instructions for use.

2.2.1 CLO safety system (optional) reasonably foreseeable misuse

The CLO safety system is an optional device which must be factory-installed directly by the manufacturer and becomes an essential part of the machine.

The CLO system is not intended for separate use from the machine on which it is installed.



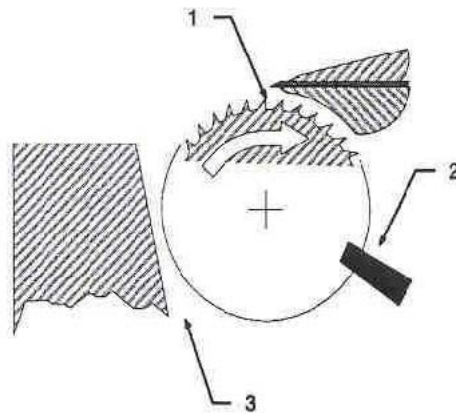
People with pacemakers or other lifesaving devices are forbidden from using the CLO safety device.



The manufacturer cannot be held liable for any damage caused by improper use of the machine or equipment connected to it.

2.3 Residual risks

With reference to European Standard UNI EN ISO 12355:2003



- Mechanical risks

- Zone 1

Rotation of the tooth-roll and adjustment of the knife holder with blade.

Risk of separation of the skin from fingers during entrapment

- Zone 2

Rotation of the tooth-roll and counter-roller.

Risk of entrapment of fingers or hand

- Zone 3

Rotation of the tooth-roll and fixed machine parts.

Risk of entrapment of fingers, hand and forearm

- **Risks arising from the loss of stability**

Risk of collision or crushing of the body in the event the machine should tip over

- **Risks generated by noise**

Skinning machines may generate noise which may damage hearing, may cause accidents due to interference with verbal communication or failure to perceive acoustic signals.

- **Risks arising from failure to comply with hygienic principles**

- **Risk (deterioration) of food**

- **Risk of harming the consumer's health through food poisoning**

- **Infections suffered by the operator**

- **Chemical causes**

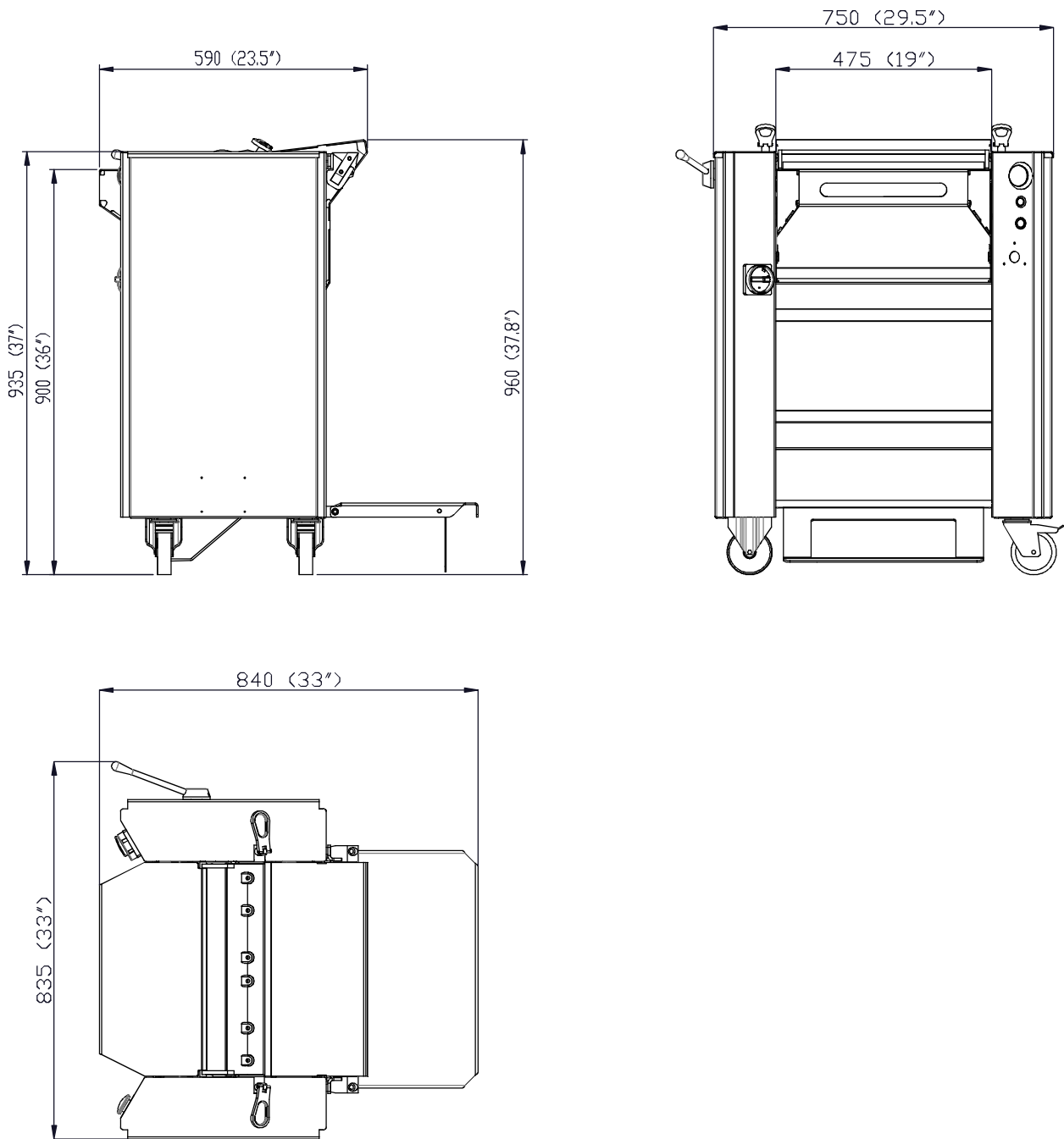
Product contamination via residues of disinfecting or cleaning products which may cause harm to consumers

- **Physical causes**

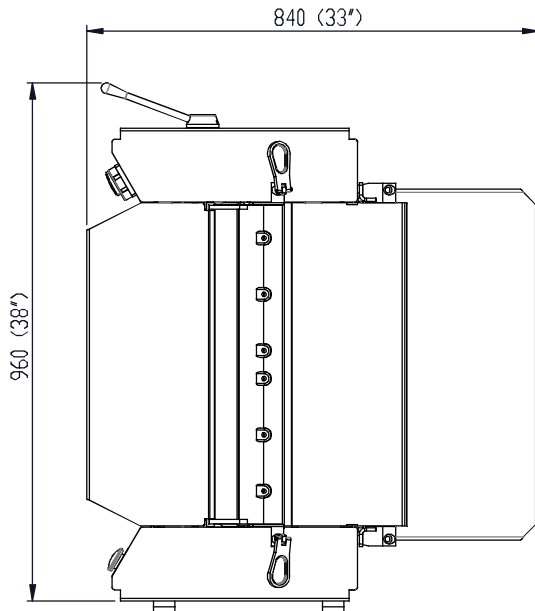
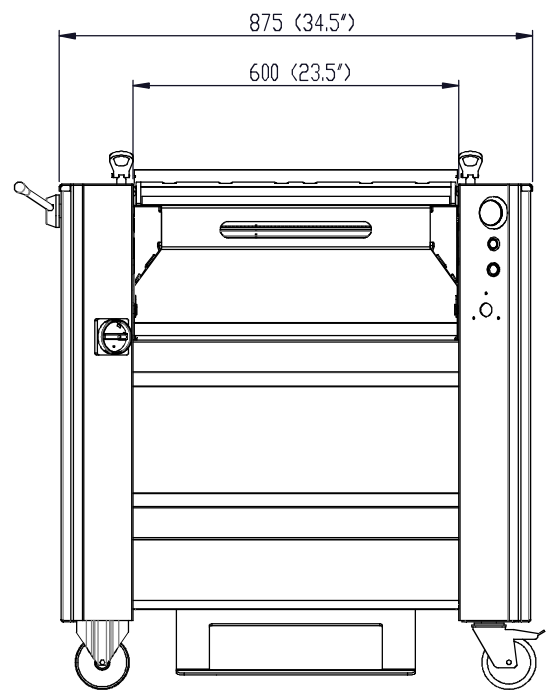
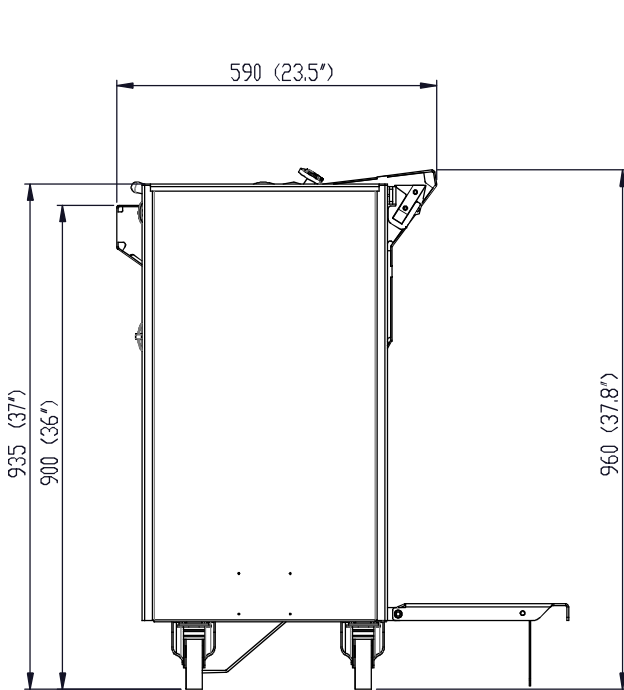
Elements encapsulated in the fresh product, from machine parts or other sources which may cause harm to consumers.

3 TECHNICAL FEATURES

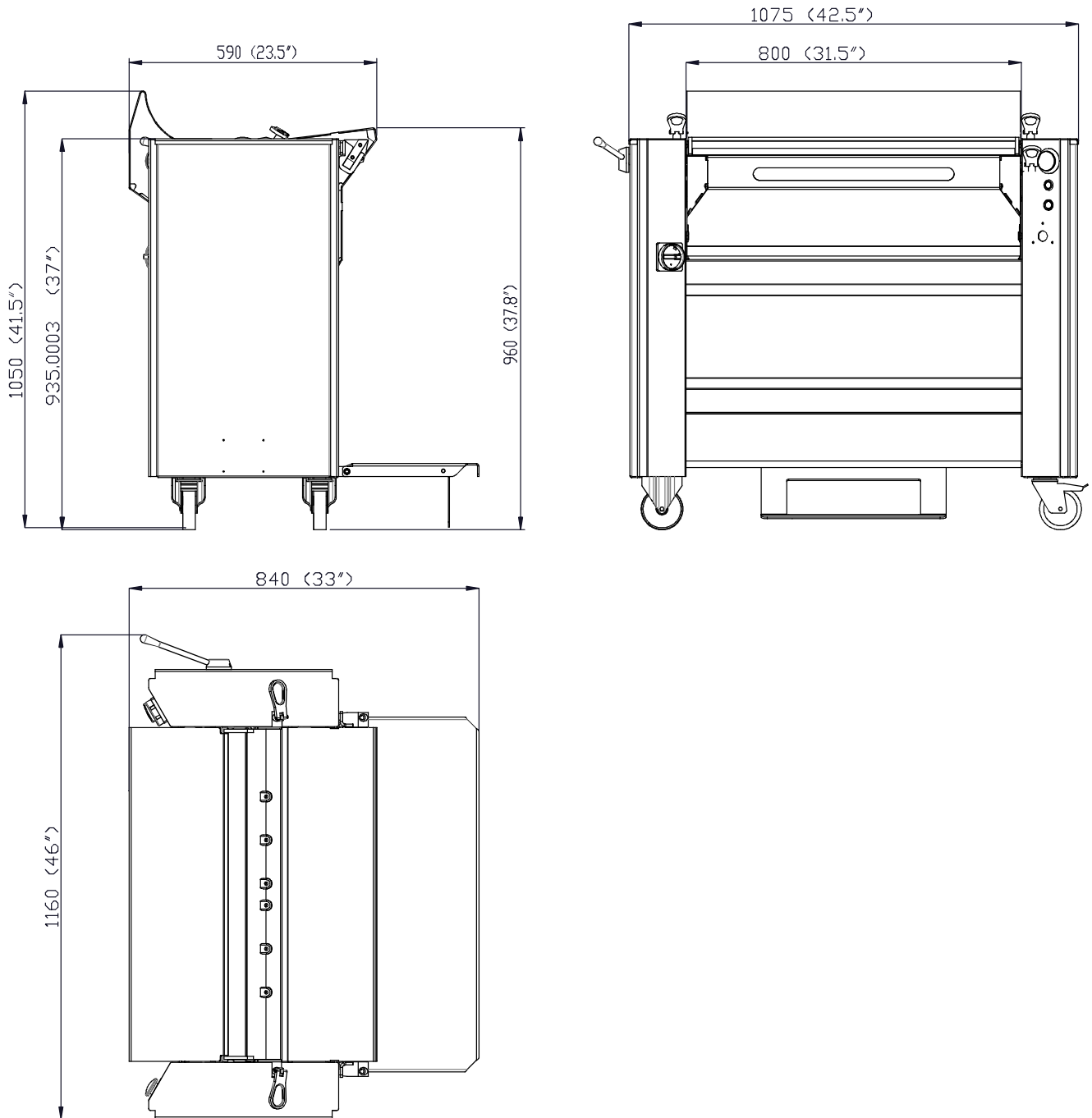
3.1. MS475-P



3.2 MS600-P



3.3 MS800-P



Technical Data				
Description	Data			U.M.
	MS475-P	MS600-P	MS800-P	
Processing width	475	600	800	mm
Machine depth	840	840	840	mm
Machine height	960	960	960	mm
Machine width	835	960	1160	mm
Weight	178	186	196	kg
Power	1.1	1.1	1.1	kW
	3	3	3	Ph
Rated current I _n	2.6	2.6	2.6	A
Start-up current I _{sp}	15	15	15	A
Voltage drop ΔU	4%	4%	4%	V
Operating speed	15	15	15	M/min
Pressure Level	64.2	64.2	64.2	dBA
Uncertainty K	2.5	2.5	2.5	
Pressure Level (operator position)	68	68	68	
Uncertainty K	2.5	2.5	2.5	
Auxiliary circuit power supply	24	24	24	V

POWER SUPPLY VOLTAGE (Volt 3P+T)** +/- 10%	MAX ABSORPTION (A)
220	4.40
230	4.35
240	4.00
380	2.60
400	2.50
460	2.45
480	2.45

FREQUENCY (Hz)
50
60

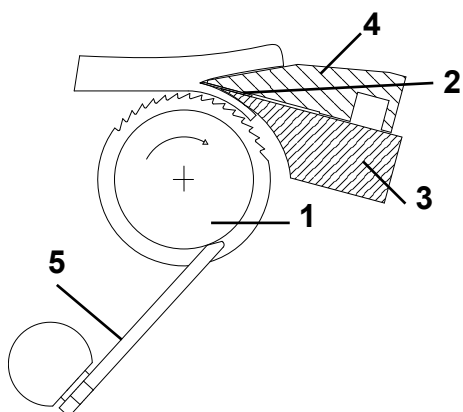
Sound pressure level test method

The parameter detected is the A-weighted equivalent continuous level (L_{pA}); the measurement lasts long enough to detect the variability of the sound signal examined. The diffused noise of the examined machine is constant.

The emitted sound level in the operator positions was measured by placing the microphone of the instrument 1.60 m from the floor and 0.10 m from the right/left ear of the operator.

A further measurement was carried out pursuant to pr EN 12355, placing the microphone of the instrument 1.60 m from the floor and 1 m from the toothed roller of the machine.

4 DESCRIPTION OF THE MACHINE



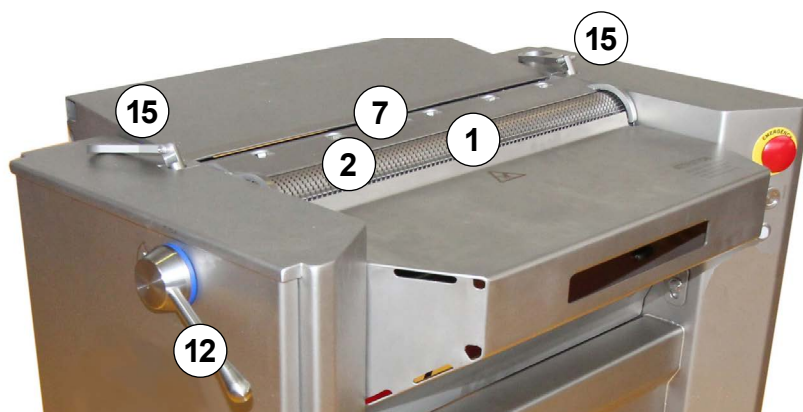
4.1 Machine

- 1) Tooth-roll
- 2) Blade
- 3) Blade support
- 4) Blade cover
- 5) Comb
- 6) Front table
- 7) Blade cover
- 8) Right hand side guard
- 9) Left hand side guard
- 10) Start pedal
- 12) Thickness adjustment lever
- 13) Rear table
- 15) Blade holder unit locking knobs
- 19) Identification plate



4.2 Sensors

- 31) Front table opening protection sensor
- 32) Rear table opening protection sensor
- 33) CLO socket (optional)
- 34) CLO display (optional)



5 GENERAL SAFETY PRECAUTIONS

5.1 Warnings

Carefully read this manual in its entirety before conducting any operations on the machine.

The operator must be able to use the machine safely, have adequate psychological and physical skills, must not be under the influence of alcohol or drugs and must be perfectly trained on how to use the machine itself.

Always wear adequate clothing, with no parts that may jam or get stuck in the machine. Use hygienic precautions and PPE prescribed by regulations in force.

Always wear cut-resistant protective safety gloves during processing, maintenance, adjustments, handling of the blade holder and when changing the blade.

Use only gloves approved by the manufacturer.

Metal mesh gloves or gloves reinforced with metal wire must not be used.

Before connecting the machine to the power supply system, make sure it is of TT type, equipped with circuit breaker having rated trip current not higher than 16A with breaking capacity equal to or higher than 1.7KA and residual current device with 30mA AC operating curve, according to standards in force.

The machine in question is considered dangerous. It is, therefore, strictly forbidden to move hands, other body parts or clothing at less than 2cm from the blade with machine in motion.

After each use of the machine, switch it off and set the master switch (17) back to 0-OFF.

Make sure the safety devices and integrity of the power supply cable are operating properly before restarting the machine after a period of inactivity and in any case perform this check on a daily basis.

Before performing any cleaning or maintenance, disconnect the power supply by pulling the plug or turning off the switch on the main electrical panel (0-OFF) upstream of the machine.

Clean and sanitise the machine when it is used for the first time and every day thereafter with the designated equipment and detergents using the PPE required by the regulations in force.

Only use original spare parts supplied by the manufacturer.

Maintenance and repair operations must be conducted only by specialised and perfectly trained personnel.

5.2 Pictograms

There are some pictograms applied or screen-printed on the machine, showing safety requirements, in addition to the CE marking and some directions for the proper use of the machine.

The stickers must be replaced if they become illegible.

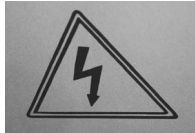




1
CE nameplate



7
Prohibition to use gloves not authorised by the manufacturer



2
Electrocutation hazard



8
Absence of radioactive emission



3
moving parts hazard



4
Cutting hazard

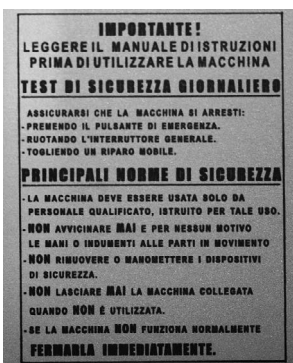
9
Maintenance instructions (on the electric control panel cover)



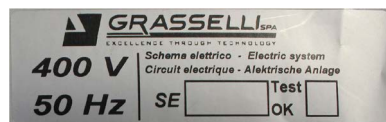
5
General information relating to safety



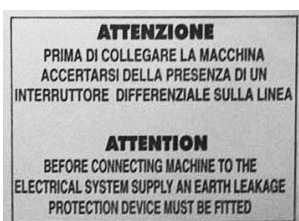
10
Maintenance instructions (on the electric control panel cover)



6
Information relating to the electrical connection



11
Information on the wiring diagram (on the electric control panel cover)



6 TRANSPORT AND INSTALLATION

6.1 Description of the packaging

The machine is secured to a special pallet with bolts and protected with clear packaging film and cardboard.

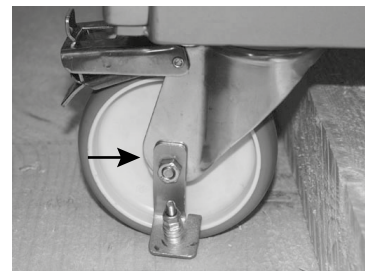
Open the cardboard box and remove the film.

Inside, in addition to the machine, there is a box which contains, as well as this manual:

- 1 pack of lubricant
- 1 mushroom adjustment tool (MS475-P)
- 1 13mm spanners (MS600-P - MS800-P)
- 3 blade holder closure screws (MS600-P - MS800-P)
- 3 spare blades
- 1 spare comb return spring
- 1 screwdriver
- 1 accessory carry-bag
- 1 accessory sack

With CLO system installed (optional)

- 1 CLO conductive gloves
- 1 pair of insulating gloves
- 1 CLO jacket



If other accessories are provided (special versions or with optional extras) they are included in the same box.

Make sure that all machine parts, including any accessories, have been supplied and are undamaged.

Dispose of the packaging material in compliance with the regulations in force.

6.1.1 Storage

The packaging is made of material suitable for storing the machine in an environment protected from direct light, excessive heat or humidity. It must be stored at a temperature ranging from -15°C to +45°C.

6.2 Transport

Use a forklift or a pallet truck to carry the machine.

Before transporting the machine, make sure that:

- the transport device is able to withstand the load (see technical data of the machine)
- the machine is stable on the forks
- the adjacent area is clear of obstacles, people or animals that may cause dangerous situations

Release the machine from the pallet, loosening the screws that secure it, and lift the machine inserting the forks of the forklift in the point shown in the picture.

Place the machine in the designated work area.



Before starting any movement, always check whether the machine is stable and make sure the area where the movement is conducted is clear of obstacles such as objects, animals or people.

Before moving the machine, it must be turned off (master switch at 0-OFF) and unplugged.

During machine displacement, the power supply cable must not be damaged.

6.3 Positioning

6.3.1 Characteristics of the work area

Provide for a work area large enough to perform all the manoeuvres safely (see technical data). The machine must be placed on a flat and smooth floor.



IT IS FORBIDDEN TO INSTALL THE MACHINE ON SLOPING FLOORS

6.3.2 Working position of the skinning machine

Access to open skinning machines must be avoided, except on the operator side. This can be obtained, for example, with the following measures:

Normal positioning of a machine in a limited working area

The open skinning machine must be placed with one side facing the wall. The table and a container must be on the other sides free to receive the product.

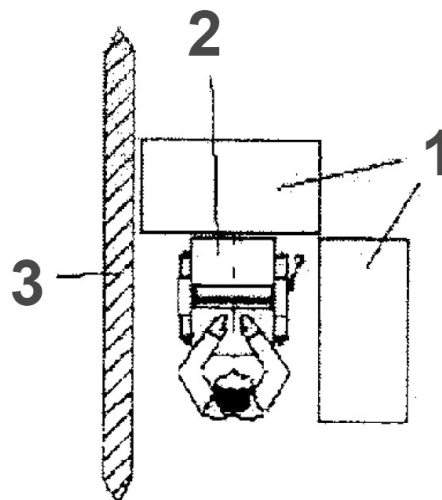
The operator stands in front of the open skinning machine. Access to the machine is in this way inhibited to other persons.

After it has been positioned correctly, the machine must be parked by means of the locking devices located on the two swivel wheels of the machine.

Open skinning machine installed in a small working area

Key

- 1 Table or container
- 2 Open skimmers
- 3 Partition wall



Normal machine positioning in a processing area with cutting line

The open skinning machine must be placed with one side facing the cutting line. The table and a container must be positioned on the other sides free to receive the product.

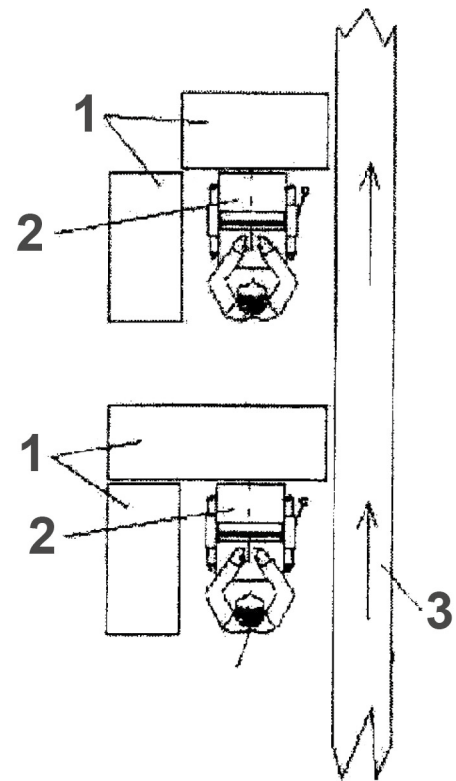
The operator stands in front of the open skinning machine. Access to the machine is in this way inhibited to other persons.

After it has been positioned correctly, the machine must be parked by means of the locking devices located on the two swivel wheels of the machine.

Open skinning machine installed in a cutting line

Key

- 1 Board or container
- 2 Open skinners
- 3 Cutting line



6.3.3 Additional positioning possibilities of the skinning machine

Access to the tooth-roll by third parties must be prevented with a fixed guard, e.g. a protective enclosure. The guards must be sized according to EN ISO 13857:2008 and subsequent amendments.

6.3.4 Machine stabilisation



After it has been positioned correctly, the machine must be parked by means of the locking devices located on the two swivel wheels of the machine.

- 1) Brake disengaged.
- 2) Using your foot, press the tab (Fig. 1) on the two swivel wheels until it clicks.
- 3) Brake engaged.
- 4) To disengage the brake on the wheels, push the tab (Fig. 3) of the brake on the two swivel wheels until the brake disengages.



6.3.5 Electrical connection

The machine is equipped with a power supply cable to connect it to the mains.



Connecting the machine to the mains involves an electrocution hazard. All connection operations must be carried out by specialised personnel, equipped with special PPE in compliance with the regulations in force.

The machine is supplied in various versions with voltages (V) and frequencies (Hz) on request. **Make sure that the operating voltage and frequency are compatible with the features of the mains by checking the CE plate applied on the machine (see section "Pictograms").**

Connect the machine to the TT power supply system, equipped with circuit breaker having rated trip current not higher than 16A and residual current device with 30mA AC operating curve, according to standards in force.

- Ensure that **the toothed roller rotates in the direction of the blade holder**; if it does not, invert its polarity.

The manufacturer cannot be held liable for damage caused by incorrect connections or connections that are not compatible with the machine's power supply system.



Do not use extension cables or jump leads with the power supply cable.

Use a 3P+E plug to conduct the connection.

Check the polarity of the connection when you start up the machine for the first time.

- Turn the main switch (I-ON) on
- Start the cycle (see the paragraph "Commissioning the machine")
- The end of the test, disconnect the master switch (0-OFF)

To reduce risk exposure, the wiring diagram has:

2 magnetic coded safety sensors installed on mobile guards, front and rear.

1 emergency pushbutton.

Ensuring the correct functioning of the emergency push-button and the safety sensors at the beginning of every work shift is **COMPULSORY**:

- by pressing the safety button the machine **MUST** stop
- the machine **MUST** stop when the front and rear mobile guards are lifted

The safety control systems are in compliance with the standard:

UNI EN ISO 13849-1:2008 - category 1 - PL=C

7 PUTTING THE MACHINE INTO SERVICE

7.1 Functions and signals

Below is an overview of the functions of the lights, the switches and the buttons on the machine control panel.



17 Master switch

- I-ON machine powered (machine on)
- 0-OFF power supply off (machine off)

14 Emergency button

- pressed Emergency on
- released, the machine is operational

18) Start button (ON)

It must be pressed in order to restart processing after every emergency stop or power failure.

When the button is pressed the warning light (21) turns green. The machine is ready for use.

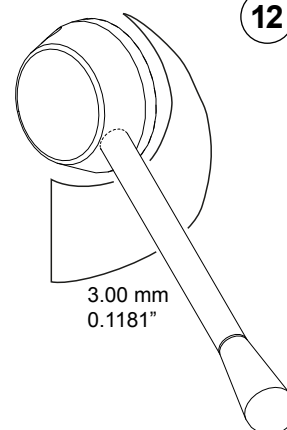
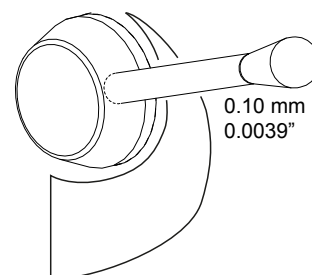
12) Thickness adjustment lever

21) Warning light

- off, machine off (main switch 0-OFF)
- green machine on and ready for use (master switch I-ON - start button ON pressed)
- red machine on and correctly powered (main switch I-ON) if start button ON is pressed, machine in alarm

10) Start pedal.

When it is pressed, with main switch in pos.I (ON) and green warning light on, the machine starts, whereas when it is released it stops.



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USE AND MAINTENANCE INSTRUCTIONS

CLO SAFETY SYSTEM (vers. 3) (optional)

Annex to Use and maintenance instructions of the machine



The manual must be kept carefully and accompany the machine throughout its life cycle. Read this manual carefully in its entirety before performing any operations on the machine.

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USE AND MAINTENANCE INSTRUCTIONS

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SECTION RESERVED FOR TECHNICAL ASSISTANCE OR SPECIALISED PERSONNEL

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1 GENERAL INFORMATION

1.1 System description

CLO is an electronic safety system which increases operator safety during processing. The system is made up of a control circuit, conductive gloves, a conductive jacket and insulated gloves.

1.2 Definitions

The manual defines certain figures who are authorised to operate on the machine in different ways:

Operator: person in charge of running the machine with operational knowledge about how it works

Specialised personnel: person with specific knowledge about the routine maintenance of the machine

Technical assistance: person in charge of special maintenance and repairing the machine, expressly appointed by the manufacturer.

2 FIELD OF APPLICATION

2.1 Intended use

The CLO safety system is an optional device which, installed on the skimmers and membrane skimmers, increases operator safety during processing.

2.2 Reasonably foreseeable misuse

The CLO safety system is an optional device which must be factory-installed directly by the manufacturer and becomes an essential part of the machine.



People with pacemakers or other lifesaving devices are forbidden from using the CLO safety device.

The CLO system is not intended for separate use from from the machine on which it is installed.

The manufacturer cannot be held liable for any damage caused by improper use of the machine or equipment connected to it.

3 INSTRUCTIONS FOR CORRECT USE

Position the machine avoiding contact with any type of metallic structure.



Carry out the test any time an operator begins a work cycle.

The TEST and the relative work cycle must be carried out by ensuring that the gloves (conductive and insulating) are perfectly intact (not torn or worn).

The regulations and instructions in this manual must be respected and the TEST must be carried out as indicated in paragraph 4 HOW TO CARRY OUT THE TEST.

Carry out the TEST any time that:

- 1) The machine has not undergone a work cycle for over 4 hours.
- 2) The operator is disconnected from the machine for over 20 consecutive minutes (in some cases, the system requires a test even if the operator just disconnected from the machine)
- 3) The machine is switched off with the main switch (0/OFF)
- 4) Following an electrical power failure.
- 5) Following an emergency intervention.
- 6) The emergency mushroom-head button is pressed.
- 7) A new operator begins a work cycle.
- 8) The system detects a problem (see 5 DISPLAY INDICATIONS)

4 HOW TO PERFORM THE CALIBRATION TEST OF THE CLO SAFETY SYSTEM WITH OPERATOR (TEST SEQUENCE)

- The TEST lasts about 10 seconds and prepares the machine for maximum working safety.
- It is important to carry out the TEST by following the phases exactly as indicated in this manual.
- Through alphanumeric codes, the machine display shows the test phases, anomalous situations, possible malfunctions and actions to carry out in order to restore the safety system (see par. 6 DISPLAY INDICATIONS).

When the gloves are torn or worn, if the operator comes into contact with the blade or the toothed shaft, he/she could be hurt. It is mandatory to check the wear of the gloves and replace them when they are torn or worn.

Should the gloves show slightly worn parts, it is still advisable to replace them and, in any case, it is preferable to carry out the test more accurately, resting one fingertip on the machine at a time to be sure the protection is effective.

- 1) Wear the jacket with the connection cables.



- 2) Wear the conductive gloves and connect them to the jacket cables.





- 3) Connect the jacket plugs to the machine sockets.
The connectors have NO polarity.



- 4) Switch on the machine by turning the main switch from 0/OFF to I/ON position.
Wait for the display to show a flashing "t". During this preparation phase, in systems with software version 6.2 and higher, the display will show the loaded version before the flashing "t".

ATTENTION!

During some phases of the test (8-9-10) the toothroll is rotating. Do not touch it for any reason whatsoever.

N.B. : During the test, the toothroll rotates in the opposite direction of the blade, whereas during processing, it must rotate in the direction of the blade.

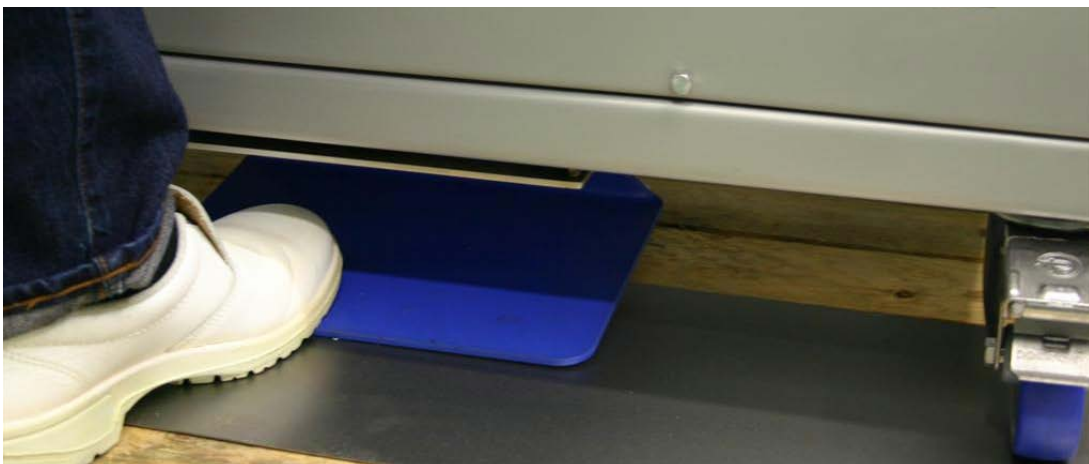
If the toothroll rotates in the direction of the blade during the test, swap the electric power supply phases.



- 5) Press START. Check that the emergency mushroom-head button is not pressed. If it is, release it by pulling it. Check the correct positioning of the mobile guards.



- 6) Press the pedal and hold it down, the display will show "tt". Wait for the display to switch off (about 5-10 seconds). In case "tt" does not appear, repeat the procedure from point 5, checking that the machine is not in emergency state.



7) Release the pedal.



8) Wait for the “_ _” symbol to switch on, and press the pedal, holding it down. The toothed shaft rotation will be reversed for the entire duration of the test. From this moment, the test must be completed within 30 seconds. If this does not occur, error 12 will appear on the display. Switch the machine off and back on with the main switch and start the complete test again.



9) Keeping the pedal pressed, touch a part of the machine frame with your right hand. If the test is carried out correctly, the machine will stop.



10) The “_ _” symbol will appear on the display. Press the pedal, and while holding it down, carry out a left hand test by resting on a part of the machine frame. If the test is carried out correctly, the machine will stop.



11) Release the pedal. The display will show two small dots “..” indicating that the test was carried out correctly.



ATTENTION!

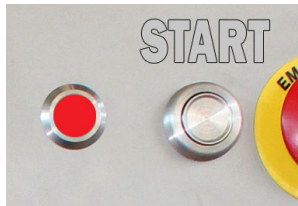
Carrying out the test with both hands at the same time cancels the efficacy of the safety system.

The test must be carried out by wearing the conductive gloves which must not touch each other.

12) Put the insulating gloves on over the conductive gloves and begin regular work activities.



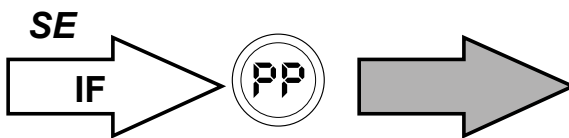
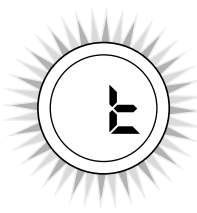
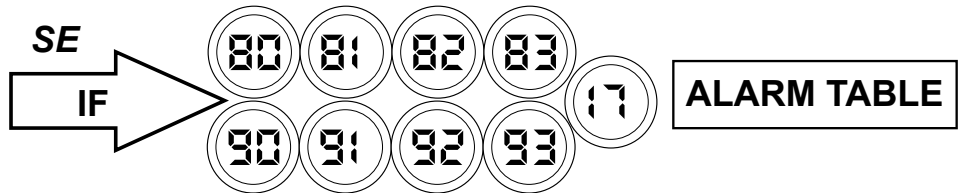
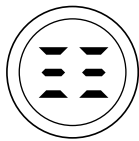
START TEST SEQUENCE



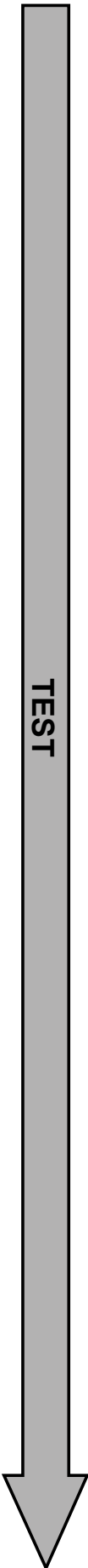
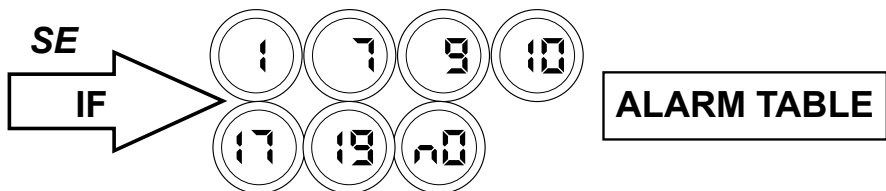
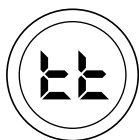
DISPLAY TEST

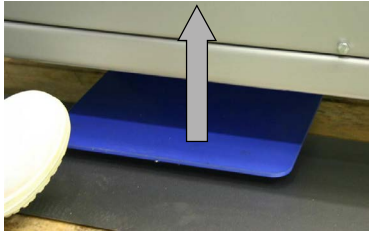
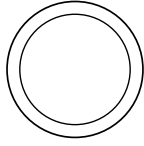
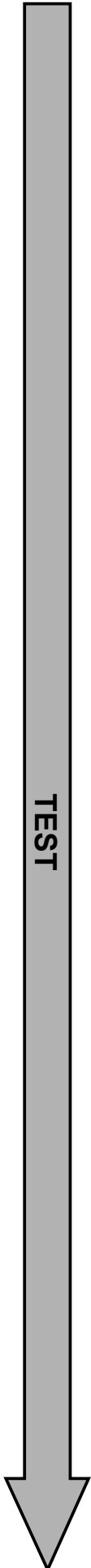


SOFTWARE VERSION (60 or follow up version)

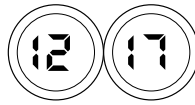
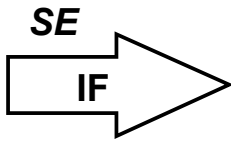
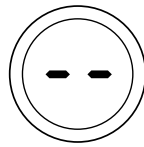


HOLD DOWN





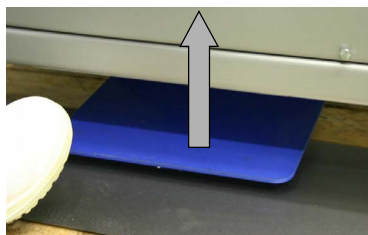
RELEASE



ALARM TABLE



HOLD DOWN

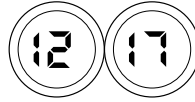
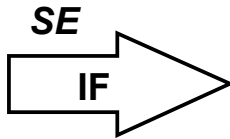
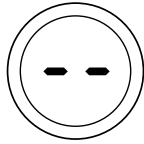


RELEASE

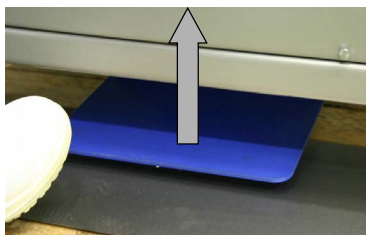
TEST



HOLD DOWN



ALARM TABLE

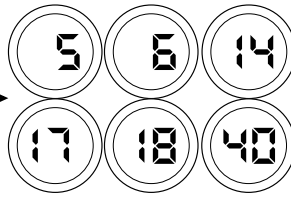
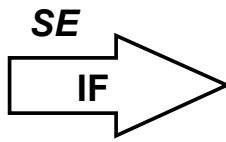
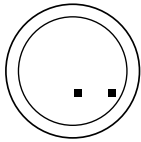


RELEASE



HOLD DOWN

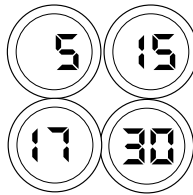
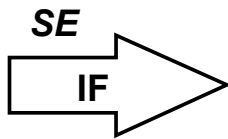
TEST



ALARM TABLE



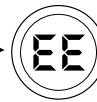
WORKING



ALARM TABLE



CONTATTO GUANTI-MACCHINA



ALARM TABLE

ALARM TABLE		
Display error code	Causes	Corrective actions
01	<i>The operator test was not completed in the maximum time available (2 minutes).</i>	Operator: - Switch the machine off and back on. Repeat the test. - If the alarm persists, contact technical assistance and communicate the displayed alarm.
05	<i>Operator not connected to the safety system</i>	Operator: - Check the electrical conduction state of the jacket and conductive gloves. - If the alarm persists, replace the components (jacket and gloves) individually. - If the alarm persists, contact technical assistance and communicate the displayed alarm.
06		Operator: - Contact technical assistance and communicate the displayed alarm.
07	<i>Operator test interrupted due to early pedal release before the end of the test.</i>	Operator: - Switch the machine off and back on. Repeat the test.
09	<i>Excessive dispersion of the stop signal.</i>	Operator: - Check that the machine is not in contact with metallic structures. If so, move it away from them. - Check for excessive wear of the operator's shoes. - If needed, replace the shoes with a new pair.
11	<i>Contactorm alarm.</i>	Specialised personnel: - Check auxiliary contactor contacts. - If the alarm persists, contact technical assistance and communicate the displayed alarm.
12	<i>Stop by contact not carried out during the test within time limit (30 sec).</i>	Operator: - Repeat the operator test making sure to perform the emergency test as indicated in this manual. - If the alarm persists, contact technical assistance and communicate the displayed alarm.
14	<i>Emergency signal detection.</i>	Operator: - Check that the insulating gloves are intact - Switch the machine off and back on. Repeat the test. - If the alarm persists, contact technical assistance and communicate the displayed alarm.
15	<i>Conductive gloves worn in a manner not compliant with machine in process (gloves short circuit).</i>	Operator: - Wear the conductive gloves appropriately, repeat the test. - If the alarm persists, contact technical assistance and communicate the displayed alarm.
16	<i>Operator not detected correctly</i>	Operator: - Wear the conductive gloves appropriately, switch the machine off and back on and repeat the test. - If the alarm persists, contact technical assistance and communicate the displayed alarm.
17	<i>System program execution error.</i>	Operator: - Switch the machine off and back on and repeat the test. - If the alarm persists, contact technical assistance and communicate the displayed alarm.

Display error code	Causes	Corrective actions
18	<i>Conductive gloves worn in a manner not compliant with machine stopped (gloves short circuit).</i>	Operator: - Wear the conductive gloves appropriately, switch the machine off and back on and repeat the test. - If the alarm persists, contact technical assistance and communicate the displayed alarm.
19	<i>Operator not detected correctly.</i>	Operator: - Check the electrical conduction state of the jacket and conductive gloves. - If the alarm persists, contact technical assistance and communicate the displayed alarm.
30	<i>Maximum working time without interruption exceeded.</i>	Operator: - Release the pedal, press it again and start the process once again. - If the alarm persists, contact technical assistance and communicate the displayed alarm.
40	<i>System calibration no longer valid</i>	Operator: - Press the emergency button, release it and repeat the test. - If the alarm persists, contact technical assistance and communicate the displayed alarm.
80	Operator: - Switch the machine off and back on. Repeat the test. - If the alarm persists, contact technical assistance and communicate the displayed alarm.	
81		
82		
83		
90		
91		
92		
93		
EE	<i>System in alarm during processing</i>	Operator: - During the process, the system detected a contact of the operator with the machine. If there was no contact between operator and machine, check the integrity of the electric conduction of the jacket and conductive gloves, press the pedal again and resume processing. - If necessary, switch the machine off and back on and repeat the test. - If the alarm persists, contact technical assistance and communicate the displayed alarm.

6 MAINTENANCE

Necessary periodical checks of the safety system accessories

- Check for electric continuity between the plug and the relative hook of the jacket glove or of the strap with a TEST (see SECTION RESERVED FOR TECHNICAL ASSISTANCE OR SPECIALISED PERSONNEL).
- During the check, move the cable to make sure that the cable is intact even during operator movements; any repairs of the jacket cable or of the strap must be insulated from the outside environment.
- Check the operator's shoes and replace them in case of holes, excessive wear or in the event they are visibly permeated with water or grease.
- Check that the insulating gloves are intact and not cut, perforated or torn.
- Check that the conductive gloves stop the machine immediately with all your fingertips.
- Should the electric boxes be opened, always make sure the covers are closed correctly and that their sealing gaskets are intact.

6.1 Conductive gloves use and maintenance

Use

- Conductive gloves are not designed to be used in contact with foodstuff.
- Conductive gloves must only be worn during processing and with insulating gloves as a cover.
- Wear the insulating gloves outside the clothing to completely cover the conductive gloves.
- **Do not handle the product with the conductive gloves without having put on the protective insulating gloves.**

Undressing procedure

- 1) Wash, disinfectant and the dry the insulating gloves.
- 2) Remove the insulating gloves
- 3) Remove the conductive gloves, taking care not to come into contact with foodstuff residue on the coat.
- 4) Take off the coat.

Washing and sterilisation

- Wash the conductive gloves, without wringing them, in cold water (max 30° C).
- Wash them using delicate detergents, **anionic surfactants**, without exceeding in the amount.
- Use a delicate wash cycle.
- After washing, hang them to dry or ventilate them at a maximum temperature of 30°C.
- If necessary, the conductive gloves can be sterilised with UV rays.

NO dry cleaning

NO bleach

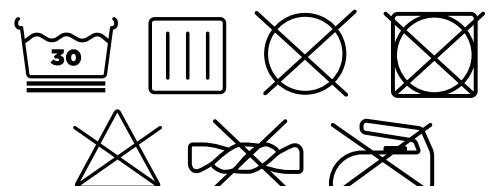
NO ironing

NO hot drying

NO wringing

NO roller drying (e.g. washer-drier)

NO rubbing



7 SPARE PARTS

Only use original Grasselli safety components

Description	Code
Insulating gloves - Size 9	G7539
Insulating gloves - Size 10	G7540
Insulating gloves - Size 11	G7541
Conductive gloves - Size M	G2549
Conductive gloves - Size L	G2549L
Conductive gloves - Size XL	G2549XL
CLO Conductive jacket belt only	2522OMAG
Complete CLO insulated socket	4207ASSY-T1

8 PROBLEMS AND SOLUTIONS

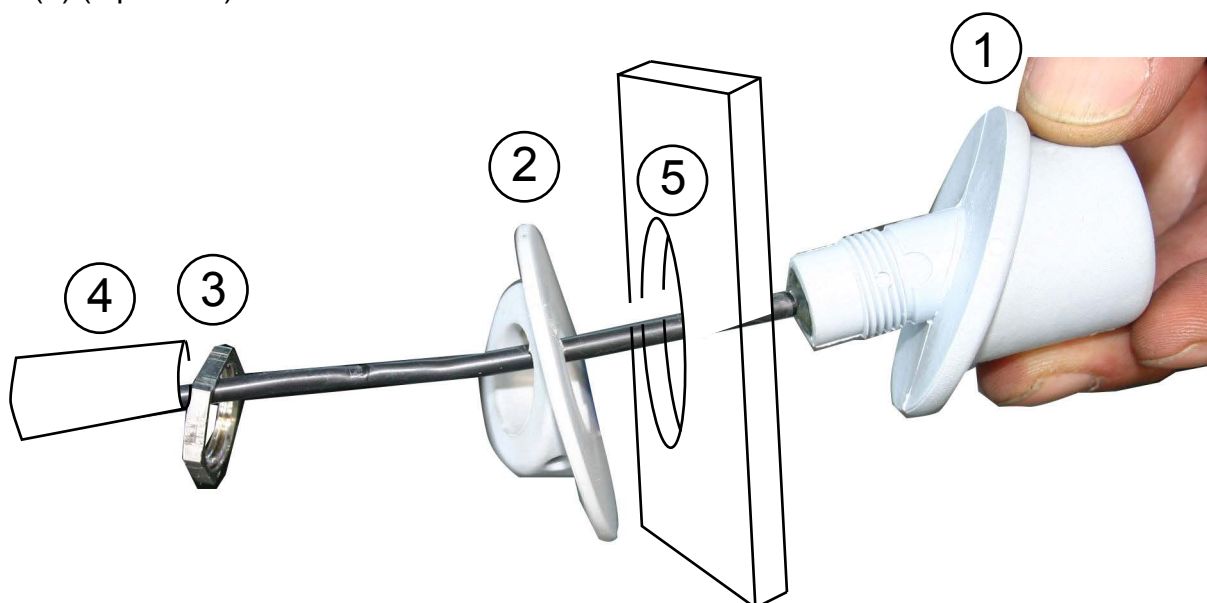
During the test, the roller rotates in the direction of the cut.	Incorrect power supply	Specialised personnel: Invert the phases on the power supply system
--	------------------------	--

**SECTION
RESERVED FOR TECHNICAL
ASSISTANCE
OR SPECIALISED PERSONNEL**

**CLO SAFETY SYSTEM
(optional)**

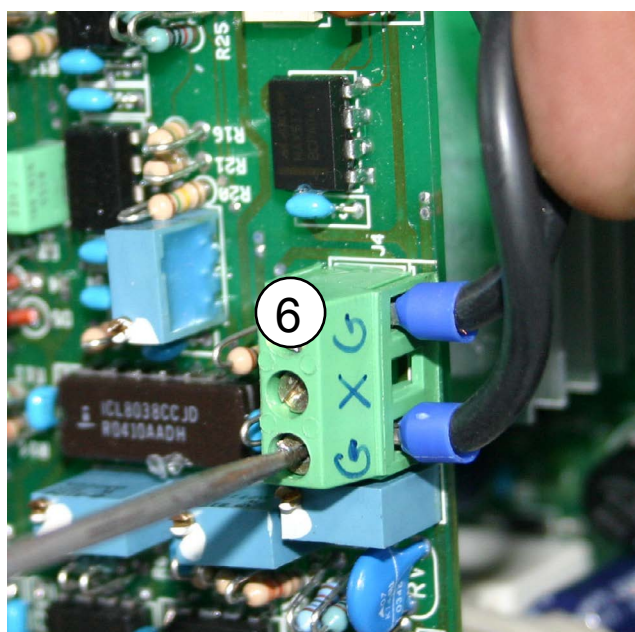
9 REPLACEMENT OF CLO INSULATED SOCKETS

The CLO insulated socket spare part (see 8 SPARE PARTS) is made up of the socket (1) to which the cable is attached, the socket frame (2), the fastening nut (3) and the insulating sheath (4) (if present).

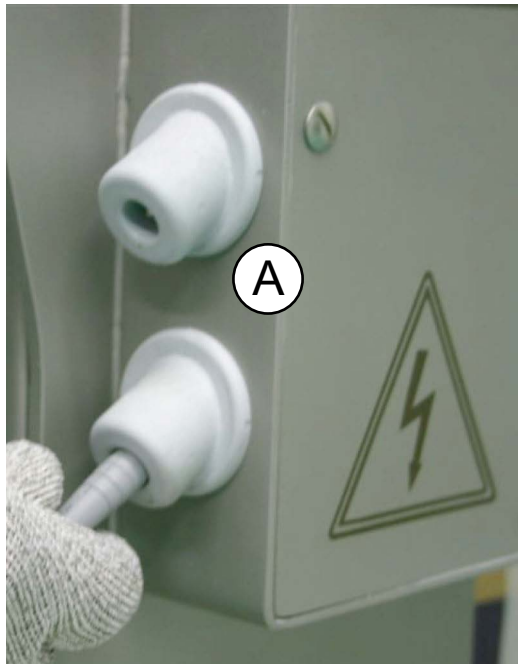


To replace them, proceed as follows:

- 1) Open the machine side guard.
- 2) Open the electric system box where the CLO system is connected.
- 3) Disconnect the cable of the socket to replace from the CLO system connection terminal (6).
- 4) Unscrew the fastening nut located behind the socket.
- 5) Disassemble the socket to replace



- 6) Assemble the new socket (1), threading the cable through the special hole on the frame (5).
- 7) Thread the cable through the socket frame (2).
- 8) Thread the cable through the fastening nut (3).
- 9) Thread the cable through the insulating sheath (4) (if present).
- 10) Secure the socket to the frame (5) by thoroughly tightening the nut (3). Attention: assemble the socket facing downwards to prevent water and humidity from accumulating inside it.
- 11) Connect the cable of the new socket to the terminal (6).
- 12) Carefully close the electric box to prevent humidity from penetrating.
- 13) Close the side guard on the machine frame.



7.2 Disinfecting the machine

Before using the machine, a disinfection must be carried out according to the regulations in force: - disconnect the power supply by unplugging the plug or turning off the switch on the main panel upstream of the machine. - perform the steps in paragraph "Cleaning and disinfection of the machine".

7.3 Starting the work cycle



Carefully read the manual in its entirety before conducting any operation on the machine, paying special attention to safety requirements. During cleaning and maintenance operations, always use the PPE required by the regulations. When an open skinning machine is in operation, the operator must wear only gloves approved by the manufacturer. Metal mesh gloves or gloves reinforced with metal wire must not be used.

Before processing, always check the operation of the switches, indicator lights and safety devices located on each cover. **Do not connect the machine to the power mains until it is fully assembled and secured in the desired work position.**

Before connecting the power supply, ensure the mains voltage matches the data shown on the machine's plate.

7.3.1 Preliminary operations

- Always wear cut-resistant protective safety gloves during processing, maintenance, adjustments, handling of the blade holder and when changing the blade. Wear only protective gloves approved by the manufacturer.

Metal mesh gloves or gloves reinforced with metal wire must not be used.

- Ensure all guards are correctly secured
- Ensure the machine does not start unless the tables (6-13) are in position. (see par. 4 Description of the machine).
- Check pedal start operates correctly.
- Check the machine is in the suitable working area and the wheels are locked
- Check that the isolating switch on the mains and the master switch (17) of the machine are turned to position (0) (OFF) (see par. 7.1 Functions and signals).
- Check that the electrical connection is correct.
- Check that the power cable is intact, without abrasions or burns.
- Perform a test (see par. 7.8 Daily test).

7.3.2 Starting the machine

- Actuate the isolator switch on the mains and turn the main switch (17) of the machine to position (1) (ON).
- Press the START button (18).
- Press the start pedal (10).

7.3.4 Processing cycle

- Proceeding from the top, approach the product to be processed to the blade holder unit, making sure that the skin faces the operator.
- Let the toothed roller drag the product so as to bring about separation of the scrap from the part to be used.

The comb has the purpose of detaching the scrap from the toothed roller making it drop on the suitable conveyor and after that into the scrap container.



In the event of failed dragging never push the product towards the blade holder. Never touch for any reason the cutting edge of the blade. Processing is particularly dangerous therefore it is obligatory to have skilled personnel use it with the utmost caution.

Thickness adjustment

Check correct thickness of the removed membrane, after commissioning. Should this not be satisfactory, adjust with the lever (12).

7.4 Stopping the machine

At the end of processing, disconnect the master switch (17) of the machine by turning it to position (0) (OFF).

With CLO Safety system (optional)

At the end of processing, wash and sanitise the insulating gloves.

Take off the insulating gloves, the protective white coat and then the CLO gloves and the CLO jacket.

The CLO gloves and jacket must not come into contact with the product being processed, observe the above procedure.

7.5 Stopping the machine in the event of an emergency

If for any reason it is necessary to suddenly stop the machine, press the red EMERGENCY button (14) on the side of the machine.

If the product infeed table (6) or the rear table (13) are opened during processing, the machine stops immediately (see par. 4 DESCRIPTION OF THE MACHINE)

7.6 Machine stop in case of contact with CLO safety system (optional)

In the event the glove make contact with any part of machine, the machine stops immediately.

7.7 Restarting the machine in the event of an emergency

After clearing the cause that caused the emergency, to resume the work cycle release the EMERGENCY button (14) by pulling it until it is released.

Press the start button, the pedal and proceed to processing as usual.

7.8 Daily test (ref. par. 4.1 Machine and 7.1 Functions and signals)

- 1) Release the start pedal (10)
The machine must stop.
- 2) Rotate main switch (17) to position (0)
The machine must stop.
- 3) Open the front table (6)
The machine must stop and the indicator light (21) turns on red.
- 4) Open the rear table (13)
The machine must stop and the indicator light (21) turns on red.
- 5) Press the emergency button (14)
The machine must stop and the indicator light (21) turns on red.



**If the machine does not stop, turn it off and immediately alert the foreman.
Never leave the machine connected when it is not attended.**

8 MACHINE MAINTENANCE

8.1 Routine maintenance

Before carrying out any machine maintenance operation, disconnect the power supply by pulling the plug or turning off the switch on the control board (0-OFF) upstream of the machine itself and disconnect the compressed air system (if applicable).



Always use the PPE in compliance with the regulations in force and especially cut-proof safety protective gloves and protective goggles.

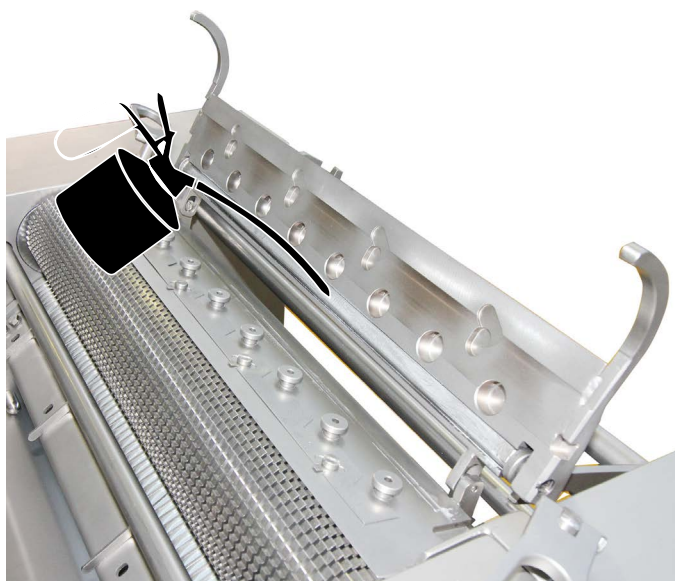
Operations to be conducted on a daily basis (work shift)

- 1) Make sure the safety devices are operating and the power supply cable is intact.
- 2) Clean and disinfect the machine (see par. 8.1.1 Cleaning and disinfecting the machine).

Model MS475-P

- 3) Lubricate the lever tightening pin after each wash. Use exclusively lubricants suitable for contact with foodstuffs or the lubricant supplied with the machine (code 19841ASSY).

It is strictly forbidden to use lubricants not approved by the food industry.



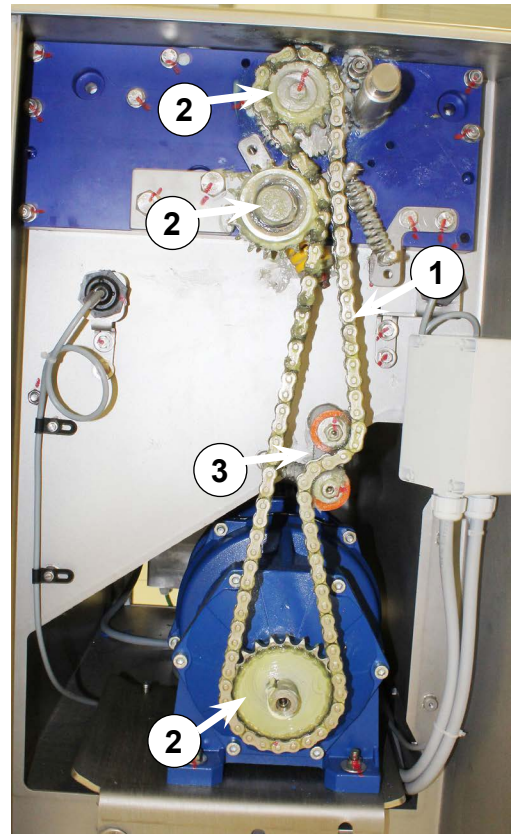
**Operations to be conducted every 6 months
Reserved to specialised personnel:**

check the accessible mechanical drive components by opening the left side guard.

- 1) Check that the chain (1) is intact and grease it with grease approved for the food industry for generic use NLGI 2.
- 2) Check that the pinions (2) and bushings (3) are not worn and, if necessary, replace them.
- 3) If during operation the machine makes abnormal noise, after carrying out the checks and operations in points 1, 2 and 3, check that the bearings are intact and, if necessary, replace them (Specialised Personnel)



It is strictly forbidden to use lubricants not approved by the food industry.



8.1.1 Cleaning and disinfecting the machine



Before cleaning or disinfecting the machine, disconnect the power supply by pulling the plug or turning off the switch on the main electrical panel (0-OFF) upstream of the machine itself and disconnect the compressed air system (if applicable).

Always use the PPE in compliance with the regulations in force and especially cut-proof safety protective gloves and protective goggles.



In any case use detergents specifically designed for cleaning and disinfecting machinery for the food industry and that are able to remove protein and fat residues. Carefully read the user instructions and safety directions provided by the manufacturer of the detergents used.

Do not insist with the water jet in the vicinity of gaskets to prevent water from penetrating into the internal parts of the machine.

Follow the indications in Standard DIN10516 “Food hygiene – Cleaning and disinfection” to clean and disinfect the machines.

Standard DIN10516 applies to cleaning and disinfection of the surfaces of premises, furniture, equipment and accessories in facilities operating in the food industry and is intended to provide guidance in selecting and executing adequate cleaning and disinfection.

It also provides the guidelines for planning, implementing cleaning and disinfection and on the checks to be carried out.

The cleaning method must comply with the standard requirements and must be chosen according to the relative ambient conditions and production process.

The standard distinguishes two methods of cleaning and disinfection, wet and dry.

The features of the MS skinning machine and the type of processing for which it is used, require cleaning combined with wet type disinfection for removal of organic residues released by the treated product.

The wet cleaning methods depend on the interaction of 4 factors:

- Temperature
- Time
- Mechanical action
- Concentration and quantity of cleaning agent

The wet disinfection methods depend on the interaction of 5 factors:

- Temperature
- Time
- Mechanical action
- Concentration and quantity of disinfectant agent
- Type and number of micro-organisms

The procedures to be adopted for cleaning and disinfection are given in par. 4.2.1 table 3 of the standard DIN 10516 - Combined cleaning and disinfection procedure:

- 1) **Rough cleaning**, to remove visible solid parts either mechanically or with drinkable water between 40°C and 60°C. If a pressure washer is used, set the pressure to a moderate value to avoid creating a water and detergent aerosol, damaging the external electrical

parts and releasing dirt residues in the environment.

2) **Disinfection**, by using food-grade detergents, follow the application times and dilution directions in potable water as indicated by the manufacturer. The machine is completely made of stainless steel. For the type of product processed we recommend using detergents that can dissolve and fully remove proteins and fats at temperature not exceeding 60°C. Paragraph 5.1 - Table 4 of the standard DIN 10516 - Overview of active cleaning agent ingredients (non-exhaustive list) indicates the active ingredient of the type of detergent to be used and, in particular, the detergents that act on the organic and inorganic residues (acid-based detergent like citric acid or phosphoric acid diluted according to the manufacturer's instructions).

Paragraph 5.2 Table 5 of standard DIN 10516 - Overview of active disinfection ingredients (non-exhaustive list) indicates the active ingredient of the type of disinfectant to be used and, in particular, the effective disinfectants for the removal of protein residues such as, for example, formic acid.

The cleaning and disinfectant agents may be used in combination, following the manufacturer's instructions.



Strictly observe the instructions of the detergent-disinfectant manufacturer on dilution and time of application (as described in paragraph 5.3.2). Use the PPE required by the regulations in force such as goggles and gloves and comply with the manufacturer's safety recommendations.

3) **Rinsing** to be carried out accurately and with drinking water.

4) **Drying** to be carried out in case the machine is not used for some time, drying by air is recommended.

For further details about the washing and disinfecting procedures, please contact the Manufacturer.

The solutions used for washing and disinfecting, must not be reused and must be disposed of according to the regulations in force.

Standard DIN10516 "Food hygiene – Cleaning and disinfection" in chapter 6, recommends defining an accurate cleaning and disinfection plan of the premises and equipment, as illustrated in annex "A".

Include in the plan, the daily cleaning and disinfection of the skinning machine, proceeding as indicated below to avoid overlooking the internal parts where processing residues may be deposited. The table below contains the cleaning and disinfecting schedule to be applied.

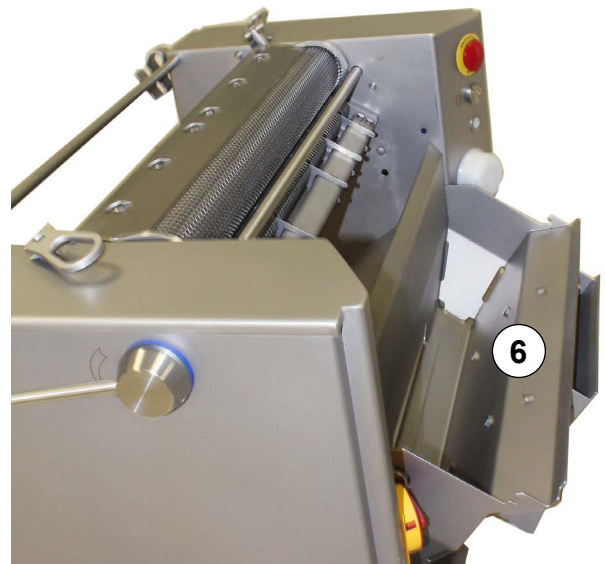
Cleaning and disinfecting areas							
Objective/ plant	Intervention frequency	Method	Detergent / disinfectant	Temperature	Concentration Application time	Other instructions	Manager

Keep monitoring the effectiveness of the washing, sanitising and rinsing operations, as prescribed by standard DIN10516 "Food hygiene – Cleaning and disinfection" in chapter 7, "Monitoring the effectiveness of cleaning and disinfection measures" and 8 "further checks". Retraining is periodically prescribed for cleaning and sanitising personnel, as specified in standard DIN 10514.

In order to perform daily cleaning and disinfection, the following procedure must be followed of preparation of the machine.

1) Disconnect the electrical connection and always turn the master switch to position 0 (OFF).

2) Open the front table (6) by pulling it upwards and turning it outwards from the machine.



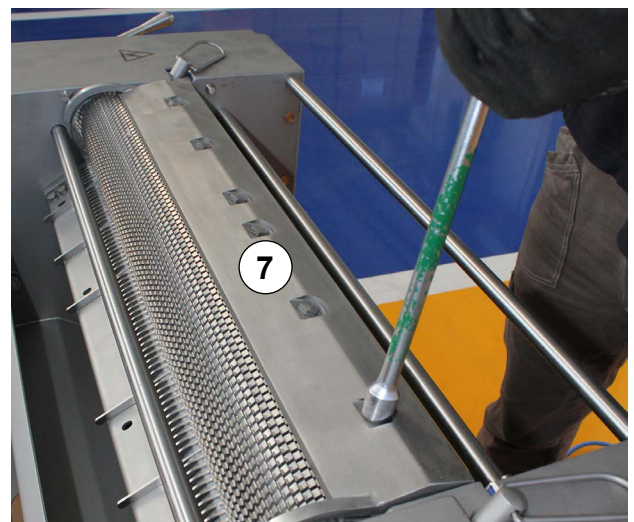
3) Open the rear board (13) by pulling it upwards and turning it outwards from the machine.



4) Turn the comb (5) until it opens.

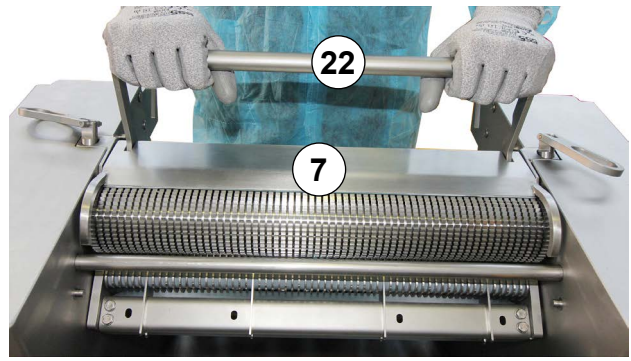


Models MS600-P and MS800-P
5) Open the blade clamp cover (7) by removing the screws.

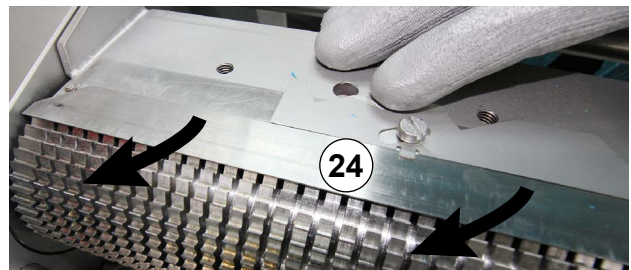
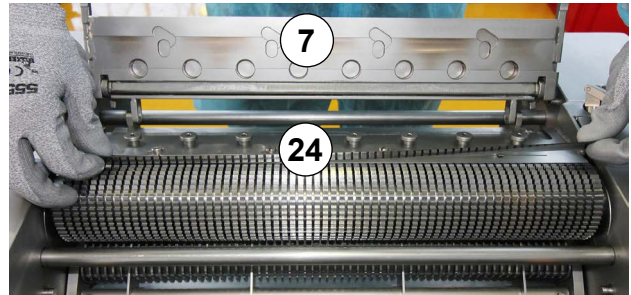


Model MS475-P

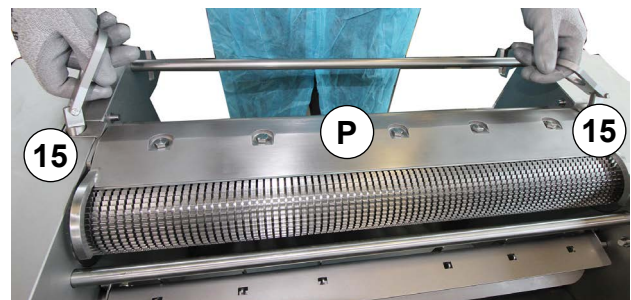
5) Open the quick blade clamp cover (7) by turning the clamping lever (22) upwards and then pushing it towards the machine, until the cover is released.



6) Remove the blade carefully (24). Always use cut-proof gloves, during all operations.



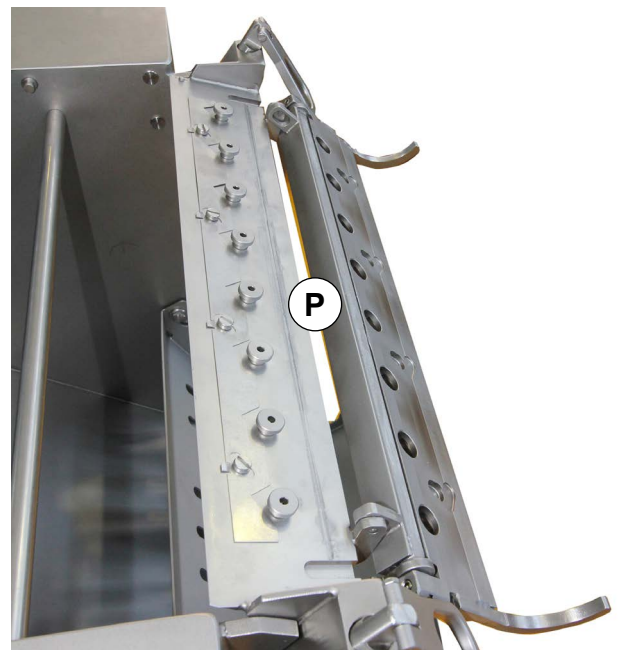
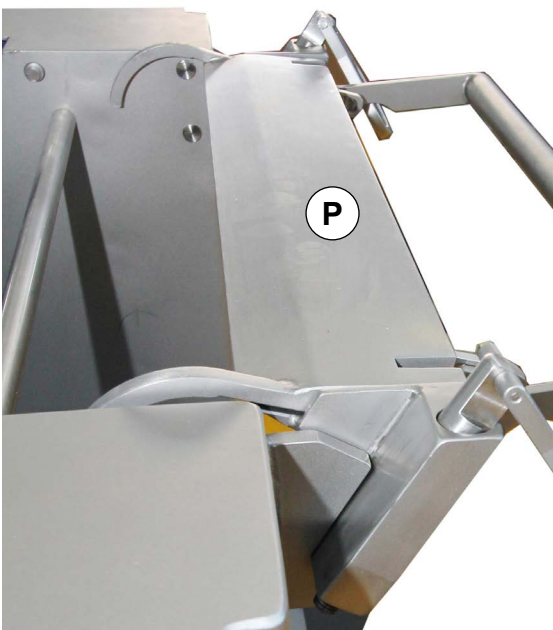
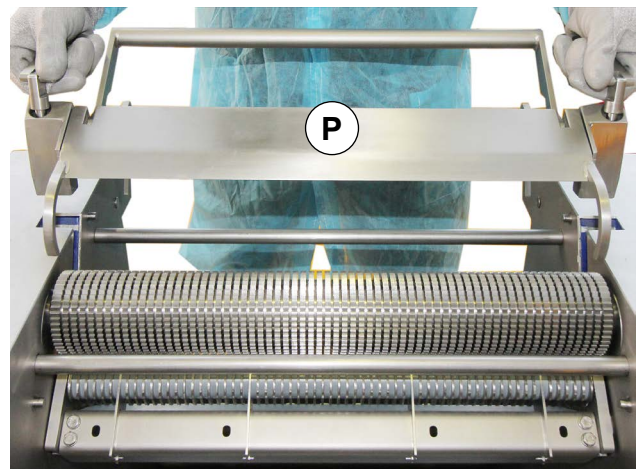
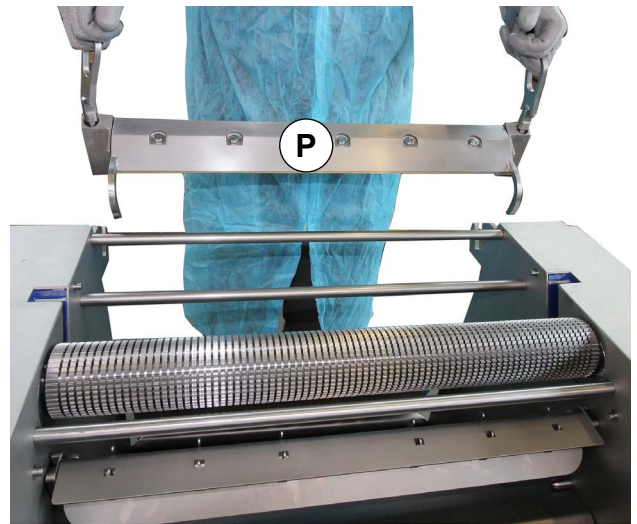
7) Close the blade cover again (7).



8) By turning the clamping knobs (15), release the blade holder unit (P) .

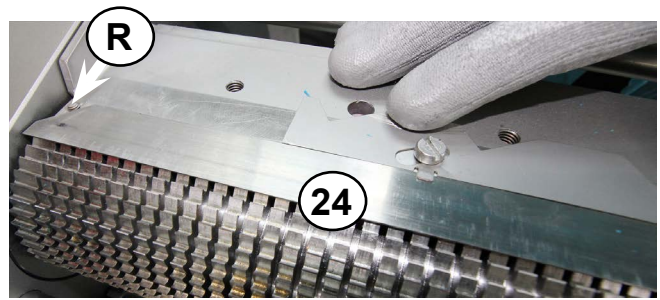


9) By turning it upwards, remove the blade holder unit (P) and place it in the relevant supports on the machine frame.



10) After having cleaned and disinfected the blade holder unit (P), reposition it and lock it by tightening the knobs (15).

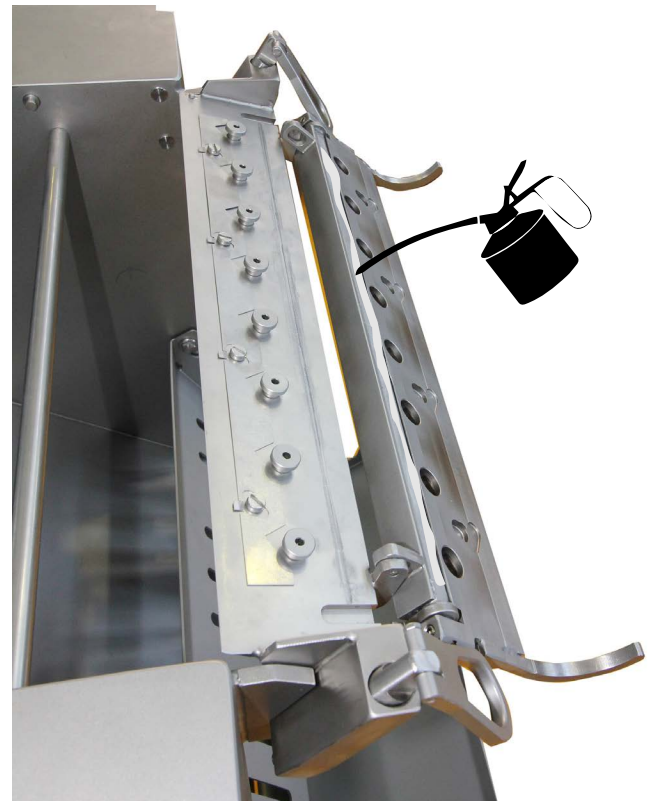
11) Open the blade holder cover (7) and reposition the blade (24) removed previously. Pay attention to the exact positioning with the bevel in contact with the pin (R) (see par. 8.2 Replacing the blade).



Model MS475-P

12) Lubricate the blade clamping lever pin. Use exclusively lubricants suitable for contact with foodstuffs or the lubricant supplied with the machine (code 19841ASSY).

13) Close the cover (7) of the blade holder unit by lowering the lever (22).



Models MS600-p and MS800-P

13) Remount the cover (7) fastening it with screws.

14) Close the rear table (13)

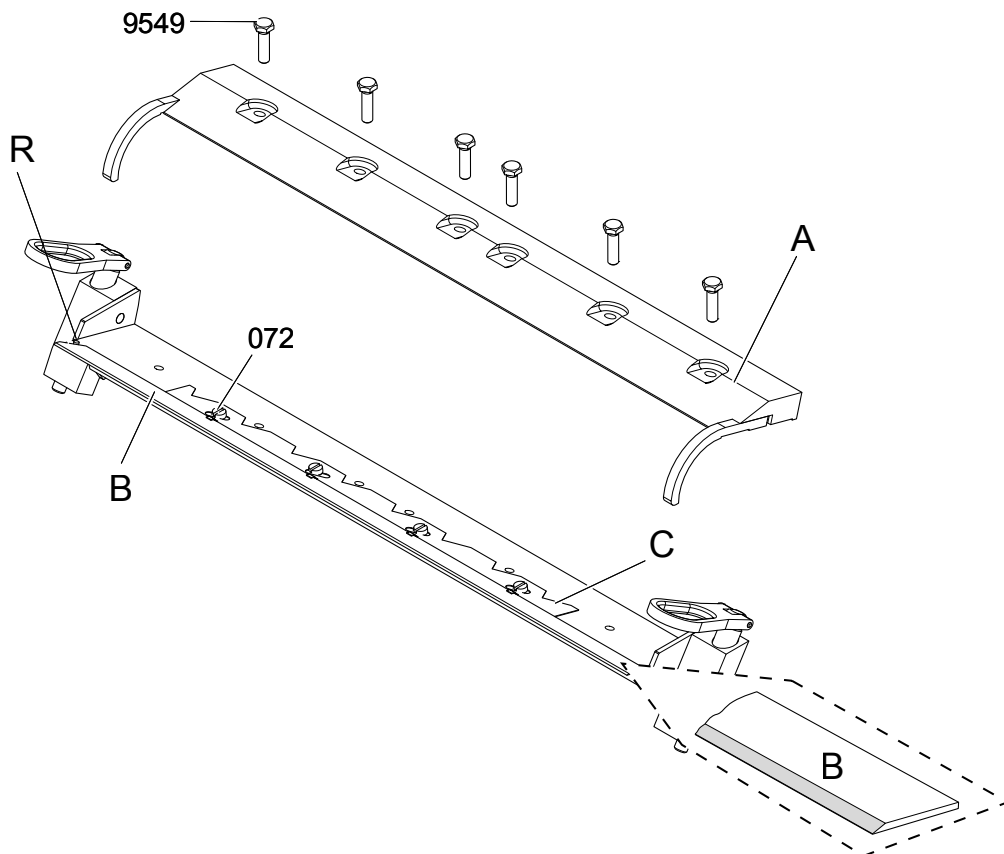
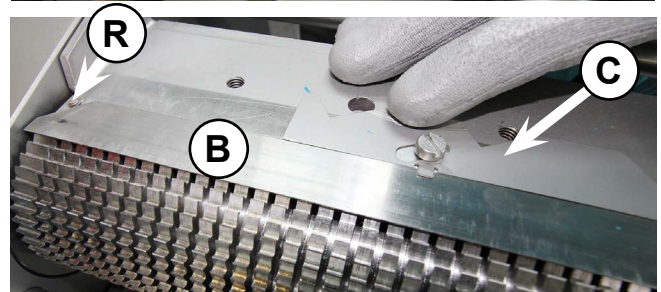
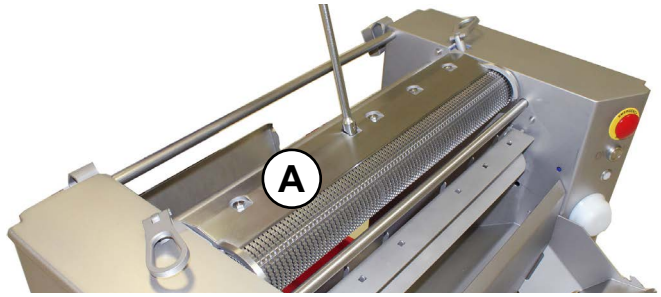
15) Close the front table (6)

8.2 Replacing the blade

8.2.1 Models MS600-P and MS800-P

Always use cut-proof gloves, during all operations.

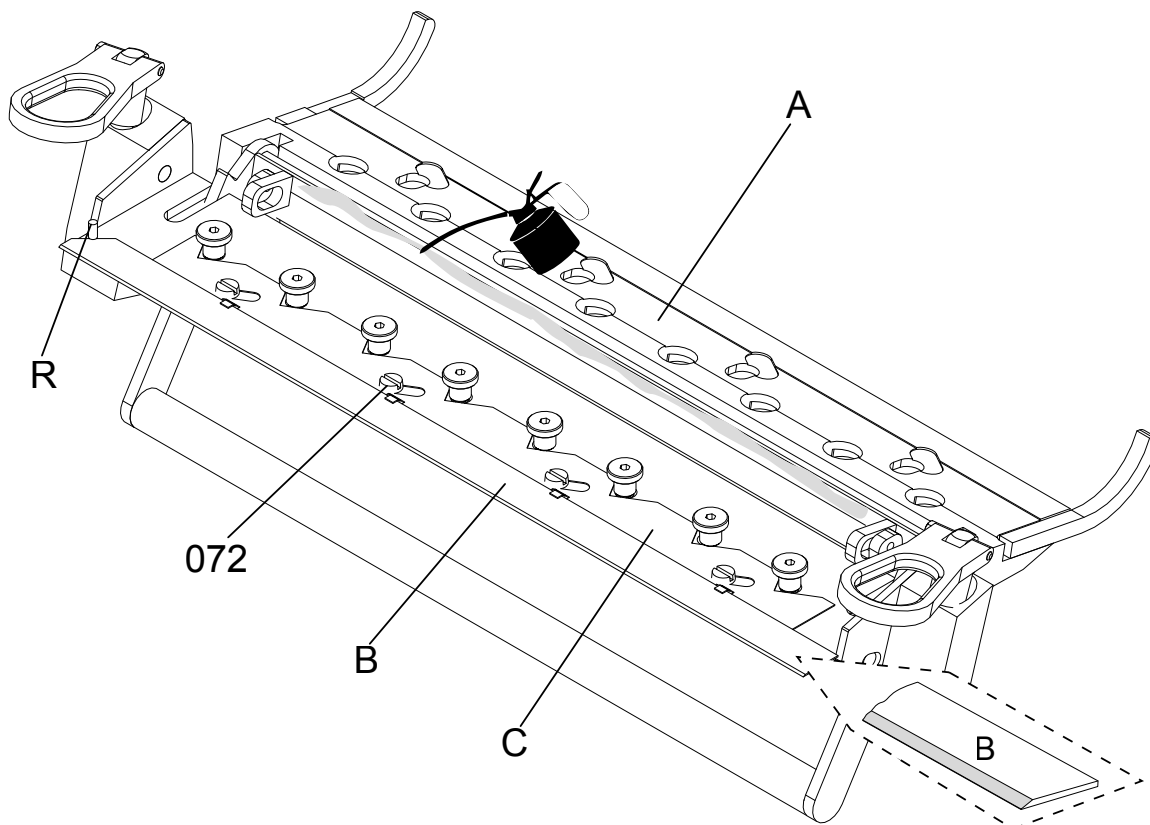
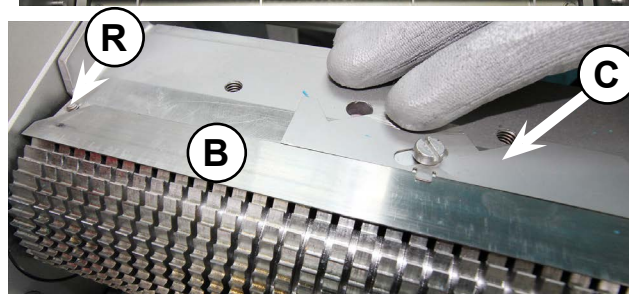
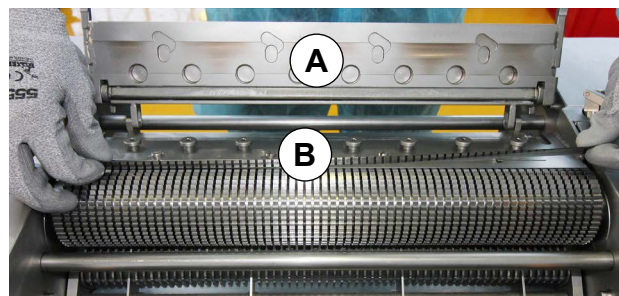
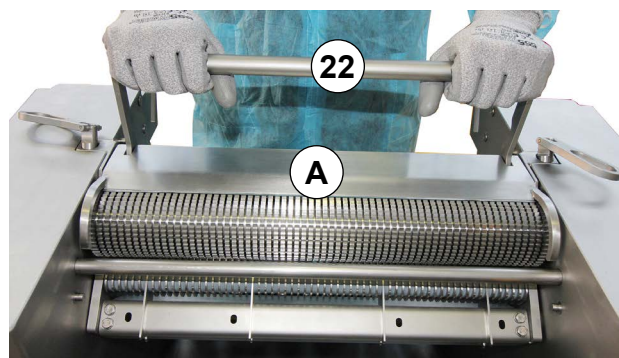
- 1) Disconnect the electrical connection and always turn the master switch to position 0 (OFF).
- 2) Open the front table (6) by pulling it upwards and turning it outwards from the machine and open the rear table (13) by pulling it upwards and turning it outwards from the machine. (see par. 4 Description of the machine).
- 3) Open the blade clamp cover (A) removing the screws (9549).
- 4) Remove the worn blade from its seat, handling it carefully.
- 5) After replacing the blade (B) make sure that it rests perfectly against the adjustment plate (C) for its entire length and that it rests perfectly against the pin (R), that the bevel faces upwards and that the blunt edge rests against the adjustment plate (C).
- 6) Remount the blade clamp cover (A) fastening it with screws (9549).



8.2.2 Model MS475-P

Always use cut-proof gloves, during all operations.

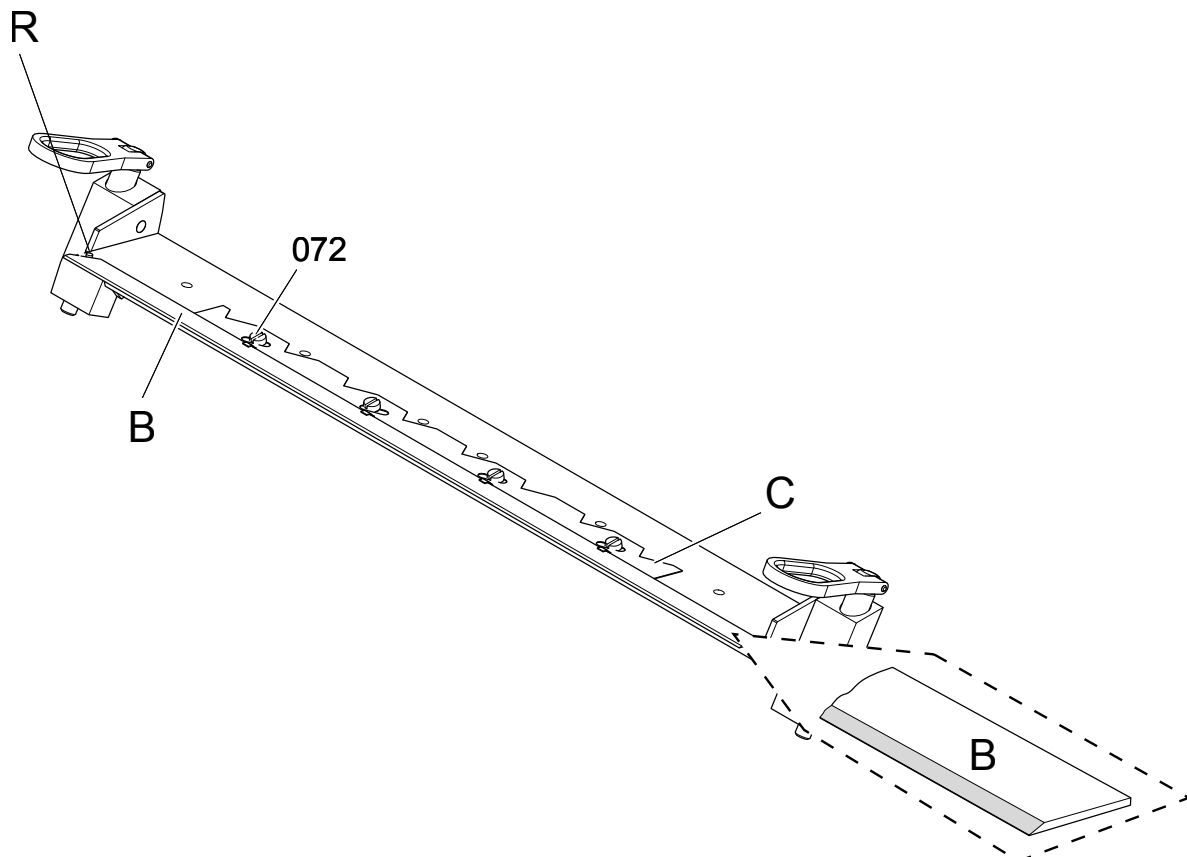
- 1) Disconnect the electrical connection and always turn the master switch to position 0 (OFF).
- 2) Open the front table (6) by pulling it upwards and turning it outwards from the machine and open the rear table (13) by pulling it upwards and turning it outwards from the machine. (see par. 4 Description of the machine).
- 3) Open the quick blade clamp cover (A) by turning the clamping lever (22) upwards and then pushing it towards the machine, until the cover is released.
- 4) Remove the worn blade from its seat, handling it carefully.
- 5) After replacing the blade (B) make sure that it rests perfectly against the adjustment plate (C) for its entire length and that it rests perfectly against the pin (R), that the bevel faces upwards and that the blunt edge rests against the adjustment plate (C).
- 6) Lubricate the blade clamping lever pin. Use exclusively lubricants suitable for contact with foodstuffs or the lubricant supplied with the machine (code 19841ASSY).
- 7) Close the blade clamp cover again (A).



8.3 Adjusting the blade

Always use cut-proof gloves, during all operations.

- 1) Disconnect the electrical connection and always turn the master switch to position 0 (OFF).
- 2) Open the front table (6) by pulling it upwards and turning it outwards from the machine and open the rear table (13) by pulling it upwards and turning it outwards from the machine. (see par. 4 Description of the machine).
- 3) Open the blade clamp cover again (see par. 8.2.1 and 8.2.2).
- 4) Loosen the fastening screws (072) of the adjustment plate (C).
- 5) Move the sheet metal (C) towards the tooth-roll to increase removal or move it back to decrease the removed thickness.
- 6) Tighten the screws (072) securing the adjustment plate (C).
- 7) Check that the blade (B) rests perfectly against the pin (R) and the edge of the adjustment plate (C) for its entire length. Ensure mounting is performed correctly, that is, the plane of the blade with the bevel facing upward and the blunt edge resting against the adjustment plate (C).
- 8) Remount (MS600-P and MS800-P) or reclose (MS475-P) the blade clamp cover by fastening it with the screws (MS600-P and MS800-P) or clamping it with the lever (MS475-P).

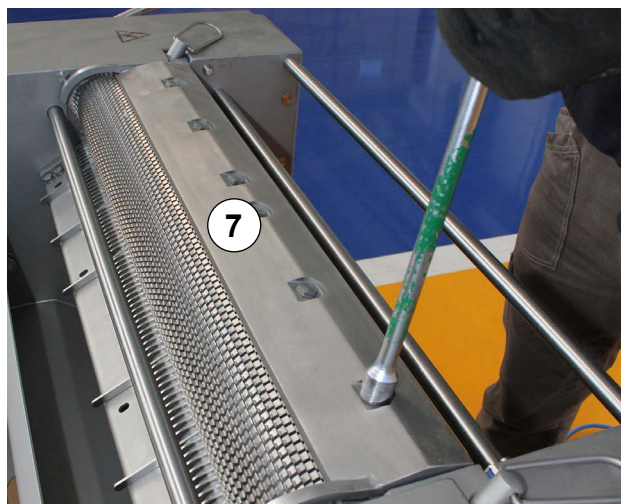


8.4 Replacing and adjusting the blade holder unit

- 1) Open the front table (6) by pulling it upwards and turning it outwards from the machine and open the rear table (13) by pulling it upwards and turning it outwards from the machine. (see par. 4 Description of the machine).

Always use cut-proof gloves, during all operations.

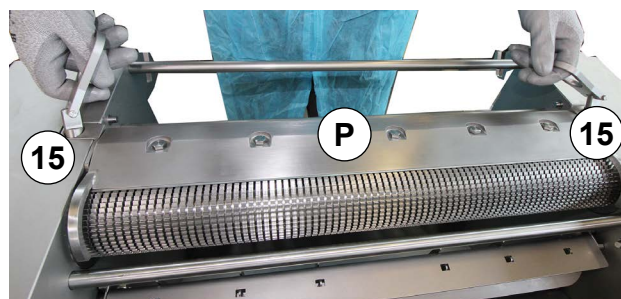
- 2) Open the blade clamp cover (7) by undoing the fastening screws (MS600-P and MS800-P) or turning the locking lever (MS475-P).



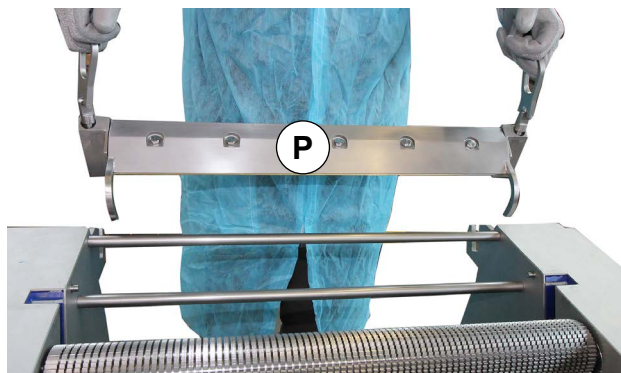
- 3) Remove the blade (B), handling it carefully and close the blade clamp cover.



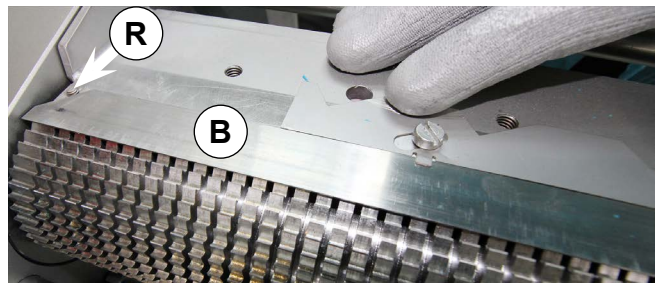
- 4) Undo the blade holder unit locking knobs (15).



- 5) Lift out the blade holder unit (P), replace it with the new one and tighten the locking knobs (15).



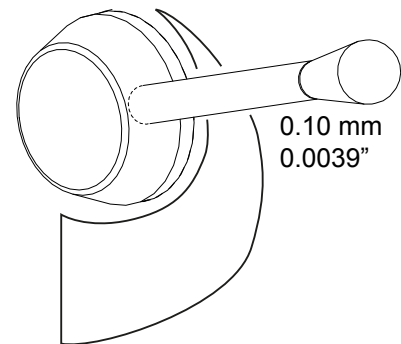
6) Open the blade clamp cover and position the new blade (B) removed previously. Pay attention to the exact positioning with the bevel in contact with the pin (R). Always use cut-proof gloves, during all operations.



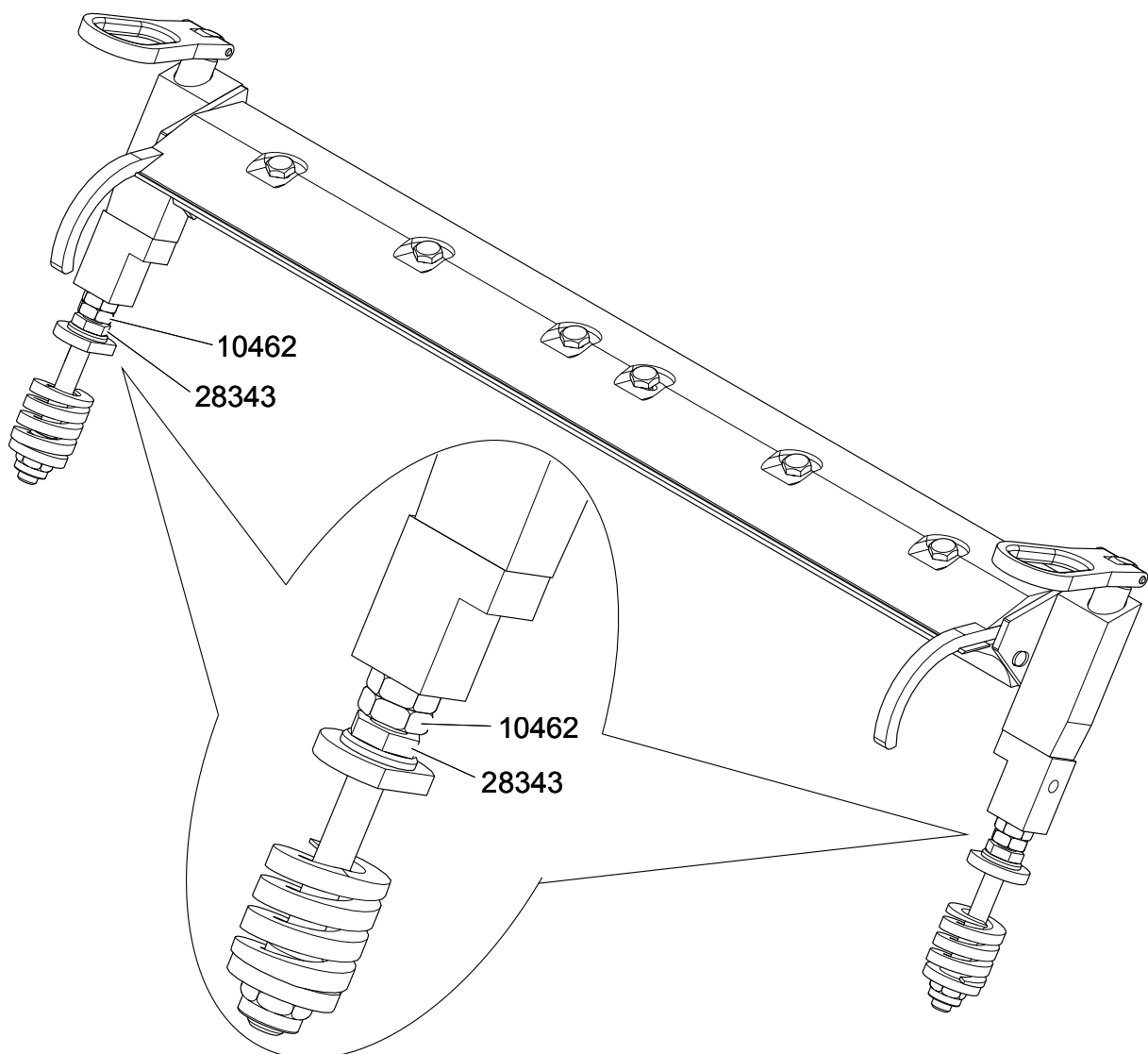
7) Close the blade clamp cover (7) by tightening the fastening screws (MS600-P and MS800-P) or turning the locking lever (MS475-P).

8) Adjust the blade holder unit, tightening or undoing the nut (10462) and locknut (28343), so that the distance between the tooth-roll and the blade (1 - see par. 4 DESCRIPTION OF THE MACHINE) is 0.10 mm for its entire length and with the thickness adjustment lever (12) in the minimum position.

9) Perform the same adjustment on both sides.



Check that the blade has the same adjustment along its entire length.



8.5 Replacing the tooth-roll

Before removing and replacing components, take note of the position of each part, possibly marking them.

- 1) Open the front table (6) by pulling it upwards and turning it outwards from the machine and open the rear table (13) by pulling it upwards and turning it outwards from the machine. (see par. 4 Description of the machine).

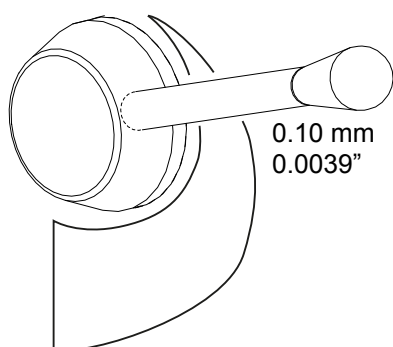
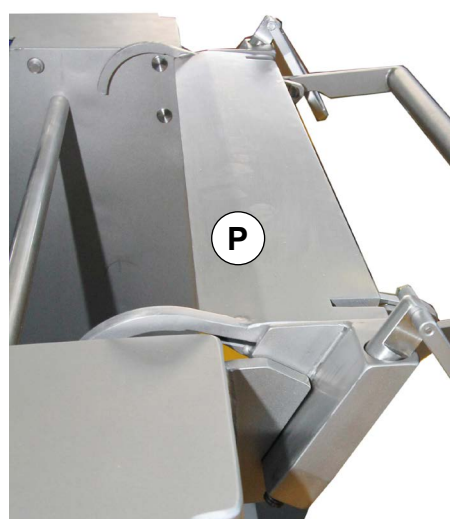
Always use cut-proof gloves, during all operations.

- 2) Remove the blade (see par. 8.2 points 3-4) and close the blade clamp cover again.



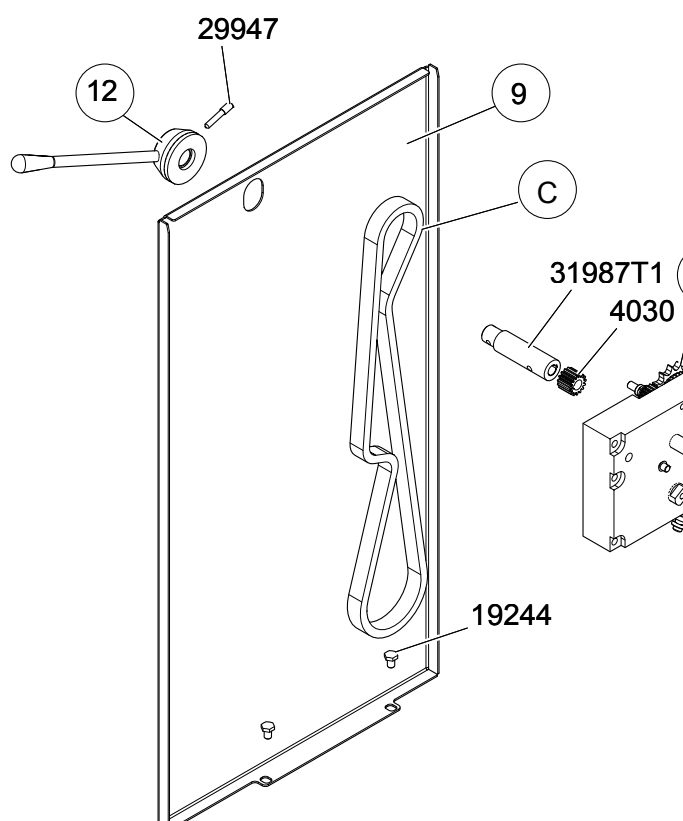
- 3) Turn the comb (5).

- 4) Remove the blade holder unit (P) (see par. 8.4 Replacing and adjusting the blade holder unit) and place it in the relevant supports on the machine frame.



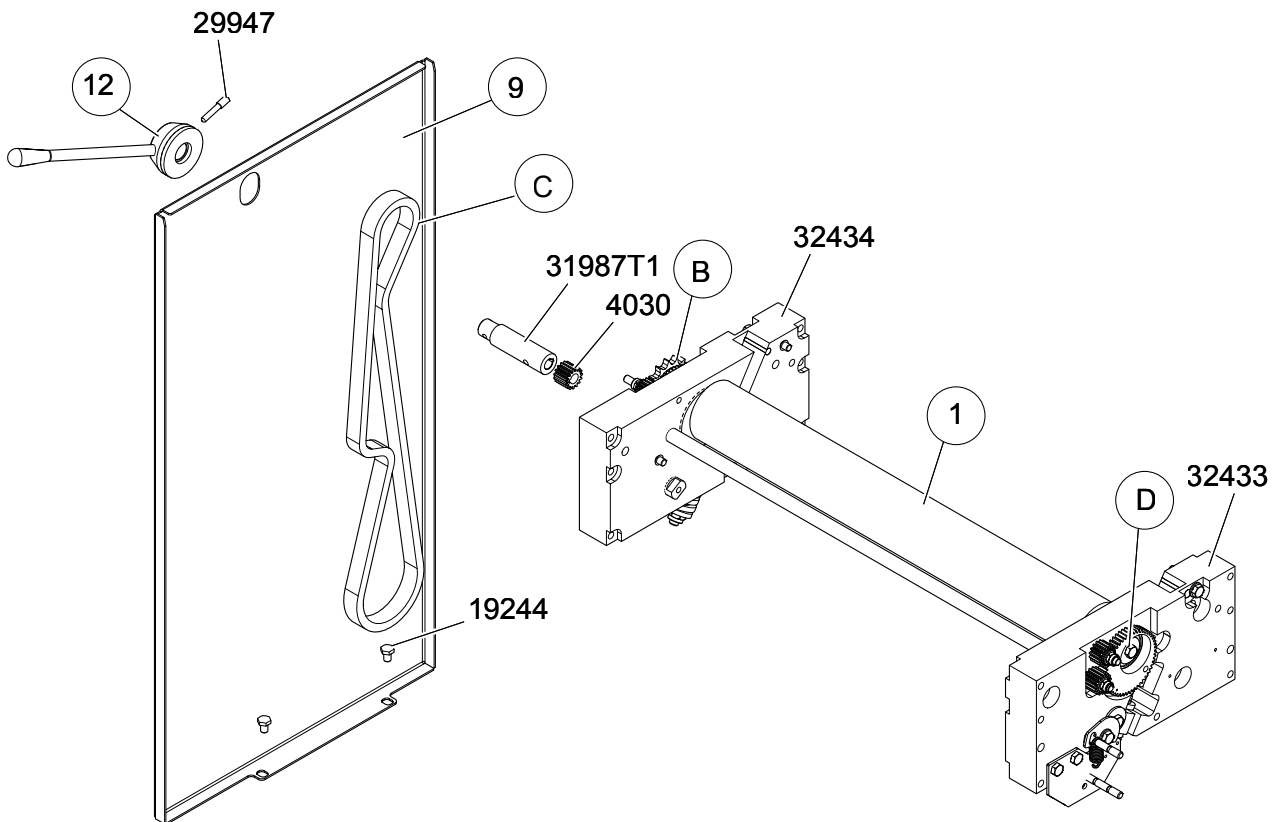
- 5) Place the thickness adjustment lever (12) in the minimum thickness position, mark the position of the various components and remove it by undoing the threaded pin (29947).

- 6) Remove the left (9) and right (8) side guards (v. par. 4 Description of the machine), by undoing the fastening screws (19244).



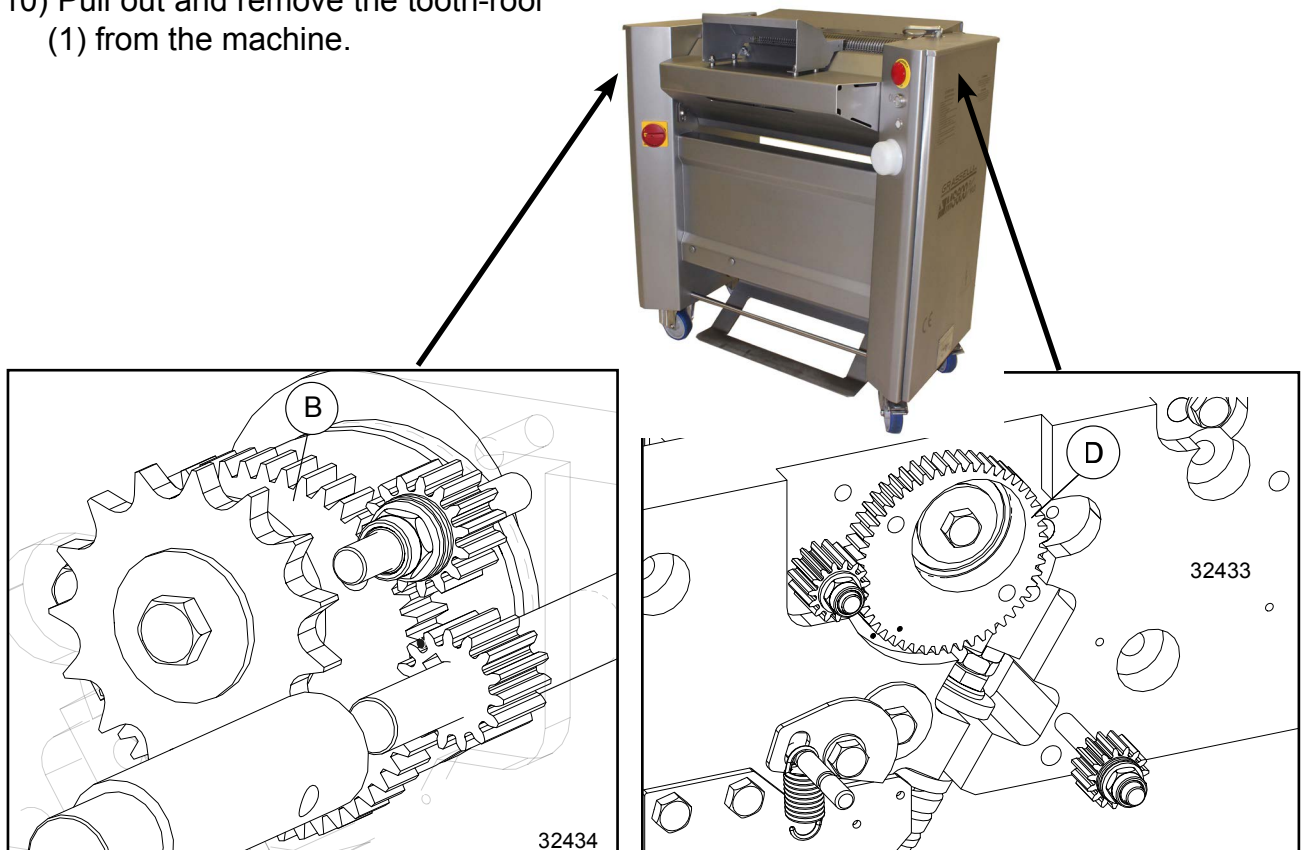
7) Remove the drive chain (C).

8) Remove the pin (31987T1).



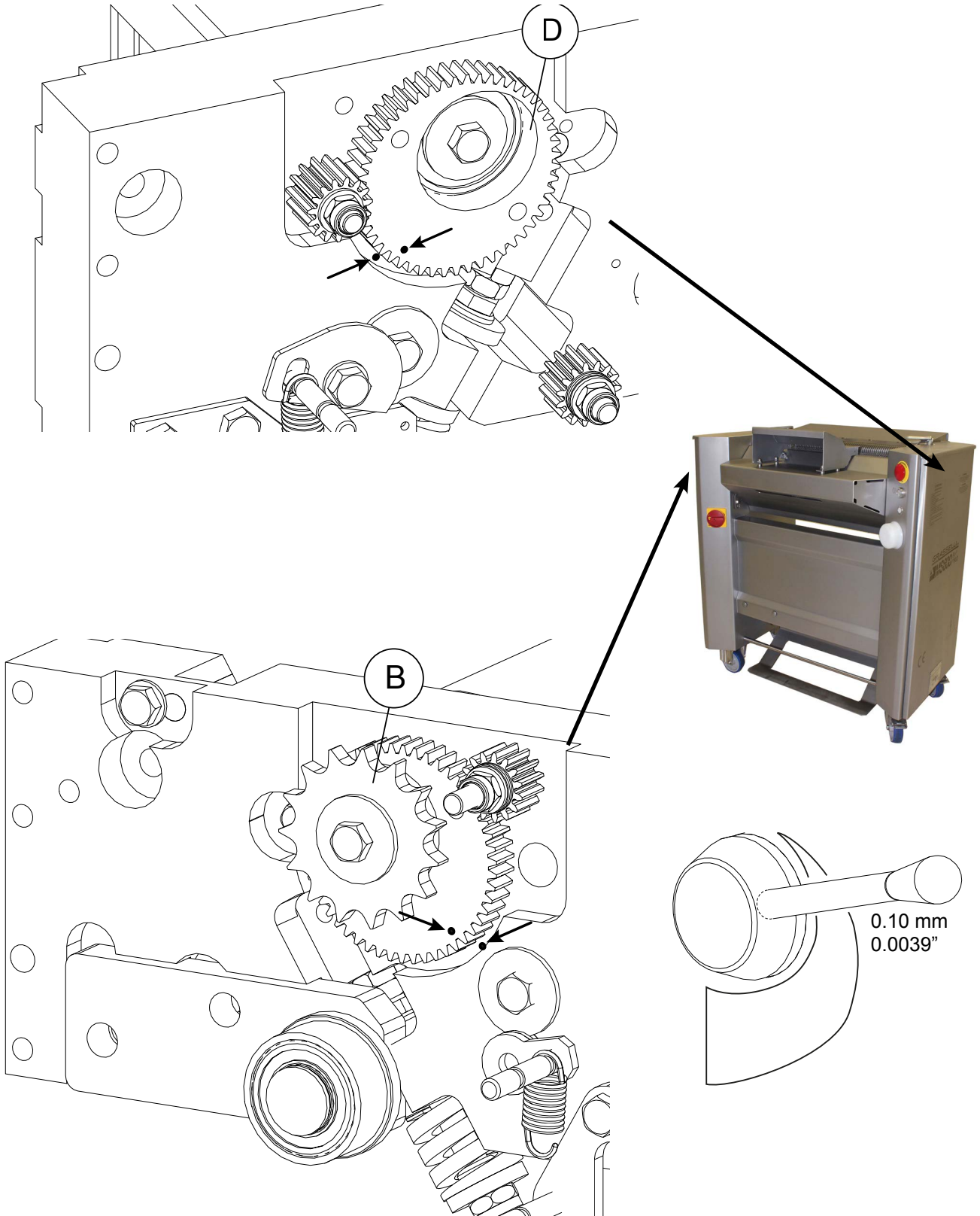
9) Remove the cams (B) and (D) of the tooth-roll (1), using an impact puller (code 4195ASSY).

10) Pull out and remove the tooth-roll (1) from the machine.



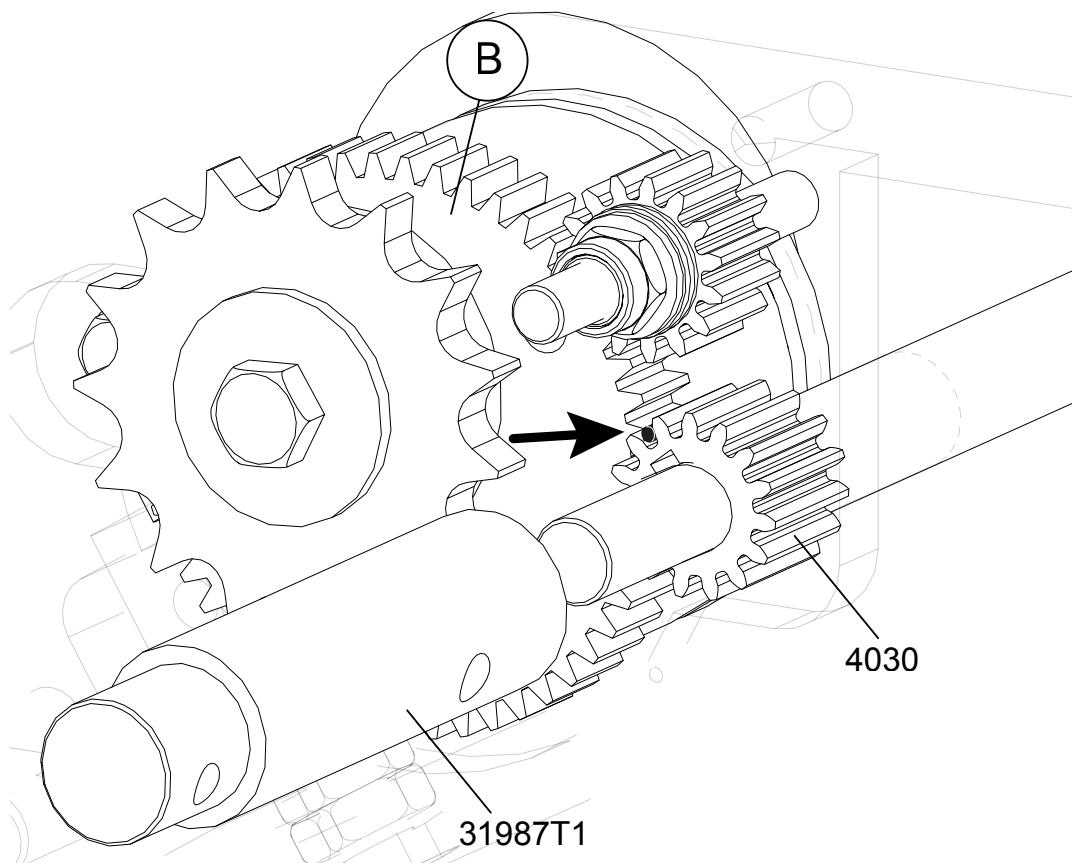
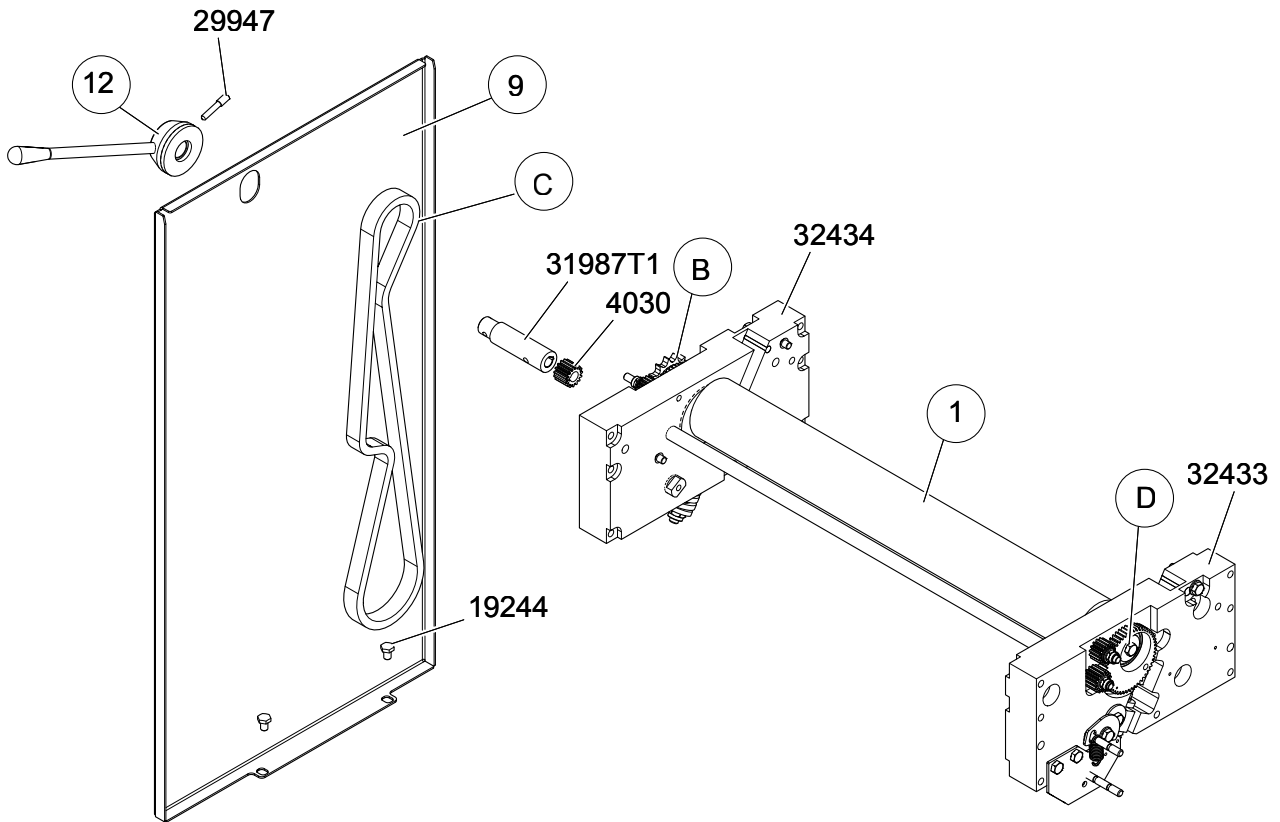
11) Remount a new tooth-roll (1).

12) When remounting the tooth-roll cams, pay attention to the references on the frame and on the cam with the thickness adjustment lever (12) in the minimum thickness position and to those located previously, which must necessarily match during assembly.

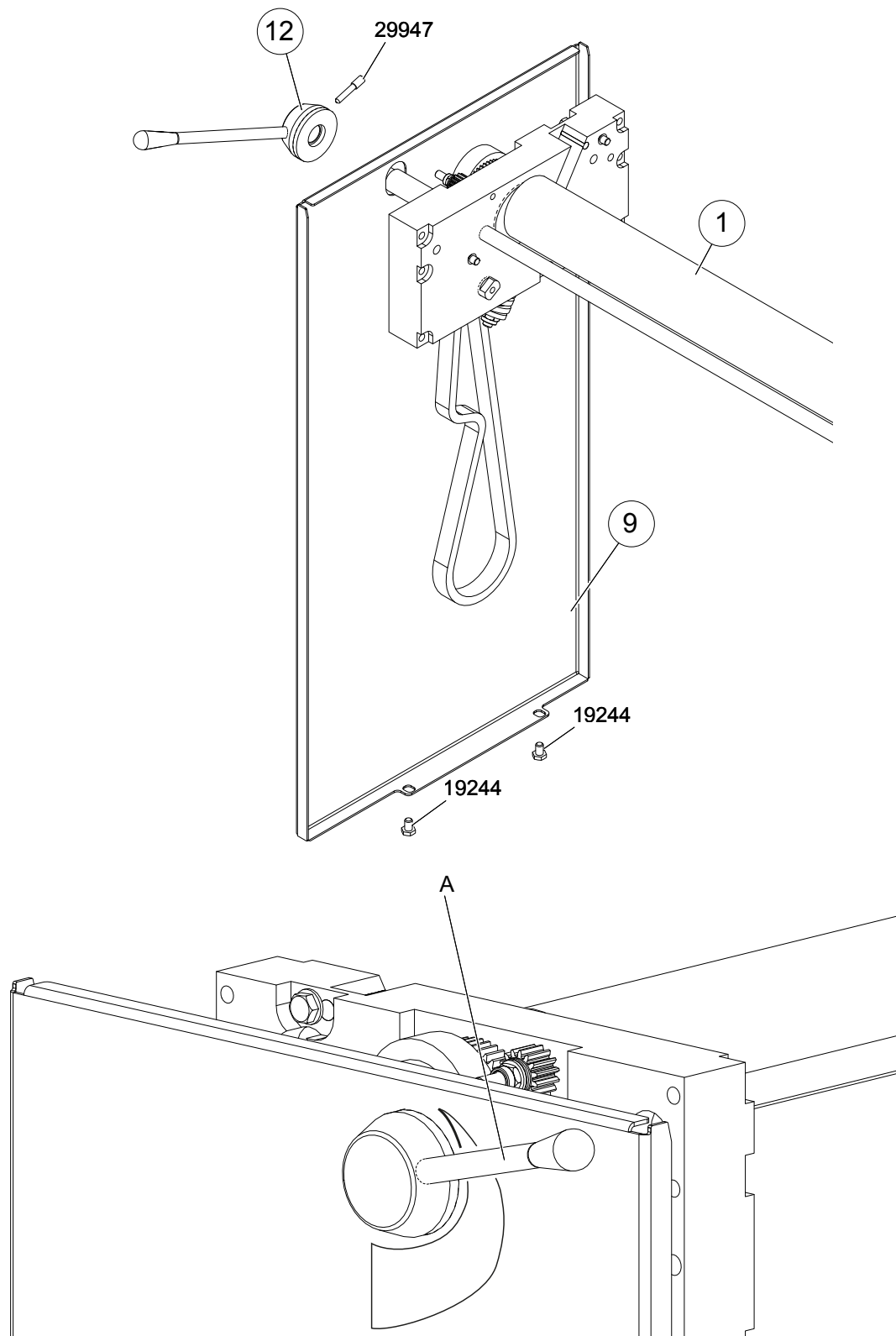


13) Remount the pin of the adjustment mechanism (31987T1), paying attention to the exact position of the references located previously.

14) Remount the transmission chain (C).



- 15) Put the side guards back in place, fastening them with the relevant screws (19244).
- 16) Remount the lever (A), in the position indicated, fastening it with the relevant threaded pin.
- 17) Check that the distance between the tooth-roll (1) and the blade is correct (see par. 8.4 Replacing and adjusting the blade holder unit).



8.6 Replacement of bearings

Before removing and replacing components, take note of the position of each part, possibly marking them.

1) Perform the operations described in paragraph 8.5 "Replacing the tooth-roll" from point 1 to point 9).

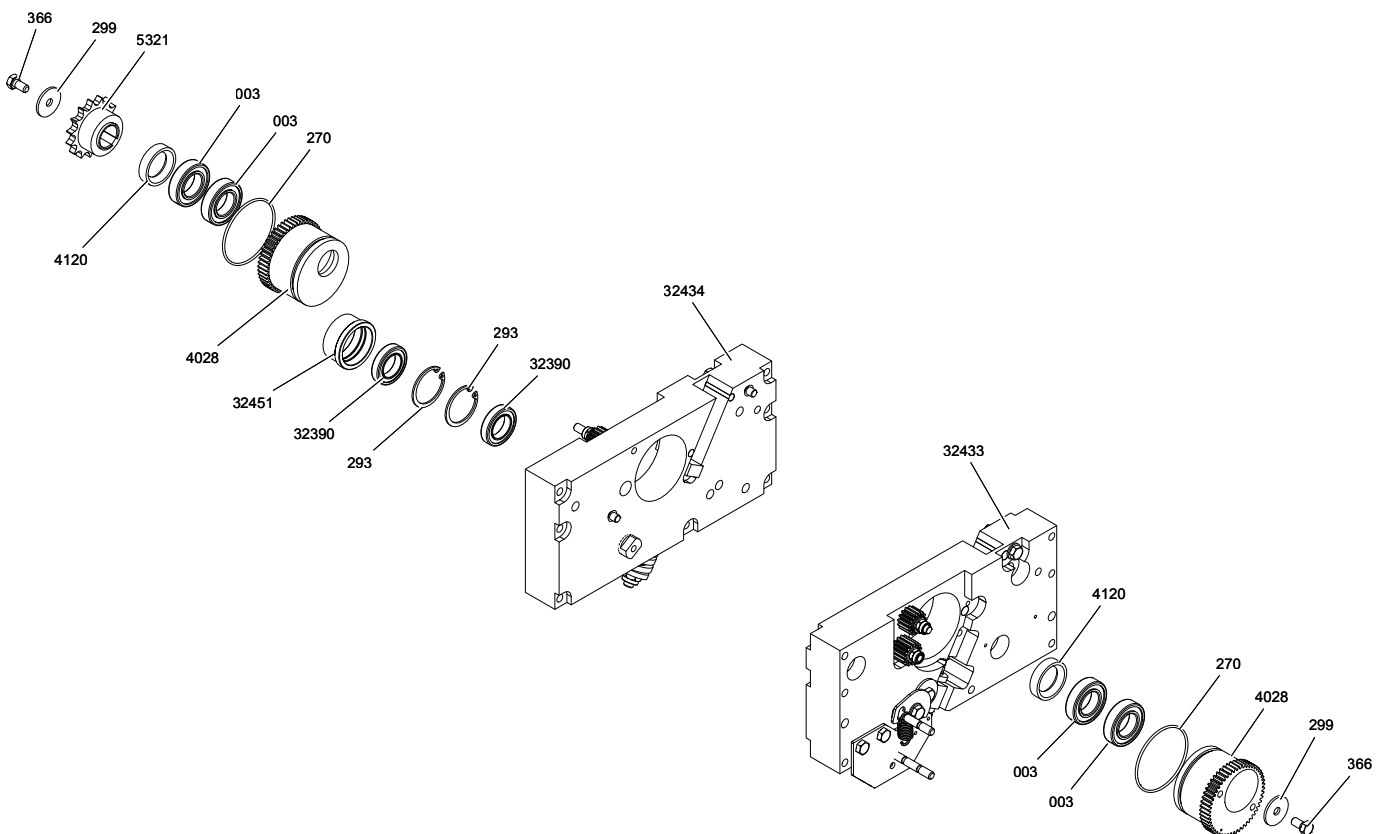
Always use cut-proof gloves, during all operations.

2) Remove the bearings and relative oil seal and replace them.

3) GREASE ABUNDANTLY with specific grease (food-grade 2 bearing grease) making sure to fill the empty gaps between the seal rings and the bearing.

4) Remount the various parts, proceeding in the reverse order, as instructed in paragraph 8.5 "Replacing the tooth-roll" .

5) Adjust the position of the blade holder unit as described in paragraph 8.4 "Replacing and adjusting the blade holder unit".



8.7 Adjusting the blade clamp cover tightening lever (model MS475-P)

The precise adjustment is obtained when the tightening lever (32266T2) opposes certain resistance to the manual movement.

If the lever opposes excessive resistance, the blade holder is damaged by friction during the processing.

If the lever opposes little resistance, the blade holder is likely to open up during the processing. The correct torque of the blade through the tightening lever is determined by the position of the pins (4021).

When replacing one or more pins (4021), adjust their position as follows so that they are all the same:

- 1) Open the front table (6) by pulling it upwards and turning it outwards from the machine and open the rear table (13) by pulling it upwards and turning it outwards from the machine. (see par. 4 Description of the machine).

Always use cut-proof gloves, during all operations.

- 2) Remove the blade (see par. 8.2 points 3-4) and close the blade clamp cover again.

- 3) Remove the adjustment plate (4062) undoing the fastening screws (072).

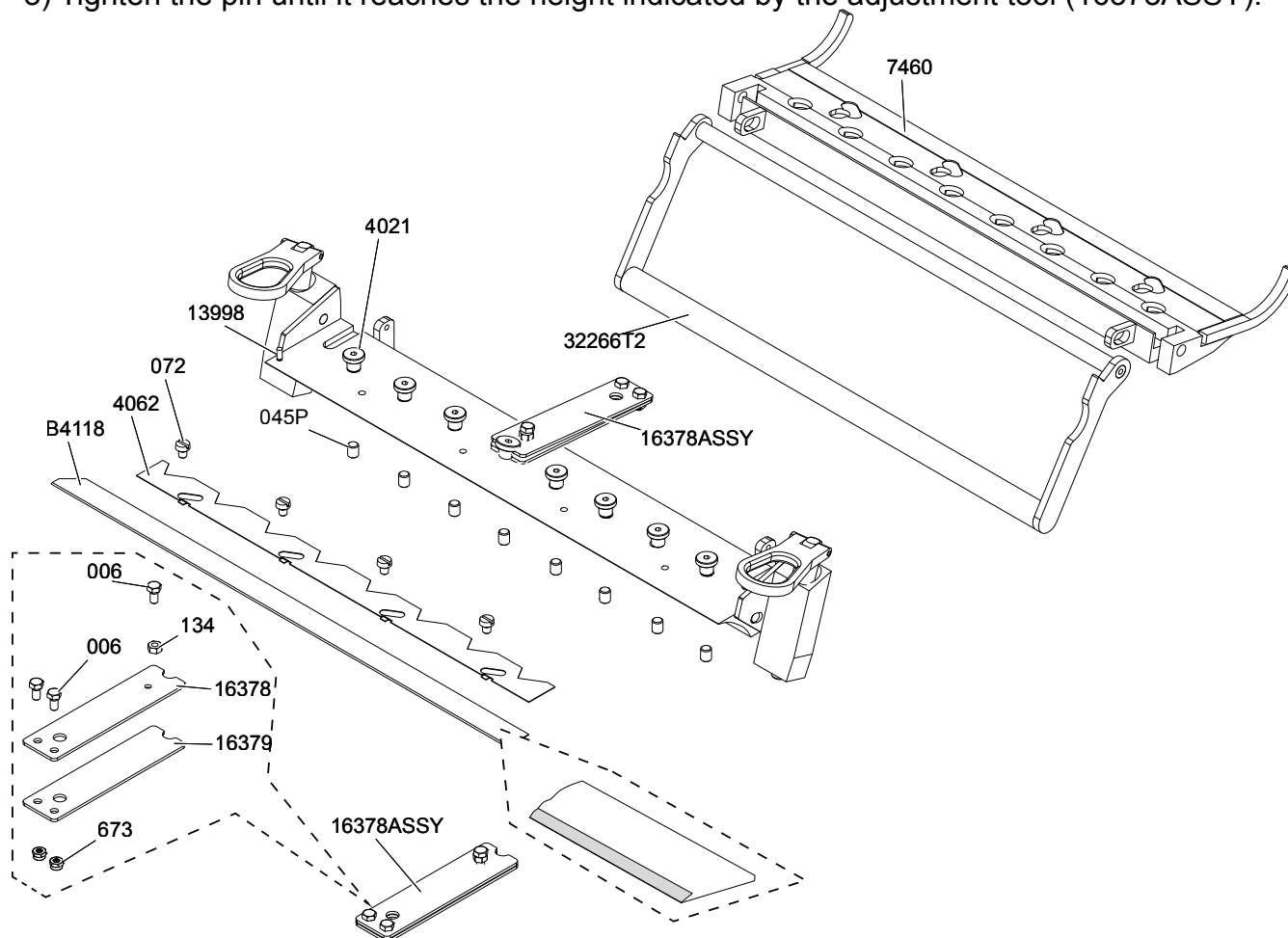
- 4) Loosen the grub screw (045P) which blocks the pin (4021).

- 5) Tighten the new pin (4021) on the blade holder.

- 6) Measure the working position of one of the existing pins, inserting the adjustment tool (16378ASSY) under the head of the pin as shown in the figure and by acting on the screw (006), tightening or loosening it to adjust the opening of the tool according to the height of the pin.

- 7) Remove the adjustment tool (16378ASSY) and place it below the pin that has just been fitted.

- 8) Tighten the pin until it reaches the height indicated by the adjustment tool (16378ASSY).



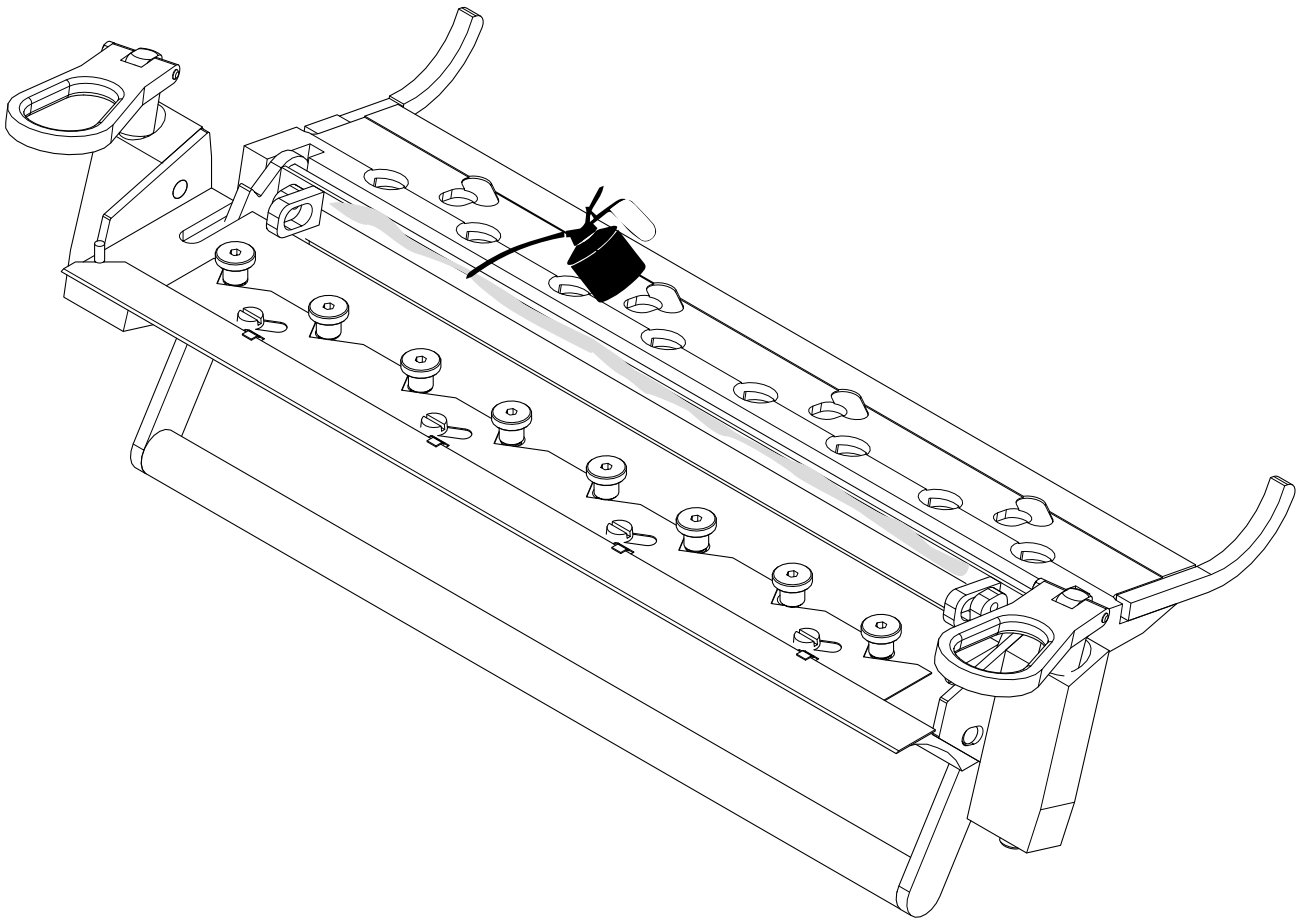
- 9) Remove the adjustment tool (16378ASSY) and lock the pin (4021) with the grub screw (045P).
- 10) Insert the adjustment tool again (16378ASSY) and check that the height of the pin (4021) is correct even after tightening the grub screw (045P). Otherwise, actuate the pin again (4021) for it to reach the correct position.

The entire length of the blade must be clamped evenly.

Attention: use only 0.7 mm thick blades.

Never touch the cutting edge of the blade for any reason whatsoever.

Attention: keep the pin of the tightening bar lubricated with food lubricant



9 STORAGE

The machine must be kept in an environment protected against direct sunlight, excessive heat or humidity and at a temperature ranging from -15°C to +45°C.

10 DECOMMISSIONING THE MACHINE

The machine is made entirely of stainless steel, except for some parts made of plastic material, rubber, electric control panel, motor and relative transmission gears.

At the end of the machine life cycle, one must follow the correct decommissioning and disposal procedure.



The machine decommissioning procedure must be carried out by specialised personnel equipped with the special PPE required by the regulations in force.

- 1) Disconnect the electric power supply by pulling the plug or disabling the main switch on the electric control panel, as well as the pneumatic power supply by disconnecting the compressed air supply.
- 2) Disassemble the various parts and dispose of them separately in compliance with the regulations in force.

SCHEDULED PERIODIC MAINTENANCE TABLE						
Purpose / machine part	When	Person in charge	Instructions/methodologies	Notes	Date and signature of Manager maintenance	
Cleaning and disinfecting the machine	Each work shift/ daily	Operator	see par. 8.1.1 "Cleaning and disinfecting the machine"	Regulations of reference: DIN10516 "Food hygiene – cleaning and disinfection"	see table DAILY MAINTENANCE	
Safety devices	Each work shift/ daily	Operator	Check the functionality of the Schmersal sensors - see par. 7.8 Daily test	-	see table DAILY MAINTENANCE	
Blade clamping lever pin (MS475-P)	After every machine washing and disinfection	Operator	Lubricate the blade clamping lever pin - see par. 8.1 Routine maintenance - point 3	Use lubricant code 19841/ASSY or having the same features (suitable for lubricating food packaging machinery)	see table DAILY MAINTENANCE	
CLO system insulated gloves (if any - optional)	Each work shift	Operator	Wash and sanitise the gloves	Regulations of reference: DIN10516 "Food hygiene – cleaning and disinfection"	see table DAILY MAINTENANCE	
Insulated gloves and CLO system gloves (if any - optional)	Each work shift/ emergency stop	Operator	Check that the insulating gloves and CLO system gloves are intact.	-	see table DAILY MAINTENANCE	
CLO system connection cables (if any - optional)	Each work shift/ emergency stop	Operator	Check the integrity of the connection cables - see par. 8.1 Routine maintenance - point 6	-	see table DAILY MAINTENANCE	
CLO system gloves and jacket (if any - optional)	Following contact with product being processed	Operator	Wash and sanitise the CLO system gloves and/ or jacket	Comply with the instructions in the manual to avoid damaging the system		
Drive chain	Every 6 months	Personnel specialised	Check that the chain is intact and grease it - see par. 8.1 Routine maintenance	Only use grease approved for the food industry for generic use NLGI 2		
Pinions	Every 6 months	Personnel specialised	Check that the pinions are not worn and, if necessary, replace them - see par. 8.1 Routine maintenance	-		
Tooth-roll bearings	Abnormal noise during operation	Personnel specialised	Replace the tooth-roll bearings - see par. 8.1 Routine maintenance	-		

DAILY SCHEDULED MAINTENANCE TABLE

Purpose / machine part	Date of intervention	Instructions/methodologies	Notes	Date and signature of Manager maintenance
Cleaning and disinfecting the machine		see par. 8.1.1 "Cleaning and disinfecting the machine"	Regulations of reference: DIN10516 "Food hygiene – cleaning and disinfection"	
Safety devices		Check the functionality of the Schmersal sensors - see par. 7.8 Daily test	-	
Blade clamping lever pin (MS475-P)		Lubricate the blade clamping lever pin - see par. 8.1 Routine maintenance - point 3	Use lubricant code 19841ASSY or having the same features (suitable for lubricating food packaging machinery)	
CLO system insulated gloves (if any - optional)		Wash and sanitise the gloves	Regulations of reference: DIN10516 "Food hygiene – cleaning and disinfection"	
Insulated gloves and CLO system gloves (if any - optional)		Check that the insulating gloves and CLO system gloves are intact.	-	
CLO system connection cables (if any - optional)		Check the integrity of the connection cables - see par. 8.1 Routine maintenance - point 6	-	

11 TROUBLESHOOTING		
PROBLEM	CAUSE	SOLUTION
The machine does not turn on - indicator (21 - see par. 7.1 Functions and signals) off.	Incorrect power supply connection	Specialised personnel: Check the connections and, if necessary, restore them
	Master switch in position 0 (OFF)	Operator: Place the master switch in position I (ON)
Pressing the ON button (18 - see par 7.1 Functions and signals), the indicator (21 - section 7.1 Functions and signals) does not turn green and the cycle does not start.	Emergency button pressed (21 - see par. 7.1 Functions and signals)	Operator: After eliminating the causes, disconnect the emergency button by pulling it.
	Front table (6) or rear table (13) are open or not closed perfectly (see par. 4 DESCRIPTION OF THE MACHINE)	Operator: Close the table correctly
	Sensor (31) or (32) are not in position correctly or fault (see par. 4 DESCRIPTION OF THE MACHINE)	Specialised personnel: Check the position and the functionality of the sensors and, if necessary, replace them.
	Safety unit in alarm	Operator: Switch off and switch on the machine (turn OFF and turn ON the master switch) and after press the ON button
		Specialised personnel: Check the safety unit placed inside the control panel and, if necessary, replace them (see MANUAL RESERVED FOR TECHNICAL SUPPORT OR EXPRESSLY AUTHORISED PERSONNEL)
Circuit breaker switch placed inside the electric control panel, disconnected	Specialised personnel: Check and, if necessary, restore it (see MANUAL RESERVED FOR TECHNICAL SUPPORT OR EXPRESSLY AUTHORISED PERSONNEL)	
When the start pedal is pressed, the cycle does not start - warning light (21 - see par. 7.1 Functions and signals) on - red.	START button not pressed	Operator: Press START button
	Circuit breaker switch placed inside the electric control panel, disconnected	Specialised personnel: Check and, if necessary, restore it
	Emergency button pressed	Operator: After eliminating the causes, disconnect the emergency button by pulling it.
	Schmersal sensors trip	Operator: Check that the product infeed table and the rear board are properly closed (see par. 4.2 Sensors) Specialised personnel: Check the functionality of the sensors and, if necessary, replace them.

PROBLEM	CAUSE	SOLUTION
The machine does not work correctly	The tooth-roll rotates in reverse direction	Specialised personnel: Power supply phases inverted, invert the phases.
	Worn blade	Operator: Replace the blade
	Blade in incorrect position	Operator: Check and reposition the blade correctly
	Tooth-roll damaged	Operator: Check: - that the blade-holder unit is not damaged - that the shaft bearings are not damaged - threaded bushings worn (see spare parts - code 20650T2) Replace the tooth-roll.
	Product unsuitable for processing (cut badly, frozen, dry)	Operator: Replace with suitable product
	Blade holder incorrectly secured	Operator: Check and fix the blade-holder unit correctly.
Product not perfectly skinned	Incorrect setting between blade holder unit and tooth-roll	Operator: Make sure that the adjustment lever (20) is correctly positioned
Excessive thickness removed	Blade mounted upside down	Operator: Check and assemble the blade correctly
	Blade assembled outside the blade-holder seat	Operator: Check and assemble the blade correctly
	Blade-holder lock knobs not sufficiently tightened	Operator: Check and tighten
	Adjustment of distance between tooth-roll and blade-holder too long	Operator: Check and adjust
	Thickness adjustment lever (20) adjusted to maximum	Operator: Make sure that the adjustment lever (20) is correctly positioned

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**MANUAL RESERVED
FOR TECHNICAL SUPPORT OR
EXPRESSLY AUTHORISED PERSONNEL**

**SKINNING MACHINE
MS475-P
MS600-P
MS800-P**

Annex to USE AND MAINTENANCE INSTRUCTIONS



The manual must be kept carefully which must be attached to the relevant use and maintenance instructions and accompany the machine throughout its life cycle. Read this manual carefully in its entirety before performing any operations on the machine.

MAINTENANCE RESERVED TO TECHNICAL ASSISTANCE OR EXPRESSLY AUTHORISED PERSONNEL

This section describes the operations on the machine that, for issues relating to safety, do not fall within standard maintenance operations.

Only Grasselli S.p.A. Technical Assistance staff or staff expressly trained by Grasselli is authorised to carry out the operations described below.

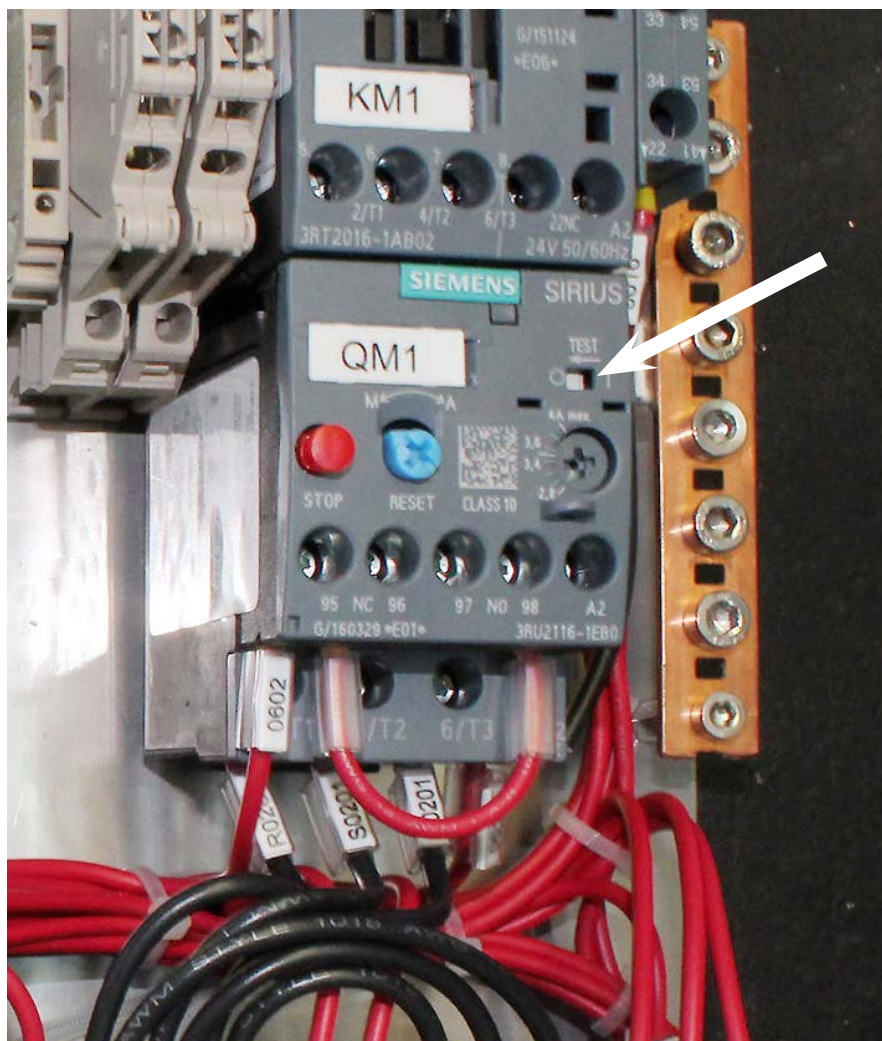


Before carrying out any operation on the machine, disconnect the power supply by pulling the plug or disabling the switch on the electrical control panel upstream of the machine itself and disconnect the compressed air supply system.

Always use the PPE required by the regulations in force.

12.0.1 Reset circuit breaker switch (QM1)

- 1) Check the TEST window , on the circuit breaker switch (QM1), which must be white, and otherwise, reset by pressing the RESET button.
- 2) If it is not possible to reset, replace the magnetothermic switch (see SPARE PARTS MANUAL)

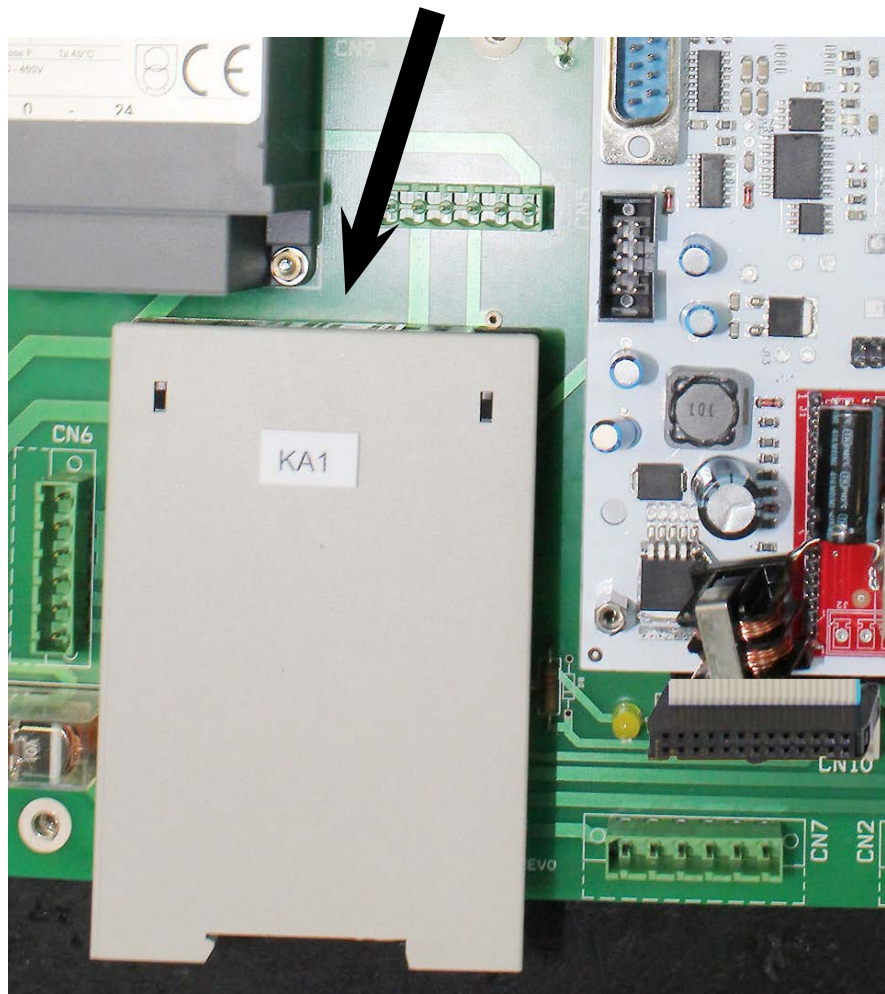


12.0.2 Safety unit

The safety unit (KA1) is placed inside the electric control panel.

A led on the control unit displays the status

flashing color	status	action
green	ready machine	-
yellow irregular blinking	front table (6) or rear table(13) are open	close the tables
	sensor are not in position correctly or fault	check the position and the functionality of the sensor and, if necessary, replace them.
yellow regular blinking	machine on stand by	press the ON button (18) on the control panel
red irregular blinking	front table (6) or rear table(13) are not closed correctly	open the table and close again
	sensor are not in position correctly or fault	check the position and the functionality of the sensor and, if necessary, replace them.



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SPARE PARTS MANUAL

MANUAL SKINNING MACHINE

MS475-P

MS600-P

MS800-P

Annex to USE AND MAINTENANCE INSTRUCTIONS



The manual must be kept carefully which must be attached to the relevant use and maintenance instructions and accompany the machine throughout its life cycle. Read this manual carefully in its entirety before performing any operations on the machine.

ESPLOSI MACCHINA E RICAMBI/ EXPLODED DRAWINGS OF THE MACHINE AND SPARE PARTS

Scheda macchina / Machine technical sheet

To order a spare part, you need to know:

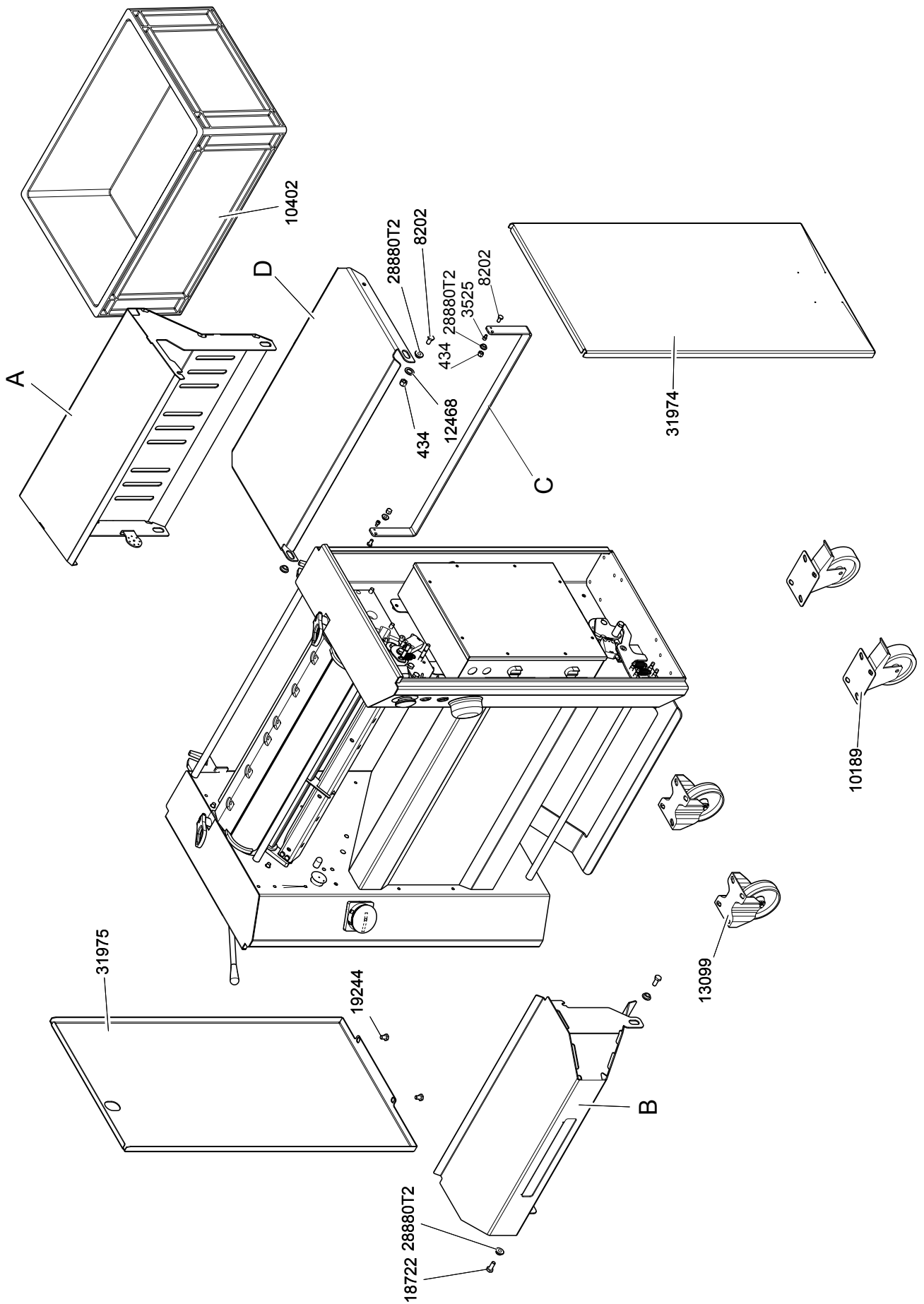
- 1) Machine model and serial number.
- 2) Type of belt and length: NSF, modular (if any),
- 3) Cutting set: spare parts and blade type (if applicable).
- 4) Voltage: motor and motor protector
- 5) Motor: if of different power compared to the standard version.
- 6) Any special parts on the machine that are not included in the exploded drawings of the machine.

To order a spare part, you need to know:

- 1) Machine model and serial number.
- 2) Type of product exit: NSF belt, modular belt (if
- 3) Cutting set: spare parts and blade type.
- 4) Voltage: motor and motor protector.
- 5) Motor: if standard or stronger version.
- 6) Any special parts on the machine that are not included in the exploded drawings of the machine.

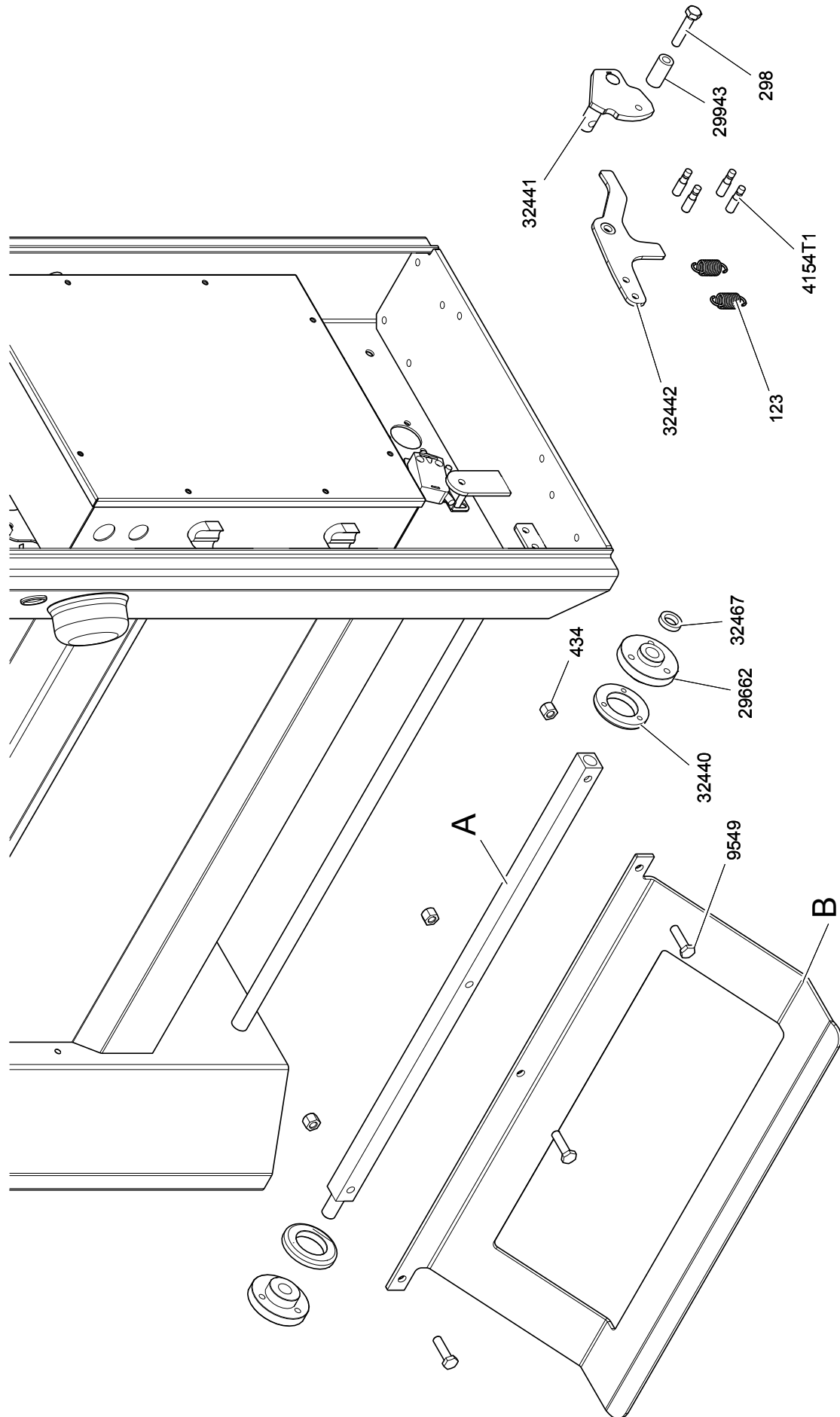
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12.1 BASAMENTO / BASE



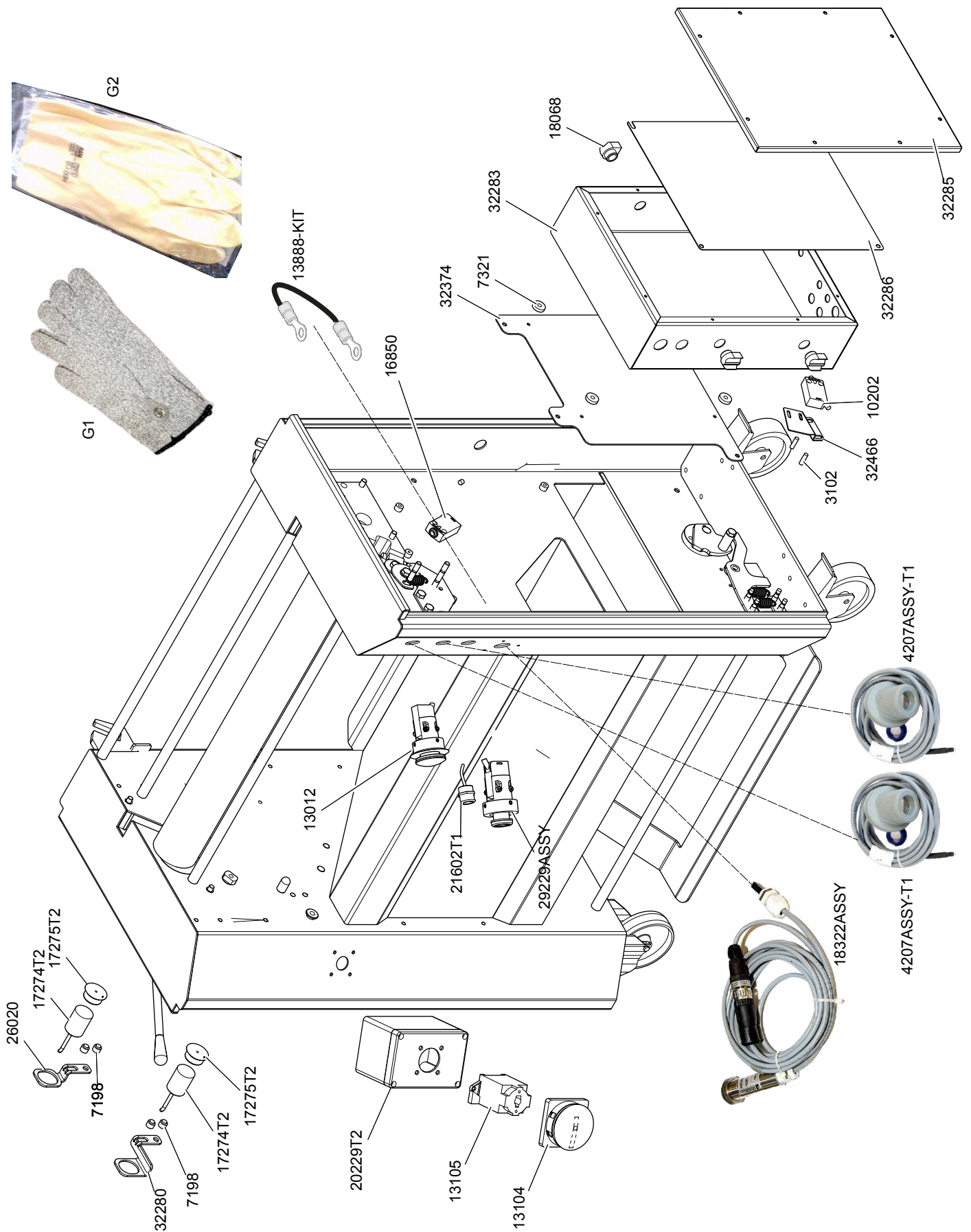
BASAMENTO / BASEMENT		
CODE	DESCRIPTION	
434	DADO CIECO M08 / HEXAGON CAP NUT M08	
8202	VITE TE 08X16 LISCIA CON TESTA ABBASSATA / 08X16 SPECIAL SCREW	
10189	RUOTA GIREVOLE Ø 100 CON PIASTRA FRENO BLU / Ø 100 WHEEL WITH SUPPORT AND BRAKE	
10402	CASSETTASCARTI ROSSA 600X400X235 MM / RED REFUSE TANK EXT. DIMENSION 600X400X235 MM	
12468	RONDELLA POLIETILENE ØI 14.2 ØE 22 SP. 2 / PLASTIC WASHER	
13099	SUPPORTO FISSO INOX CON RUOTA Ø 100 BLU / Ø 100 SUPPORT WITH WHEEL	
18722	VITE TE M08X20 LISCIA CON TESTA ABBASSATA / M8X20 SPECIAL SCREW	
19244	VITE 08X12 LISCIA CON TESTA ABBASSATA / 08X12 SPECIAL SCREW	
28880T2	BOCCOLA SUL FULCRO PIANI / BUSH	
31974	COPERCHIO LATERALE DESTRO / RIGHT COVER	
31975	COPERCHIO LATERALE SINISTRO / LEFT COVER	
3525	VITE TCCE 06X10 / 06X10 SCREW	
A	32229	PIANO POSTERIORE FULCRATO COMPLETO (MS475-P) / COMPLETE FULCRED REAR PLATE (MS475-P)
	32229T1	PIANO POSTERIORE FULCRATO COMPLETO (MS600-P) / COMPLETE FULCRED REAR PLATE (MS600-P)
	32229T2	PIANO POSTERIORE FULCRATO COMPLETO (MS800-P) / COMPLETE FULCRED REAR PLATE (MS800-P)
B	32228T1	PIANO ANTERIORE RIBALTABILE (MS475-P) / COMPLETE FULCRED FRONT PLATE (MS475-P)
	32228	PIANO ANTERIORE RIBALTABILE (MS600-P) / COMPLETE FULCRED FRONT PLATE (MS600-P)
	32228T2	PIANO ANTERIORE RIBALTABILE (MS800-P) / COMPLETE FULCRED FRONT PLATE (MS800-P)
C	32282T4	PIEDE COMPLETO PER LAMIERA APPOGGIO CASSETTA (MS475-P) / REFUSE TANK SUPPORT PLATE FOOT (MS475-P)
	32282T4	PIEDE COMPLETO PER LAMIERA APPOGGIO CASSETTA (MS600-P) / REFUSE TANK SUPPORT PLATE FOOT (MS600-P)
	32282T5	PIEDE COMPLETO PER LAMIERA APPOGGIO CASSETTA (MS800-P) / REFUSE TANK SUPPORT PLATE FOOT (MS800-P)
D	32281T1	LAMIERA APPOGGIO CASSETTA SCARTI (MS475-P) / REFUSE TANK SUPPORT PLATE (MS475-P)
	32281T1	LAMIERA APPOGGIO CASSETTA SCARTI (MS600-P) / REFUSE TANK SUPPORT PLATE (MS600-P)
	32281T2	LAMIERA APPOGGIO CASSETTA SCARTI (MS800-P) / REFUSE TANK SUPPORT PLATE (MS800-P)

12.2 GRUPPO PEDALE / PEDAL GROUP



GRUPPO PEDALE / PEDAL GROUP	
CODE	DESCRIPTION
123	MOLLA RITORNO PETTINE / SPRING
298	VITE TE 08X40 / HEXAGON HEAD SCREW 08X40
434	DADO CIECO M08 / HEXAGON CAP NUT M08
4154T1	TONDO PER MOLLA PEDALE AVVIAMENTO / PIN FOR SPRING
9549	VITE TE 08X30 LISCIA CON TESTA ABBASSATA / 08X30 BLADE HOLDER SCREW
29662	BUSSOLA PER SCORRIMENTO PEDALE / FOOTPEDAL BUSHING
29943	DISTANZIALE 8 X 15 X 30 POM / SPACER
A	32469 QUADRO FISSAGGIO PEDALE MECCANICO (MS475-P) / PEDAL FIXING BAR (MS475-P)
	32439 QUADRO FISSAGGIO PEDALE MECCANICO (MS600-P) / PEDAL FIXING BAR (MS600-P)
	32471 QUADRO FISSAGGIO PEDALE MECCANICO (MS800-P) / PEDAL FIXING BAR (MS800-P)
32440	ANELLO SUL FULCRO PEDALE / RING
32441	LAMIERA MICRO PEDALE / MICRO SHEET
32442	LEVA FULCRATA PER MOLLE PEDALE MECCANICO / FULCRUM LEVER
32467	DISTANZIALE 14.2X22X5 / 14.2X22X5 SPACER
B	32470 LAMIERA PEDALE MECCANICO (MS475-P) / PEDAL SHEET (MS475-P)
	32438 LAMIERA PEDALE MECCANICO (MS600-P) / PEDAL SHEET (MS600-P)
	32472 LAMIERA PEDALE MECCANICO (MS800-P) / PEDAL SHEET (MS800-P)

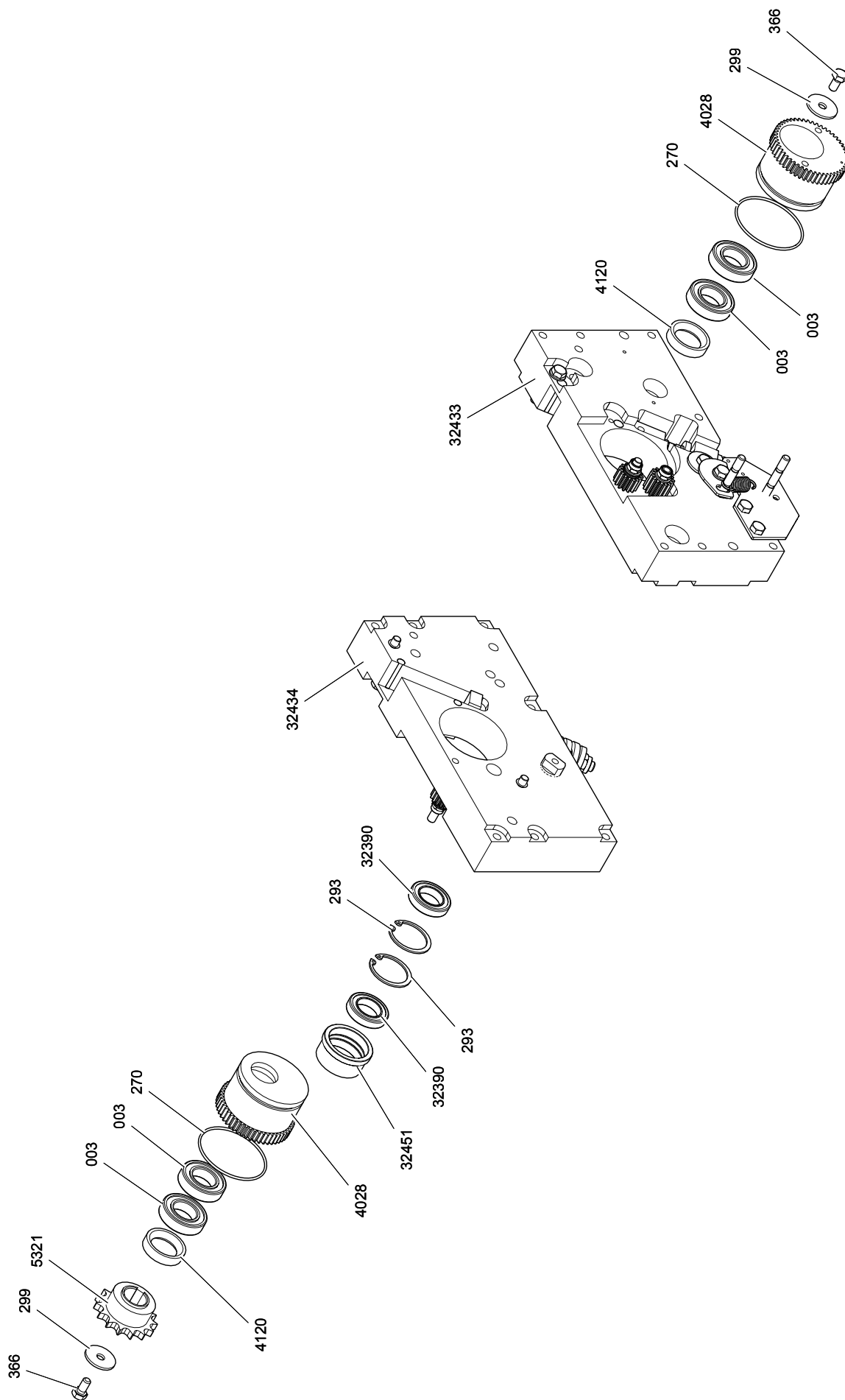
12.3 IMPIANTO ELETTRICO / ELECTRICAL SYSTEM



IMPIANTO ELETTRICO / ELECTRICAL SYSTEM		
CODE	DESCRIPTION	
10202	FINECORSA / LIMIT SWITCH	
13012	PULSANTE EMERGENZA ITW COMPLETO DI SUPPORTO E MICRO / EMERGENCY BUTTON ASSY	
13104	MANOPOLA / LEVER	
13105	INTERRUTTORE / SWITCH	
13888-KIT	CAVETTO MASSA CLO MACCHINE MS / EARTH GROUND CABLE MS MACHINES	
16850	FINECORSA / LIMIT SWITCH	
17274T2	SENSORE / SENSOR	
17275T2	MAGNETE / MAGNET	
18068	AREATORE / AIR INTAKE	
18322ASSY	DISPLAY COMPLETO / DISPLAY	
20229T2	SCATOLA PER SELETTORE 0-1 / SELECTOR BOX	
21602T1	SPIA ROSSA-VERDE COMPLETA INOX AC/DC / STAINLESS STEEL RED-GREEN SIGNAL LAMP 24V AC/DC	
26020	STAFFA PER FISSAGGIO SENSORE CODIFICATO PIANO ANTERIORE / FRONT PLANE CODED SENSOR'S SUPPORT	
29229ASSY	PULSANTE INOX COMPLETO / STAINLESS STEEL PUSH BUTTON ASSY	
3102	VITE STEI 06X20 PUNTA PIANA / SOCKET SETSCREW 06X20	
32280	STAFFA FISSAGGIO SENSORE COD. PIANO ANTERIORE / BRACKET	
32283	SCATOLA ELETTRICA / ELECTRICAL BOX	
32285	COPERCHIO SCATOLA ELETTRICA / COVER	
32286	LAMIERA INTERNA SCATOLA ELETTRICA / INNER SHEET	
32374	LAMIERA FISSAGGIO SCATOLA ELETTRICA / SHEET	
32466	STAFFA FISSAGGIO MICRO PEDALE / BRACKET	
4207ASSY-T1	PRESA CLO CONTATTO MAGNETICO COMPLETA / MAGNETIC SOCKET ASSY	
7198	PERNO FISSAGGIO S.E. / PIN	
7321	RONDELLA GOMMA D.I 6.5 D.E 20 SPESSORE 5 / SPACER	
G2549	PAIO GUANTI CONDUTTIVI / CONDUCTIVE GLOVES	TAGLIA M / MEDIUM SIXE
G2549L		TAGLIA L / LARGE SIZE
G2549XL		TAGLIA XL / XLARGE SIZE
G7539	GUANTI ISOLANTI / INSULATING GLOVES	TAGLIA 9 / SIZE 9
G7540		TAGLIA 10 / SIZE 10
G7541		TAGLIA 11 / SIZE 11

TRASMISSIONE MECCANICA / MECHANICAL TRANSMISSION		
CODE	DESCRIPTION	
048	RONDELLA PIANA 10X21X2 / FLAT WASHER 10X21X2	
293	SEEGER INTERNO Ø 42 INOX / SNAP RING Ø 42	
299	RONDELLA PIANA 08X32X2.5 / FLAT WASHER 08X32X2.5	
344	DADO AUTOBLOCCANTE M10 / SELF-LOCKING NUT M10	
366	VITE TE 08X16 / HEXAGON HEAD SCREW 08X16	
586	DISTANZIALE PLASTICA TENDICATENA DI 8 DE 24 SP. 2 / PLASTIC SPACER	
668	VITE TE 08X25 / HEXAGON HEAD SCREW 08X25	
718	RONDELLA PIANA 08X24X2 / WASHER 08X24X2	
4029	PIATTO PER TENDICATENA / CHAIN STRETCHER PLATE	
4097	TENDICATENA ADIPOL ROSSO MISURE ØE 32 ØI 8.5 SP 5 / RUBBER WASHER	
4136	VITE STEI 08X20 PUNTA PIANA / GRUB SCREW	
4153	VITE PER TENDICATENA / INOX SCREW	
6005	PIATTO COMPLETO PER RINVIO CATENA / PLATE	
10279	VITE TTQST 10X35 / MUSHROOM HEAD SQUARE NEK BOLT 10X35	
10414	MOTORE KW 1.1 GR80 B5 4P 3PH 220-460V 50-60HZ MOTOR KW 1.1 V 220-460 / MOTOR	
32390	CUSCINETTO 61905-2RS MISURE 25429 / BEARING	
32451	ROTELLA RINVIO CATENA / INTERMEDIATE CHAIN ROLLER	
A	5321	PIGNONE PER MOTORIDUTTORE Z=15 ZINCATO / GEAR BOX SPROCKET Z=15
B	5321	PIGNONE PER MOTORIDUTTORE Z=15 ZINCATO / GEAR BOX SPROCKET Z=15
	4060	PIGNONE PER MOTORIDUTTORE Z=23 ZINCATO / GEAR BOX SPROCKET Z=23
	8180	PIGNONE PER MOTORIDUTTORE Z=28 ZINCATO / GEAR BOX SPROCKET Z=28
	30028	PIGNONE PER MOTORIDUTTORE Z=32 ZINCATO / GEAR BOX SPROCKET Z=32
	32645	PIGNONE PER MOTORIDUTTORE Z=46 ZINCATO / GEAR BOX SPROCKET Z=46
C	17080T2	CATENA PER PIGNONI Z=15-Z=32 / CHAIN FOR SPROCKET Z=15-Z=32
	17080T3	CATENA PER PIGNONI Z=15-Z=46 / CHAIN FOR SPROCKET Z=15-Z=46
	17080T4	CATENA PER PIGNONI Z=15-Z=15 / CHAIN FOR SPROCKET Z=15-Z=15
	17080T5	CATENA PER PIGNONI Z=15-Z=23 / CHAIN FOR SPROCKET Z=15-Z=23
	17080T6	CATENA PER PIGNONI Z=15-Z=28 / CHAIN FOR SPROCKET Z=15-Z=28
D	10389	MOTORIDUTTORE (MS600-P - MS800-P) / GEARBOX (MS600-P - MS800-P)
	10389T1	MOTORIDUTTORE (MS475-P) / GEARBOX (MS475-P)

12.5 SUPPORTI LATERALI / SIDE SUPPORTS



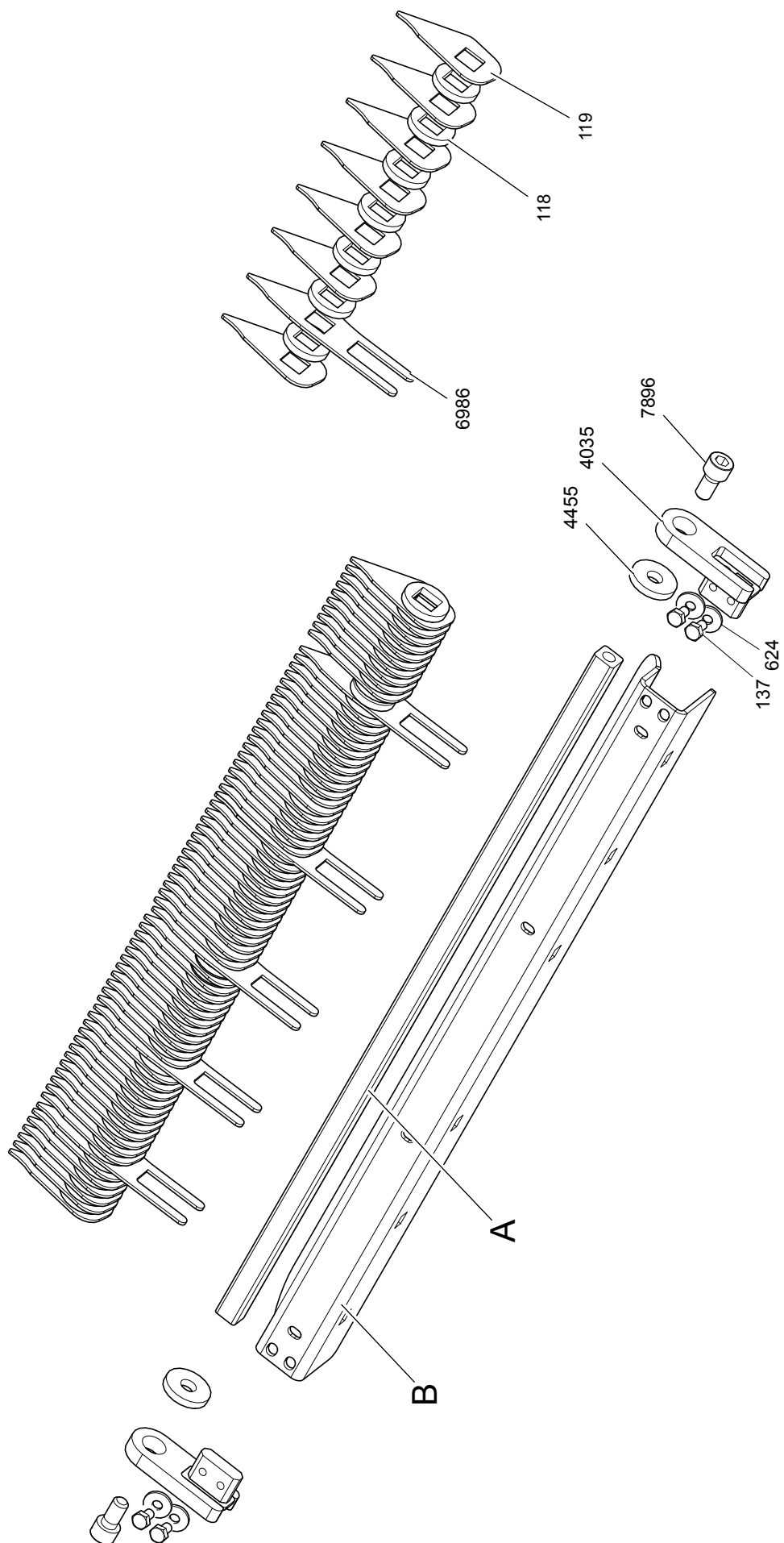
TRASMISSIONE MECCANICA / MECHANICAL TRANSMISSION	
CODE	DESCRIPTION
048	RONDELLA PIANA 10X21X2 / FLAT WASHER 10X21X2
293	SEEGER INTERNO Ø 42 INOX / SNAP RING Ø 42
299	RONDELLA PIANA 08X32X2.5 / FLAT WASHER 08X32X2.5
344	DADO AUTOBLOCCANTE M10 / SELF-LOCKING NUT M10
366	VITE TE 08X16 / HEXAGON HEAD SCREW 08X16
586	DISTANZIALE PLASTICA TENDICATENA DI 8 DE 24 SP. 2 / PLASTIC SPACER
668	VITE TE 08X25 / HEXAGON HEAD SCREW 08X25
718	RONDELLA PIANA 08X24X2 / WASHER 08X24X2
4029	PIATTO PER TENDICATENA / CHAIN STRETCHER PLATE
4060	PIGNONE PER MOTORIDUTTORE Z=23 / GEAR BOX PINION Z=23
4097	TENDICATENA ADIPOL ROSSO MISURE ØE 32 ØI 8.5 SP 5 / RUBBER WASHER
4136	VITE STEI 08X20 PUNTA PIANA / GRUB SCREW
4153	VITE PER TENDICATENA / INOX SCREW
5321	PIGNONE Z=15 ZINCATO / SPROCKET Z=15
6005	PIATTO COMPLETO PER RINVIO CATENA / PLATE
7505	PIGNONE RIDUTTORE Z=34 / GEAR BOX PINION Z=34
10279	VITE TTQST 10X35 / MUSHROOM HEAD SQUARE NEK BOLT 10X35
10389	RIDUTTORE MOTOVARIO HA52 1/29.9 PAM 80 B5 ALBERO USCITA 24 / GEARBOX PRC052 1/29.9
10414	MOTORE KW 1.1 GR80 B5 4P 3PH 220-460V 50-60HZ MOTOR KW 1.1 V 220-460 / MOTOR
17080T1	CATENA PER PIGNONI Z15-Z23 / CHAIN FOR PINIONS Z15-Z23
17080T2	CATENA PER PIGNONI Z15-Z34 / CHAIN FOR PINIONS Z15-Z34
32390	CUSCINETTO 61905-2RS MISURE 25429 / BEARING
32451	ROTELLA RINVIO CATENA / INTERMEDIATE CHAIN ROLLER

GRUPPO ALBERO DENTATO / TOOTHED ARBOR GROUP	
CODE	DESCRIPTION
003	CUSCINETTO 6005-2RS MISURE 254712 / BEARING
123	MOLLA RITORNO PETTINE / SPRING
270	ANELLO OR 3268 ECCENTRICO ALBERO / ARBOR CAM SEALING
293	SEEGER INTERNO Ø 42 / SNAP RING
299	RONDELLA PIANA 08X32X2.5 / FLAT WASHER 08X32X2.5
331	RONDELLA PIANA 08X17X1.5 / WASHER 08X17X1.5
344	DADO AUTOBLOCCANTE M10 / SELF-LOCKING NUT M10
357	MOLLA GIALLA PORTALAMA Ø 32 H=32 EXTRAFORTE / BLADE HOLDER SPRING
366	VITE TE 08X16 / HEXAGON HEAD SCREW 08X16
643	DADO AUTOBLOCCANTE M08 / SELF-LOCKING NUT M08
646	RONDELLA PIANA 06X12X1.6 / WASHER
923	LINGUETTA MEZZALUNA 4X6.5X16 / WOODRUFF KEY 4X6.5X16
4006	INSERTO IN PLASTICA PER CUBETTO PORTALAMA / PLASTIC INSERT
4007	DADO DI FERMO PER PERNO PORTALAMA / BLADE HOLDER NUT
4028	ECCENTRICO X ALBERO DENTATO / TOOTHED ARBOR CAM
4120	PARAOILIO / OIL SEAL
4186	VITE TE 08X60 / HEXAGON HEAD SCREW 08X60
4249T1	PERNO PER FRENO ECCENTRICO SUL SUPPORTO IN PLASTICA / PIN
4255	MOLLA A TAZZA FORO 08X18X01 / PRESSURE SPRING
5321	PIGNONE Z=15 / SPROCKET Z=15
6005	PIATTO COMPLETO PER RINVIO CATENA / PLATE
6052	PIASTRINA DESTRA PER TIRAGGIO PETTINE / RIGHT PLATE
6053	PIASTRINA SINISTRA PER TIRAGGIO PETTINE / LEFT PLATE
6260	SPINA PER SOSTEGNO PIANO PRODOTTO / PEG
6263	PERNO SUPERIORE MOLLE PETTINE / PIN
6264	PERNO INFERIORE MOLLE PETTINE / PIN
6264	PERNO INFERIORE MOLLE PETTINE / PIN
6518	LAMIERA SCHIACCIAMICRO PETTINE / PLATE
9213	CUBETTO PER BLOCCAGGIO PORTALAMA / BLOCK
10462	DADO BASSO M10 / HEXAGON JAM NUT M10
10858	RONDELLA PER MOLLA SPECIALE / SPECIAL WASHER
13302	VITE TE 06X12 / HEXAGON CAP SCREW 06X12
13423	VITE TE 08X12 INOX A2 UNI 5739 / HEXAGON CAP SCREW 08X12 INOX A2 UNI 5739
28341	BUSSOLA PER MOLLA PORTALAMA / BUSH
28342	BARRA FILETTATA M10 PORTALAMA / BAR M10
28343	DADO FLANGIATO M10 / NUT WITH WASHER M10

	29939		LEVA MOVIMENTAZIONE ECCENTRICI / LEVER TRANSMISSION
	29947		PERNO FILETTATO BLOCCAGGIO LEVA ECCENTRICI / PIN FOR LEVER LOCK
	31987T1		TONDO PER LEVA ROTAZIONE ECCENTRICO / ECCENTRIC MOVING LEVER SHAFT
	31988		MOZZO LEVA MOVIMENTAZIONE ECCENTRICI / ECCENTRIC MOVING LEVER SHAFT
	32390		CUSCINETTO 61905-2RS MISURE 25429 / BEARING
	32433		SUPPORTO DESTRO / RIGHT SUPPORT
	32434		SUPPORTO SINISTRO / LEFT SUPPORT
	32443		PERNO DESTRO COMPLETO FULCRO PETTINE / RIGHT PIN
	32444		PERNO SINISTRO COMPLETO FULCRO PETTINE / LEFT PIN
	32451		ROTELLA RINVIO CATENA / INTERMEDIATE ROLLER CHAIN
	32452		ANELLO SUL MOZZO LEVA / RING
A	MS475-P	32310T1	ALBERO DENTATO P=5.15 Z=44 / TOOTHED ARBOR P=5.15 Z=44
		32310T2	ALBERO DENTATO P=3.75 Z=60 / TOOTHED ARBOR P=3.75 Z=60
	MS600-P	32311T1	ALBERO DENTATO P=5.15 Z=44 / TOOTHED ARBOR P=5.15 Z=44
		32311T2	ALBERO DENTATO P=3.75 Z=60 / TOOTHED ARBOR P=3.75 Z=60
	MS800-P	32312T1	ALBERO DENTATO P=5.15 Z=44 / TOOTHED ARBOR P=5.15 Z=44
		32312T2	ALBERO DENTATO P=10.3 Z=22 / TOOTHED ARBOR P=10.3 Z=22
B	MS475-P	4059	PERNO PER INGRANAGGI REG. ECCENTRICI / CAM PIN
	MS600-P	4437	PERNO PER INGRANAGGI REG. ECCENTRICI (MS600-P) / CAM PIN (MS600-P)
	MS800-P	4218	PERNO PER INGRANAGGI REG. ECCENTRICI / CAM PIN

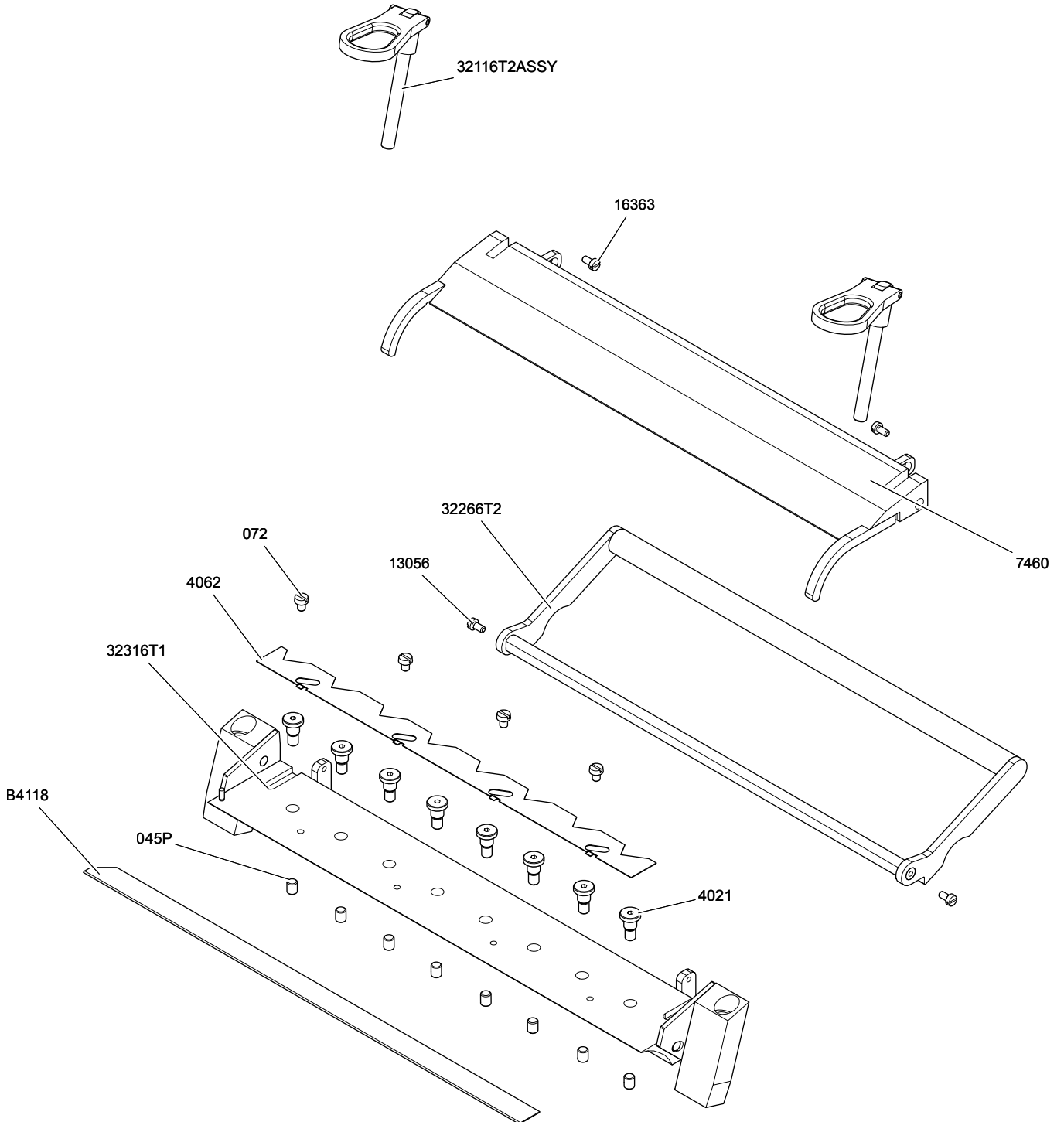
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12.7 PETTINE / COMB



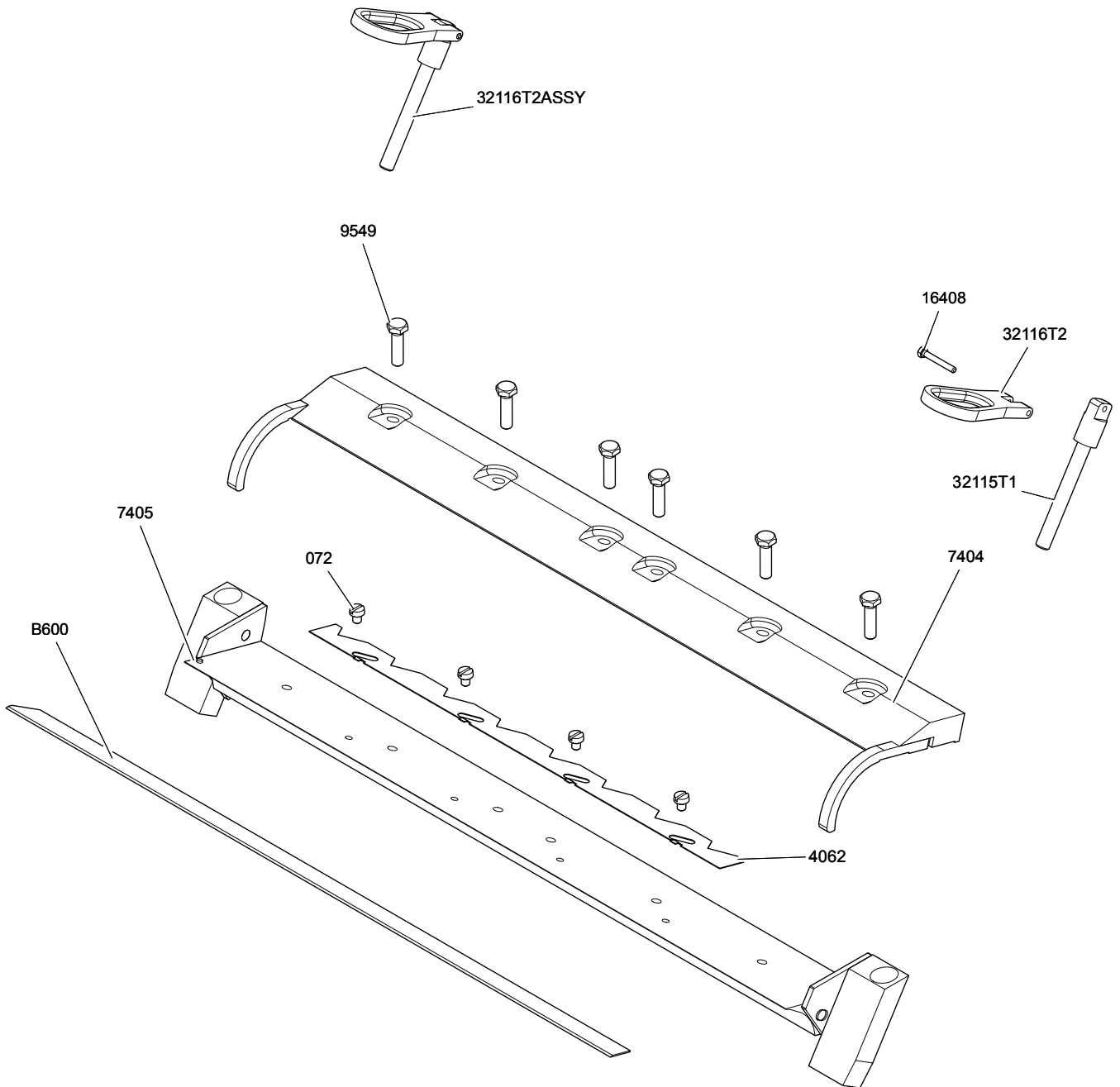
PETTINE / COMB			
CODE	DESCRIPTION		
118	DISTANZIALE PLASTICA SP 5 FORO QUADRO 15 / SPACER		
119	LAMELLA PETTINE ALBERO DENTATO SPESSORE 20/10 / COMB LAMELLA		
137	VITE TE 06X16 / HEXAGON CAP SCREW 06X16		
624	RONDELLA PIANA 06X18X1.6 / WASHER 06X18X1.6		
4035	PIATTO SUPPORTO PETTINE COMPLETO / STRIPPER SUPPORT PLATE		
4455	RONDELLA CHIUSURA PETTINE / WASHER FOR COMB		
6986	LAMELLA SPECIALE CON FERMO PER PETTINE / SPECIAL COMB		
7896	VITE TCCE 10X20 / SCREW 10X20		
A	MS475-P	4066	PERNO QUADRO PER PETTINE / STRIPPER PIN
	MS600-P	4438	PERNO QUADRO PER PETTINE / COMB SAHFT
	MS800-P	4220	PERNO QUADRO PER PETTINE / COMB SHAFT
B	MS475-P	4067	LAMIERA UNIONE PETTINE / STRIPPER PLATE
	MS600-P	4443	LAMIERA UNIONE PETTINE / STRIPPER PLATE
	MS800-P	4244	LAMIERA UNIONE PETTINE / STRIPPER PLATE

12.8 PORTALAMA (MS475-P) / BLADE HOLDER (MS475-P)



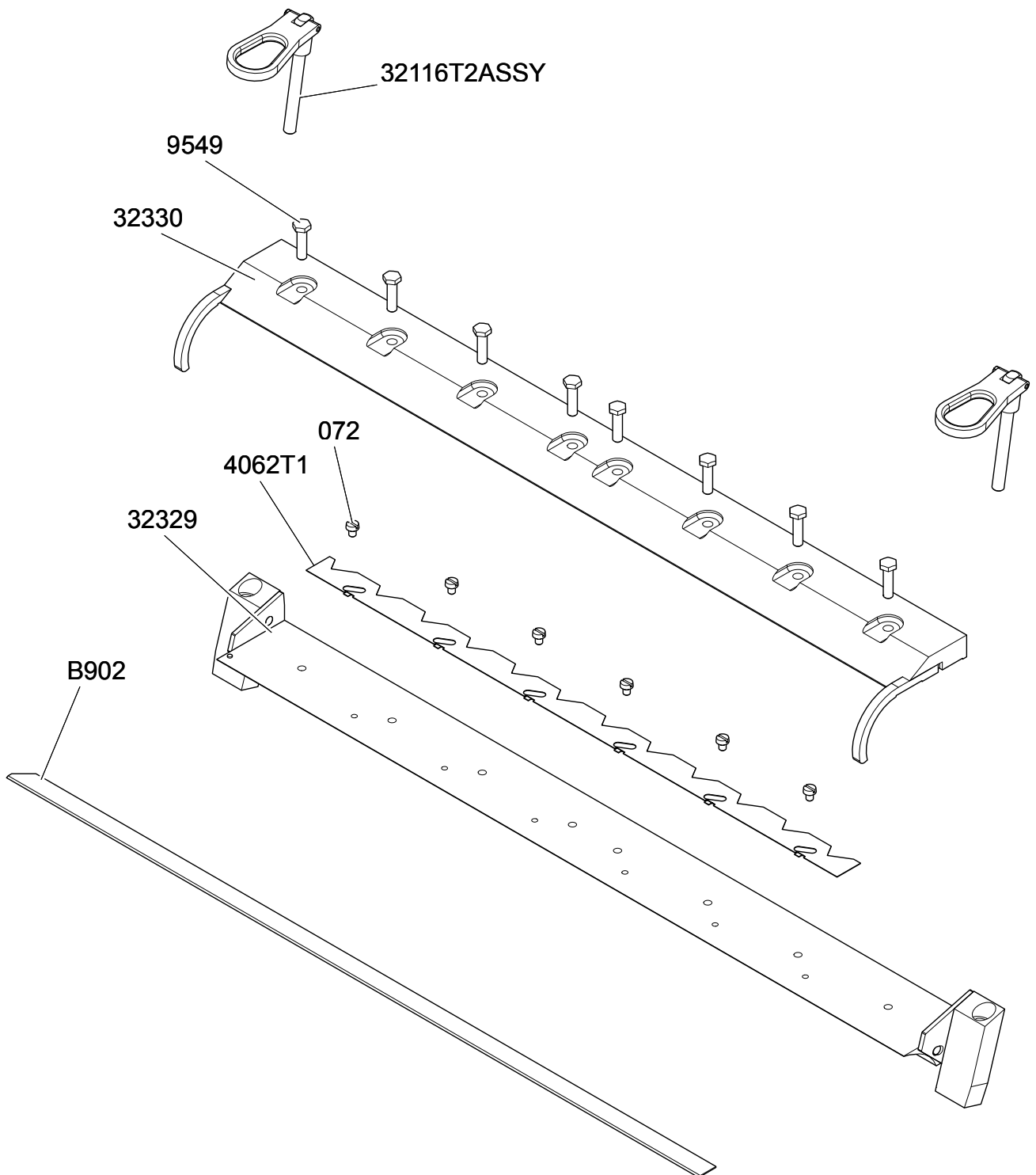
PORTALAMA MS475-P / MS475-P BLADE HOLDER	
CODE	DESCRIPTION
045P	VITE STEI 08X10 PUNTA PIANA / DOWEL 08X10
072	VITE TCTC 06X08 / SCREW WITH SLOT 06X08
13056	VITE TCTC 05X06 / SCREW WITH SLOT 05X06
16363	VITE TCTC 05X10 / SCREW WITH SLOT 05X10
32116T2ASSY	GRUPPO VITE PORTALAMA / BLADE HOLDER SCREW GROUP
32266T2	LEVA SERRALAMA RAPIDO / LEVER
32316T1	SUPPORTO PORTALAMA COMPLETO RAPIDO / BLADE HOLDER SUPPORT
4021	PERNO PER FISSAGGIO COPERCHIO LAMA RAPIDO / BLADE HOLDER PLATE LOCK PIN
4062	LAMIERA PER REGOLAZIONE LAMA / BLADE REGULATION PLATE
7460	COPERCHIO PORTALAMA / BLADE COVER
B4118	LAMA 470X22X0.7 / BLADE 470X22X0.7

12.9 PORTALAMA (MS600-P) / BLADE HOLDER (MS600-P)



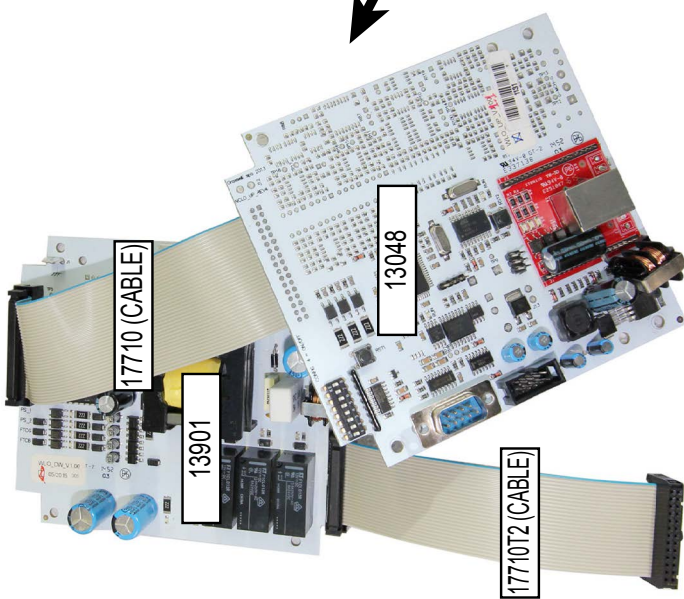
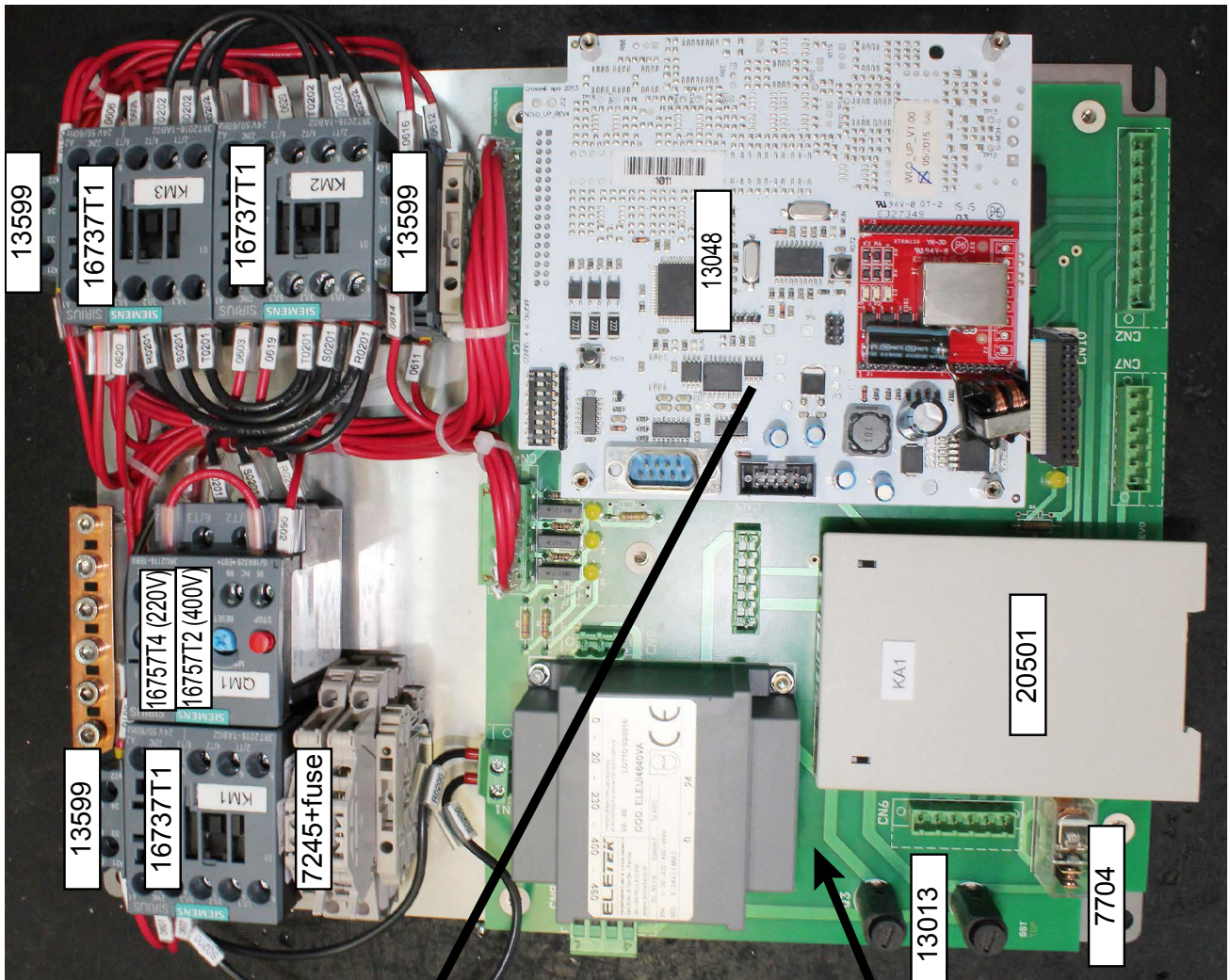
PORTALAMA MS600-P / MS600-P BLADE HOLDER	
CODE	DESCRIPTION
B600	LAMA 595X20X1 / BLADE 595X20X1
072	VITE TCTC 06X08 / SCREW WITH SLOT 06X08
4062	LAMIERA PER REGOLAZIONE LAMA / BLADE REGULATION PLATE
7404	COPERCHIO PORTALAMA AVVITATO COMPLETO / SHOE TOP PLATE
7405	BASE PORTALAMA COMPLETA / BLADE HOLDER BASE
9549	VITE TE 08X30 LISCIA CON TESTA ABBASSATA / BLADE HOLDER SCREW
16408	VITE TE 04X30 / HEXAGON CAP SCREW 04X30
32115T1	VITE PORTALAMA SPECIALE / BLADE HOLDER SPECIAL SCREW
32116T2ASSY	GRUPPO VITE PORTALAMA / BLADE HOLDER SCREW GROUP
32116T2	MANIGLIA PER VITE PORTALAMA / HANDLE FOR BLADE HOLDER

12.10 PORTALAMA (MS800-P) / BLADE HOLDER (MS800-P)



PORTALAMA MS800-P / MS800-P BLADE HOLDER	
CODE	DESCRIPTION
B902	LAMA 800X20X1 / BLADE 800X20X1
072	VITE TCTC 06X08 / SCREW WITH SLOT 06X08
4062T1	LAMIERA X REGOLAZIONE LAMA / BLADE REGULATION PLATE
9549	VITE TE 08X30 LISCIA CON TESTA ABBASSATA / BLADE HOLDER SCREW
32116T2ASSY	GRUPPO VITE PORTALAMA / BLADE HOLDER SCREW GROUP
32329	SUPPORTO PORTALAMA COMPLETA / BLADE HOLDER BASE
32330	COPERCHIO PORTALAMA AVVITATO COMPLETO / SHOE TOP PLATE

12.11 IMPIANTO ELETTRICO / ELECTRICAL SYSTEM



IMPIANTO ELETTRICO / ELECTRICAL SYSTEM	
CODE	DESCRIPTION
13013	FUSIBILE IN VETRO 5X20 4A / GLASS FUSE 4A
13048	SCHEDINA SUPERIORE CLO / UPPER CLO CARD
13599	CONTATTO AUSILIARIO 3RH1921-1EA11 SIEMENS / AUXILIARY CONTACT
13901	SCHEDINA INFERIORE CLO / LOWER CLO CARD
16737T1	TELERUTTORE SIEMENS 3RT2016-1AB02 / CONTACTOR 3RT2016-1AB02
16757T2	TERMICO 3RU2116-1EB0 SIEMENS 2,8-4A / THERMAL OVERLOAD 2,8-4A
16757T4	TERMICO 3RU2116-1CB0 SIEMENS 1,8-2.5A / THERMAL OVERLOAD 1,8-2.5A
17075/3	SCHEDA CIRCUITO STAMPATO IMP. ELETTRICO GSB2016 / CARD FOR ELECTRICAL CIRCUIT SYSTEM GSB2016
17710	CAVO FLAT COLLEGAMENTO SCHEDE (SE PRESENTE) / FLAT CABLE CLO CARDS CONNECTION (IF PRESENT)
17710T2	CAVO FLAT COLLEGAMENTO SCHEDE GSB2005-SCHEDE (SE PRESENTE) / FLAT CABLE CLO CARDS CONNECTION (IF PRESENT)
20501	CENTRALINA SCHMERSAL AES 1185.3 24V AC / TRIGGER BOX AES 1185.3
7245	MORSETTO ZSI 2.5 PORTAFUSIBILE / FUSE HOLDER
7704	RELE' OMRON G2R-1 24V AC / RELAY

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