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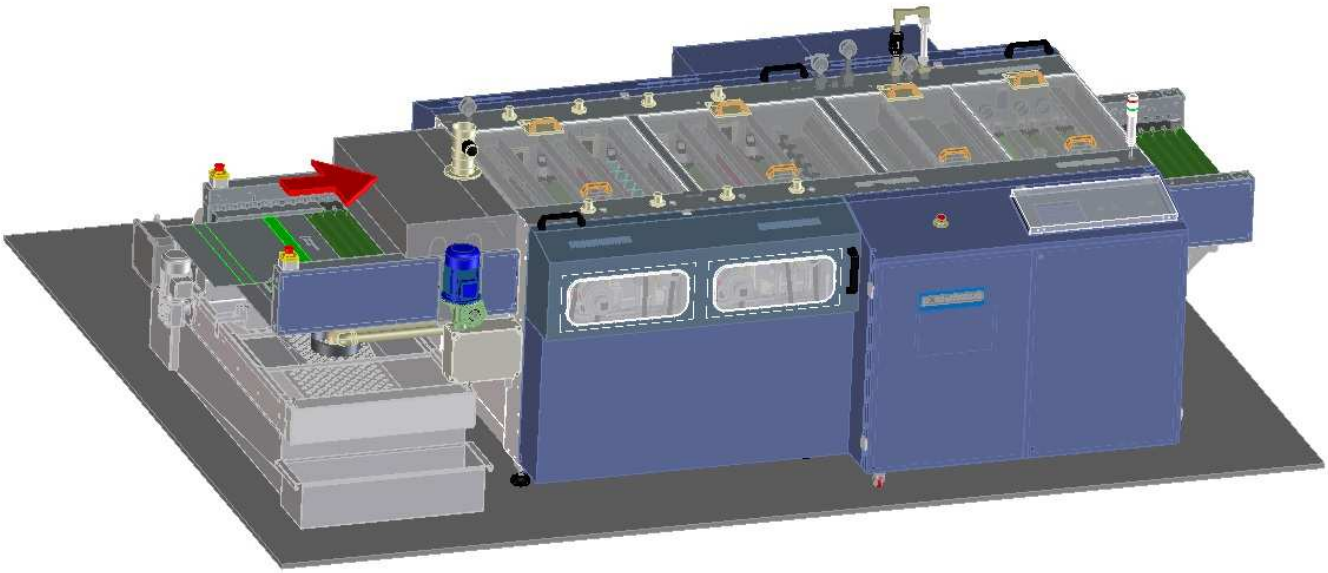
INSTRUCTION AND MAINTENANCE MANUAL

UNIBLOC BRUSHING 4/25/FA-120

"ITR" (POLAND) – MATR. 18.050



TRANSLATIONS OF THE ORIGINAL INSTRUCTIONS
KEEP FOR FUTURE CONSULTATION

CE

REVISION CHART OF MANUAL AND MANUAL SECTIONS

MANUAL SECTION	Revision	Date	Revision	Date	Revision	Date
Content	0.0	09/09/2019				
Chapter 1	0.0	09/09/2019				
Chapter 2	0.0	09/09/2019				
Chapter 3	0.0	09/09/2019				
Chapter 4	0.0	09/09/2019				
Chapter 5	0.0	09/09/2019				
Chapter 6	0.0	09/09/2019				
Chapter 7	0.0	09/09/2019				
Chapter 8	0.0	09/09/2019				
Chapter 9	0.0	09/09/2019				
Chapter 10	0.0	09/09/2019				

Date	09/09/2019
Signature	

Should this document be modified by the manufacturer, it is the customer's responsibility to ensure that only the updated versions of this manual are actually found at the location where the machine is used.
After the manual is revised, Pola e Massa shall send customers the updated version of the document as specified below. Hardcopy: via registered letter with acknowledgement of receipt. Digital: via PEC (certified e-mail address).

THE OFFICIAL LANGUAGE CHOSEN BY THE MANUFACTURER IS ENGLISH.
We accept no responsibility for translations into other languages which do not comply with to the original meaning.

CONTENT

1. FOREWORD

1.1. PURPOSE OF THE INSTRUCTION AND MAINTENANCE MANUAL

This manual is aimed at providing users a general overview of the machine so that the latter can be used safely.

This Instruction Manual is an integral part of the machine and is designed to provide all the information necessary for:

- safe handling of the machine, both packed and unpacked;
- proper installation of the machine,
- knowledge of the technical characteristics of the machine;
- detailed knowledge of the operating principles of the machine, and its limitations;
- the indication of qualifications and specific training required for operators and maintainers of the machine;
- detailed knowledge of intended and not intended uses as well as uses not permitted;
- correct machine use in conditions of safety;
- the performance of maintenance and repair, properly and safely;
- the technical assistance and spare parts management;
- the disposal of waste originated by operating the machine;
- the safe dismantling of the machine following any applicable regulations on environmental protection and for safeguarding operators' health.

In this document, it is assumed that all the safety and occupational health regulations are observed and applied in the facilities in which the machine will be installed.

Following the safety regulations in the country where the machine is used, the competent officer must carefully read all the information contained in this Instruction Manual and have operators, maintenance engineers, and employees read the relevant part in the manual dealing with their tasks.

All instructions, documentation and drawings contained in this Manual are of a technical and confidential nature, and property of the manufacturer. Therefore, except for the purposes for which the manual has been written, any reproduction, whether in whole or in part, of its contents and/or format is prohibited unless a prior consent is given by the manufacturer.

1.2. TARGET READERS

This Instruction Manual is addressed to installers, operators and/or users, and qualified personnel authorized to use and service the machine.

The machine is intended for industrial applications and therefore, can be used only by qualified persons and expert technicians who meet the following characteristics:

- be at least 18 years of age;
- be physically and psychologically able to perform technically difficult tasks;
- have been suitably trained with regards machine use and maintenance;
- be considered by the employer to be capable of performing the duties assigned to them;
- be capable of understanding and interpreting the Operating Manual and the safety instructions contained therein;
- be familiar with the emergency procedures, and know how to implement them;
- have understood the operating procedures specified by the manufacturer of the machine.

QUALIFIED/SPECIALIZED PERSONNEL means personnel that due to their knowledge are authorized to install, operate and service the machine.

1.3. HOW TO KEEP THIS INSTRUCTION MANUAL

This Instruction Manual should be carefully kept and stored. The manual should accompany the machine throughout its useful life. If the machine is sold, the manual should be handed over to the new owner.

Handle this manual with care; your hands must be always clean. Do not leave the manual onto dirty surfaces.

Never remove, tear off or deliberately modify any part of this manual.

Store this manual in dry place, away from any heat source and close to the machine to which it refers.

1.4. UPDATES TO THIS INSTRUCTION MANUAL

The Manufacturer will be responsible only for the Instructions written and validated by himself (Original Instructions); Any translated instructions MUST BE accompanied by the Original Instructions in order to check that the translation is correct. In any case, the Manufacturer shall not be held liable for any translation not approved by himself. Therefore, should any discrepancies be detected, refer to the text in its original language and, where appropriate, contact the Manufacturer's sales department which will make any amendments deemed necessary.

The Manufacturer reserves the right to modify the design, make improvements and/or changes to the machine, and update the Instruction Manual without prior notice to customers.
However, if the machine already installed at the customer's premises is modified, as agreed upon with the Manufacturer, and such modifications require amending one or more chapters of the Instruction Manual, the Manufacturer shall be in charge of sending the customer the sections of the Instruction Manual affected by the change, along with the new global revision model of the same. In line with the instructions given in the updated documentation, the customer shall be responsible for replacing the sections that are no longer valid with the new sections in all the old copies in his possession.
After the manual is revised, Pola e Massa shall send the document to the final customers as follows: via registered letter with acknowledgement of receipt, if it is a hardcopy, and via PEC (certified e-mail address) if it is in a digital format.

1.5. HOW TO READ THE INSTRUCTION MANUAL

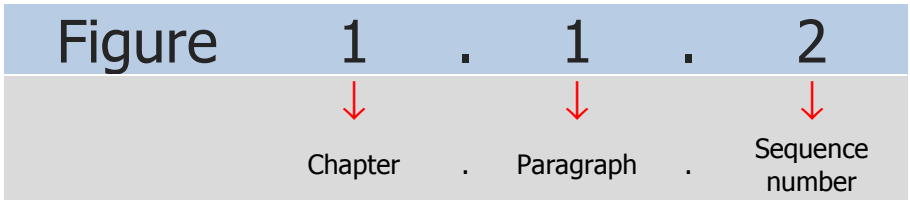
This Manual is subdivided into chapters, each of which deals with a specific category of information and intended to operators for whom the necessary skills for safe machine use are defined.
To facilitate understanding the text, a series of terms, abbreviations and pictograms are used; their meanings are specified in Paragraph 7.

FIGURE NUMBERING

Every illustration is numbered progressively.

Each number is built as follows:

Example: Figure 1.1.2



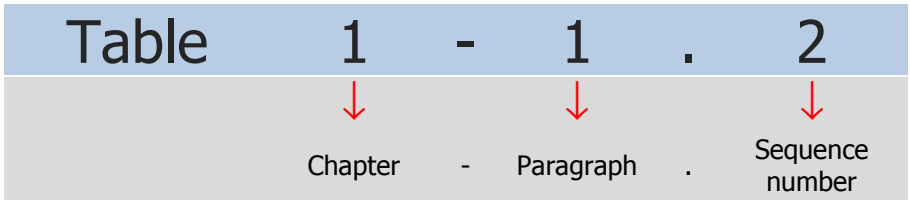
Sequence numbers start again from 1 at each new paragraph.

TABLE NUMBERING

Every table is numbered progressively.

Each number is built as follows:

Example: Table 1-1.2



Sequence numbers start again from 1 at each new paragraph.

ABBREVIATIONS

Chap. = Chapter

Par. = Paragraph

Sec. = Section

P. = Page

Fig. = Figure

Tab. = Table

UNIT OF MEASURE

The units of measurement are in compliance with the stipulations of the International System (IS).

Essential Values	Unit of Measure	Symbol
Time interval	seconds	s
Length	meter	m
Weight	kilogram	kg
Thermodynamic temperature	kelvin	K
Amount of substance	mole	mol
Electrical current intensity	ampere	A
Luminous intensity	Candela	cd
Temperature	celsius	°C

Mechanical values	Unit of Measure	Symbol	Conversion
Frequency	hertz	Hz	1 Hz = 1 s^{-1}
Force	newton	N	1 N = 1 kg m s^{-2}
Pressure	pascal	Pa	1 Pa = 1 N m^{-2}
Work, energy, amount of heat	joule	J	1 J = 1 N m
Power	watt	W	1 W = 1 J s^{-1}

1.6. DEFINITIONS

MACHINERY DIRECTIVE 2006/42/EC (Article 2 Definitions)

MANUFACTURER means any natural or legal person who designs and/or manufactures machinery or partly completed machinery covered by this Directive and is responsible for the conformity of the machinery or the partly completed machinery with this Directive with a view to its being placed on the market, under his own name or trademark or for his own use. In the absence of a manufacturer as defined above, any natural or legal person who places on the market or puts into service machinery or partly completed machinery covered by this Directive shall be considered a manufacturer.

PLACING ON THE MARKET means making available for the first time in the Community machinery or partly completed machinery with a view to distribution or use, whether for reward or free of charge.

PUTTING INTO SERVICE means the first use, for its intended purpose, in the Community, of machinery covered by this Directive.

SAFETY COMPONENTS Component

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

ANNEX I MACHINERY DIRECTIVE 2006/42/EC (p. 1.1.1 Definitions)

HAZARD A potential source of injury or damage to health.

DANGER ZONE Any zone within and/or around machinery in which a person is subject to a risk to his health or safety.

EXPOSED PERSON Any person wholly or partially in a danger zone.

OPERATOR The person or persons installing, operating, adjusting, maintaining, cleaning, repairing or moving machinery.

RISK A combination of the probability and the degree of an injury or damage to health that can arise in a hazardous situation.

GUARD A part of the machinery used specifically to provide protection by means of a physical barrier.

PROTECTIVE DEVICE means a device (other than a guard) which reduces the risk, either alone or in conjunction with a guard.

INTENDED USE The use of machinery in accordance with the information provided in the instructions for use.

REASONABLY FORESEEABLE INCORRECT USE The use of machinery in a way not intended in the instructions for use, but which may result from readily predictable human behavior.

RESIDUAL RISKS Risks that remain despite the inherent safe design measures, safeguarding and complementary protective measures adopted.

OTHER DEFINITIONS

ROUTINE MAINTENANCE Kind of regular preventive maintenance activities performed during the life cycle of an item intended to

- maintain the original integrity of an item;
- retain the item in a state in which it can perform its required function or restore it to such state;
- contain normal degradation caused by use;
- ensure the useful life of the item;
- face accidental events.

EXTRAORDINARY MAINTENANCE Kind of not-regular maintenance activities with a high cost compared to the value of replacing the item and to the annual costs of a routine maintenance on that item.

1.7. PICTOGRAMS

General info

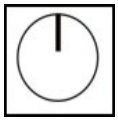
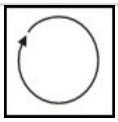
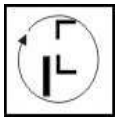
Affix pictograms where they are clearly visible and legible by anyone approaching the area and at such a point that the person can speedily react and take any necessary action to avoid a hazard.
Where possible, pictograms should be affixed in areas protected against the risk of being damaged, against abrasion, chemical corrosion, dust or any other factor that alters their visibility and legibility.
The operating temperature range is from -40°C to +80°C as long as there is not an uneven distribution of the temperatures that may adversely affect the thermal expansion of the material.
Affix pictograms only on clean, smooth surfaces without any trace of greases, oils or chemicals that may impair adhesion.
Based on applicable regulations, safety pictograms should be checked and cleaned on a regular basis in order to ensure they are properly legible at the minimum safety distance. Pictograms should be replaced if products are subject to extreme weather conditions or, in any event, when the safety pictograms do not comply with the visibility characteristics required.

PICTOGRAMS RELATED TO «OPERATOR QUALIFICATION»

SYMBOL	DESCRIPTION
	Unskilled worker: operator who possesses no particular skills, only capable of simple duties under the supervision of technically qualified personnel.
	Machine operator: operator trained to operate the machine, who can carry out all the tasks related to operating the machine (setting parameters, resetting e-stops, restarting the machine after an emergency, cleaning, and the like)
	Operator of hoisting and handling equipment: operator authorized to use equipment to hoist and handle material and machinery (strictly following the manufacturer's instructions) in compliance with the legislation in force in the user's country.
	Mechanical maintenance engineer: skilled technician who can operate the machine under ordinary conditions, operate it in maintenance mode, carry out any required adjustments, maintenance tasks and repairs on mechanical parts. In general, he is not authorized to work on electrical systems when they are live.
	Maintenance engineer - electrical: skilled technician who can operate the machine under ordinary conditions, operate it in maintenance mode, and is in charge of all the electrical operations involving adjusting, servicing and repairing the machine. He is authorized to work inside live cabinets and junction boxes.
	Manufacturer's Technician: skilled technician made available by the manufacturer to carry out complex operations in special situations or according to agreements with the user. On a case-by-case basis, the technician's competences are mechanical and/or electrical/electronic in nature and/or involving software.

Where applicable, the pictograms related to the qualifications required for the operations described will be shown next to the titles of the next chapters.

PICTOGRAMS RELATED TO MACHINE STATUS

SYMBOL	MACHINE STATUS
	Machine Off: electric and pneumatic supplies cut off.
	Machine On: at a standstill and ready to start (stand-by) by means of a functional enabling signal (for instance, the presence of product), with movable guards closed, safety device enabled and fixed guards closed too.
	Machine On: with electric and pneumatic supplies connected and in a safe stop status caused by movable guards open (it should be specified which guards); JOG disabled; fixed guards closed.
	Machine On: with electric and pneumatic supplies connected and in a safe stop status by means of a mushroom-head emergency stop held down or any other dedicated control component close to the zone involved (it should be specified which emergency stop or component is to be used).
	Machine running: automatic mode, with movable guards closed via the relevant interlocking devices activated, and fixed guards closed too.
	Machine running: operation via a hold-to-run control (JOG), with movable guards closed via the relevant interlocking devices activated, and fixed guards closed too.
	Machine running: operation via a hold-to-run control (JOG), with one or several movable guards that can be excluded open (it should be specified which ones), the relevant interlocking devices disabled, any remaining movable guard closed, the relevant interlocking devices enabled, and fixed guards closed.

WARNING PICTOGRAMS

SYMBOL	DESCRIPTION
	General danger
	Danger: electricity
	Danger of crushing to fingers and hands

PROHIBITION PICTOGRAMS

SYMBOL	DESCRIPTION
	General prohibition
	Do not walk or stand here
	Do not touch

MANDATORY PICTOGRAMS

SYMBOL	DESCRIPTION
	Safety helmet must be worn
	Safety gloves must be worn
	Safety boots must be worn
	Safety overalls must be worn

2. GENERAL INFORMATION

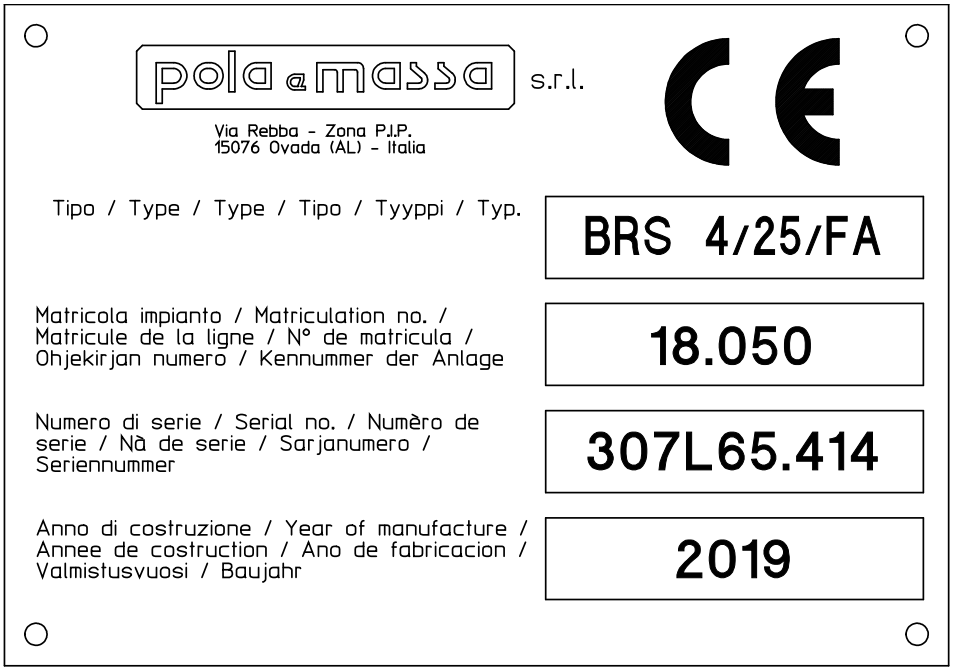
2.1. MANUFACTURER'S DETAILS

MANUFACTURER	POLA E MASSA s.r.l.
REGISTERED & EXECUTIVE OFFICES	Via Rebba zona P.I.P. 15076 Ovada (AL) Italy
PHONE	+39.0143-837711
FAX	+39.0143-80012
E-MAIL	sales@polaemassa.com
WEB SITE	www.polaemassa.com

2.2. MACHINE MARKING

Each machine is identified by a plate bearing its reference details stamped. The position of the place may vary from one machine to the other.

Always quote these details upon contacting the manufacturer or the technical support centers.



2.3. DECLARATIONS

pola e massa S.R.L.

POLA E MASSA S.R.L.
Via Rebba - Zona P.I.P.
15076 Ovada (Al) Italia

DICHIARAZIONE DI CONFORMITA' N° 023-19
DECLARATION OF COMPLIANCE NR.

LA SOTTOSCRITTA / *THE UNDERSIGNED:* Pola e Massa s.r.l.
Via Rebba - Zona P.I.P.
15076 Ovada (Al) Italia

DICHIARA SOTTO LA PROPRIA RESPONSABILITA' CHE LA MACCHINA NUOVA
DECLARE ON THEIR OWN RESPONSIBILITY THAT THE NEW MACHINE

DENOMINAZIONE / *NAME:* Brushing monoblocco 4/25/FA
Unibloc scrubber machine mod. 4/25/FA.

N° MATRICOLA IMPIANTO / *MATRICULATION NUMBER:* *18.050*

N° DI SERIE / *SERIAL NUMBER:* *307L65.414*

ANNO DI COSTRUZIONE / *YEAR OF MANUFACTURE:* *2019*

E' CONFORME ALLE DISPOSIZIONI LEGISLATIVE CHE TRASPONGONO LA DIRETTIVA MACCHINE 2006/42/EC - MD, 2014/35/UE – LVD E 2014/30/UE - EMC
IS FULLY COMPLYING WITH THE REGULATIONS SETFORTH IN EEC DIRECTIVE 2006/42/EC - MD, 2014/35/UE – LVD E 2014/30/UE - EMC

Persona autorizzata a costituire il fascicolo tecnico: Sebastiano Vacca
Person authorized to prepare the technical file: (Amministratore / Administrator)

TIMBRO E FIRMA / *SIGNATURE AND STAMP*
Pola & Massa S.r.l.
Via Rebba - Zona P.I.P.
15076 OVADA (AL) Italia
C.F. e P.IVA 01 3[illegible]5 0

OVADA, LI / *DATE* 18/09/2019

The machine has been built in compliance with all relevant Community Directives applicable when the machine was placed on the market.

PROHIBITION TO PUT THE MACHINE INTO SERVICE

The machine cannot be put into service after its structure is modified or after other components are integrated to it, if such changes or integrations do not fall within the routine or extraordinary maintenance activities, until it satisfies the requirements set by Directive 2006/42/EC and any Community Directive applicable.

Place / Date

Ovada, 18/09/2019

The manufacturer

TIMBRO E FIRMA / *SIGNATURE AND STAMP*

Pola & Massa S.r.l.
Via Rebba - Zona P.I.P.
15076 OVADA (AL) Italia
C.F. e P.IVA: 01218280070

2.4. SAFETY RULES

The machine has been built in accordance with the Technical Standards listed below.

STANDARD	Title
UNI EN ISO 12100	Safety of machinery - General design principles - Risk assessment and risk reduction.
UNI EN ISO 13849-1	Safety of machinery - Safety-related parts of control systems - Part 1: General principles for design.

2.5. INFORMATION ON THE TECHNICAL SUPPORT SERVICE

All machines are covered by a warranty as provided for in the General Terms and Conditions of Sale. If during the term the warranty is valid, a failure or a faulty part of the machine is detected, and if such case falls within the cases covered by the warranty, the Manufacturer will, after inspecting the machine, repair or replace any faulty parts.

It should be noted that any change introduced by the user without an express written authorization by the manufacturer will render the warranty null and void, and will relieve the manufacturer of any liabilities in case of damage caused by a faulty product.

This concerns in particular those changes that involve safety devices, impairing their efficiency. The same also applies if non-original spare parts or parts other than those specifically recommended by the manufacturer as «safety devices» are used.

Therefore, our customers are advised to contact our Technical Support Service before carrying out any of the above operations.

Any evident and visible defects (such as defects in appearance in visible parts, tears, dents, malfunction, missing parts, etc.) found when the product is delivered must be informed to the company without delay.

The Manufacturer shall not be held liable for any defect not informed by the customer at the time of delivery.

2.6. ARRANGEMENTS BY THE CUSTOMER

Unless a different agreement has been concluded, the Customer is generally required to provide:

- the premises, including any masonry work and/or piping and ducting required;
- the power supply to the machine in accordance with the legislation in force in the country where the machine is used;
- Pneumatic supply.
- Check to verify the load bearing capacity of the floor where the machine will be installed.

3. SAFETY

3.1. GENERAL SAFETY WARNING

Before starting the machine, thoroughly read and strictly follow all the instructions contained in this Manual.

Upon designing this machine, the manufacturer has made significant efforts to render it as SAFE as possible.

On this basis, the machine is equipped with all the guards and safety devices that are needed, and it is supplied together with enough information to be used safely and properly.

To this end, the following information is supplied when needed for each man-machine interaction:

- minimum operator's qualification required;
- number of operators;
- machine status;
- residual risks;
- personal protective equipment needed or recommended;
- prevention of human errors;
- prohibitions and/or obligations related to reasonably foreseeable misconduct.

It is essential to follow the instructions below:

- it is strictly prohibited to operate the machine in automatic mode without the fixed/movable protections fitted;
- it is strictly prohibited to bypass the safety devices installed in the machine;
- operations in which the safety margin is reduced must be carried out strictly following the instructions given in the relevant sections;
- after an operation with reduced safety margin, the right status of the machine needs to be restored with active guards;
- for any washing task, the electrical and pneumatic isolation devices must be isolated;
- never modify any part of the machine for any reason whatsoever. In case of machine malfunctioning, the Manufacturer shall not be liable for any consequences deriving from failure to observe this premise.

- The machine must be inspected and assessed again to verify its status whenever a change affecting its operation is introduced. This check is made following the regulations in force and a new marking is needed. If any change is needed, please consult the manufacturer directly.
- install the machine following the diagrams supplied by the manufacturer; otherwise, the latter is not liable for any problems that may arise;
- never wear garments with protruding elements that may get caught in the machine;
- never wear ties or other loose clothing;
- avoid wearing bulky rings or bracelets since they may catch on the moving parts of the machine and drag your hands resulting in serious injury.

Besides, whenever needed, further tips will be given to the user in the Manual on precautionary measures, personal protective equipment, information to prevent human errors as well as prohibitions regarding behavior that is not allowed but is reasonably foreseeable.

In any case, users may supplement the information supplied by the manufacturer as appropriate with additional work instructions that help use the machine safely, as long as such instructions are not incompatible with those contained in this Instruction Manual.

The Manufacturer is relieved of any responsibility for damage caused to people, animals or objects by the machine when:

- the machine is used by personnel who are not duly trained;
- the machine is not used properly;
- defects in the electric, hydraulic or pneumatic supplies are found;
- incorrect installation;
- the machine has not been serviced as scheduled;
- an unauthorized modification or operation has occurred;
- use of non-genuine parts or non-specific parts for a particular model;
- all or some instructions are not followed;
- the machine is used in a manner inconsistent with specific national regulations;
- there are disasters or special occurrences.

General requirements

All movable elements must be always used following the manufacturer's recommendations, as specified in this Manual. The Manual needs to be readily accessible for the operator at his work station.

All the safety devices fitted onto the movable elements aimed at avoiding incidents and ensuring safety cannot be neither modified nor removed, and they must be duly protected.

The user is to inform his employer or immediate line manager of any defects or faults found in the moving parts in a timely manner.

Checks and Inspections

An expert should be in charge of the checks; these must be visual and functional inspections aimed at ensuring the safety of the machine.

Checks and inspections include:

- Inspection involving all bearing structures that must be checked for cracks, tears, damage, deformation, corrosion, wear or alterations compared with the original characteristics of the machine;
- Inspection of all the mechanical parts;
- Inspection of all the safety devices installed in the machine;
- Inspection of all connections and their bolts and screws;
- Functional test of the machine;
- Inspection to check machine status;
- Inspection to check the pneumatic and/or hydraulic system for sealing and efficiency.

The results of these inspections are to be recorded on a specific card.

If the technician in charge of the inspection finds any cracks or hazardous faults, he must:

- Report this situation to the manufacturer of the machine without delay.
- Take the machine out of service and conduct any inspection and/or repair needed.
- Make sure that there are not any objects in between any machine parts.

If a failure is detected, first solve it before starting the machine again. The expert in charge of the inspection must record the repair on the specific cards and in this way, the machine is approved to be used again.

Make sure that no object remains in between the moving parts after a maintenance task.

If any worn or faulty part is not replaced immediately, the manufacturer shall not be held liable for any damage caused by an incident deriving from such situation.

In order to guarantee the total safety of the machine, it is PROHIBITED to:

- Tamper with any part of the machine;
- Leave moving parts unattended;
- Use a machine that can work but it is not totally efficient;
- Modify the machine to change its original intended use without any express authorization by the Manufacturer or without taking full responsibility;
- Move moving parts by hand whenever there is a blackout.

3.2. INTENDED USE

The DEBURRING LINE WITH DEGREASING is designed for processing metal plates that need deburring, washing, high pressure washing, and drying. The size and thickness of plates should match the data given in the "Technical Data" paragraph.

Using products and/or materials other than those specified by the Manufacturer is wrong and improper since that may damage the machine and create hazard situations for both operators and people who are near the machine.

3.3. USES ADVISED AGAINST

The machine is not intended for use:

- in applications other than those set by the manufacturer or uses not mentioned in this manual;
- in potentially explosive atmospheres, corrosive atmospheres, or atmospheres with high concentration of airborne dust or oily substances suspended in air;
- in a fire hazard atmosphere;
- exposed to weather conditions;
- with safety devices off or out of order;
- with electrical jumpers and/or mechanical devices that exclude equipment or parts of the machine.

3.4. SAFETY DEVICES

The machine is equipped with the following safety devices:

- An emergency stops from the main control panel, plus other emergency stops distributed throughout the machine depending on what is needed.

3.5. SIGNS

These are the signs to be fitted close to the machine and in the work areas:

WARNING PICTOGRAMS

SYMBOL	DESCRIPTION
	**General danger**
	**Electric current**
	**Warning: harmful or irritating substances**
	**Caution: hot surface**
	**Danger gear in movement**
	**Crushing hands**
	**Crushing feet**
	**Suspended loads**

PROHIBITION PICTOGRAMS

SYMBOL	DESCRIPTION
	General prohibition
	Do not use water to extinguish fire
	Prohibition of access to unauthorized personnel

MANDATORY PICTOGRAMS

SYMBOL	DESCRIPTION
	Safety glasses must be worn
	Safety boots must be worn
	Safety gloves must be worn
	Refer to Instruction Manual

3.6. RESIDUAL RISKS

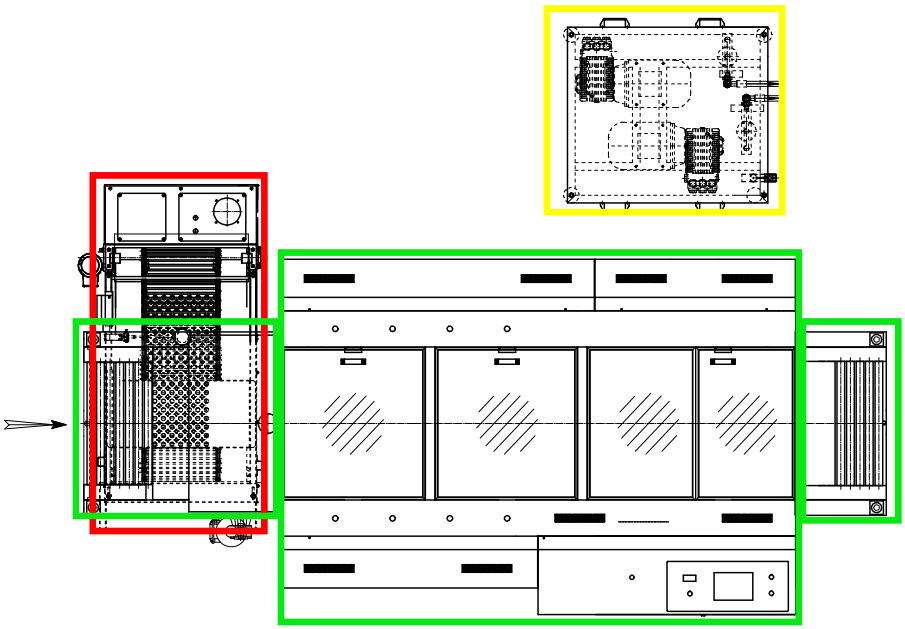
Take utmost care with the following residual risks that are present when the machine is used and cannot be eliminated.

	**ATTENTION: DANGEROUS MOVEMENTS** Only the operator is authorized to be around/near the machine. If anybody else is around the machine, stop all movements and ask them to leave.
	**ATTENTION: ELECTRICAL RISKS - LIVE PARTS** Only skilled personnel should be in charge of operations on the main electrical control panel, and the device powering the machine must be isolated.
	**ATTENTION: ELECTRICAL RISKS - RESIDUAL VOLTAGE** Consult the notes in the description of the electrical equipment.
	**ATTENTION: FAULTY SAFETY DEVICE** Under no circumstances should the machine be used if any of the safety devices is not in perfect working order. Put the line out of service at once by locking the power isolating switch to the isolated circuit position. Power on the machine only when all the safety devices are in perfect working order again.
	**ATTENTION: CHEMICAL PRODUCTS** Operators must follow the handling instructions given in the safety data sheets of the chemicals that are used, and wear/use suitable personal protective equipment. It is the end user's responsibility to check the safety data sheet of a chemical and verify any potential risks involved in using the product. Besides, the end user has to check that the safety data sheets of all the chemicals used are up to date.

	**ATTENTION: ILL-TIMED RESTARTS** Before any operation on the machine, operators must make sure that the machine cannot be started unintentionally. All supplies must be isolated. Cut off power and supplies to the machine by means of individual lockout devices such as a padlock, and take the keys with you. In this way all supplies can be restored only after all operators have removed their individual lock-out devices, that is, only after all operators have finished their tasks. In this way, no operator can start the machine without noticing that there is another operator close to dangerous elements.
	**ATTENTION: PERSONAL PROTECTION EQUIPMENT** Before starting any maintenance or adjustment tasks, the operator must be provided with and wear, on a case-by-case basis, personal protection equipment that is suitable for the type of maintenance (and according to safety regulations), such as gloves, goggles, helmet, non-slip shoes, and the like.
	**ATTENTION: GUARDS REMOVED** If a guard is removed, for instance to service the machine, under no circumstances should the machine be started unless all the guards that have been removed are properly fixed back in place.
	**ATTENTION: ISOLATION FAILURE** The protection against isolation failures must be part of the power system of the machine, and it is not supplied by the manufacturer.

4. INSTALLATION

4.1. DIVISION FOR TRANSPORT



Kg. 195

Kg. 225

Kg. 2200

4.2. TRANSPORT AND HANDLING

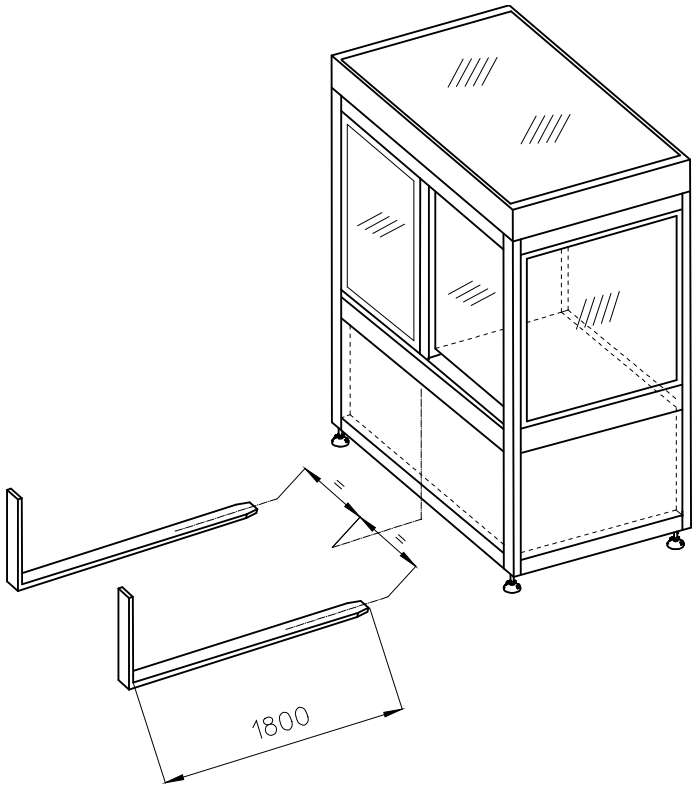
The machine can be transported using regular equipment that can bear the weight and handle the dimensions of the machine. It is advisable to use equipment that can bear the weight and handle the dimensions of the machine so that the machine and/or people and objects around it are not damaged.

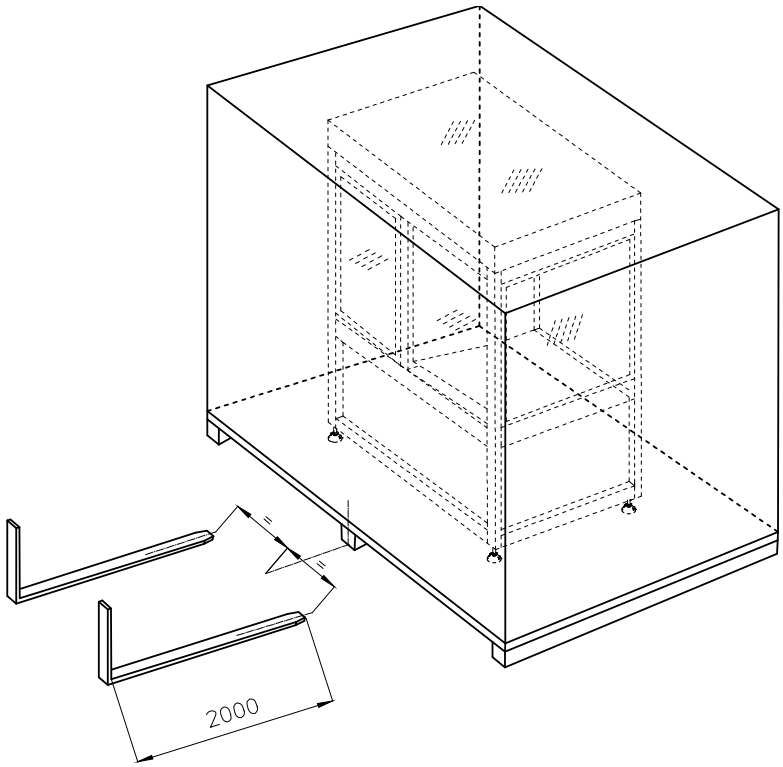
Unload it using a forklift truck with suitable forks.

The machine is shipped subdivided in several sections; they must be handled by means of a forklift truck with forks only.

- Unpacked machine: it must be handled using a forklift truck capable of lifting and moving the weight of the machine at least, as specified in the technical data sheet included in the last chapter of this manual. Handling movements must be slow, without any jerk, jolts or abrupt changes in velocity (acceleration/deceleration). The forks must be at least **1,80 m** long.
- Packed machine: The packed machine is fastened with clamps nailed to the base of the crate. The machine is to be handled by means of a forklift truck capable of lifting and moving the weight of the pack at least (see the gross weight specified in the two plates bearing the address of the recipient, affixed on both sides of the wooden crate). Handling movements must be slow, without any jerk, jolts or abrupt changes in velocity (acceleration/deceleration). The forks must be at least **2,00 m** long.

Lift the machine using a forklift truck; the forks must support both sides of the machine. Make sure that the weight of the machine is properly balanced so that the machine does not fall onto the floor or moves unexpectedly.





The Manufacturer shall not be responsible for any damage caused to people, animals, and objects if a lifting system other than that recommended is used.

4.3. STORAGE

When the machine is not used, store it taking into account the following:

- store the machine in an enclosed place;
- grease the parts that are not painted;
- protect the machine from impact and strain;
- protect the machine against moisture;
- never expose the machine to extreme temperatures and protect it against strong temperature variations;
- do not allow corrosive substances to come into contact with the machine.

4.4. REQUIREMENTS

Installation

The area to install the machine should be suitable to fit the machine and work with the lifting equipment chosen.

The machine should be so set-up as to ensure total ergonomics and safety of the work point. Leave a free area around suitable to facilitate using and handling materials as well as maintenance and adjustment activities.

Electrical Installation

Only skilled and specialized personnel should be in charge of all connections to the electrical system that powers the machine and synchronizes it with other machines. The electrical diagram and the provisions of the legislation and/or technical standards in force on occupational safety and electrical installations must be strictly followed.

To achieve a proper level of safety, the customer is to arrange the following for the electrical installation to which the machine is connected:

- an earthing system in accordance with the regulations in force in the user's country;
- everything needed to properly and professionally set up the machine in accordance with the legislation and the technical standards in force on occupational safety and electrical installations.

	**The user will provide all these arrangements and be fully responsible for them.**
	**The Manufacturer shall not be liable for any injury to people/animals or damage to objects derived from failure to comply with this requirement.**

4.5. ASSEMBLY

The machine is shipped subdivided into several sections and packed as described in chapter 4.1. It is to be positioned and assembled as described in the paragraphs below.

4.6. POSITIONING

The machine is to be positioned as set upon ordering it and/or according to the Positioning Diagram found in Chapter 10, «Annexes» (the last chapter in this manual). The Manufacturer shall not be held liable for any problems caused by positioning the machine in a manner other than that agreed upon.

Make sure that there is enough space to remove the safety casings and for maintenance tasks.

- Position the machines at the planned installation points;
- make sure that the conveying surface of the line is perfectly level with and at the same height as the other downstream/ upstream machines. The height of the machines can be adjusted by means of the leveling support feet.

4.7. CONNECTIONS

Hydraulic connections: to be carried out by the customer

Make sure that the machines are connected to:

- The water mains, by means of a ∅20 mm supply pipe minimum. Check the water supply pressure is the right one for the proper operation of the machines (consult the technical sheet found in Chapter 10, «Annexes»- the last chapter in this manual). The customer is to include a safety ball valve upstream the connection to the machines in order to close the water supply pipe;
- The drainage pipes; their diameter should not be smaller than that of the connection present in the machine;

All the pipes connecting the machine to the different networks must be laid along the specific channels made below the level of the floor; they must be closed/covered by plates or rails so that operators do not trip on them. On the other hand, power connections must come from above.

The User must refer to and follow the regulations on storing and disposing of residual water from the machine and/or production waste in force in his country.

Electrical connections: to be carried out by the customer

Only qualified personnel appointed by the customers must be in charge of the connection between the electrical control panel and the customer's power distribution system.

- Make sure that the machines are connected to the electric power source by means of a terminal block found inside the control board.

  Upstream the terminal block, the customer is to install a dedicated protection device- a differential circuit breaker- suitable for the power consumption of the machine. The section of the cable used to connect the electric power source to the terminal block is to withstand the current ranges specified in the technical data sheet included in Chapter 10, «Annexes». Any variation in current/voltage should not be greater than ± 5% the nominal current value.

After all electrical connections are ready, it is mandatory to refit the clear plastic protection cover onto the terminal block before starting the machine.

4.8. PRELIMINARY CHECKS

Before commissioning the machine, conduct a series of checks and inspections to avoid errors or incidents:

- Check that all the safety systems operate correctly;
- Check that the earthing connection has been made following all applicable regulations;
- Check guards;
- Check signs;
- Check that all external energy sources are properly connected;
- Check if the machine has been damaged upon assembly;
- Thoroughly check all electrical control panels, control panels, electrical cables and pipes for damage;
- Check that all moving parts move and/or turn smoothly.

4.9. NO-LOAD TESTS

Before doing load operations, make at least a no-load test to check if there are anomalies.

4.10. LOAD TESTS

Conduct at least one load test to check if there are anomalies.

5. MACHINE DESCRIPTION

5.1. WORKING PRINCIPLE

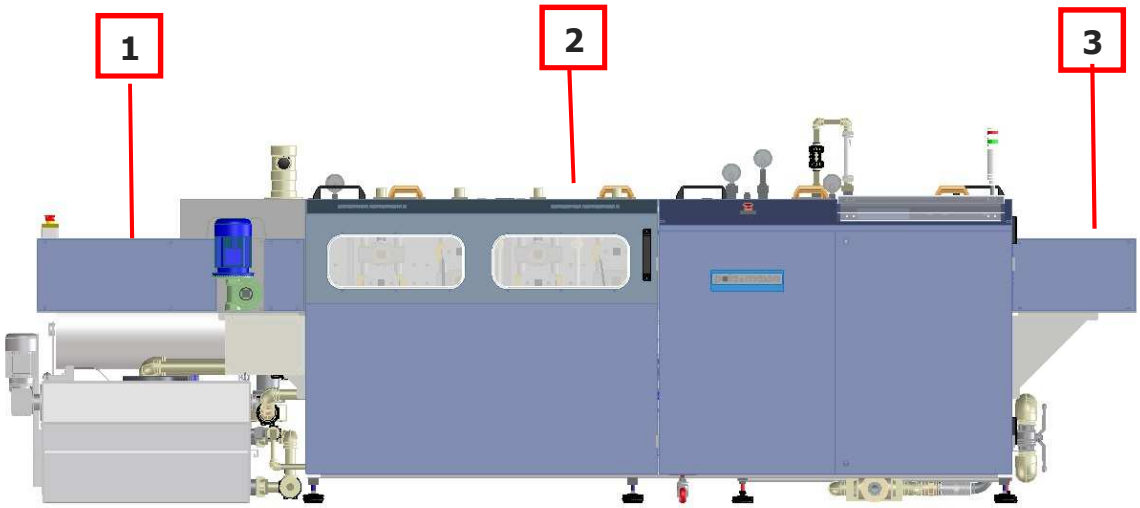
The machine that this manual describes has been designed to carry out the following processes: deburring, washing, degreasing, and drying of steel plates using water under pressure dispensed from special nozzles.

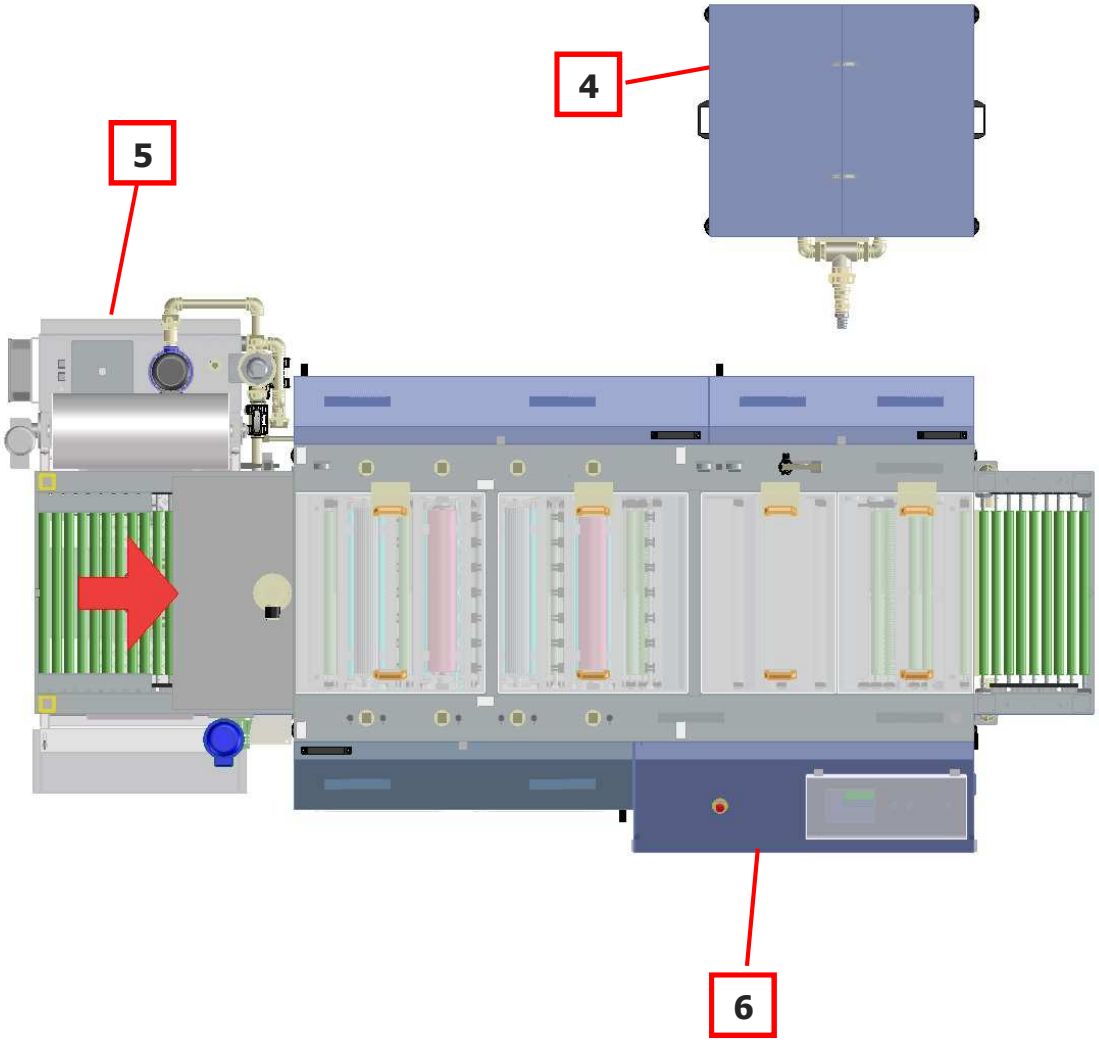
Find the limits of use of the machine in Par. 8 of this chapter.

The line is primarily broken down into the various processing areas described below:

1. Entry conveyor with thickness detector;
2. Unibloc scrubber 4/25/FA-120;
3. Exit conveyor;
4. High pressure pumping group (100 bar);
5. Gravity filter;
6. Built-in control cabinet.

Find below a layout of the machine indicating the main parts and the work cycle.

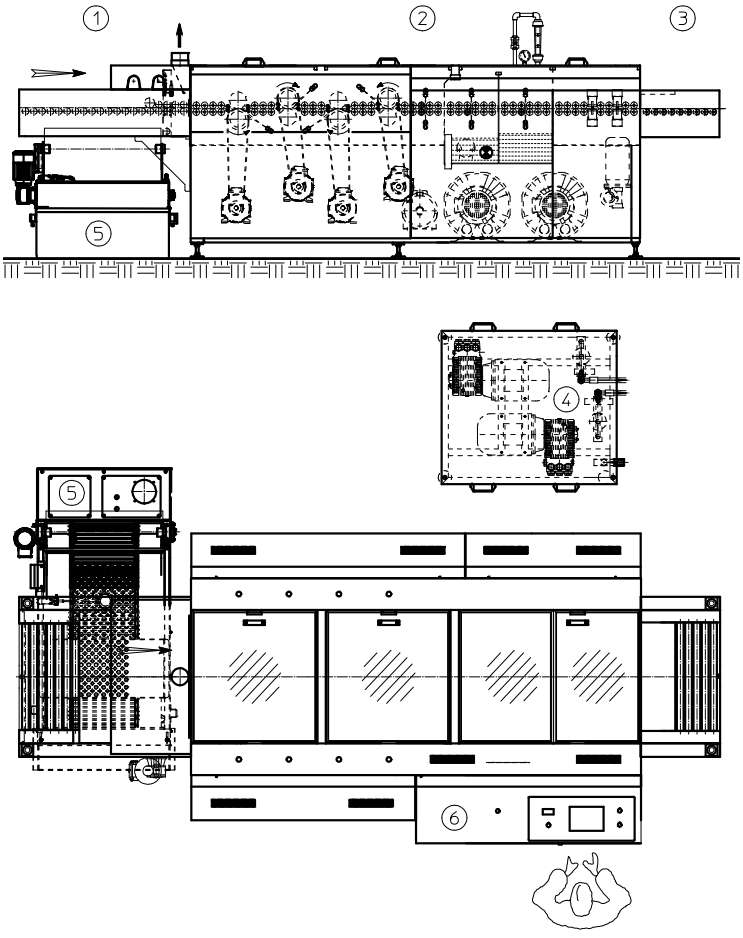

1
2
3


4
5
6

5.2. MAIN COMPONENTS

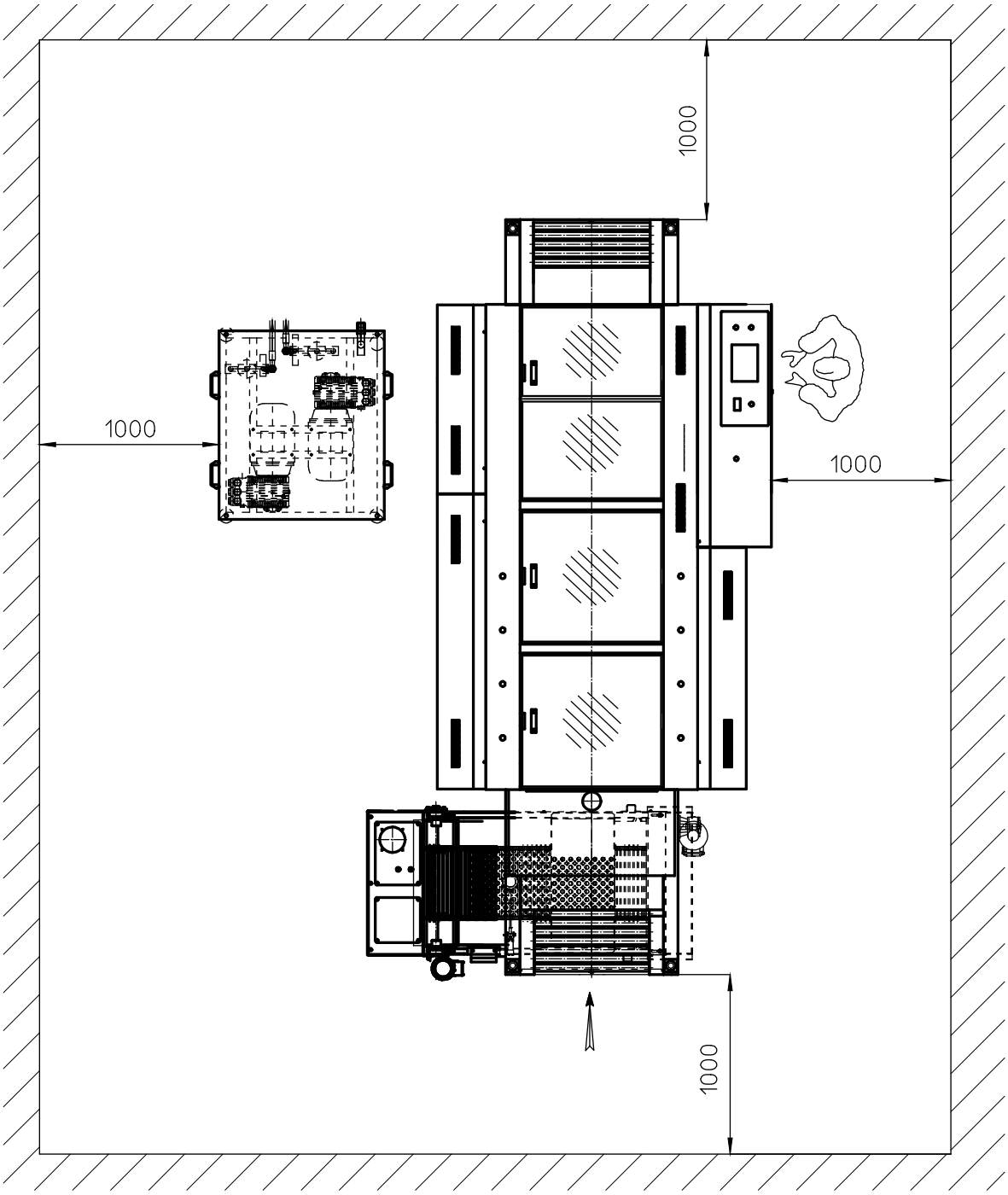
Find below a brief description of the main components of the machine:

1. Also the infeed conveyor is made up of stainless steel rollers coated with blue rubber (Ø40 mm). An automatic thickness measuring system is located at the beginning of the conveyor to measure the thickness of the incoming sheets; the brushes and counter-rollers will be automatically adjusted according to the thickness of the sheet;
2. Unibloc scrubber 4/25/FA-120 that includes 4 brushes Ø120 (2 upper and 2 lower) and 4 stainless steel counter-rollers covered with Vulkollan. The pairing of the brush pin and self-centring cone makes assembly and removal of the brushes and counter-rollers simple and quick. The machine includes specific software for automatic control of the brushes. It is also equipped with a self-zeroing cycle for the precise reset of the reference position of the brushes and counter-rollers. Each brush has separate control operations and works in close contact with a single spraying hose, able to ensure the spray of water along with cleaning and operation of the brush;
3. Exit conveyor;
4. External high-pressure group (100 bar);
5. Gravity filter;
6. Built-in control cabinet.



5.3. DIMENSIONS

Find below the diagrams showing the general guidelines for the machine.



5.4. ENVIRONMENTAL CONDITION

The machine is to be installed inside a well-lit industrial building, properly ventilated and featuring a firm and level floor.

The machine is suitable to operate in environments:

- at altitudes not above 1500 m asl;
- at temperatures between + 5°C and + 40°C;
- with relative humidity between 30 and 95%, not above 50% at 40° C, and not above 90% at 20° C.

It is prohibited to use the machine in:

- dusty environments;
- corrosive atmospheres;
- fire-risk atmospheres;
- potentially explosive atmospheres.

The machine is not suitable to work in potentially explosive/ corrosive atmospheres or with too much dust.

5.5. LIGHTING

The lighting at the installation room must comply with the legislation in force in the country where the machine is installed. It must ensure good visibility at every point and must not create dangerous reflections. Clearly reading controls panels and identifying emergency push-buttons must be guaranteed by proper lighting.

5.6. VIBRATION

If the machine is used properly in compliance with the use instructions, vibration should not be expected to rise to dangerous levels.

5.7. NOISE

The A-weighted sound pressure level at the work point is 79 dB (A).

See ACOUSTIC TEST drawing BRS_4700_4_RUMORE in Chap. 10 "ANNEXES".

A new sound level measurement needs to be done after the machine is put into service.

5.8. TECHNICAL DATA

Find below the technical data sheet of the machine.

SCHEDA DATI TECNICI / TECHNICAL DATA SHEET / TABLE DES DONNÉES TECHNIQUES	
Tipo / Type / Type.	BRS 4/25/FA-120
Numero di serie / Serial no. / Numéro de série.	307L65.414
Larghezza piano di lavoro / Working width / Largeur du plan de travail.	0,640 m
Altezza piano di lavoro / Working height / Hauteur du plan de travail.	0,900 m
Tensione nominale / Voltage rating / Tension nominale.	400 Vac
Numero fasi / No. phases / Nombre de phases.	3
Frequenza / Frequency / Fréquence.	50 Hz
Corrente a pieno carico / Maximum current / Courant maximum.	75 A
Tensione ausiliaria / Auxiliary voltage / Tension auxiliaire.	24 Vac
Schema elettrico / Eletrical schematic / Schéma électrique.	SE1-1378

Pressione pneumatica di funzionamento / Working pneumatic pressure / Pression nominale pneumatique.	500 Kpa PSI
Consumo aria compressa / Compressed air consumption / Consommation en air comprime.	200 nl/1
Schema pneumatico / Pneumatic diagram / Schéma pneumatique.	BRS_4700_SP_4
Pressione idrica massima di alimentazione / Maximum hydraulic feeding pressure / Pression maximum du reseau d'alimentation en eau.	300 Kpa
Pressione idrica massima presente / Maximum hydraulic pressure in the machine / Pression maximum de l'eau en circulation.	10000 Kpa
Consumo idrico / Water consumption / Consommation en eau.	OPEN CIRCUIT l/1'
Schema idrico / Hydraulic diagram / Schéma hydraulique.	BRS_4700_SI_4
Temperatura aria massima presente / Maximum air temperature in the machine / Temperature maximum de l'air circulant.	60 °C °F
Umidità relativa (senza condensa) / Relative humidity (without condensate) / Humidité relative (sans condensat).	10 - 90 %
Rumorosità massima / Maximum noise / Niveau sonore maximum.	79 dB
Velocità massima rulliera / Maximum conveyor speed / Vitesse maximum du convoyeur.(UNI EN ISO 3746)	3 m/1'
Massa macchina / Mass / Poids de la machine.	2620 daN

Further technical data:

MAINS WATER INPUT:	**outer∅ 20 mm**
MAINS WATER DISCHARGE:	**outer∅ 40 mm**
COMPRESSED AIR IN:	**outer∅ 8 mm**
MIN. SPEED:	**m/min. 0.5**
MAX. SPEED:	**m/min. 3**
MINIMUM PLATE THICKNESS:	**mm 0.5**
MAXIMUM PLATE THICKNESS:	**mm 8**
MINIMUM PLATE DIMENSIONS (thickness from 0.5 to 0.8 mm):	**LENGTH 250 mm**
	WIDTH 250 mm
MINIMUM PLATE DIMENSIONS (thickness from 0.8 to 4 mm):	**LENGTH 120 mm**
	WIDTH 50 mm
MINIMUM PLATE DIMENSIONS (thickness from 4 to 8 mm):	**LENGTH 250 mm**
	WIDTH 50 mm

Note = For pieces thicker than 4 mm, the special guide for flexible pieces must be removed.

5.9. STANDARD SUPPLY

The machine is supplied complete with all its parts so that it can be put into service.

As standard, the machine is supplied together with:

- Instruction and Maintenance Manual;
- E.C. Conformity Declaration;
- C.E. marking plate.

5.10. ELECTRICAL INSTALLATION

The electrical installation of the machine complies with the essential requirements set forth in Directive 2014/35/EU and has been tested as specified in the following harmonized standards:

EN 60204-1 Safety of machinery - Electrical equipment of machines.

The Report of the Electrical Safety Test conducted on 17/09/2019 is attached to Chapter 10, "ANNEXES".

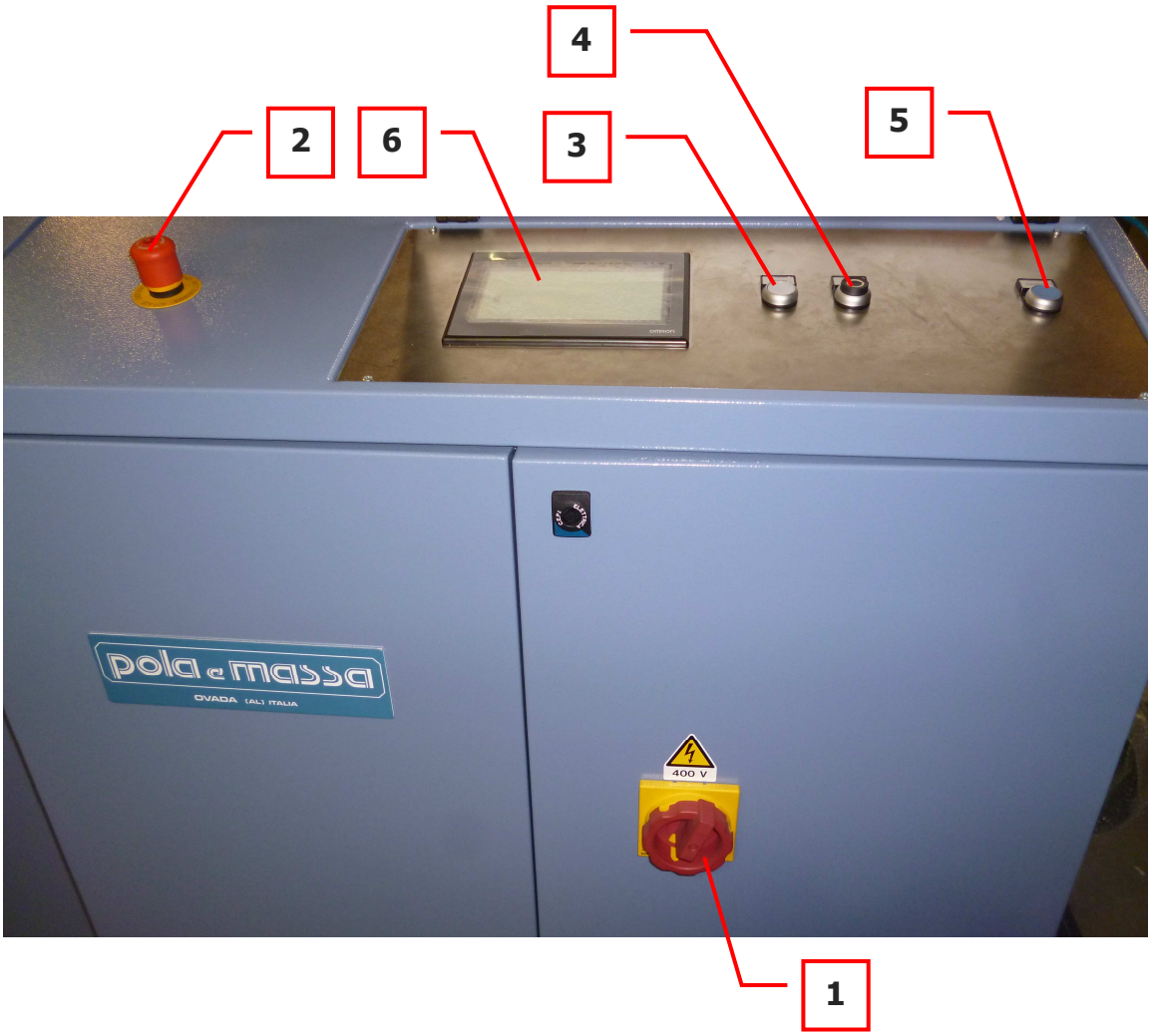
5.11. ELECTROMAGNETIC ENVIRONMENT

The machine has been designed and built to operate properly in an industrial electromagnetic environment; its Emission and Immunity limits fall within the requirements of the following Harmonized Standards:

EN 61000-6-2	Electromagnetic Compatibility (EMC) Generic standards – Immunity for industrial environments.
EN 61000-3-2 e/o 61000-3-12	Electromagnetic Compatibility (EMC) Generic standards – Limits for harmonic current emissions.
EN 61000-3-3 e/o 61000-3-11	Electromagnetic Compatibility (EMC) Generic standards – Limits – Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems.
CEI EN 61000-6-4	Electromagnetic Compatibility (EMC) Generic standards – Emission standards for industrial environments.

6. USE OF MACHINE

6.1. CONTROL PANEL



1) Main switch:
    - Turn to «1» to power the machine;
    - Turn to «0» to cut off power to the machine.
2) Red mushroom-head push-button:
    - Press to lock the machine;
    - Turn anticlockwise to unlock the machine.
3) «START» push-button:

    Press to start the machine.
4) «STOP» button:

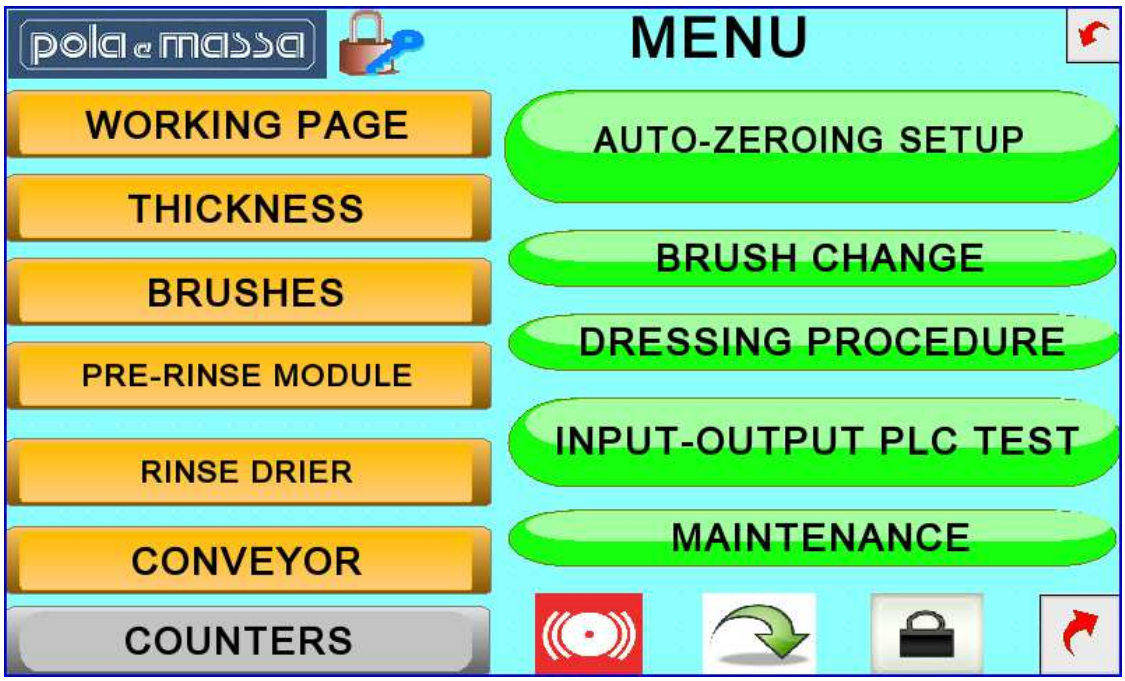
    Press to stop the machine.
5) Blue «RESET» push-button:

    Press to reset after an emergency.
6) Video panel.

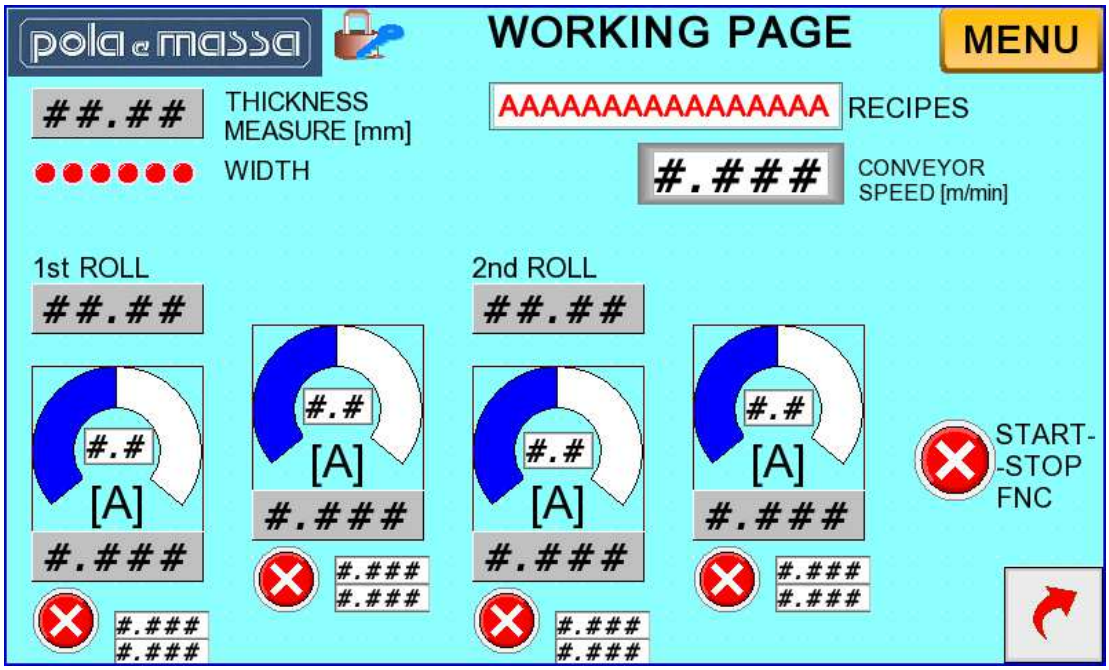
CONTROL PANEL

General information on the menu:
Push on “menu” to switch to the main menu page
Pushing the flashing arrow at the right bottom of the page it will be switched sequentially from page to page

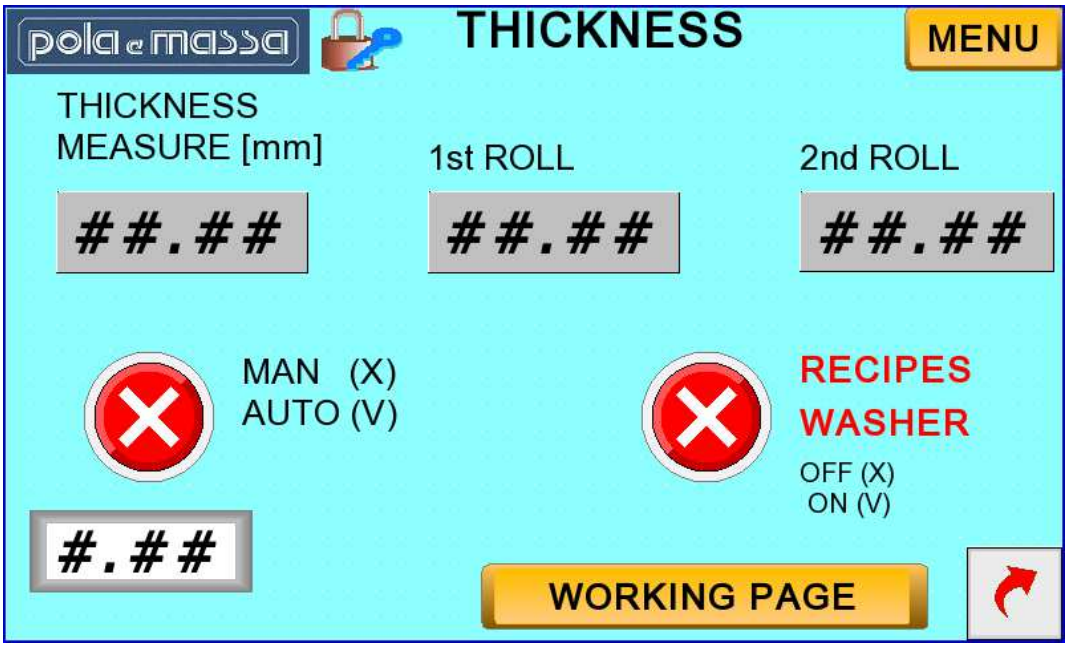
The man-machine interface use is a “TOUCH-SCREEN” model. In fact, it is possible to control the functions of the machine without using any buttons or function keys but simply by pressing a finger on the part of the screen where you want to intervene.
Here below we are listing, screen by screen, some characteristics and the various keys that the Operator has to press to access the other screens or to alter particular conditions.



Some functions are not allowed during some states of operations.
For example, AUTOZERO, dressing, brush change and all password-protected pages are not accessible if the machine works.
In order to activate the above mentioned special procedures, it necessary to stop the machine (stop).

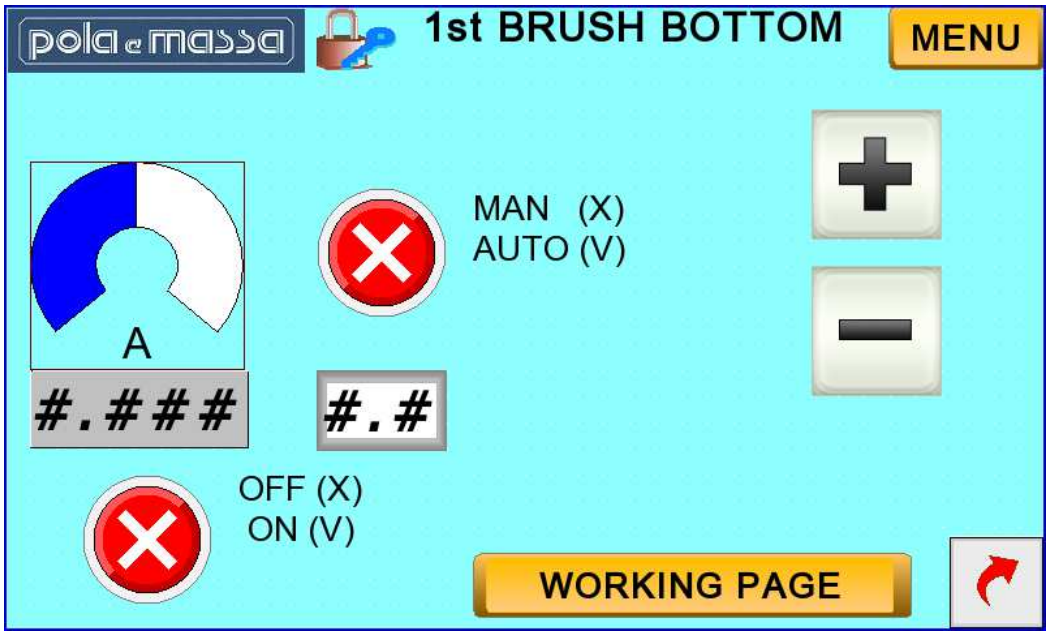


In this page the operator may control the overall operations of the machine, change conveyor speed and set working pressure of each brush.



If you set the AUTO function, it means that, by reading the pieces that enter in the inlet, the machine adjusts the brushes and the upper counter-rollers automatically. Unless thickness difference among the first plates and the following ones is too much high that the operator must release the joint in the inlet conveyor, wait for plates coming out from the machine, set the brushes and the upper counter-rollers to the new quote and return the joint to its proper position. This operation is subject to the thickness difference of the pieces and conveyor speed.

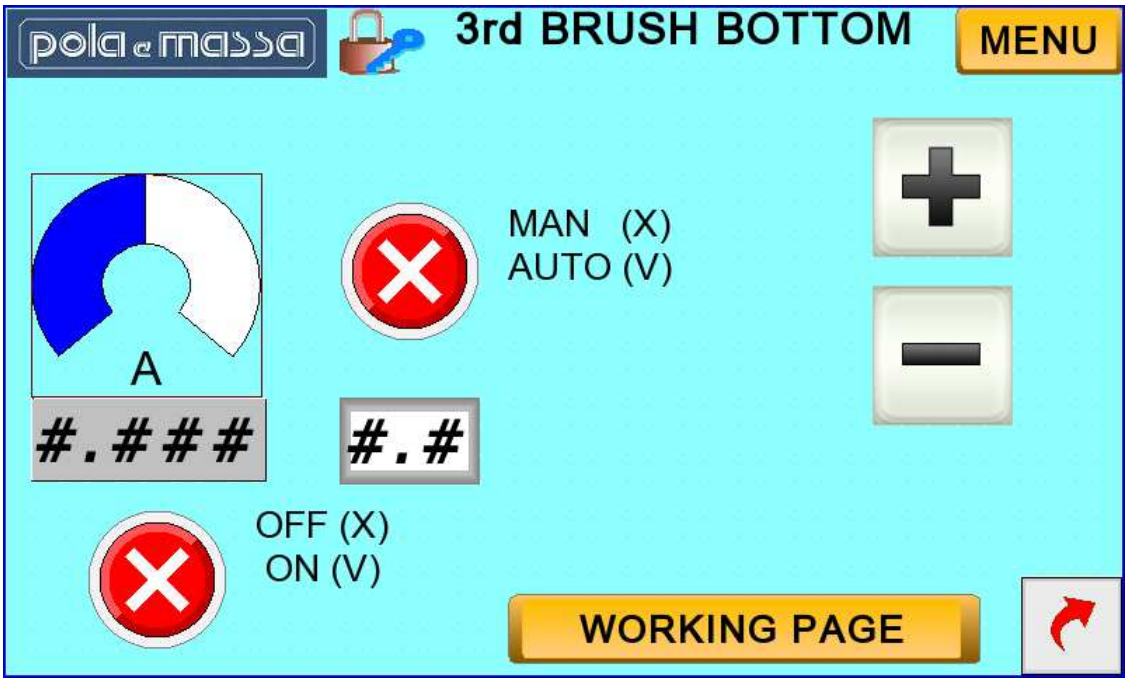
If you set the "MAN" function, it means that the upper counter-rollers will position to the quote set in the proper field (press "ENTER" to confirm).



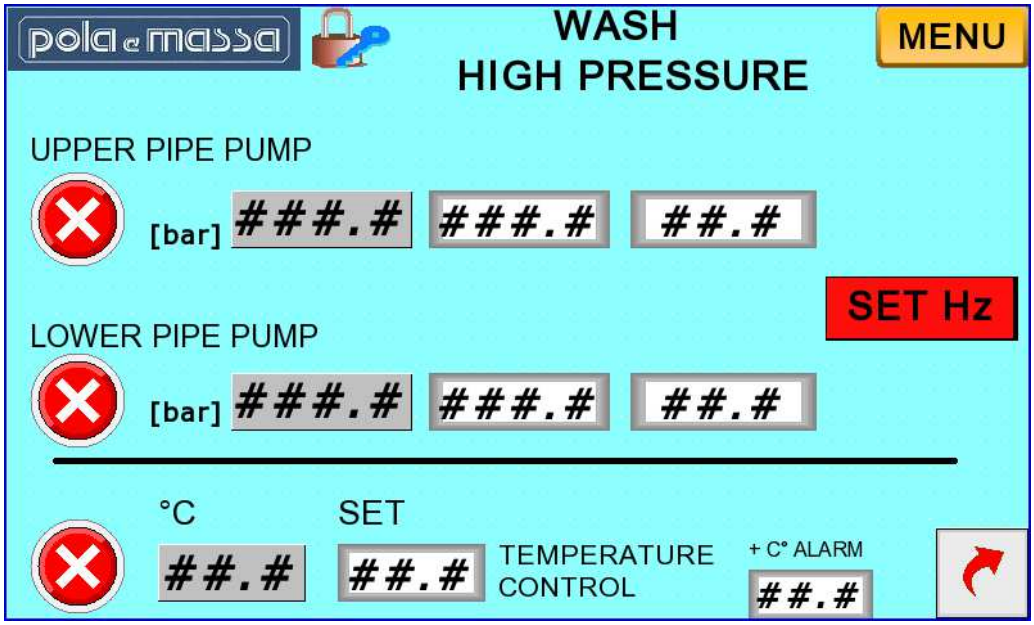
If pressure control is set to "AUTO", thanks to the inlet sensors and brush current reading system, the machine waits for the plate and positions by means of the abrasion coefficient that can change from 0.5 to 2.

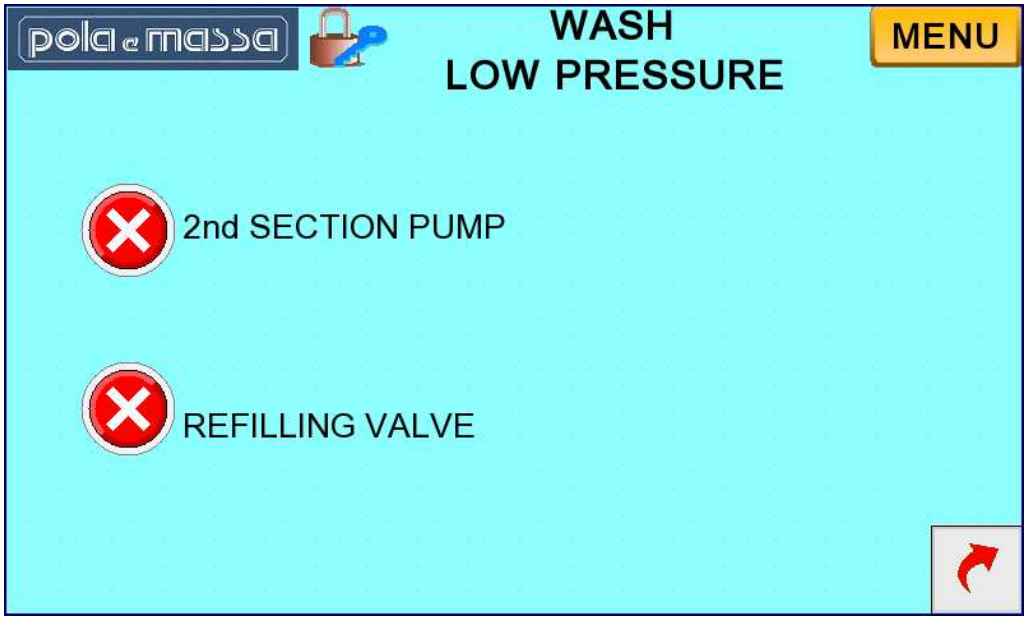
If pressure control is set to "MAN", it's necessary to adjust brushes position with the keys "+A" and "-A". Please consider that amperage variation can be obtained if the plates are placed between the brushes and the counter-rollers only.

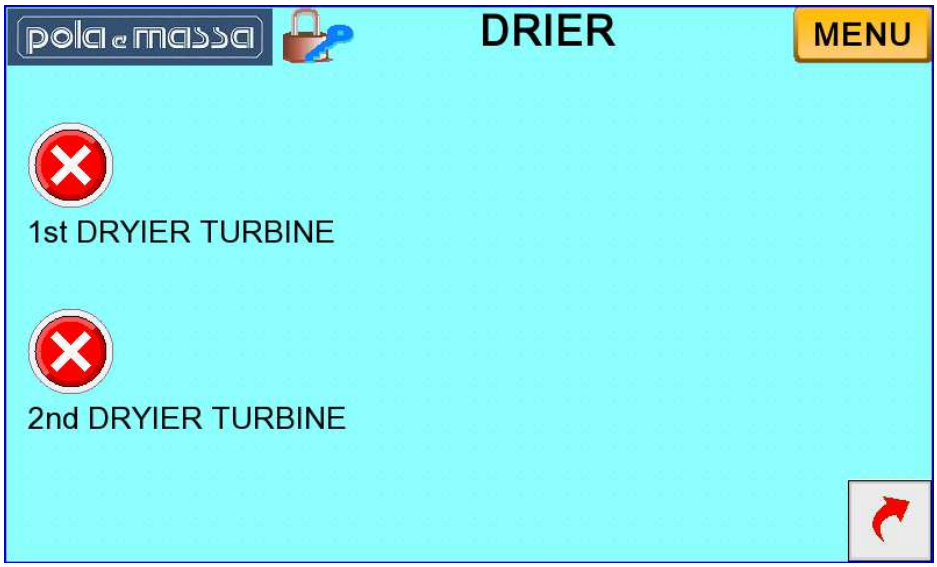

pola e massa
2nd BRUSH TOP
MENU
A
#.###
MAN (X)
AUTO (V)
#.#
OFF (X)
ON (V)
WORKING PAGE


pola e massa
3rd BRUSH BOTTOM
MENU
A
#.###
MAN (X)
AUTO (V)
#.#
OFF (X)
ON (V)
WORKING PAGE

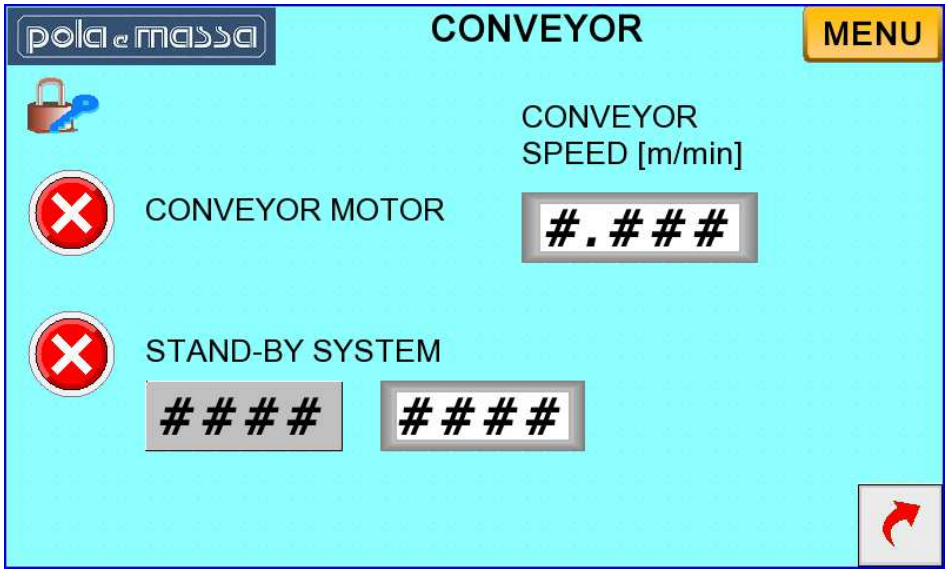

pola e massa
4th BRUSH TOP
MENU
MAN (X)
AUTO (V)
A
#.###
#.#
OFF (X)
ON (V)
WORKING PAGE

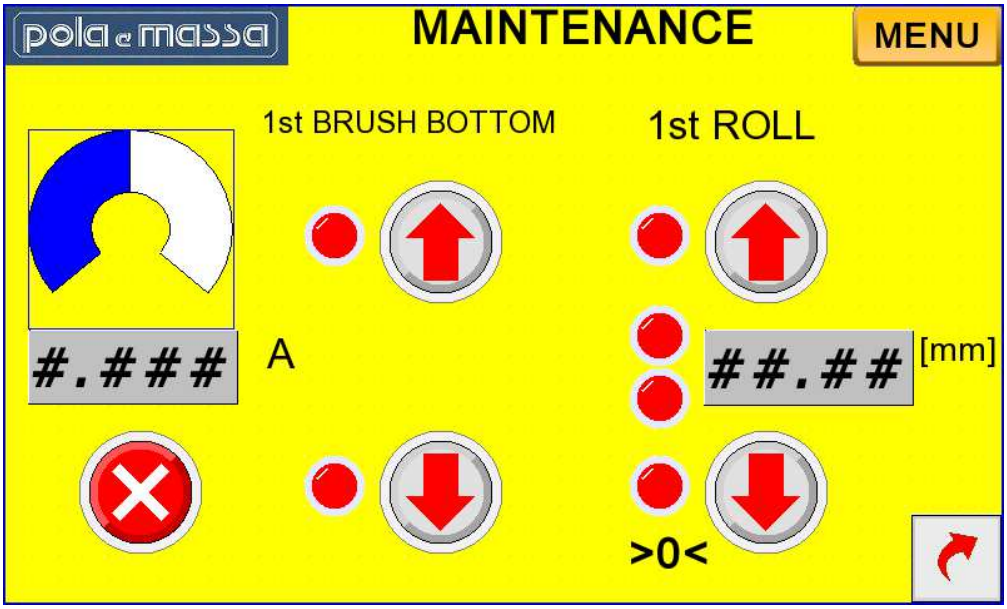

pola e massa
WASH
HIGH PRESSURE
MENU
UPPER PIPE PUMP
[bar]
###.#
###.#
##.#
SET Hz
LOWER PIPE PUMP
[bar]
###.#
###.#
##.#
°C
SET
##.#
##.#
TEMPERATURE
CONTROL
+ C° ALARM
##.#


pola e massa
WASH
LOW PRESSURE
MENU
2nd SECTION PUMP
REFILLING VALVE

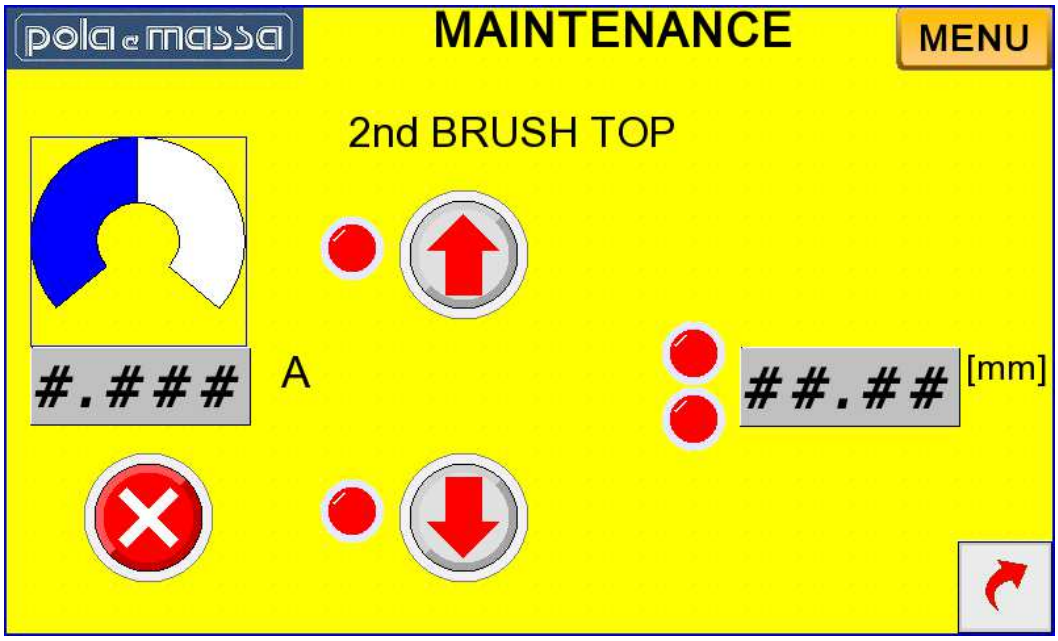

pola e massa
DRIER
MENU
1st DRYIER TURBINE
2nd DRYIER TURBINE

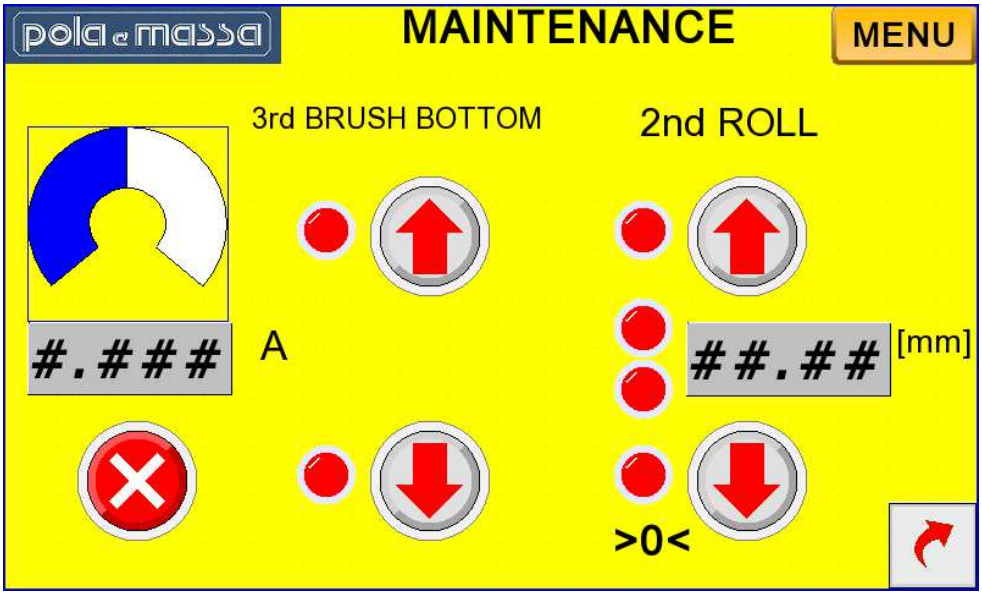

pola e massa
MENU
ENTRY 2 WAY DIVERTER
ENTRY 3 WAY DIVERTER
EXIT CENTERING DEVICE

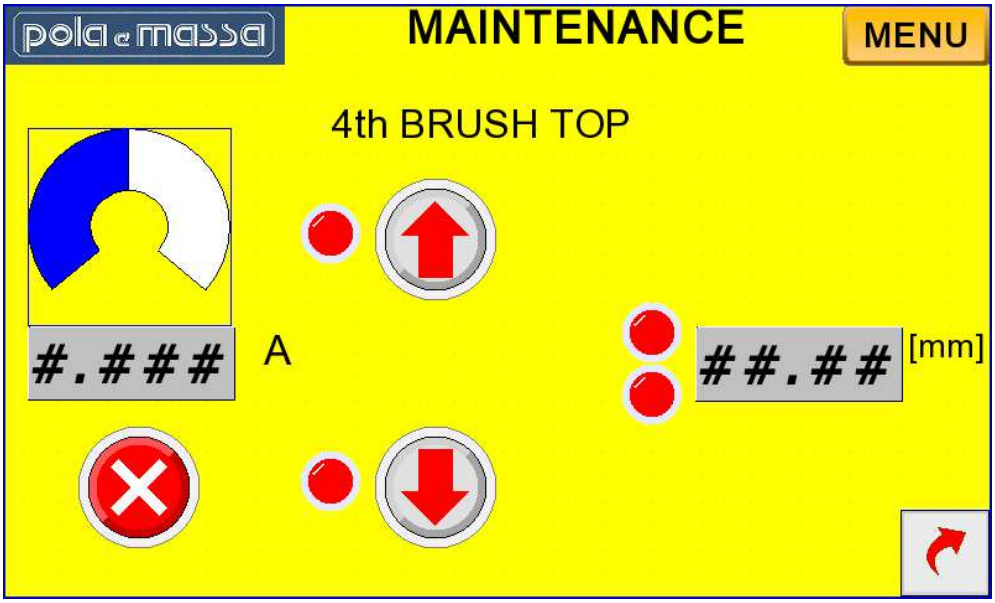

pola e massa
CONVEYOR
MENU
CONVEYOR
SPEED [m/min]
CONVEYOR MOTOR
#.###
STAND-BY SYSTEM
####
####

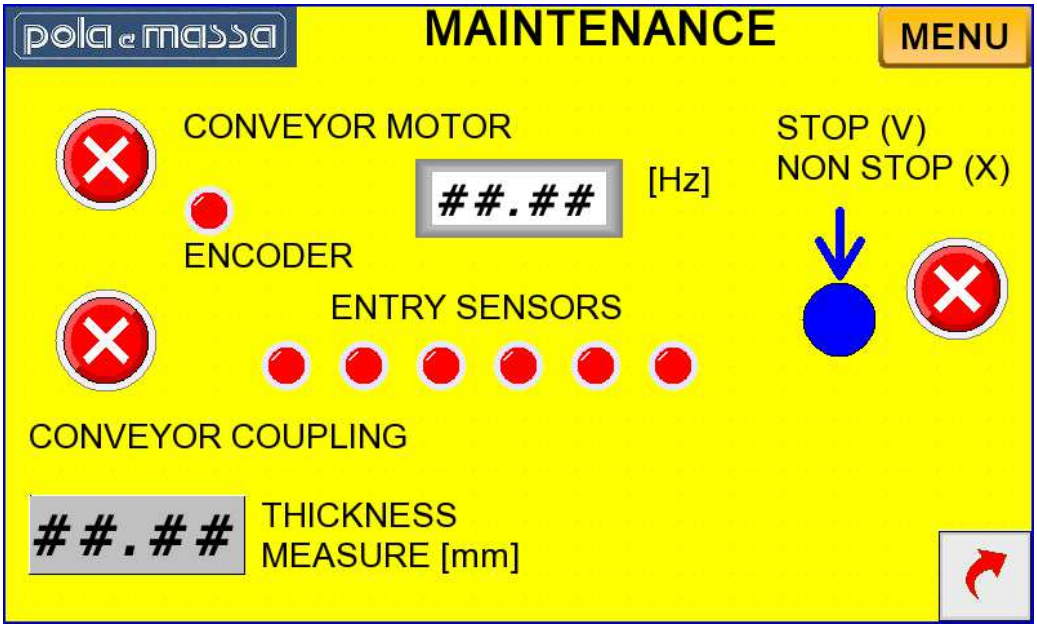


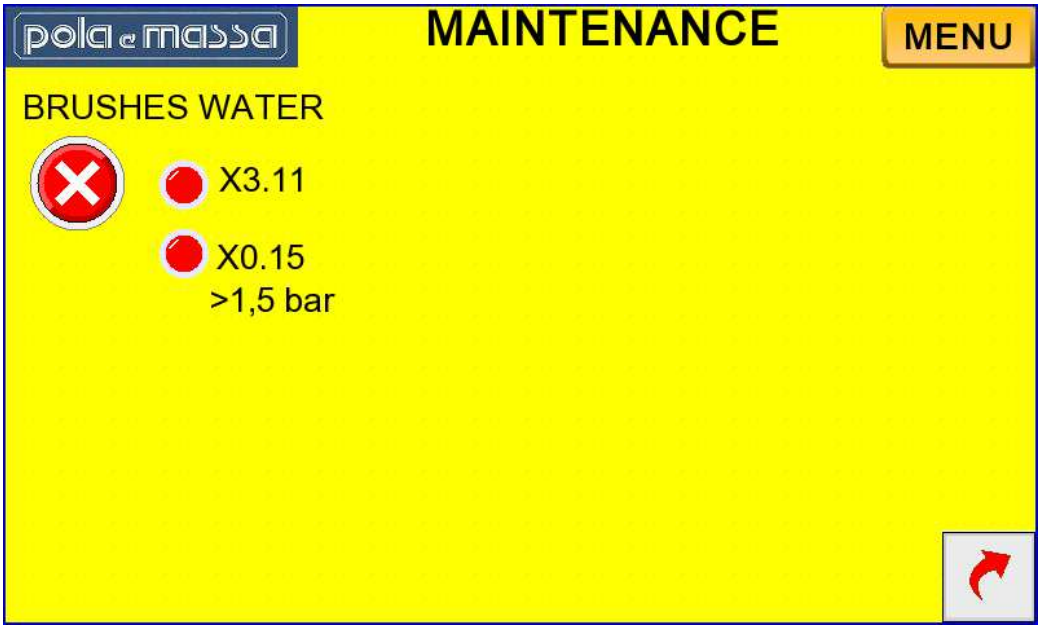
In this page you can verify the operations of each use.

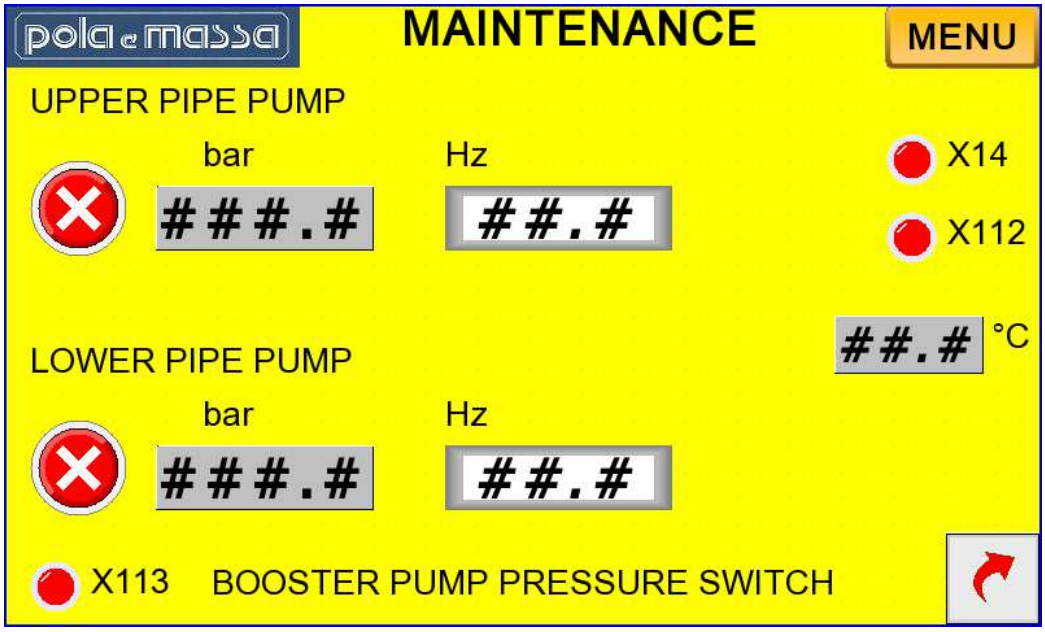

pola e massa
MAINTENANCE
MENU
2nd BRUSH TOP
#.###
A
##.##
[mm]

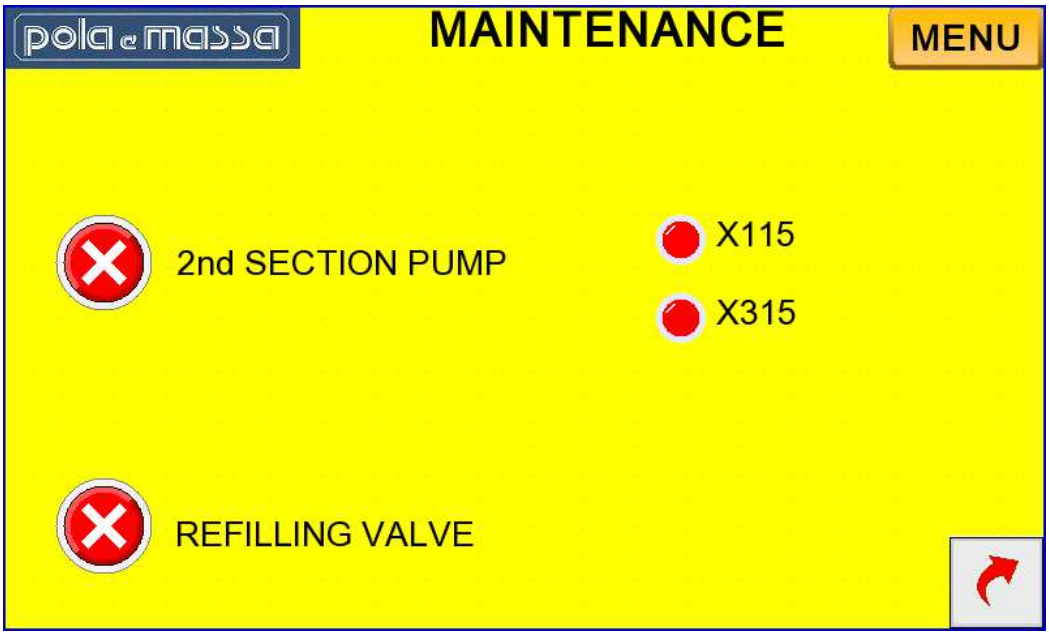

pola e massa
MAINTENANCE
MENU
3rd BRUSH BOTTOM
2nd ROLL
#.###
A
##.##
[mm]
>0<

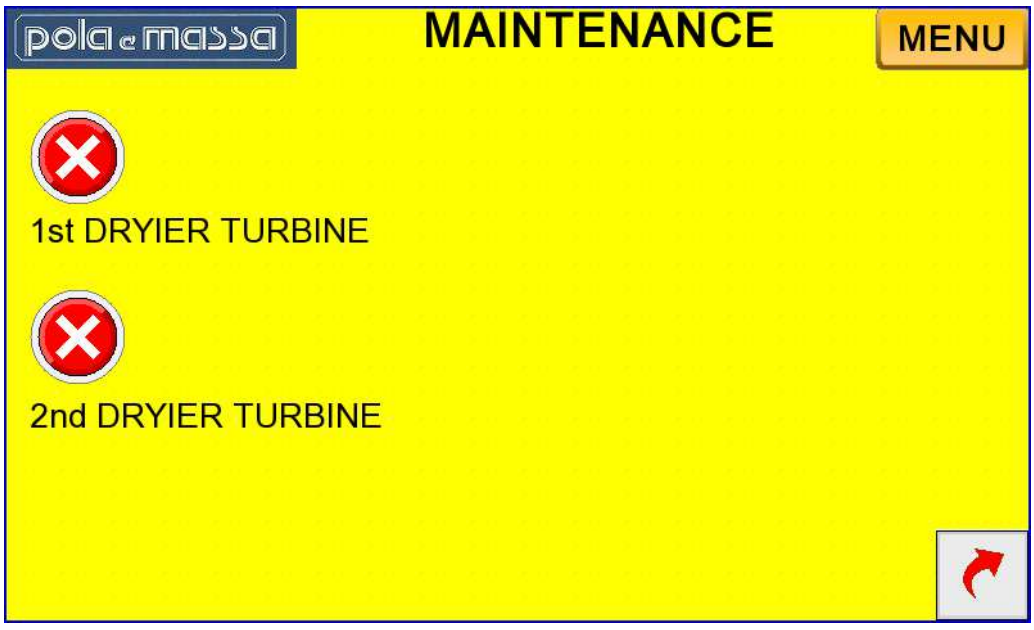

pola e massa
MAINTENANCE
MENU
4th BRUSH TOP
#.###
A
##.##
[mm]


pola e massa
MAINTENANCE
MENU
CONVEYOR MOTOR
##.##
[Hz]
STOP (V)
NON STOP (X)
ENCODER
ENTRY SENSORS
CONVEYOR COUPLING
##.##
THICKNESS
MEASURE [mm]


pola e massa
MAINTENANCE
MENU
BRUSHES WATER
X3.11
X0.15
>1,5 bar


pola e massa
MAINTENANCE
MENU
UPPER PIPE PUMP
bar
Hz
###.#
##.#
X14
X112
##.#
°C
LOWER PIPE PUMP
bar
Hz
###.#
##.#
X113
BOOSTER PUMP PRESSURE SWITCH

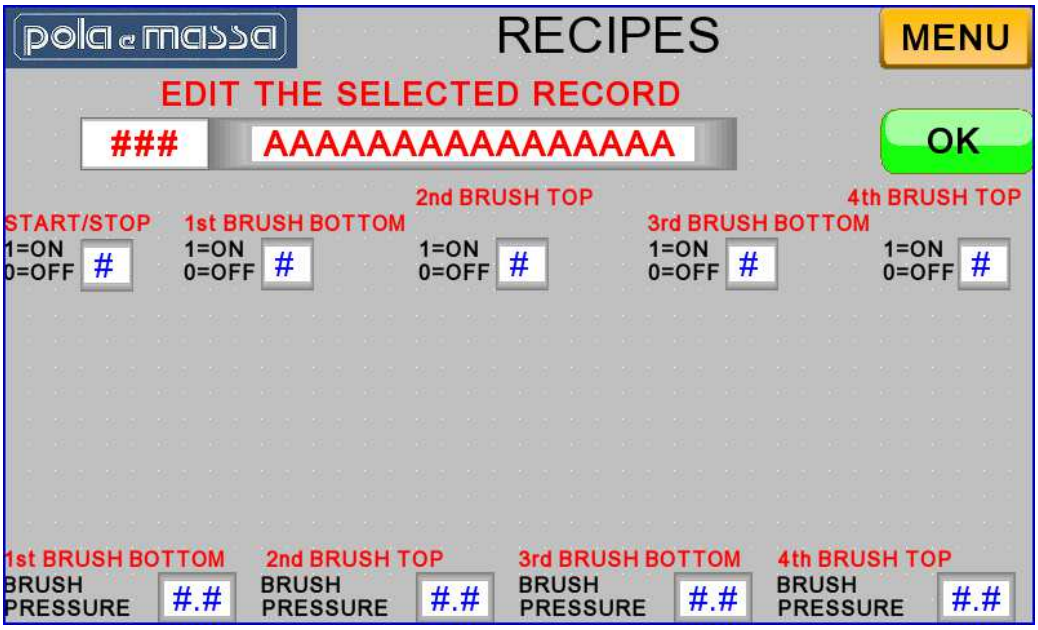

pola e massa
MAINTENANCE
MENU
2nd SECTION PUMP
X115
X315
REFILLING VALVE

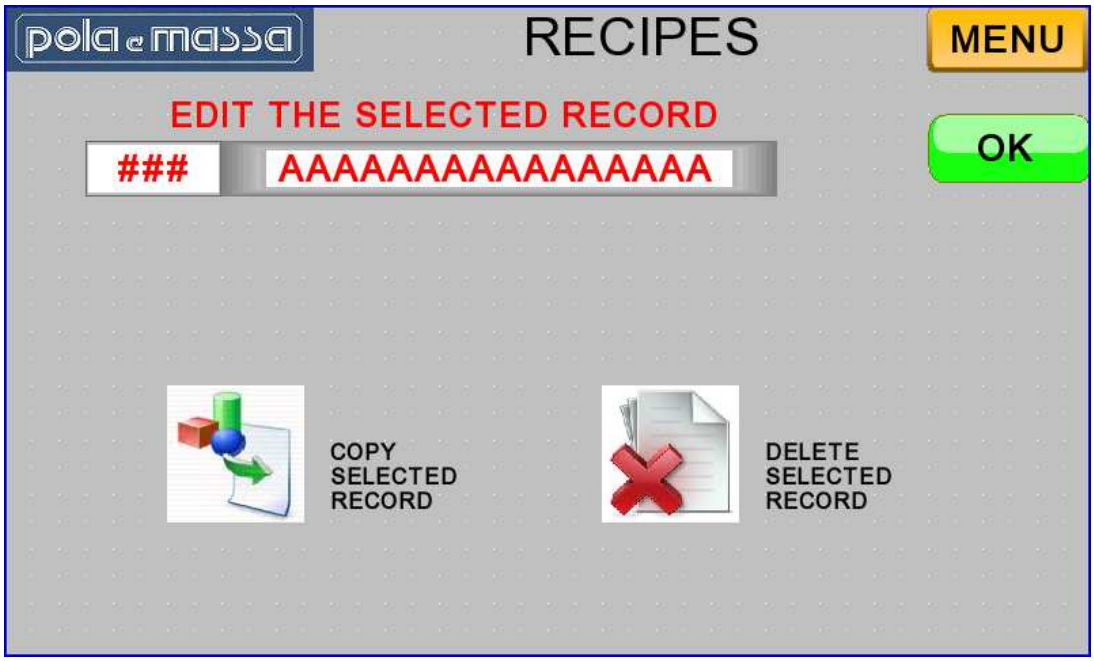

pola e massa
MAINTENANCE
MENU
1st DRYIER TURBINE
2nd DRYIER TURBINE


RECIPES
INTRODUCE THE PASSWORD CODE
****
MENU
OK

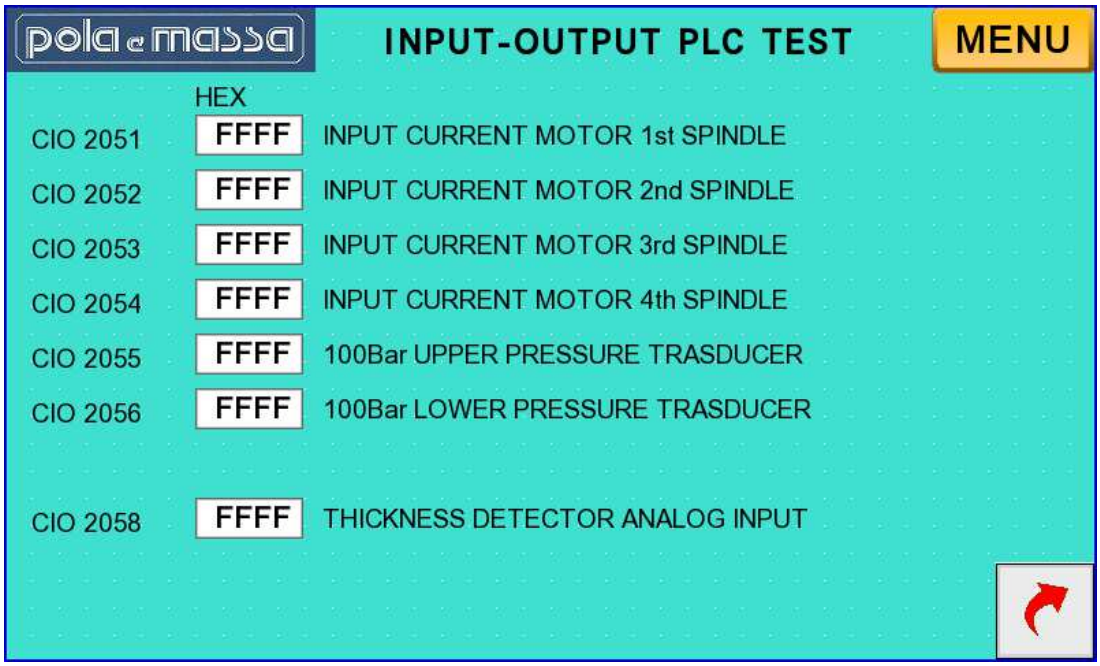

pola e massa
RECIPES
MENU
###
AAAAAAAAAAAAAAAA
SELECTED RECORD
GO TO FIRST RECORD
MODIFY SELECTED RECORD
JUMP TO RECORD
###
GO TO LAST RECORD
DOWNLOAD

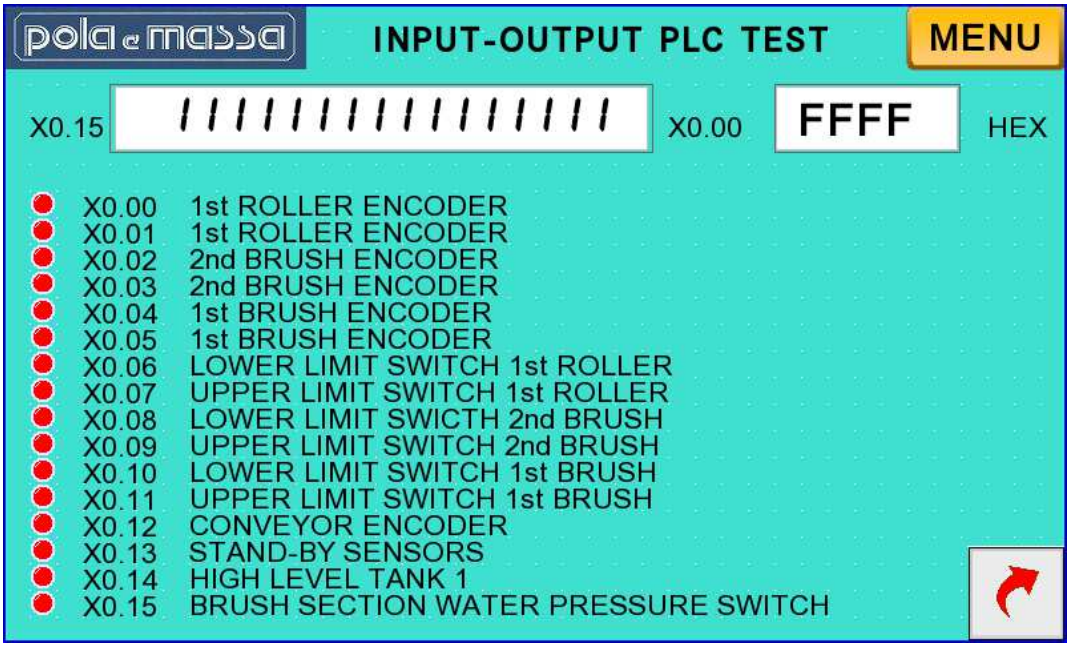

pola e massa
RECIPES
MENU
EDIT THE SELECTED RECORD
###
AAAAAAAAAAAAAAAA
OK
HIGH PRESSURE WASHER
1=ON 0=OFF #
Hz ##.#
Bar ###.#
2nd SECTION PUMP WASHER
1=ON 0=OFF #
ENTRY 2 WAY DIVERTER
1=ON 0=OFF #
ENTRY 3 WAY DIVERTER
1=ON 0=OFF #
EXIT CENTERING DEVICE
1=ON 0=OFF #
1=ON 0=OFF #
Hz ##.#
Bar ###.#
CONVEYOR
[m/min] #.### SPEED
WASHER RECIPES
1=ON 0=OFF #
[DM=10100+RWI, @ RWI 0-49]

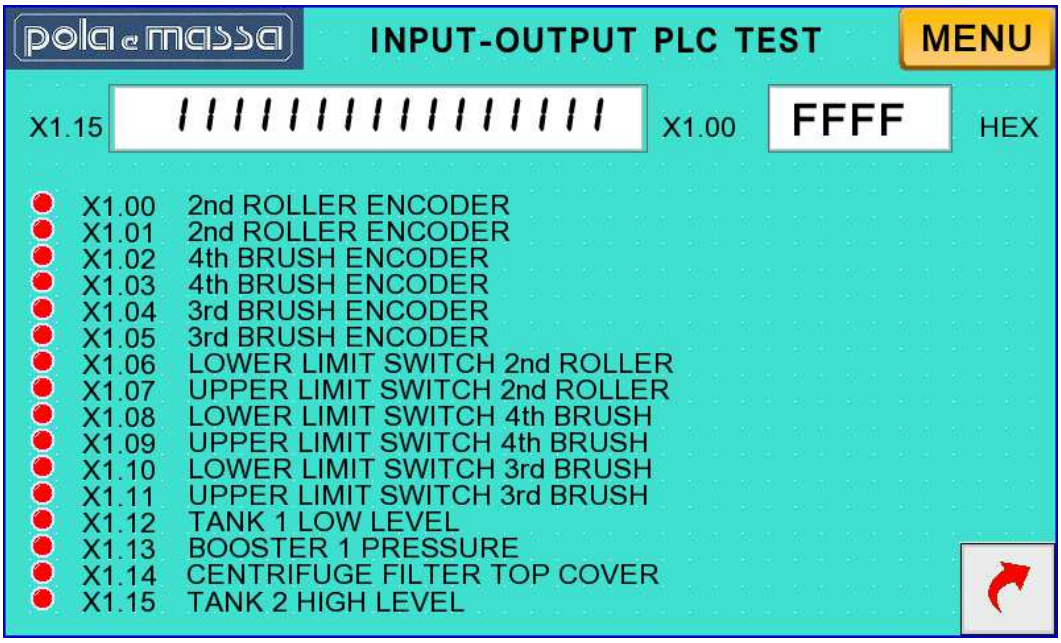

pola e massa
RECIPES
MENU
EDIT THE SELECTED RECORD
###
AAAAAAAAAAAAAAAA
OK
START/STOP
1=ON 0=OFF #
1st BRUSH BOTTOM
1=ON 0=OFF #
2nd BRUSH TOP
1=ON 0=OFF #
3rd BRUSH BOTTOM
1=ON 0=OFF #
4th BRUSH TOP
1=ON 0=OFF #
1st BRUSH BOTTOM BRUSH PRESSURE #.#
2nd BRUSH TOP BRUSH PRESSURE #.#
3rd BRUSH BOTTOM BRUSH PRESSURE #.#
4th BRUSH TOP BRUSH PRESSURE #.#

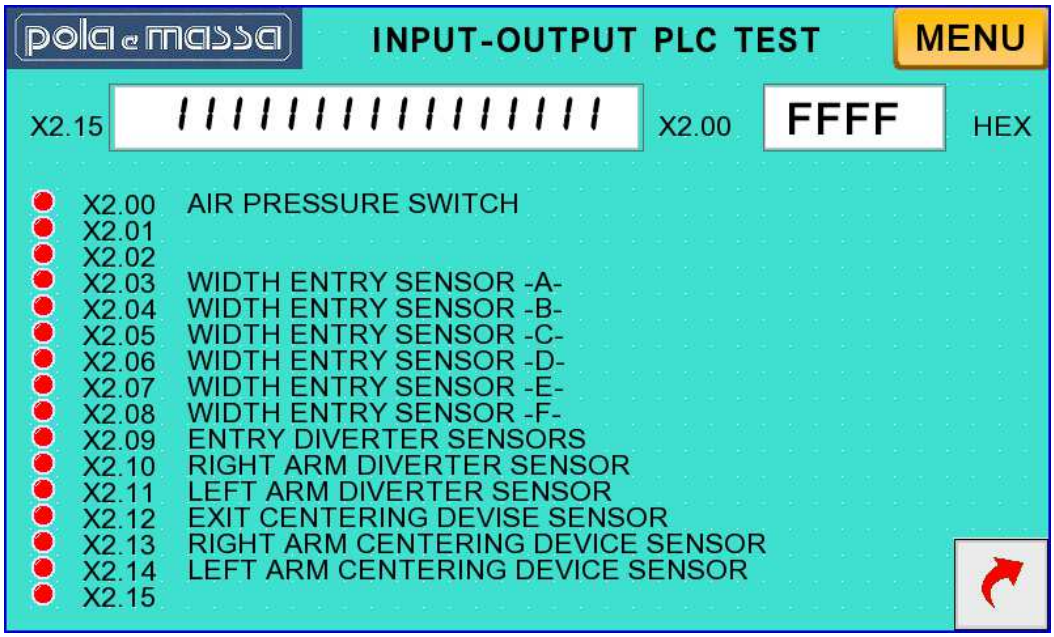

pola e massa
RECIPES
MENU
EDIT THE SELECTED RECORD
###
AAAAAAAAAAAAAAA
OK
COPY
SELECTED
RECORD
DELETE
SELECTED
RECORD

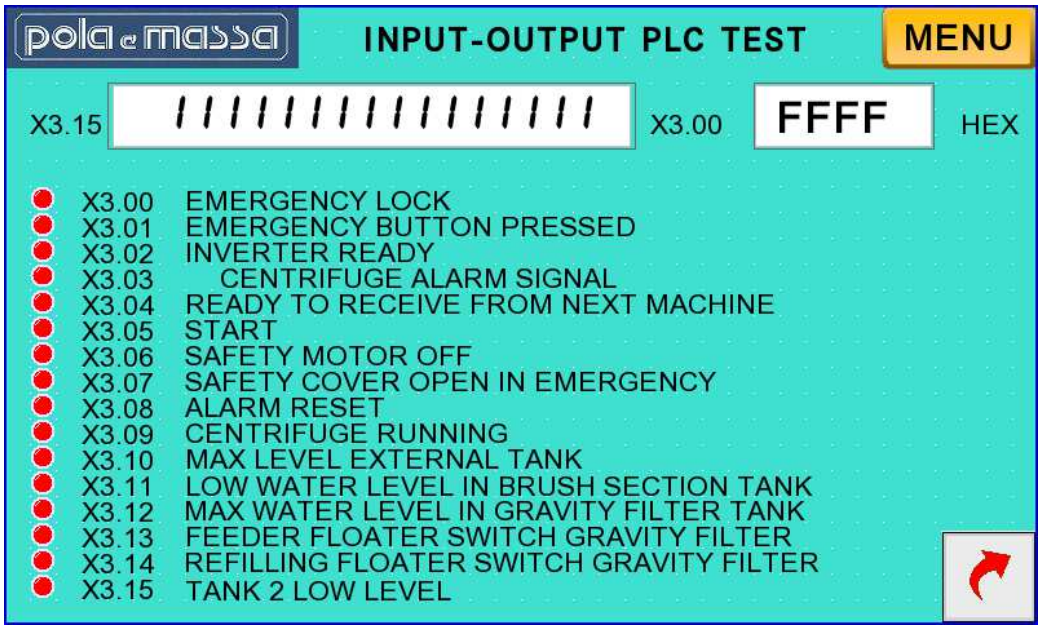

pola e massa
RECIPES
MENU
OK
SELECTED
RECORD:
###
AAAAAAAAAAAAAAA
DOWNLOAD TO PLC

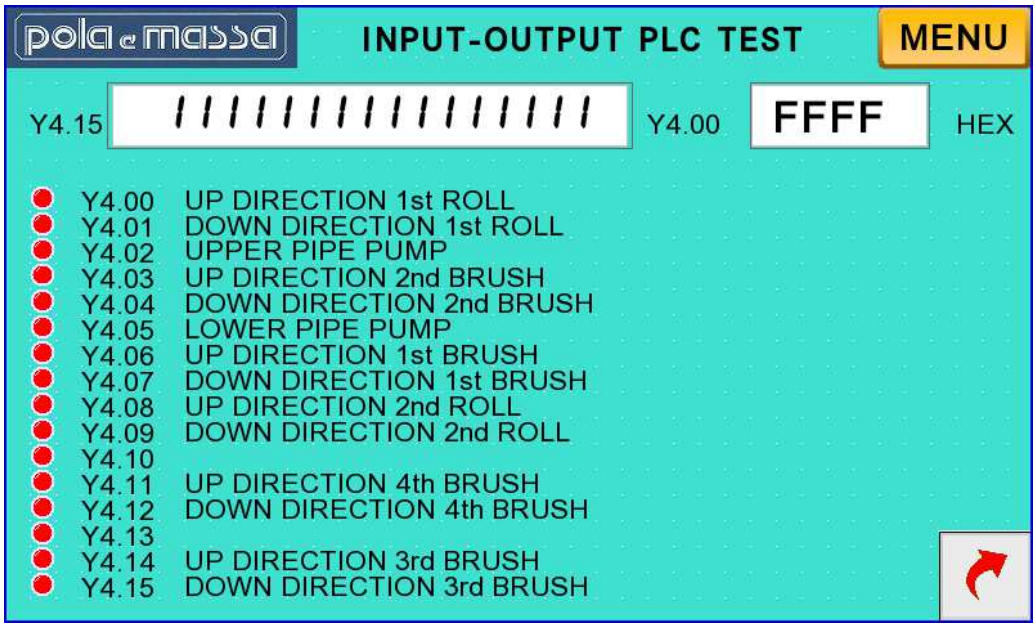

pola e massa
INPUT-OUTPUT PLC TEST
MENU
HEX
CIO 2051 FFFF INPUT CURRENT MOTOR 1st SPINDLE
CIO 2052 FFFF INPUT CURRENT MOTOR 2nd SPINDLE
CIO 2053 FFFF INPUT CURRENT MOTOR 3rd SPINDLE
CIO 2054 FFFF INPUT CURRENT MOTOR 4th SPINDLE
CIO 2055 FFFF 100Bar UPPER PRESSURE TRASDUCER
CIO 2056 FFFF 100Bar LOWER PRESSURE TRASDUCER
CIO 2058 FFFF THICKNESS DETECTOR ANALOG INPUT

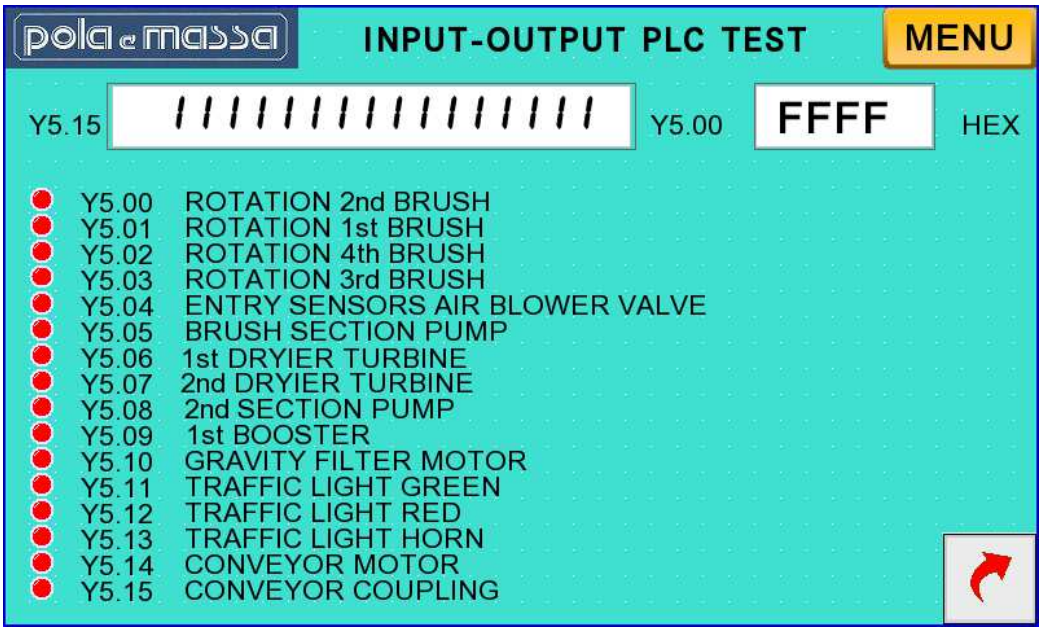

pola e massa
INPUT-OUTPUT PLC TEST
MENU
X0.15
1111111111111111
X0.00
FFFF
HEX
X0.00 1st ROLLER ENCODER
X0.01 1st ROLLER ENCODER
X0.02 2nd BRUSH ENCODER
X0.03 2nd BRUSH ENCODER
X0.04 1st BRUSH ENCODER
X0.05 1st BRUSH ENCODER
X0.06 LOWER LIMIT SWITCH 1st ROLLER
X0.07 UPPER LIMIT SWITCH 1st ROLLER
X0.08 LOWER LIMIT SWICTH 2nd BRUSH
X0.09 UPPER LIMIT SWITCH 2nd BRUSH
X0.10 LOWER LIMIT SWITCH 1st BRUSH
X0.11 UPPER LIMIT SWITCH 1st BRUSH
X0.12 CONVEYOR ENCODER
X0.13 STAND-BY SENSORS
X0.14 HIGH LEVEL TANK 1
X0.15 BRUSH SECTION WATER PRESSURE SWITCH

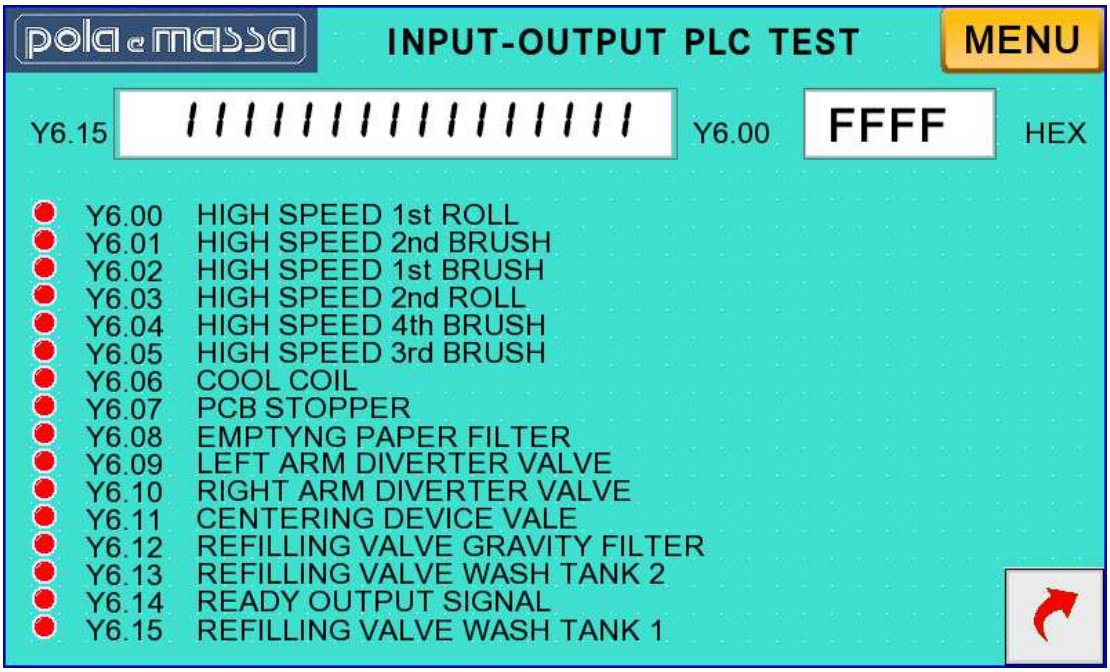

pola e massa
INPUT-OUTPUT PLC TEST
MENU
X1.15
X1.00
FFFF
HEX
X1.00 2nd ROLLER ENCODER
X1.01 2nd ROLLER ENCODER
X1.02 4th BRUSH ENCODER
X1.03 4th BRUSH ENCODER
X1.04 3rd BRUSH ENCODER
X1.05 3rd BRUSH ENCODER
X1.06 LOWER LIMIT SWITCH 2nd ROLLER
X1.07 UPPER LIMIT SWITCH 2nd ROLLER
X1.08 LOWER LIMIT SWITCH 4th BRUSH
X1.09 UPPER LIMIT SWITCH 4th BRUSH
X1.10 LOWER LIMIT SWITCH 3rd BRUSH
X1.11 UPPER LIMIT SWITCH 3rd BRUSH
X1.12 TANK 1 LOW LEVEL
X1.13 BOOSTER 1 PRESSURE
X1.14 CENTRIFUGE FILTER TOP COVER
X1.15 TANK 2 HIGH LEVEL

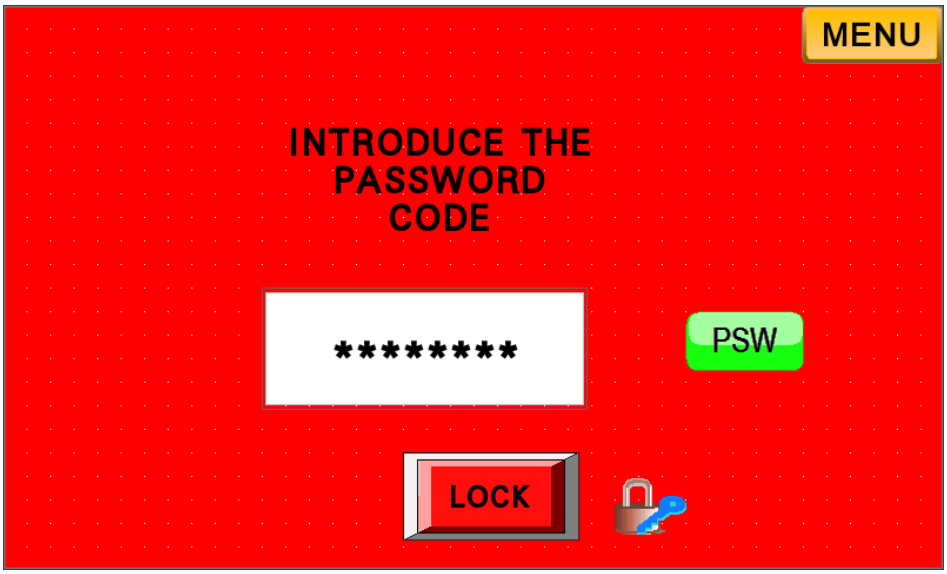

pola e massa
INPUT-OUTPUT PLC TEST
MENU
X2.15
X2.00
FFFF
HEX
X2.00 AIR PRESSURE SWITCH
X2.01
X2.02
X2.03 WIDTH ENTRY SENSOR -A-
X2.04 WIDTH ENTRY SENSOR -B-
X2.05 WIDTH ENTRY SENSOR -C-
X2.06 WIDTH ENTRY SENSOR -D-
X2.07 WIDTH ENTRY SENSOR -E-
X2.08 WIDTH ENTRY SENSOR -F-
X2.09 ENTRY DIVERTER SENSORS
X2.10 RIGHT ARM DIVERTER SENSOR
X2.11 LEFT ARM DIVERTER SENSOR
X2.12 EXIT CENTERING DEVISE SENSOR
X2.13 RIGHT ARM CENTERING DEVICE SENSOR
X2.14 LEFT ARM CENTERING DEVICE SENSOR
X2.15


pola e massa
INPUT-OUTPUT PLC TEST
MENU
X3.15
X3.00
FFFF
HEX
X3.00 EMERGENCY LOCK
X3.01 EMERGENCY BUTTON PRESSED
X3.02 INVERTER READY
X3.03 CENTRIFUGE ALARM SIGNAL
X3.04 READY TO RECEIVE FROM NEXT MACHINE
X3.05 START
X3.06 SAFETY MOTOR OFF
X3.07 SAFETY COVER OPEN IN EMERGENCY
X3.08 ALARM RESET
X3.09 CENTRIFUGE RUNNING
X3.10 MAX LEVEL EXTERNAL TANK
X3.11 LOW WATER LEVEL IN BRUSH SECTION TANK
X3.12 MAX WATER LEVEL IN GRAVITY FILTER TANK
X3.13 FEEDER FLOATER SWITCH GRAVITY FILTER
X3.14 REFILLING FLOATER SWITCH GRAVITY FILTER
X3.15 TANK 2 LOW LEVEL


pola e massa
INPUT-OUTPUT PLC TEST
MENU
Y4.15
Y4.00
FFFF
HEX
Y4.00 UP DIRECTION 1st ROLL
Y4.01 DOWN DIRECTION 1st ROLL
Y4.02 UPPER PIPE PUMP
Y4.03 UP DIRECTION 2nd BRUSH
Y4.04 DOWN DIRECTION 2nd BRUSH
Y4.05 LOWER PIPE PUMP
Y4.06 UP DIRECTION 1st BRUSH
Y4.07 DOWN DIRECTION 1st BRUSH
Y4.08 UP DIRECTION 2nd ROLL
Y4.09 DOWN DIRECTION 2nd ROLL
Y4.10
Y4.11 UP DIRECTION 4th BRUSH
Y4.12 DOWN DIRECTION 4th BRUSH
Y4.13
Y4.14 UP DIRECTION 3rd BRUSH
Y4.15 DOWN DIRECTION 3rd BRUSH

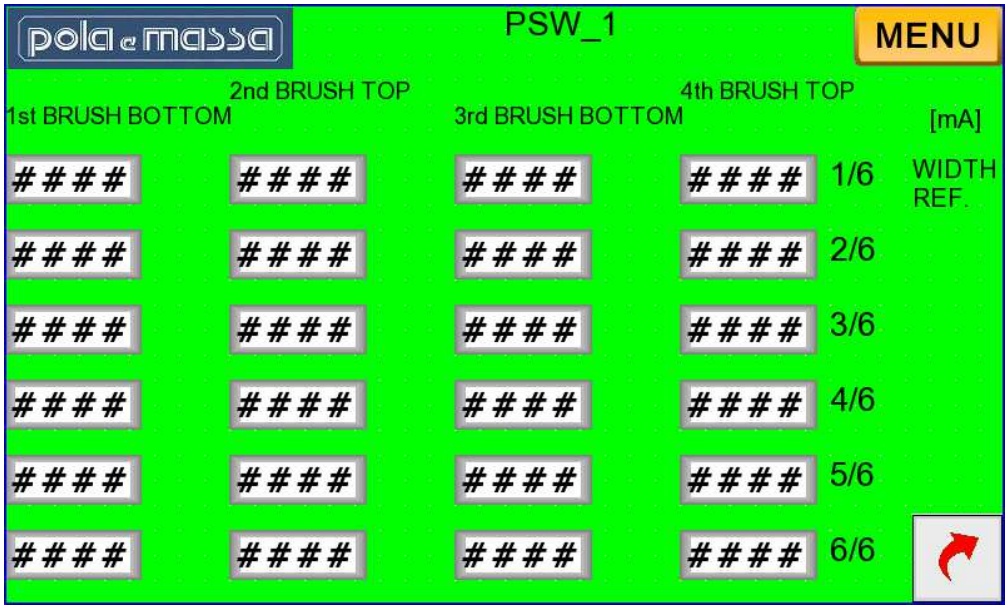

pola e massa
INPUT-OUTPUT PLC TEST
MENU
Y5.15
Y5.00
FFFF
HEX
Y5.00 ROTATION 2nd BRUSH
Y5.01 ROTATION 1st BRUSH
Y5.02 ROTATION 4th BRUSH
Y5.03 ROTATION 3rd BRUSH
Y5.04 ENTRY SENSORS AIR BLOWER VALVE
Y5.05 BRUSH SECTION PUMP
Y5.06 1st DRYIER TURBINE
Y5.07 2nd DRYIER TURBINE
Y5.08 2nd SECTION PUMP
Y5.09 1st BOOSTER
Y5.10 GRAVITY FILTER MOTOR
Y5.11 TRAFFIC LIGHT GREEN
Y5.12 TRAFFIC LIGHT RED
Y5.13 TRAFFIC LIGHT HORN
Y5.14 CONVEYOR MOTOR
Y5.15 CONVEYOR COUPLING

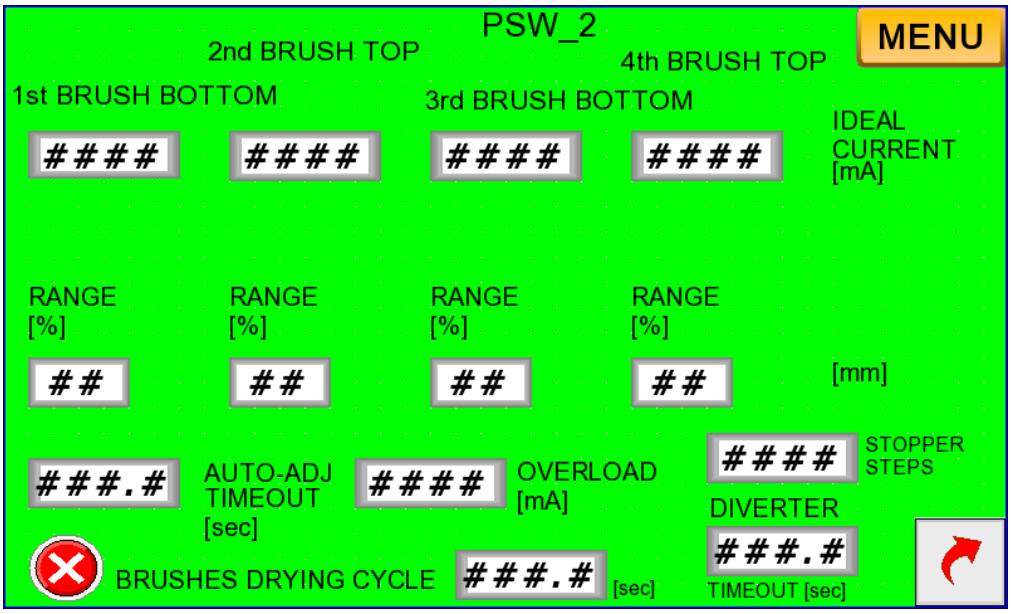

pola e massa
INPUT-OUTPUT PLC TEST
MENU
Y6.15
Y6.00
FFFF
HEX
Y6.00 HIGH SPEED 1st ROLL
Y6.01 HIGH SPEED 2nd BRUSH
Y6.02 HIGH SPEED 1st BRUSH
Y6.03 HIGH SPEED 2nd ROLL
Y6.04 HIGH SPEED 4th BRUSH
Y6.05 HIGH SPEED 3rd BRUSH
Y6.06 COOL COIL
Y6.07 PCB STOPPER
Y6.08 EMPTYNG PAPER FILTER
Y6.09 LEFT ARM DIVERTER VALVE
Y6.10 RIGHT ARM DIVERTER VALVE
Y6.11 CENTERING DEVICE VALE
Y6.12 REFILLING VALVE GRAVITY FILTER
Y6.13 REFILLING VALVE WASH TANK 2
Y6.14 READY OUTPUT SIGNAL
Y6.15 REFILLING VALVE WASH TANK 1

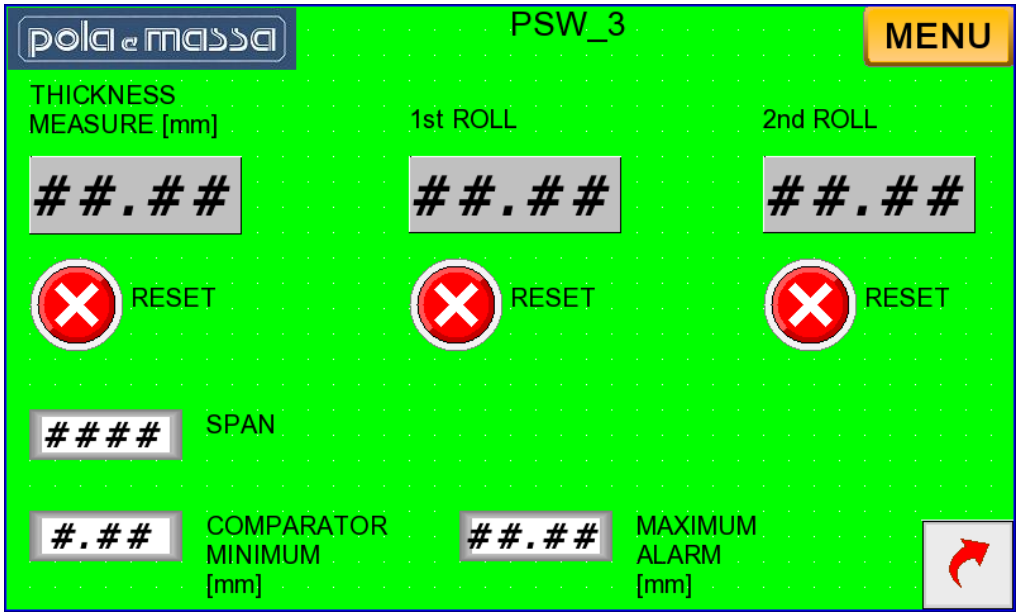


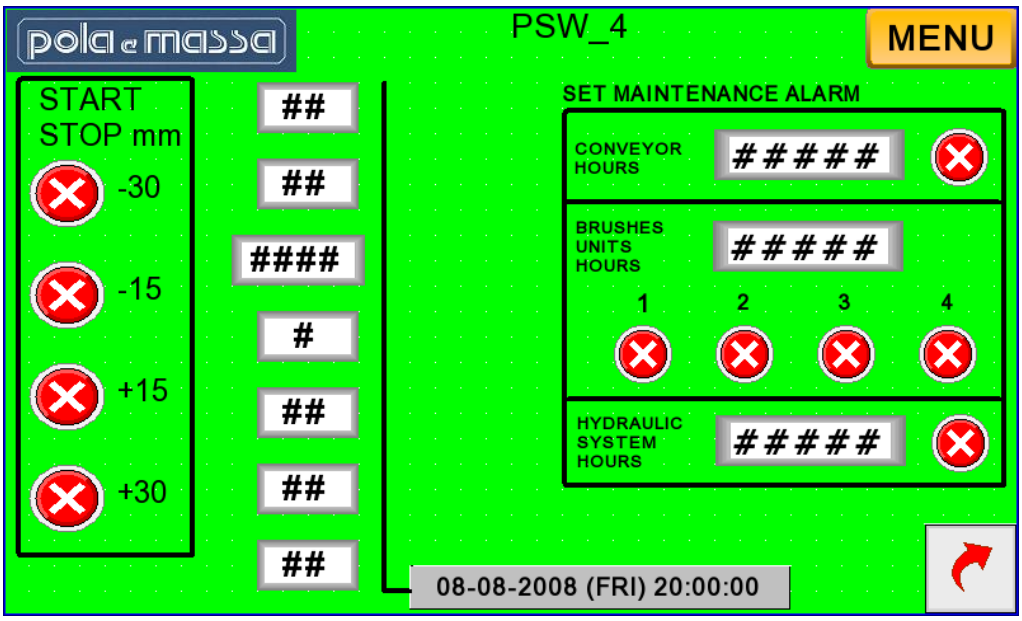
The Customer password for lock / unlock panel is 1234 (panel locked = padlock)

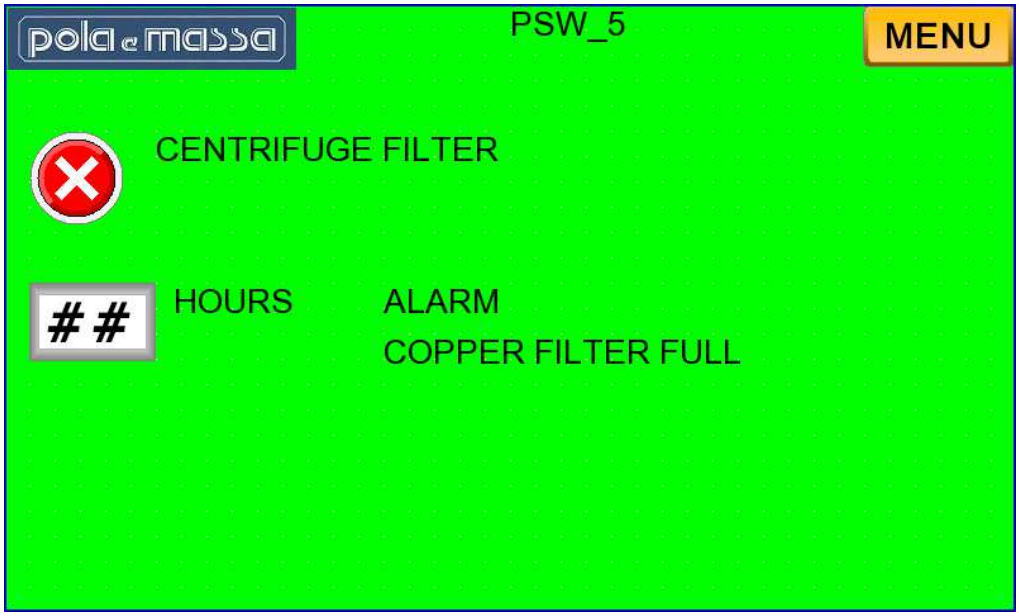
The password Pola & Massa is 9266 (machine parameters)

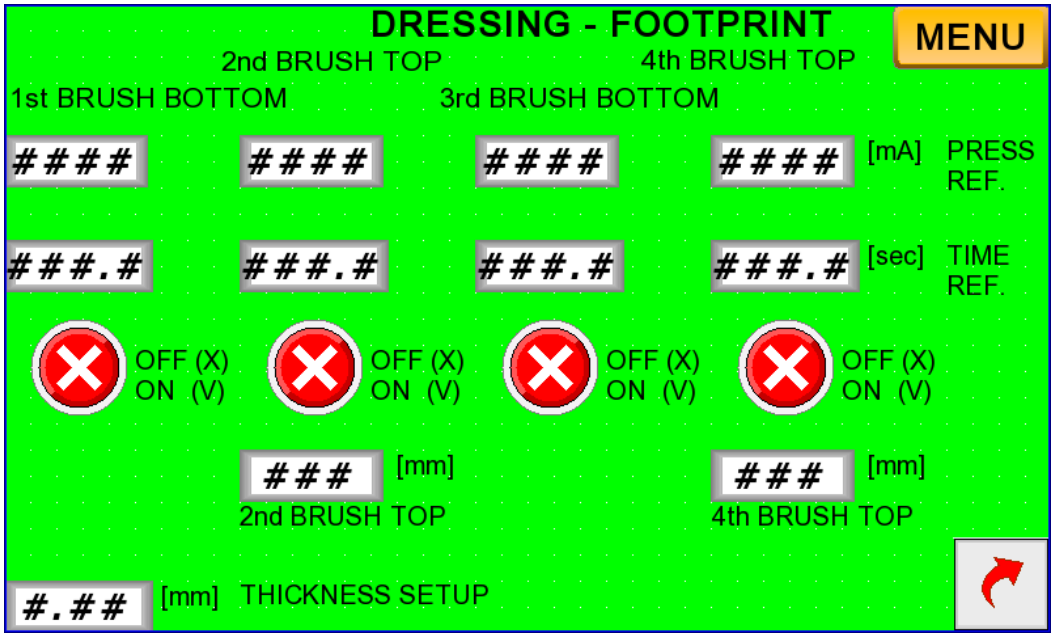

pola e massa
PSW_1
MENU
1st BRUSH BOTTOM
2nd BRUSH TOP
3rd BRUSH BOTTOM
4th BRUSH TOP
[mA]
1/6
WIDTH REF.
2/6
3/6
4/6
5/6
6/6

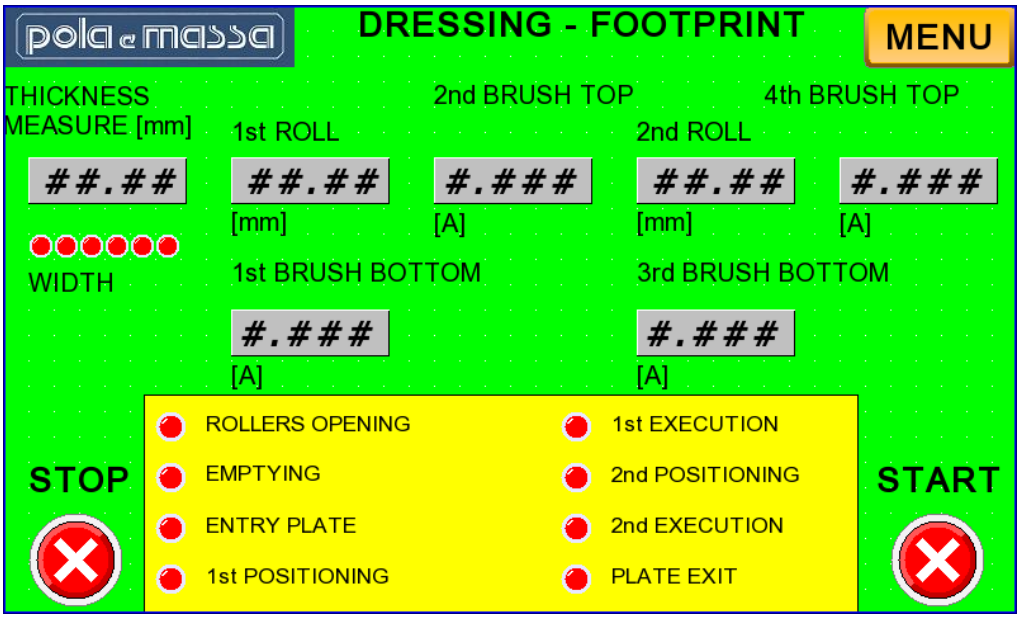

PSW_2
MENU
2nd BRUSH TOP
4th BRUSH TOP
1st BRUSH BOTTOM
3rd BRUSH BOTTOM
IDEAL CURRENT [mA]
####
####
####
####
RANGE [%]
RANGE [%]
RANGE [%]
RANGE [%]
##
##
##
##
[mm]
###.#
AUTO-ADJ TIMEOUT [sec]
####
OVERLOAD [mA]
####
STOPPER STEPS
DIVERTER
###.#
TIMEOUT [sec]
BRUSHES DRYING CYCLE
###.#
[sec]

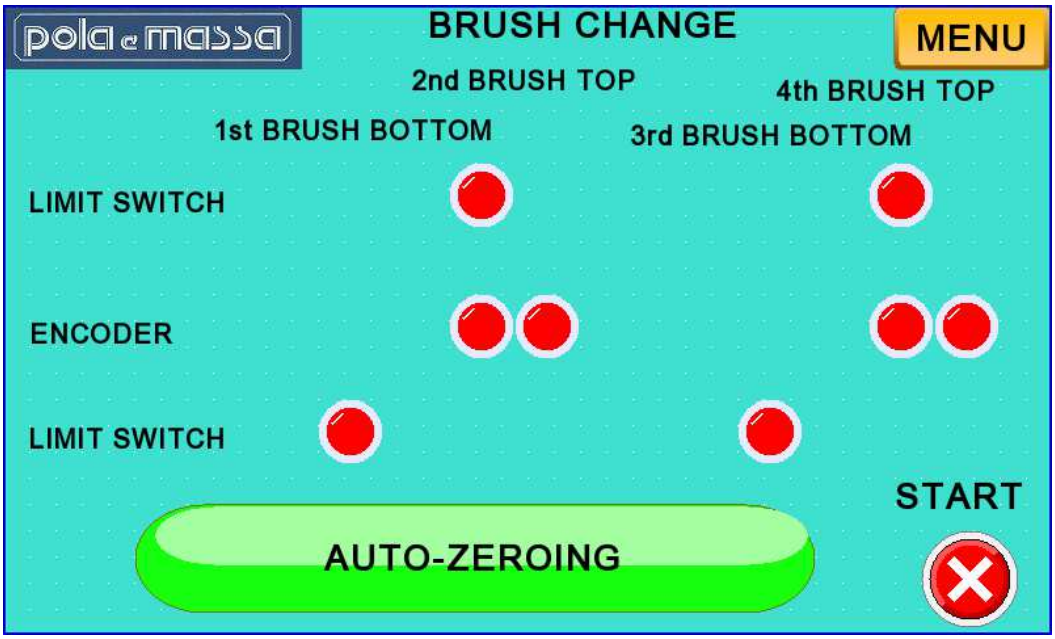

pola e massa
PSW_3
MENU
THICKNESS MEASURE [mm]
1st ROLL
2nd ROLL
##.##
##.##
##.##
RESET
RESET
RESET
####
SPAN
#.##
COMPARATOR MINIMUM [mm]
##.##
MAXIMUM ALARM [mm]

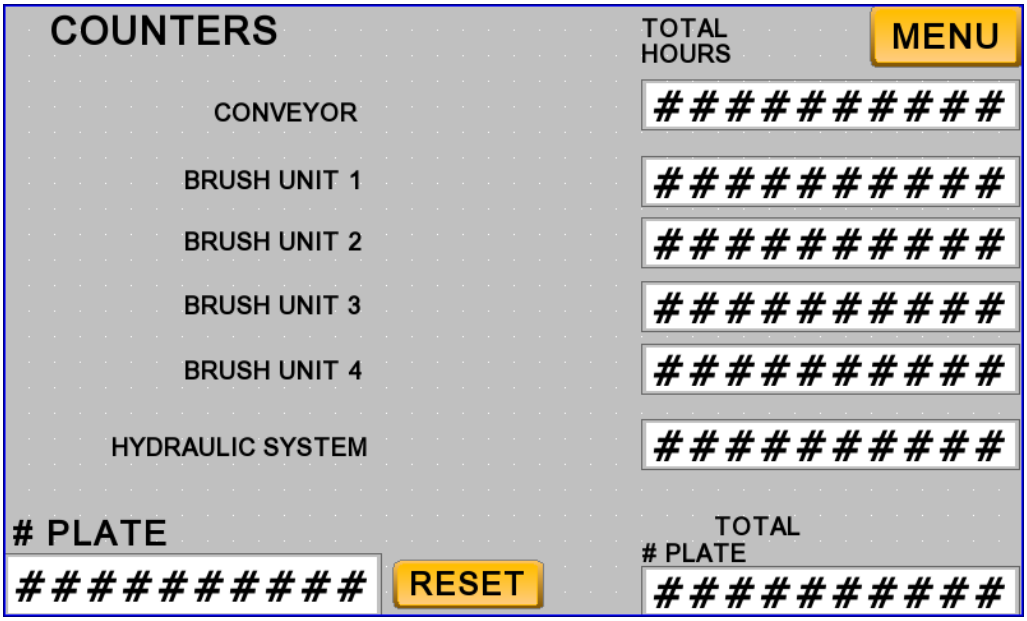

pola e massa
PSW_4
MENU
START
STOP mm
-30
-15
+15
+30
##
##
####
#
##
##
##
SET MAINTENANCE ALARM
CONVEYOR HOURS
#####
BRUSHES UNITS HOURS
#####
1
2
3
4
HYDRAULIC SYSTEM HOURS
#####
08-08-2008 (FRI) 20:00:00

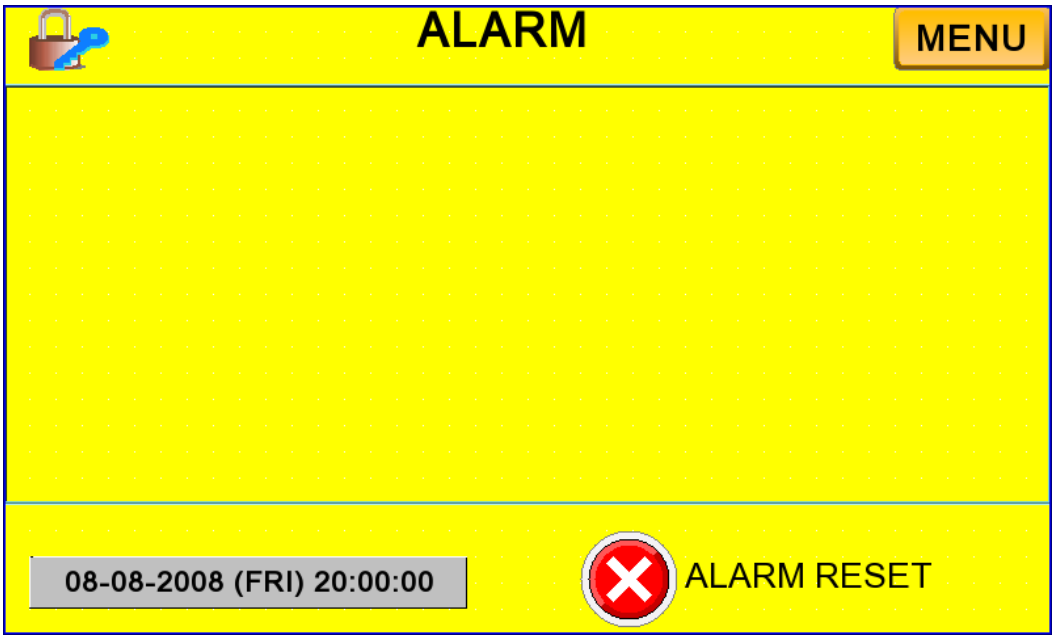

pola e massa
PSW_5
MENU
CENTRIFUGE FILTER
##
HOURS
ALARM
COPPER FILTER FULL


DRESSING - FOOTPRINT
MENU
2nd BRUSH TOP
4th BRUSH TOP
1st BRUSH BOTTOM
3rd BRUSH BOTTOM
####
####
####
####
[mA]
PRESS REF.
###.#
###.#
###.#
###.#
[sec]
TIME REF.
OFF (X)
ON (V)
OFF (X)
ON (V)
OFF (X)
ON (V)
OFF (X)
ON (V)
###
[mm]
2nd BRUSH TOP
###
[mm]
4th BRUSH TOP
#.##
[mm]
THICKNESS SETUP


pola e massa
DRESSING - FOOTPRINT
MENU
THICKNESS MEASURE [mm]
##.##
WIDTH
1st ROLL
##.##
[mm]
2nd BRUSH TOP
#.###
[A]
2nd ROLL
##.##
[mm]
4th BRUSH TOP
#.###
[A]
1st BRUSH BOTTOM
#.###
[A]
3rd BRUSH BOTTOM
#.###
[A]
ROLLERS OPENING
EMPTYING
ENTRY PLATE
1st POSITIONING
1st EXECUTION
2nd POSITIONING
2nd EXECUTION
PLATE EXIT
STOP
START


pola e massa
BRUSH CHANGE
MENU
2nd BRUSH TOP
4th BRUSH TOP
1st BRUSH BOTTOM
3rd BRUSH BOTTOM
LIMIT SWITCH
ENCODER
LIMIT SWITCH
START
AUTO-ZEROING


COUNTERS
TOTAL HOURS
MENU
CONVEYOR
BRUSH UNIT 1
BRUSH UNIT 2
BRUSH UNIT 3
BRUSH UNIT 4
HYDRAULIC SYSTEM
PLATE
RESET
TOTAL # PLATE


ALARM
MENU
08-08-2008 (FRI) 20:00:00
ALARM RESET

ALARM LIST

OVERLOAD 1st BRUSH	
OVERLOAD 2nd BRUSH	
OVERLOAD 3rd BRUSH	
OVERLOAD 4th BRUSH	
RECOVERY TANK FULL	
LOW LEVEL 1st RINSE TANK	
LOW LEVEL 2nd RINSE TANK	
CONVEYOR STOPPED	
PAPER FINISH FILTER	
BRUSHES WATER LOW LEVEL	
BOOSTER PUMP ALARM	
HIGH PRESSURE WASH TEMPERATURE ALARM	
LOW WATER PRESSURE BRUSH SECTION	
EMERGENCY SWITCHES CHAIN	
AT LEAST ONE COVER OPEN BRS	
ENTRY BOARD TOO SHORT	
AIR COMPRESSED LOW PRESSURE	
NEXT MACHINE NOT READY TO RECEIVE	
INVERTER ALARM	
HIGH PRESSURE UPPER WASH ALARM	
THICKNESS SENSOR OVER RANGE	
AT LEAST 1 SAFETY MOTOR OFF	
AD081 PLC MODULE DISCONNECTED	

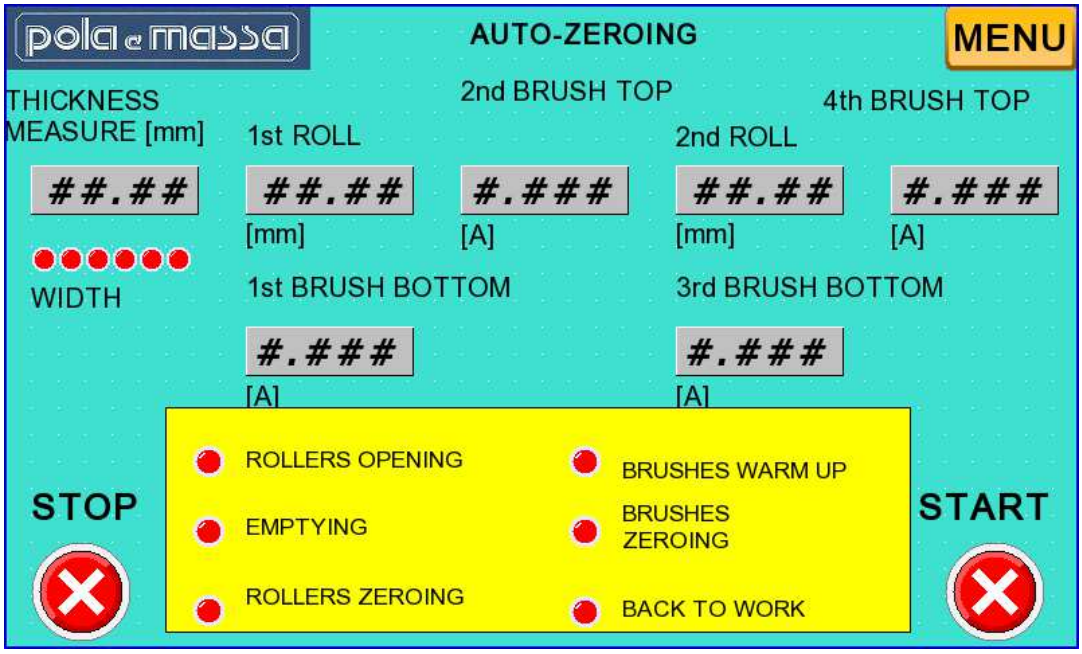
EMERGENCY LOCK	
LOW VOLTAGE PLC BATTERY	
1st BRUSH WORN	
2nd BRUSH WORN	
3rd BRUSH WORN	
4th BRUSH WORN	
PLC TEMPERATURE PROBE ALARM	
HIGH PRESSURE LOWER WASH ALARM	
SAFETY THERMOREGULATOR ALARM	

ALARM LIST AND RESOLUTION

ALARM	PROBABLE RESOLUTION
OVERLOAD 1st BRUSH OVERLOAD 2nd BRUSH OVERLOAD 3rd BRUSH OVERLOAD 4th BRUSH	CHECK: - BRUSH STRUCTURE - BELT, PULLEY AND MOTOR FOR BRUSH ROTATION CARRY OUT THE AUTO-ZERO PRECEDURE.
RECOVERY TANK FULL	CHECK: - EXTERNAL TANK LEVEL (IF PRESENT) - INPUT PLC X310.
LOW LEVEL 1st RINSE TANK LOW LEVEL 2nd RINSE TANK	CHECK: - THE LEVEL OF THE TANK INSIDE THE MACHINE AND RELATED FLOATING; - MANUAL VALVE ON FLOWMETER.
CONVEYOR STOPPED	CHECK: - INVERTER AND RELATED FUSES IN THE ELECTRICAL CABINET. - MOTOR AND REDUCER CONVEYOR. - ENCODER AND JOINT PLACED NEAR THE CONVEYOR REDUCER (CONNECTED TO INPUT PLC X12)
PAPER FINISH FILTER	THE FILTRATION FABRIC ROLL IS ABOUT TO FINISH. IT WILL BE NECESSARY TO REPLACE.
BRUSHES WATER LOW LEVEL	CHECK (IF PRESENT): - THE PAPER FILTER TANK LEVEL AND RELATED FLOATING.
BOOSTER PUMP ALARM	THE PUMP DOES NOT REACH THE NECESSARY PRESSION. CHECK: - FILTER; - PUMP EFFICIENCY.
HIGH PRESSURE WASH TEMPERATURE ALARM	THE TEMPERATURE OF THE HIGH PRESSURE TANK HAS EXCEEDED THE SET THRESHOLD. CHECK: - COOLING COIL.
LOW WATER PRESSURE BRUSH SECTION	CHECK (IF PRESENT): - WATER LEVEL OF THE PAPER FILTER TANK. - BRUSHES WATER PUMP. - BRUSHES WATER VALVE. - PRESSURE-SWITCH CONNECTED TO INPUT PLC X15.

EMERGENCY SWITCHES CHAIN	CHECK: - THE VARIOUS EMERGENCY SWITCHES ARE NOT PUSHED. - ELECTRICAL CONNECTION TO EMERGENCY SWITCHES AND CONNECTORS.
AT LEAST ONE COVER OPEN BRS	CHECK: - GLASSES AND COVERS ARE IN THE RIGHT POSITION. - ELECTRICAL CONNECTION TO MAGNETIC SENSORS PLACED ON THE SAME.
ENTRY BOARD TOO SHORT	CHECK: - LENGHT PIECE IN PRODUCTION TOO SHORT. - PHOTOCELLS AND ANALOGIC SENSOR PLACED ON ENTRY THICKNESS DETECTOR.
AIR COMPRESSED LOW PRESSURE	(IF PRESENT OPTION PRESSURE SWITCH) NO COMPRESSED AIR PRESSURE OR TOO LOW. CHECK THE MANOMETER.
NEXT MACHINE NOT READY TO RECEIVE	CHECK: - THAT THE NEX MACHINE IS ACTIVATES. - INPUT PLC X304 ACTIVE.
INVERTER ALARM	CHECK: - INVERTER AND RELATED FUSES IN THE ELECTRICAL CABINET.
HIGH PRESSURE UPPER WASH ALARM	CHECK: - SPRAY TUBES AND NOZZLES. - FILTERS. - PUMP EFFICIENCY.
THICKNESS SENSOR OVER RANGE	CHECK: - THE ANALOGICAL SENSOR PLACED ON THE ENTRY THICKNESS DETECTOR. - AMPLIFIER WITH DISPLAY IN THE MACHINE SIDE BOX. - ELECTRICAL CONNECTIONS AMONG SENSOR, AMPLIFIER AND PLC; - PIECE TOO THICK (> 8,2 mm).
AT LEAST 1 SAFETY MOTOR OFF	CHECK: - OVERLOAD CUTOT MAGNETOTHERMIC SWITCH INSIDE THE ELECTRICAL CABINET.
AD081 PLC MODULE DISCONNECTED	CHECK: - CONNECTIONS TO PLC MODULE AD081 (ELECTRICAL SCHEME PAGE 38).
EMERGENCY LOCK	- MACHINE IN EMERGENCY BLOCK: REACTIVATE EMERGENCY SWITCHES, GLASSES AND COVERS. THEN PUSH THE BLUE RESET SWITCH; - CHECK CONNECTORS (PAPER FILTER, ETC.).

LOW VOLTAGE PLC BATTERY	- REPLACE BATTERY INSIDE THE PLC
1st BRUSH WORN	- REPLACE THE BRUSH.
2nd BRUSH WORN	
3rd BRUSH WORN	
4th BRUSH WORN	
PLC TEMPERATURE PROBE ALARM	CHECK: - MEASUREMENT THERMOCOUPLE ON TANK
HIGH PRESSURE LOWER WASH ALARM	CHECK: - SPRAY TUBES AND NOZZLES. - FILTERS. - PUMP EFFICIENCY.
SAFETY THERMOREGULATOR ALARM	CHECK: - SAFETY THERMOCOUPLE ON TANK

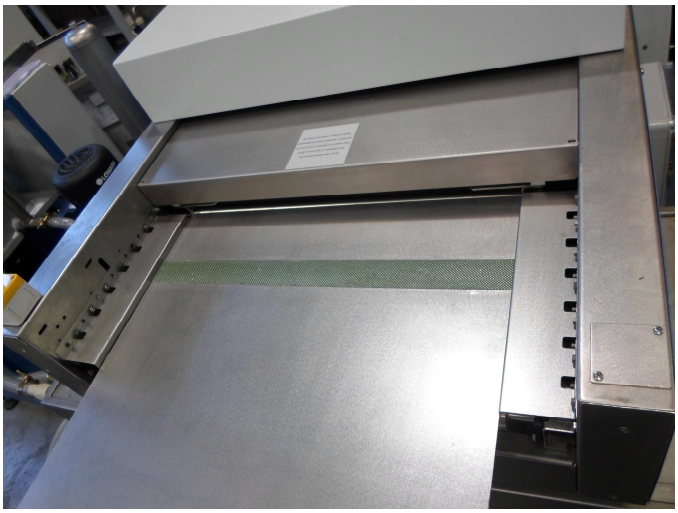


Always start Autozero after these conditions:

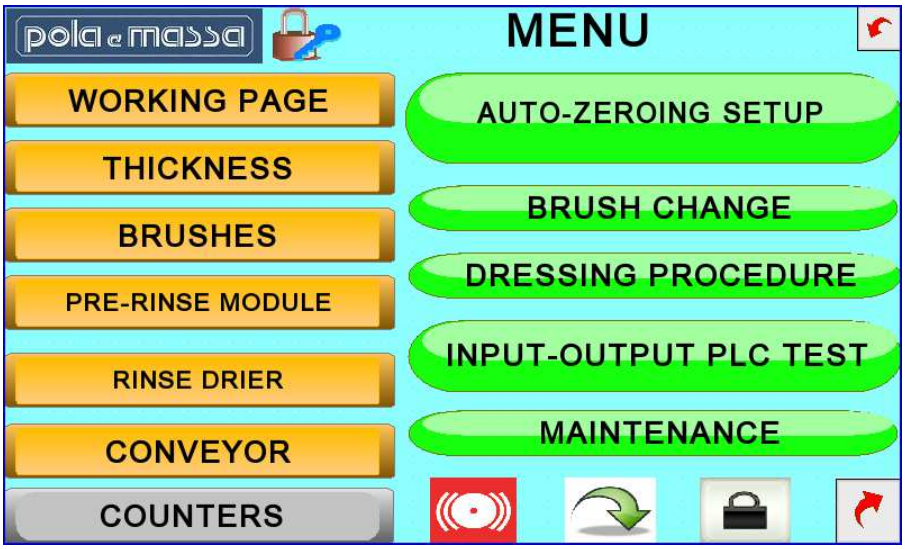
- *Brush over current alarms*
- *Brush replacement*
- *Dressing*

By means of this procedure the machine checks the brushes diameters and works properly starting from the first piece.

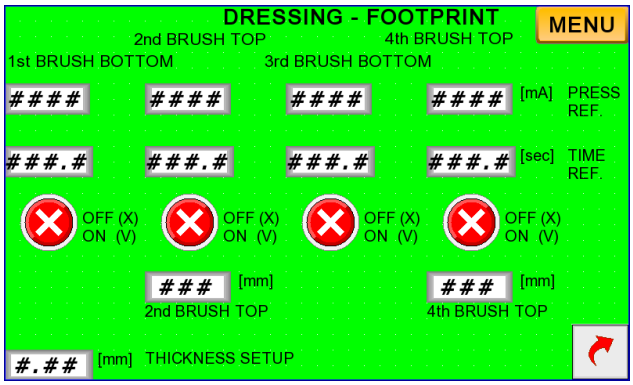
DRESSING PROCEDURE

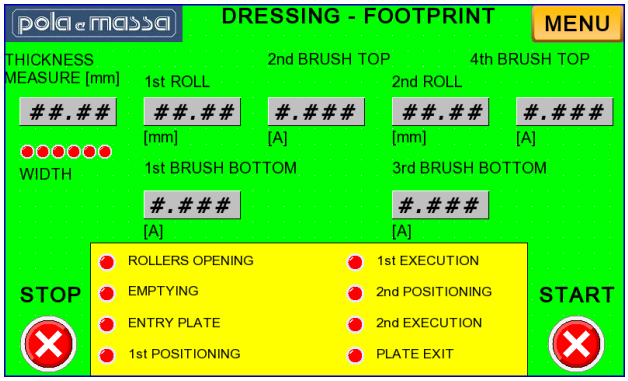


Place the sheet of dressing on the entry conveyor.
Attention to the arrow that indicates the direction of insertion)

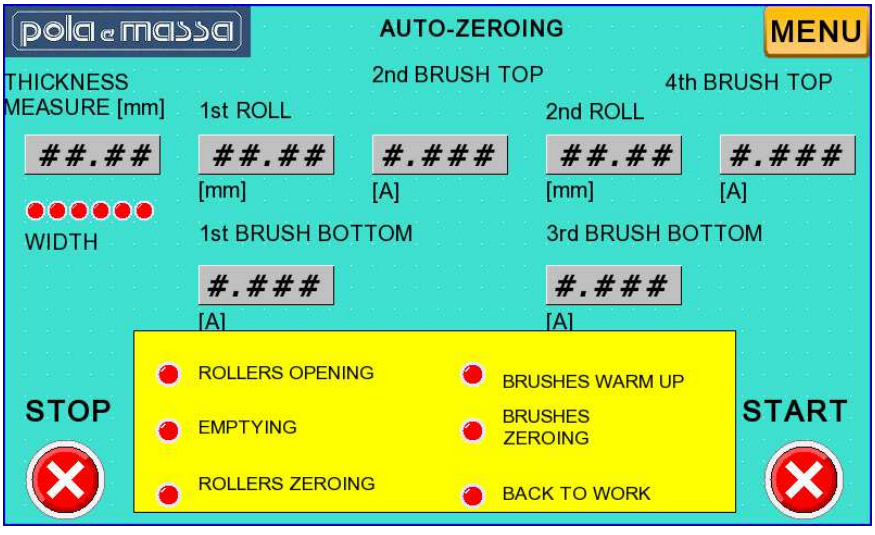


Select the procedure dressing.





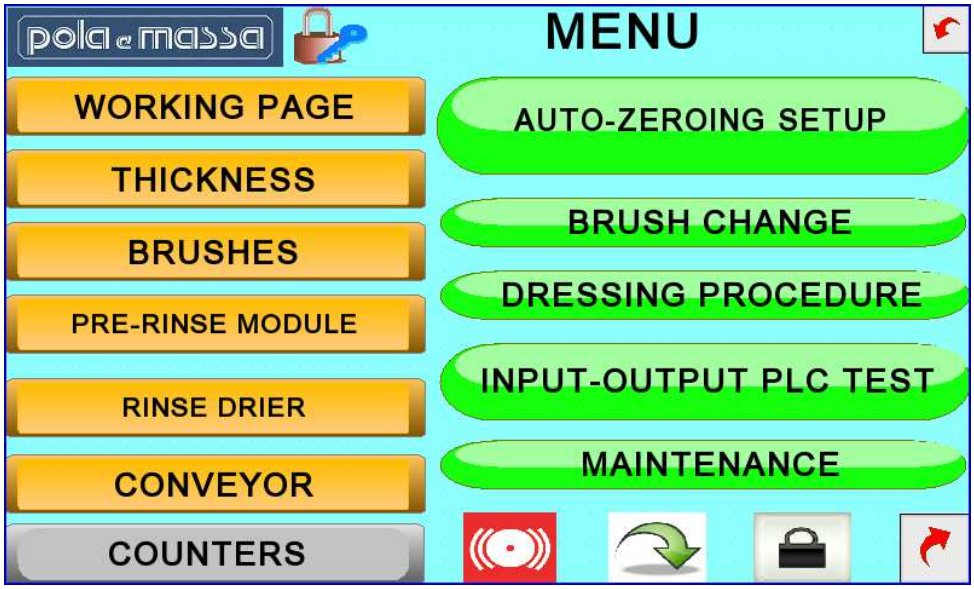
Set of brushes which run the dressing
(brushes TYNEX cannot be dressed)
Set the pressure with which to do
Set the duration of the operation
Press the arrow key to change the page



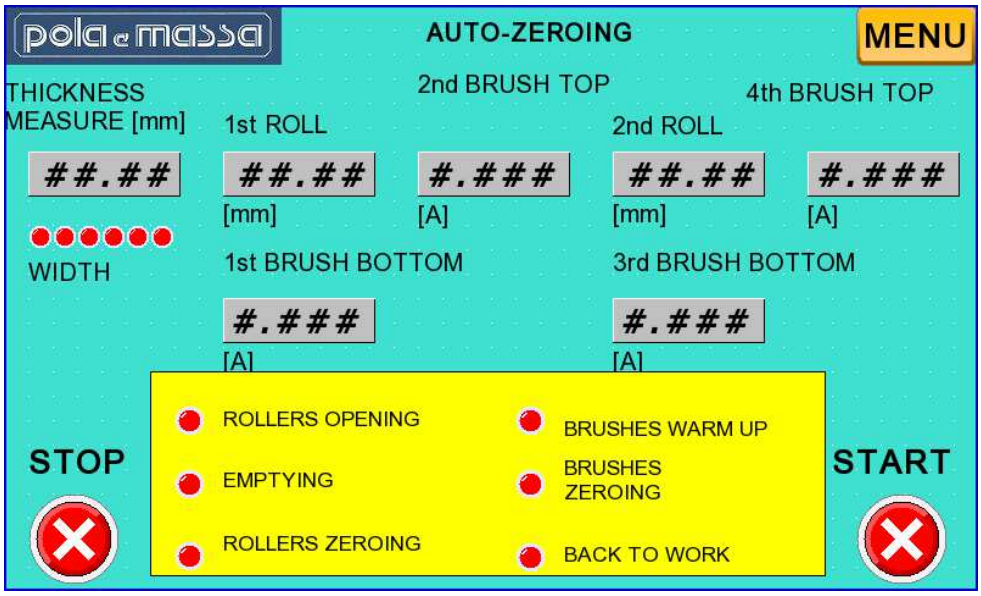
Press the start button to begin the process
When the procedure is finished remove the plate dressing on exit conveyor.

If the brush is still not perfectly cylindrical, rerun the procedure.

After the dressing must perform the auto-zero.



Press the auto-zero



Press the start button.

The procedure starts automatically, when the procedure is finished the page changes and the machine is ready to work.

6.2. PUTTING INTO SERVICE

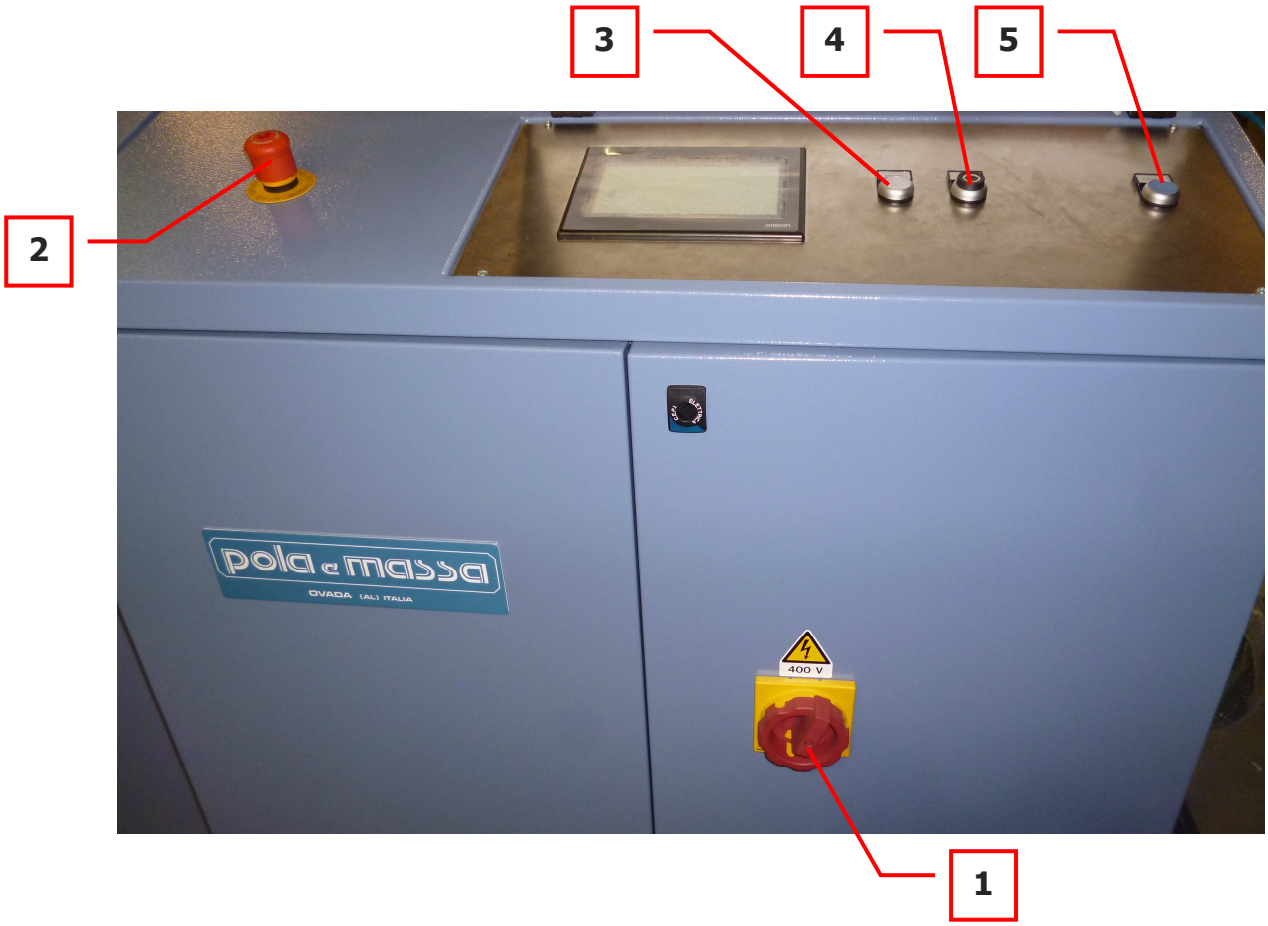
Once the machine or the line to which the machine belongs is powered, thoroughly inspect the whole machine visually. Make sure no objects have been left inadvertently on the machine, and that there are not any persons or objects that may hinder the regular operation of the machine.

Make sure that all the safety devices of the machine are enabled; otherwise, restore them. Mainly:

- Turn main switch (1) to position «1». This switch is on one of the doors of the external control board. This action powers up the machine;
- Make sure that the red mushroom-head push-buttons (2) have not been pressed. Also make sure that all covers are closed and all safety casings are properly fitted;
- Press the blue «RESET» push-button (5) to reset the emergency devices;
- Press the white «START» push-button (3) and the preset parameters will be operational and the machine will be started.
- activate the other functions using the video panel.

Data setting

Set data in the control panel as described in paragraph 6.1 observing the functional requirements according to the specific processes executed.

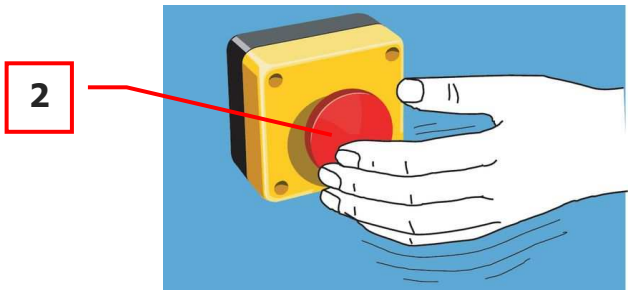


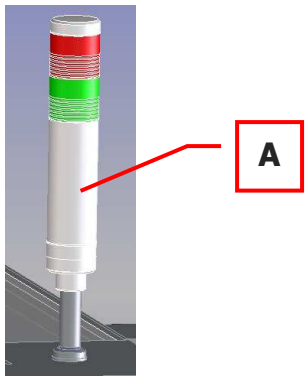
6.3. NORMAL STOP

Press the «STOP» push-button (4) found in the main control panel to stop the machine.
For sub-components, act on the stop push-buttons found in their specific control panels.

6.4. EMERGENCY STOP

To stop the machine due to an emergency, press the dedicated red mushroom-head push-button (2). When this push-button is pressed, all parts that are running and moving are stopped at once.
To unlock the machine after an emergency, rearm the red mushroom-head push button and press the blue «RESET» push-button (5).





The light stack (A) is divided into three sectors:
Steady green light: the line is running.
Steady red light: stop line.
Steady red light + buzzer: low and/or no water alarm.

ALARM LIST:

For alarm list see chap. **6.1 CONTROL PANEL**.

6.5. EMERGENCY RESET

After the mushroom-head Emergency Push-button is rearmed manually by turning it clockwise by about 30 degrees, the machine can be started again as usual following the specific procedure.

6.6. DECOMMISSIONING

If the machine is not used for a long time, cut off power and all the rest of the supplies via the electrical panel.

7. MAINTENANCE

7.1. MAINTENANCE STATUS

The machine must be at a standstill to carry out any maintenance activity. If some parts of the machine have to be individually enabled for maintenance, first power the machine and then go to the maintenance-dedicated PLC screens and activate the drives of the parts involved.

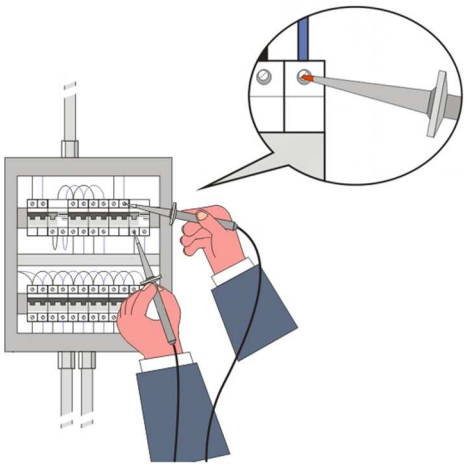
7.2. CHECKING THE FUNCTIONS OF THE ELECTRICAL INSTALLATION PRESENT IN THE MACHINE

Electrical panels or the electrical equipment present in the machine must be serviced only by properly trained staff.

TYPE OF MEASUREMENT 1

- The degree of protection of an open panel to the active parts is ≥ IPXXB.
- There is no risk of accidental contact or accidental short circuit taking into account the type of probes used (sizes and shape of the bare contact end) and the distances of the active parts to one another and to the masses.

Supervision of expert staff is not required. Insulating gloves or face shields to protect against short circuits are not required.



7.3. MACHINE ISOLATION

Before any maintenance and/or repair activities, isolate the machine from the power supply and any other energy source.

All sectioning devices should be able to lock the «isolated circuit» in place, for instance by using a padlock, so that operators working on the machine can be sure that no machine component can be started as long as they are working. Follow the method below:

Before starting to work on the machine, each operator locks out all disconnecting switches of external power sources using individual lockout devices- a padlock for instance- and takes the opening keys with him. Each operator removes their individual lockout devices from the disconnecting switches once they finish working on the machine. In this way the disconnecting switches can be unlocked only after all the operators have removed their individual lockout devices, that is, only after all operators have finished their tasks.

If there is not enough room in the disconnecting switches for all the padlocks, other simple lockout devices may be used, such as the one shown in the picture:

Such a procedure is aimed at preventing any operator from starting the machine without noticing there are other operators within the danger zones of the machine. A key factor to ensure this procedure is effective is that all the operators that are working on/with the machine lock out the disconnecting switches using individual padlocks.

A method to isolate energy sources widely used in the industrial field is known as Lockout/Tagout (LOTO). This method was created in the United States and has been defined by the Occupational Safety and Health Administration (OSHA) [www.osha.gov].

Isolation	Mode
Electric power 1	
Electric power 2	
Gas energy source 1	
Gas energy source 2	

7.4. SPECIAL PRECAUTIONARY MEASURE

Strictly follow the instructions below when servicing and/or repairing the machine:

- Before starting any work, display a «MACHINE UNDER MAINTENANCE» sign in a well visible place;
- Never use flammable materials and solvents;
- Dispose of cooling lubricants responsibly;
- To reach the upper parts of the machine, use equipment suitable for the operations to be carried out;
- Never climb onto the components of the machine because they have not been designed to withstand a person's weight;
- Once you finish working, properly refit and fasten all the protections and guards that have been previously removed, opened and disabled.

Failure to comply with the above recommendations or using the machine for applications other than its intended use or not specified in these instructions shall relieve the Manufacturer of any responsibility.

7.5. CLEANING

Before any cleaning activities, isolate the machine from the power supply and any other energy source.

When cleaning the machine, be careful not to dispose of process waste (washing liquids, oil and any cleaning solvents) as household waste.

If solvents are used inside the machine or for cleaning, wear the PPE suitable for handling solvents; refer to the relevant material safety data sheets.

7.6. SCHEDULED ROUTINE MAINTENANCE

General requirements

Scheduled routine maintenance includes inspections, checks and operations aimed at preventing interruptions and faults, and that constantly monitor the lubrication of the machine and the condition of wearing parts.
Even if these actions are simple, they must be carried out by qualified staff.

The machine has been designed to minimize routine maintenance; the operator is to assess the machine condition and the suitability to operate.
However, it is advisable to stop and service the machine each time some poor functioning is detected.
In this way, total efficiency at all times is guaranteed.

Always use the specific PPE - personal protection equipment:

- gloves;
- non-slip shoes;
- goggles;
- dust respirator;
- suitable clothing.

Procedures

If the maintenance activities listed in this chapter are followed, the proper operation of the machine over time is guaranteed. Read this paragraph before starting any maintenance activity.

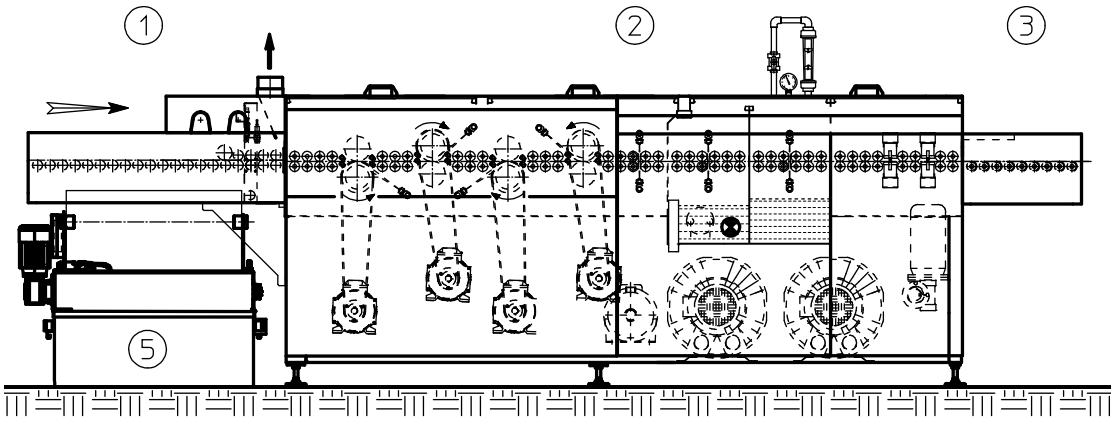
- Repairing any problem on time as soon as it is detected will prevent any further deterioration of the fault;
- Service the machine at the recommended intervals; Never defer nor avoid maintenance; otherwise, the operation of the machine is compromised;
- Before any maintenance not requiring powered components, make sure that the machine is stopped and that current is cut off by turning the main switch to the left (= 0, zero, OFF);
- Only qualified staff must carry out any maintenance activities and/or repairs;
- Covers and/or protections can be removed by qualified staff only for maintenance or repair purposes. Once maintenance/repairs are completed, immediately refit any protections and/or guards to protect the operator;
- Never operate the machine if covers are not in place;
- Only qualified staff must carry out any operations on the machine: Unauthorized persons are not allowed to approach the machine;
- The user of the machine is fully responsible for any maintenance and/or repair tasks;
- Any adjustments and/or inspections by the customer's qualified technicians should be never done swiftly and/or in an incomplete manner. In case of doubt or if a problem arises, immediately contact Pola e Massa s.r.l. Technical Support Service;
- It is prohibited to modify and/or alter the machine or its parts in order to include other devices or to change machine functions;
- Requests to modify and/or use optional equipment not foreseen at the time the contract is signed must be sent directly to Pola e Massa s.r.l.;
- Check the safety and accident prevention systems for proper operation on a regular basis (once a month at least). Such check consists in testing each lateral cover (removing them) and pressing the red mushroom-head push-buttons of the whole line. If these systems work properly, each time they are tested/inspected, a steady red light comes on in the light stack. Otherwise, the red light does not come on and the systems need to be restored.
- Visually check that each component of the machine is in good condition. Check that they are not altered as the result of deformation or breakdown.
- Check that the earthing circuit is not interrupting by measuring continuity
- For technical support, contact Pola e Massa s.r.l. Technical Support Service.

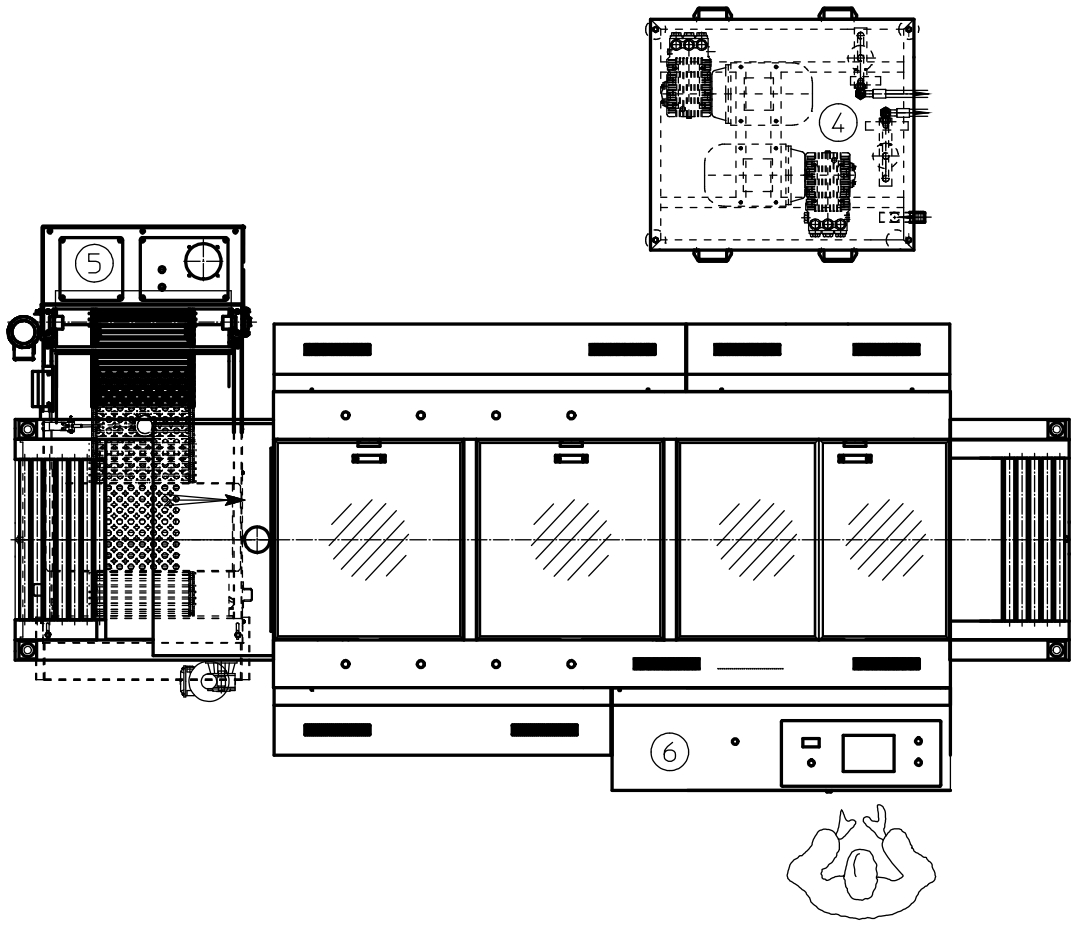
Failure to comply with these rules shall relieve the Manufacturer of any obligations regarding the Warranty.

Description of actions

The machine consists of several components, as described in Chapter 5.2. The tables below show the type and frequency of the interventions to be carried out on the different sections of the machine. They are grouped according to their operational characteristics as – Degreasing – Brushing – Drying - Filtering.

Checks and periodic maintenance





ENTRY CONVEYOR WITH THICKNESS MEASURER L=1025 mm (Rif. 1)

FREQUENCY	N°	TYPE OF INTERVENTATION
Before each work shift:	1	**Check that all safety devices and protections of the machine are in perfectly good working order. If any malfunctioning is detected, report it to Pola e Massa s.r.l. without delay.**
Every 80 hours of operation:	1	Check the drive chain all along the machine for proper tension. Adjust if necessary.
Every 200 hours of operation:	1	Lubricate the drive chain throughout the machine and all the gears that are in contact with this chain.
Every 1000 hours of operation:	1	Check that all the different parts that are near the upper and lower rollers of the machine (supports, bearings, gears, etc.) are not worn. Replace worn out parts if necessary.
Every 7500 hours of operation:	1	Replace the pads of the chain guide.

Table 7-6-1

Use one of the following recommended products to lubricate the chain and the gears next to it.

Roloil ARM 68-EP.
Mobil Vactra-2.
Esso Febis K-68.

The types of oils listed above should be used only and exclusively for the specific parts mentioned!

It is the end user's responsibility to consult the safety data sheet of the oil used and the check if said data sheet has been updated.

To reach the transmission components of the machine, remove the guards on both sides of the machine.

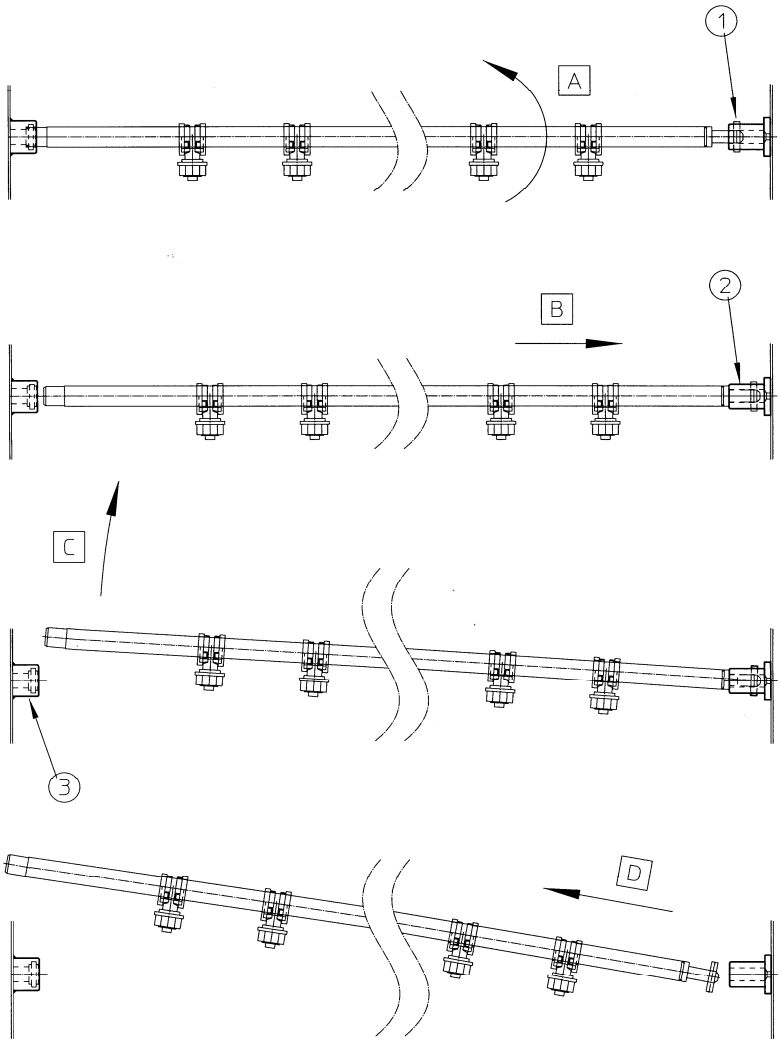
After maintenance is completed and before starting the machine again, make sure that all guards previously removed are back in place.

NB = Procedure valid for the modules of the line equipped with spray pipes.

Removing the spraying pipes

Follow the steps below to remove both low- and high-pressure spraying pipes:

- one of the two ends of the spraying pipe feature a cylindrical pin (1);
- With one hand turn the pipe (A) until the pin is released from its white plastic bayonet fitting (2);
- Slightly push pipe (B) towards the bayonet fitting (2);
- The pipe is released from the other fitting (3) that is exactly opposite the bayonet fitting;
- Slightly tilt the end of the pipe (C);
- Remove the pipe (D).



To put the spraying pipes back into place, follow the same steps described but in reverse order.

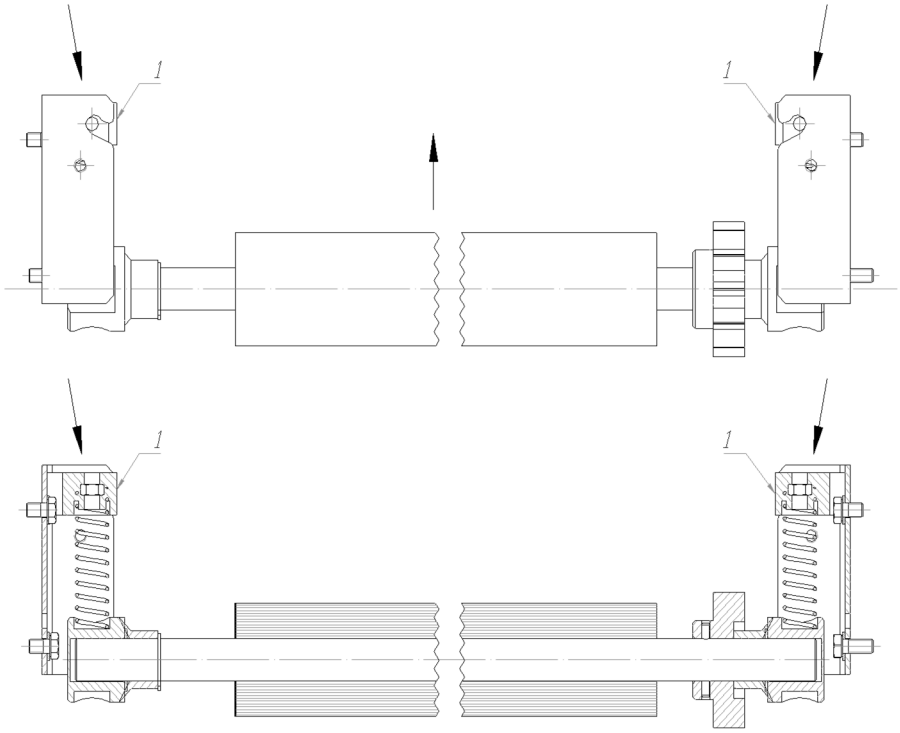
NB = Procedure valid for line modules equipped with upper and lower rollers.

Removing the rollers

All the upper rollers marked 1 and the lower rollers marked 2 and 3 in the diagram below are easily removed so that the tanks and the lower spraying pipes can be reached.

- **Upper rollers**

  Follow the steps below to remove the upper rollers:
- Press the contrast plugs 1 to release them from their couplings;
- Remove the contrast plugs and the springs;
- Take the roller up and slide it out.

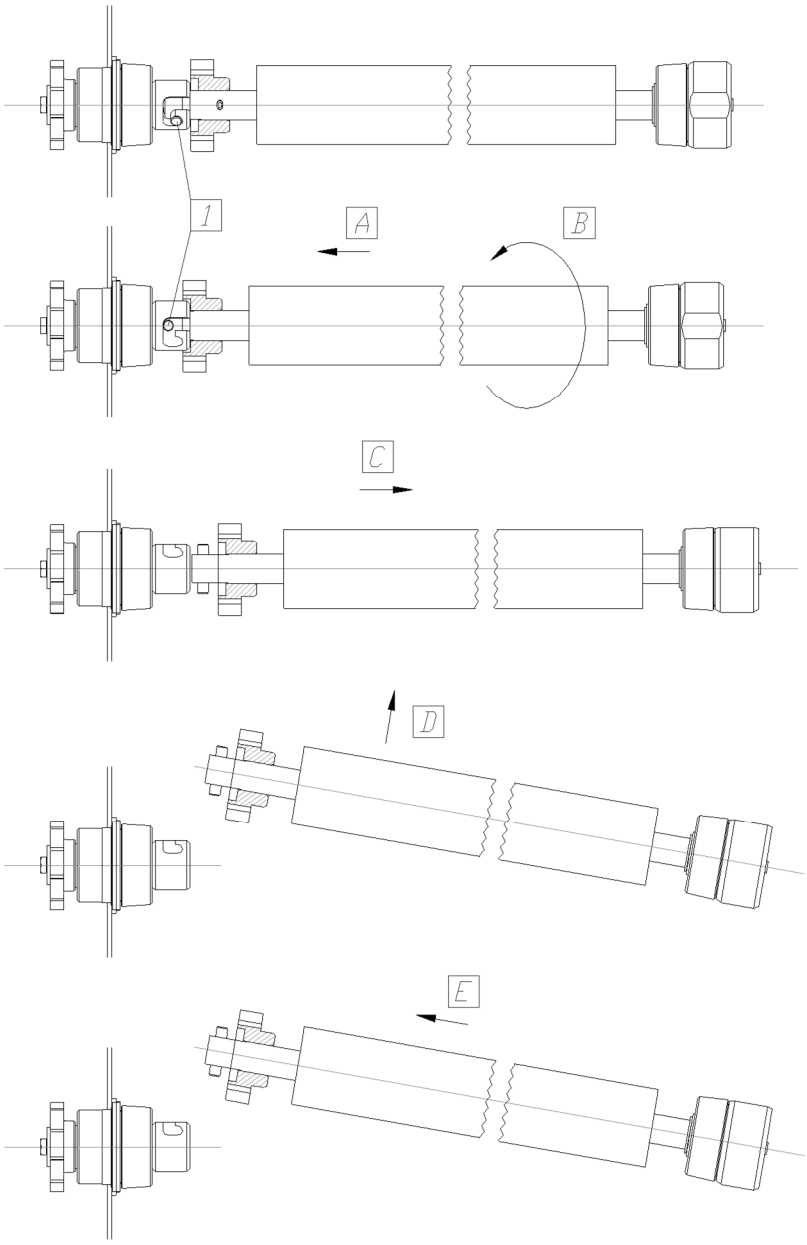


To put the rollers back into place, follow the same steps described but in reverse order.

- **Lower rollers**

Follow the steps below to remove the lower rollers:

- Push the roller to the left (A) and turn it in order to release the drive pin (1) from its coupling system;
- Slide off the end of the roller and the pin by pushing everything to the right (C);
- Turn the roller upwards (D);
- Slide the roller off (E).



To put the rollers back into place, follow the same steps described but in reverse order.

UNIBLOC BRUSHING 4/25 WITH DOUBLE WASHING L=2700 mm (Ref. 2)

Lubrication methods.

The machine is lubricated with both oil and grease. The following are the details regarding the various lubrication methods, referring also to certain drawings located in this chapter.
For the types of oil and/or grease to be used, see the information at the end of this paragraph.

It is absolutely forbidden to lubricate and/or grease mechanical parts when they are in motion!

• Lubrication system for the bushings on the oscillating shafts (no. 4-5, figure C):
the bushings (no. 6, figure D) are lubricated in an oil bath. To better understand the instructions listed below, refer to figure A in this chapter, which illustrates the section of a bushing.

1) Check oil level:
- stop the machine and turn off power by turning the main switch to the left (= 0, zero, OFF);
- remove the left cover;
- manually rotate the bushing until the six screws are in the position shown in figure A in relation to the vertical axis;
- unscrew the top two screws (no. 1, figure A) and make sure the oil reaches the bottom edge of each hole. In figure A, the oil is shown in black;
- if there is no oil showing in the hole, fill it up using a small syringe until it reaches the necessary level;
- as soon as the level is correct, retighten the top two screws (no. 1, figure A) and reposition the left cover before restarting production.

2) Oil replacement:
- stop the machine and turn off power by turning the main switch to the left (= 0, zero, OFF);
- remove the left cover;
- manually turn the bushing until one of the four holes for the screws (no. 1-2, figure A) is on the vertical axis;
- place a basin below the bushing;
- unscrew both the top and bottom screws (no. 1 and 2, figure A);
- allow the oil to flow from the hole for a few minutes until the inner chamber of the bushing (which is the one shown in black in figure A) is completely emptied;
- retighten the bottom two screws (no. 2, figure A) and manually rotate the bushing until the six screws are in the position shown in figure A in relation to the vertical axis;
- fill the inner chamber of the bushing with approximately 8-10 cc of oil using a small syringe;
- replace the cover and allow the brushes to rotate for about 4-5 minutes;
- stop the machine again, turn off power, and remove the cover;
- manually rotate the bushing until the six screws are in the position shown in figure A in relation to the AA' vertical axis;
- unscrew the top two screws (no. 1, figure A) and make sure the oil reaches the bottom edge of each hole;
- if the level is lower, fill it up with a small syringe until the proper oil level is restored;
- retighten the top two screws (no. 1, figure A), position the cover back to its site, and restart the machine.

In order to not compromise the operation of the machine, it is absolutely forbidden to unscrew the two screws (no. 3, figure A)!

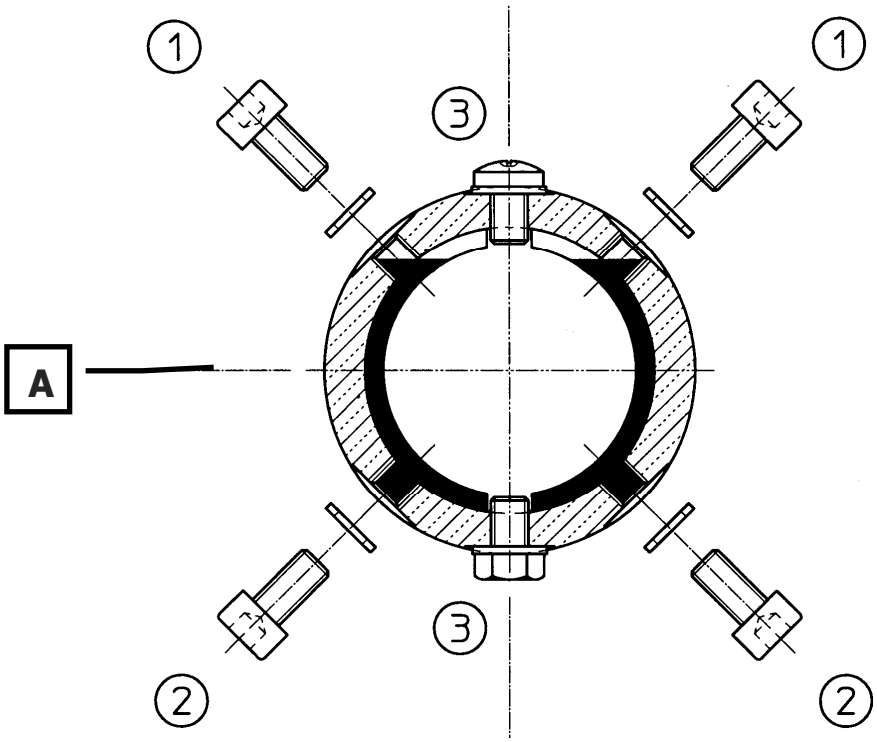
• Lubrication system for the oscillating units, diametrically opposite the bushings (no. 6, figure D): the oscillating units are also lubricated in an oil bath.

1) Check oil level:
- stop the machine and turn off power by turning the main switch to the left (= 0, zero, OFF);
- remove the right cover;
- make sure the oil level reaches the centre point of each indicator light (no. 3-4, figure C);
- if the level is lower, top up through the oil fill caps (no. 9, figure C) until it reaches the centre point of each indicator light;
- as soon as the proper level has been reached, replace the fill caps and cover and then restart production.

2) Oil replacement:
- stop the machine and turn off power by turning the main switch to the left (= 0, zero, OFF);
- remove the right cover;
- turn the oscillating units by hand until the oil fill caps (no. 9, figure C) are aimed upward;
- place a basin below the two oscillating units;
- unscrew the oil drain caps opposite the fill caps;
- also unscrew the fill caps to facilitate the output of the oil from the oscillating units;
- as soon as more oil comes out of the oscillating units, re-screw the drain caps;
- fill the oscillating units with about 250 cc of oil using the fill caps (no. 9, figure C);
- screw on the fill caps and make sure the oil reaches the centre points of the indicator lights (no. 3, figure C);
- replace the cover and allow the brushes to rotate for about 4-5 minutes;
- if the level is lower, add another bit of oil to the oscillating units. Otherwise, restart the machine.

• Lubrication system through the greasers:
the machine has a series of greasers in its top part (figure B). There are greasers (no. 4, figure B) below the polypropylene guards (no. 5, figure B).

Greasing using the greasers located on the top part of the machine:
- stop the machine and turn off power by turning the main switch to the left (= 0, zero, OFF);
- remove the polypropylene guards (no. 5, figure B);
- attach the grease pump to each greaser and apply a certain amount of grease.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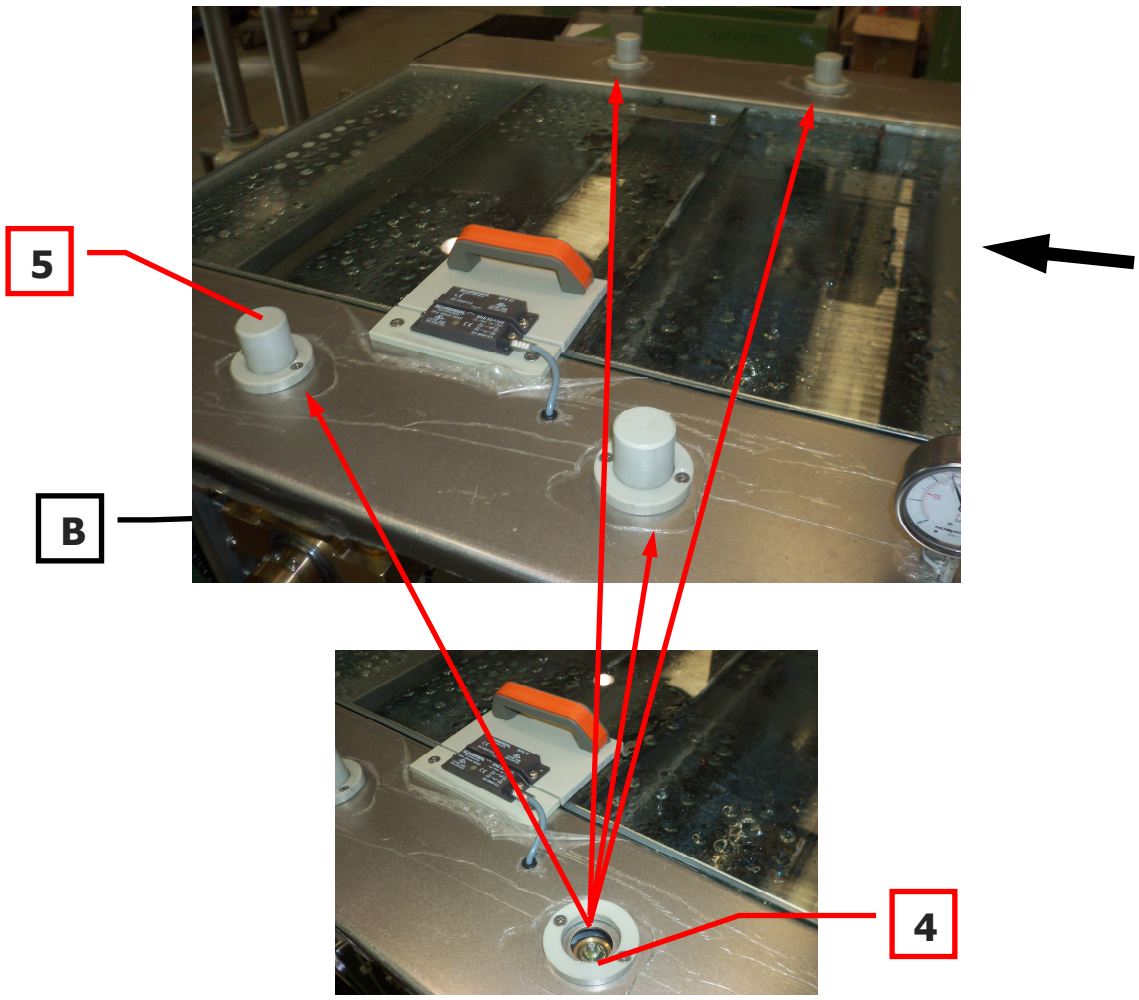
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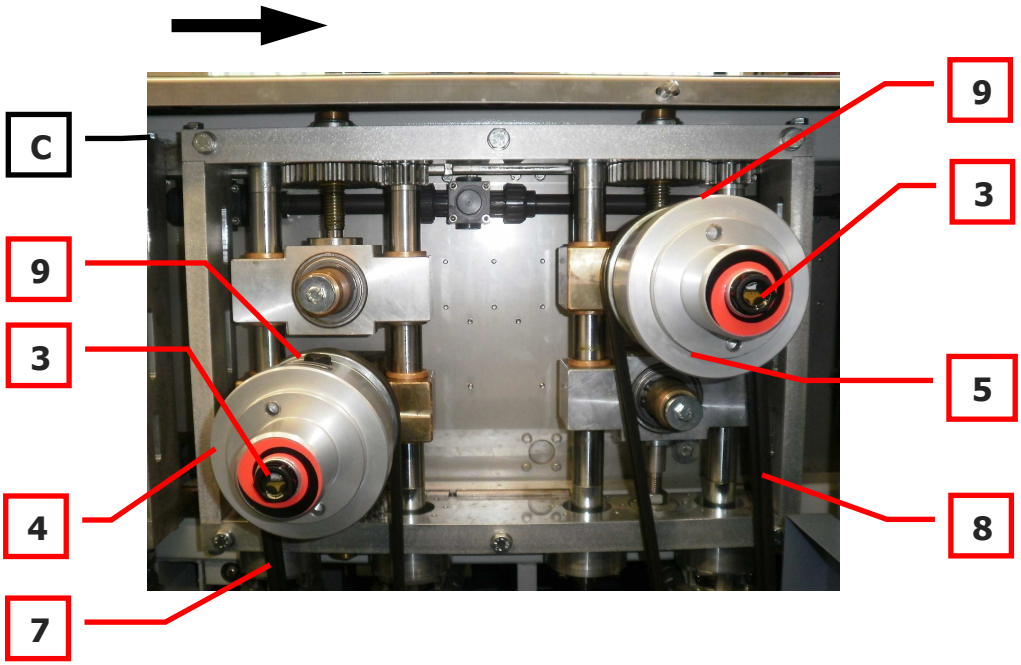
FREQUENCY	N°	TYPE OF INTERVENTATION
Before each work shift:	1	**Check that all safety devices and protections of the machine are in perfectly good working order. If any malfunctioning is detected, report it to Pola e Massa s.r.l. without delay.**
	2	Check the nozzles of all spray pipes are not obtured. If necessary, clean them with some compressed air.
	3	Check the brushes are not worn. If necessary, replace them.
	4	Check working pressure range is correct by means of the gauges. If necessary clean or replace the filter cartridges.
	5	Check that the outlets of the blowers are not clogged by impurities. If necessary, clean them with utmost care so that their dimensions are not modified.
Every 40 hours of operation:	1	**Check oil level in the oscillating units by means of the oil windows. Check oil level in the bushes also.**
Every 80 hours of operation:	1	Grease the screws to adjust both the brushes and the counter-rolls by means of the grease nipples under the rubber plugs and protections.
	2	Check chain-drive stretch. If necessary, adjust it.
	3	Check the chain-guides are not loosened. If necessary, tighten their suitable screws.
	4	Check the chain-tighteners are not released. If necessary, adjust them.
	5	Check belts (n°7-8, pag.12) stretch. If it is not sufficient, replace the gas hoister. If belts are worn, replace them.
Every 200 hours of operation:	1	**Replace the oil in the oscillating units (no. 4,5) and bushings (no. 6) according to the instructions in the previous paragraph. This time frame is <u>only</u> for the first replacement after machine installation, for later ones, consult "Every 2000 hours of operation".**
	2	Lubricate the drive chain throughout the machine and all the gears that are in contact with this chain.
Every 1000 hours of operation:	1	Check that all the different parts that are near the upper and lower rollers of the machine (supports, bearings, gears, etc.) are not worn. Replace worn out parts if necessary.
Every 2000 hours of operation:	1	**Replace the oil in the oscillating units (no. 4 and 5) and bushings (no. 6) as indicated in the instructions in the previous paragraph.**
Every 7500 hours of operation:	1	Replace the pads of the chain guide.

Table 7-6-2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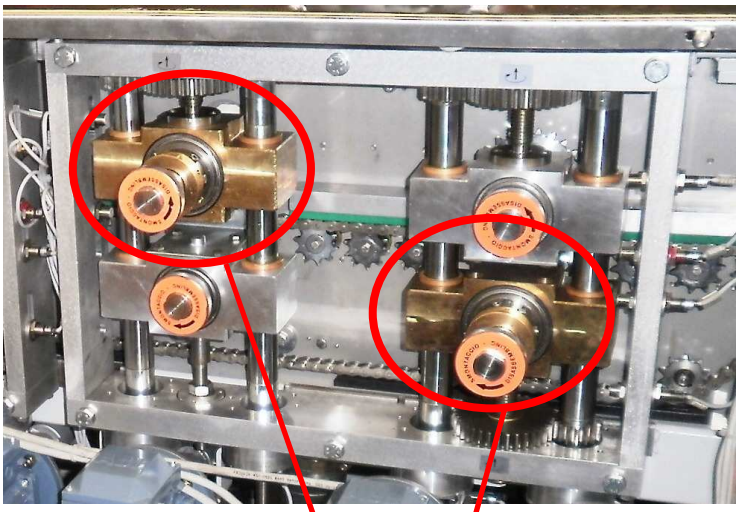

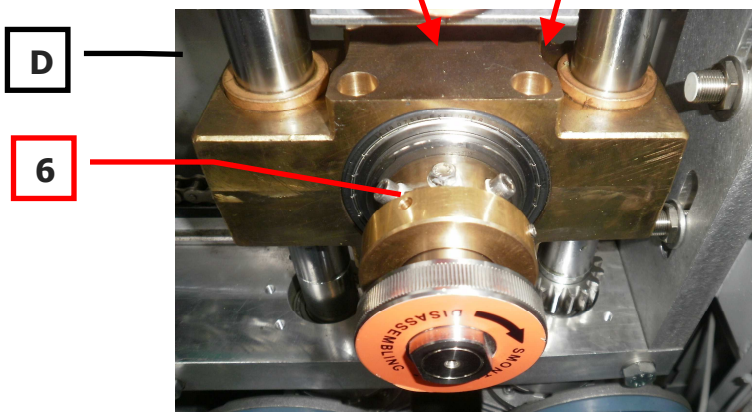
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	Recommend oils and greases:	**Roloil ARM 68-EP.** **Mobil Vactra-2.** **Esso Febis K-68.**
	Oil to lubricate the oscillating units and the bushes only	**Roloil LR/220-CCW.** **IP VERETUM 220.**
	**Grease to lubricate the grease nipples**	**Roloil Litex EP1.** **IP ATHESIA GREASE EP1.** **Esso Beacon EP1.** **Castrol Spheerol EPL1.** **Shell Super GR EP1.**

Utilize the above mentioned greases or oils to lubricate the suitable parts only!

It is the end user's responsibility to consult the safety data sheet of the oil used and the check if said data sheet has been updated.

To reach the transmission components of the machine, remove the guards on both sides of the machine.

After maintenance is completed and before starting the machine again, make sure that all guards previously removed are back in place.

EXIT CONVEYOR L=475 mm (Rif. 3)

FREQUENCY	N°	TYPE OF INTERVENTATION
Before each work shift:	1	**Check that all safety devices and protections of the machine are in perfectly good working order. If any malfunctioning is detected, report it to Pola e Massa s.r.l. without delay.**
Every 80 hours of operation:	1	Check the drive chain all along the machine for proper tension. Adjust if necessary.
Every 200 hours of operation:	1	Lubricate the drive chain throughout the machine and all the gears that are in contact with this chain.
Every 1000 hours of operation:	1	Check that all the different parts that are near the upper and lower rollers of the machine (supports, bearings, gears, etc.) are not worn. Replace worn out parts if necessary.
Every 7500 hours of operation:	1	Replace the pads of the chain guide.

Table 7-6-3

Use one of the following recommended products to lubricate the chain and the gears next to it.

Roloil ARM 68-EP.
Mobil Vactra-2.
Esso Febis K-68.

The types of oils listed above should be used only and exclusively for the specific parts mentioned!

It is the end user's responsibility to consult the safety data sheet of the oil used and the check if said data sheet has been updated.

To reach the transmission components of the machine, remove the guards on both sides of the machine.

After maintenance is completed and before starting the machine again, make sure that all guards previously removed are back in place.

EXTERNAL HIGH-PRESSURE PUMP (Rif. 4)

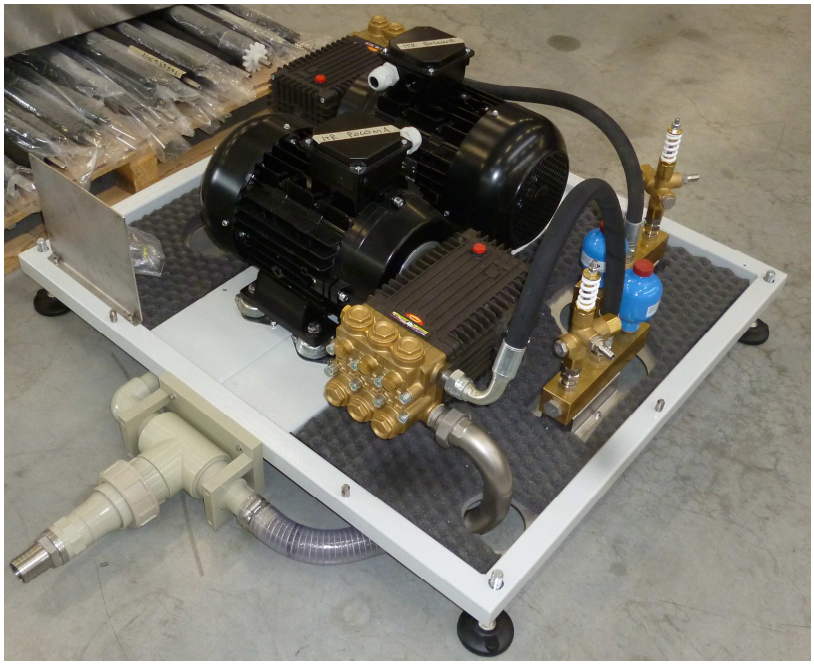
FREQUENCY	N°	TYPE OF INTERVENTATION
Before each work shift:	1	**Check that all safety devices and protections of the machine are in perfectly good working order. If any malfunctioning is detected, report it to Pola e Massa s.r.l. without delay.**
Every 500 hours of operations:	1	Change the oil in the 100-bar pump.

Table 7-6-4

After maintenance is completed and before starting the machine again, make sure that all guards previously removed are back in place.

Use the following recommended product for change oil in the 100-bar pump.

INTERMPUMP X-9.9. (SAE 15W40 Mineral)



GRAVITY FILTER ROLL WIDTH 700 mm (Rif. 5)

FREQUENCY	N°	TYPE OF INTERVENTATION
Before each work shift:	1	**Check that all safety devices and protections of the machine are in perfectly good working order. If any malfunctioning is detected, report it to Pola e Massa s.r.l. without delay.**

Table 7-6-5

7.7. EXTRAORDINARY MAINTENANCE

General requirements

Caution! The user is not allowed to perform any extraordinary maintenance task inasmuch as there is not detailed information about how to perform such maintenance, and so operators may find themselves involved in dangerous situations.

Leave this kind of maintenance in the hands of expert staff appointed by the user.

It is advisable to stop and perform this extraordinary maintenance each time some poor functioning is detected. In this way, total efficiency at all times is guaranteed.

Always use the specific PPE - personal protection equipment:

- gloves;
- non-slip shoes;
- goggles;
- dust respirator;
- suitable clothing.

Procedure

Visually check that each component of the machine is in good condition. Check that they are not altered as the result of deformation or breakdown.

Before any maintenance not requiring powered transmission components, stop the system by cutting off power via the disconnecting switch in the main control panel. Set the switch to 0 (OFF) and lock it out with a padlock.

7.8. TROUBLESHOOTING

Contact the Manufacturer for any defect and/or failure not described in this Manual.

8. ACCESSORIES AND SPARE PARTS

8.1. SERVICE

The Manufacturer is always at the customers' disposal for any information needed about how to install, use and service the machine.

Customers are required to send clear questions in connection with this Manual and the instructions listed in it.

8.2. SPARES PARTS

Spare parts list

This is a list of the main spare parts for servicing the machine. A set of tables have been prepared to facilitate searching for spare parts. These tables are divided into vertical columns; from left to right, each column represents:

1st column: the number of the figure on the next page to be used as reference;

2nd column: the description of the spare part;

3rd column: the Pola e Massa s.r.l. code that identifies the spare part;

4th column: Quantity of spare parts fitted and unit of measurement.

ALWAYS USE ORIGINAL SPARE PARTS.

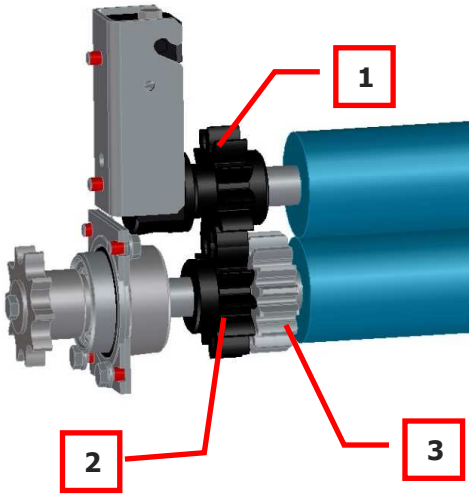
CONTACT THE MANUFACTURER FOR SPARE PARTS.

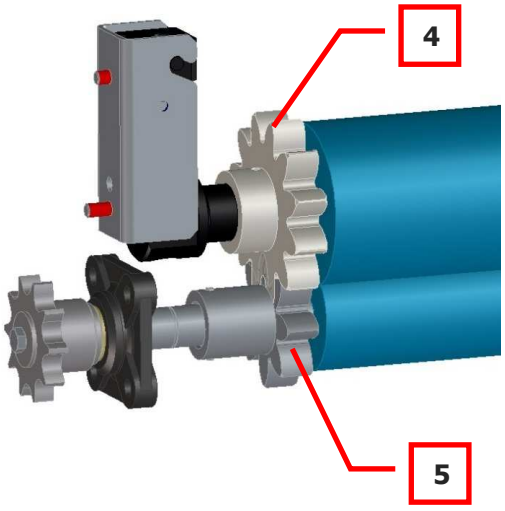
Please quote the following data when ordering spare parts from Pola e Massa s.r.l. in order to avoid shipping mistakes:

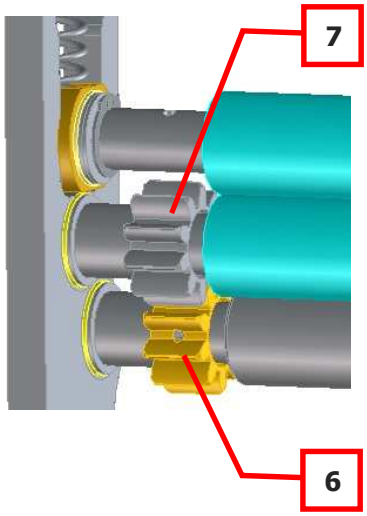
- **All data appearing on the marking plate affixed onto the machine;**
- **description of spare part;**
- **how many spare parts are needed;**
- **code of spare part;**
- **mode of transport;**
- **full address where goods are to be sent and full invoicing address.**

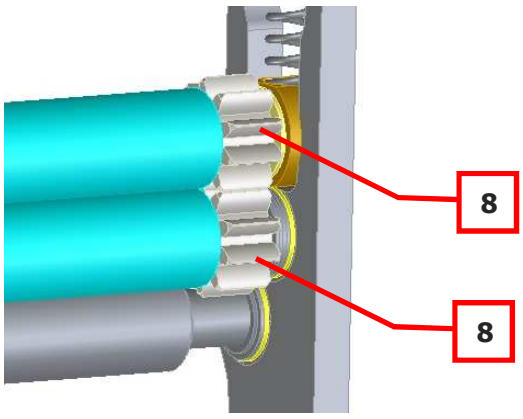
GEARS WITH UPPER SHAFTS, Ø40 AND Ø60 (Applies to the entire line)

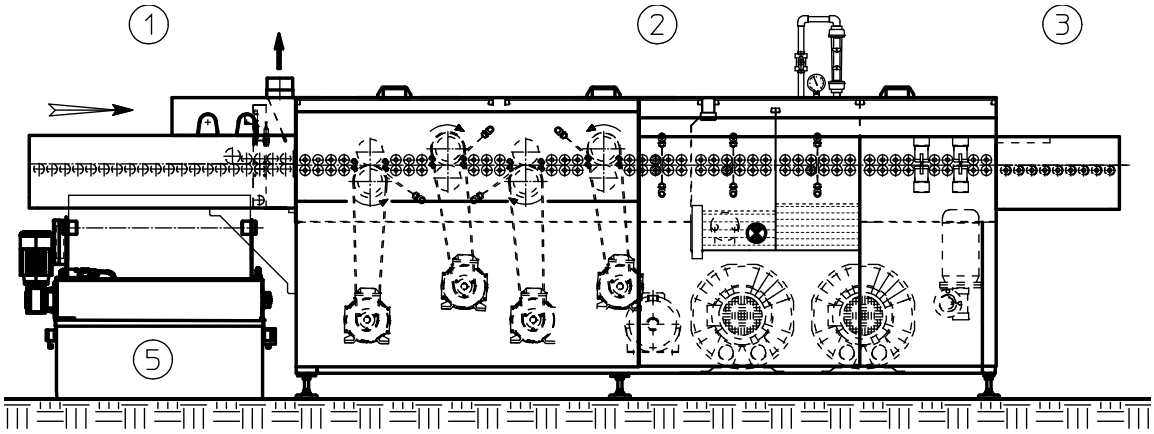
Pos.	Description	Code or drawing	Q.ty
1)	UPPER GEAR	3.07.65.572	120
2)	LOWER GEAR	3.07.65.572	120
3)	LOWER GEAR	3.07.65.440	8
4)	LOWER GEAR	3.07.65.698	1
5)	UPPER GEAR	3.07.65.699	1
--	STAINLESS STEEL ELASTIC PIN Ø3X20 FOR GEAR NO. 3	B/26.19	8
--	STAINLESS STEEL ELASTIC PIN Ø3X26 FOR GEARS NO. 1-2-4-5	B/26.25	242
6)	BRONZE GEAR	3.07.65.787	8
7)	GEAR INOX	3.07.65.439	8
8)	PLASTIC GEAR	3.07.65.983	16







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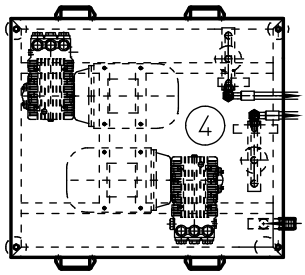
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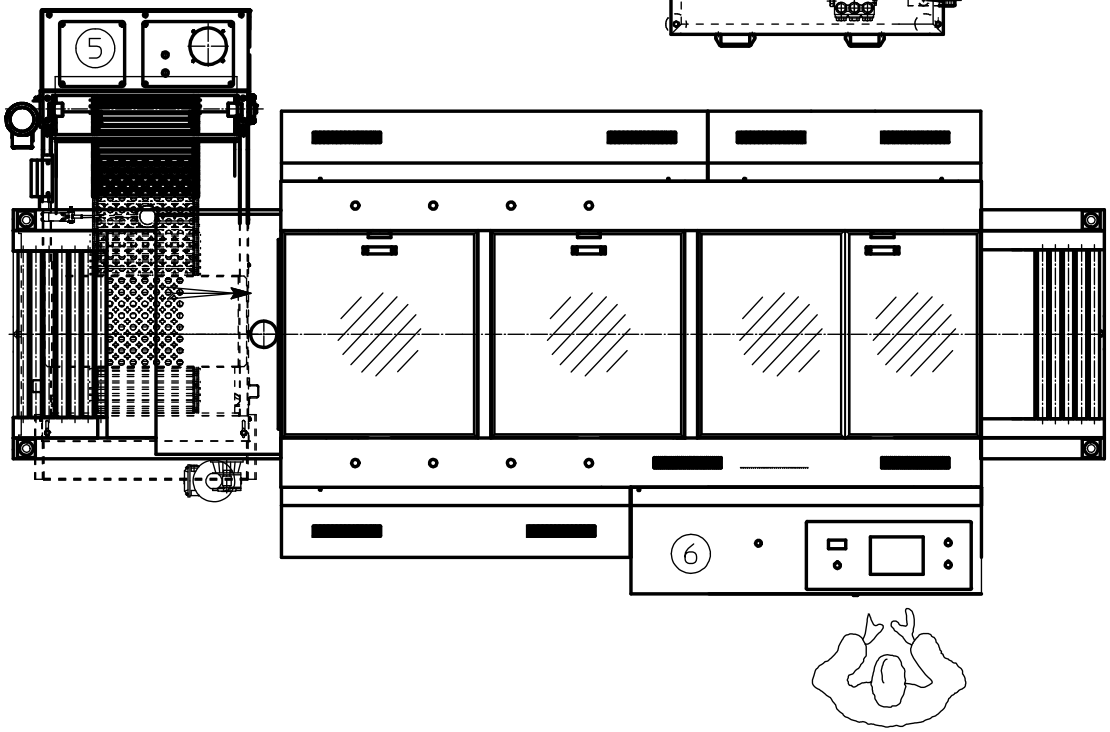
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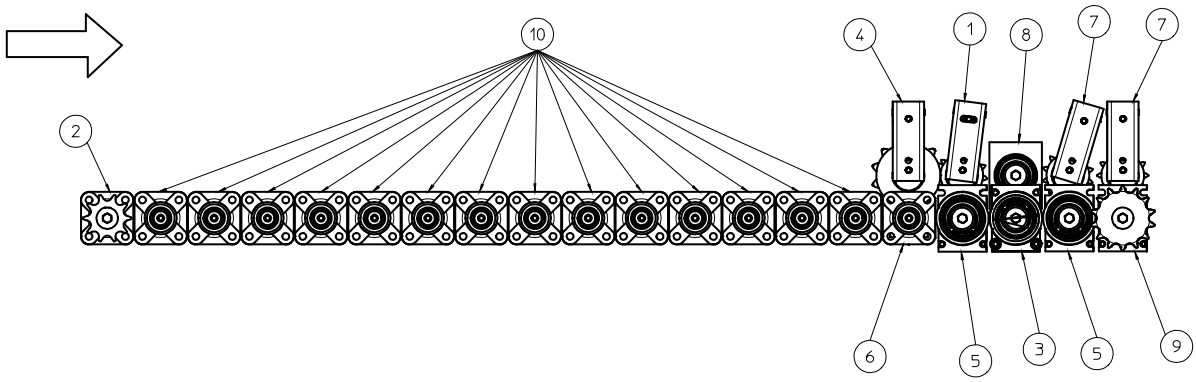
CONVEYOR WITH THICKNESS GAUGE L=1025 mm (Ref. 1)

Pos.	Description	Code or drawing	Q.ty
1)	LOWER SHAFT ASSEMBLY	3.07.652352/2	1
2)	LOWER MEASURING SHAFT ASSEMBLY	3.07.652351/2	1
3)	TOUCH PROBE INPUT SHAFT ASSEMBLY Ø60	3.07.652347	1
4)	UPPER WRINGER SHAFT ASSEMBLY	3.07.652363	1
5)	LOWER END SHAFT ASSEMBLY	3.07.653169	2
6)	LOWER END SHAFT ASSEMBLY	3.07.652349/2	1
7)	UPPER WRINGER SHAFT ASSEMBLY	3.07.652206/2	2
8)	UPPER TOUCH PROBE INPUT SHAFT ASSEMBLY	3.07.652358	1
9)	LOWER END SHAFT ASSEMBLY	3.07.652325/2	1
10)	TRANSPORT SHAFT ASSEMBLY	3.07.652350/2	14



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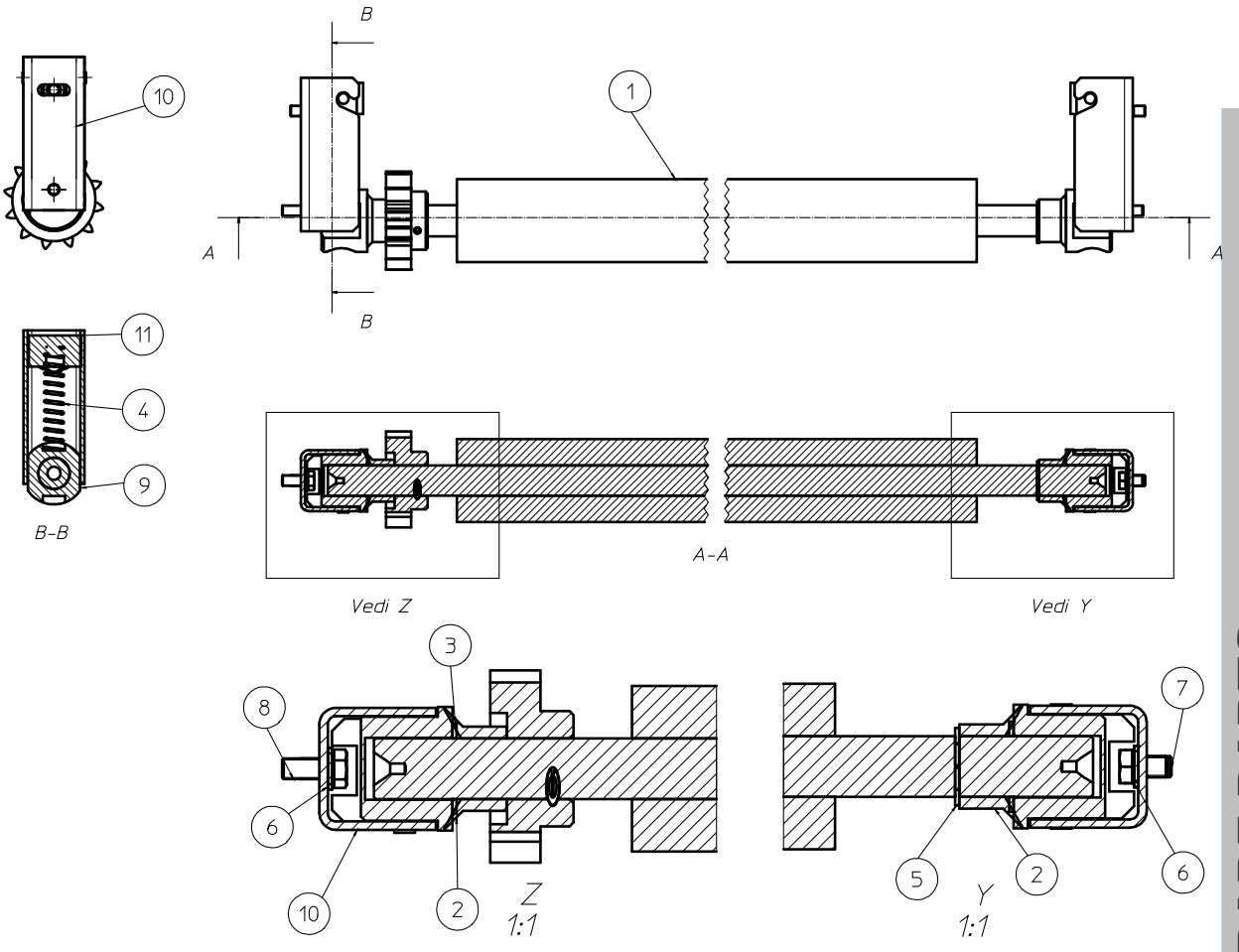
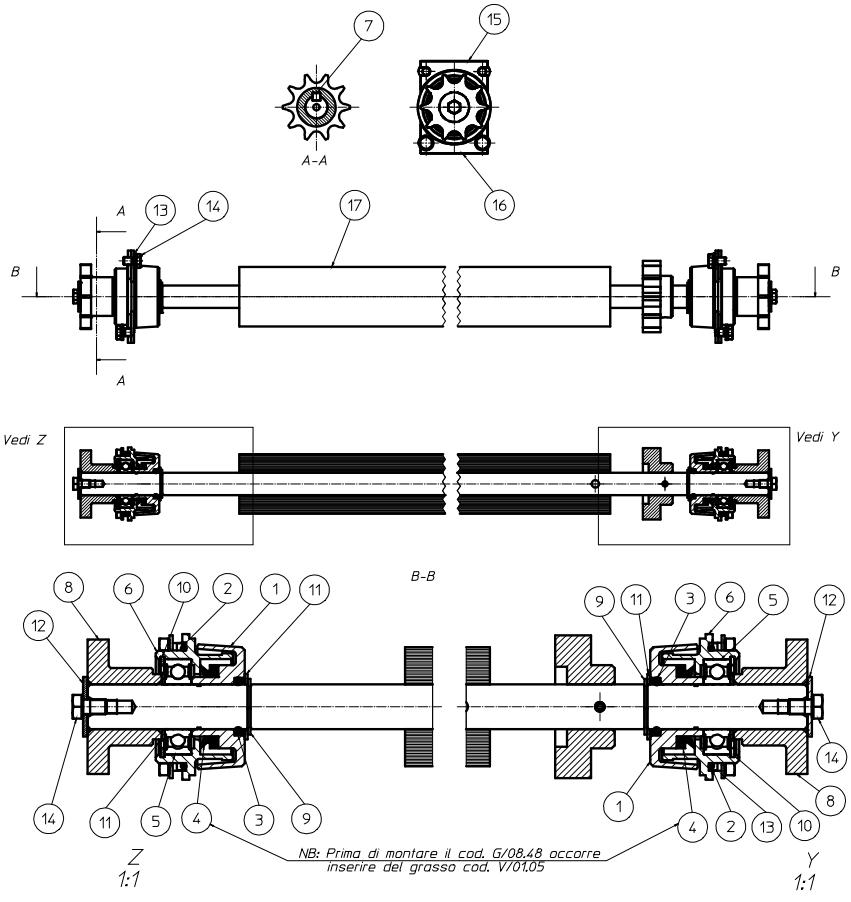
UPPER INPUT SHAFT ASSEMBLY (3.07.652352/2)

Pos.	Description	Code or drawing	Q.ty
1)	UPPER WRINGER SHAFT	3.07.65.449/3	1
2)	FRONT SEAL RING	1.PU.042	2
3)	WASHER	C-01130	2
4)	SPRING	1.PU1024	2
5)	STAINLESS STEEL SEEGER 15 E	B-33.15	1
6)	WASHER D.5	B-10.05	4
7)	STAINLESS STEEL HEX HEAD SCREW M5X8	B-01.48	3
8)	STAINLESS STEEL HEX HEAD SCREW M5X12	B-01.53	1
9)	BUSHING	1.PU.159/2	2
10)	BUSHING SUPPORT	3.07.65.859/2	2
11)	PLUG	1.PU.160/2	2



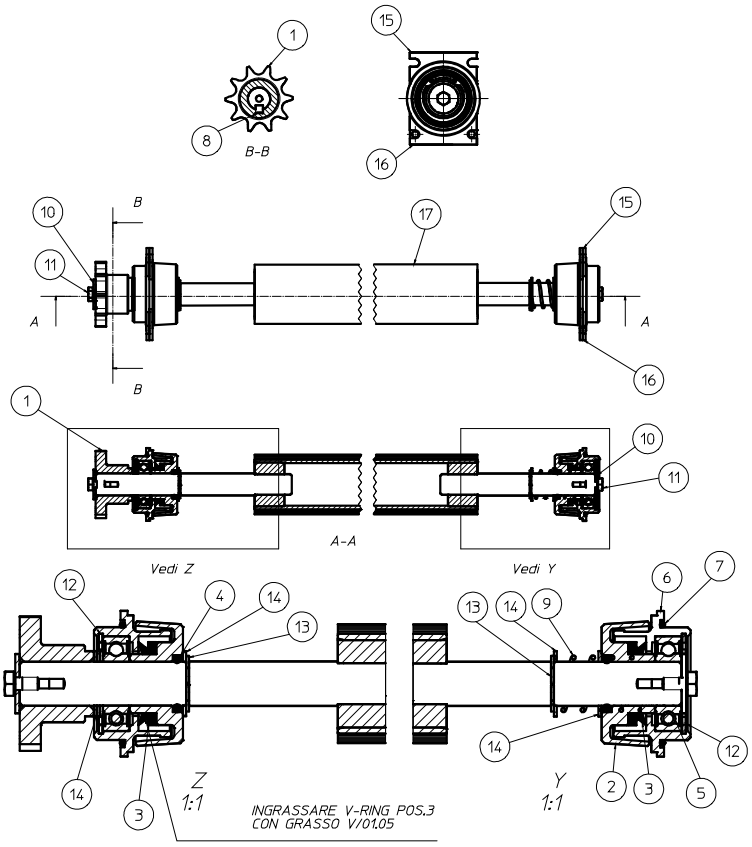
LOWER END SHAFT ASSEMBLY (3.07.652351/2)

Pos.	Description	Code or drawing	Q.ty
1)	PROTECTIVE CASING	3.07.65.425	2
2)	O-RING 2150	G-09150	2
3)	O-RING 119	G-09.13	2
4)	V-RING V20A	G-08.48	2
5)	BEARING 6002 2RS (15-32-9)	C-01.06-A	2
6)	BEARING SUPPORT	3.07.65.891	2
7)	STAINLESS STEEL KEY 5x5x15	B-22.40	2
8)	GEAR Z=10 1/2"-5/16"	3.07.65.418/2	2
9)	STAINLESS STEEL SEEGER 15 E	B-33.15	2
10)	STAINLESS STEEL SEEGER 32 I	B-33.32	2
11)	WASHER	C-01130	4
12)	WASHER	B-12.05	2
13)	WASHER D.5	B-10.05	8
14)	STAINLESS STEEL HEX HEAD SCREW M5X8	B-01.48	10
15)	SIDE MOUNT	3.07.65.422	2
16)	SIDE MOUNT	3.07.651142	2
17)	LOWER END SHAFT	3.07.65.617/2	1



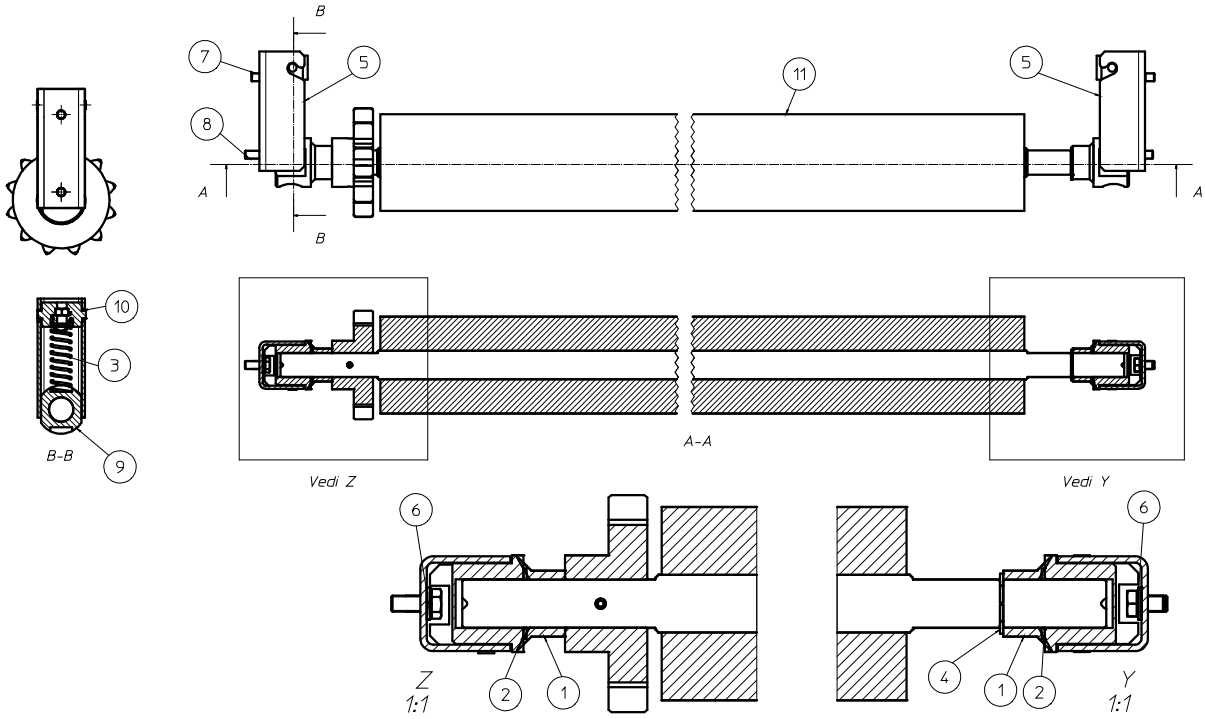
LOWER MEASURING SHAFT ASSEMBLY (3.07.652347)

Pos.	Description	Code or drawing	Q.ty
1)	GEAR Z=10 1/2"-5/16"	3.07.65.418/2	1
2)	PROTECTIVE CASING	3.07.65.425	2
3)	V-RING V20A	G-08.48	2
4)	O-RING 119	G-09.13	2
5)	BEARING 6002 2RS (15-32-9)	C-01.06-A	2
6)	BEARING SUPPORT	3.07.65.891	2
7)	O-RING 2150	G-09150	2
8)	STAINLESS STEEL KEY 5x5x15	B-22.40	1
9)	SPRING FOR SUCTION CUP RETURN	1.01.60.080	1
10)	WASHER	B-12.05	2
11)	STAINLESS STEEL HEX HEAD SCREW M5X8	B-01.48	2
12)	STAINLESS STEEL SEEGER 32 I	B-33.32	2
13)	STAINLESS STEEL SEEGER 15 E	B-33.15	2
14)	WASHER	C-01130	6
15)	SIDE MOUNT	3.07.65.422	2
16)	SIDE MOUNT	3.07.651142	2
17)	COATED LOWER MEASURING SHAFT	3.07.65.651/2	1



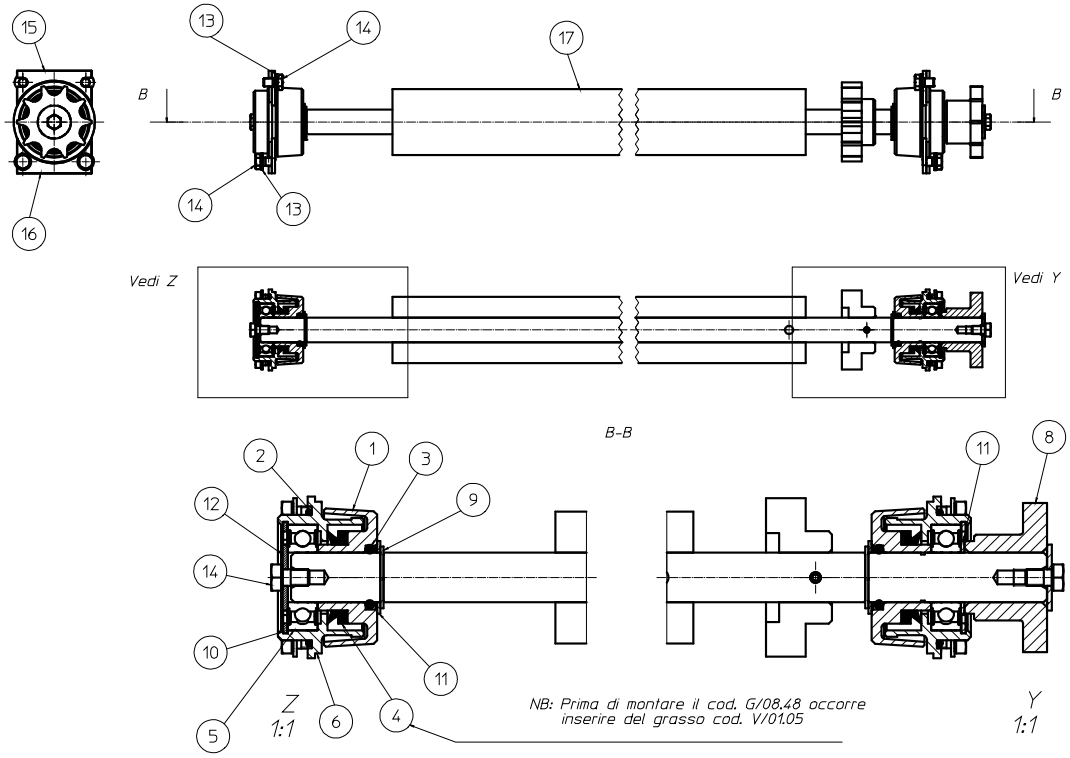
TOUCH PROBE INPUT SHAFT ASSEMBLY Ø60 (3.07.652363)

Pos.	Description	Code or drawing	Q.ty
1)	FRONT SEAL RING	1.PU.042	2
2)	WASHER	C-01130	2
3)	SPRING	1.PU1024	2
4)	STAINLESS STEEL SEEGER 15 E	B-33.15	1
5)	BUSHING SUPPORT	3.07.65.421/3	2
6)	WASHER D.5	B-10.05	4
7)	STAINLESS STEEL HEX HEAD SCREW M5X8	B-01.48	3
8)	STAINLESS STEEL HEX HEAD SCREW M5X12	B-01.53	1
9)	BUSHING	1.PU.159/2	2
10)	PLUG	1.PU.160/2	2
11)	TOUCH PROBE INPUT SHAFT ASSEMBLY Ø60	3.07.65.703/2	1



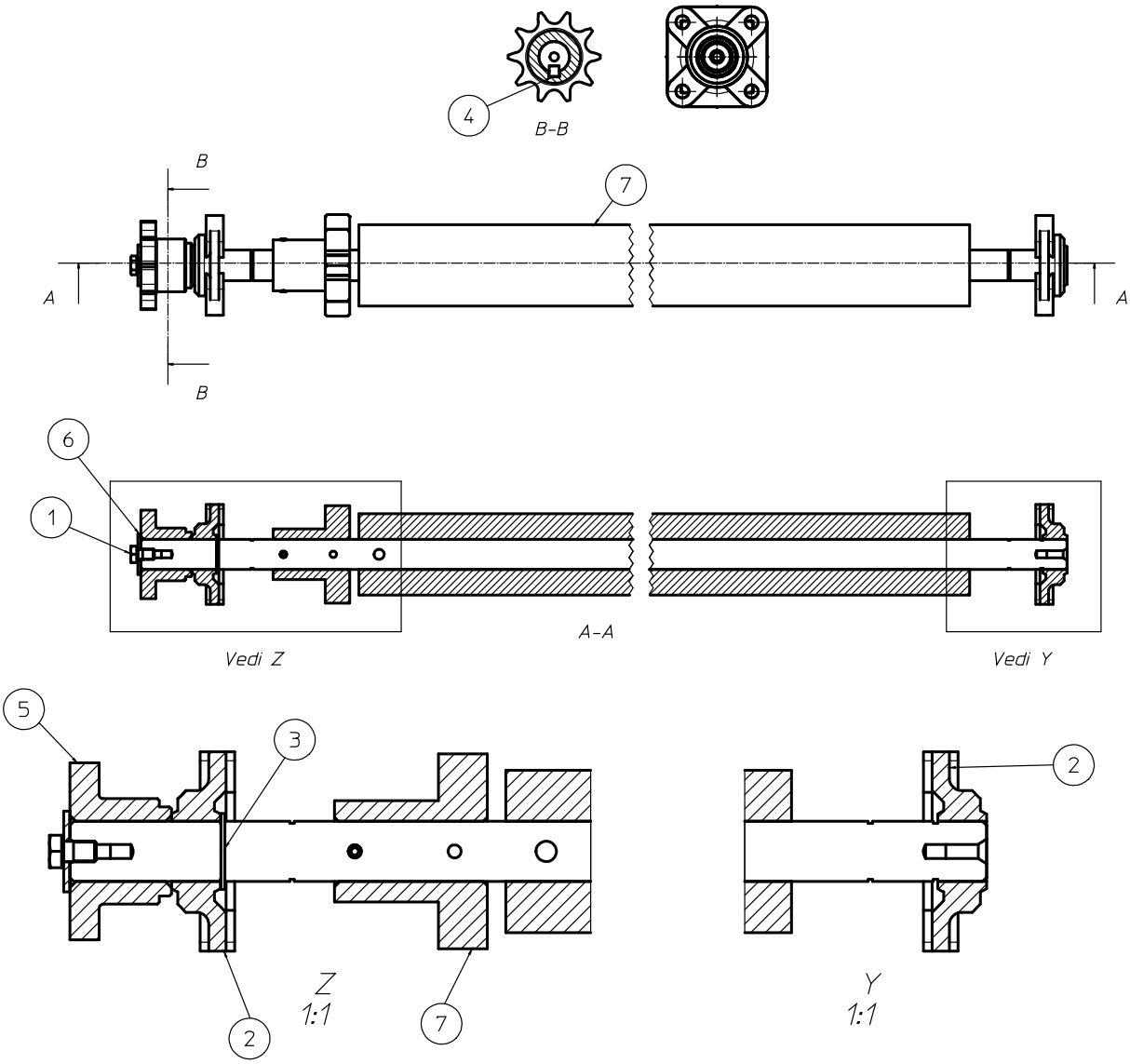
LOWER SHAFT ASSEMBLY (3.07.653169)

Pos.	Description	Code or drawing	Q.ty
1)	PROTECTIVE CASING	3.07.65.425/2	2
2)	O-RING 2150	G-09150	2
3)	O-RING 119	G-09.13	2
4)	V-RING V20A	G-08.48	2
5)	BEARING 6002 2RS (15-32-9)	C-01.06-A	2
6)	BEARING SUPPORT	3.07.65.891	2
7)	STAINLESS STEEL KEY 5x5x15	B-22.40	1
8)	GEAR Z=10 1/2"-5/16"	3.07.65.418/2	1
9)	STAINLESS STEEL SEEGER 15 E	B-33.15	2
10)	STAINLESS STEEL SEEGER 32 I	B-33.32	2
11)	WASHER	C-01130	3
12)	WASHER	B-12.05	2
13)	WASHER D.5	B-10.05	8
14)	STAINLESS STEEL HEX HEAD SCREW M5X8	B-01.48	10
15)	SIDE MOUNT	3.07.65.422	2
16)	SIDE MOUNT	3.07.651142	2
17)	LOWER SHAFT ASSEMBLY	3.07.653168	1



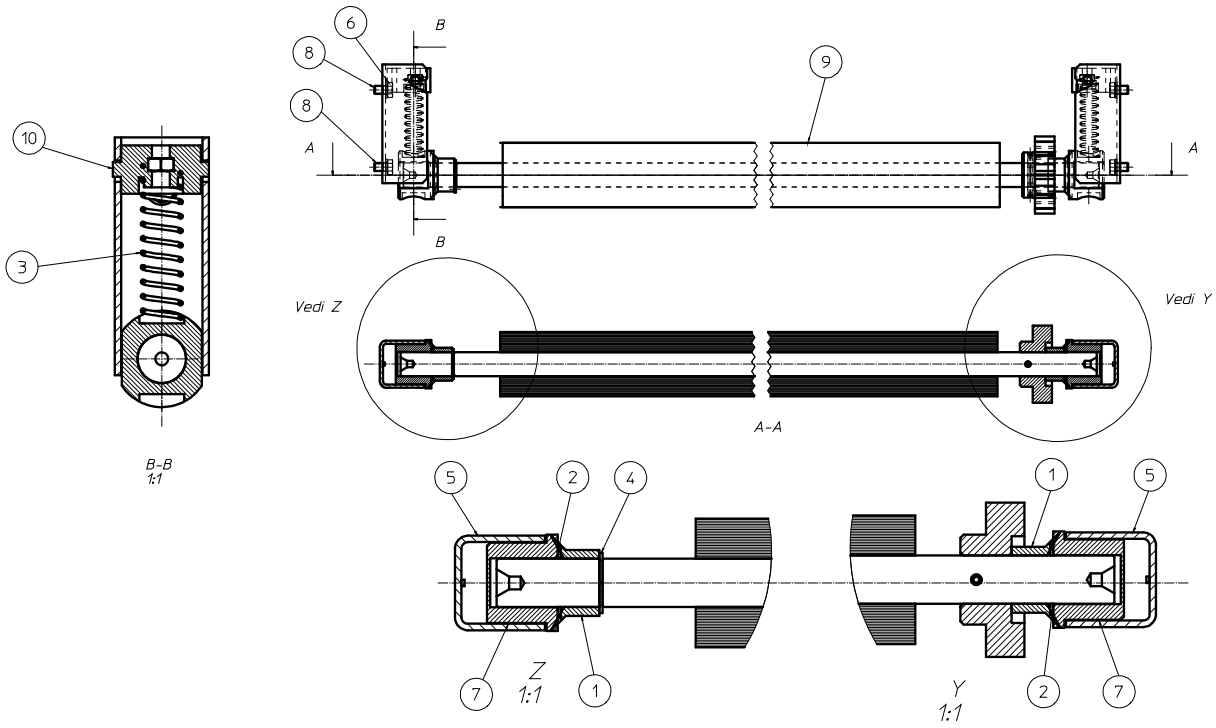
LOWER SHAFT ASSEMBLY (3.07.652349/2)

Pos.	Description	Code or drawing	Q.ty
1)	STAINLESS STEEL HEX HEAD SCREW M5X8	B-01.48	1
2)	FLANGE SUPPORT	C-06.05	2
3)	STAINLESS STEEL SEEGER 15 E	B-33.15	1
4)	STAINLESS STEEL KEY 5x5x15	B-22.40	1
5)	GEAR Z=10 1/2"-5/16"	3.07.65.418/2	1
6)	WASHER	B-12.05	1
7)	LOWER SHAFT FOR ROLLER Ø60	3.07.65.674/2	1



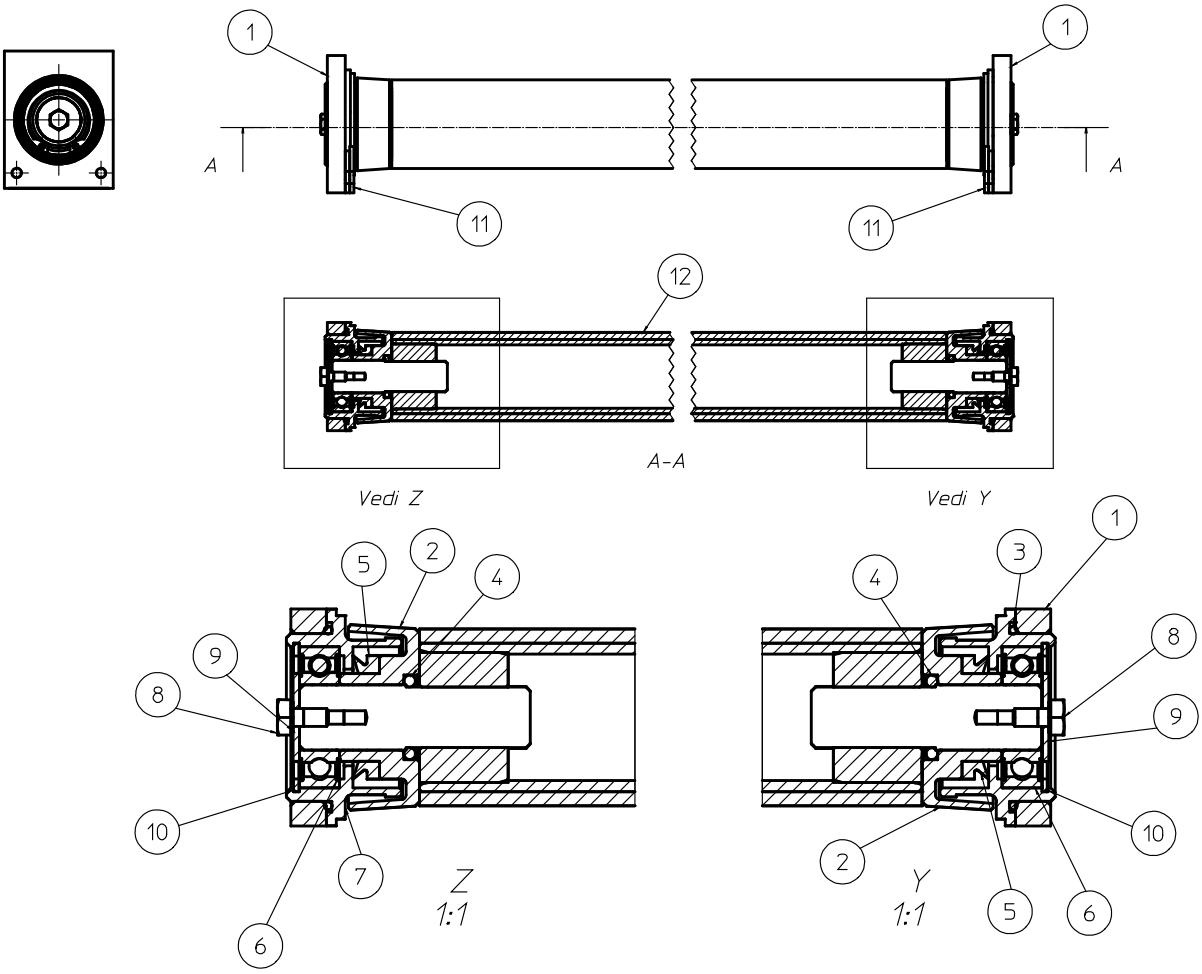
UPPER WRINGER SHAFT ASSEMBLY (3.07.652206/2)

Pos.	Description	Code or drawing	Q.ty
1)	FRONT SEAL RING	1.PU.042	2
2)	WASHER	C-01130	2
3)	SPRING	1.PU1024	2
4)	STAINLESS STEEL SEEGER 15 E	B-33.15	1
5)	BUSHING SUPPORT	3.07.65.421/3	2
6)	WASHER D.5	B-10.05	4
7)	BUSHING	1.PU.159/2	2
8)	STAINLESS STEEL HEX HEAD SCREW M5X8	B-01.48	4
9)	UPPER WRINGER SHAFT	3.07.65.449/3	1
10)	PLUG	1.PU.160/2	2



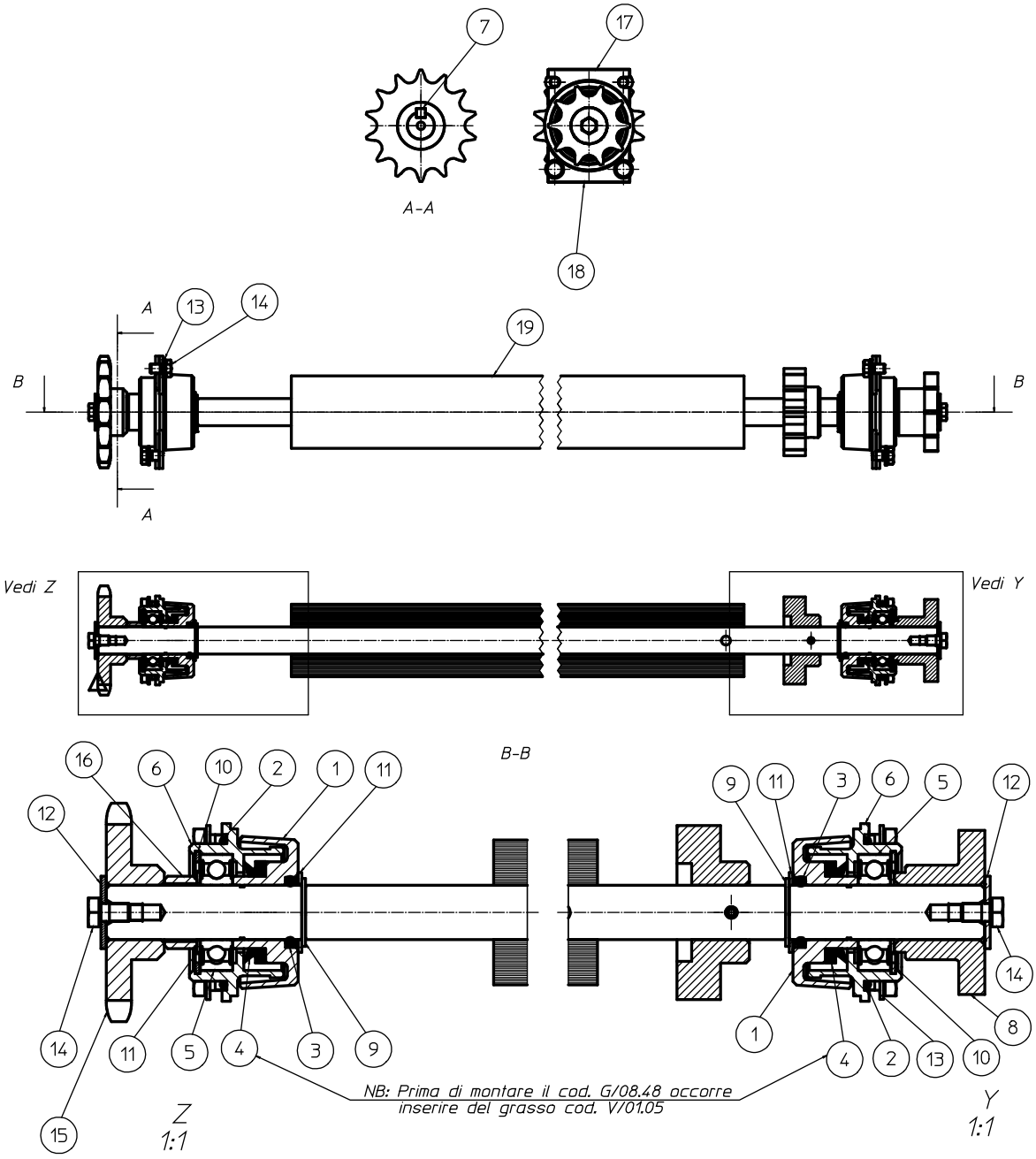
UPPER MEASURING SHAFT ASSEMBLY (3.07.652358)

Pos.	Description	Code or drawing	Q.ty
1)	COUPLING FOR MEASURING SHAFT	3.07.65.642	2
2)	PROTECTIVE CASING	3.07.65.425	2
3)	O-RING 2150	G-09150	2
4)	O-RING 119	G-09.13	2
5)	V-RING V20A	G-08.48	2
6)	BEARING 6002 2RS (15-32-9)	C-01.06-A	2
7)	BEARING SUPPORT	3.07.65.891	2
8)	STAINLESS STEEL HEX HEAD SCREW M5X8	B-01.48	2
9)	WASHER	B-12.05	2
10)	STAINLESS STEEL SEEGER 32 I	B-33.32	2
11)	SIDE MOUNT	3.07.65.422	2
12)	UPPER MEASURING SHAFT	3.07.65.653/2	1



LOWER END SHAFT ASSEMBLY (3.07.652325/2)

Pos.	Description	Code or drawing	Q.ty
1)	PROTECTIVE CASING	3.07.65.425/2	2
2)	O-RING 2150	G-09150	2
3)	O-RING 119	G-09.13	2
4)	V-RING V20A	G-08.48	2
5)	BEARING 6002 2RS (15-32-9)	C-01.06-A	2
6)	BEARING SUPPORT	3.07.65.891	2
7)	STAINLESS STEEL KEY 5x5x15	B-22.40	2
8)	GEAR Z=10 1/2"-5/16"	3.07.65.418/2	1
9)	STAINLESS STEEL SEEGER 15 E	B-33.15	2
10)	STAINLESS STEEL SEEGER 32 I	B-33.32	2
11)	WASHER	C-01130	4
12)	WASHER	B-12.05	2
13)	WASHER D.5	B-10.05	8
14)	STAINLESS STEEL HEX HEAD SCREW M5X8	B-01.48	10
15)	GEAR	3.06.100.149	1
16)	SPACER	3.06.80.727	1
17)	SIDE MOUNT	3.07.65.422	2
18)	SIDE MOUNT	3.07.651142	2
19)	LOWER END SHAFT	3.07.65.774/2	1


7
17
A-A
18
A
13
14
19
B
B
A
Vedi Z
Vedi Y
16
6
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2
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11
12
B-B
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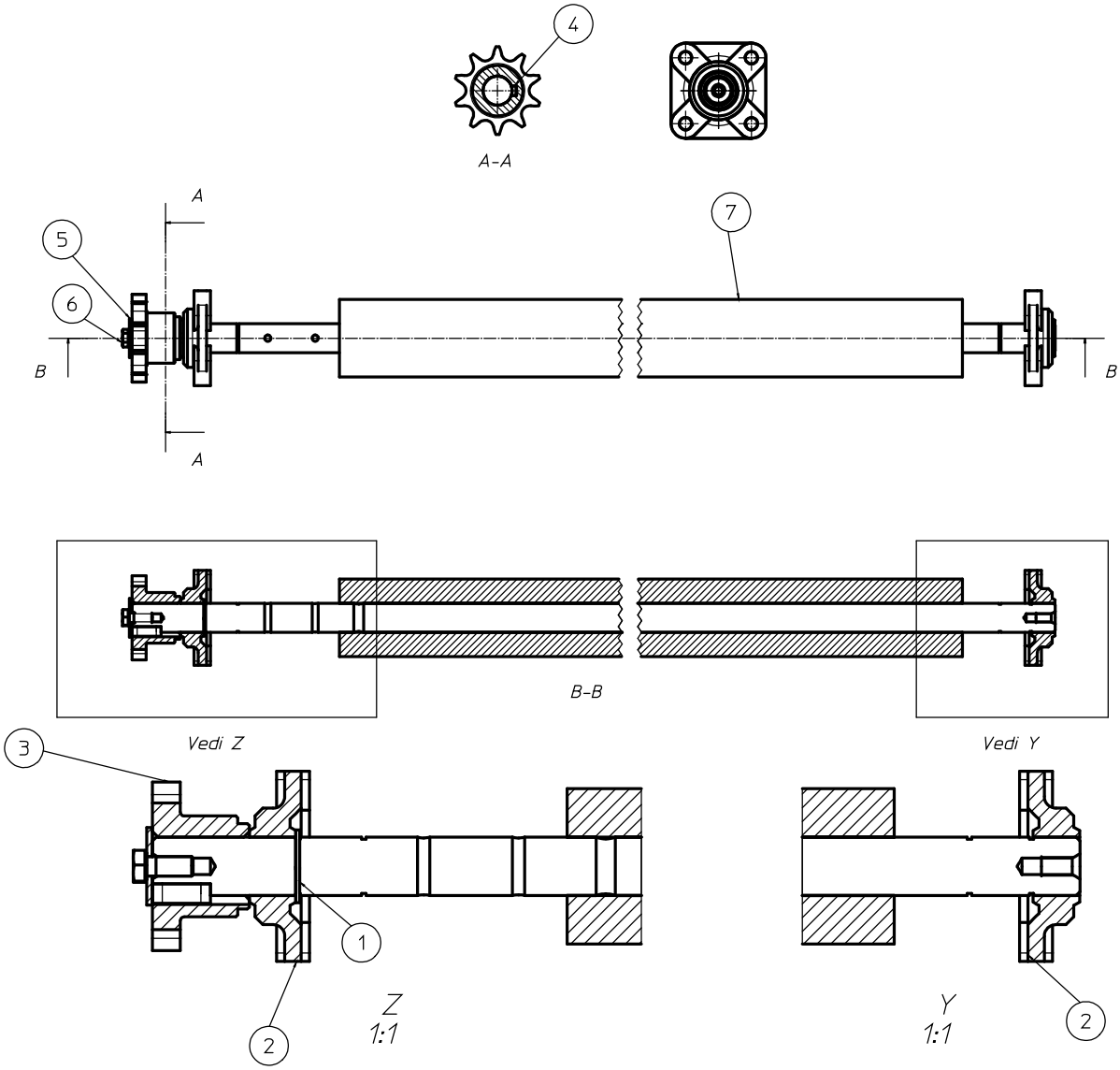
13
10
15
NB: Prima di montare il cod. G/08.48 occorre inserire del grasso cod. V/01.05
Z
1:1
Y
1:1

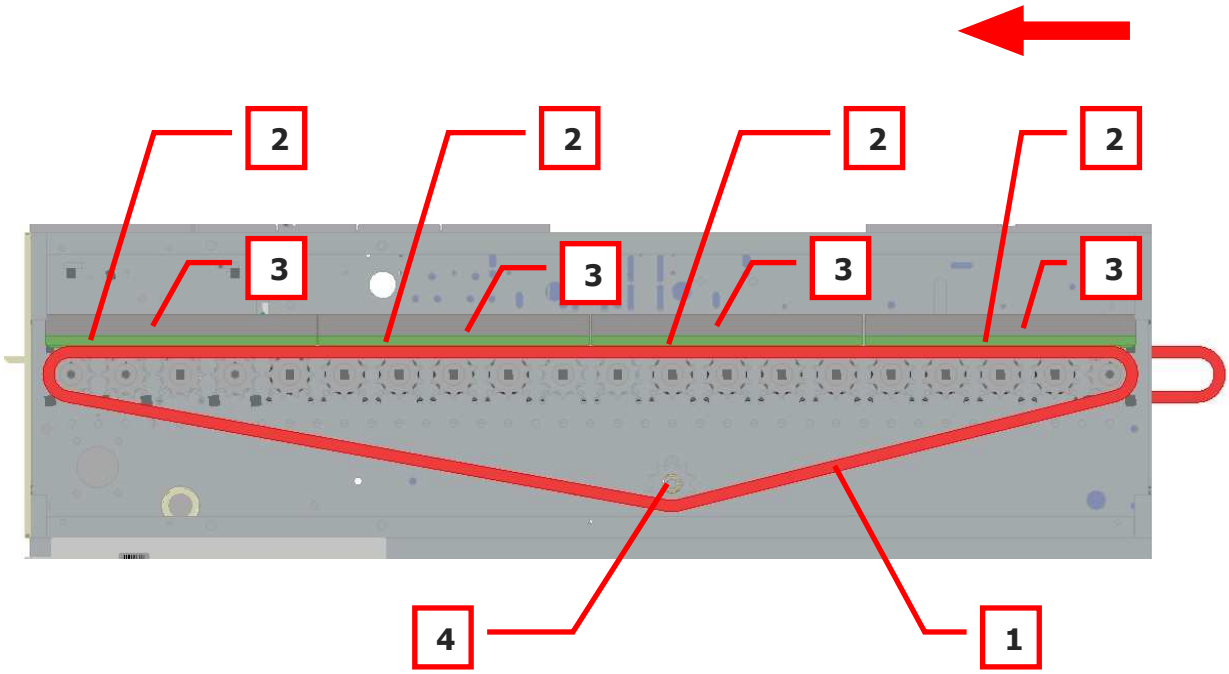
TRANSPORT SHAFT ASSEMBLY (3.07.652350/2)

Pos.	Description	Code or drawing	Q.ty
1)	STAINLESS STEEL SEEGER 15 E	B-33.15	1
2)	FLANGE SUPPORT	C-06.05	2
3)	GEAR Z=10 1/2"-5/16"	3.07.65.418/2	1
4)	STAINLESS STEEL KEY 5x5x15	B-22.40	1
5)	WASHER	B-12.05	1
6)	STAINLESS STEEL HEX HEAD SCREW M5X12	B-01.53	1
7)	LOWER SHAFT ASSEMBLY	3.07.65.759/2	1



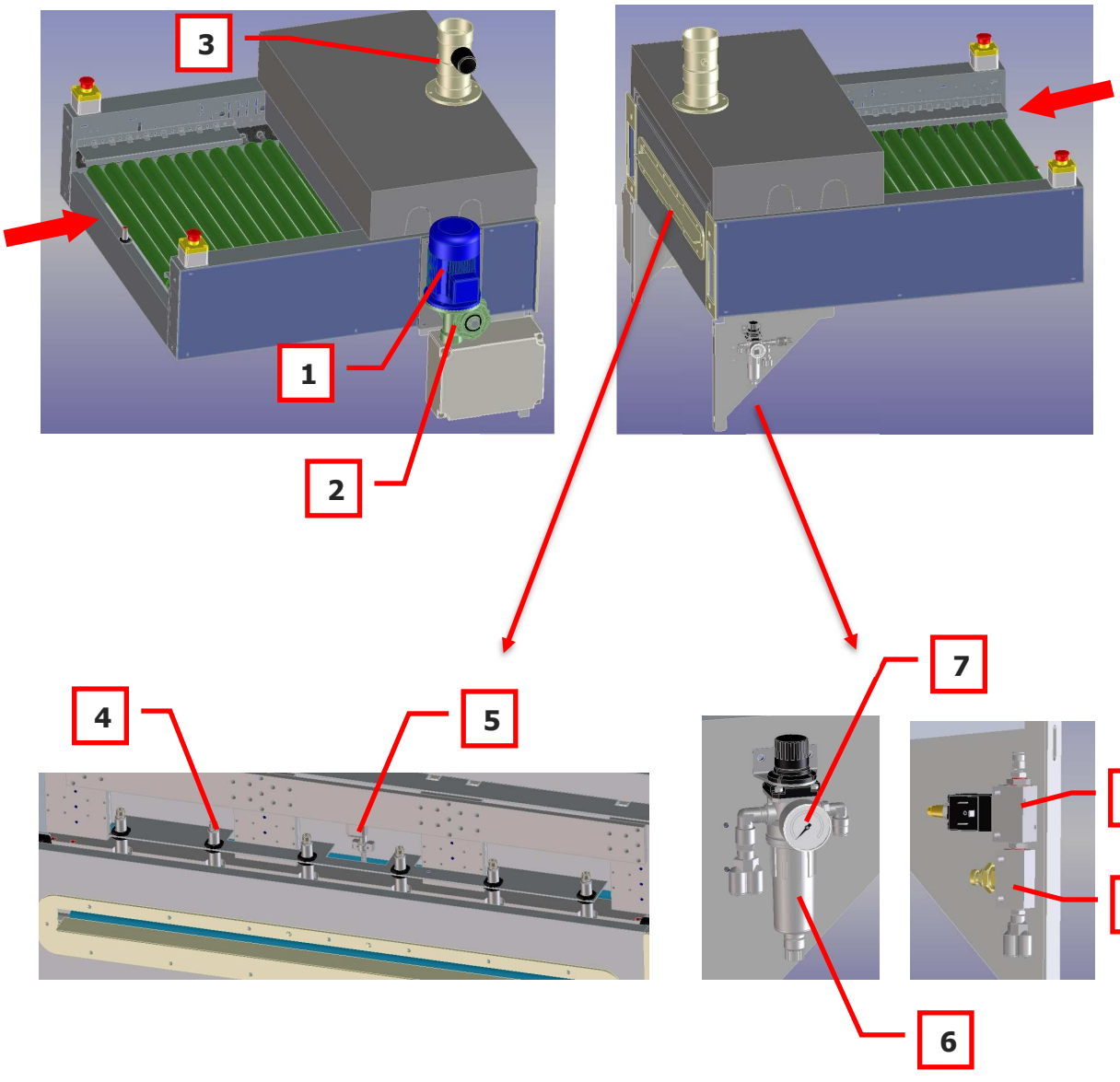
CONVEYOR WITH THICKNESS GAUGE TRANSMISSION L=1025 mm

Pos.	Description	Code or drawing	Q.ty
1)	DRIVE CHAIN	T/01.50	m 3
--	JUNCTION MESH	T/01.51	2
--	FALSE MESH	T/01.52	2
2)	CHAIN GUIDE	3.07.65.503	4
3)	CHAIN GUIDE SUPPORT	3.07.65.502/2	4
4)	TENSIONER GEAR	3.07.65.719/2	1



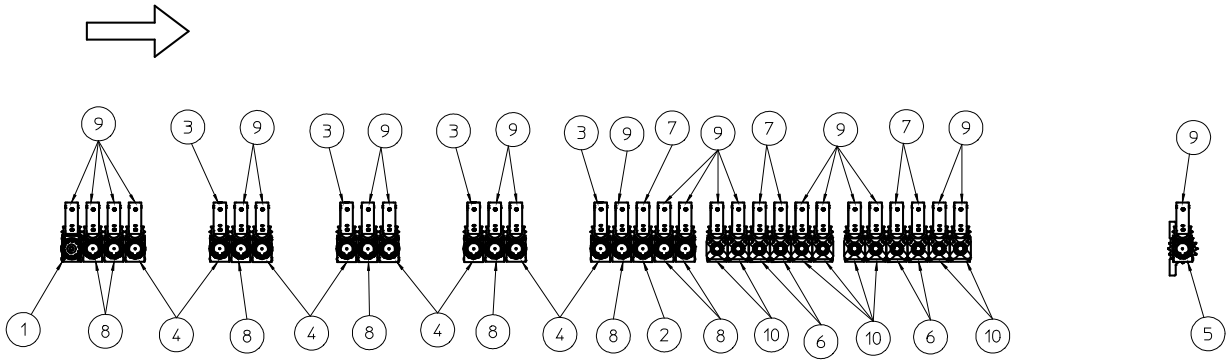
ACCESSORIES

Pos.	Description	Code or drawing	Q.ty
1)	DRIVE MOTOR	M/01.11	1
2)	DRIVE REDUCTION UNIT	R/02.12/CH	1
3)	SUCTION VALVE	1.PU2279	1
4)	PHOTOCELL	E/40.50/S	6
5)	SENSOR	E/40100	1
6)	REGULATOR FILTER	I/03.13/A	1
7)	PRESSURE GAUGE	I/03.13/D	1
8)	SOLENOID VALVE	I/03.81	1
9)	FLOW REGULATOR	I/03.08	1



UNIBLOC BRUSHING 4/25 L=2700 mm (Ref. 2)

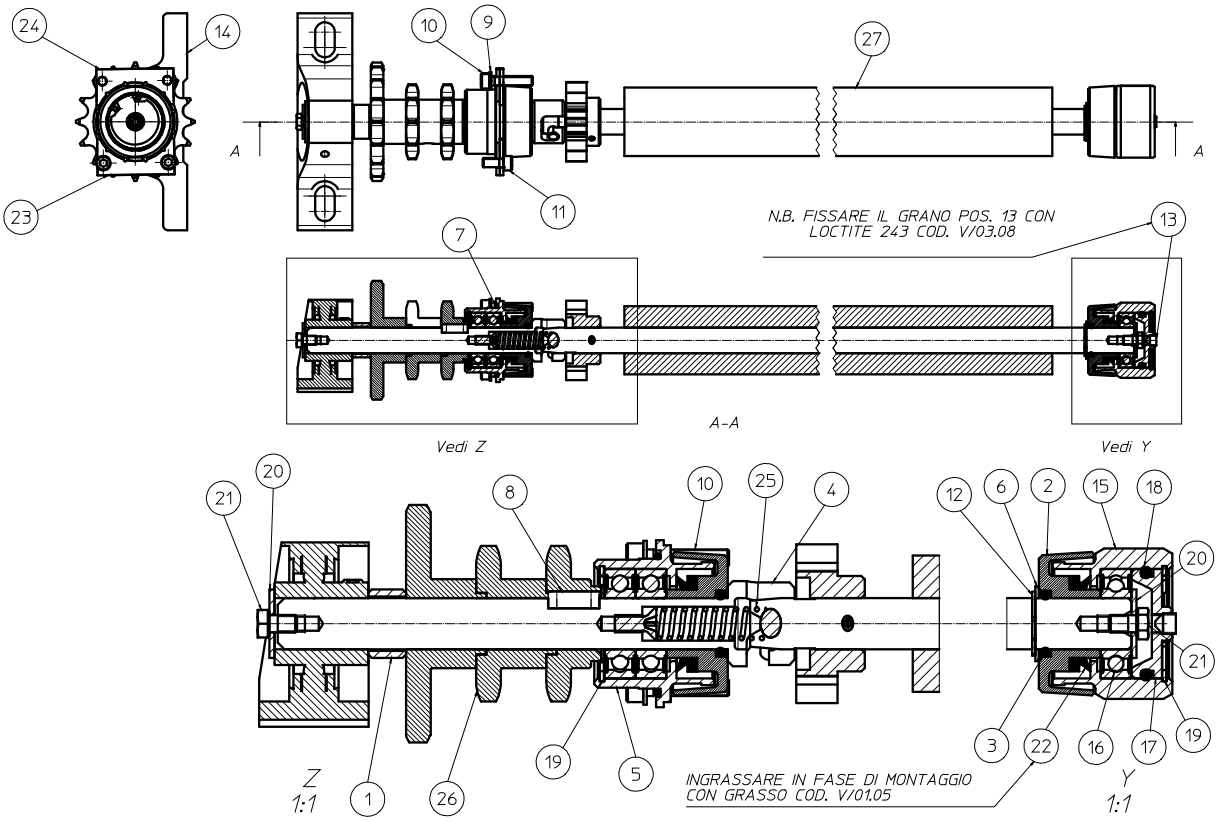
Pos.	Description	Code or drawing	Q.ty
1)	BRUSHING DRIVE SHAFT ASSEMBLY 120	3.07.653171	1
2)	UPPER WRINGER SHAFT ASSEMBLY	3.07.652206/2	22
3)	UPPER WRINGER SHAFT ASSEMBLY	3.07.652495/2	4
4)	UPPER SHAFT ASSEMBLY WITH GROOVES	3.07.652437/2	5
5)	LOWER END SHAFT ASSEMBLY	3.07.652209/2	1
6)	LOWER SHAFT ASSEMBLY	3.07.652207/2	8
7)	LOWER SHAFT ASSEMBLY	3.07.652458/2	8
8)	LOWER SHAFT ASSEMBLY WITH GROOVES	3.07.652459/2	1
9)	LOWER FLANGE SUPPORT SHAFT ASSEMBLY	3.07.652499/2	8
10)	LOWER QUICK-COUPLING SHAFT ASSEMBLY WITH GROOVES	3.07.652461/2	4



DRIVING ELEMENT-40

BRUSHING DRIVE SHAFT ASSEMBLY 120 (3.07.653171)

Pos.	Description	Code or drawing	Q.ty
1)	SPACER	3.07.65.905/2	1
2)	PROTECTIVE CASING	3.07.65.425/2	2
3)	O-RING 119	G-09.13	2
4)	QUICK-COUPLING SHAFT	3.07.652850	1
5)	BEARING SUPPORT	3.07.65.892	1
6)	WASHER	C-01130	2
7)	O-RING 2150	G-09150	1
8)	STAINLESS STEEL KEY 5x5x15	B-22.40	1
9)	WASHER D.5	B-10.05	2
10)	STAINLESS STEEL HEXAGON SOCKET HEAD CAP SCREW M5X25	B-02.58	2
11)	STAINLESS STEEL HEXAGON SOCKET HEAD CAP SCREW M5X12	B-02.52	2
12)	STAINLESS STEEL SEEGER 15 E	B-33.15	1
13)	STAINLESS STEEL DOWEL M6x6	B-24.92	1
14)	BEARING CHANGE	3.07.652338	1
15)	BEARING SUPPORT - RIGHT	3.07.65.893/2	1
16)	BEARING 6002 2RS (15-32-9)	C-01.06-A	3
17)	SIDE CLOSING BUSHING	7.01.65.473/3	1
18)	O-RING 3106	G-09.24	1
19)	STAINLESS STEEL SEEGER 32 I	B-33.32	2
20)	WASHER	B-12.05	2
21)	STAINLESS STEEL HEX HEAD SCREW M5X8	B-01.48	2
22)	V-RING V20A	G-08.48	2
23)	SIDE MOUNT	3.07.65.422	1
24)	SIDE MOUNT	3.07.651142	1
25)	SPRING + SCREW ASSEMBLY	3.07.651120	1
26)	GEAR	3.07.652852	1
27)	LOWER QUICK-COUPLING SHAFT	3.07.65.450/2	1


24
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23
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A
A
N.B. FISSARE IL GRANO POS. 13 CON LOCTITE 243 COD. V/03.08
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A-A
Vedi Z
Vedi Y
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22
16
17
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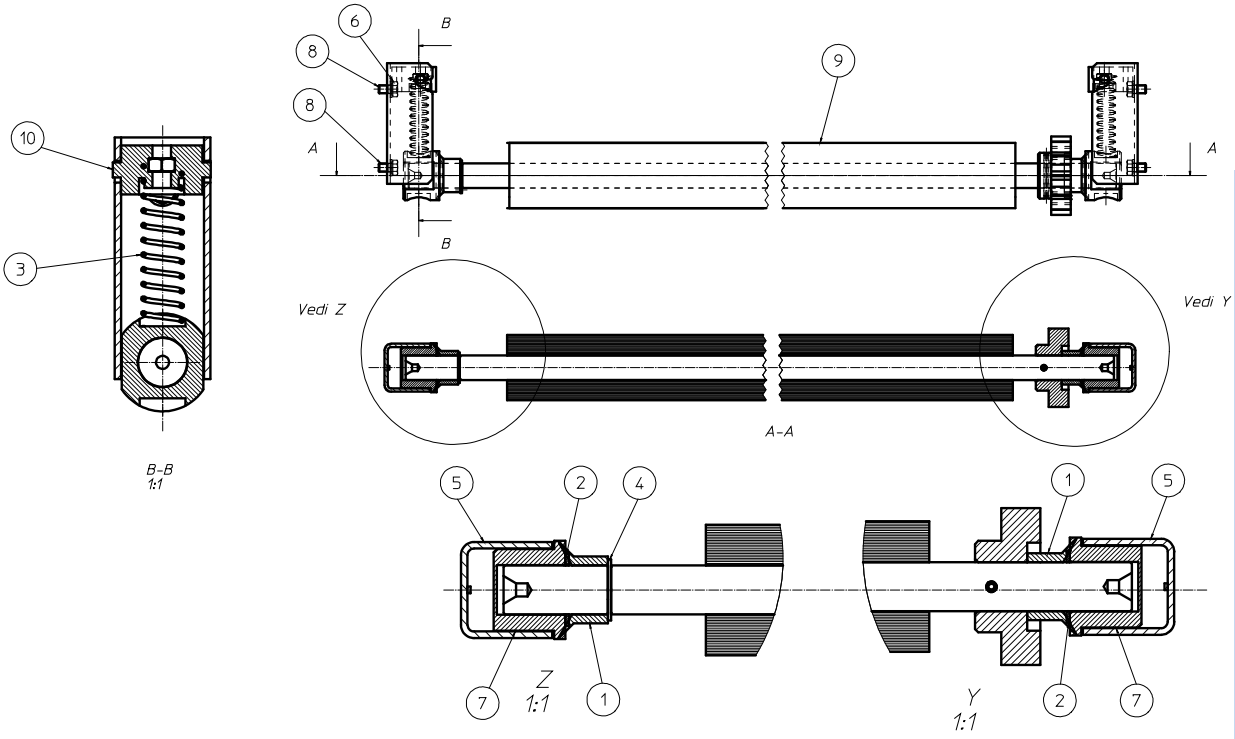
26
Z
1:1
Y
1:1
INGRASSARE IN FASE DI MONTAGGIO CON GRASSO COD. V/01.05

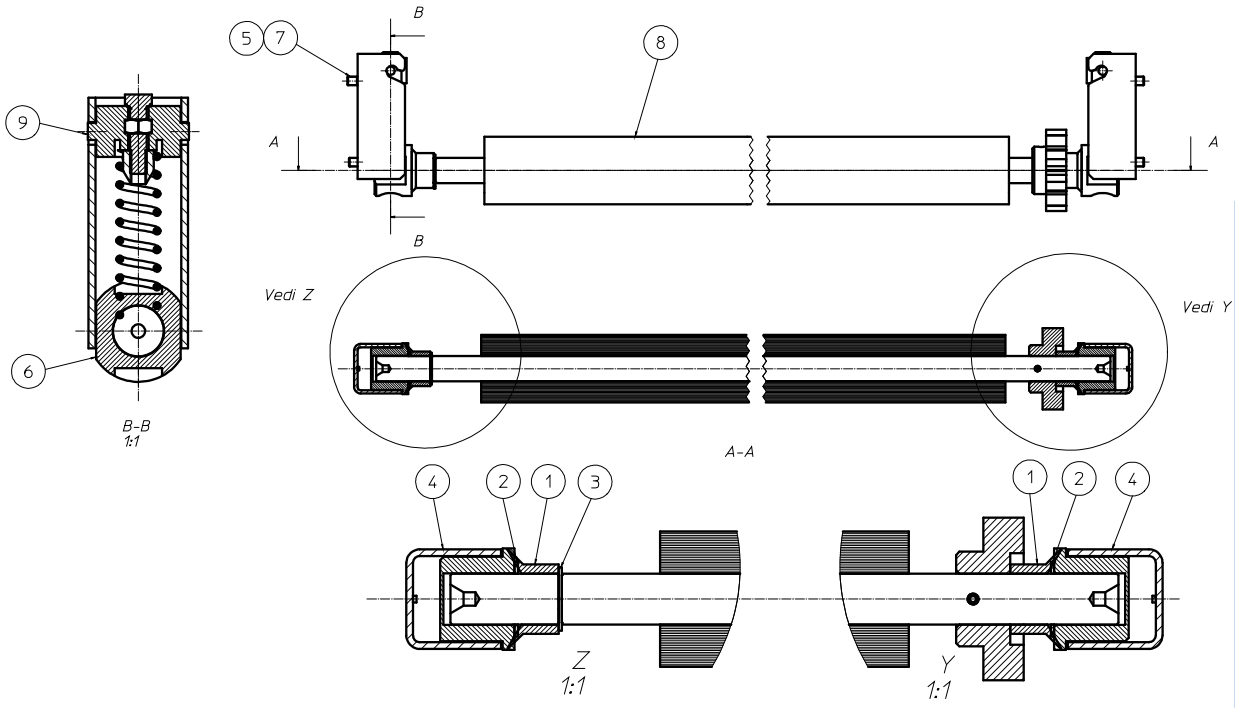
UPPER WRINGER SHAFT ASSEMBLY (3.07.652206/2)

Pos.	Description	Code or drawing	Q.ty
1)	FRONT SEAL RING	1.PU.042	2
2)	WASHER	C-01130	2
3)	SPRING	1.PU1024	2
4)	STAINLESS STEEL SEEGER 15 E	B-33.15	1
5)	BUSHING SUPPORT	3.07.65.421/3	2
6)	WASHER D.5	B-10.05	4
7)	BUSHING	1.PU.159/2	2
8)	STAINLESS STEEL HEX HEAD SCREW M5X8	B-01.48	4
9)	UPPER WRINGER SHAFT	3.07.65.449/3	1
10)	PLUG	1.PU.160/2	2



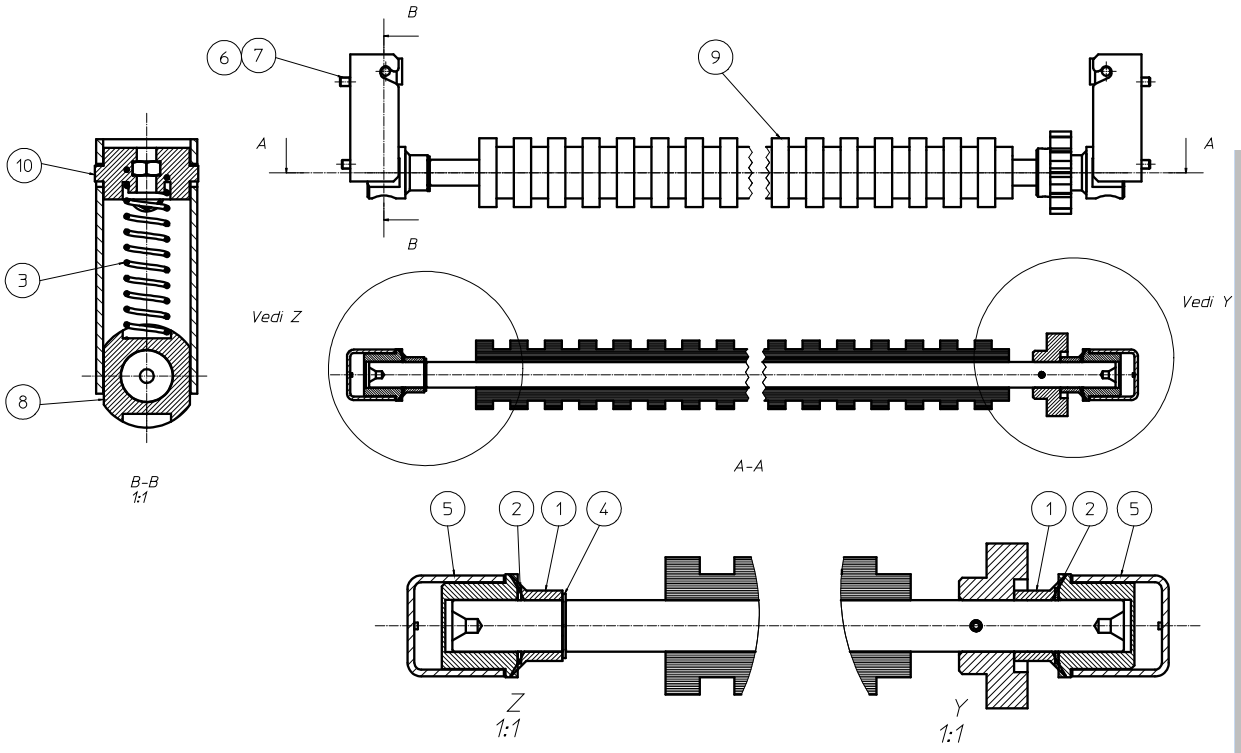
UPPER WRINGER SHAFT ASSEMBLY (3.07.652495/2)

Pos.	Description	Code or drawing	Q.ty
1)	FRONT SEAL RING	1.PU.042	2
2)	WASHER	C-01130	2
3)	STAINLESS STEEL SEEGER 15 E	B-33.15	1
4)	BUSHING SUPPORT	3.07.65.421/3	2
5)	WASHER D.5	B-10.05	4
6)	BUSHING	1.PU.159/2	2
7)	STAINLESS STEEL HEX HEAD SCREW M5X8	B-01.48	4
8)	UPPER WRINGER SHAFT	3.07.65.449/3	1
9)	SPRING PRESS ASSEMBLY	3.07.65.755	2



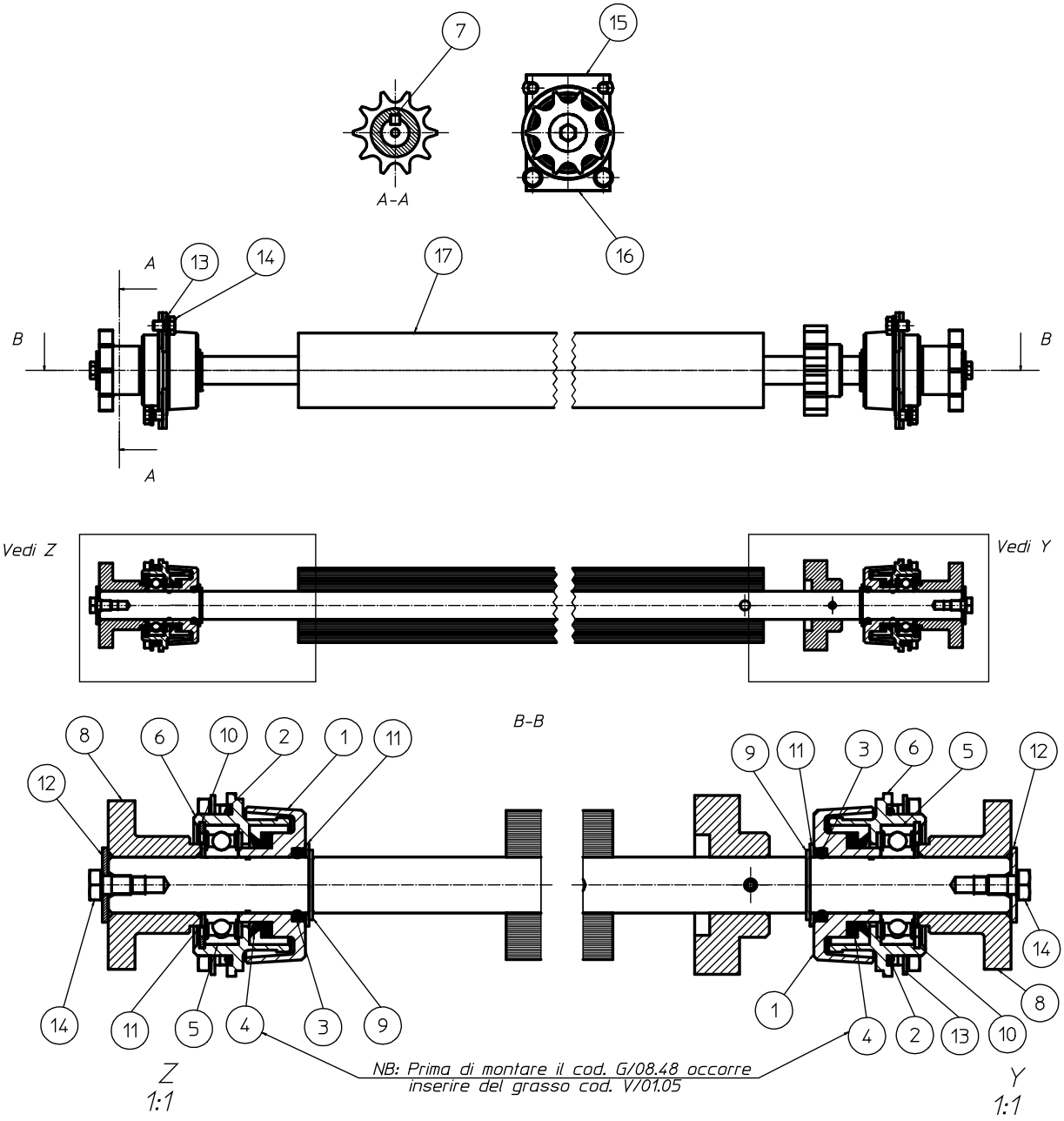
UPPER SHAFT ASSEMBLY WITH GROOVES (3.07.652437/2)

Pos.	Description	Code or drawing	Q.ty
1)	FRONT SEAL RING	1.PU.042	2
2)	WASHER	C-01130	2
3)	SPRING	1.PU1024	2
4)	STAINLESS STEEL SEEGER 15 E	B-33.15	1
5)	BUSHING SUPPORT	3.07.65.421/3	2
6)	WASHER D.5	B-10.05	4
7)	BUSHING	1.PU.159/2	2
8)	STAINLESS STEEL HEX HEAD SCREW M5X8	B-01.48	4
9)	UPPER SHAFT ASSEMBLY WITH GROOVES	3.07.65.473/4	1
10)	PLUG	1.PU.160/2	2



LOWER END SHAFT ASSEMBLY (3.07.652209/2)

Pos.	Description	Code or drawing	Q.ty
1)	PROTECTIVE CASING	3.07.65.425	2
2)	O-RING 2150	G-09150	2
3)	O-RING 119	G-09.13	2
4)	V-RING V20A	G-08.48	2
5)	BEARING 6002 2RS (15-32-9)	C-01.06-A	2
6)	BEARING SUPPORT	3.07.65.891	2
7)	STAINLESS STEEL KEY 5x5x15	B-22.40	2
8)	GEAR Z=10 1/2"-5/16"	3.07.65.418/2	2
9)	STAINLESS STEEL SEEGER 15 E	B-33.15	2
10)	STAINLESS STEEL SEEGER 32 I	B-33.32	2
11)	WASHER	C-01130	4
12)	WASHER	B-12.05	2
13)	WASHER D.5	B-10.05	8
14)	STAINLESS STEEL HEX HEAD SCREW M5X8	B-01.48	10
15)	SIDE MOUNT	3.07.65.422	2
16)	SIDE MOUNT	3.07.651142	2
17)	LOWER END SHAFT	3.07.65.774/2	1


7
15
A-A
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A
13
14
17
B
B
A
Vedi Z
Vedi Y
B-B
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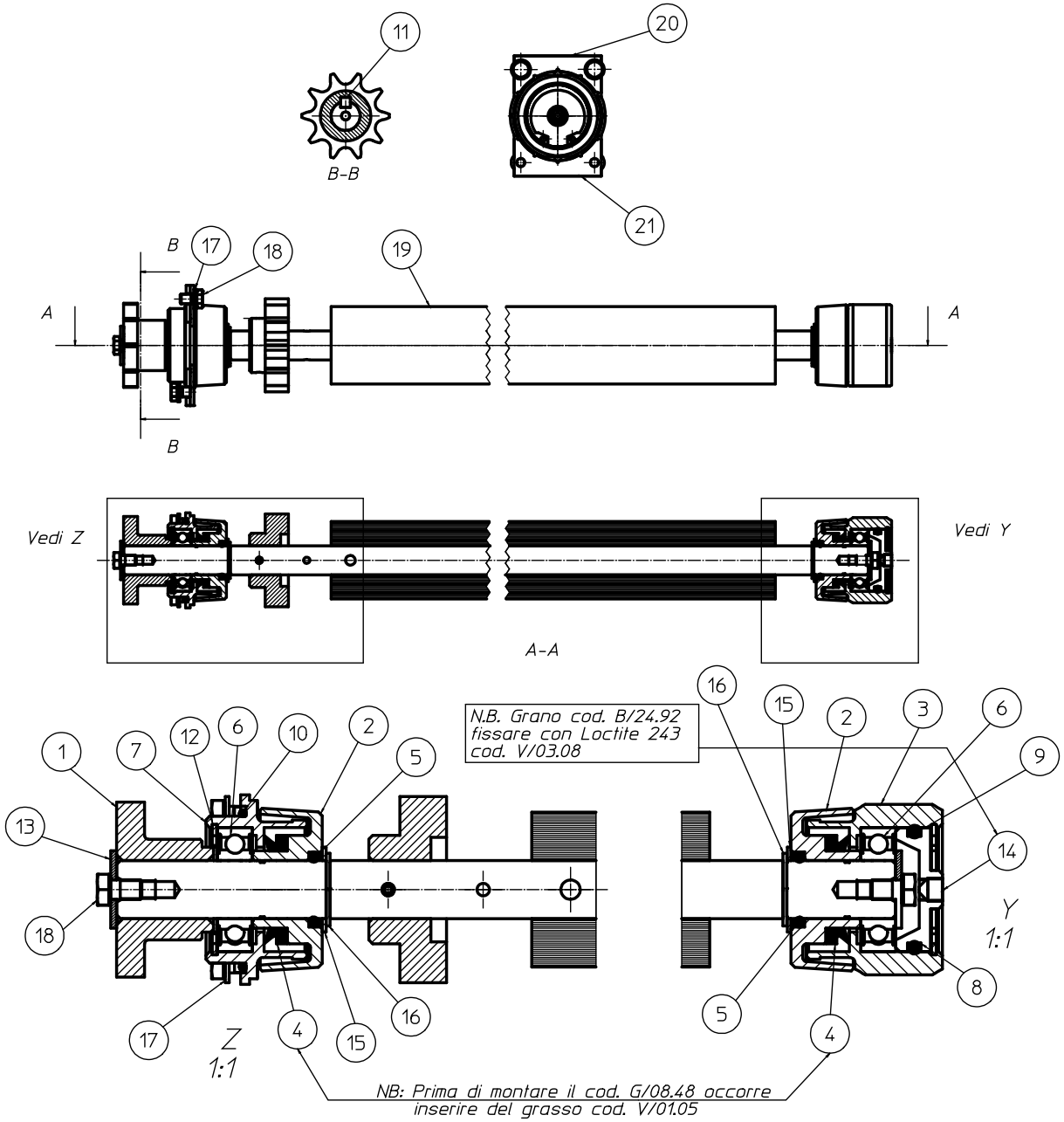
10
8
NB: Prima di montare il cod. G/08.48 occorre inserire del grasso cod. V/01.05
Z
1:1
Y
1:1

LOWER SHAFT ASSEMBLY (3.07.652207/2)

Pos.	Description	Code or drawing	Q.ty
1)	GEAR Z=10 1/2"-5/16"	3.07.65.418/2	1
2)	PROTECTIVE CASING	3.07.65.425/2	2
3)	BEARING SUPPORT - RIGHT	3.07.65.893/2	1
4)	V-RING V20A	G-08.48	2
5)	O-RING 119	G-09.13	2
6)	BEARING 6002 2RS (15-32-9)	C-01.06-A	2
7)	BEARING SUPPORT	3.07.65.891	1
8)	SIDE CLOSING BUSHING	7.01.65.473/3	1
9)	O-RING 3106	G-09.24	1
10)	O-RING 2150	G-09150	1
11)	STAINLESS STEEL KEY 5x5x15	B-22.40	1
12)	STAINLESS STEEL SEEGER 32 I	B-33.32	2
13)	WASHER	B-12.05	2
14)	STAINLESS STEEL DOWEL M6x6	B-24.92	1
15)	WASHER	C-01130	3
16)	STAINLESS STEEL SEEGER 15 E	B-33.15	2
17)	WASHER D.5	B-10.05	4
18)	STAINLESS STEEL HEX HEAD SCREW M5X8	B-01.48	6
19)	LOWER SHAFT	3.07.65.448/2	1
20)	SIDE MOUNT	3.07.65.422	1
21)	SIDE MOUNT	3.07.651142	1


11
20
B-B
21
B
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A
A
B
Vedi Z
Vedi Y
A-A
N.B. Grano cod. B/24.92
fissare con Loctite 243
cod. V/03.08
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Y
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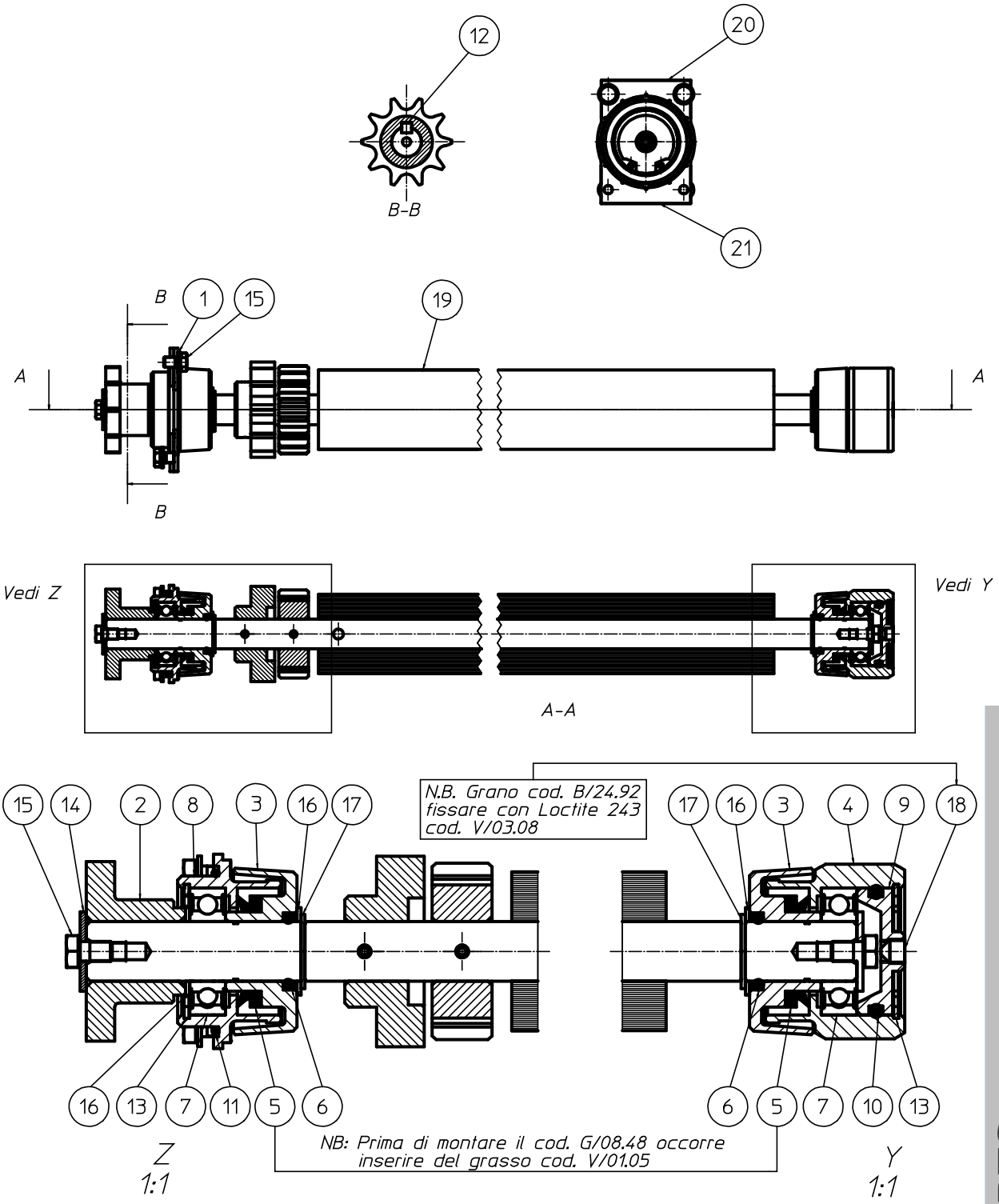
NB: Prima di montare il cod. G/08.48 occorre
inserire del grasso cod. V/01.05

LOWER SHAFT ASSEMBLY (3.07.652458/2)

Pos.	Description	Code or drawing	Q.ty
1)	STAINLESS STEEL DOWEL M6x6	B-24.92	1
2)	GEAR Z=10 1/2"-5/16"	3.07.65.418/2	1
3)	PROTECTIVE CASING	3.07.65.425/2	2
4)	BEARING SUPPORT - RIGHT	3.07.65.893/2	1
5)	V-RING V20A	G-08.48	2
6)	O-RING 119	G-09.13	2
7)	BEARING 6002 2RS (15-32-9)	C-01.06-A	2
8)	BEARING SUPPORT	3.07.65.891	1
9)	SIDE CLOSING BUSHING	7.01.65.473/3	1
10)	O-RING 3106	G-09.24	1
11)	O-RING 2150	G-09150	1
12)	STAINLESS STEEL KEY 5x5x15	B-22.40	1
13)	STAINLESS STEEL SEEGER 32 I	B-33.32	2
14)	WASHER	B-12.05	2
15)	WASHER	C-01130	3
16)	STAINLESS STEEL SEEGER 15 E	B-33.15	2
17)	WASHER D.5	B-10.05	4
18)	STAINLESS STEEL HEX HEAD SCREW M5X8	B-01.48	6
19)	LOWER SHAFT ASSEMBLY	3.07.65.585/2	1
20)	SIDE MOUNT	3.07.65.422	1
21)	SIDE MOUNT	3.07.651142	1


12
20
B-B
21
B
1
15
19
A
A
B
Vedi Z
Vedi Y
A-A
15
14
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8
3
16
17
N.B. Grano cod. B/24.92
fissare con Loctite 243
cod. V/03.08
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7
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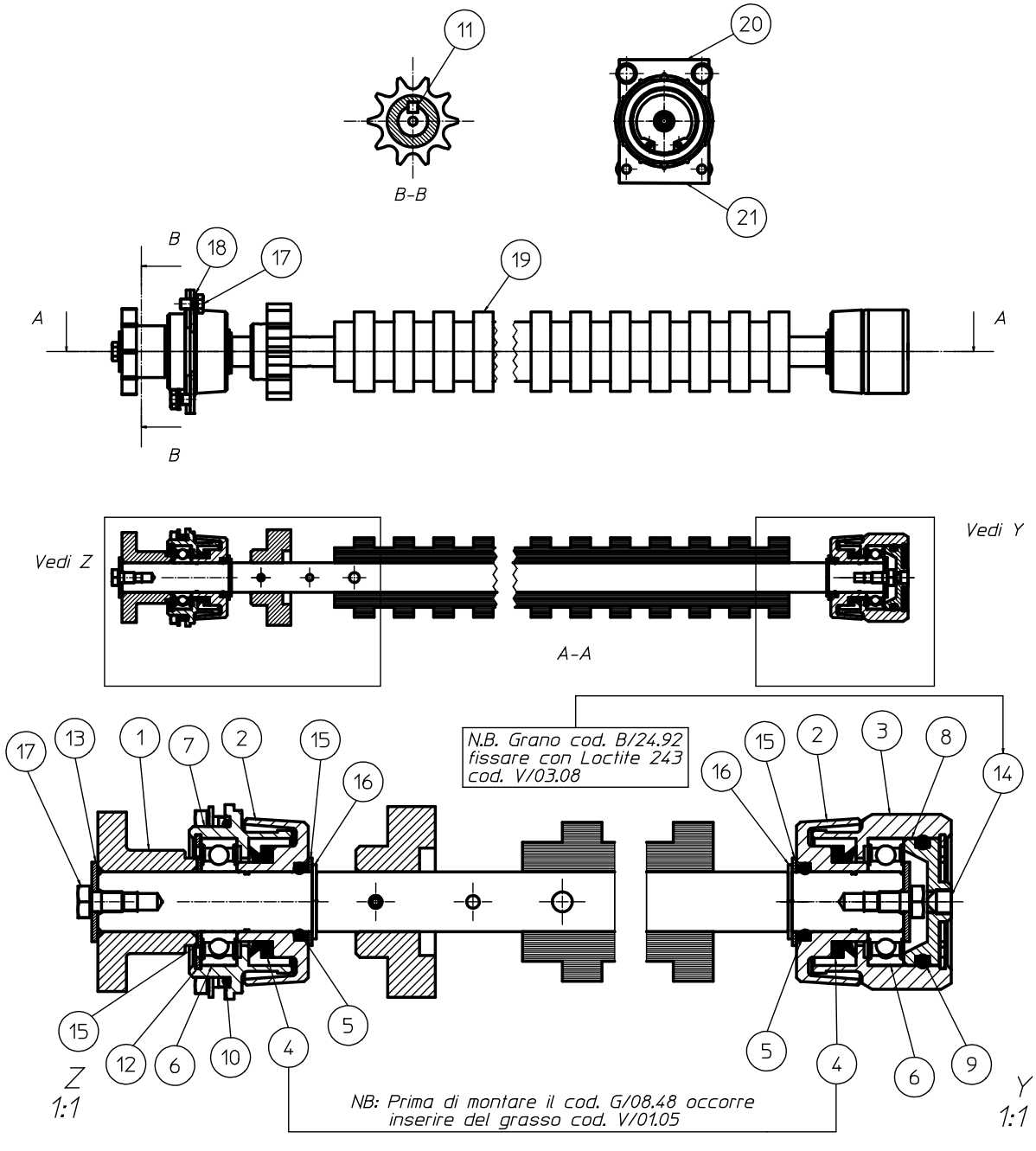
13
NB: Prima di montare il cod. G/08.48 occorre
inserire del grasso cod. V/01.05
Z
1:1
Y
1:1

LOWER SHAFT ASSEMBLY WITH GROOVES (3.07.652459/2)

Pos.	Description	Code or drawing	Q.ty
1)	GEAR Z=10 1/2"-5/16"	3.07.65.418/2	1
2)	PROTECTIVE CASING	3.07.65.425/2	2
3)	BEARING SUPPORT - RIGHT	3.07.65.893/2	1
4)	V-RING V20A	G-08.48	2
5)	O-RING 119	G-09.13	2
6)	BEARING 6002 2RS (15-32-9)	C-01.06-A	2
7)	BEARING SUPPORT	3.07.65.891	1
8)	SIDE CLOSING BUSHING	7.01.65.473/3	1
9)	O-RING 3106	G-09.24	1
10)	O-RING 2150	G-09150	1
11)	STAINLESS STEEL KEY 5x5x15	B-22.40	1
12)	STAINLESS STEEL SEEGER 32 I	B-33.32	2
13)	WASHER	B-12.05	2
14)	STAINLESS STEEL DOWEL M6x6	B-24.92	1
15)	WASHER	C-01130	3
16)	STAINLESS STEEL SEEGER 15 E	B-33.15	2
17)	STAINLESS STEEL HEX HEAD SCREW M5X8	B-01.48	6
18)	WASHER D.5	B-10.05	4
19)	LOWER SHAFT ASSEMBLY WITH GROOVES	3.07.65.474/3	1
20)	SIDE MOUNT	3.07.65.422	1
21)	SIDE MOUNT	3.07.651142	1


11
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B-B
21
B
18
17
19
A
A
B
Vedi Z
Vedi Y
A-A
N.B. Grano cod. B/24.92
fissare con Loctite 243
cod. V/03.08
17
13
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16
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Z
1:1
16
15
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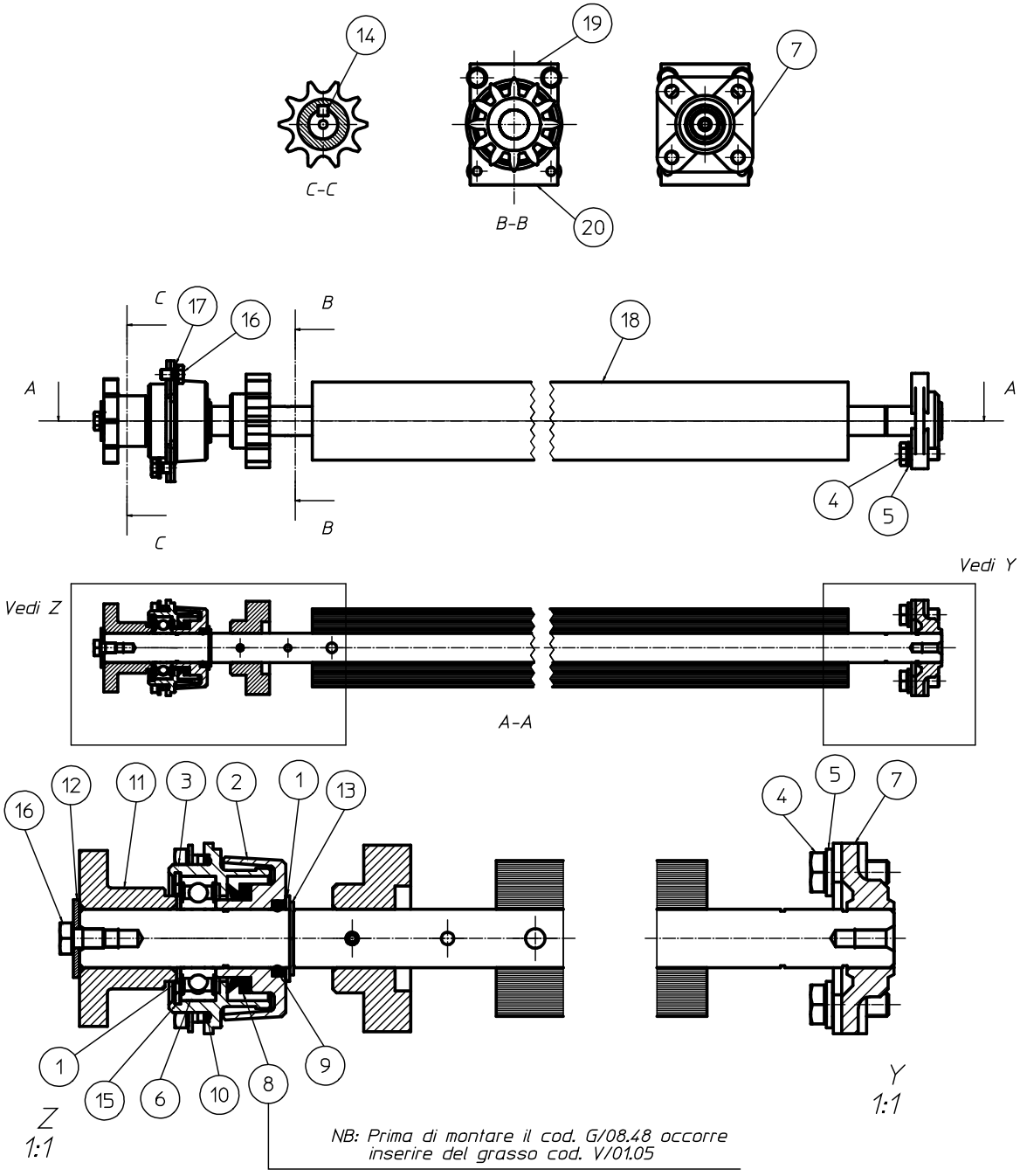
14
5
4
6
9
Y
1:1
NB: Prima di montare il cod. G/08.48 occorre
inserire del grasso cod. V/01.05

LOWER FLANGE SUPPORT SHAFT ASSEMBLY (3.07.652499/2)

Pos.	Description	Code or drawing	Q.ty
1)	WASHER	C-01130	2
2)	PROTECTIVE CASING	3.07.65.425	1
3)	BEARING SUPPORT	3.07.65.891	1
4)	STAINLESS STEEL HEX HEAD SCREW M6x16	B-01.96	2
5)	WASHER D.6	B-10.06	2
6)	BEARING 6002 2RS (15-32-9)	C-01.06-A	1
7)	FLANGE SUPPORT	C-06.05	1
8)	V-RING V20A	G-08.48	1
9)	O-RING 119	G-09.13	1
10)	O-RING 2150	G-09150	1
11)	GEAR Z=10 1/2"-5/16"	3.07.65.418/2	1
12)	WASHER	B-12.05	1
13)	STAINLESS STEEL SEEGER 15 E	B-33.15	1
14)	STAINLESS STEEL KEY 5x5x15	B-22.40	1
15)	STAINLESS STEEL SEEGER 32 I	B-33.32	1
16)	STAINLESS STEEL HEX HEAD SCREW M5X8	B-01.48	5
17)	WASHER D.5	B-10.05	4
18)	LOWER SHAFT	3.07.65.448/2	1
19)	SIDE MOUNT	3.07.65.422	1
20)	SIDE MOUNT	3.07.651142	1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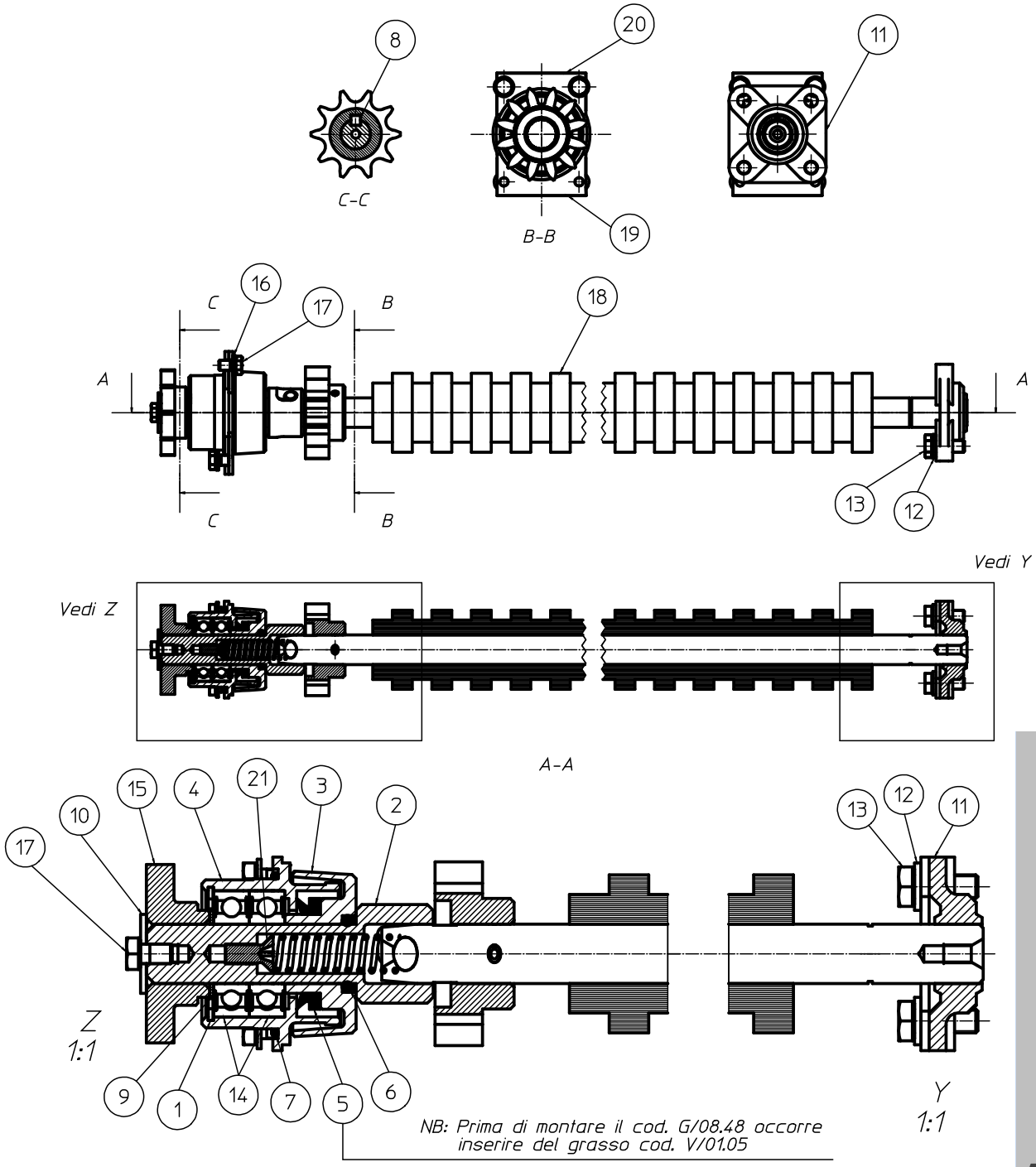
NB: Prima di montare il cod. G/08.48 occorre
inserire del grasso cod. V/01.05

LOWER QUICK-COUPLING SHAFT ASSEMBLY WITH GROOVES (3.07.652461/2)

Pos.	Description	Code or drawing	Q.ty
1)	STAINLESS STEEL SEEGER 32 I	B-33.32	1
2)	QUICK-COUPLING LOWER SHAFT	3.07.65.434/2	1
3)	PROTECTIVE CASING	3.07.65.425	1
4)	BEARING SUPPORT	3.07.65.892	1
5)	V-RING V20A	G-08.48	1
6)	O-RING 119	G-09.13	1
7)	O-RING 2150	G-09150	1
8)	STAINLESS STEEL KEY 5x5x15	B-22.40	1
9)	WASHER	C-01130	1
10)	WASHER	B-12.05	1
11)	FLANGE SUPPORT	C-06.05	1
12)	WASHER D.6	B-10.06	2
13)	STAINLESS STEEL HEX HEAD SCREW M6x16	B-01.96	2
14)	BEARING 6002 2RS (15-32-9)	C-01.06-A	2
15)	GEAR Z=10 1/2"-5/16"	3.07.65.419/2	1
16)	WASHER D.5	B-10.05	4
17)	STAINLESS STEEL HEX HEAD SCREW M5X8	B-01.48	5
18)	LOWER SHAFT ASSEMBLY	3.07.65.474/3	1
19)	SIDE MOUNT	3.07.651142	1
20)	SIDE MOUNT	3.07.65.422	1
21)	SPRING + SCREW ASSEMBLY	3.07.651120	1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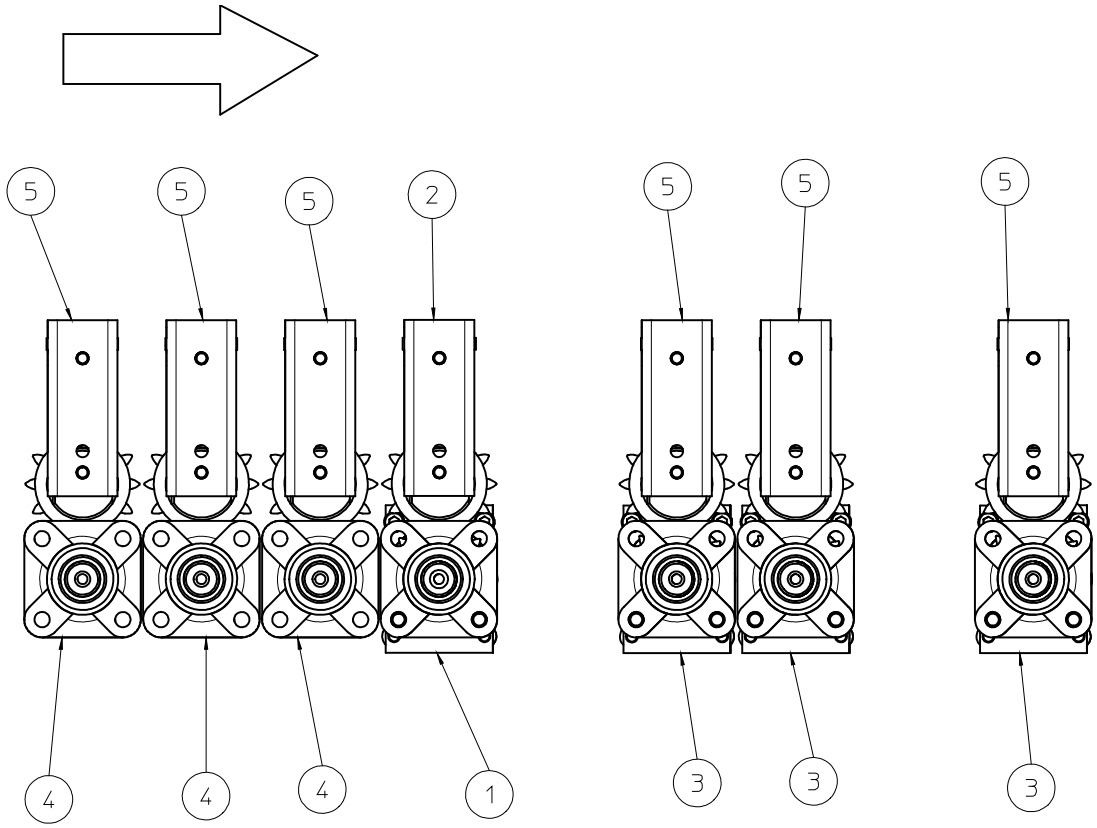
NB: Prima di montare il cod. G/08.48 occorre
inserire del grasso cod. V/01.05

UNIBLOC BRUSHING DRYING AREA 4/25

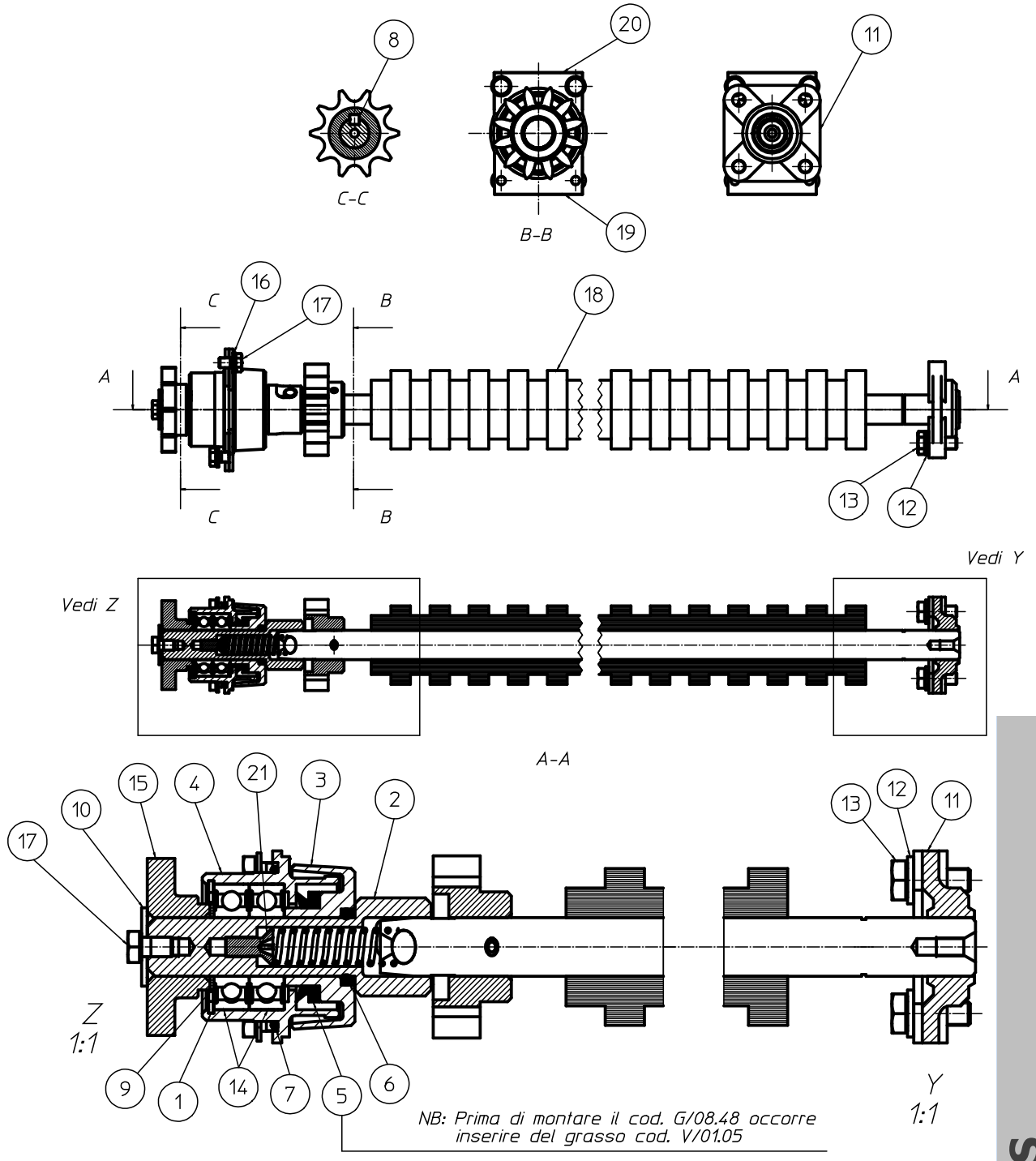
Pos.	Description	Code or drawing	Q.ty
1)	LOWER SHAFT ASSEMBLY WITH GROOVES	3.07.652461/2	1
2)	UPPER SHAFT ASSEMBLY WITH GROOVES	3.07.652437/2	1
3)	LOWER QUICK-COUPLING SHAFT ASSEMBLY	3.07.652499/2	3
4)	LOWER SHAFT ASSEMBLY WITH FLANGE SUPPORT	3.07.652666/2	3
5)	UPPER WRINGER SHAFT ASSEMBLY	3.07.652206/2	6



DRIVING ELEMENT-55

LOWER QUICK-COUPLING SHAFT ASSEMBLY WITH GROOVES (3.07.652461/2)

Pos.	Description	Code or drawing	Q.ty
1)	STAINLESS STEEL SEEGER 32 I	B-33.32	1
2)	QUICK-COUPLING LOWER SHAFT	3.07.65.434/2	1
3)	PROTECTIVE CASING	3.07.65.425	1
4)	BEARING SUPPORT	3.07.65.892	1
5)	V-RING V20A	G-08.48	1
6)	O-RING 119	G-09.13	1
7)	O-RING 2150	G-09150	1
8)	STAINLESS STEEL KEY 5x5x15	B-22.40	1
9)	WASHER	C-01130	1
10)	WASHER	B-12.05	1
11)	FLANGE SUPPORT	C-06.05	1
12)	WASHER D.6	B-10.06	2
13)	STAINLESS STEEL HEX HEAD SCREW M6x16	B-01.96	2
14)	BEARING 6002 2RS (15-32-9)	C-01.06-A	2
15)	GEAR Z=10 1/2"-5/16"	3.07.65.419/2	1
16)	WASHER D.5	B-10.05	4
17)	STAINLESS STEEL HEX HEAD SCREW M5X8	B-01.48	5
18)	LOWER SHAFT ASSEMBLY WITH GROOVES	3.07.65.474/3	1
19)	SIDE MOUNT	3.07.651142	1
20)	SIDE MOUNT	3.07.65.422	1
21)	SPRING + SCREW ASSEMBLY	3.07.651120	1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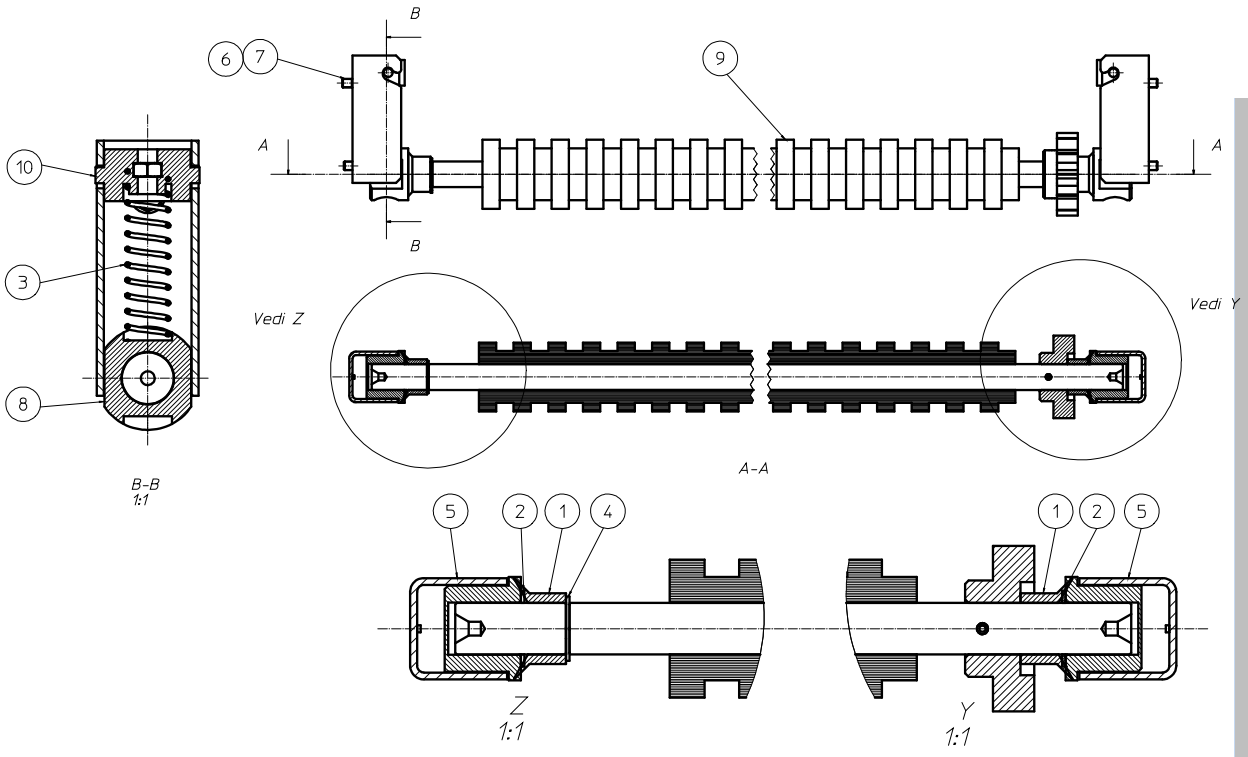
NB: Prima di montare il cod. G/08.48 occorre inserire del grasso cod. V/01.05

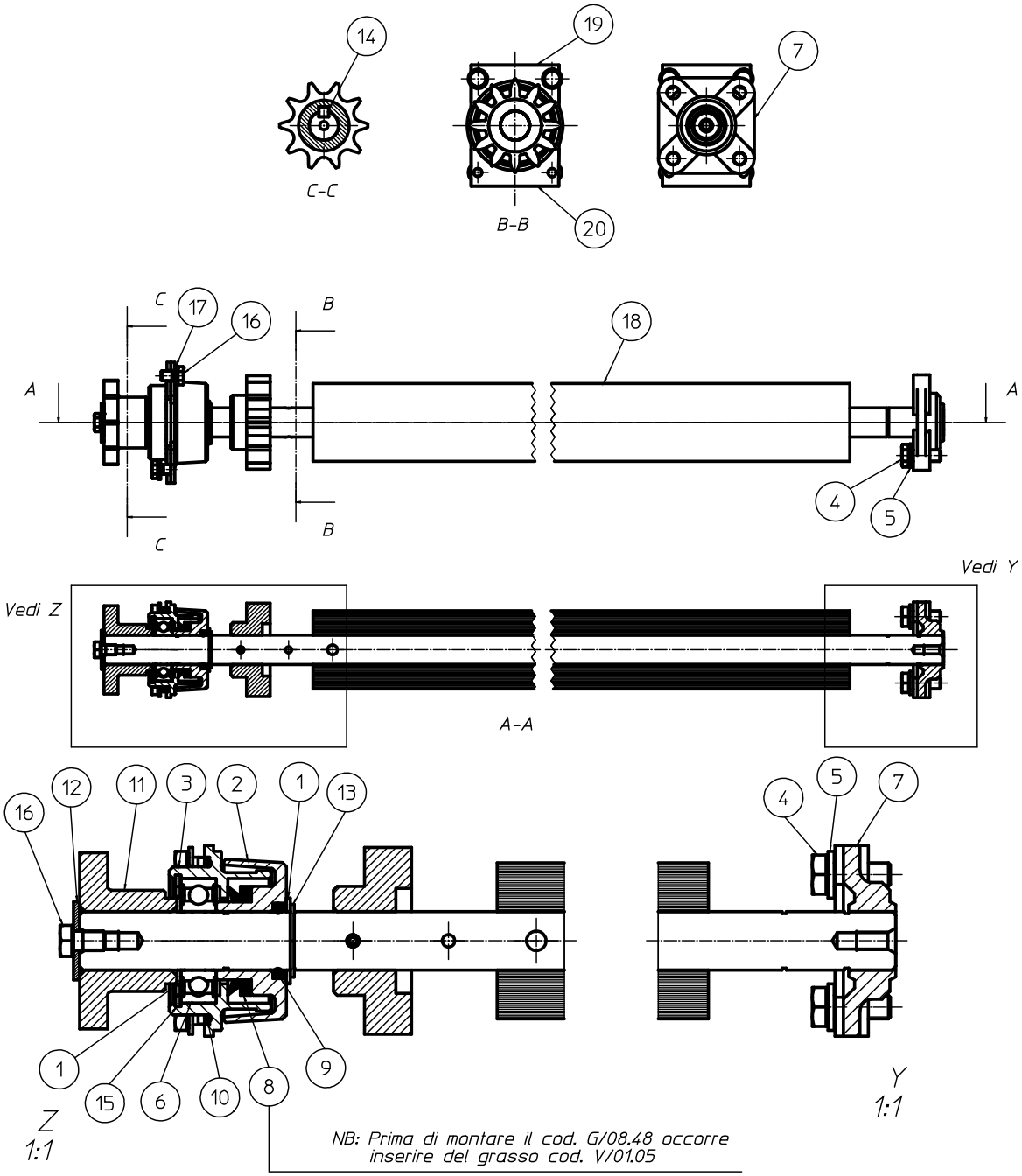
UPPER SHAFT ASSEMBLY WITH GROOVES (3.07.652437/2)

Pos.	Description	Code or drawing	Q.ty
1)	FRONT SEAL RING	1.PU.042	2
2)	WASHER	C-01130	2
3)	SPRING	1.PU1024	2
4)	STAINLESS STEEL SEEGER 15 E	B-33.15	1
5)	BUSHING SUPPORT	3.07.65.421/3	2
6)	WASHER D.5	B-10.05	4
7)	BUSHING	1.PU.159/2	2
8)	STAINLESS STEEL HEX HEAD SCREW M5X8	B-01.48	4
9)	UPPER SHAFT ASSEMBLY WITH GROOVES	3.07.65.473/4	1
10)	PLUG	1.PU.160/2	2



LOWER FLANGE SUPPORT SHAFT ASSEMBLY (3.07.652499/2)

Pos.	Description	Code or drawing	Q.ty
1)	WASHER	C-01130	2
2)	PROTECTIVE CASING	3.07.65.425	1
3)	BEARING SUPPORT	3.07.65.891	1
4)	STAINLESS STEEL HEX HEAD SCREW M6x16	B-01.96	2
5)	WASHER D.6	B-10.06	2
6)	BEARING 6002 2RS (15-32-9)	C-01.06-A	1
7)	FLANGE SUPPORT	C-06.05	1
8)	V-RING V20A	G-08.48	1
9)	O-RING 119	G-09.13	1
10)	O-RING 2150	G-09150	1
11)	GEAR Z=10 1/2"-5/16"	3.07.65.418/2	1
12)	WASHER	B-12.05	1
13)	STAINLESS STEEL SEEGER 15 E	B-33.15	1
14)	STAINLESS STEEL KEY 5x5x15	B-22.40	1
15)	STAINLESS STEEL SEEGER 32 I	B-33.32	1
16)	STAINLESS STEEL HEX HEAD SCREW M5X8	B-01.48	5
17)	WASHER D.5	B-10.05	4
18)	LOWER SHAFT	3.07.65.448/2	1
19)	SIDE MOUNT	3.07.65.422	1
20)	SIDE MOUNT	3.07.651142	1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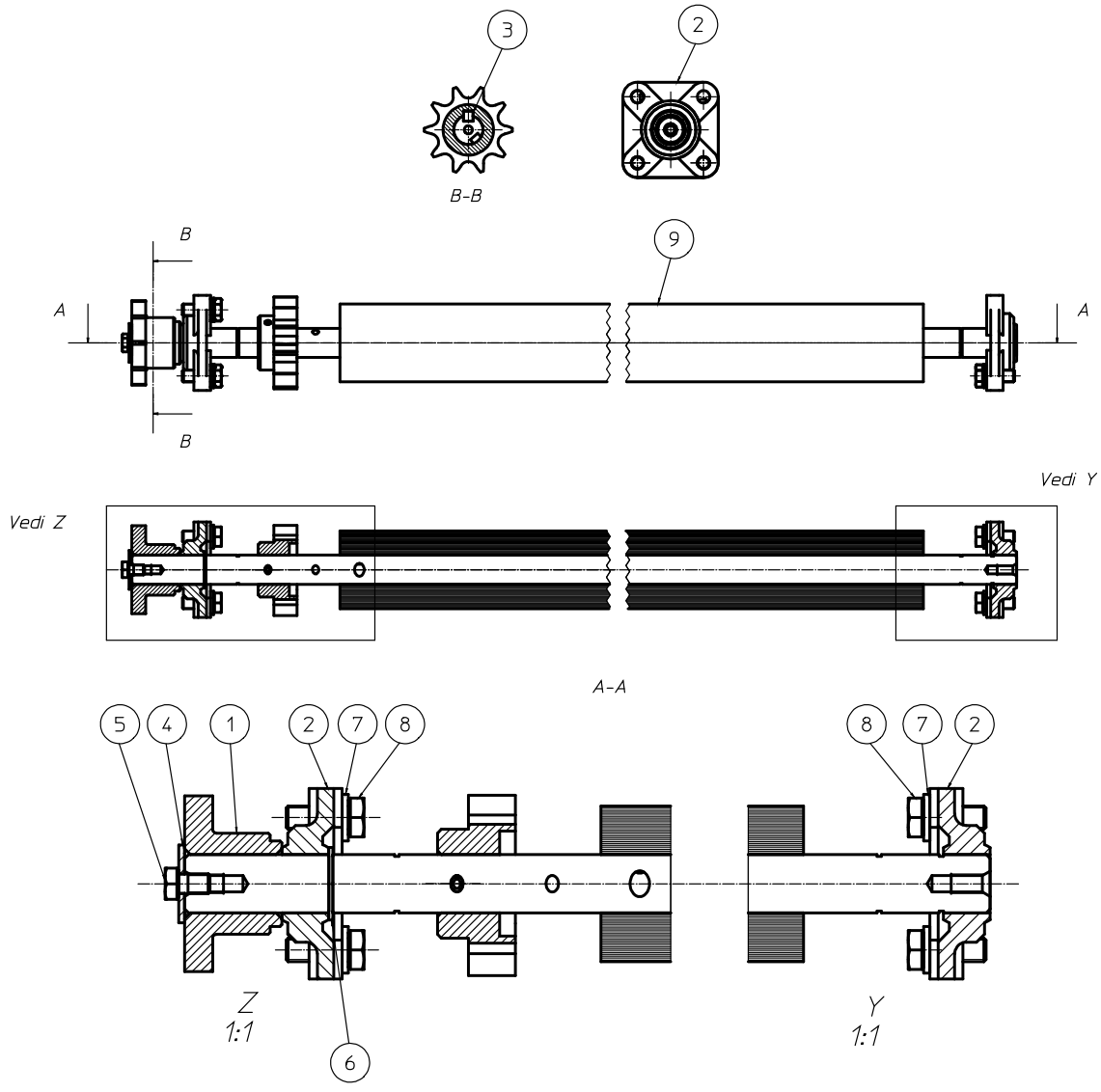
NB: Prima di montare il cod. G/08.48 occorre inserire del grasso cod. V/01.05

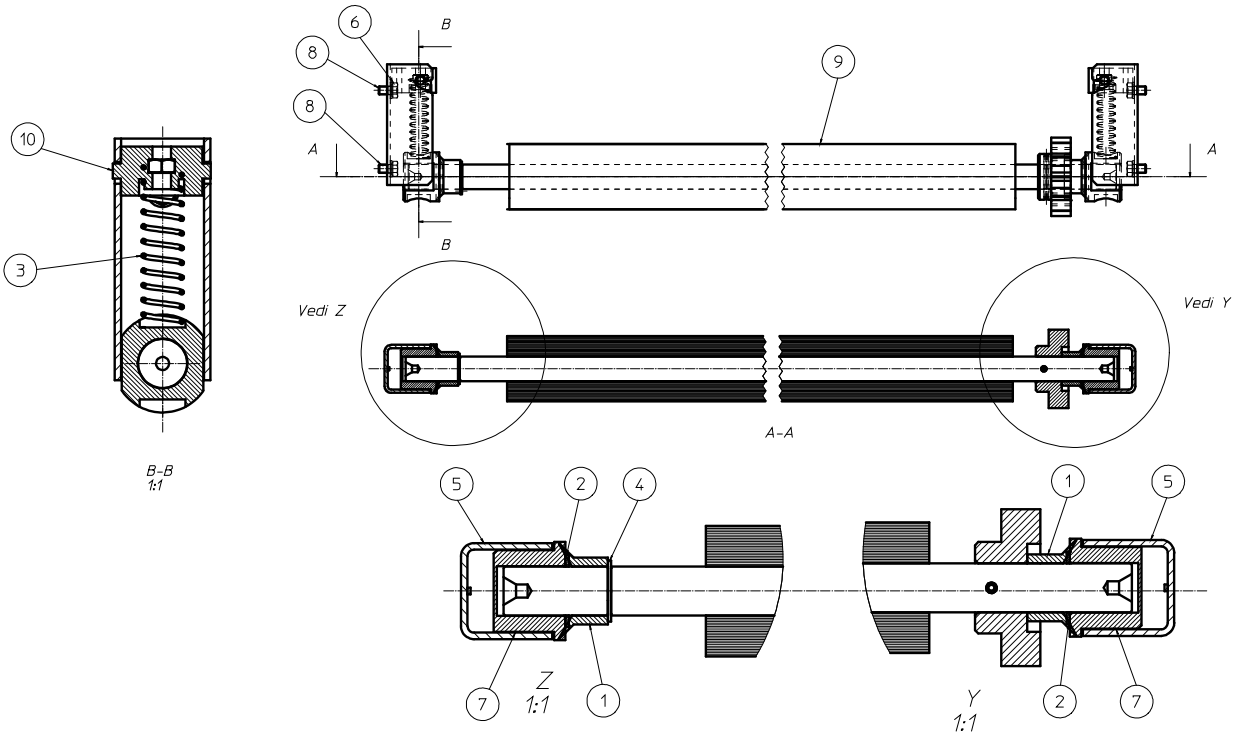
LOWER SHAFT ASSEMBLY WITH FLANGE SUPPORT (3.07.652666/2)

Pos.	Description	Code or drawing	Q.ty
1)	GEAR Z=10 1/2"-5/16"	3.07.65.418/2	1
2)	FLANGE SUPPORT	C-06.05	2
3)	STAINLESS STEEL KEY 5x5x15	B-22.40	1
4)	WASHER	B-12.05	1
5)	STAINLESS STEEL HEX HEAD SCREW M5X8	B-01.48	1
6)	STAINLESS STEEL SEEGER 15 E	B-33.15	1
7)	WASHER D.6	B-10.06	6
8)	STAINLESS STEEL HEX HEAD SCREW M6x16	B-01.96	6
9)	LOWER SHAFT	3.07.65.448/2	1



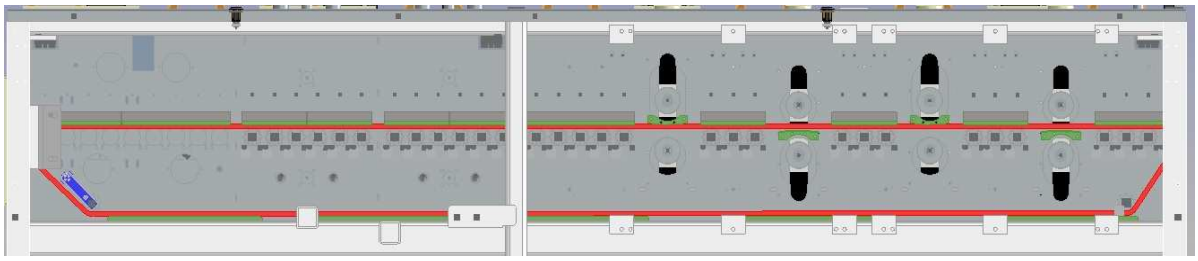
UPPER WRINGER SHAFT ASSEMBLY (3.07.652206/2)

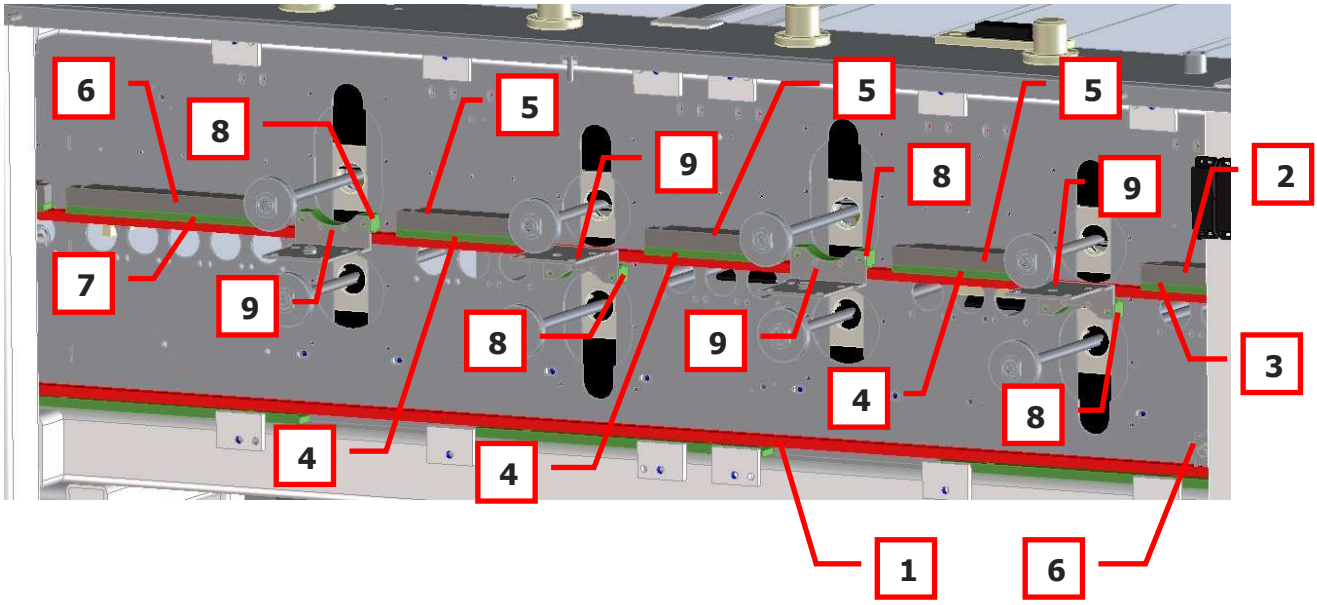
Pos.	Description	Code or drawing	Q.ty
1)	FRONT SEAL RING	1.PU.042	2
2)	WASHER	C-01130	2
3)	SPRING	1.PU1024	2
4)	STAINLESS STEEL SEEGER 15 E	B-33.15	1
5)	BUSHING SUPPORT	3.07.65.421/3	2
6)	WASHER D.5	B-10.05	4
7)	BUSHING	1.PU.159/2	2
8)	STAINLESS STEEL HEX HEAD SCREW M5X8	B-01.48	4
9)	UPPER WRINGER SHAFT	3.07.65.449/3	1
10)	PLUG	1.PU.160/2	2



SINGLE-BLOCK BRUSHING TRANSMISSION 4/25

Pos.	Description	Code or drawing	Q.ty
1)	CHAIN	T/01.50	m 7
--	JUNCTION MESH	T/01.51	2
--	FALSE MESH	T/01.52	2
2)	CHAIN GUIDE	3.07.65.501	1
3)	CHAIN GUIDE SUPPORT	3.07.65.500/2	1
4)	CHAIN GUIDE	3.07.65.460	7
5)	CHAIN GUIDE SUPPORT	3.07.65.459/2	7
6)	CHAIN GUIDE	3.07.65.503	3
7)	CHAIN GUIDE SUPPORT	3.07.65.502/2	3
8)	CHAIN GUIDE	3.07.65.455	4
9)	CHAIN GUIDE SUPPORT	3.07.65.454	4
10)	TENSIONER GEAR	3.07.65.719/2	2
11)	TENSIONER	T/14.01	1

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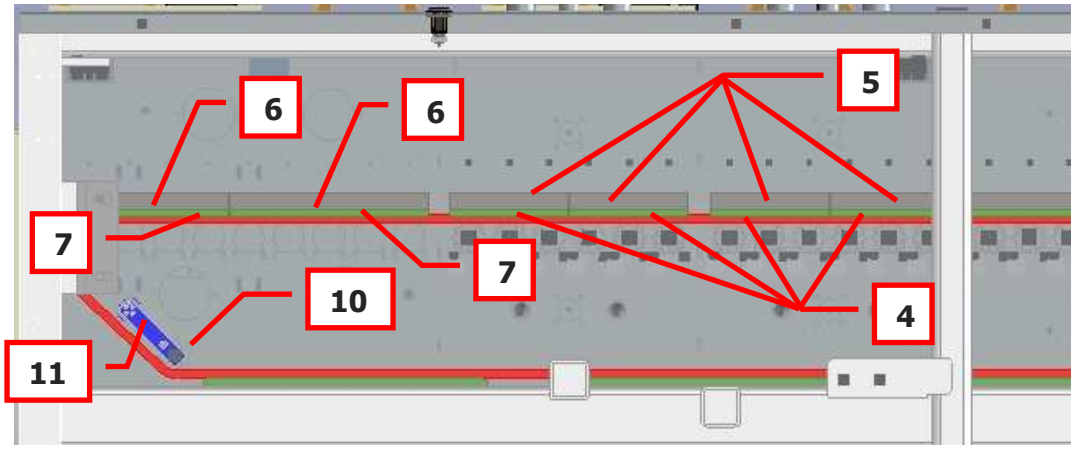
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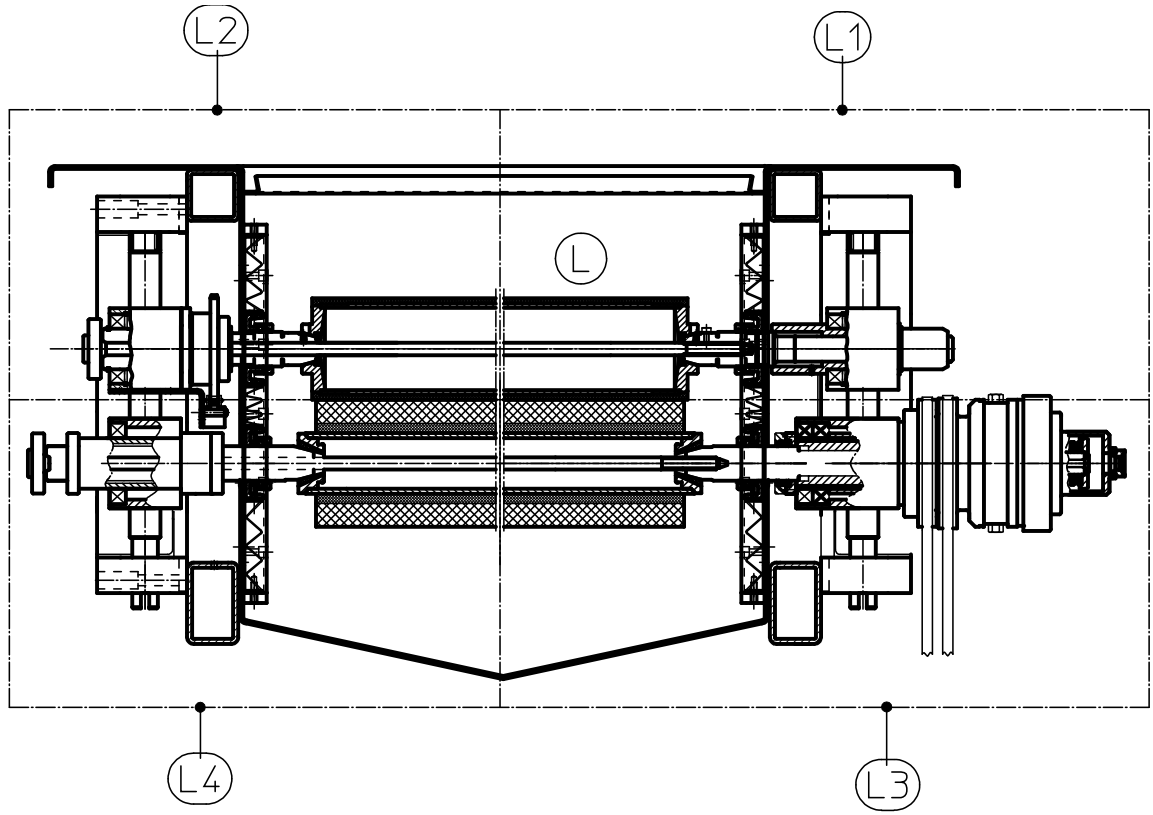
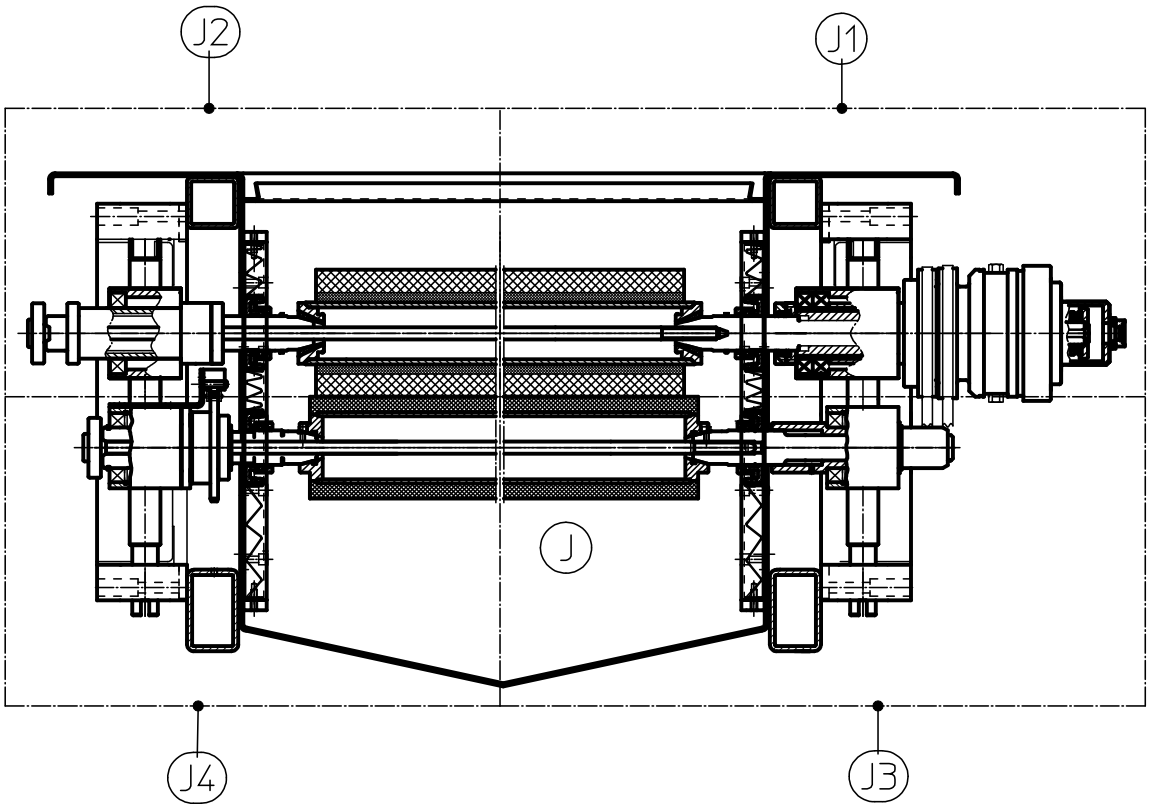
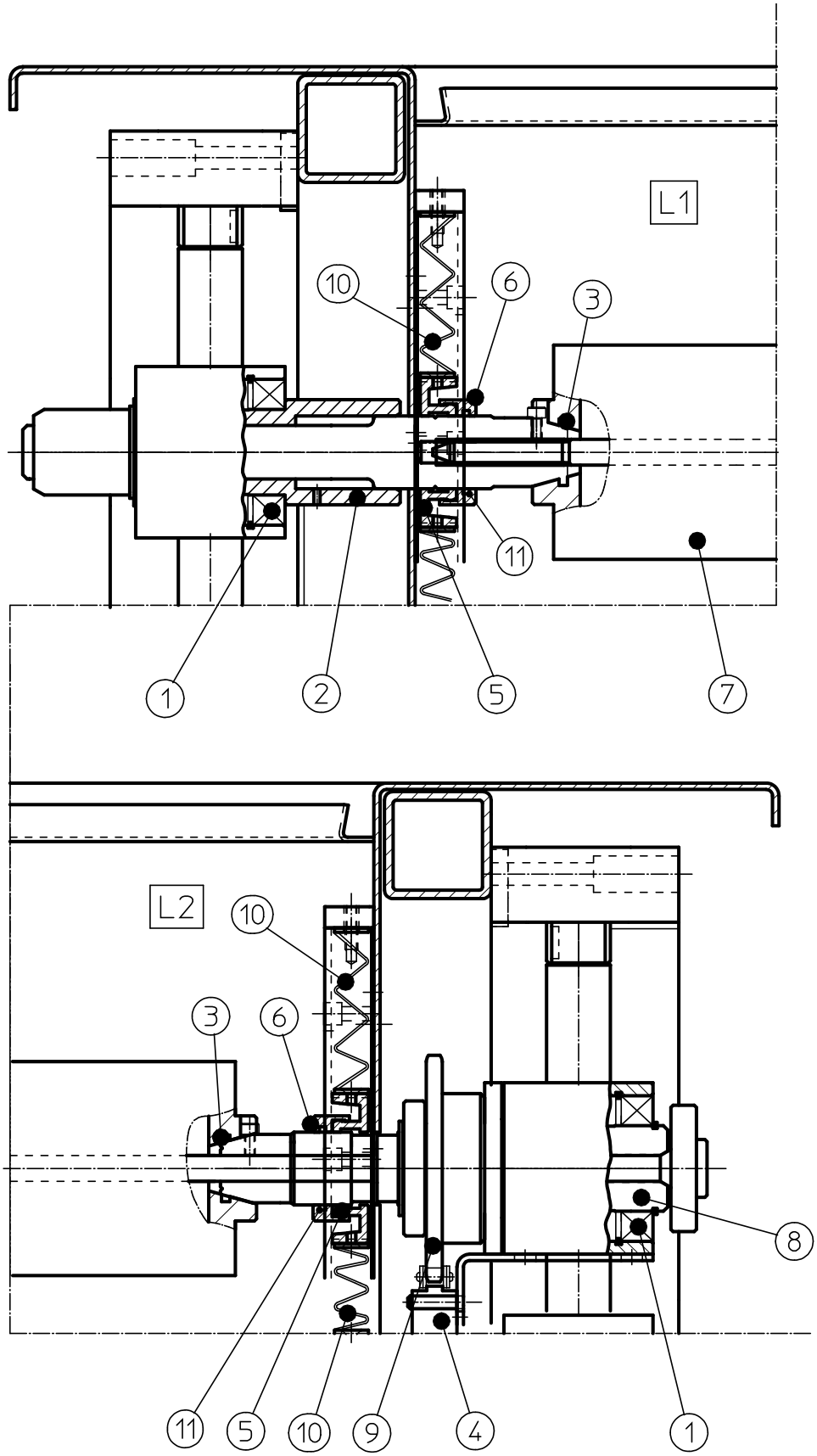




30765-MANU73

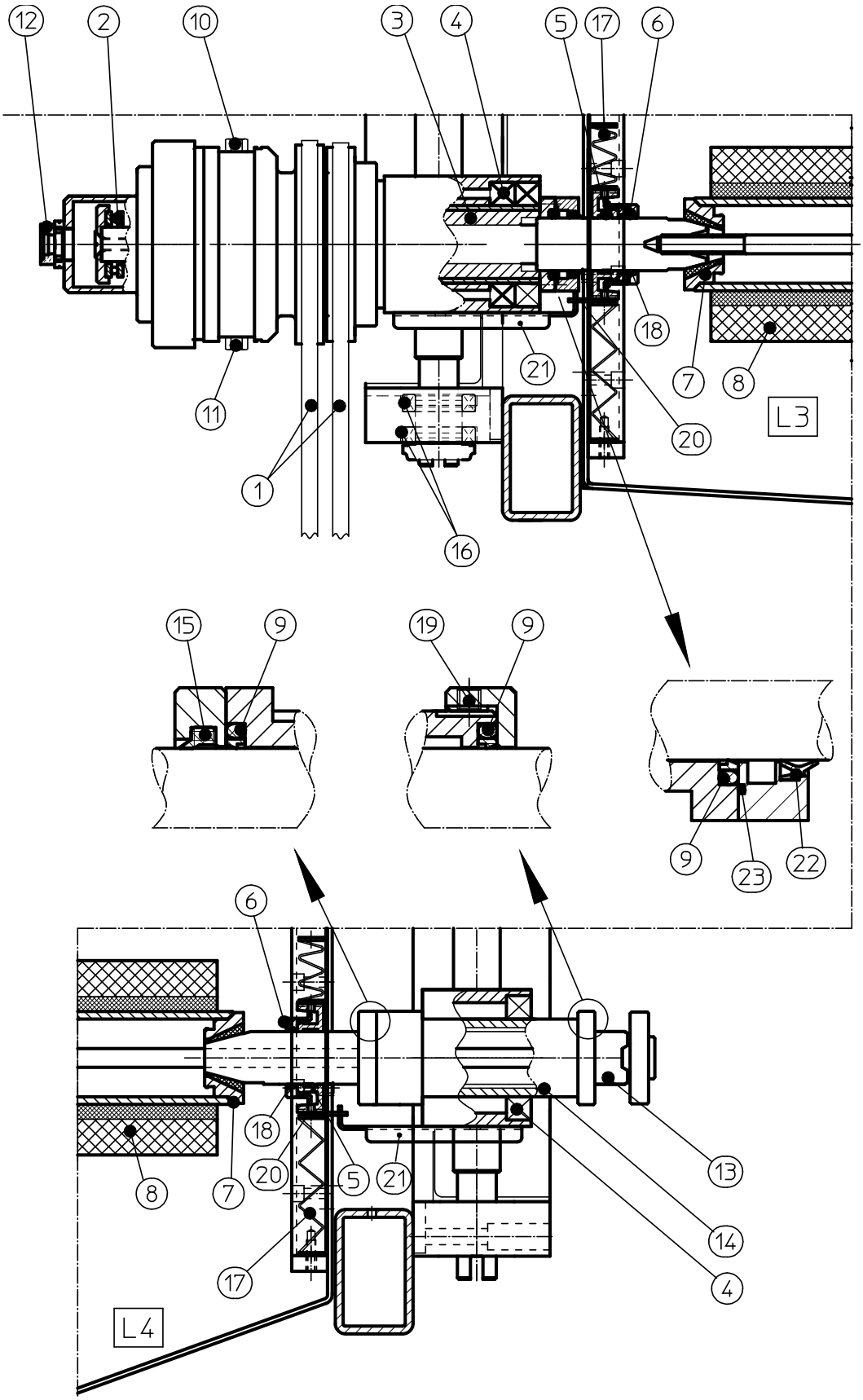
Pos.	Description	Code or drawing	Q.ty
1)	BEARING	C/01.28	8
2)	SLEEVE	3.07.65.729/2	2
3)	O-RING	G/09.22	4
4)	CHAIN GUIDE	3.07.65.455	2
5)	SEAL	3.07.65.976	4
6)	RING	1.07.60.010/2	2
7)	COUNTER-ROLLER COVERED IN CERAMIC	3.07.65.751	2
8)	STEEL SHAFT	1.07.65.800	2
9)	GEAR	3.07.65.458	2
10)	BELLOWS	3.07.651315	6
11)	O-RING	G/09.37	4



30765-MANU04-3

Pos.	Description	Code or drawing	Q.ty
1)	BELT FOR ROTATING ABRASIVE BRUSH	G/05.16/CONTI	4
2)	BEARING	C/01.22	2
3)	SLEEVE	1.07.60.649/2	2
4)	BEARING	C/01.40	12
5)	SEAL	3.07.65.976	4
6)	RING	3.07.651161	4
7)	BRUSH CONE	1.07.60.764/2	4
8)	ABRASIVE BRUSH outer Ø 125 mm	◑	2
9)	SEAL RING	G/08.43	6
10)	OIL FILLER PLUG	V/08.39	2
11)	OIL DRAIN PLUG	V/08.39	2
12)	LEVEL INDICATOR	V/19.21	2
13)	STEEL SHAFT	7.01.65.499/3	2
14)	SLEEVE	1.07.60.019/5	2
15)	SCRAPER RING	G/08.41	2
16)	BEARING	C/01.49	8
17)	BELLOWS	3.07.651315	6
18)	O-RING	G/09.37	4
19)	COPPER PAD	1.07.60.444	2
20)	BELLOWS SUPPORT	3.07.651356	2
21)	BELLOWS SUPPORT	3.07.651357/2	2
22)	SCRAPER RING	G/08120	2
23)	O-RING	G/09.48/E	2

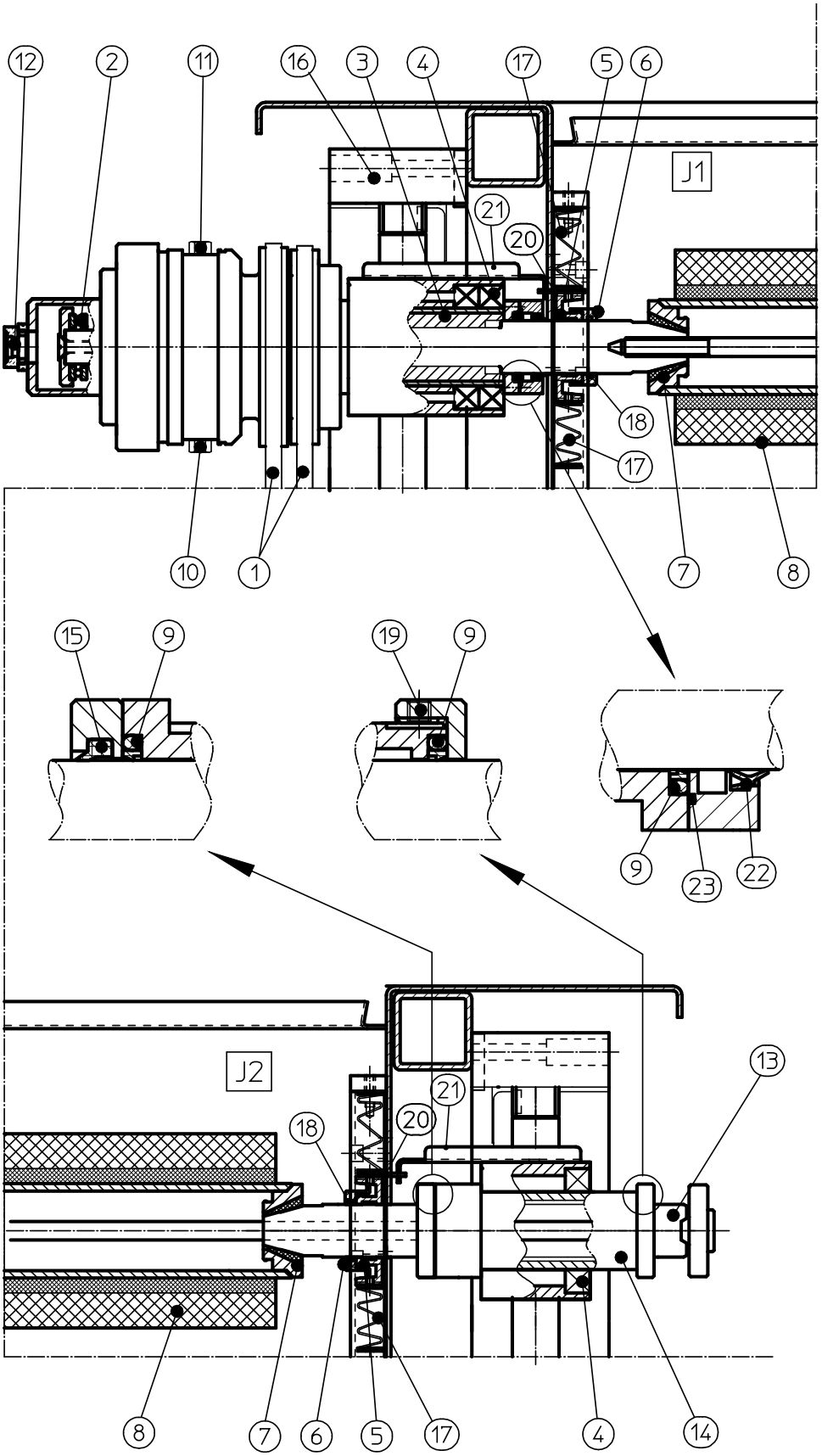
The symbol "◑" indicates that, to order the abrasive brush you must contact Pola e Massa s.r.l.



30765-MANU05-5

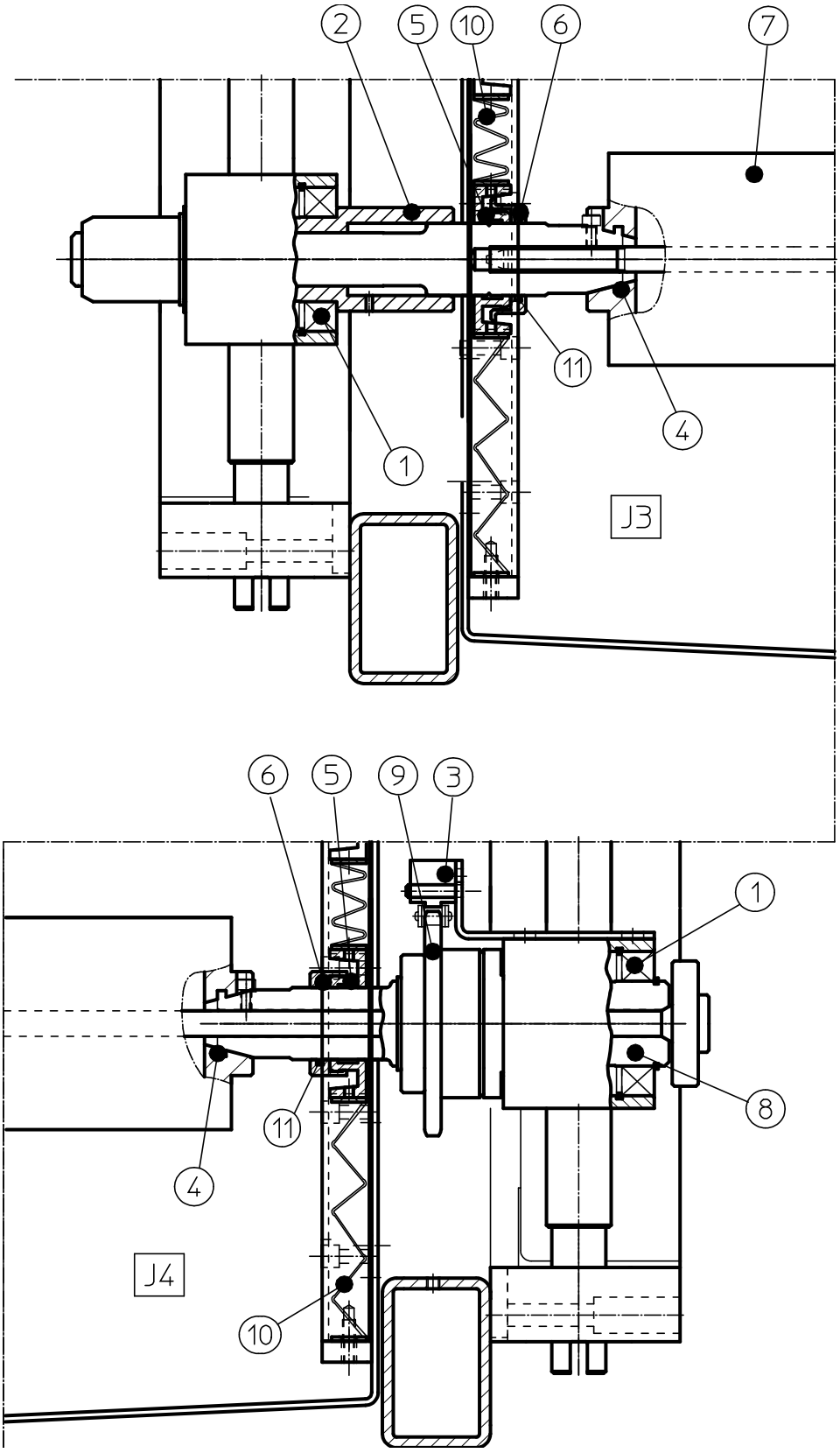
Pos.	Description	Code or drawing	Q.ty
1)	BELT FOR ROTATING ABRASIVE BRUSH	G/05.10/CONTI	4
2)	BEARING	C/01.22	2
3)	SLEEVE	1.07.60.649/2	2
4)	BEARING	C/01.40	12
5)	SEAL	3.07.65.976	4
6)	RING	3.07.651161	4
7)	BRUSH CONE	1.07.60.764/2	4
8)	ABRASIVE BRUSH outer Ø 125 mm	◑	2
9)	SEAL RING	G/08.43	6
10)	OIL FILLER PLUG	V/08.39	2
11)	OIL DRAIN PLUG	V/08.39	2
12)	LEVEL INDICATOR	V/19.21	2
13)	STEEL SHAFT	7.01.65.499/3	2
14)	SLEEVE	1.07.60.019/5	2
15)	SCRAPER RING	G/08.41	2
16)	BEARING	C/01.49	8
17)	BELLOWS	3.07.651315	6
18)	O-RING	G/09.37	4
19)	COPPER PAD	1.07.60.444	2
20)	BELLOWS SUPPORT	3.07.651356	2
21)	BELLOWS SUPPORT	3.07.651357/2	2
22)	SCRAPER RING	G/08120	2
23)	O-RING	G/09.48/E	2

The symbol "◑" indicates that, to order the abrasive brush you must contact Pola e Massa s.r.l.



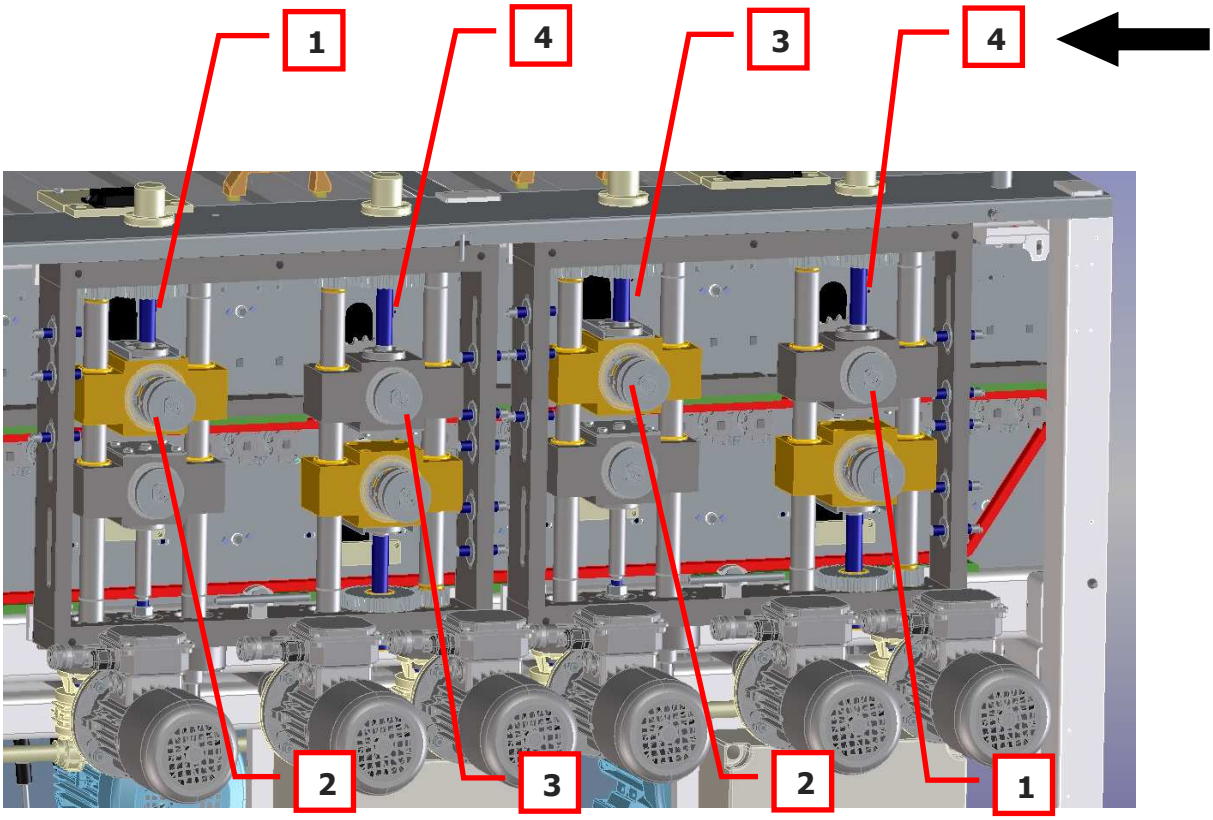
30765-MANU06-5

Pos.	Description	Code or drawing	Q.ty
1)	BEARING	C/01.28	8
2)	SLEEVE	3.07.65.729/2	2
3)	O-RING	G/09.22	4
4)	CHAIN GUIDE	3.07.65.455	2
5)	SEAL	3.07.65.976	4
6)	RING	1.07.60.010/2	2
7)	COUNTER-ROLLER COVERED IN CERAMIC	3.07.65.751	2
8)	STEEL SHAFT	1.07.65.800	2
9)	GEAR	3.07.65.458	2
10)	BELLOWS	3.07.651315	6
11)	O-RING	G/09.37	4

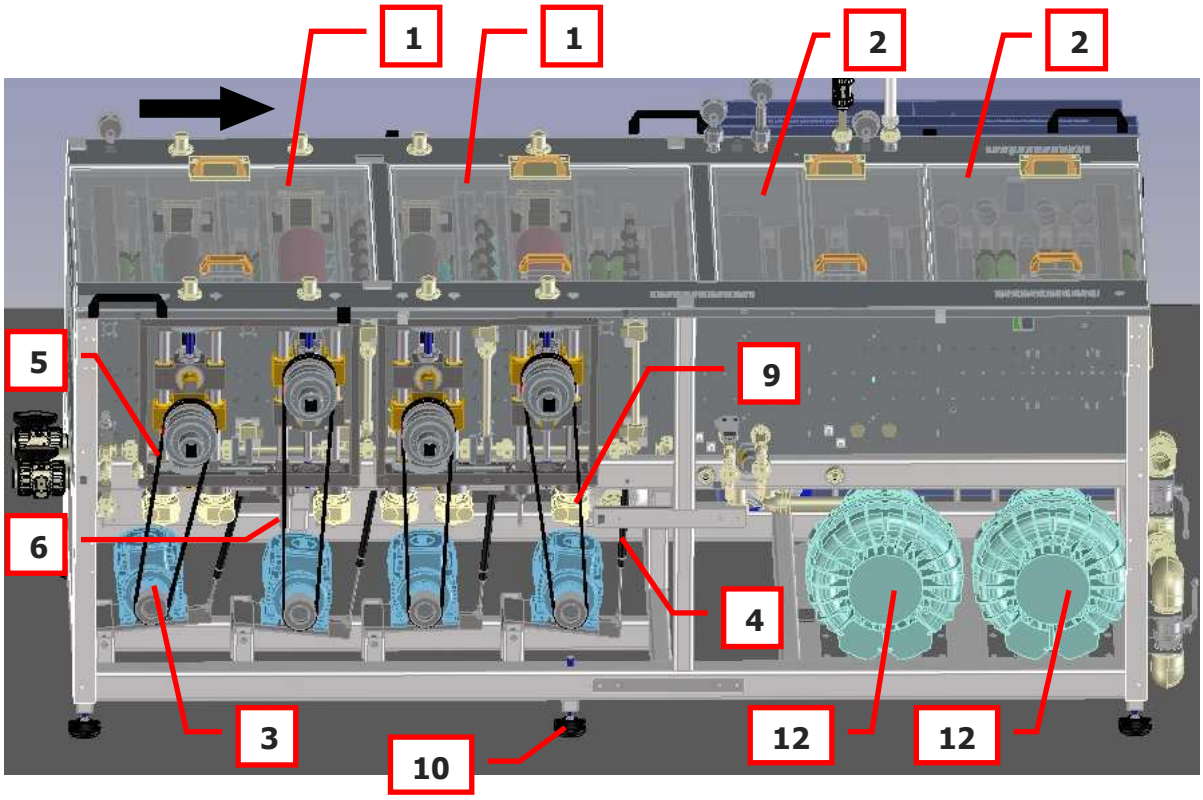


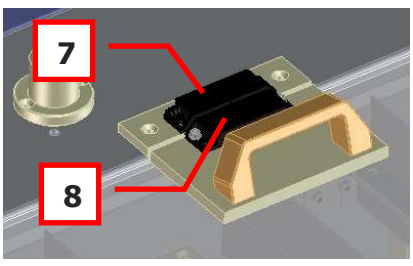
30765-MANU07-3

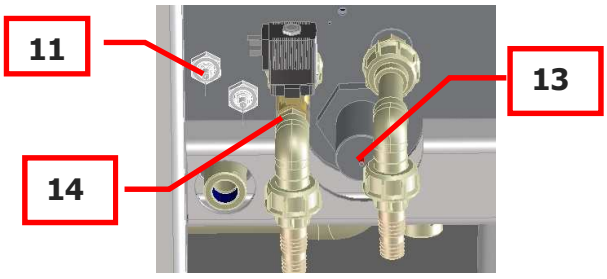
Pos.	Description	Code or drawing	Q.ty
1)	LEFT THREAD BRUSH ROD	1.07.65.518	2
	STEEL SHAFT WITH LEFT THREAD	3.07.65.804/2	2
2)	LEFT THREAD COUNTER-ROLLER ROD	1.07.65.517	2
	STEEL SHAFT WITH LEFT THREAD	7.01.65.524/2	2
3)	RIGHT THREAD BRUSH ROD	1.07.65.518	2
	STEEL SHAFT WITH RIGHT THREAD	3.07.65.804/2	2
4)	RIGHT THREAD COUNTER-ROLLER ROD	1.07.65.517	2
	STEEL SHAFT WITH RIGHT THREAD	7.01.65.524/2	2



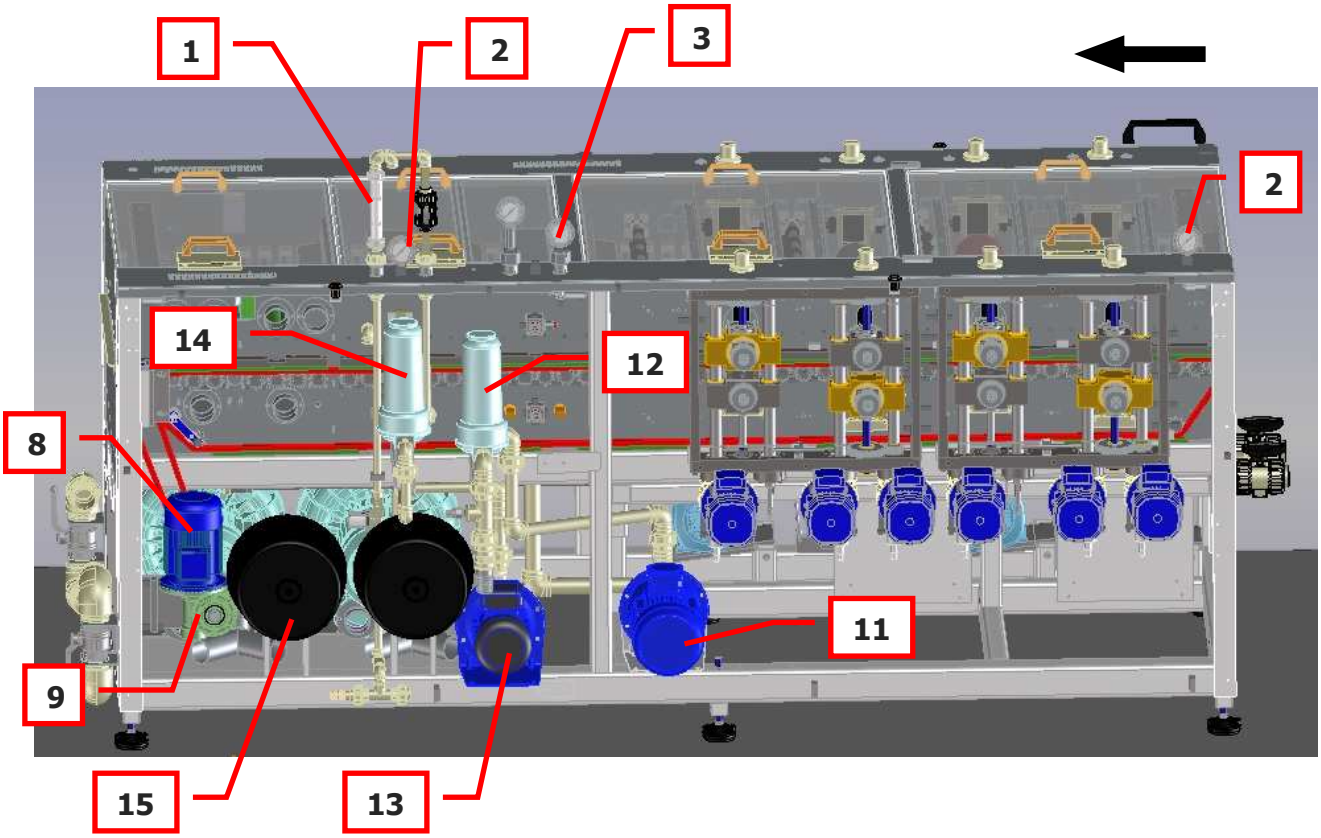
Pos.	Description	Code or drawing	Q.ty
1)	UPPER GLASS	3.07.651093	2
2)	UPPER GLASS	3.07.651857	2
3)	BRUSH ROTATION MOTOR	M/01.24/IE2	4
4)	GAS LIFT	I/05.04	4
5)	BELTS FOR LOWER BRUSH ROTATION	G/05.16/CONTI	4
6)	BELTS FOR UPPER BRUSH ROTATION	G/05.10/CONTI	4
7)	SENSOR	E/37.21/B/LED	4
8)	MAGNET	E/37.16	4
9)	REDUCTION GEAR	R/01.10/H	6
10)	FOOT	V/28.30	6
11)	LEVEL SWITCH	E/50.11	4
12)	TURBINE	M/03.27/E	2
13)	HEATER	1.PU2534	1
14)	SOLENOID VALVE	V/09.18	1







Pos.	Description	Code or drawing	Q.ty
1)	FLOWMETER	V/16.02/A/FIP	1
2)	PRESSURE GAUGE	V/24.05	2
3)	PRESSURE GAUGE	V/24.13	1
4)	LOWER BRUSH LIFTING MOTOR	M/01.04/H	1
5)	UPPER COUNTER-ROLLER LIFTING MOTOR	M/01.04/H	1
6)	UPPER BRUSH LIFTING MOTOR	M/01.04/H	1
7)	REDUCTION GEAR	R/02.45/E	3
8)	DRIVE MOTOR	M/01.11/E	1
9)	DRIVE REDUCTION UNIT	R/02.12/CH	1
10)	PROXIMITY SENSOR	E/32.07/E	8
11)	BOOSTER PUMP	M/02.32/IE3	1
12)	FILTER CARTRIDGE	V/20.14/C	1
13)	BOOSTER PUMP	M/02.27/EA	1
14)	FILTER CARTRIDGE	V/20.14/C	1
15)	CARTRIDGE	M/03.35/A	2


1
2
3
2
14
12
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11
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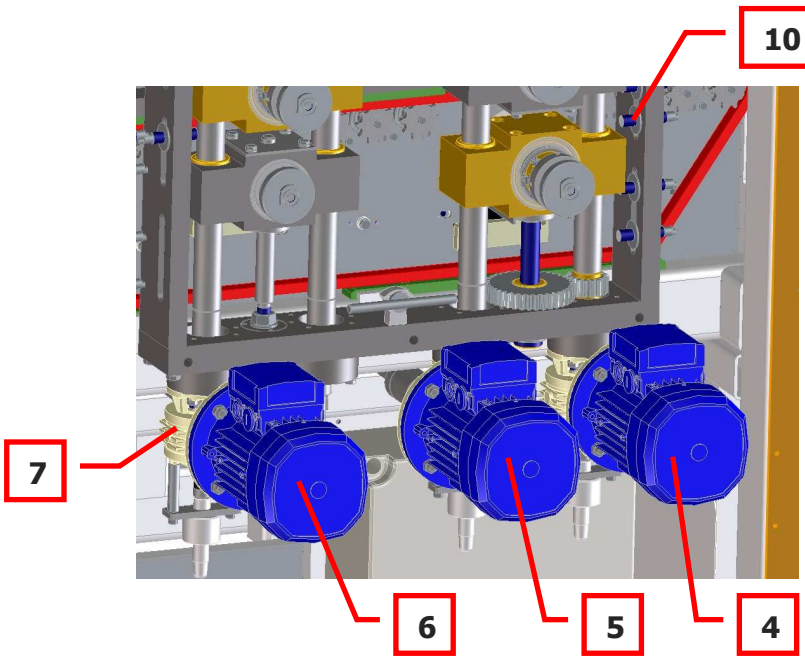
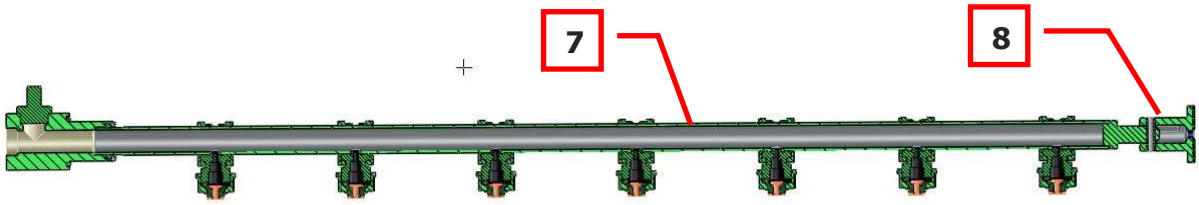
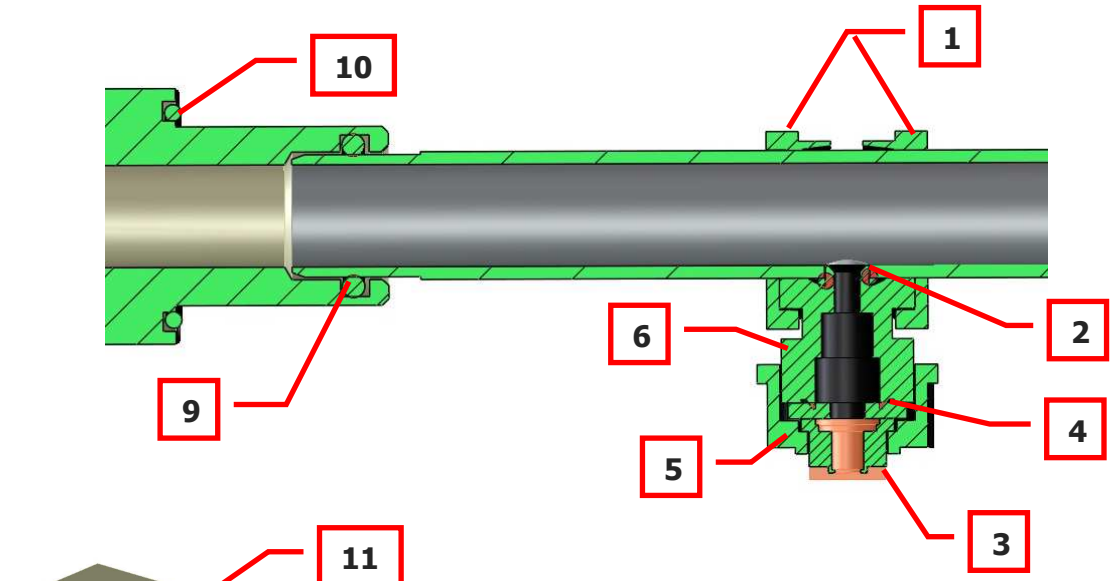
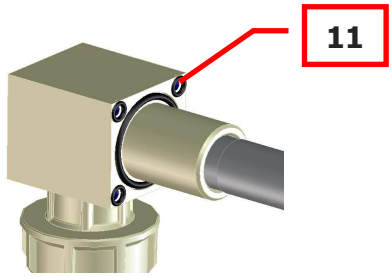
15
13


10
7
6
5
4

Pos.	Description	Code or drawing	Q.ty
1)	RING NUT	1.PU.464	108
2)	O-RING	G/09.100	54
3)	PVDF SPRAY HEAD	V/07110/05	54
4)	GASKET	1.PU.1230/2	54
5)	SECURING NUT	1.PU.463	54
6)	NOZZLE HOLDER BODY	1.PU.462	54
7)	WASHING HOSE (NO. 6 NOZZLES)	3.07.652462/2	2
7)	WASHING HOSE (NO. 7 NOZZLES)	3.07.652504/2	6
8)	BAYONET COUPLING FOR SPRAYING HOSE	7.01.65.012/4	8
9)	O-RING	G/09.17	8
10)	O-RING	G/09.29	8
11)	O-RING	G/09.02	32

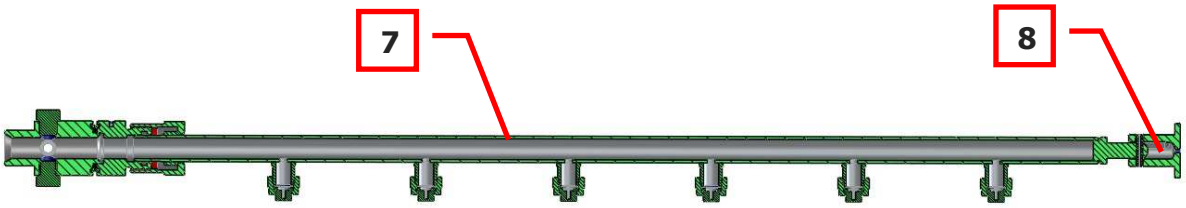


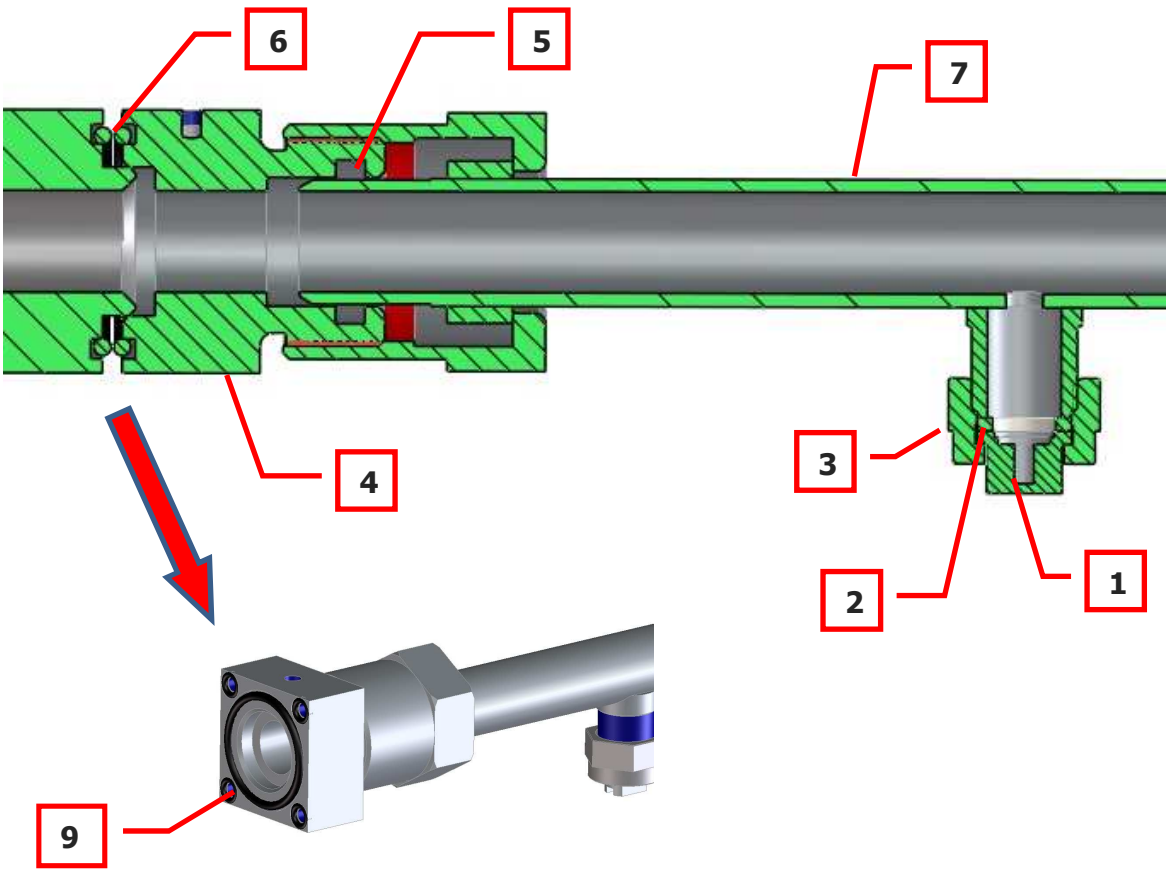


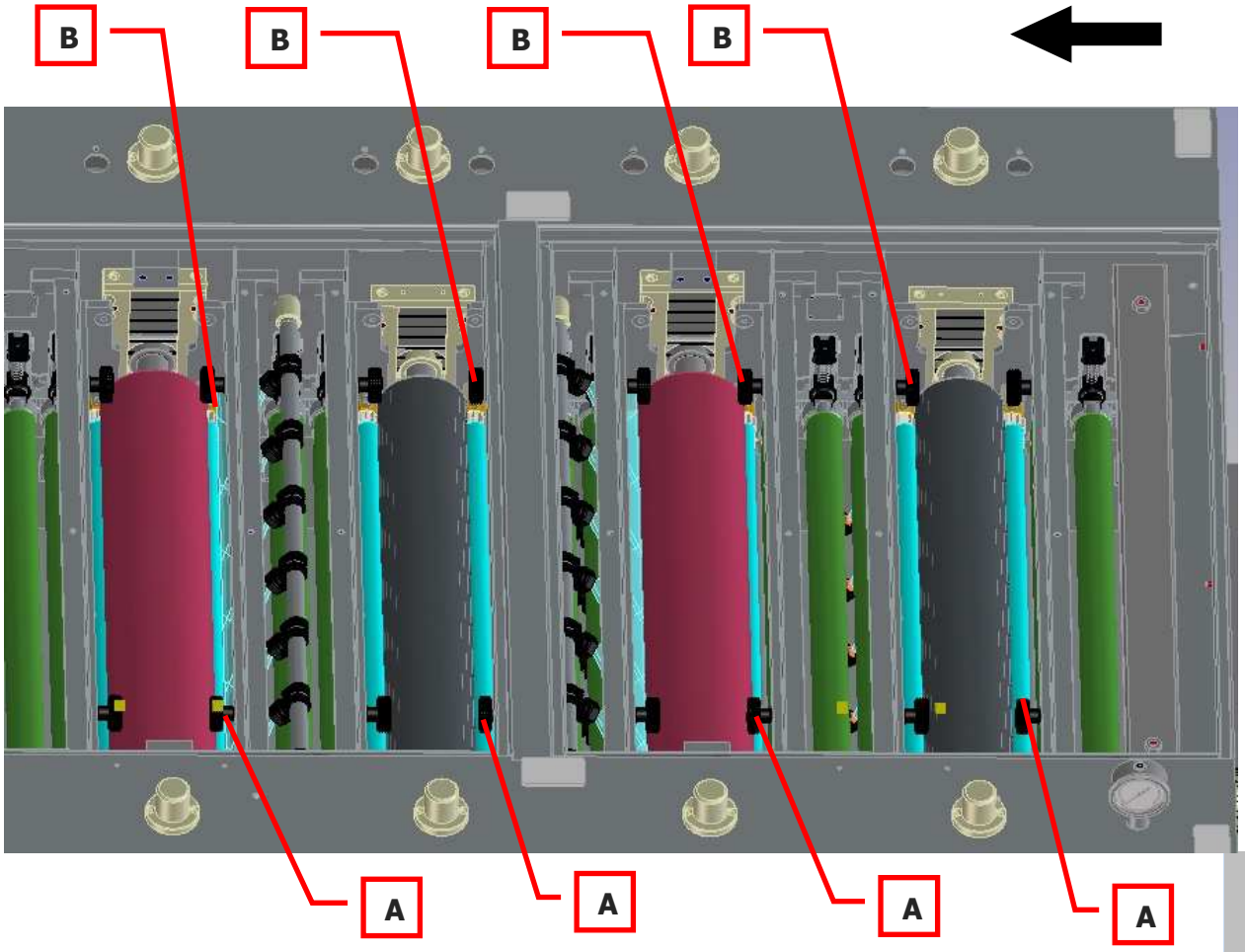


HIGH PRESSURE WASH HOSES

Pos.	Description	Code or drawing	Q.ty
1)	SPRAY HEAD	V/07.33/D	13
2)	WASHER	B/90.30	13
3)	SECURING NUT	1.06.60.041/3	13
4)	SOLID	3.07.65.936	2
5)	O-RING	G/09.17	2
6)	O-RING	G/09.29	2
7)	UPPER WASHING HOSE (NO. 6 NOZZLES)	3.07.652300	1
7)	LOWER WASHING HOSE (NO. 7 NOZZLES)	3.07.652305	1
8)	BAYONET COUPLING FOR SPRAYING HOSE	7.01.65.012/4	2
9)	O-RING	G/09.02	8





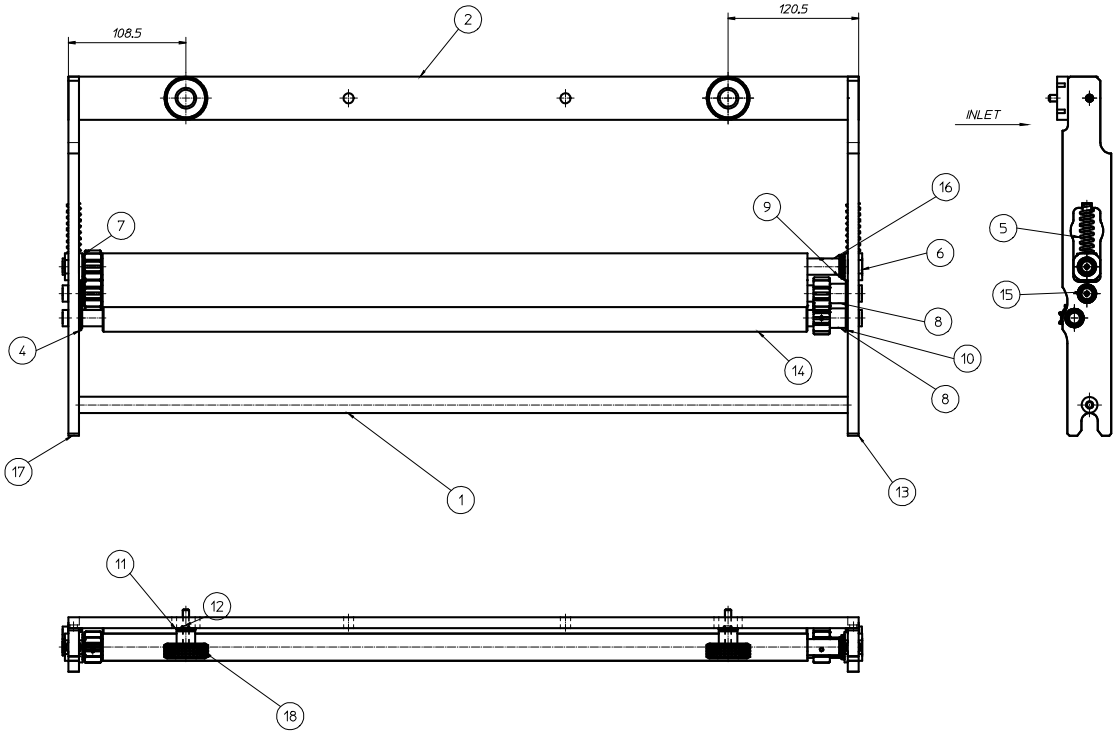


A) = FRAMES FOR HOSES 3.07.65.404/5

B) = FRAMES FOR HOSES 3.07.65.403/5

A) = FRAMES FOR HOSES

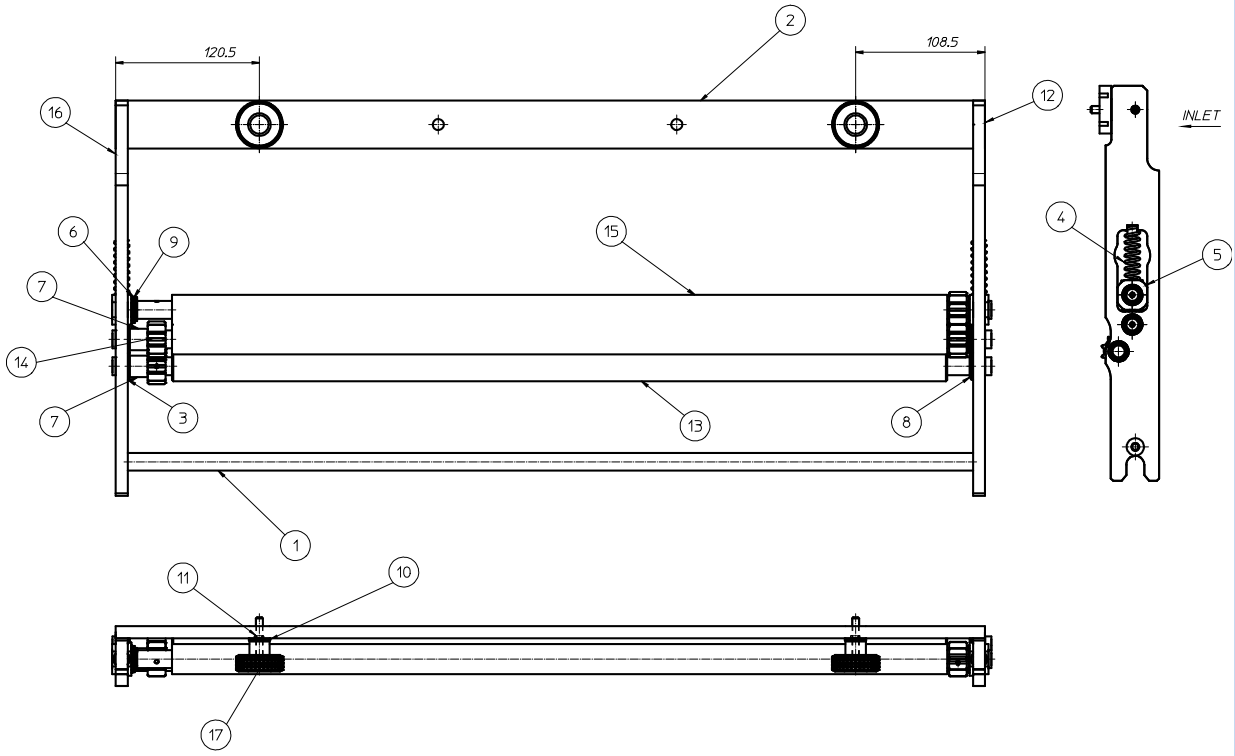
Pos.	Description	Code or drawing	Q.ty
1)	REINFORCING BAR	3.07.65.441	1
2)	PLATE	3.07.65.443/2	1
3)			
4)	BUSHING CHANGE	3.07.65.757	4
5)	SPRING	1.PU1488	2
6)	BUSHING FOR UPPER SHAFTS - Ø25	3.07.65.435	2
7)	BUSHING	C-06.06	2
8)	SPACER FOR SHAFT	3.07.65.611	2
9)	STAINLESS STEEL SEEGER 15 E	B-33.15	2
10)	WASHER	C-01130	10
11)	WASHER	B-66.10	2
12)	O-RING 2018	G-09.02	2
13)	SUPPORT FOR Ø25 ROLLERS	3.07.65.442/2	1
14)	LOWER SHAFT REINFORCING ROLLER ASSEMBLY	3.07.65.444/3	1
15)	LOWER SHAFT ASSEMBLY - D.25	3.07.65.584/3	1
16)	UPPER SHAFT ASSEMBLY - D.25	3.07.65.586/3	1
17)	SUPPORT FOR Ø25 ROLLERS	3.07.652186/2	1
18)	KNOB ASSEMBLY	3.07.65.806	2



30765-404/5

B) = FRAMES FOR HOSES

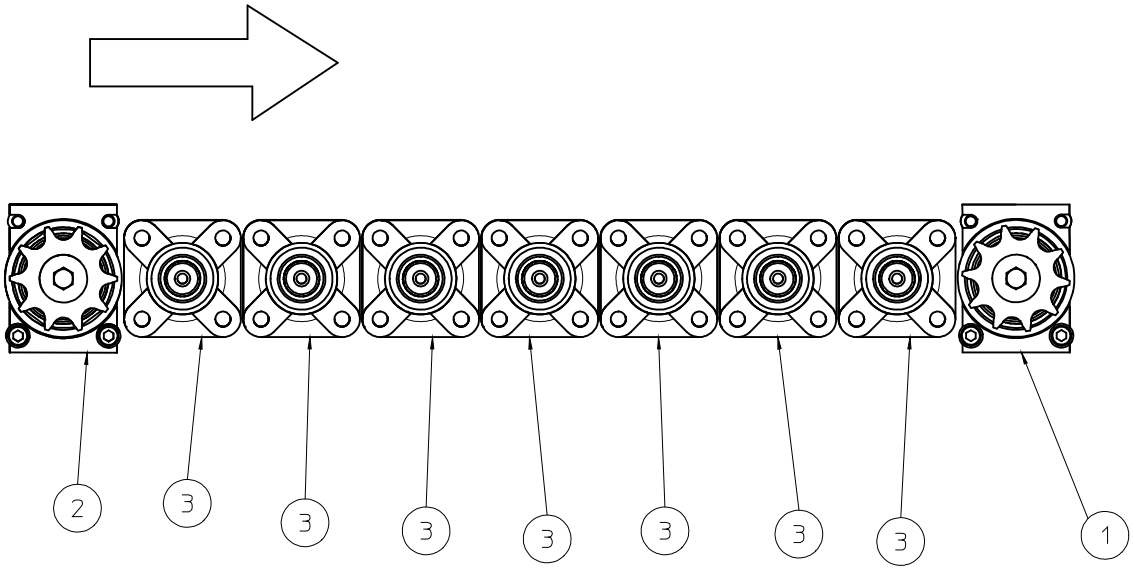
Pos.	Description	Code or drawing	Q.ty
1)	REINFORCING BAR	3.07.65.441	1
2)	PLATE	3.07.65.443/2	1
3)	BUSHING CHANGE	3.07.65.757	4
4)	SPRING	1.PU1488	2
5)	BUSHING FOR UPPER SHAFTS - Ø25	3.07.65.435	2
6)	BUSHING	C-06.06	2
7)	SPACER FOR SHAFT	3.07.65.611	2
8)	STAINLESS STEEL SEEGER 15 E	B-33.15	2
9)	WASHER	C-01130	10
10)	WASHER	B-66.10	2
11)	O-RING 2018	G-09.02	2
12)	SUPPORT FOR Ø25 ROLLERS	3.07.65.442/2	1
13)	LOWER SHAFT REINFORCING ROLLER ASSEMBLY	3.07.65.444/3	1
14)	LOWER SHAFT ASSEMBLY - D.25	3.07.65.584/3	1
15)	UPPER SHAFT ASSEMBLY - D.25	3.07.65.586/3	1
16)	SUPPORT FOR Ø25 ROLLERS	3.07.652186/2	1
17)	KNOB ASSEMBLY	3.07.65.806	2



30765-403/5

OUTFEED CONVEYOR L=475 mm (Ref. 3)

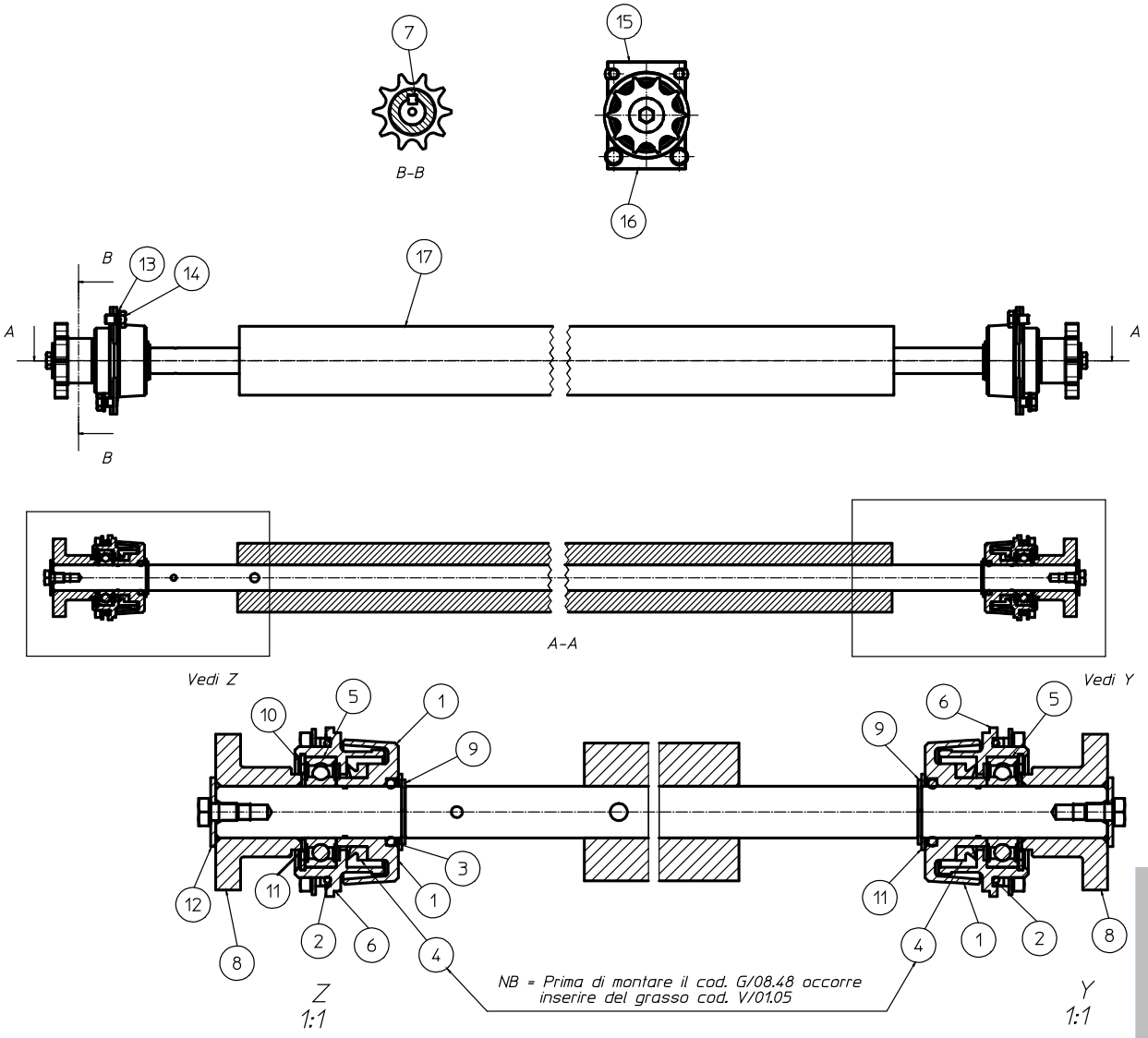
Pos.	Description	Code or drawing	Q.ty
1)	LOWER END SHAFT ASSEMBLY	3.07.652246/2	1
2)	END SHAFT ASSEMBLY	3.07.653170	1
3)	TRANSPORT SHAFT ASSEMBLY	3.07.652350/2	7



DRIVING ELEMENT-39

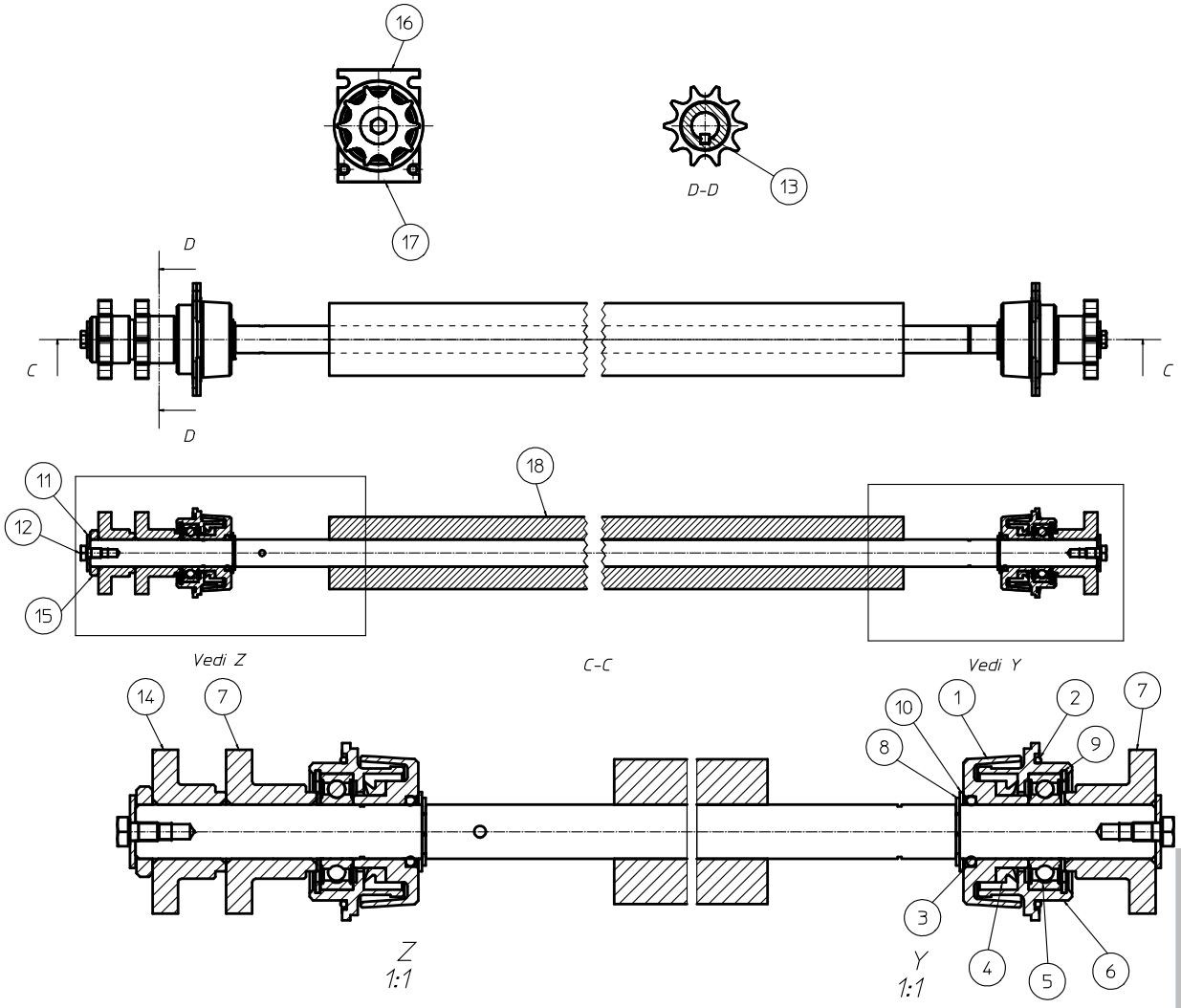
LOWER END SHAFT ASSEMBLY (3.07.652246/2)

Pos.	Description	Code or drawing	Q.ty
1)	PROTECTIVE CASING	3.07.65.425	2
2)	O-RING 2150	G-09150	2
3)	O-RING 119	G-09.13	2
4)	V-RING V20A	G-08.48	2
5)	BEARING 6002 2RS (15-32-9)	C-01.06-A	2
6)	BEARING SUPPORT	3.07.65.891	2
7)	STAINLESS STEEL KEY 5x5x15	B-22.40	2
8)	GEAR Z=10 1/2"-5/16"	3.07.65.418/2	2
9)	STAINLESS STEEL SEEGER 15 E	B-33.15	2
10)	STAINLESS STEEL SEEGER 32 I	B-33.32	2
11)	WASHER	C-01130	4
12)	WASHER	B-12.05	2
13)	WASHER D.5	B-10.05	8
14)	STAINLESS STEEL HEX HEAD SCREW M5X8	B-01.48	10
15)	SIDE MOUNT	3.07.65.422	2
16)	SIDE MOUNT	3.07.651142	2
17)	LOWER SHAFT ASSEMBLY	3.07.65.617/2	1


7
15
B-B
16
B
13
14
17
A
A
B
A-A
Vedi Z
Vedi Y
10
5
1
9
6
5
9
3
12
11
1
11
2
6
4
4
1
2
8
8
NB = Prima di montare il cod. G/08.48 occorre inserire del grasso cod. V/01.05
Z
1:1
Y
1:1

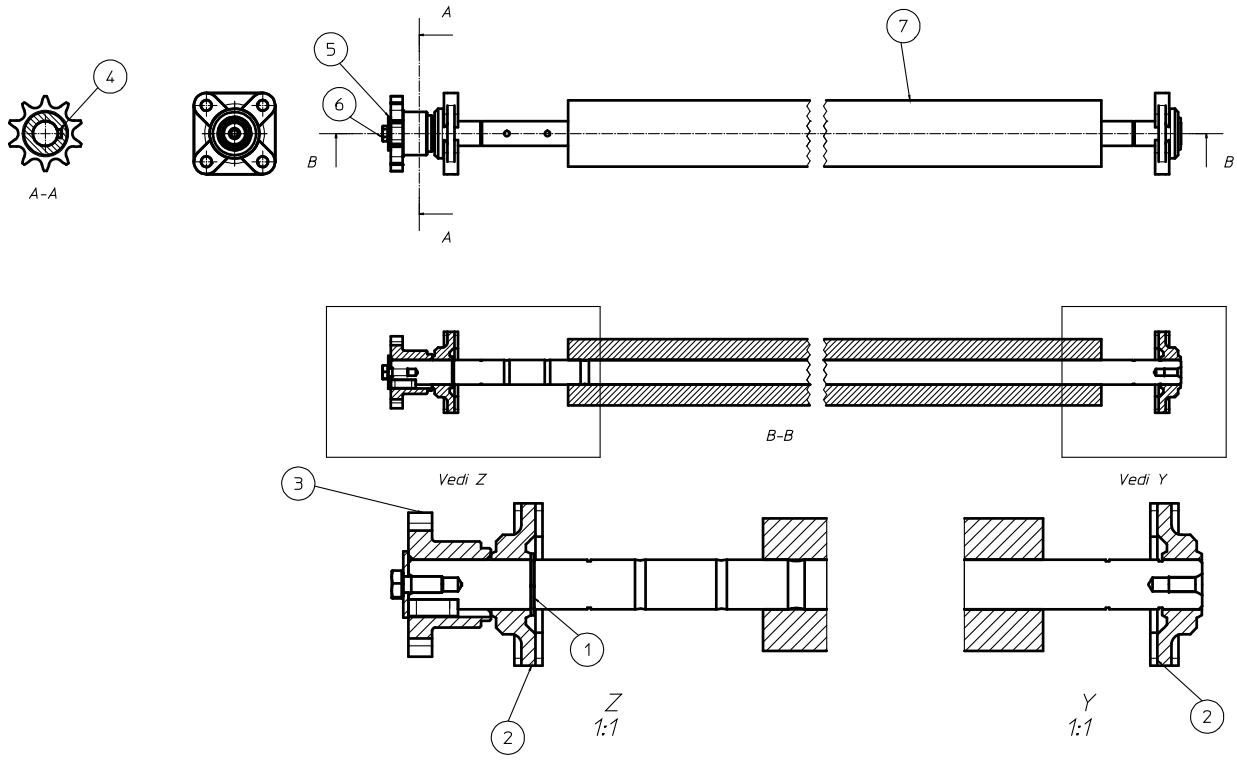
OUTFEED CONVEYOR END SHAFT ASSEMBLY (3.07.653170)

Pos.	Description	Code or drawing	Q.ty
1)	PROTECTIVE CASING	3.07.65.425	2
2)	O-RING 2150	G-09150	2
3)	O-RING 119	G-09.13	2
4)	V-RING V20A	G-08.48	2
5)	BEARING 6002 2RS (15-32-9)	C-01.06-A	2
6)	BEARING SUPPORT	3.07.65.891	2
7)	GEAR Z=10 1/2"-5/16"	3.07.65.418/2	2
8)	STAINLESS STEEL SEEGER 15 E	B-33.15	2
9)	STAINLESS STEEL SEEGER 32 I	B-33.32	2
10)	WASHER	C-01130	4
11)	WASHER	B-12.05	2
12)	STAINLESS STEEL HEX HEAD SCREW M5X8	B-01.48	2
13)	STAINLESS STEEL KEY 5x5x15	B-22.40	4
14)	GEAR Z=10 1/2"-5/16"	3.07.801464	1
15)	SPACER	3.07.651073/2	1
16)	SIDE MOUNT	3.07.65.422	2
17)	SIDE MOUNT	3.07.651142	2
18)	INPUT SHAFT ASSEMBLY	3.07.801471	1


16
17
D-D
13
D
C
C
D
11
12
15
18
Vedi Z
C-C
Vedi Y
14
7
10
1
2
7
8
9
3
4
5
6
Z
1:1
Y
1:1

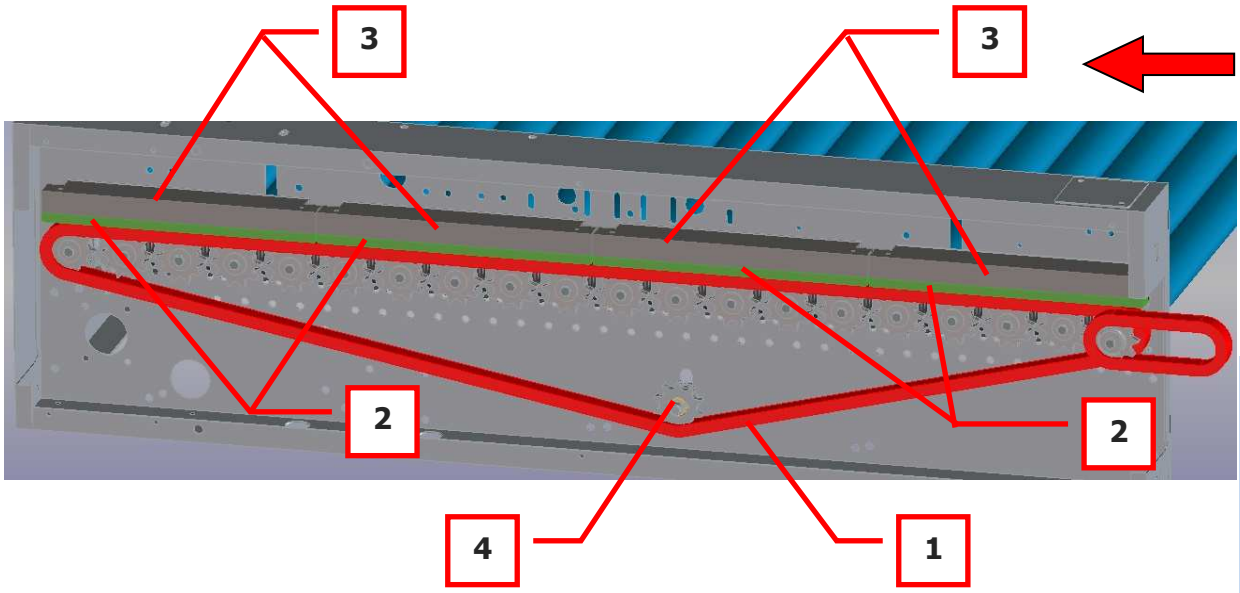
TRANSPORT SHAFT ASSEMBLY (3.07.652350/2)

Pos.	Description	Code or drawing	Q.ty
1)	STAINLESS STEEL SEEGER 15 E	B-33.15	1
2)	FLANGE SUPPORT	C-06.05	2
3)	GEAR Z=10 1/2"-5/16"	3.07.65.418/2	1
4)	STAINLESS STEEL KEY 5x5x15	B-22.40	1
5)	WASHER	B-12.05	1
6)	STAINLESS STEEL HEX HEAD SCREW M5X12	B-01.53	1
7)	LOWER SHAFT ASSEMBLY	3.07.65759/2	1



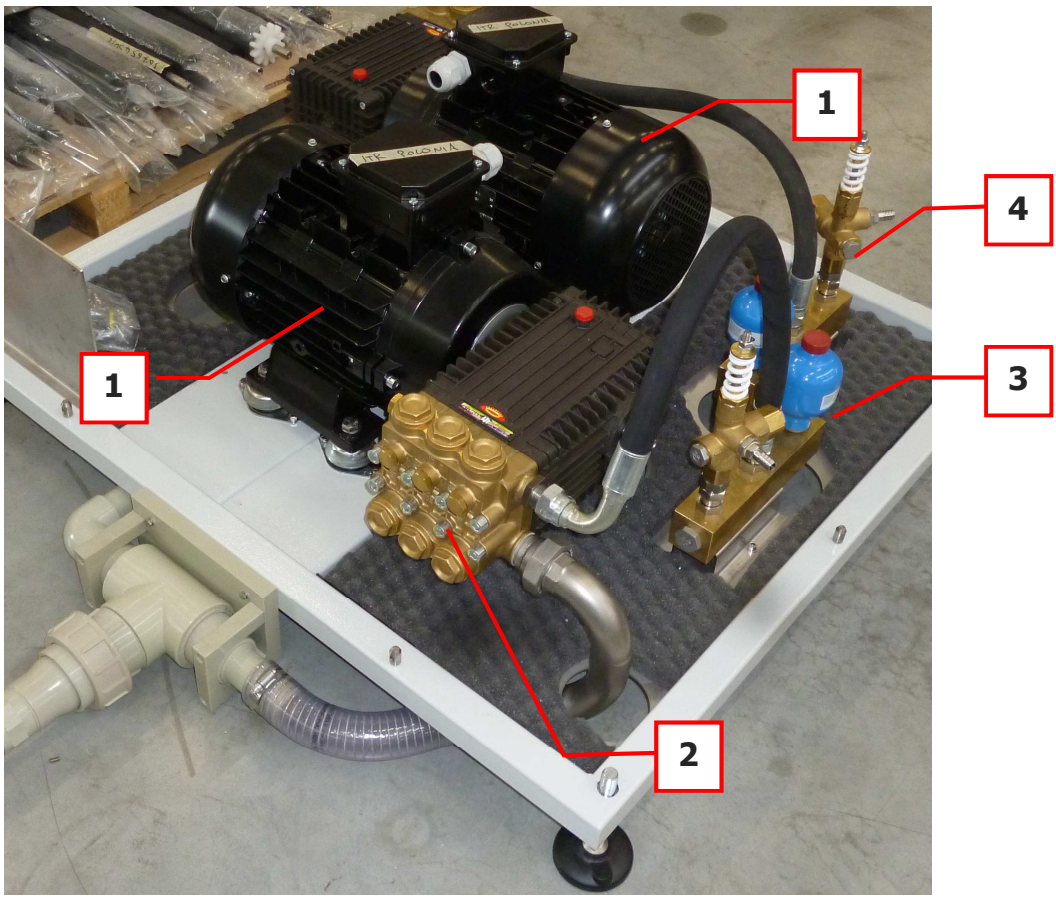
OUTFEED CONVEYOR TRANSMISSION L=1025 mm.

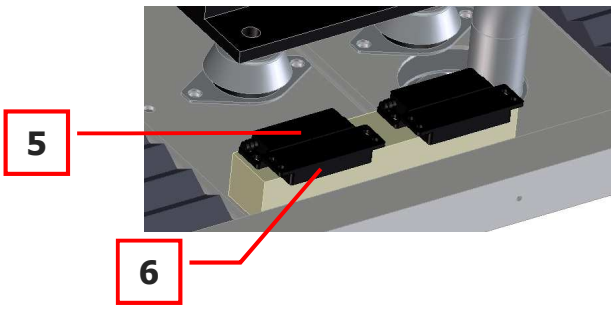
Pos.	Description	Code or drawing	Q.ty
1)	DRIVE CHAIN	T/01.50	m 1
--	JUNCTION MESH	T/01.51	2
--	FALSE MESH	T/01.52	2
2)	CHAIN GUIDE	3.07.65.503	1
3)	CHAIN GUIDE SUPPORT	3.07.65.502/2	1
4)	TENSIONER GEAR	3.07.65.719/2	1



GRAVITY FILTER ROLL L=700 mm (Ref. 4)

Pos.	Description	Code or drawing	Q.ty
1)	MOTOR	M/01.70	n°2
2)	HIGHT PRESSURE PUMP	M/02135	n°2
3)	DAMPER	1.06.65.971/2	n°2
4)	VALVE	1.06.65.959/3	n°2
5)	SAFETY SENSOR	E/37.21/B/LED	n°1
6)	SAFETY MAGNET	E/37.16	n°1

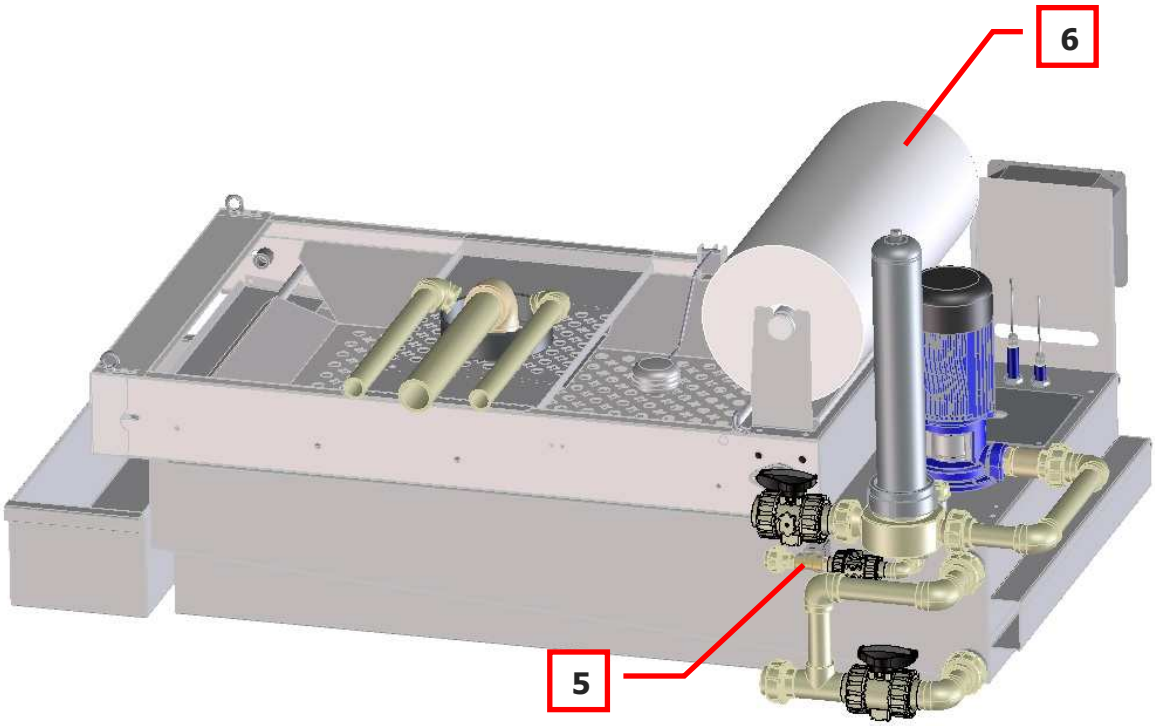


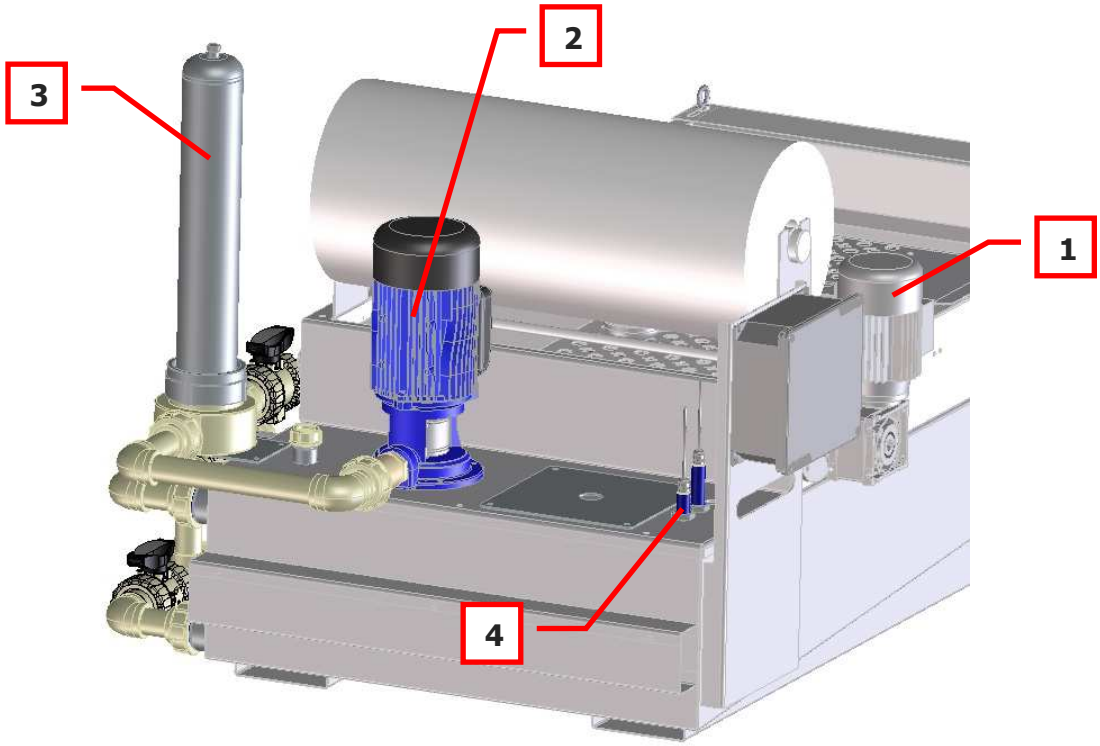


GRAVITY FILTER ROLL L=700 mm (Ref. 5)

Pos.	Description	Code or drawing	Q.ty
1)	PAPER ADVANCEMENT MOTOR	◑	1
2)	PUMP	M/02220/A/IE3	1
3)	FILTER CARTRIDGE	V/20.35/F	1
4)	LEVEL SWITCH	E/50.10	2
5)	SOLENOID VALVE	V/09.18	1
6)	PAPER ROLL	F/01.11	1

The symbol "◑" indicates that, to order the corresponding part you must contact Pola e Massa s.r.l.


6
5


2
3
1
4

The manufacturer recommends using the form attached to facilitate processing spare parts orders. Please fill out the spare parts order form and send it to the Manufacturer. Be careful to provide all data required.

In order to efficiently interact with our technicians when spare parts are ordered, please follow this procedure:

- Identify to which section of the machine the part to be replaced belongs;
- In Chapter 8.2, SPARE PARTS, find the specific paragraph in connection to the section of the machine, and within that paragraph, find the table of the unit to which the spare part belongs. Also find the description, code and quantity of pieces present in that section;
- Order the piece by filling out and sending the Order Form on the next page or by calling the Manufacturer directly;

Using non-original parts is not recommended. If such parts are used, the Terms of the Warranty (if the latter is still valid) and the Manufacturer's liability regarding the use of the machine and any injury to people and/or damage to objects will be rendered null and void.

SPARE PARTS ORDER FORM

ORDER DETAILS	**CORPORATE NAME**	
	NAME & SURNAME	
	ADDRESS	
	CITY	
	ZIP	
	PROVINCE	
	PHONE	
	FAX	
	E-MAIL	

MACHINE DATA	**MACHINE NAME**	
	MODEL	
	SERIAL NUMBER	
	YEAR OF MANUFACTURE	

	DESCRIPTION	**CODE OR DRAWING**	**Q.ty**
LIST OF SPARE PARTS TO ORDER			

NOTES	

9. ADDITIONAL INSTRUCTIONS

9.1. WASTE DISPOSAL

The user shall be responsible for supervising that the waste resulting from the machine processes is disposed of in full compliance with the legislation in force in his country.

Lubricants and replaced parts must be disposed of following the regulations in force in the country where the machine is installed.

9.2. DECOMMISIONING & DISMANTLING

Upon dismantling the system, plastic parts, metal parts and electrical components must be sorted out and separately collected in compliance with the regulations in force.
As regards the metal mass of the machine, just sort out ferrous parts from parts made of other metals or alloys so that they are correctly sent to fusion recycling.

9.3. SAFE WORK PROCEDURES

Provide staff with proper training and information on the specific procedures on:

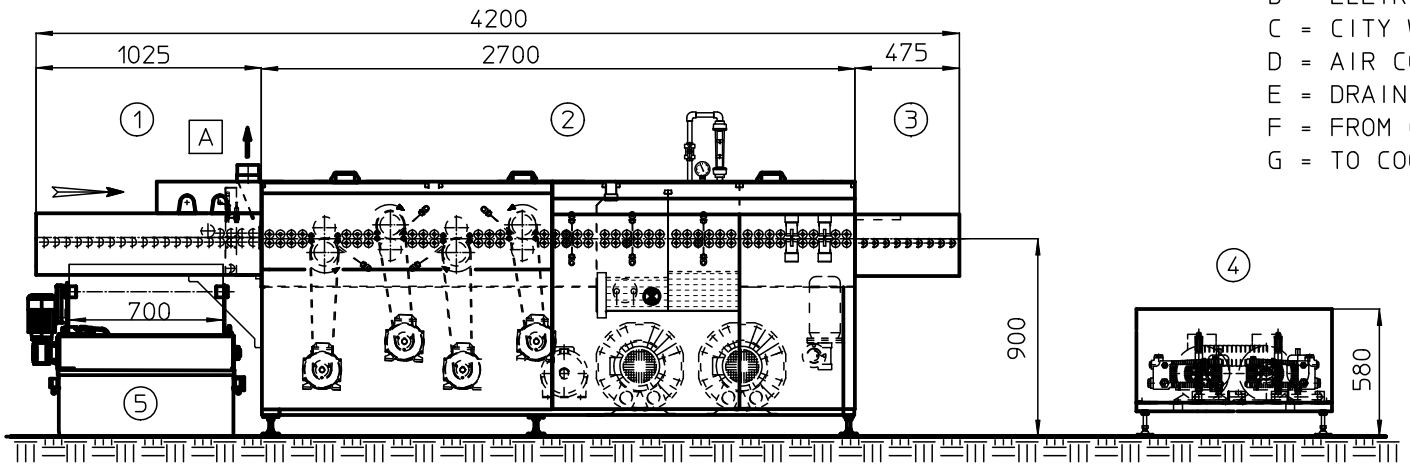
- the safe use of the machine;
- emergency situations;
- cleaning the machine;
- maintenance.

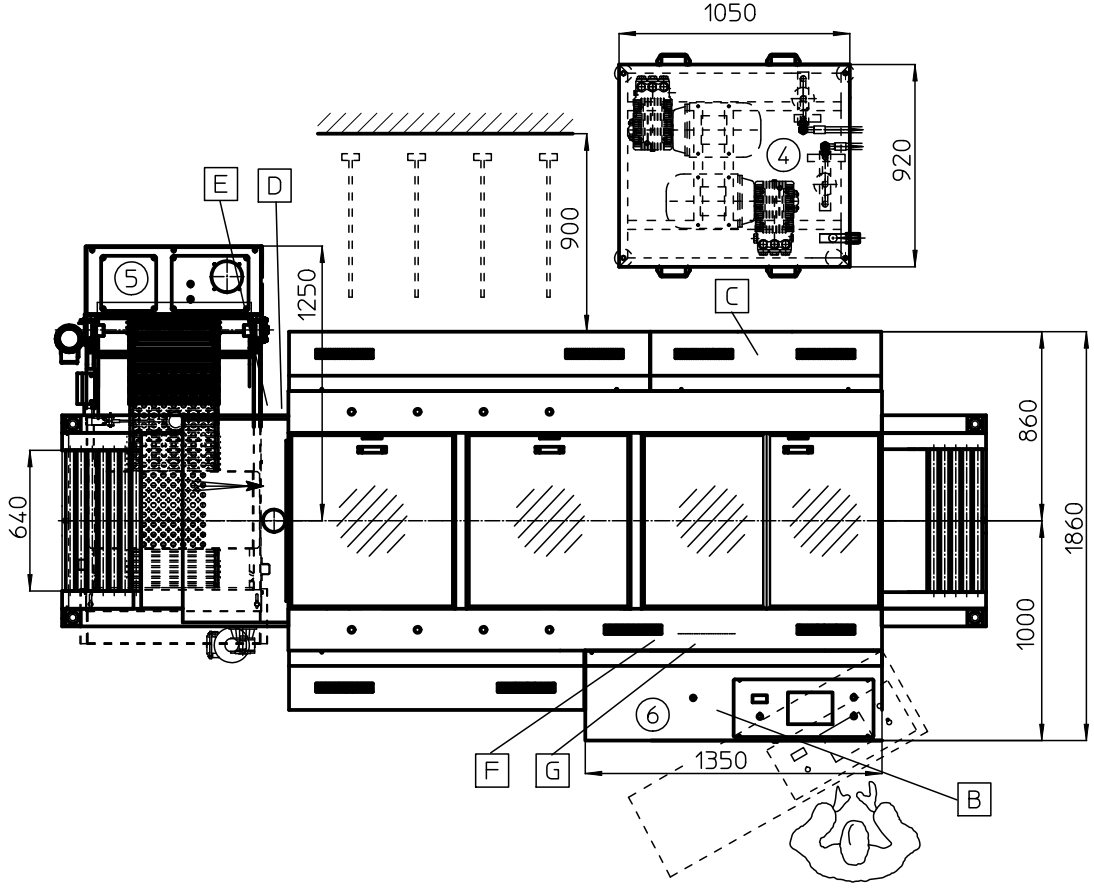
10. ANNEXES

10.1. LIST OF ANNEXES

1. Machine position layout BRS_4700_4
2. Pneumatic plan BRS_4700_SP_4
3. Water supply diagram BRS_4700_SI_4
4. Wiring diagram SE1-1378
5. Technical data sheet
6. ACOUSTIC TEST BRS_4700_4_RUMORE

A = ASPIRATION CONNECTION FOR PIPE Øext 90 mm
B = ELETRICAL CONNECTION
C = CITY WATER, POLIFUSION FOR PIPE Ø 20ext mm
D = AIR COMPRESSED, CONNECTION FOR PIPE Øext 8 mm
E = DRAIN, POLYFUSION FOR PIPE Øext 40 mm
F = FROM COOLING SYSTEM, POLYFUSION FOR PIPE Øext 20 mm
G = TO COOLING SYSTEM, POLYFUSION FOR PIPE Øext 20 mm





1 - ENTRY CONVEYOR WITH THICKNESS DETECTOR
2 - UNIBLOC SCRUBBER 4/25/FA special 120 mm
3 - EXIT CONVEYOR
4 - HIGH PRESSURE PUMPING GROUP (100 bar)
5 - GRAVITY FILTER W=700 mm
6 - CONTROL CABINET

A = ASPIRATION Ø 90 mm

MAX INSTALLED POWER : 41 KW
(400 V. 3PH.+N+PE 50Hz)
WATER CONSUMPTION :
ADJUSTABLE 0,2 - 0,6 m3/h

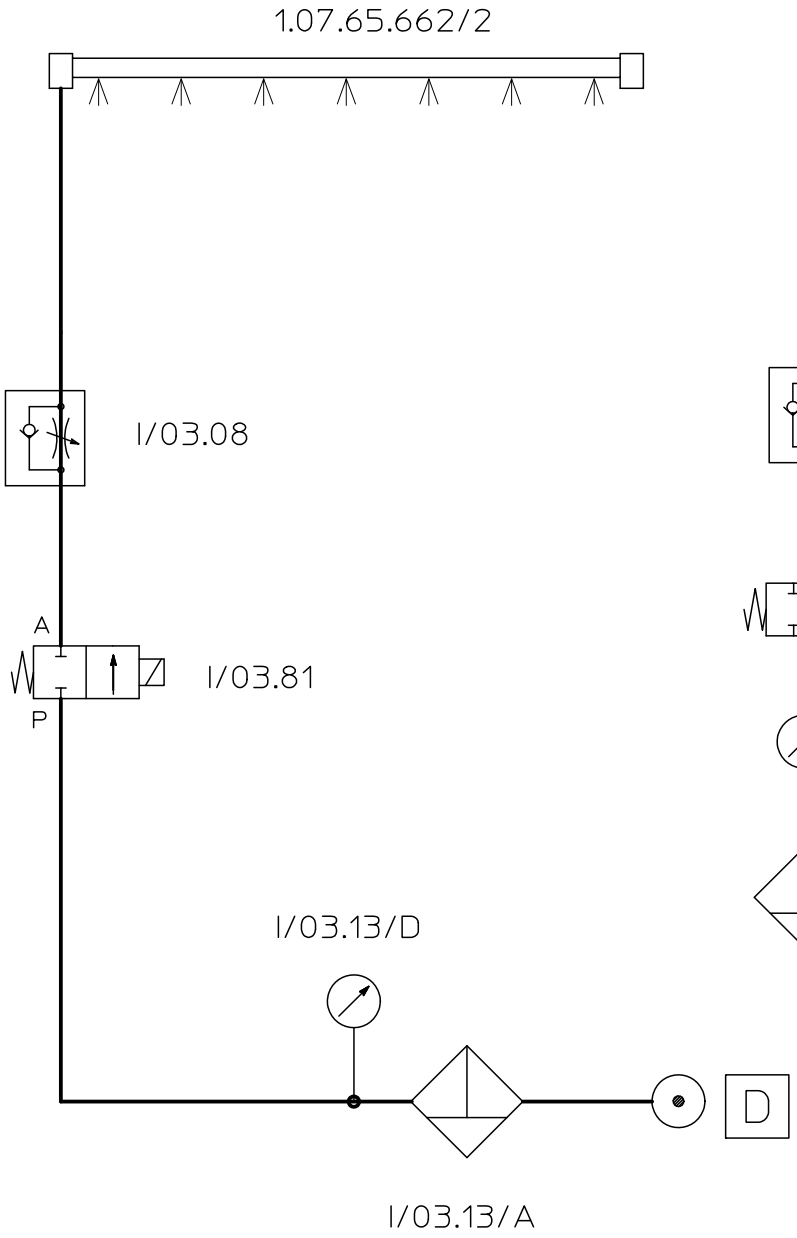
Dalla macchina - from machine

modifiche - modifications

pola e massa
OVADA (AL) ITALIA

UNIBLOC SCRUBBING
4/25/FA special 120 mm

disegno n° / dwg n° BRS_4700_4	quantita' / quantity /	materiale / material /			
cod. materiale / material ref. /	dis. scala / scale dwg 1:25	peso grezzo / gross weight /	trattamento / treatment /	data / date 05/09/19	



REGOLATORE DI FLUSSO
FLUX REGULATOR

ELETTROVALVOLA
SOLENOID VALVE

MANOMETRO
MANOMETER

FILTRO ARIA
AIR FILTER

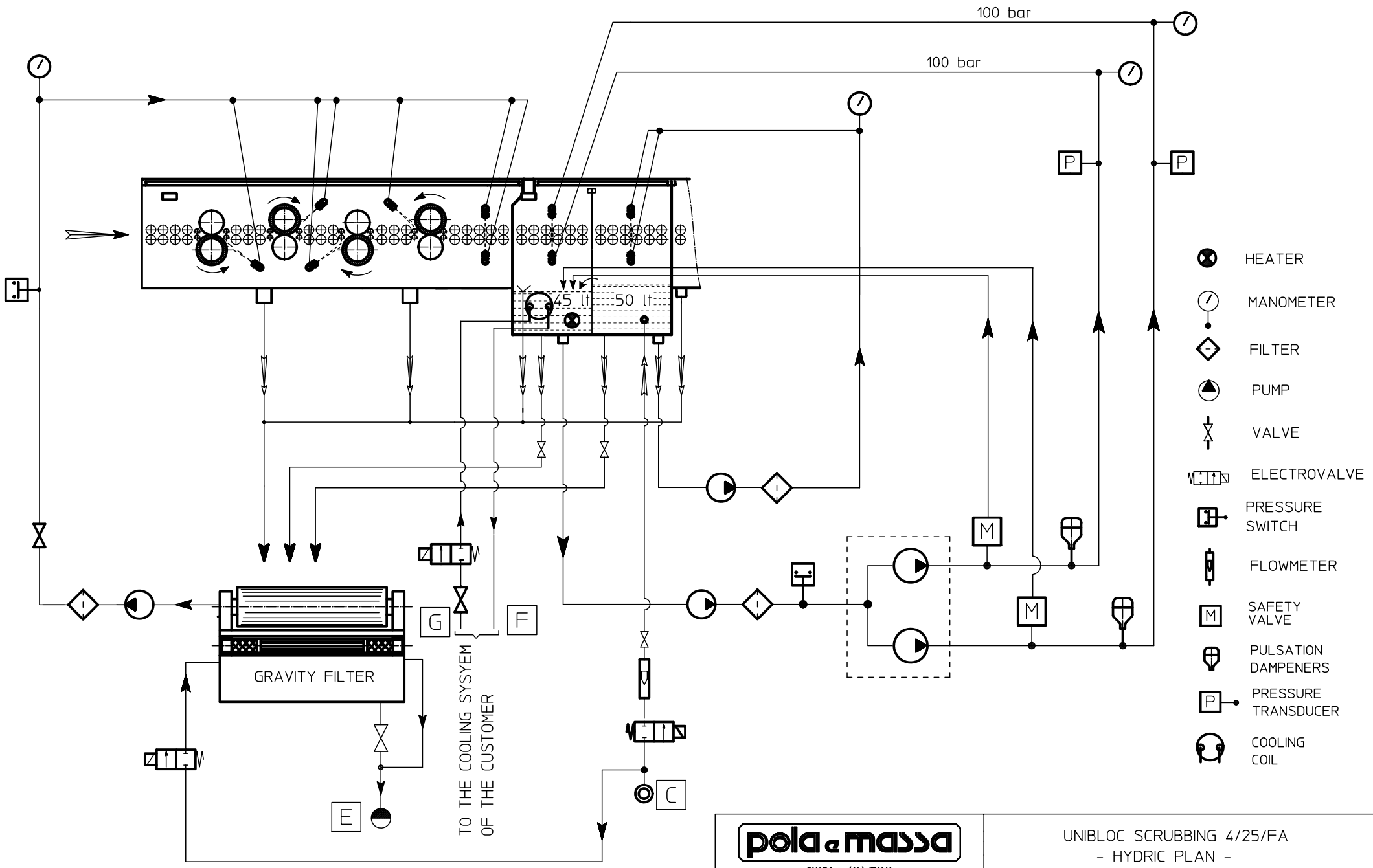
ATTACCO ARIA COMPRESSA
CONNECTION TO COMPRESSED SUPPLY MAINS

pola e massa
OVADA (AL) ITALIA

- SCHEMA PNEUMATICO - PNEUMATIC PLAN -

UNIBLOC SCRUBBER 4/25/FA

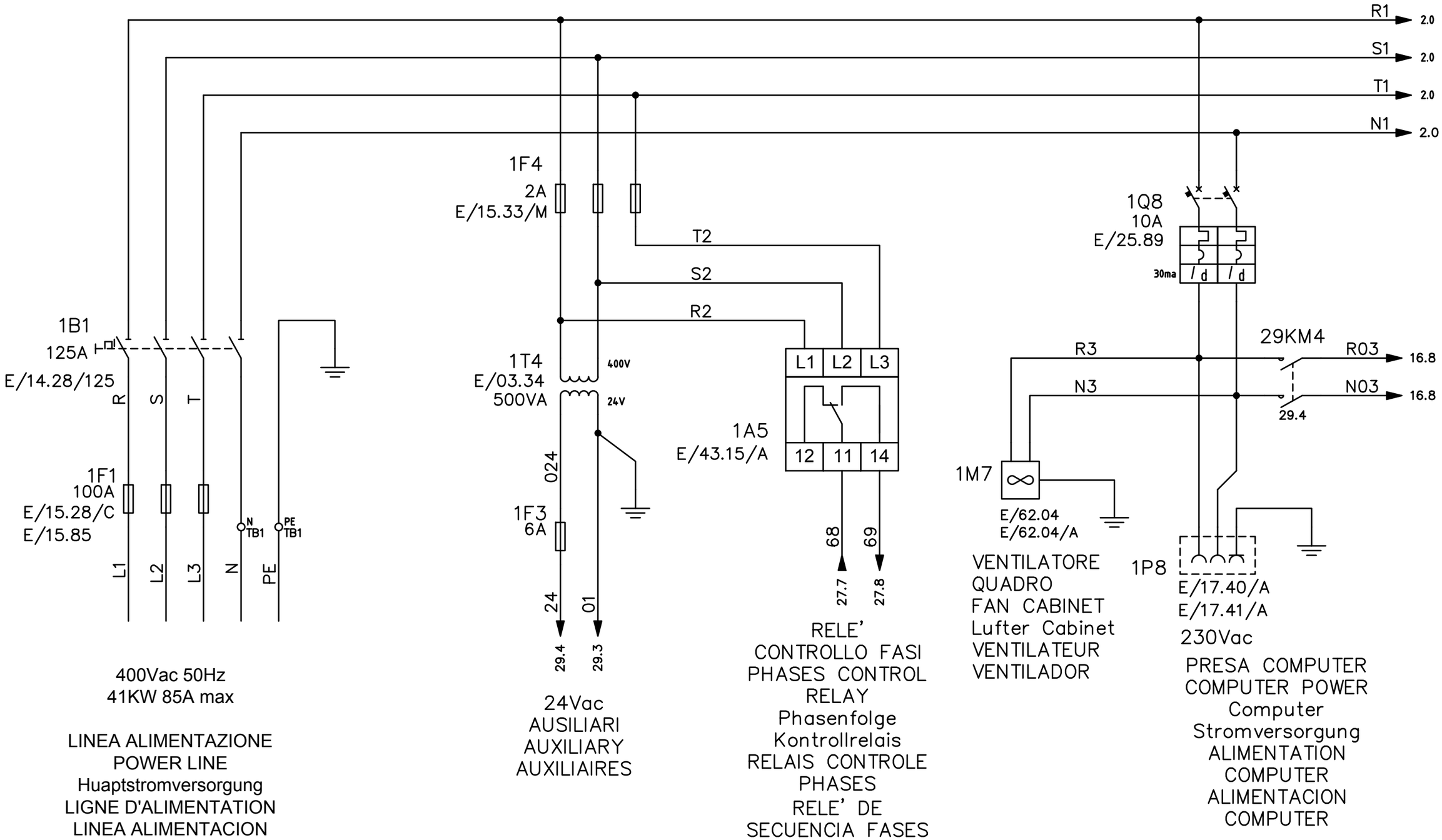
disegno n° / dwg n° BRS_4700_SP_4	quantita' / quantity /				
cod. materiale / material ref.	dis. scala / scale dwg 1:15	peso grezzo / gross weight /	trattamento / treatment /	data / date 05/09/19	



pola e massa
OVADA (AL) ITALIA

UNIBLOC SCRUBBING 4/25/FA
- HYDRIC PLAN -

disegno n° / dwg n° BRS_4700_SI_4	quantita' / quantity /	materiale / material /		
cod. materiale / material ref. /	dis. scala / scale dwg 1:20	peso grezzo / gross weight /	trattamento / treatment /	data / date 18/09/19



400Vac 50Hz
41KW 85A max

LINEA ALIMENTAZIONE
POWER LINE
Huaptstromversorgung
LIGNE D'ALIMENTATION
LINEA ALIMENTACION

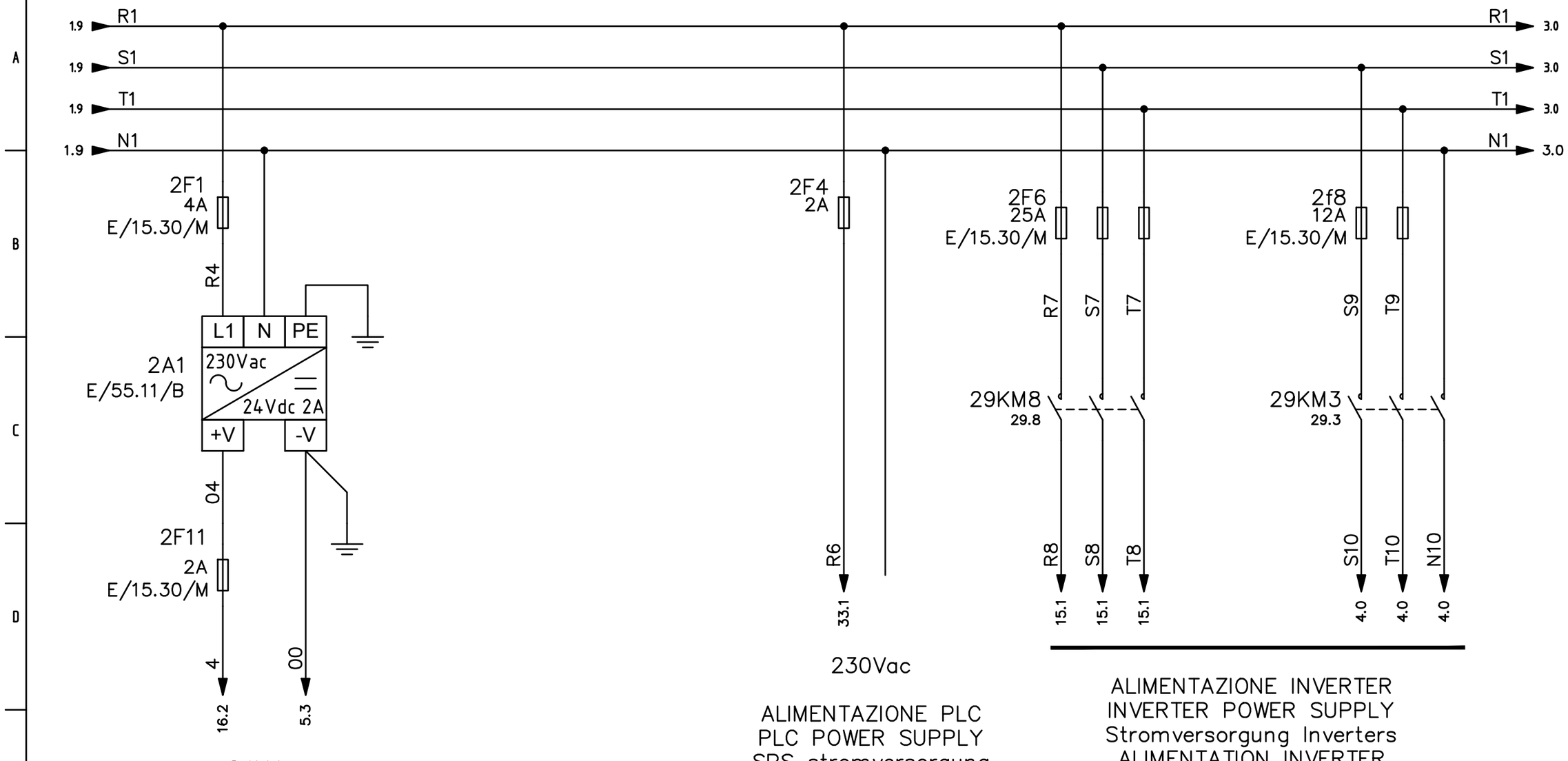
24Vac
AUSILIARI
AUXILIARY
AUXILIAIRES

RELE'
CONTROLLO FASI
PHASES CONTROL
RELAY
Phasenfolge
Kontrollrelais
RELAIS CONTROLE
PHASES
RELE' DE
SECUENCIA FASES

VENTILATORE
QUADRO
FAN CABINET
Lufter Cabinet
VENTILATEUR
VENTILADOR

PRESA COMPUTER
COMPUTER POWER
Computer
Stromversorgung
ALIMENTATION
COMPUTER
ALIMENTACION
COMPUTER

				DATA	23/05/2019	pola e massa		BRUSHING 4/25/FA	=
				DISEGN.	mkm			–	+
				VISTO					SE1-1378 FG. 1 F.S. 2
REV.	MODIFICA	DATA	FIRMA	APPR.		SOST. IL :	SOST. DA :	FILE : SE1-1378	



REV.	MODIFICA	DATA	FIRMA	APPR.		SOST. IL :	SOST. DA :	FILE : SE1-1378
				VISTO				
				DISEGN.	mkm			
				DATA	23/05/2019			

pola e massa

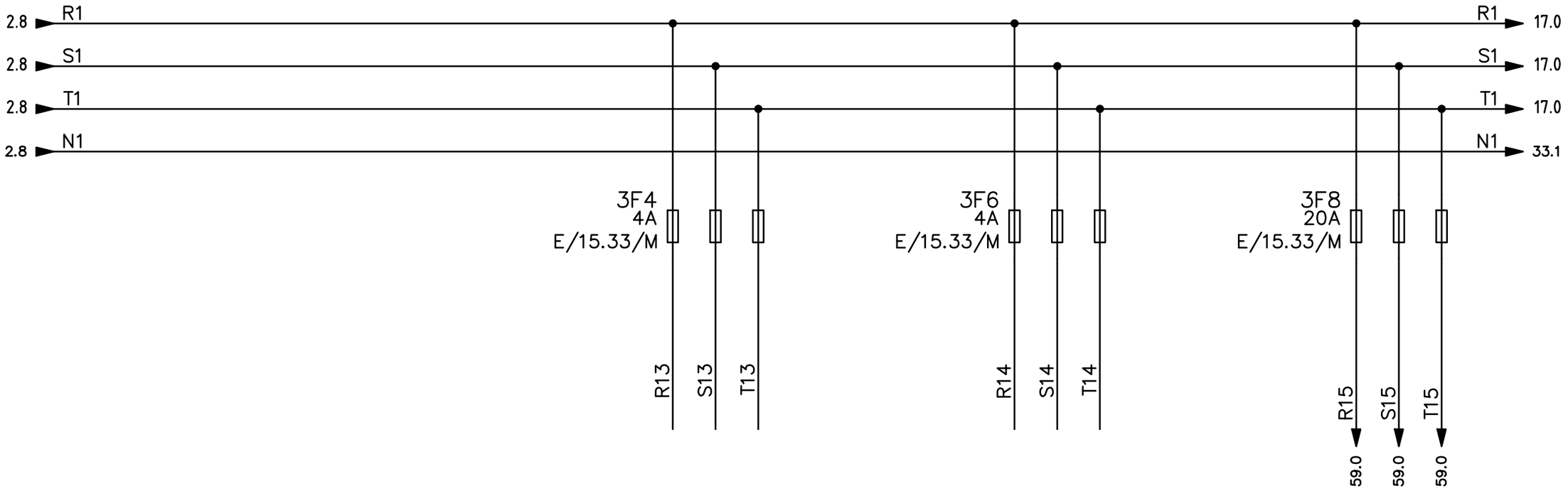
BRUSHING 4/25/FA

–

SE1-1378

FG. 2

F.S. 3



OPTION

400Vac

ALIMENTAZIONE
CARICATORE
LOADER POWER
Lader Stromversorgung
ALIMEMTACION
CARGADORA

OPTION

400Vac

ALIMENTAZIONE
SCARICATORE
UNLOADER POWER
Entlader Stromversorgung
ALIMEMTACION
SCARGADORA

OPTION

400Vac

ALIMENTAZIONE FILTRO
CETRIFUGO
CENTRIFUGAL FILTER POWER
Zentrifugalfiter
Stromversorgung
ALIMEMTACION
FILTRO CENTRIFUGO

REV.	MODIFICA	DATA	FIRMA	APPR.	
				DATA	23/05/2019
				DISEGN.	mkm
				VISTO	

pola e massa

SOST. IL :

SOST. DA :

FILE : SE1-1378

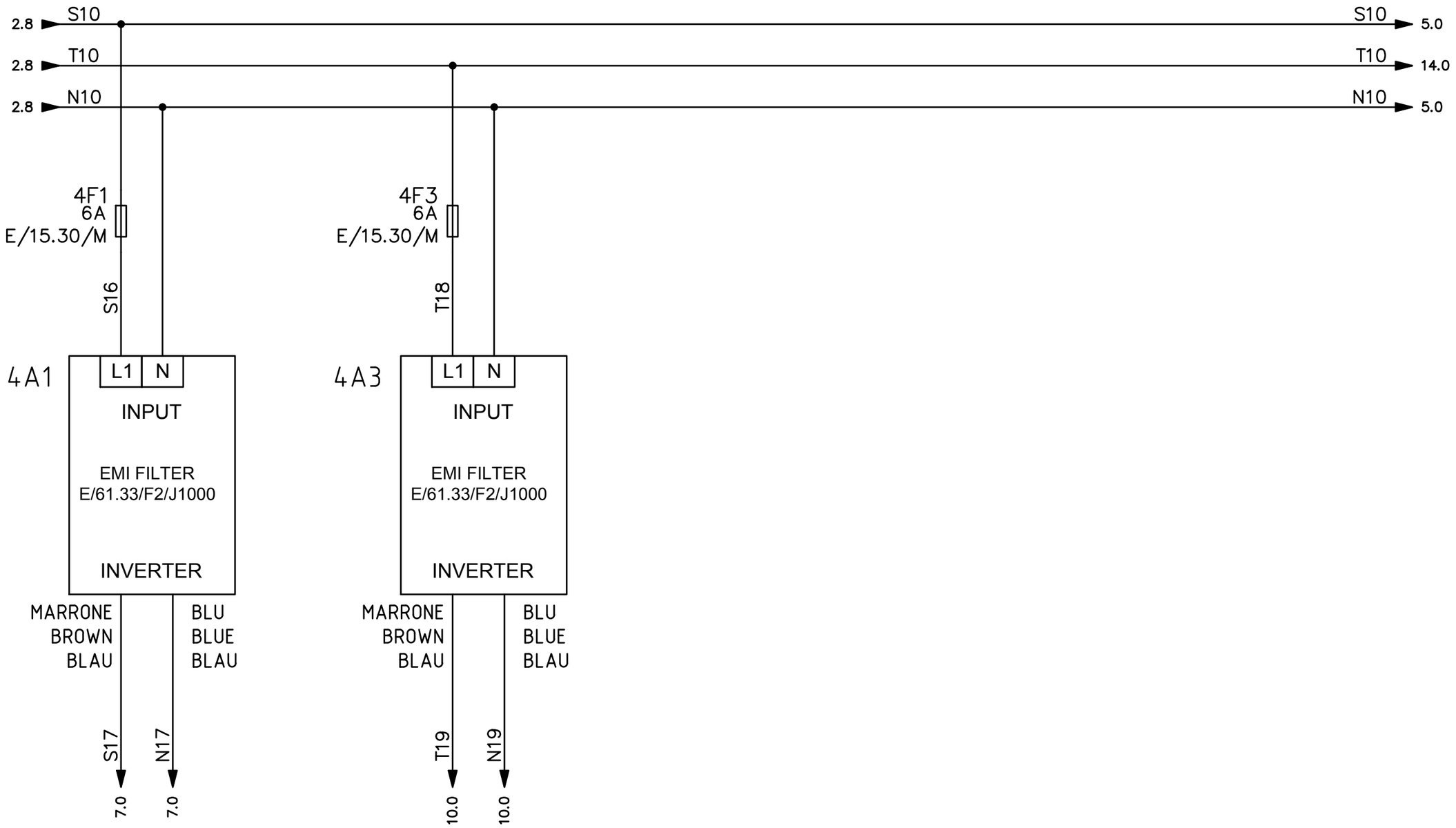
BRUSHING 4/25/FA

–

SE1-1378

FG. 3

F.S. 4



REV.	MODIFICA	DATA	FIRMA	APPR.	
				DATA	23/05/2019
				DISEGN.	mkm
				VISTO	

pola e massa

SOST. IL :

SOST. DA :

FILE : SE1-1378

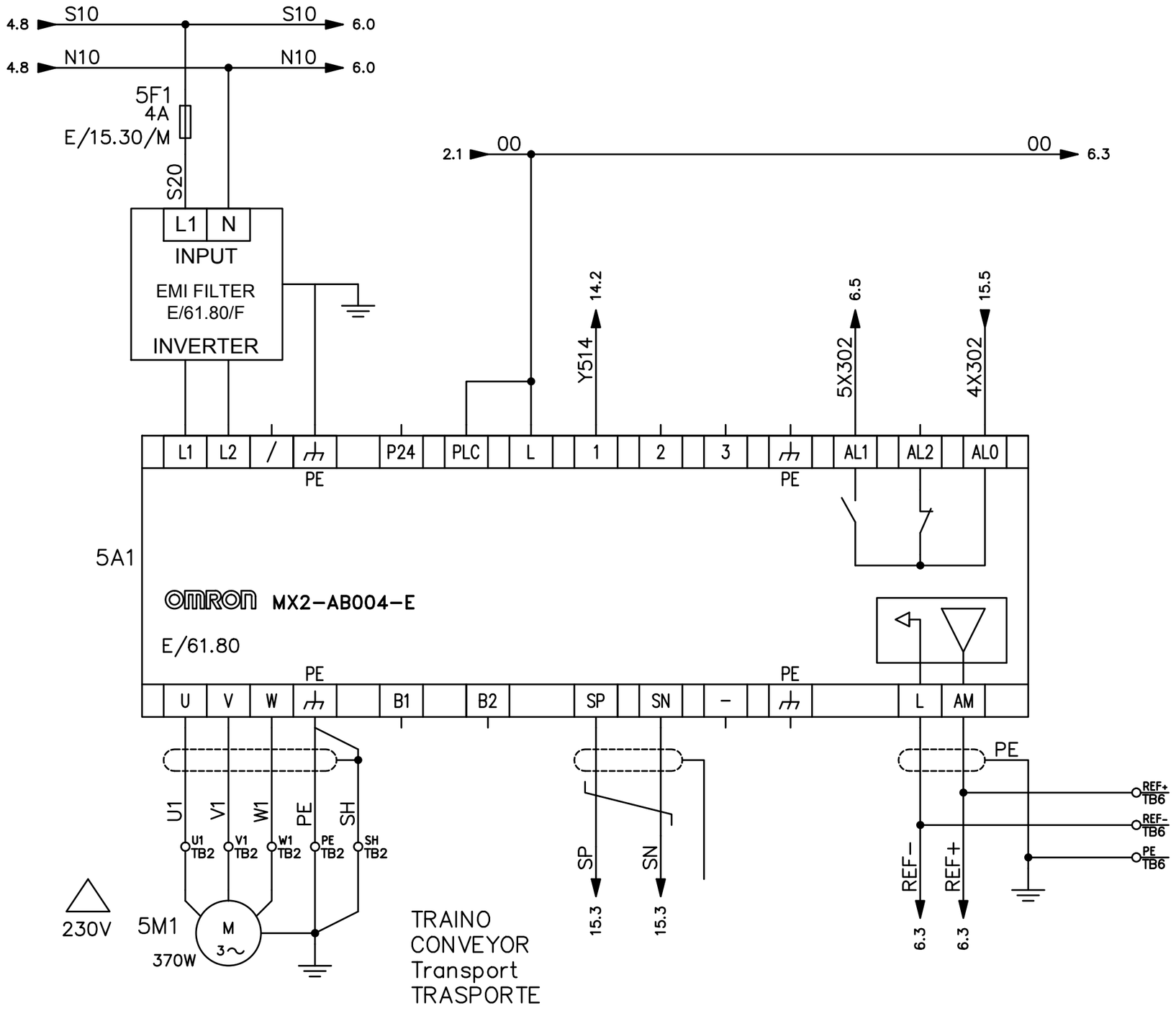
BRUSHING 4/25/FA

–

SE1-1378

FG. 4

F.S. 5



REV.	MODIFICA	DATA	FIRMA	APPR.		SOST. IL :	SOST. DA :	FILE : SE1-1378
				VISTO				
				DISEGN.	mkm			
				DATA	23/05/2019			

pola e massa

BRUSHING 4/25/FA

–

=
+

SE1-1378

FG. 5
F.S. 6

5.2 S10 — S10 13.0

5.2 N10 — N10 13.0

6F1
4A
E/15.30/M

S21

L1 N
INPUT
EMI FILTER
E/61.33/F/J1000
INVERTER

5.6 00 — 00 7.3

Y515 13.2

05X302 7.5

5X302 5.5

L1 L2 / PE 1 2 3 4 5 SC PE MA MB MC

6A1

OMRON

SOURCE

E/61.33/J1000

PE U V W PE B1 B2 +V A1 AC PE AC AM

U32 V32 W32 PE SH

61P5 17 18 19 20 21

6M1
M
3~
180W

230V

5.5 REF+ — REF+ 13.3

5.5 REF− — REF− 13.3

TRASPORTO INGRESSO
ENTRY CONVEYOR

REV.	MODIFICA	DATA	FIRMA	APPR.		SOST. IL :	SOST. DA :	FILE : SE1-1378
				VISTO				
				DISEGN.	mkm			
				DATA	23/05/2019			

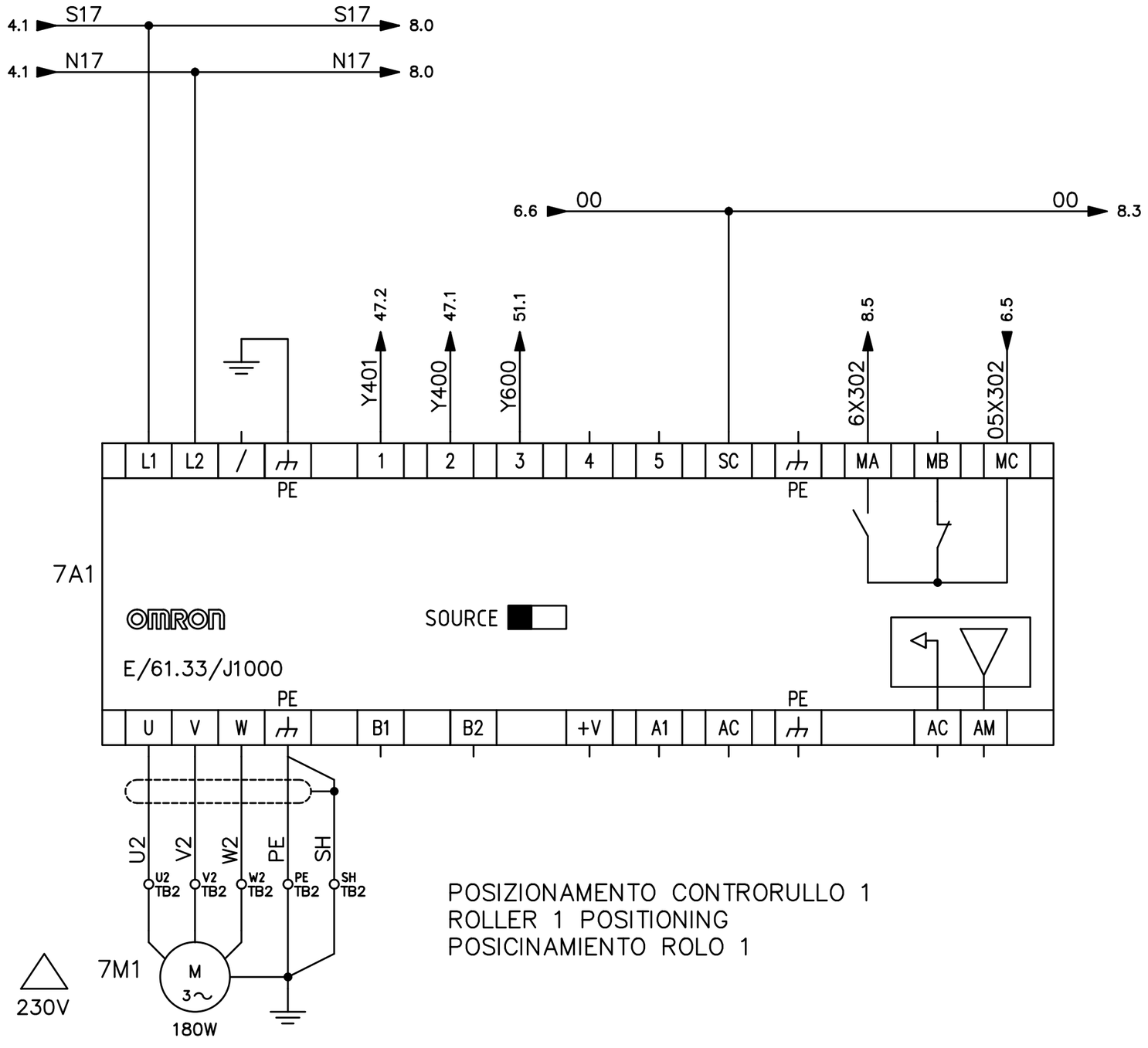
pola e massa

BRUSHING 4/25/FA

–

SE1-1378

FG. 6
F.S. 7



POSIZIONAMENTO CONTRORULLO 1
ROLLER 1 POSITIONING
POSICINAMIENTO ROLO 1

REV.	MODIFICA	DATA	FIRMA	APPR.		SOST. IL :	SOST. DA :	FILE : SE1-1378
				VISTO				
				DISEGN.	mkm			
				DATA	23/05/2019			

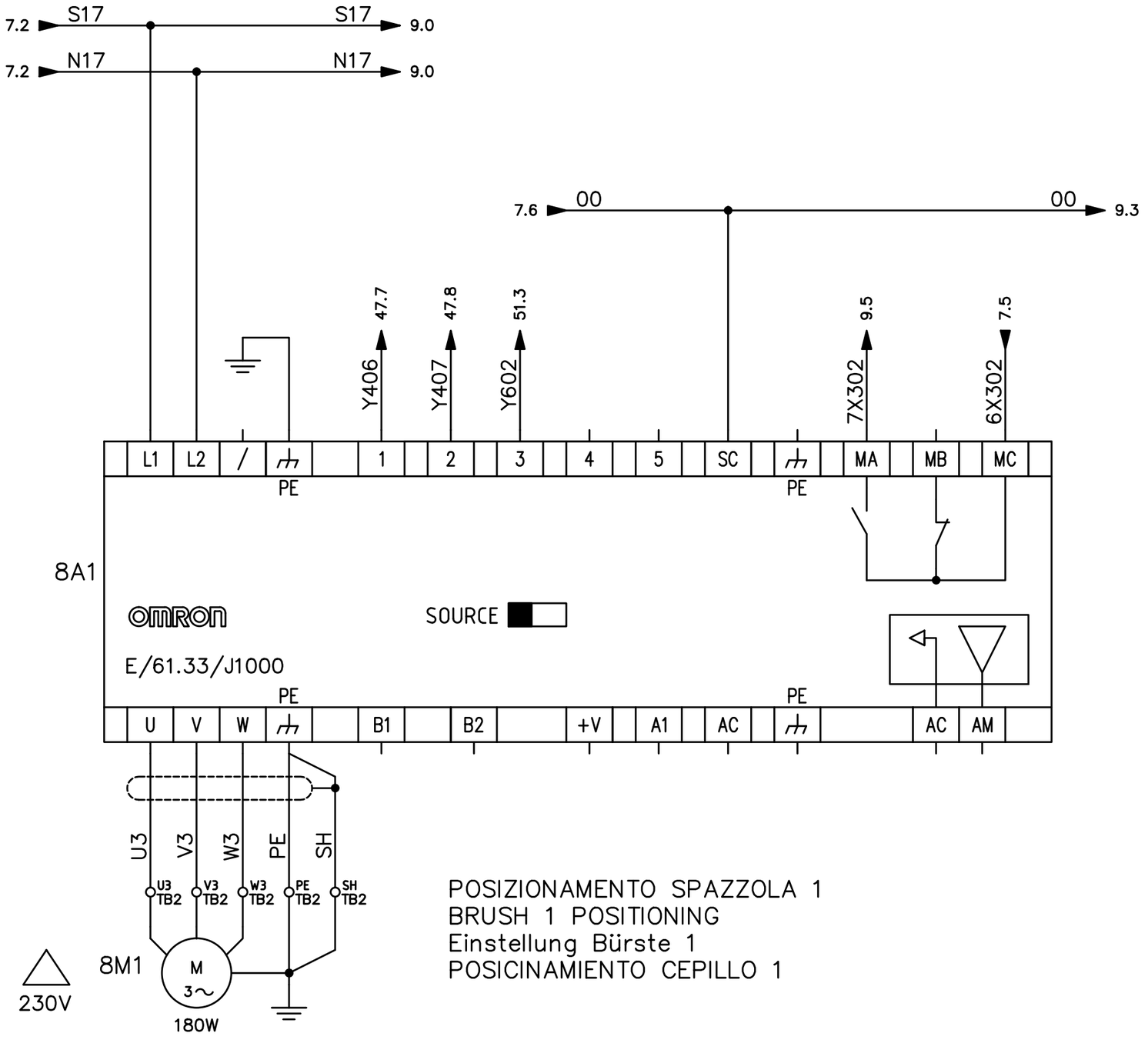
pola e massa

BRUSHING 4/25/FA

–

SE1-1378

FG. 7
F.S. 8



POSIZIONAMENTO SPAZZOLA 1
BRUSH 1 POSITIONING
Einstellung Bürste 1
POSICINAMIENTO CEPILLO 1

REV.	MODIFICA	DATA	FIRMA
		DATA	23/05/2019
		DISEGN.	mkm
		VISTO	
		APPR.	

pola e massa

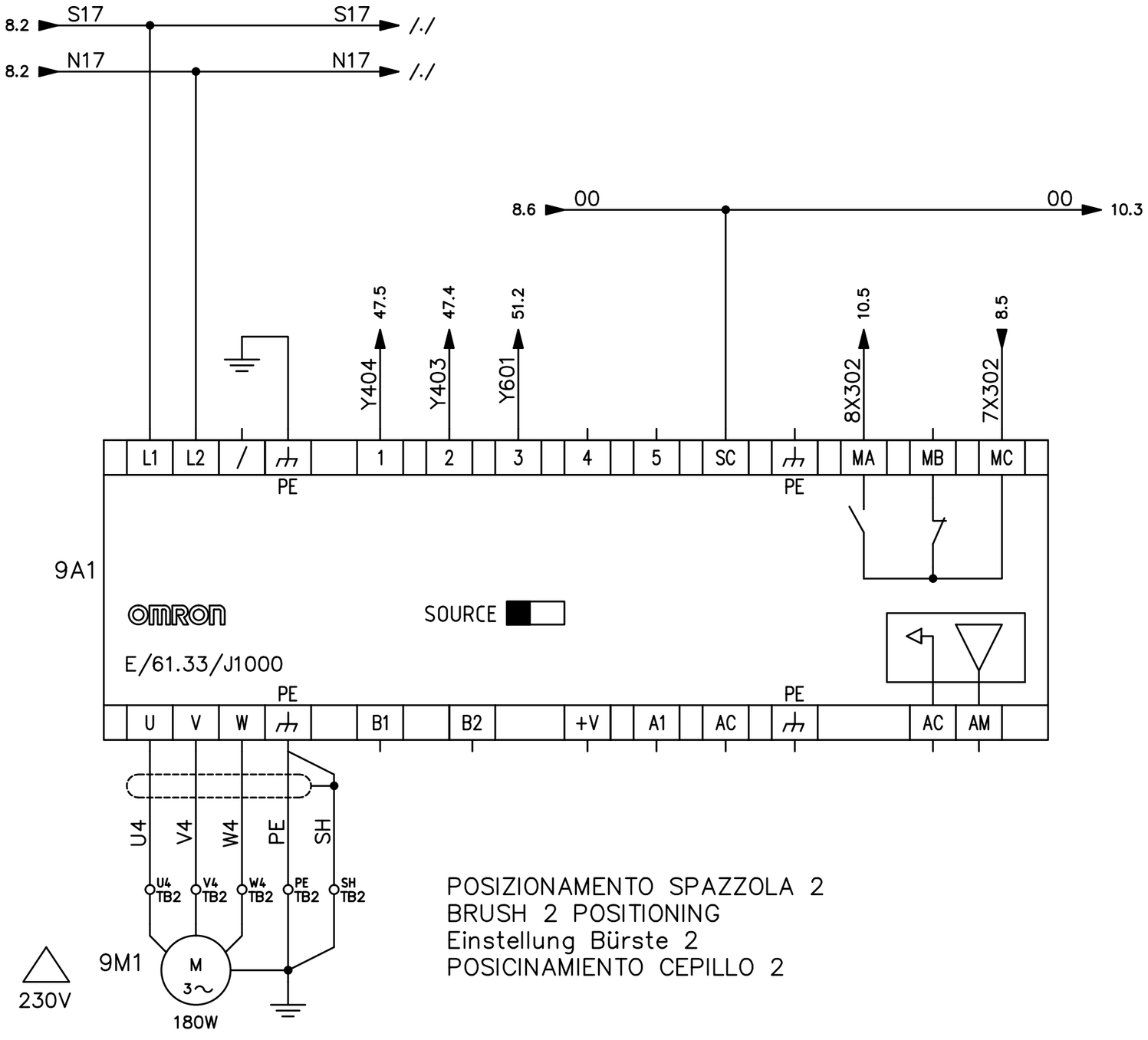
SOST. IL : | SOST. DA : | FILE : SE1-1378

BRUSHING 4/25/FA

–

SE1-1378

FG. 8
F.S. 9



POSIZIONAMENTO SPAZZOLA 2
BRUSH 2 POSITIONING
Einstellung Bürste 2
POSICINAMIENTO CEPILLO 2

REV.	MODIFICA	DATA	FIRMA
		DATA	23/05/2019
		DISEGN.	mkm
		VISTO	
		APPR.	

pola e massa

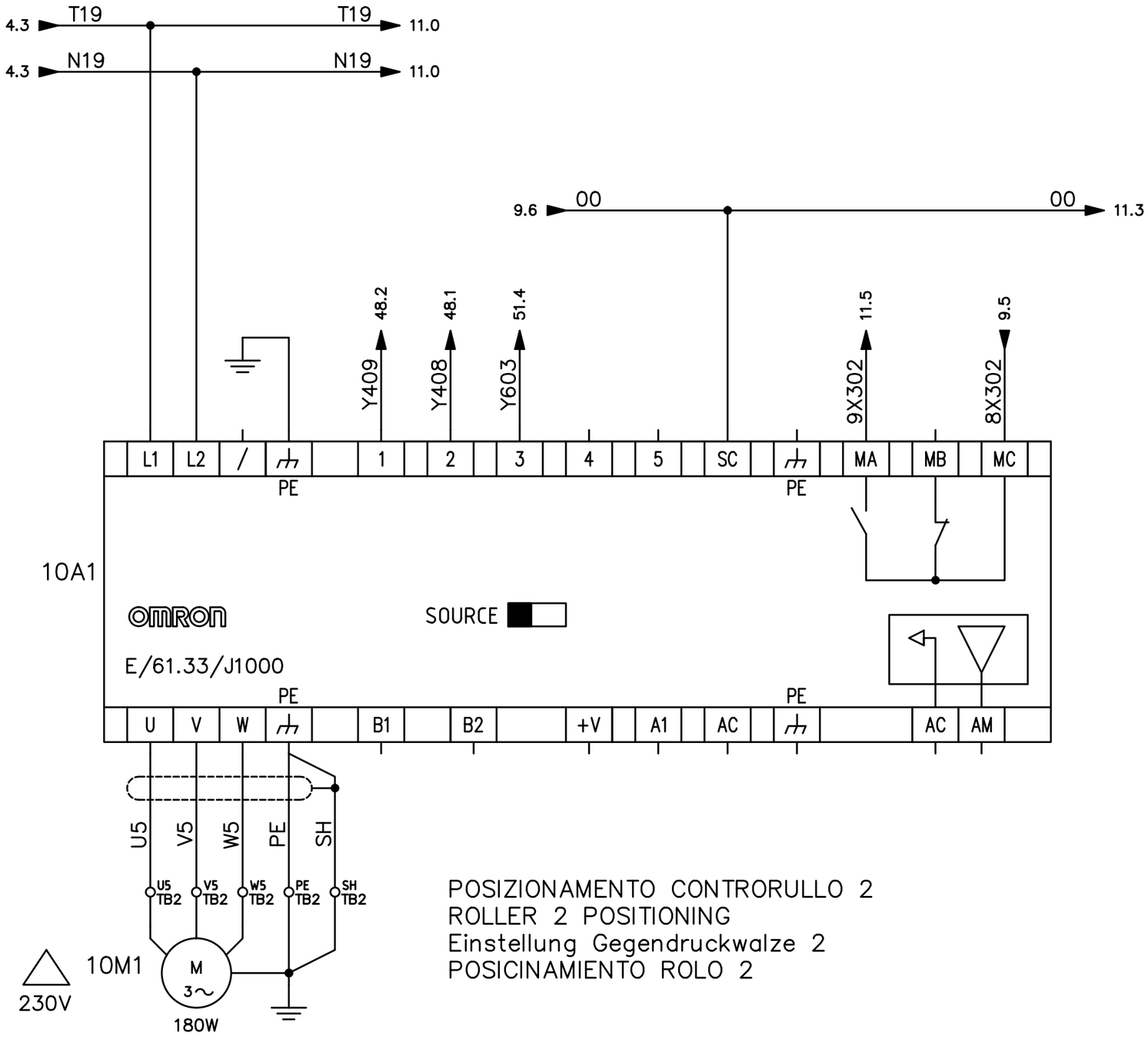
SOST. IL : | SOST. DA : | FILE : SE1-1378

BRUSHING 4/25/FA

–

SE1-1378

FG. 9
F.S. 10



POSIZIONAMENTO CONTRORULLO 2
ROLLER 2 POSITIONING
Einstellung Gegendruckwalze 2
POSICINAMIENTO ROLO 2

REV.	MODIFICA	DATA	FIRMA
		DATA	23/05/2019
		DISEGN.	mkm
		VISTO	
		APPR.	

pola e massa

SOST. IL :

SOST. DA :

FILE : SE1-1378

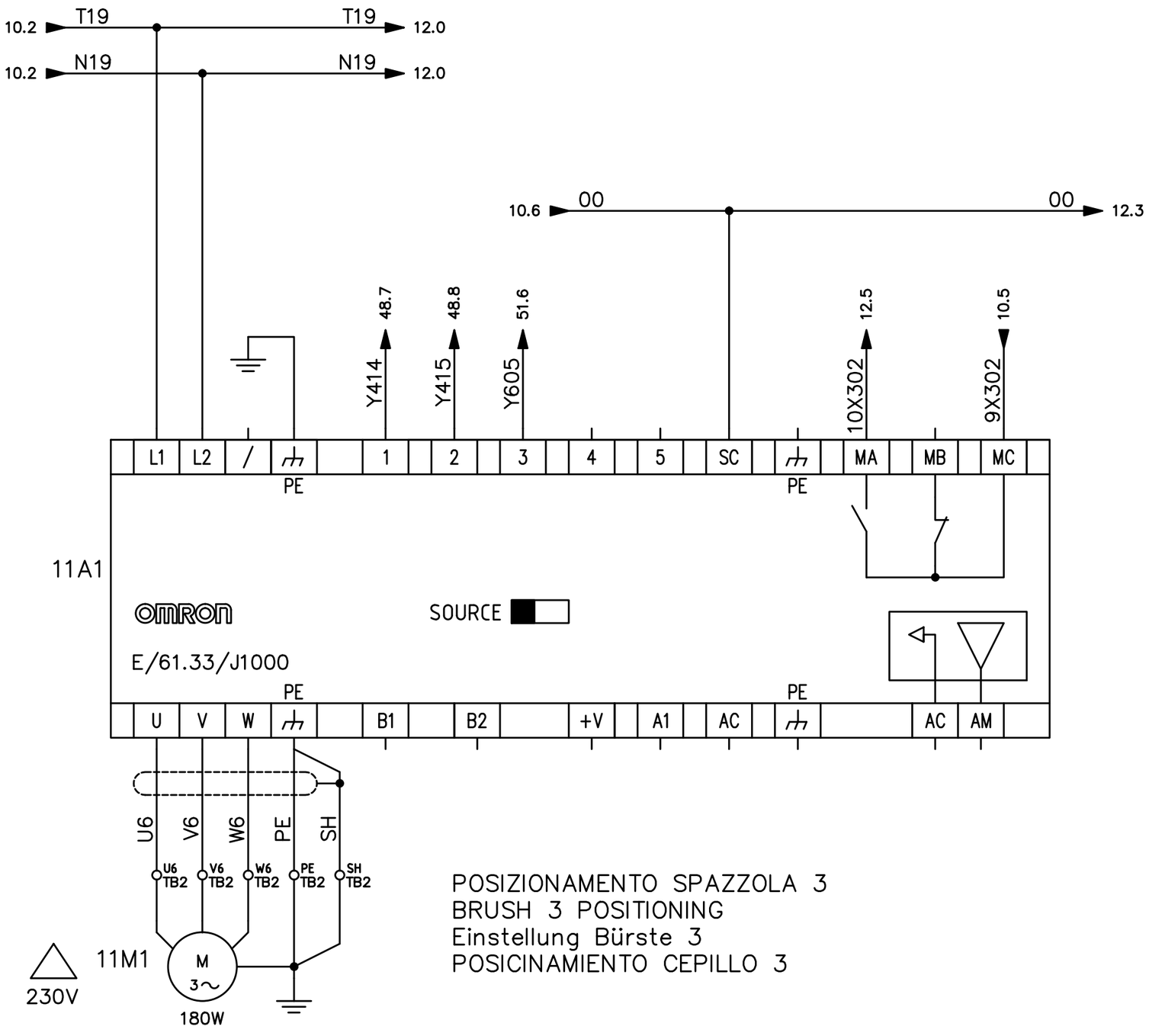
BRUSHING 4/25/FA

–

SE1-1378

FG. 10

F.S. 11



POSIZIONAMENTO SPAZZOLA 3
BRUSH 3 POSITIONING
Einstellung Bürste 3
POSICINAMIENTO CEPILLO 3

REV.	MODIFICA	DATA	FIRMA
		DATA	23/05/2019
		DISEGN.	mkm
		VISTO	
		APPR.	

pola e massa

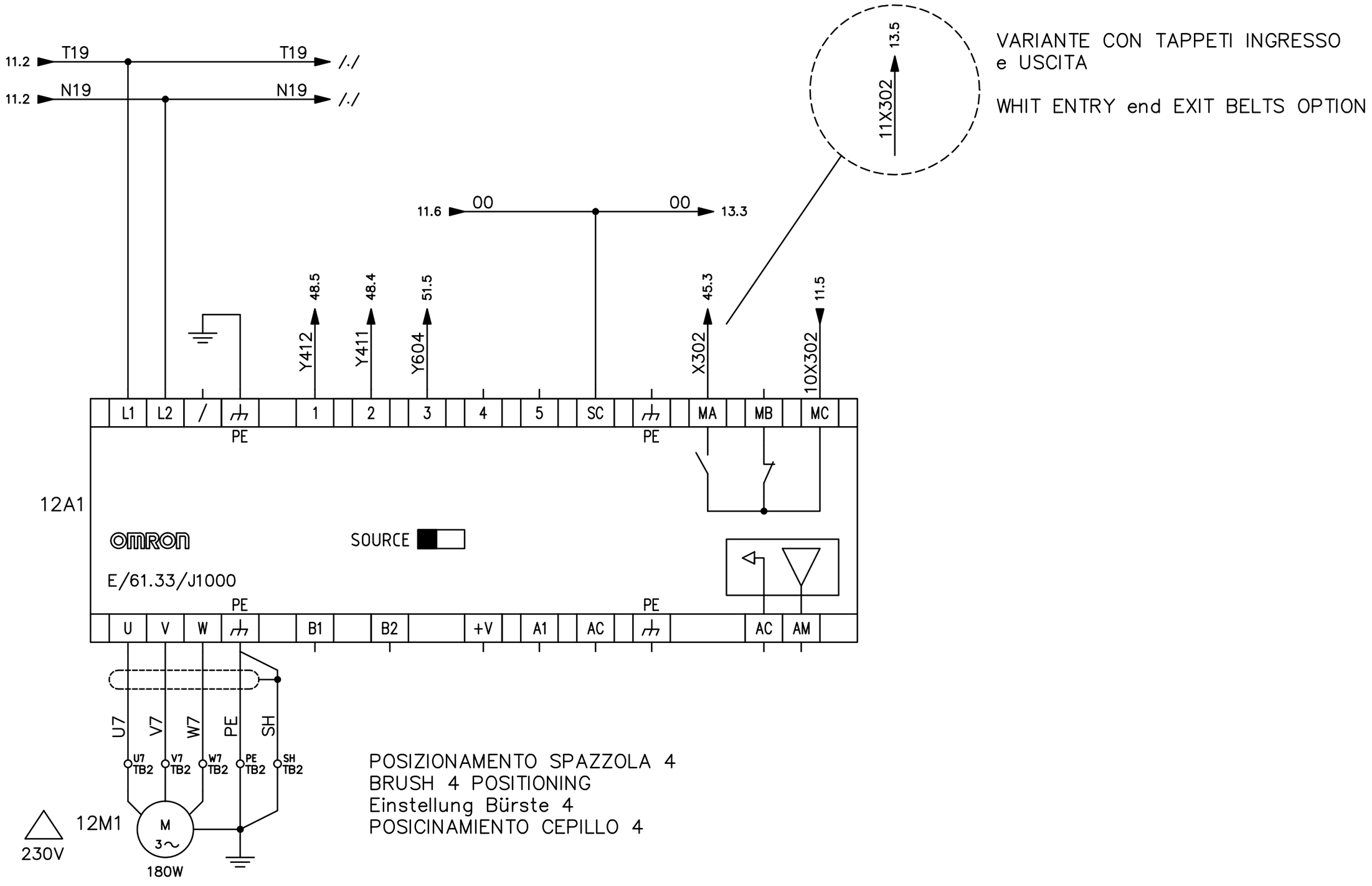
SOST. IL : | SOST. DA : | FILE : SE1-1378

BRUSHING 4/25/FA

–

SE1-1378

FG. 11
F.S. 12



REV.	MODIFICA	DATA	FIRMA	APPR.	
				DATA	23/05/2019
				DISEGN.	mkm
				VISTO	

pola e massa

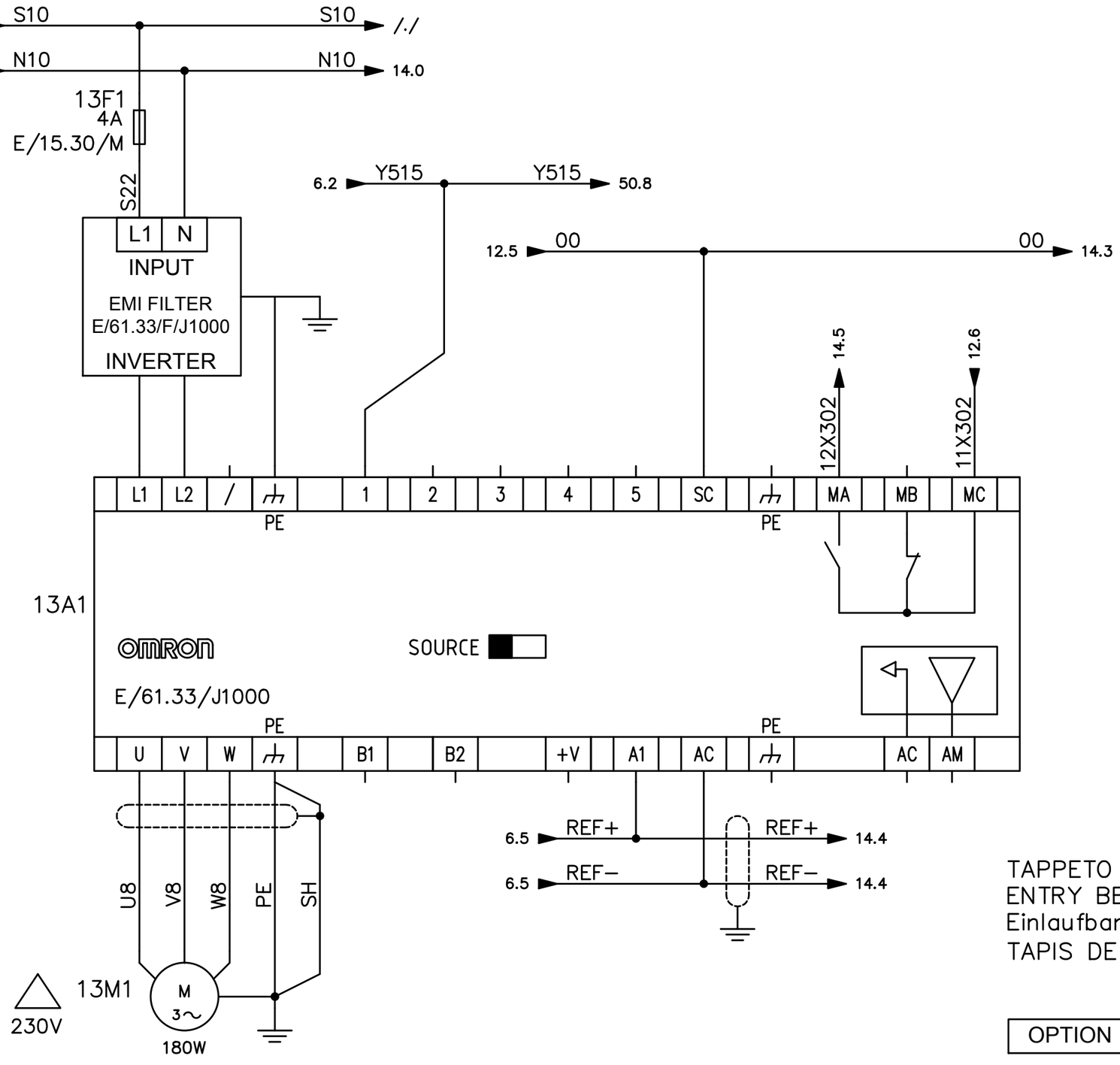
SOST. IL : | SOST. DA : | FILE : SE1-1378

BRUSHING 4/25/FA

–

SE1-1378

FG. 12
F.S. 13



TAPPETO INGRESSO
ENTRY BELT
Einlaufband
TAPIS DE ENTRÉE

OPTION

REV.	MODIFICA	DATA	FIRMA	APPR.		SOST. IL :	SOST. DA :	FILE : SE1−1378
				VISTO				
				DISEGN.	mkm			
				DATA	23/05/2019			

pola e massa

BRUSHING 4/25/FA

−

SE1-1378

FG. 13
F.S. 14

4.8 T10 T10 /./

13.2 N10 N10 /./

14F1
4A
E/15.30/M

T20

5.3 Y514 Y514 50.7

13.6 00 00 15.3

L1 N
INPUT
EMI FILTER
E/61.33/F/J1000
INVERTER

45.3 X302

13.5 12X302

L1 L2 / PE 1 2 3 4 5 SC PE MA MB MC

14A1

OMRON

SOURCE

E/61.33/J1000

PE PE

U V W PE B1 B2 +V A1 AC AC AM

U9 V9 W9 PE SH

REF+ 13.5

REF− 13.5

14M1
M
3~
230V
180W

TAPPETO USCITA
EXIT BELT
Ausgabeband
TAPIS DE SORTIE

OPTION

REV.	MODIFICA	DATA	FIRMA	APPR.		SOST. IL :	SOST. DA :	FILE : SE1−1378
				DISEGN.	mkm			
				VISTO				
				DATA	23/05/2019			

pola e massa

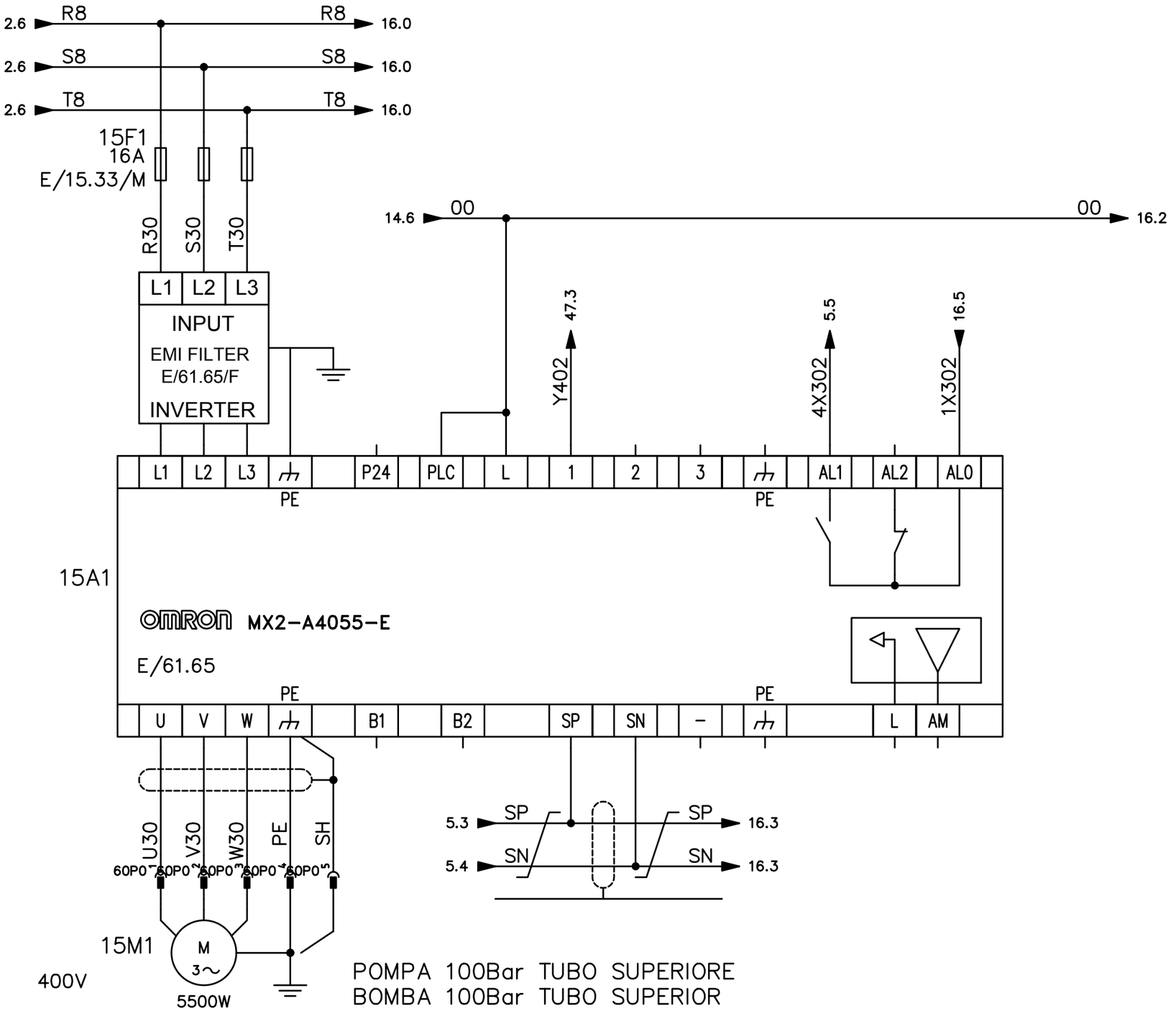
BRUSHING 4/25/FA

−

SE1-1378

FG. 14

F.S. 15



				DATA	23/05/2019	pola e massa		BRUSHING 4/25/FA		=	
				DISEGN.	mkm			–		+	
				VISTO						SE1-1378	FG. 15
REV.	MODIFICA	DATA	FIRMA	APPR.		SOST. IL :	SOST. DA :	FILE : SE1-1378			F.S. 16

15.2 R8 → R8 /./
15.2 S8 → S8 /./
15.2 T8 → T8 /./

16F1
16A
E/15.33/M

R31 S31 T31

L1 L2 L3
INPUT
EMI FILTER
E/61.65/F
INVERTER

2.1 4 → 4 17.0
15.7 00 → 00 17.0

60P0 20 60P0 19
SH
60P0 18

Y405 47.6
1X302 15.6

L1 L2 L3 PE P24 PLC L 1 2 3 PE AL1 AL2 AL0

16A1

OMRON MX2-A4055-E

E/61.65

PE U V W PE B1 B2 SP SN – PE L AM

U31 V31 W31 PE SH
60P0 13 60P0 14 60P0 15 60P0 16 60P0 17

16M1
M
3~
400V
5500W

15.5 SP → SP 34.6
15.5 SN → SN 34.6

POMPA 100Bar TUBO INFERIORE
BOMBA 100Bar TUBO INFERIOR

1.9 R03
1.9 N03
60P0 6
60P0 7

16M7
E/62.04
E/62.04/A
PE

VENTILATORE
POMPE 100BAR
100BAR PUMPS PHAN
VENTILADOR
BOMBAS 100BAR

REV.	MODIFICA	DATA	FIRMA	APPR.		SOST. IL :	SOST. DA :	FILE : SE1-1378
				VISTO				
				DISEGN.	mkm			
				DATA	23/05/2019			

pola e massa

BRUSHING 4/25/FA

–

SE1-1378

FG. 16
F.S. 17

3.8 R1 — R1 18.0
3.8 S1 — S1 18.0
3.8 T1 — T1 18.0

17Q2
5A
E/25.73/M
E/24.01/M
49.1
31.3

17Q5
5A
E/25.73/M
E/24.01/M
49.2
31.3

ON
S1
S2

49KM1
49.1

49KM2
49.2

0U10

0U11

17A0
E/52.11
IN : 0...10A
POWER
OUT 0...10V
12 13
51 52 41 42

17A3
E/52.11
IN : 0...10A
POWER
OUT 0...10V
12 13
51 52 41 42

U10 V10 W10 PE
TB2

U11 V11 W11 PE
TB2

17M2
M
3~
2200W
PE

17M5
M
3~
2200W
PE

M2052
X2052
38.3
38.3

M2051
X2051
38.2
38.2

SPAZZOLA 2
BRUSH 2
Bürste 2
CEPILLO 2

SPAZZOLA 1
BRUSH 1
Bürste 1
CEPILLO 1

16.6 4 — 4 18.0
16.6 00 — 00 18.0

REV.	MODIFICA	DATA	FIRMA
		DATA	23/05/2019
		DISEGN.	mkm
		VISTO	
		APPR.	

pola e massa

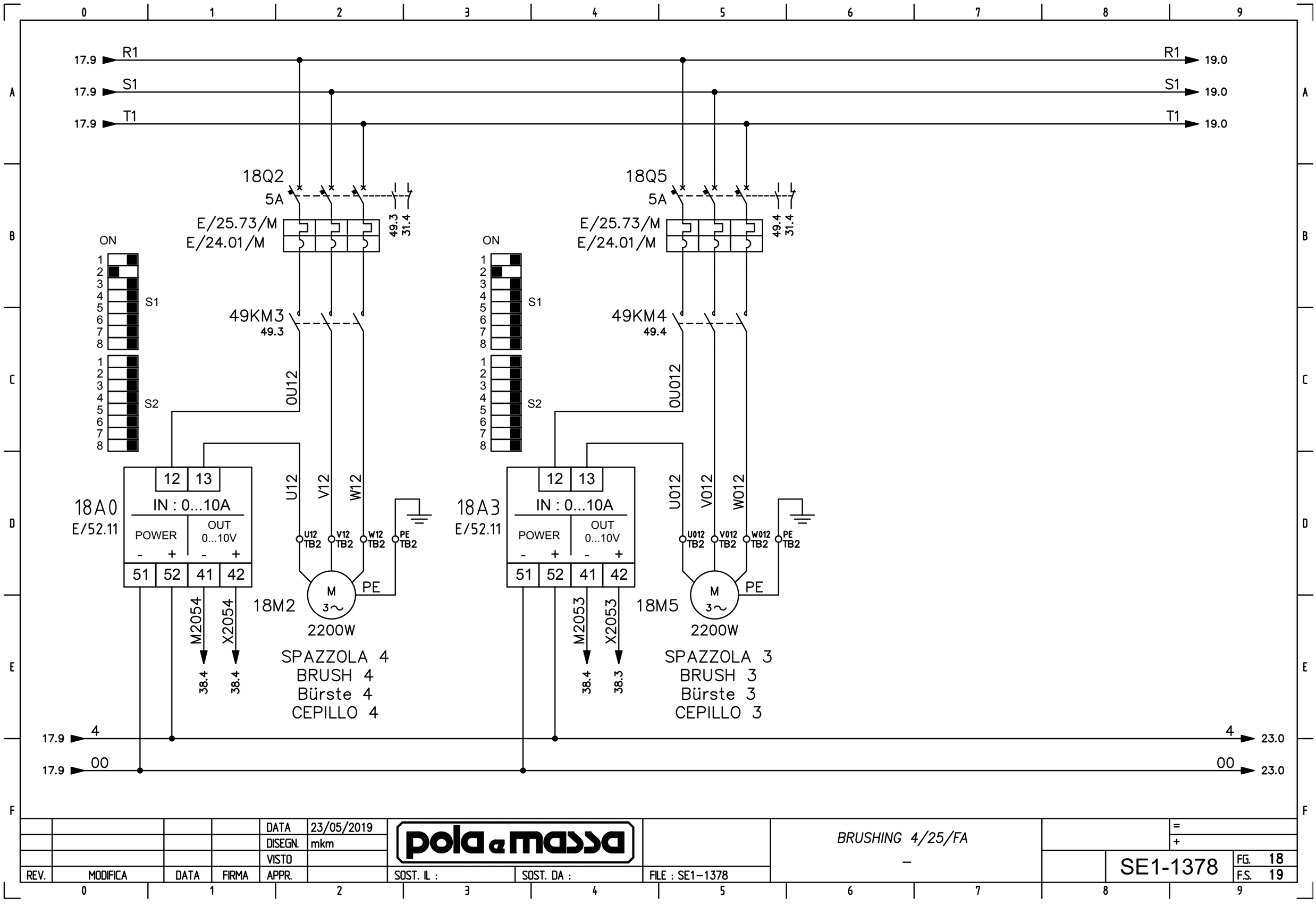
SOST. IL :
SOST. DA :
FILE : SE1-1378

BRUSHING 4/25/FA

–

SE1-1378

FG. 17
F.S. 18



REV.	MODIFICA	DATA	FIRMA	APPR.		SOST. IL :	SOST. DA :	FILE : SE1-1378
				DISEGN.	mkm			
				VISTO				
				DATA	23/05/2019			

pola e massa

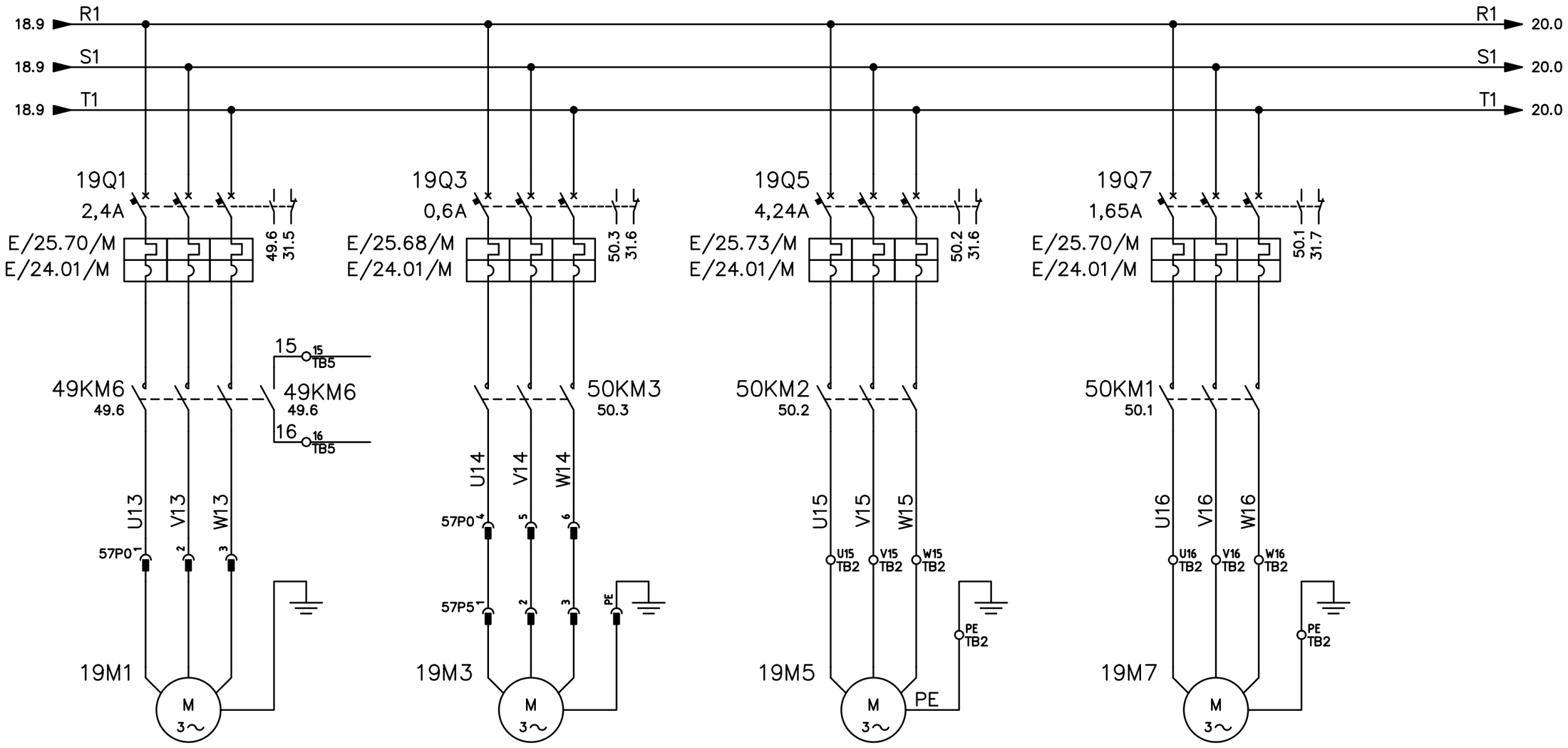
BRUSHING 4/25/FA

–

SE1-1378

FG. 18

F.S. 19



1100W

POMPA ACQUA SPAZZOLE
BRUSHING PUMP
Bürstenwasser Pumpe
BOMBA AGUA CEPILLOS

120W

AVANZAMENTO CARTA
FILTRO
PAPER FEED FILTER
Papiervorschub Filter
AVANCEMENT PAPIER
FILTRE

OPTION

2200W

POMPA BOOSTER 100BAR
BOMBA BOOSTER 100BAR
LAVADO 1

880W

POMPA LAVAGGIO 2
WASHING PUMP 2
Spüle Pumpe 2
BOMBA LAVADO 2

REV.	MODIFICA	DATA	FIRMA	APPR.		SOST. IL :	SOST. DA :	FILE : SE1-1378
				DATA	23/05/2019			
				DISEGN.	mkm			
				VISTO				

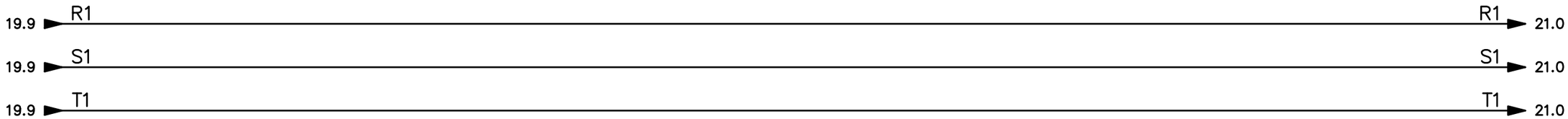
pola e massa

BRUSHING 4/25/FA

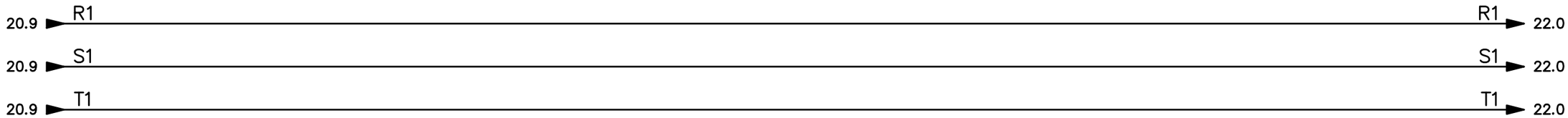
–

SE1-1378

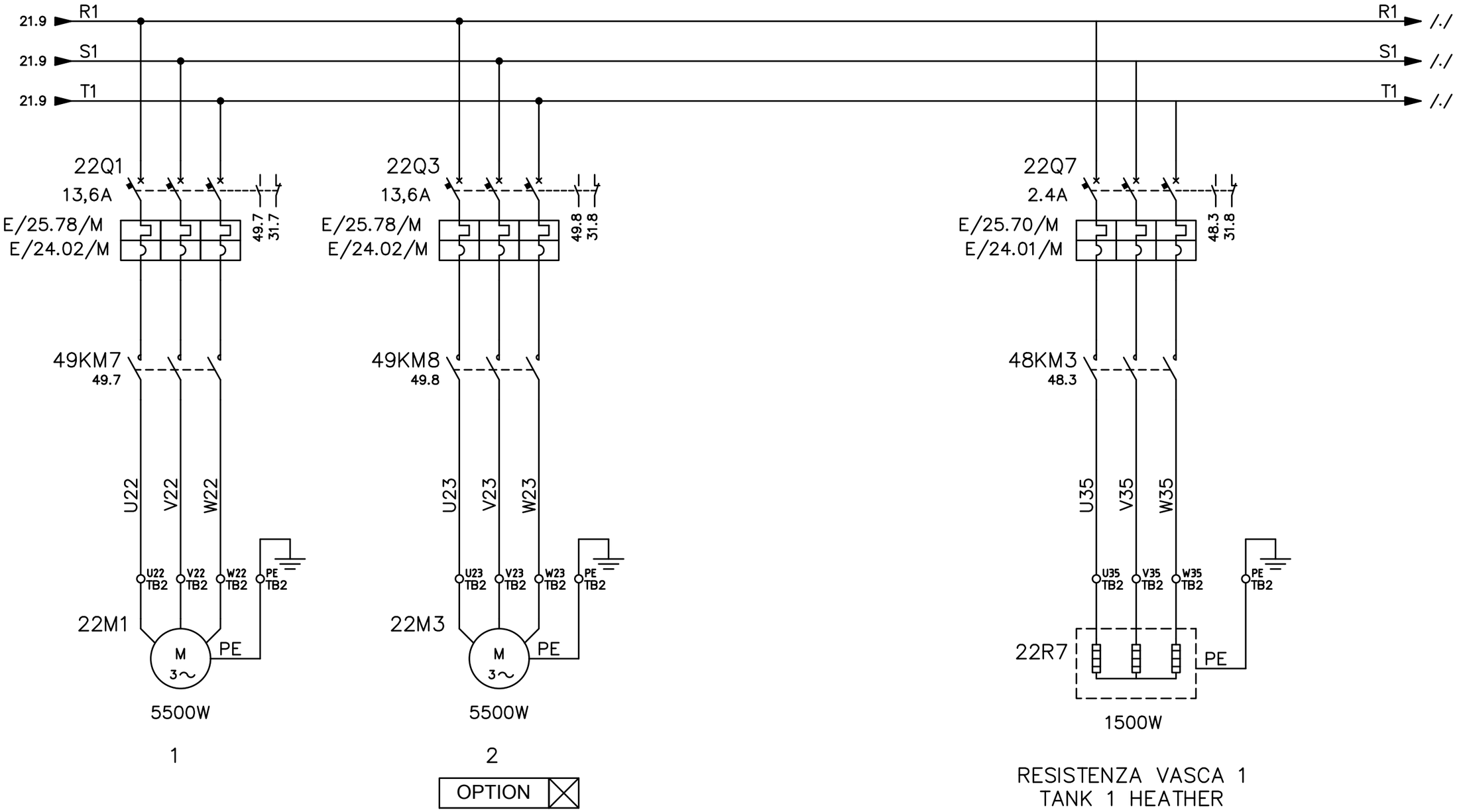
FG. 19
F.S. 20



				DATA	23/05/2019	pola e massa		BRUSHING 4/25/FA			=		
				DISEGN.	mkm						+		
				VISTO				–				SE1-1378	FG. 20
REV.	MODIFICA	DATA	FIRMA	APPR.		SOST. IL :	SOST. DA :	FILE : SE1–1378					F.S. 21



				DATA	23/05/2019	pola e massa		BRUSHING 4/25/FA		=		
				DISEGN.	mkm					+		
				VISTO				–			SE1-1378	FG. 21
REV.	MODIFICA	DATA	FIRMA	APPR.		SOST. IL :	SOST. DA :	FILE : SE1–1378				F.S. 22



REV.	MODIFICA	DATA	FIRMA	APPR.		SOST. IL :	SOST. DA :	FILE : SE1-1378
				VISTO				
				DISEGN.	mkm			
				DATA	23/05/2019			

pola e massa

BRUSHING 4/25/FA

–

SE1-1378

FG. 22

F.S. 23

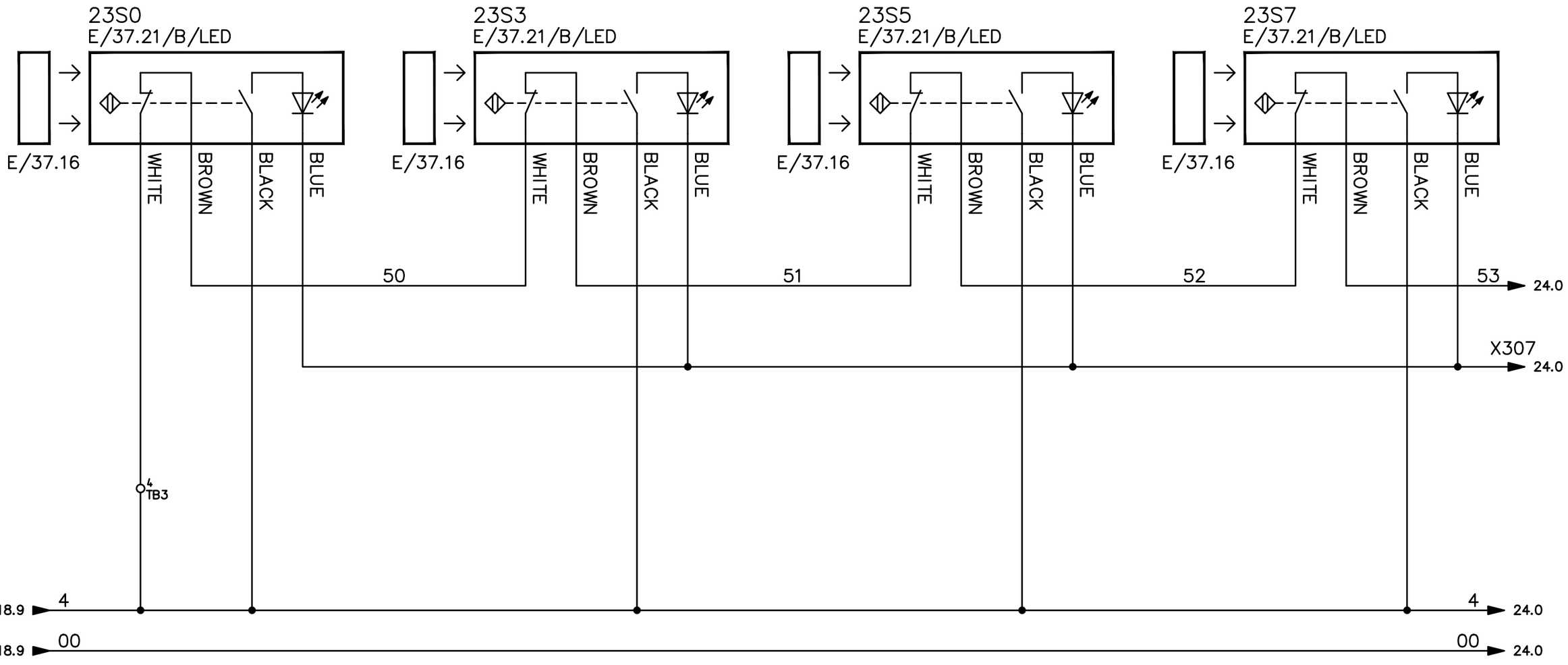
SENSORI MAGNETICI DI SICUREZZA
MAGNETIC SAFETY SENSORS
Magnetischen Sicherheits–Sensor
SENSORES MAGNÉTICOS DE SEGURIDAD

1° CARTER DESTRO
1st CARTER RIGHT
1. Abdeckung Rechte
CUBIERTA DERECHA 1

1° CARTER SINISTRO
1st CARTER LEFT
1. Abdeckung Linke
CUBIERTA IZQUIERDA 1

1° CRISTALLO
1st GLASS
1. Glas
CRISTAL 1

2° CARTER DESTRO
2nd CARTER RIGHT
2. Abdeckung Rechte
CUBIERTA DERECHA 2



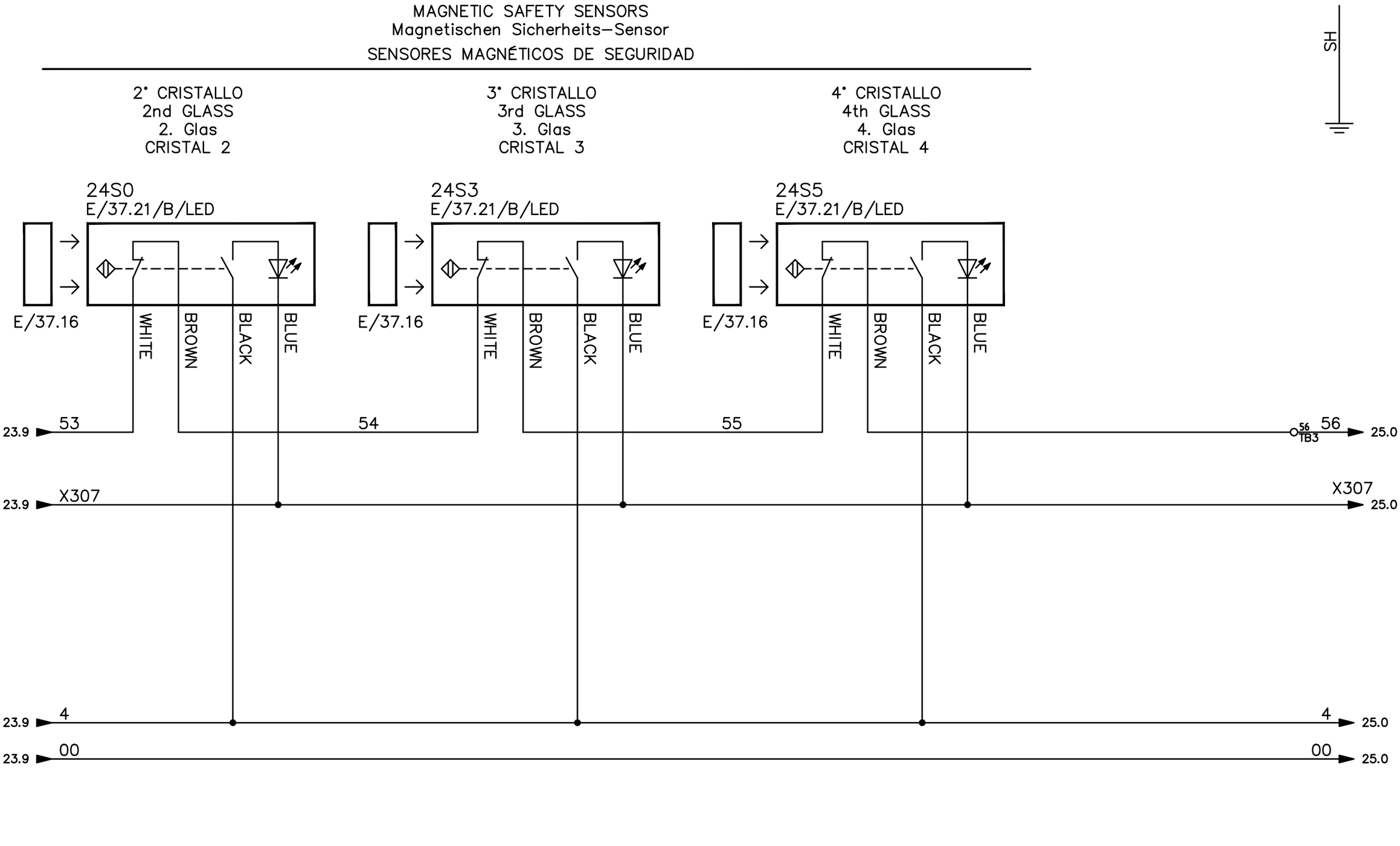
				DATA	23/05/2019	pola e massa		BRUSHING 4/25/FA		=			
				DISEGN.	mkm					+			
				VISTO				–			SE1-1378	FG.	23
REV.	MODIFICA	DATA	FIRMA	APPR.		SOST. IL :	SOST. DA :	FILE : SE1–1378				F.S.	24

SENSORI MAGNETICI DI SICUREZZA
MAGNETIC SAFETY SENSORS
Magnetischen Sicherheits–Sensor
SENSORES MAGNÉTICOS DE SEGURIDAD

2° CRISTALLO
2nd GLASS
2. Glas
CRISTAL 2

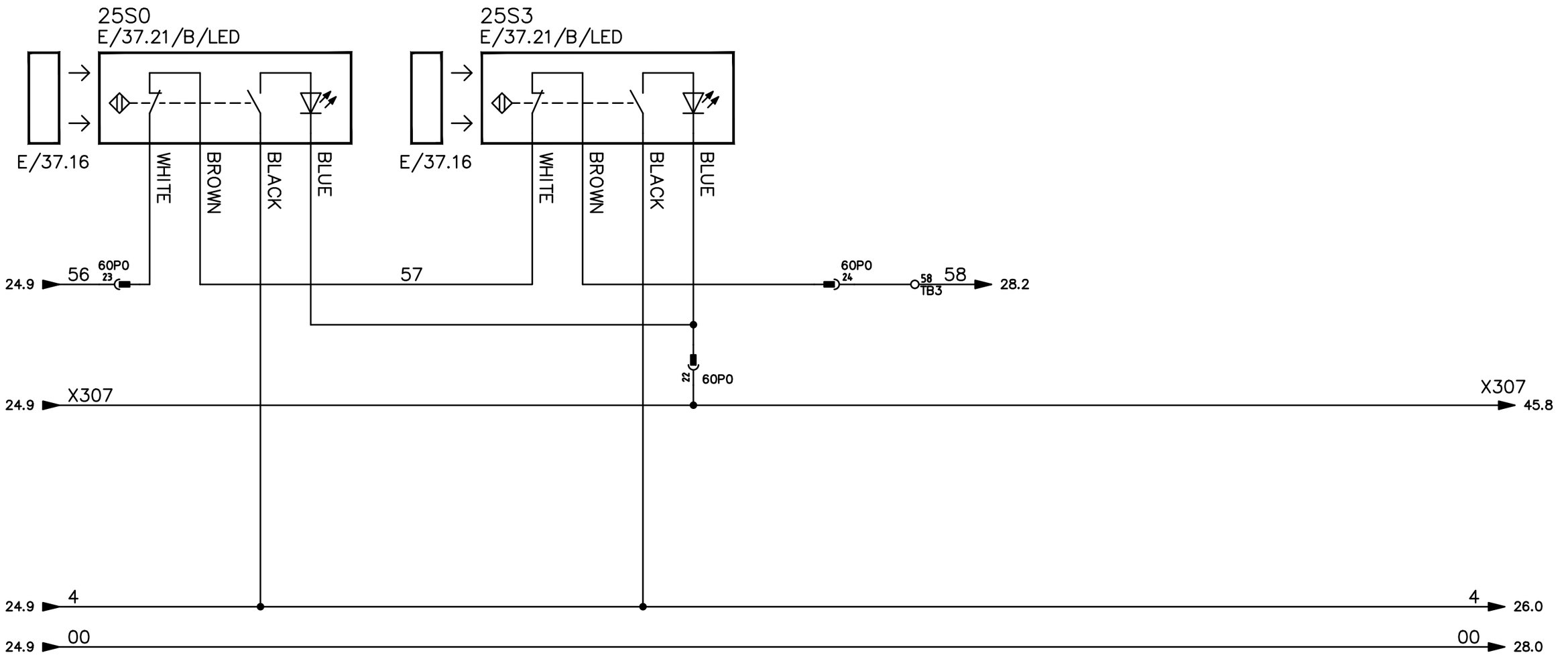
3° CRISTALLO
3rd GLASS
3. Glas
CRISTAL 3

4° CRISTALLO
4th GLASS
4. Glas
CRISTAL 4



				DATA	23/05/2019	pola e massa		BRUSHING 4/25/FA		=	
				DISEGN.	mkm					+	
				VISTO				–		SE1-1378	FG. 24
REV.	MODIFICA	DATA	FIRMA	APPR.		SOST. IL :	SOST. DA :	FILE : SE1–1378			F.S. 25

SENSORI MAGNETICI DI SICUREZZA CARTER POMPE 100Bar
100Bar PUMPS MAGNETIC SAFETY SENSORS CARTERS
SENSORES MAGNÉTICOS DE SEGURIDAD CUBIERTAS BOMBAS 100Bar



				DATA	23/05/2019	pola e massa		BRUSHING 4/25/FA		=	
				DISEGN.	mkm					+	
				VISTO				–		SE1-1378	FG. 25
REV.	MODIFICA	DATA	FIRMA	APPR.		SOST. IL :	SOST. DA :	FILE : SE1–1378			F.S. 26

EMERGENZA INGRESSO SINISTRO
ENTRY LEFT EMERGENCY
Notaus Eingang Linke
EMERGENCIA ENTRADA IZQUIERDA

OPTION ☒

EMERGENZA INGRESSO DESTRO
ENTRY RIGHT EMERGENCY
Notaus Eingang Rechte
EMERGENCIA ENTRADA DERECHA

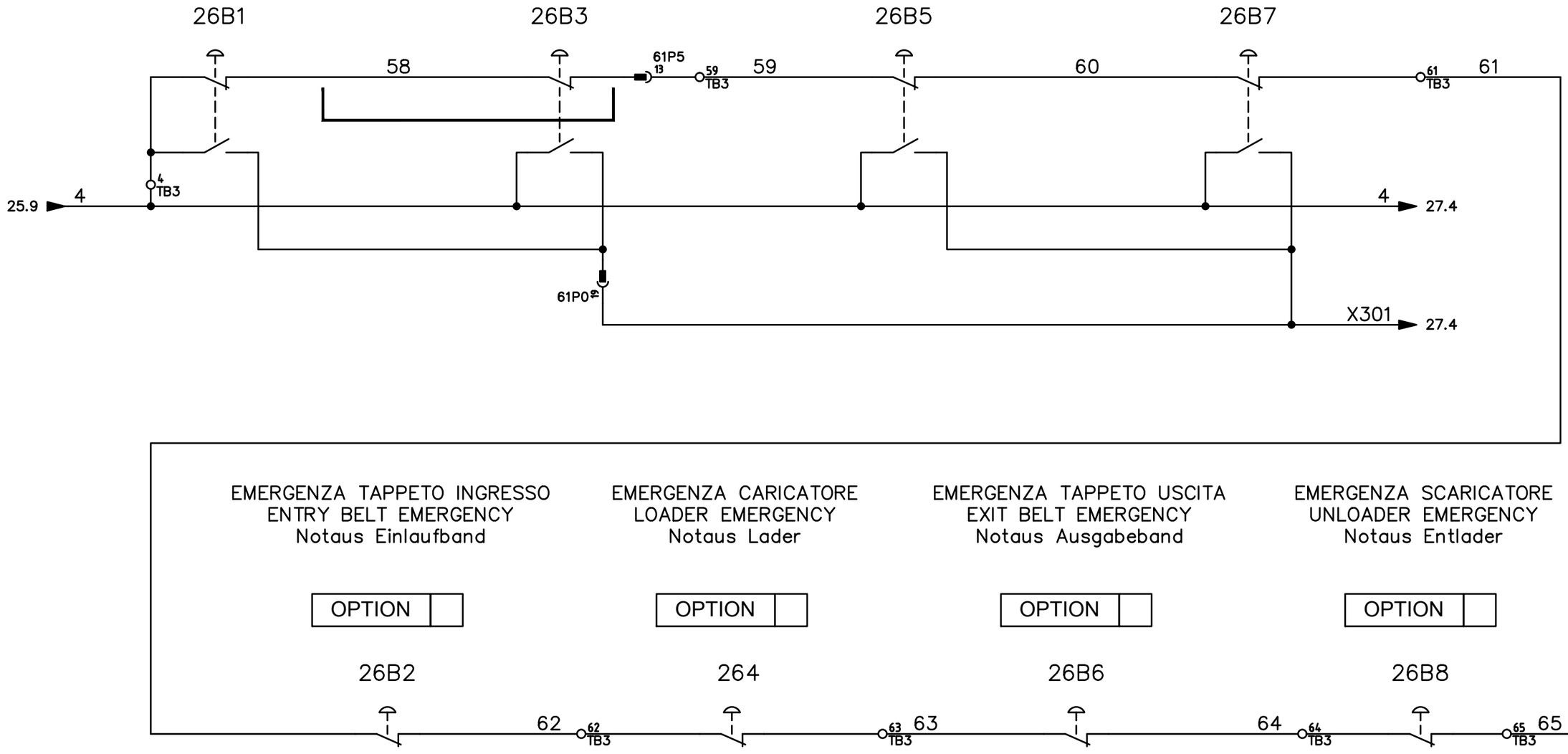
OPTION ☒

EMERGENZA USCITA DESTRA
EXIT RIGHT EMERGENCY
Notaus Ausgang Rechte
EMERGENCIA SALIDA DERECHA

OPTION ☒

EMERGENZA USCITA SINISTRA
EXIT LEFT EMERGENCY
Notaus Ausgang Linke
EMERGENCIA SALIDA IZQUIERDA

OPTION ☒



EMERGENZA TAPPETO INGRESSO
ENTRY BELT EMERGENCY
Notaus Einlaufband

OPTION ☐

EMERGENZA CARICATORE
LOADER EMERGENCY
Notaus Lader

OPTION ☐

EMERGENZA TAPPETO USCITA
EXIT BELT EMERGENCY
Notaus Ausgabeband

OPTION ☐

EMERGENZA SCARICATORE
UNLOADER EMERGENCY
Notaus Entlader

OPTION ☐

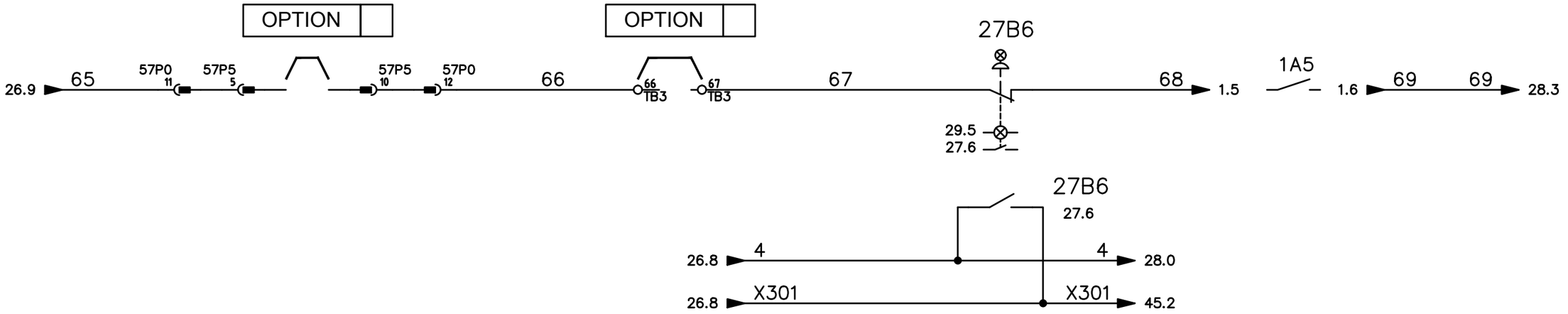
				DATA	23/05/2019	pola e massa		BRUSHING 4/25/FA	=
				DISEGN.	mkm				+
				VISTO				–	SE1-1378 FG. 26 F.S. 27
REV.	MODIFICA	DATA	FIRMA	APPR.		SOST. IL :	SOST. DA :	FILE : SE1–1378	

EMERGENZA FILTRO CARTA
PAPER FILTER EMERGENCY
Papierfilter Notaus

EMERGENZA ESTERNA
EXTERNAL EMERGENCY
External Notaus

EMERGENZA QUADRO
PANEL EMERGENCY
Panel Notaus
EMERGENCIA CUADRO

RELE' SEQUENZA FASI
PHASES SEQUANCE RELAY
Phasenfolge Kontrollrelais
RELE SECUENCIA FASES



				DATA	23/05/2019	pola e massa		BRUSHING 4/25/FA		=			
				DISEGN.	mkm					+			
				VISTO				–			SE1-1378	FG.	27
REV.	MODIFICA	DATA	FIRMA	APPR.		SOST. IL :	SOST. DA :	FILE : SE1–1378				F.S.	28

PE
PE
TB3

25.6
58
27.9
69

28A2
E/37.85

A1 | T11 | T12 | T31 | T32 | T33 | 13 | 23

OMRON
G9SE-201-24VDC
SAFETY MODULE

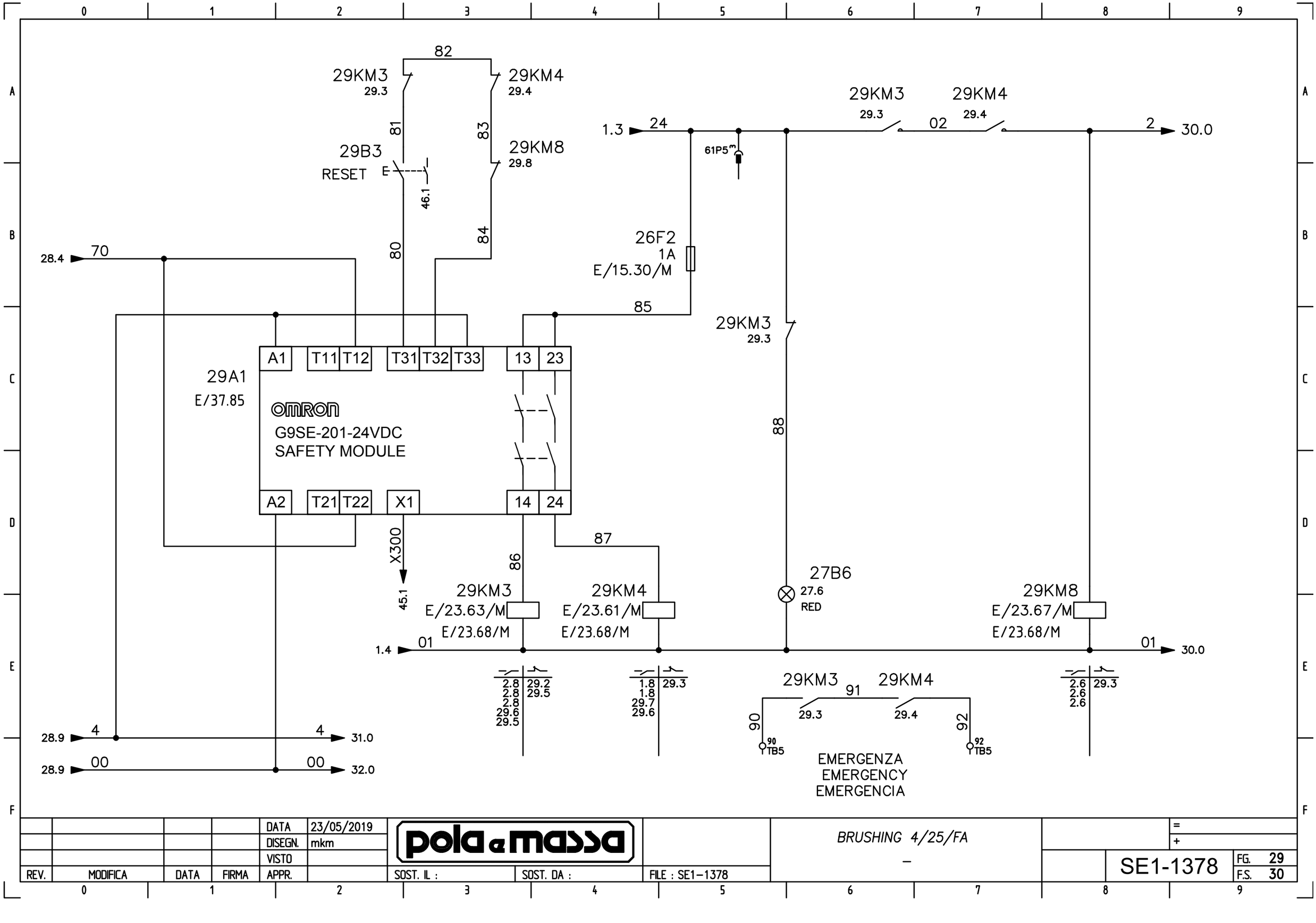
A2 | T21 | T22 | X1 | 14 | 24

70 → 29.0

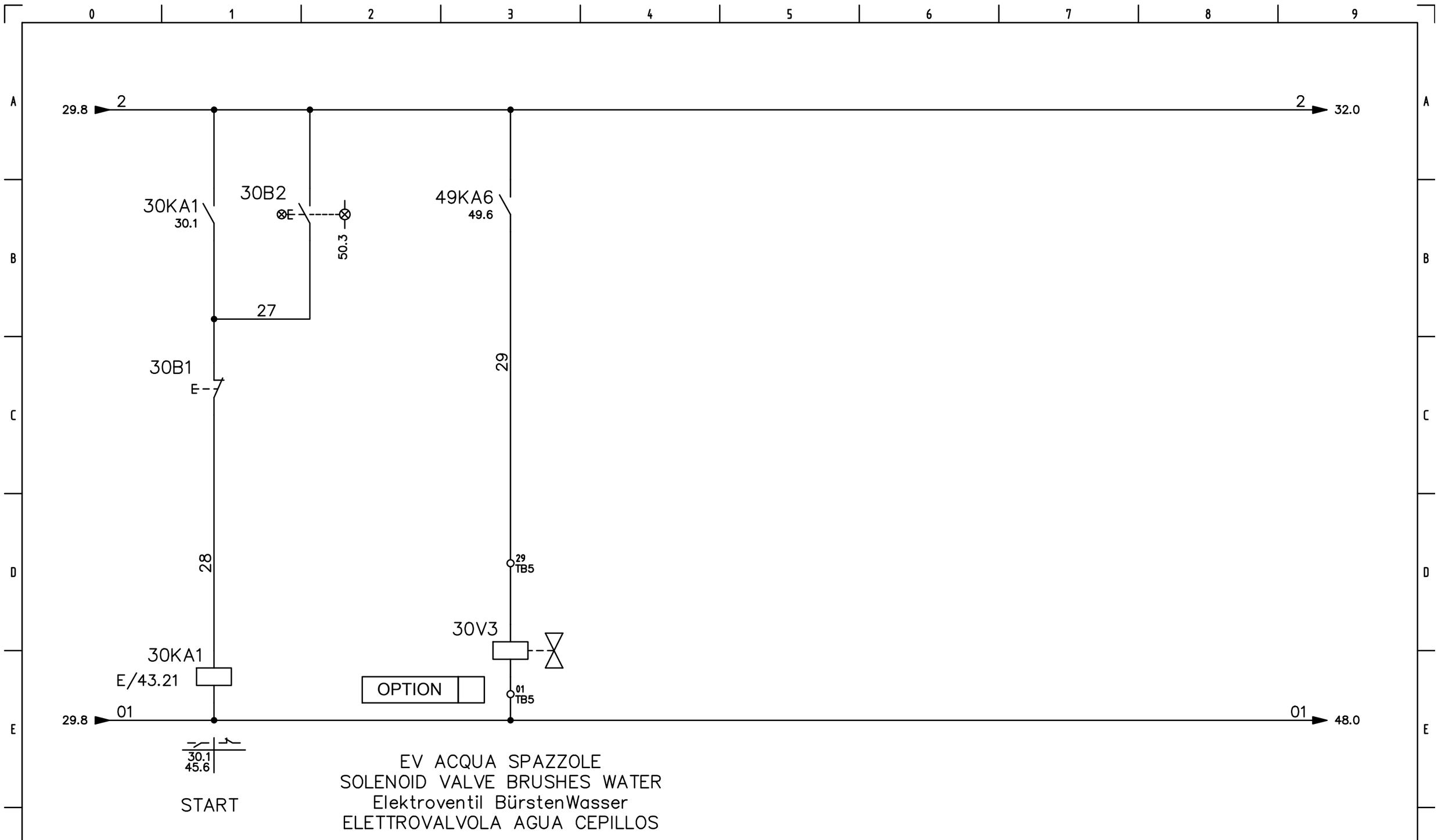
27.7 4 → 4 29.0

25.9 00 → 00 29.0

				DATA	23/05/2019	pola e massa		BRUSHING 4/25/FA	=
				DISEGN.	mkm				+
				VISTO				–	SE1-1378 FG. 28 F.S. 29
REV.	MODIFICA	DATA	FIRMA	APPR.		SOST. IL :	SOST. DA :	FILE : SE1-1378	



				DATA	23/05/2019	pola e massa		BRUSHING 4/25/FA		=	
				DISEGN.	mkm					+	
				VISTO				–		SE1-1378	FG. 29
REV.	MODIFICA	DATA	FIRMA	APPR.		SOST. IL :	SOST. DA :	FILE : SE1-1378			F.S. 30



REV.	MODIFICA	DATA	FIRMA	APPR.	
				DATA	23/05/2019
				DISEGN.	mkm
				VISTO	

pola e massa

SOST. IL :

SOST. DA :

FILE : SE1-1378

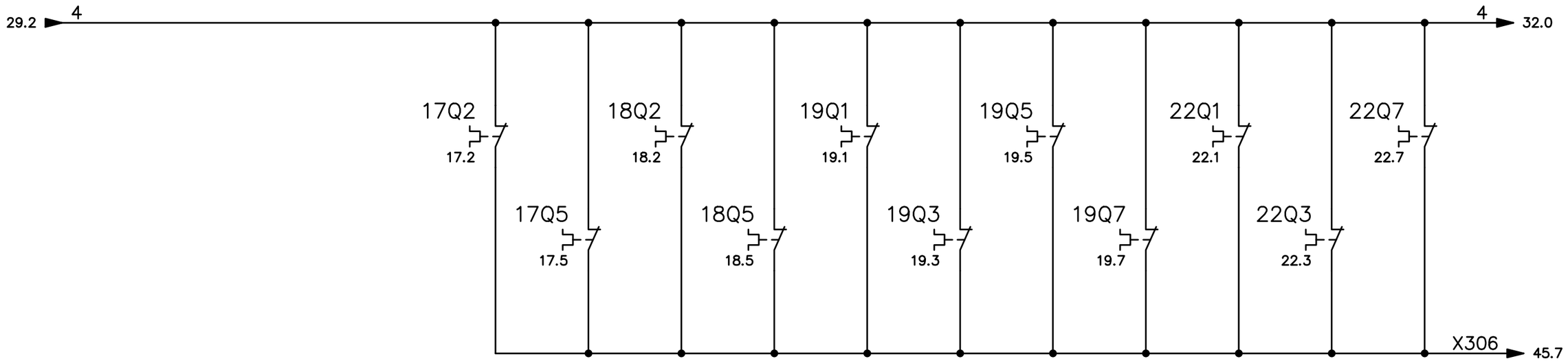
BRUSHING 4/25/FA

–

SE1-1378

FG. 30

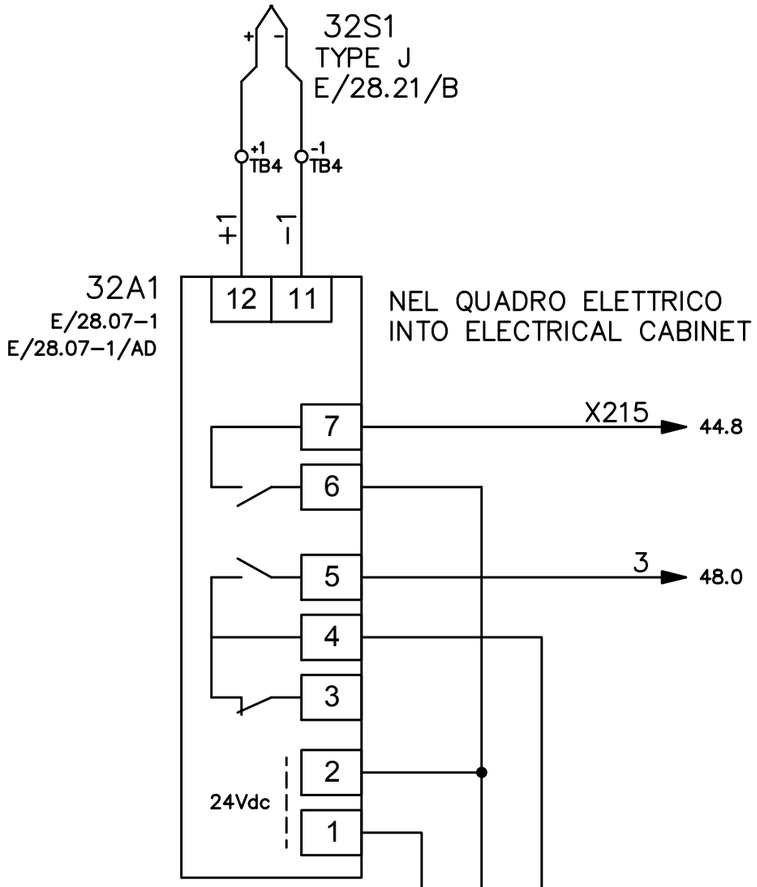
F.S. 31

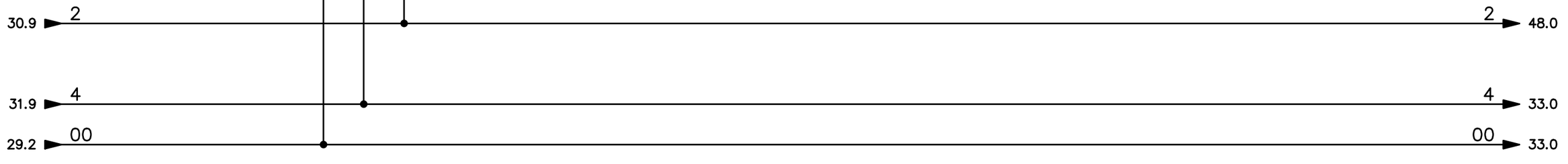


				DATA	23/05/2019	pola e massa		BRUSHING 4/25/FA		=	
				DISEGN.	mkm					+	
				VISTO				–		SE1-1378	FG. 31
REV.	MODIFICA	DATA	FIRMA	APPR.		SOST. IL :	SOST. DA :	FILE : SE1–1378			F.S. 32

TERMOCOPPIA DI SICUREZZA
SAFETY THERMOCOUPLE

VASCA 1
TANK 1





				DATA	23/05/2019	pola e massa		BRUSHING 4/25/FA		=	
				DISEGN.	mkm					+	
				VISTO				–		SE1-1378	FG. 32
REV.	MODIFICA	DATA	FIRMA	APPR.		SOST. IL :	SOST. DA :	FILE : SE1–1378			F.S. 33

32.9 4 — 4 38.1

32.9 00 — 00 38.1

33A2

CONTROL PANEL 7"

24V 0V PE

Omron NB17W-TW01B
(E/55190 + E/55190/A)

192.168.3.191

33A6

24V 0V

LAN WAN

E/55400
TOSIBOX
REMOTE CONNECTION

TO CUSTOMER INTERNET CONNECTION

L = 150cm E/55179/F

L = 30cm E/55179/E

MODBUS
RS485
INVERTER
PAGE 34

33A0

24V 0V PE

SWITCH
ETHERNET
E/55256

POWER SUPPLY	CPU	COM. MODULE	ANALOG INPUT X2051...8	DIGITAL INPUT X0...15	DIGITAL INPUT X100...15	DIGITAL INPUT X200...15	DIGITAL INPUT X300...15	DIGITAL OUTPUT Y400...15	DIGITAL OUTPUT Y500...15	DIGITAL OUTPUT Y600...15	TC INPUT X700...1200
E/55119	E/55157	E/55104	E/55113	E/55108	E/55108	E/55108	E/55108	E/55109	E/55109	E/55109	E/55112
CJ1W-PA202 Omron	CJ2M-CPU32 Omron	CJ1W-SCU41 Omron	CJ1W-AD081-V1 Omron	CJ1W-ID211 Omron	CJ1W-ID211 Omron	CJ1W-ID211 Omron	CJ1W-ID211 Omron	CJ1W-OD212 Omron	CJ1W-OD212 Omron	CJ1W-OD212 Omron	CJ1W-TS561 Omron

2.4 R6 — 1 AC Input

3.8 N1 — 2

3 — 4

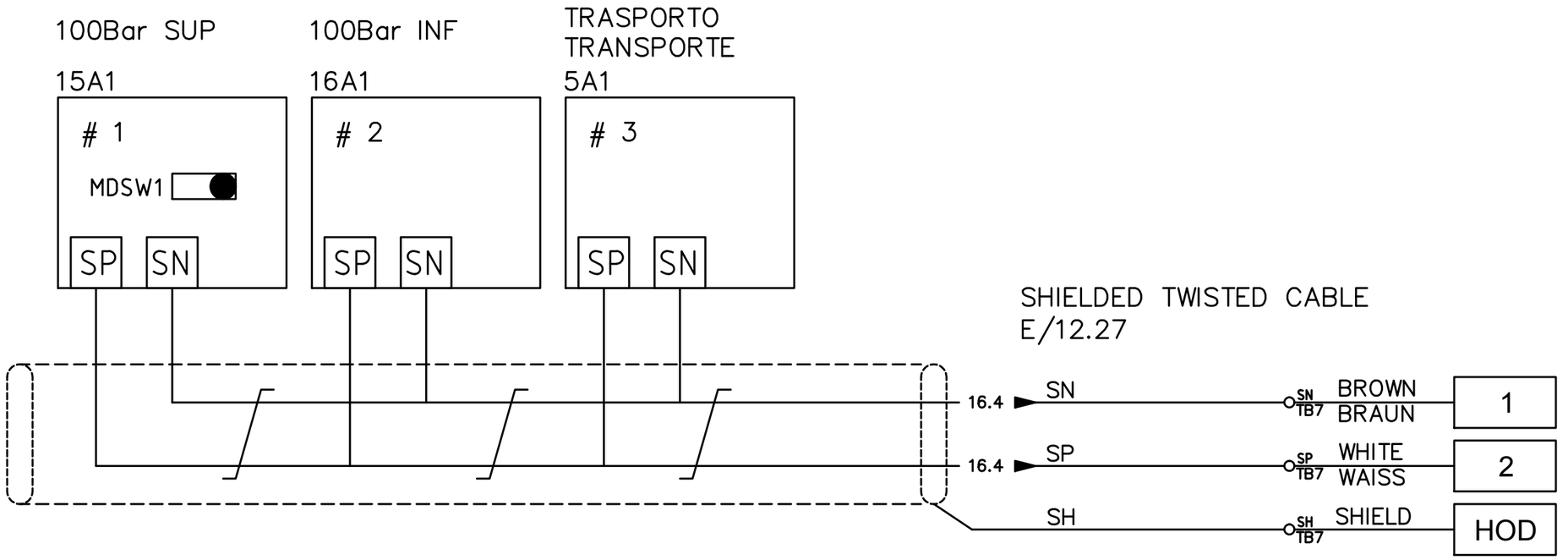
5 NC

6 NC

192.168.3.190

PLC RACK

				DATA	23/05/2019	pola e massa		BRUSHING 4/25/FA		=	
				DISEGN.	mkm					+	
				VISTO				–	SE1-1378	FG. 33	
REV.	MODIFICA	DATA	FIRMA	APPR.		SOST. IL :	SOST. DA :	FILE : SE1-1378		F.S. 34	



PORT 1
MODBUS
RS–485
DB9 MALE
CONNECTOR
PAGE 33

PLC–INVERTER MODBUS RS485 CABLING
PLC–INVERTER MODBUS RS485 CABLEADO

REV.	MODIFICA	DATA	FIRMA

DATA	23/05/2019
DISEGN.	mkm
VISTO	
APPR.	

pola e massa

SOST. IL :

SOST. DA :

FILE : SE1–1378

BRUSHING 4/25/FA

–

SE1-1378

FG. 34
F.S. 35

				DATA	23/05/2019	pola e massa		BRUSHING 4/25/FA		=	
				DISEGN.	mkm					+	
				VISTO				–		SE1-1378	FG. 35
REV.	MODIFICA	DATA	FIRMA	APPR.		SOST. IL :	SOST. DA :	FILE : SE1–1378			F.S. 36

				DATA	23/05/2019	pola e massa		BRUSHING 4/25/FA	=
				DISEGN.	mkm				+
				VISTO				–	SE1-1378 FG. 36 F.S. 37
REV.	MODIFICA	DATA	FIRMA	APPR.		SOST. IL :	SOST. DA :	FILE : SE1–1378	

				DATA	23/05/2019	pola e massa		BRUSHING 4/25/FA	=
				DISEGN.	mkm				+
				VISTO				–	SE1-1378 FG. 37 F.S. 38
REV.	MODIFICA	DATA	FIRMA	APPR.		SOST. IL :	SOST. DA :	FILE : SE1–1378	

E/17311 M12
FEMMINA
LATO VITI

SPESSORE ZERO = 0,5..1mm SUL DISPLAY AMPLIFICATORE
THICKNESS ZERO = 0,5..1mm AMPLIFIRE DISPLAY
ESPESOR ZERO = 0,5..1mm DISPLAY AMPLIFICADOR

SENSORE SPESSORE
THICKNESS DETECTOR
Dickensensor
SENSOR GROSOR

38A7
E/40100/C
E/40100/D
E/40100/A
38S8
E/40100
E/40100/B

COLLEGARE A
TERRA CLAMP
E/29.30

0...10Vdc
INGRESSI ANALOGICI CORRENTE SPAZZOLE
CURRENT BRUSH ANALOG INPUT
ENTRADAS ANALOGICA CORRIENTE CEPILLOS

38S5
160 BAR
I/04.47/N
38S6
160 BAR
I/04.47/N

brown braun
blue blau
orange
green grüne

61P0 14
61P0 13
61P0 15
61P0 16
61P0 17

1 2 3 4

X2051 M2051 X2052 M2052 X2053 M2053 X2054 M2054
17.4 17.4 17.1 17.1 18.4 18.4 18.1 18.1

X2055 TB4 SH TB4 X2056 TB4
X2058 M2058

33.7 4 ▶ 4 39.0
33.7 00 ▶ 00 39.0

X2057 M2057
TB4 TB4 SH TB4
X2055 X2056 X2057 M2057

SH SH

A1 A2	B1 B2	A3 A4	B3 B4	A6 A7	B6 B7	A8 A9	B8 B9	A5	B5
INPUT (+) INPUT (-)									
X2051	X2052	X2053	X2054	X2055	X2056	X2057	X2058	AG	AG
0..10Vdc	0..10Vdc	0..10Vdc	0..10Vdc	4...20mA	4...20mA	4...20mA	4...20mA		
				TUBO 100BAR SUP	TUBO 100BAR INF				

B1 A1
B2 A2
B3 A3
B4 A4
B5 A5
B6 A6
B7 A7
B8 A8
B9 A9

ANALOG
INPUT
E/55113

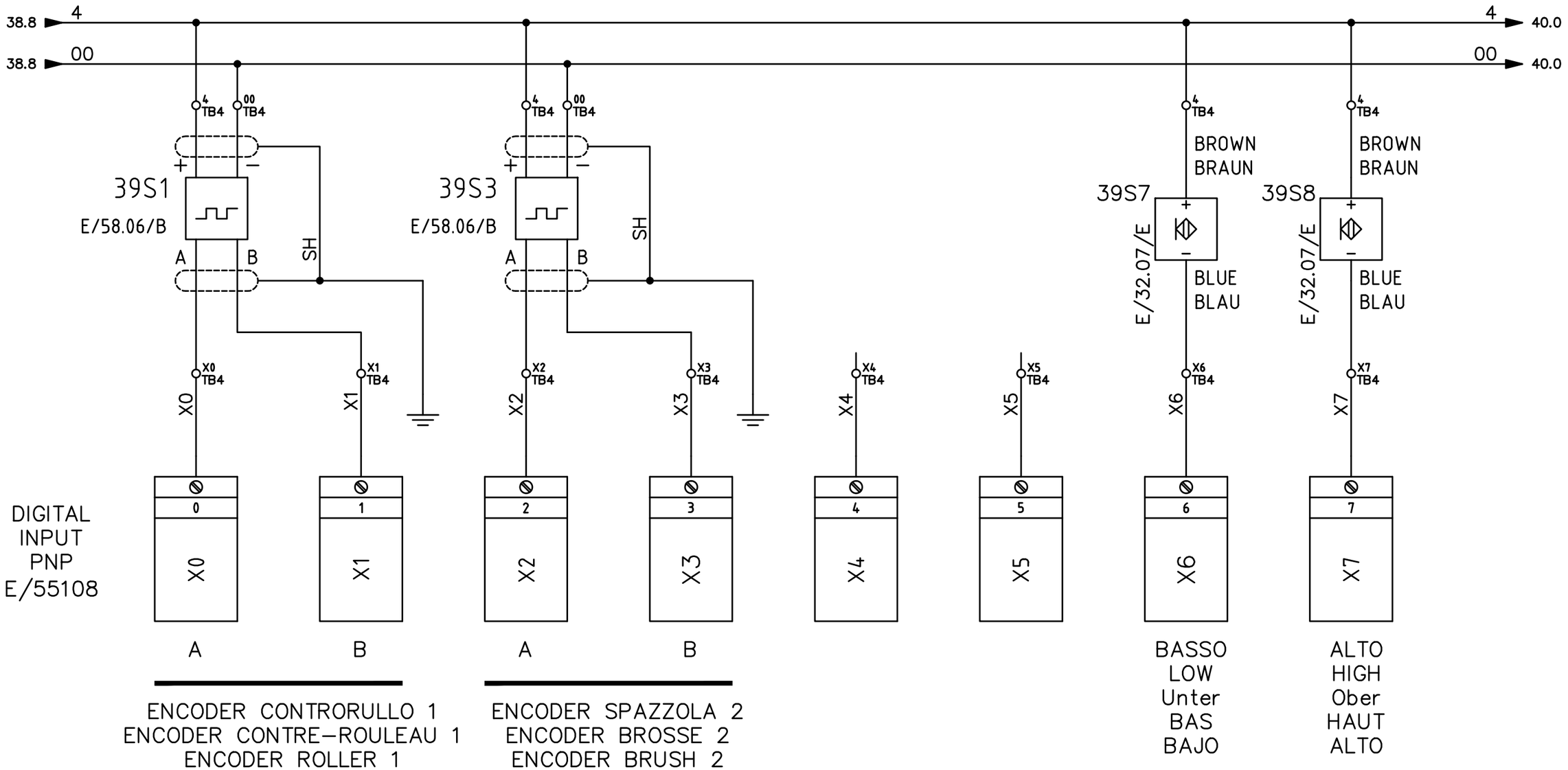
ANALOG INPUT OMRON CPU: MOD.:

REV.	MODIFICA	DATA	FIRMA	APPR.		SOST. IL :	SOST. DA :	FILE : SE1-1378
				VISTO				
				DISEGN.	mkm			
				DATA	23/05/2019			

pola e massa

BRUSHING 4/25/FA
–

SE1-1378
FG. 38
F.S. 39



ENCODER CONTRORULLO 1
ENCODER CONTRE–ROULEAU 1
ENCODER ROLLER 1
Encoder Gegendruckwalze 1
CODIFICADOR ROLO 1

ENCODER SPAZZOLA 2
ENCODER BROSSE 2
ENCODER BRUSH 2
Encoder Bürste 2
CODIFICADOR CEPILLO 2

PROXIMITY CONTRORULLO 1
BUTEE CONTRE–ROULEAU 1
ROLLER 1 PROXIMITY
Proximity Gegendruckwalze 1
FINAL DE CARRERA RULO1

REV.	MODIFICA	DATA	FIRMA	APPR.		SOST. IL :	SOST. DA :	FILE : SE1–1378
				VISTO				
				DISEGN.	mkm			
				DATA	23/05/2019			

pola e massa

BRUSHING 4/25/FA

–

SE1-1378

FG. 39
F.S. 40

39.9 4 → 41.0 4
39.9 00 → 41.0 00

	40S1	40S2	40S3	40S4	40S5	40S6	40S7	40S8
	4 TB4	4 TB4	4 TB4	4 TB4	4 TB4 / 00 TB4	4 TB4 / 00 TB4	4 TB4	4 TB4
	BROWN BRAUN	BROWN BRAUN	BROWN BRAUN	BROWN BRAUN				
	E/32.07/E	E/32.07/E	E/32.07/E	E/32.07/E	E/58.06/B (A, B)	E/40.50/S/PNP	E/50.11	1,5BAR
	BLUE BLAU	BLUE BLAU	BLUE BLAU	BLUE BLAU		WHITE WAISS / BLACK SCHWARZ		
	X8 TB4	X9 TB4	X10 TB4	X11 TB4	X12 TB4	61PO 18 / X13	X14 TB4	X15 TB4
	8	9	10	11	12	13	14	15
DIGITAL INPUT PNP E/55108	X8	X9	X10	X11	X12	X13	X14	X15
	BASSO LOW Unter BAS BAJO	ALTO HIGH Ober HAUT ALTO	BASSO LOW Unter BAS BAJO	ALTO HIGH Ober HAUT ALTO	ENCODER TRAINO ENCODER CONVEYOR ENCODER ENCODER CONVOYEUR Encoder Transport CODIFICADOR TRASPORTE	ECONOMY START Sparsystem Start STAND-BY SENSOR	ALTO LIVELLO LAVAGGIO 1 RINSE 1 HIGH LEVEL Hoch Niveau Spüle 1 ALTO NIVEL LAVADO 1	PRESSOSTATO ACQUA SPAZZ. PRESSURE SW BRUSH WATER PRESSOSTAT EAU BROSSE Druckschalter Bürstenwasser PRESOSTATO AGUA CEPILLOS
	PROXIMITY SPAZZOLA 2 BUTEE BROSSE 2 PROXIMITY BRUSH 2 Proximity Bürste 2 FINAL DE CARRERA CEPILLO 2		PROXIMITY SPAZZOLA 1 BUTEE BROSSE 1 PROXIMITY BRUSH 1 Proximity Bürste 1 FINAL DE CARRERA CEPILLO 1					

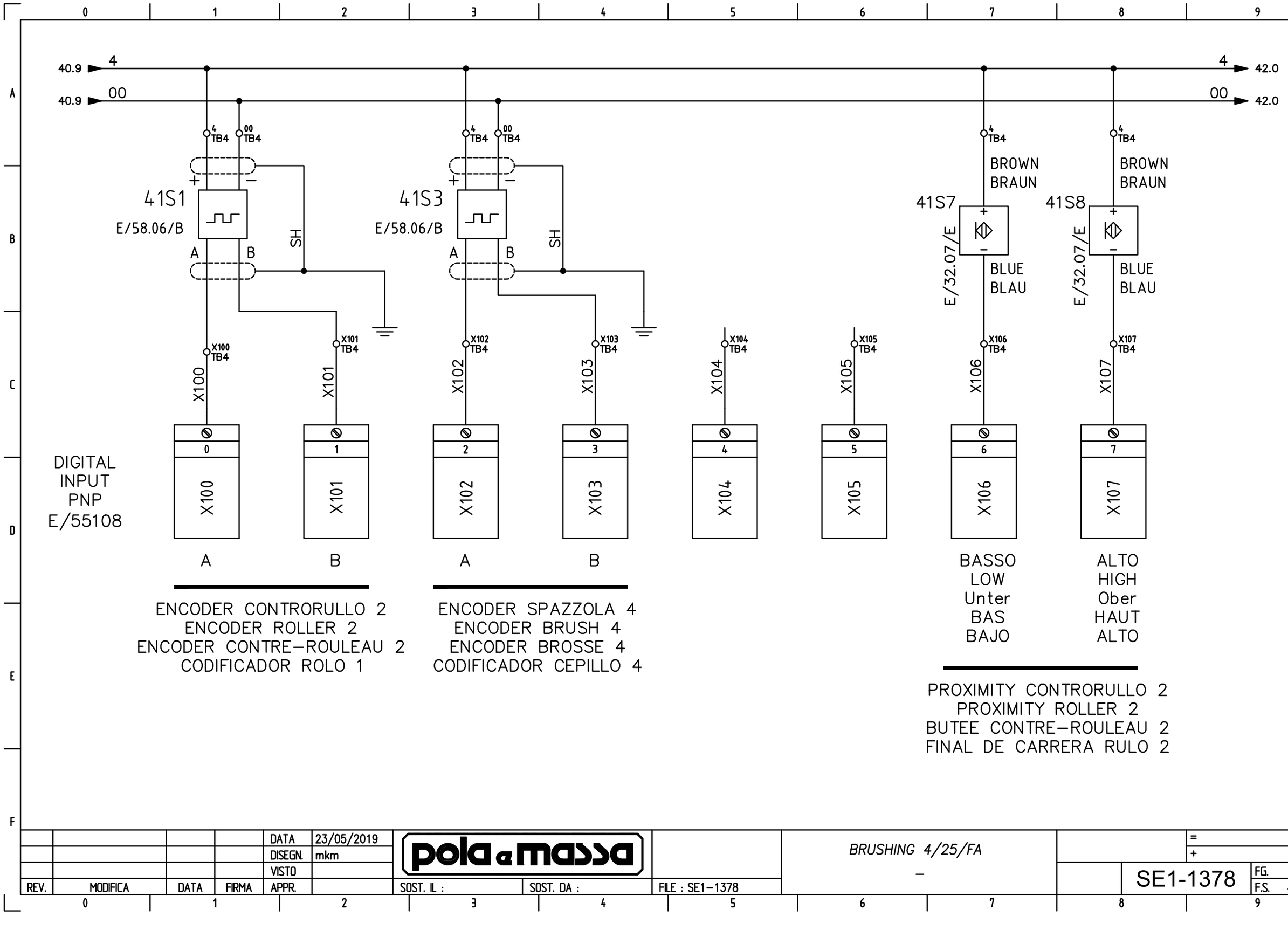
COM COM

REV.	MODIFICA	DATA	FIRMA	APPR.		SOST. IL :	SOST. DA :	FILE : SE1-1378
				DATA	23/05/2019			
				DISEGN.	mkm			
				VISTO				

pola e massa

BRUSHING 4/25/FA

SE1-1378 FG. 40 F.S. 41



REV.	MODIFICA	DATA	FIRMA		
				DATA	23/05/2019
				DISEGN.	mkm
				VISTO	
				APPR.	

pola e massa

SOST. IL :

SOST. DA :

FILE : SE1–1378

BRUSHING 4/25/FA

–

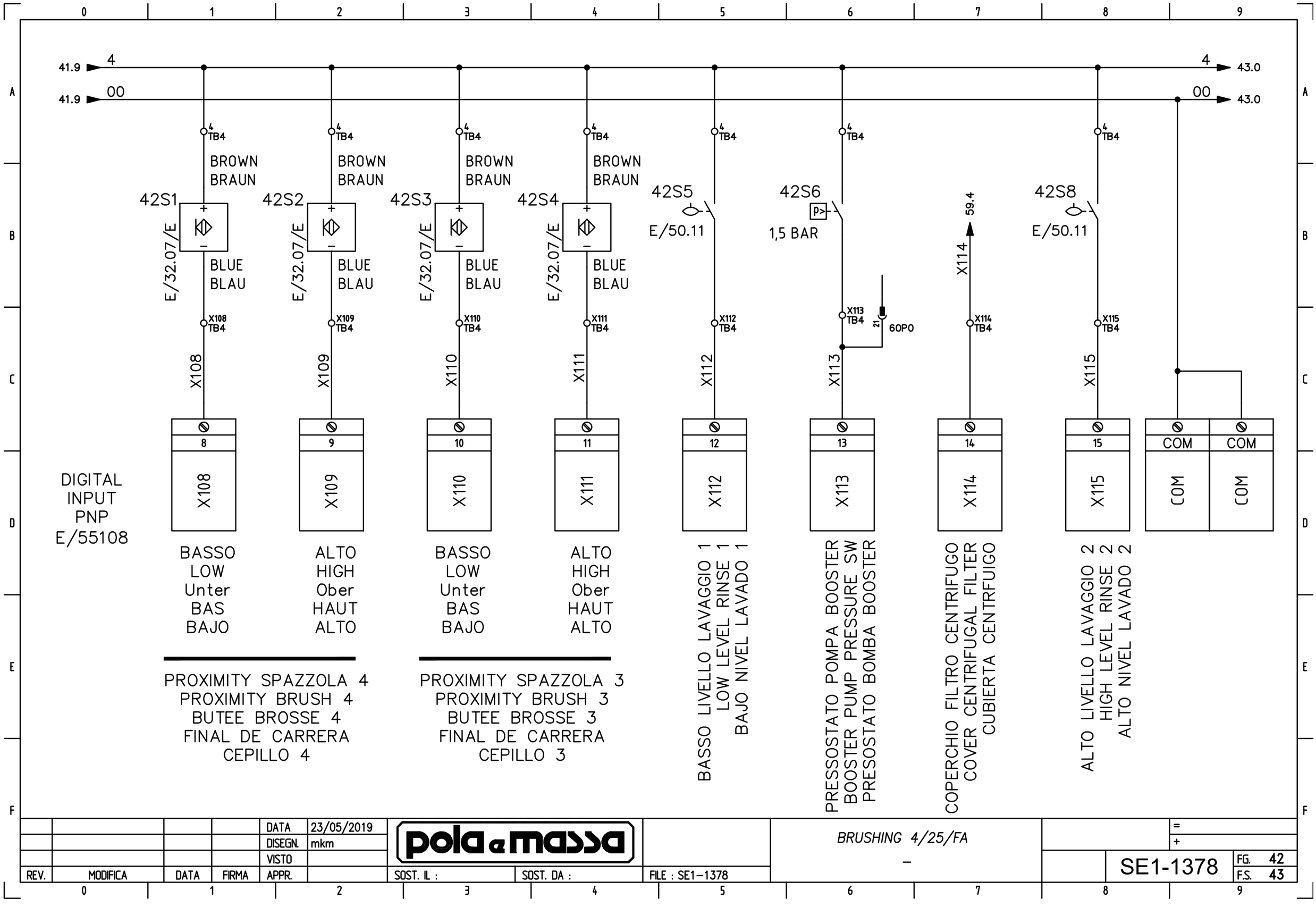
=

+

SE1-1378

FG. 41

F.S. 42



REV.	MODIFICA	DATA	FIRMA	APPR.		SOST. IL :	SOST. DA :	FILE : SE1-1378
				VISTO				
				DISEGN.	mkm			
				DATA	23/05/2019			

pola e massa

BRUSHING 4/25/FA

–

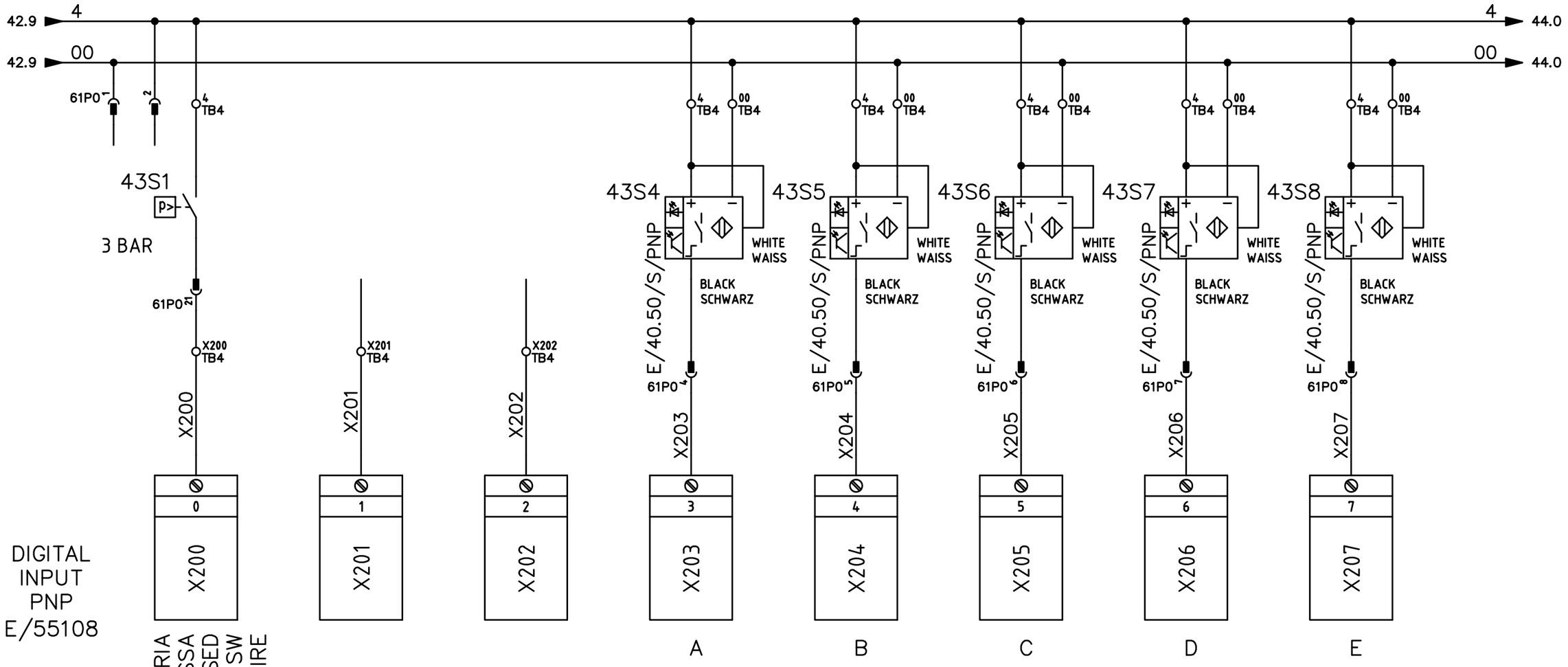
=

+

SE1-1378

FG. 42

F.S. 43



FOTOCELLULE TASTATORE INGRESSO
ENTRY PHOTOCELLS
EINGANG PHOTOZELLE
PHOTOCELLULES CAPTEUR D'EPAISSEUR D'ENTREE
SENSOR ENTRADA DE ANCHO

REV.	MODIFICA	DATA	FIRMA

DATA	23/05/2019
DISEGN.	mkm
VISTO	
APPR.	

pola e massa

SOST. IL :

SOST. DA :

FILE : SE1-1378

BRUSHING 4/25/FA

–

SE1-1378

FG. 43

F.S. 44

43.9 4 — 4 45.0

43.9 00 — 00 45.0

44S1 44S2 44S3 44S4 44S5 44S6 44S7

4 TB4 — 00 TB4

E/40.50/S/PNP

BIANCO BLANC

NERO NOIR

61P03 61P023 61P024

X208 X209 X210 X211 X212 X213 X214

X212 TB4 — X213 TB4 — X214 TB4

X215 — 32.3

DIGITAL INPUT PNP E/55108

8	9	10	11	12	13	14	15	COM	COM
X208	X209	X210	X211	X212	X213	X214	X215	COM	COM
F	INGRESSO ENTRY EINGANG ENTREE ENTRADA	DESTRA RIGHT Recht DROITE DERECHO	SINISTRA LEFT Linke MANCHE ISQUERDA	INGRESSO ENTRY EINGANG ENTREE ENTRADA	DESTRA RIGHT Recht DROITE DERECHO	SINISTRA LEFT Linke MANCHE ISQUERDA	TERMOREG. DI SICUREZZA SAFETY THERMOREG.		

BRACCI ARMS

BRACCI ARMS

FOTOCELLULE TASTATORE
INGRESSO
ENTRY PHOTOCELLS
EINGANG PHOTOZELLE
PHOTOCELLULES CAPTEUR
D'EPAISSEUR D'ENTREE
SENSOR ENTRADA DE
ANCHO

FOTOCELLULE TRASLATORE
DIVERTER PHOTOCELLS
Panelverschieber Photozelle
PHOTOCELLULES TRASLATEUR
SENSOR DESVIADOR

FOTOCELLULE CENTRATORE
CENTERING PHOTOCELLS
Zentrierung Photozelle
PHOTOCELLULES CENTREUR
SENSOR CENTRADOR

SH — 61P03 — SH — 61P023 — SH — 61P024

REV.	MODIFICA	DATA	FIRMA		
				DATA	23/05/2019
				DISEGN.	mkm
				VISTO	
				APPR.	

pola e massa

SOST. IL : — SOST. DA : — FILE : SE1-1378

BRUSHING 4/25/FA

–

SE1-1378

FG. 44

F.S. 45

44.9 4 ——— 4 46.0

44.9 00 ——— 00 46.0

45S4
E/37.37
OPTION

57P5 8

57P0 15

59.5 X303

4 TB4

30KA1
30.1

X303 TB4

X304 TB4

29.2 X300

27.7 X301 X301 TB4

12.5 X302

X304

X305

31.9 X306

25.9 X307 X307 TB4

DIGITAL
INPUT
PNP
E/55108

0	X300	EMERGENZA EMERGENCE EMERGENCIA	
1	X301	FUNGhi EMERGENZA BOUTONS D'EMERGENCE HONGO EMERGENCIA.	
2	X302	INVERTER READY INVERTER LISTO	
3	X303	ALLARME FILTRO/FINE CARTA FILTER ALARM/END PAPER ALARMA FILTRO	
4	X304	PRONTO A RICEVERE READY TO RECEIVE PRETE A RECEVOIR LISTO PARA RECEBIR	
5	X305	START	
6	X306	TERMICHE MOTORI OL MOTOR TERMIQUES MOTEURS SOBRACARGA MOTOR	
7	X307	COPERTURE APERTE COVER OPEN COVERTURE OUVERTE CUBIERTAS ABERTO (EMERGENCIA)	

REV.	MODIFICA	DATA	FIRMA

DATA 23/05/2019
DISEGN. mkm
VISTO
APPR.

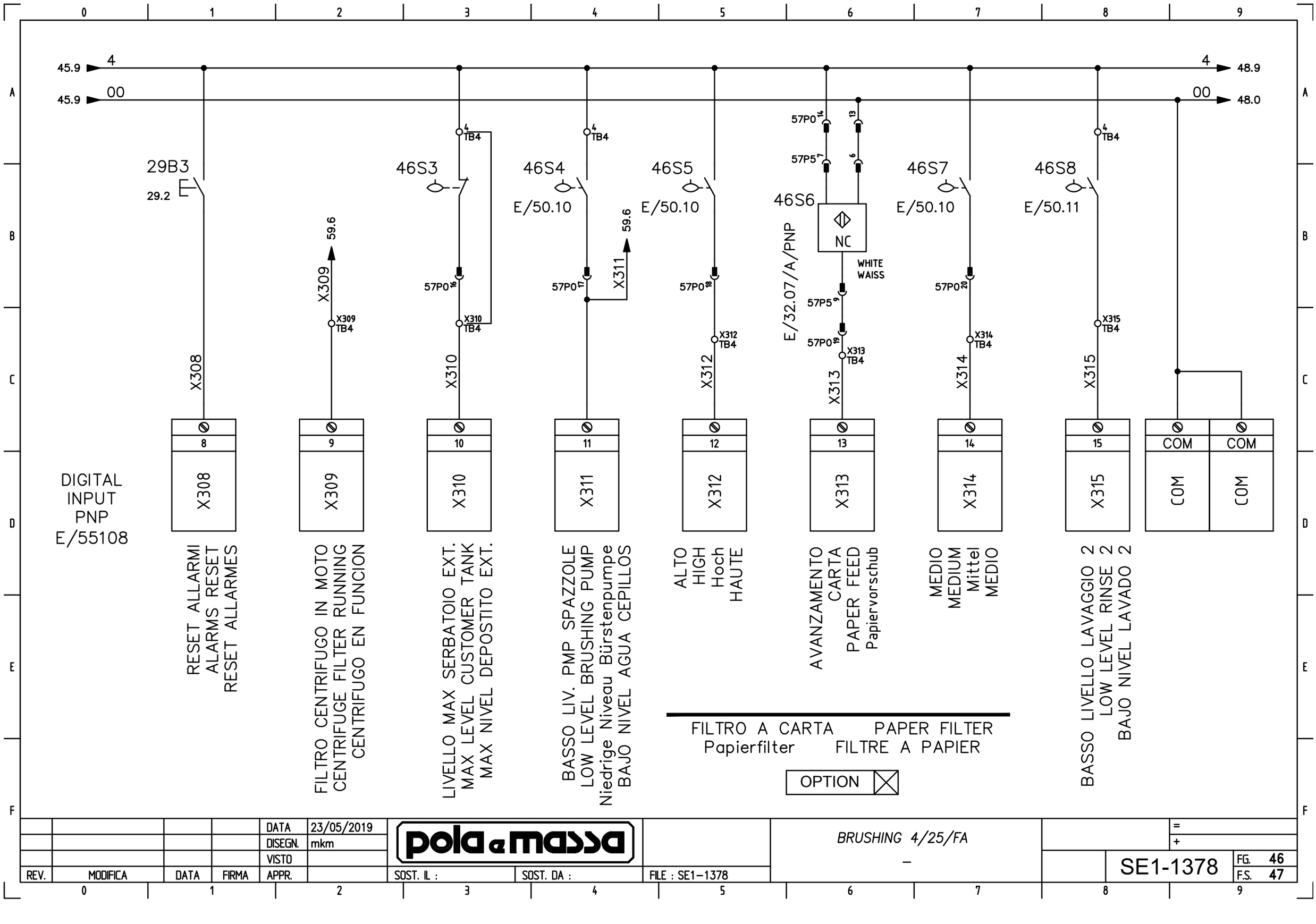
pola e massa

SOST. IL :
SOST. DA :
FILE : SE1-1378

BRUSHING 4/25/FA

SE1-1378

FG. 45
F.S. 46



REV.	MODIFICA	DATA	FIRMA

DATA	23/05/2019
DISEGN.	mkm
VISTO	
APPR.	

pola e massa

SOST. IL :

SOST. DA :

FILE : SE1-1378

BRUSHING 4/25/FA

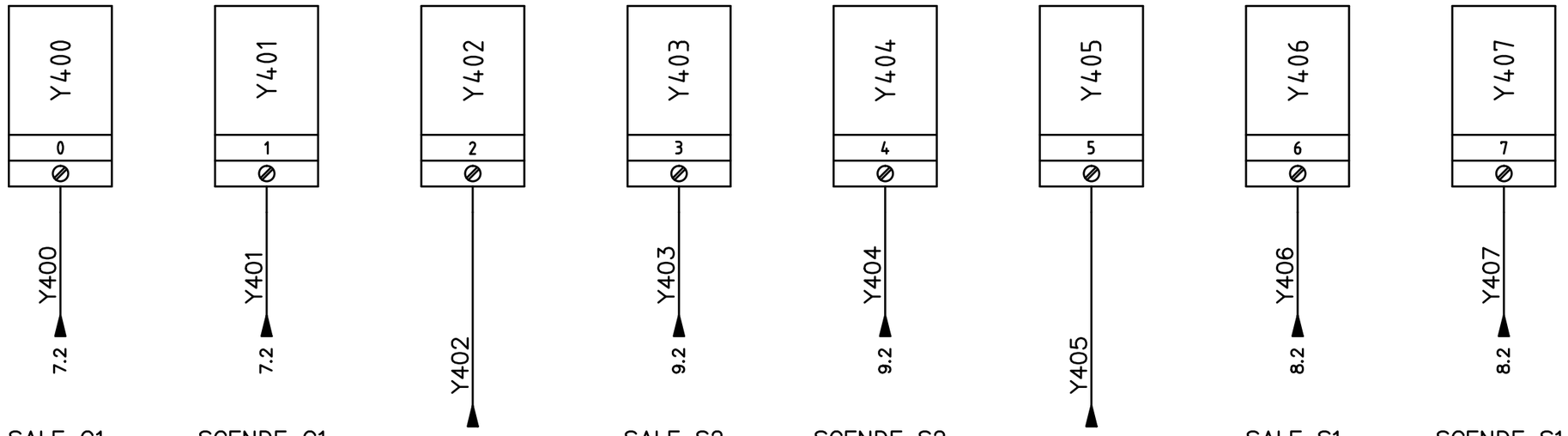
–

SE1-1378

FG. 46

F.S. 47

DIGITAL
OUTPUT
PNP
E/55109



SALE C1
ROLL 1
GO UP
SUBIDA
ROLO 1

SCENDE C1
ROLL 1
GO DOWN
BAJADA
ROLO 1

POMPA 100 BAR
TUBO SUPERIORE
BOMBA 100 BAR
TUBO SUPERIOR

SALE S2
BRUSH 2
GO UP
SUBIDA
CEPILLO 2

SCENDE S2
BRUSH 2
GO DOWN
BAJADA
CEPILLO 2

POMPA 100 BAR
TUBO INFERIORE
BOMBA 100 BAR
TUBO INFERIOR

SALE S1
BRUSH 1
GO UP
SUBIDA
CEPILLO 1

SCENDE S1
BRUSH 2
GO DOWN
BAJADA
CEPILLO 1

				DATA	23/05/2019	pola e massa		BRUSHING 4/25/FA		=	
				DISEGN.	mkm					+	
				VISTO				–		SE1-1378	FG. 47
REV.	MODIFICA	DATA	FIRMA	APPR.		SOST. IL :	SOST. DA :	FILE : SE1–1378			F.S. 48

DIGITAL
OUTPUT
PNP
E/55109

Y408 — 8 — Y408 10.2 — SALE C2 ROLL 2 GO UP SUBIDA ROLO 2

Y409 — 9 — Y409 10.2 — SCENDE C2 ROLL 2 GO DOWN BAJADA ROLO 2

Y410 — 10 — Y410 — 48KA3 E/43.20 — 48.3 — SALE S4 BRUSH 4 GO UP SUBIDA CEPILLO 4

Y411 — 11 — Y411 12.2 — SCENDE S4 BRUSH 4 GO DOWN BAJADA CEPILLO 4

Y412 — 12 — Y412 12.2

Y413 — 13

Y414 — 14 — Y414 11.2 — SALE S3 BRUSH 3 GO UP SUBIDA CEPILLO 3

Y415 — 15 — Y415 11.2 — SCENDE S3 BRUSH 3 GO DOWN BAJADA CEPILLO 3

0V — 0V

\+ — +

4 4 → 50.9 (46.9)

46.9 00 → 00 49.0

32.9 2 → 2 49.0

32.3 3 → 3 /./

48KA3 48.3 — 510 — 22Q7 22.7 — 510A — 48KM3 E23.61/M

30.9 01 → 01 49.0

22.7 22.7 22.7

RESISTENZA VASCA 1
TANK 1 HEATHER
CALENTADOR
DEPOSITO 1

REV.	MODIFICA	DATA	FIRMA	APPR.		SOST. IL :	SOST. DA :	FILE : SE1-1378
				VISTO				
				DISEGN.	mkm			
				DATA	23/05/2019			

pola e massa

BRUSHING 4/25/FA

–

SE1-1378

FG. 48
F.S. 49

DIGITAL
OUTPUT
PNP
E/55109

Y500 0 · Y501 1 · Y502 2 · Y503 3 · Y504 4 · Y505 5 · Y506 6 · Y507 7

Y500 · Y501 · Y502 · Y503 · Y504 · Y505 · Y506 · Y507

49KA1 E/43.20 · 49KA2 E/43.20 · 49KA3 E/43.20 · 49KA4 E/43.20 · 49KA5 E/43.20 · 49KA6 E/43.20 · 49KA7 E/43.20 · 49KA8 E/43.20

48.9 00 → 50.0 00

49.1 · 49.2 · 49.3 · 49.4 · 49.5 · 30.3 49.6 · 49.7 · 49.8

48.9 2 → 50.0 2

61P5 2

49KA1 49.1 · 49KA2 49.2 · 49KA3 49.3 · 49KA4 49.4 · 49KA5 49.5 · 49KA6 49.6 · 49KA7 49.7 · 49KA8 49.8

500 · 501 · 502 · 503 · 504 · 505 · 506 · 507

17Q2 17.2 · 17Q5 17.5 · 18Q2 18.2 · 18Q5 18.5 · 504 TB5 · 19Q1 19.1 · 22Q1 22.1 · 22Q3 22.3

500A · 501A · 502A · 503A · 505A · 506A · 507A

49KM1 E23.61/M · 49KM2 E23.61/M · 49KM3 E23.61/M · 49KM4 E23.61/M · 49V5 · 61P5 4 · 61P5 1 · 49KM6 E23.61/M · 49KM7 E/23.63/M · 49KM8 E/23.63/M

48.9 01 → 50.0 01

17.2 17.2 17.2 · 17.5 17.5 17.5 · 18.2 18.2 18.2 · 18.5 18.5 18.5 · SOFFIO SOUFLE · 19.1 19.1 19.1 19.1 · 22.1 22.1 22.1 · 22.3 22.3 22.3

2 · 1 · 4 · 3

SPAZZOLE
BRUSHES
CEPILLOS

POMPA SPAZZOLE
BRUSHING PUMP
POMPE BROSSES
BOMBA CEPILLOS

1 · 2

TURBINE ASCIUGATURA
DRIER TURBINE
TROKNER TURBINE
TURBINE SECADO

				DATA	23/05/2019	pola e massa		BRUSHING 4/25/FA	=
				DISEGN.	mkm				+
				VISTO				–	SE1-1378 FG. 49 F.S. 50
REV.	MODIFICA	DATA	FIRMA	APPR.		SOST. IL :	SOST. DA :	FILE : SE1-1378	

DIGITAL OUTPUT PNP E/55109

Y508 8 | Y509 9 | Y510 10 | Y511 11 | Y512 12 | Y513 13 | Y514 14 | Y515 15 | 0V 0V | + +

Y508 → 50KA1 E/43.20 → 49.9 00 → 50.1

Y509 → 50KA2 E/43.20 → 50.2

Y510 → 50KA3 E/43.20 → 50.3

WHITE 30B2 30.2

Y511 → Y511 TB5 GREEN GRÜNE

Y512 → Y512 TB5 RED ROT

Y513 → Y513 TB5 VIOLET PURPUR

BUZZER

50L4 E/09.39

YELLOW GELB 00 TB5

Y514 → 14.3

Y515 → 13.3

0V → 4 → 48.9 ; + → 4 → 52.9

00 → 51.0

COLONNINA LUMINOSA
LIGHT TOWER
ALARM LICHT
TORRETA LUZ

BRS INGRESSO ENTRY

TRAINI
CONVEYORS

49.9 2 → 50KA1 50.1 → 508 → 19Q7 → 19.7 → 508A → 50KM1 E/23.61/M

50KA2 50.2 → 509 → 19Q5 → 19.5 → 509A → 50KM2 E/23.62/M

50KA3 50.3 → 510 → 19Q3 → 19.3 → 510A → 50KM3 E/23.61/M

2 → 51.0

49.9 01 → 19.7 19.7 19.7 ; 19.5 19.5 19.5 ; 19.3 19.3 19.3 → 01 51.0

2 1/BOOSTER

POMPE LAVAGGI
RINSE PUMPS
BOMBAS LAVADO

AVANZ. CARTA
FILTRO PAPER
FEED FILTER

OPTION ☒

REV.	MODIFICA	DATA	FIRMA	APPR.
				DATA 23/05/2019
				DISEGN. mkm
				VISTO

pola e massa

SOST. IL : | SOST. DA : | FILE : SE1-1378

BRUSHING 4/25/FA

–

SE1-1378 FG. 50 F.S. 51

DIGITAL
OUTPUT
PNP
E/55109

Y600 0 7.3 Y600
Y601 1 9.3 Y601
Y602 2 8.3 Y602
Y603 3 10.3 Y603
Y604 4 12.3 Y604
Y605 5 11.3 Y605
Y606 6 51KA7 E/43.20 Y606
Y607 7 51KA8 E/43.20 Y607

50.9 00 — C1 S2 S1 C2 S4 S3 — 00 52.0

51.7 51.8

ALTA VELOCITA' POSIZIONAMENTO
POSITIONING HIGH SPEED
ALTA VELOCIDAD POSICIONAMIENTO

50.3 2 — 2 52.0

51KA7 51.7 606 606 TB5 51V7
51KA8 51.8 607 61P5 51V8

50.3 01 — 01 52.0

SERPENTINA VASCA LAVAGGIO 1 TANK 1 COOLER ENFRIADOR DEPOSITO 1

SCONTRO PCB INGRESSO PCB ENTRY STOPPER TAPÓN ENTRADA PCB

				DATA	23/05/2019	pola e massa		BRUSHING 4/25/FA		=	
				DISEGN.	mkm					+	
				VISTO				–		SE1-1378	FG. 51
REV.	MODIFICA	DATA	FIRMA	APPR.		SOST. IL :	SOST. DA :	FILE : SE1-1378			F.S. 52

DIGITAL OUTPUT PNP E/55109

Y608 8 · Y609 9 · Y610 10 · Y611 11 · Y612 12 · Y613 13 · Y614 14 · Y615 15 · 0V 0V · + +

52KA1 E/43.20 · 52KA2 E/43.20 · 52KA3 E/43.20 · 52KA4 E/43.20 · 52KA5 E/43.20 · 52KA6 E/43.20 · 52KA7 E/43.20 · 52KA8 E/43.20

51.9 00 — 4 4 → 59.5 (50.9) — 00 → /./

52.1 · 52.2 · 52.3 · 52.4 · 52.5 · 52.6 · sc 52.7 · 52.8

51.9 2 → 59.7

52KA1 52.1 → Y608 608 TB5 57P0 8 → 52V1 → 57P0 7

52KA2 52.2 → Y609 609 TB5 61P5 5 → 52V2 → 01 TB5

52KA3 52.3 → Y610 610 TB5 61P5 6 → 52V3 → 01 TB5

52KA4 52.4 → Y611 611 TB5 → 52V4 → 01 TB5

52KA5 52.5 → Y612 612 TB5 57P0 9 → 52V5 → 01 TB5

52KA6 52.6 → Y613 613 TB5 → 52V6 → 01 TB5

52KA7 52.7 → 614 TB5 61P5 22 → 52V7 → 614 · 614B TB5 23 → 614B · 614C TB5 24 → 614C

ORANGE WIRE
PRONTO A RICEVERE
READY TO RECEIVE
PRETE E RECEVOIR

52KA8 52.8 → Y615 615 TB5 → 52V8 → 01 TB5

51.9 01 — 01 → 59.7

SCARICO FILTRO A CARTA
EMPTYNG PAPER FILTER
Entleerenn Papierfilter

OPTION ☐

SINISTRA
LEFT
Linke
MANCHE
ISQUERDA

DESTRA
RIGHT
Recht
DROITE

TRASLATORE DIVERTER
Panelverschieber TRASLATEUR

CENTRATORE
CENTERING
Zentrierung
CENTRADOR

REINTEGRO VASCA FILTRO
FILTER TANK FILLING
Filter tank Füllung

OPTION ☒

REINTEGRO VASCA 2
RINSE TANK 2 FILLING
Filter tank 2 Füllung

OPTION ☐

REINTEGRO VASCA 1
RINSE TANK 1 FILLING
Filter tank 1 Füllung
VALVULA SUMINISTRO
LAVADO 1

REV.	MODIFICA	DATA	FIRMA	APPR.		SOST. IL :	SOST. DA :	FILE : SE1-1378
				VISTO				
				DISEGN.	mkm			
				DATA	23/05/2019			

pola e massa

BRUSHING 4/25/FA

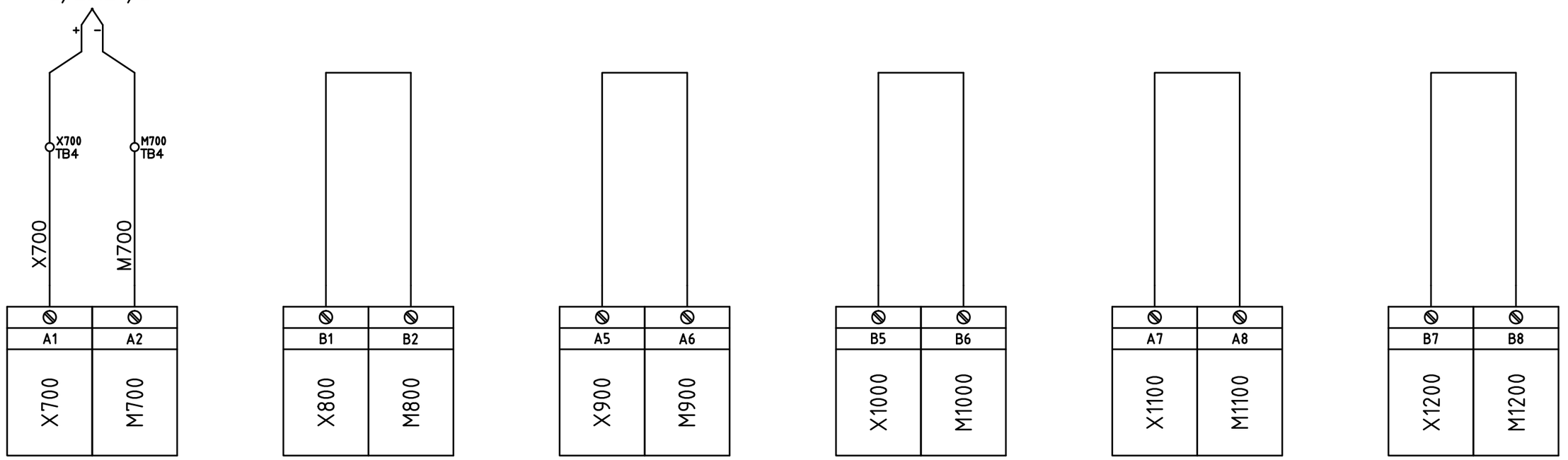
SE1-1378 FG. 52 F.S. 53

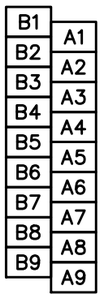
TERMOCOPPIE TIPO "J"
"J" TYPE THERMOCOUPLE
SENSOR DE TEMPERATURA

VASCA LAVAGGIO 1
WASHING TANK 1
DEPOSITO LAVADO 1

53S0

E/28.21/B



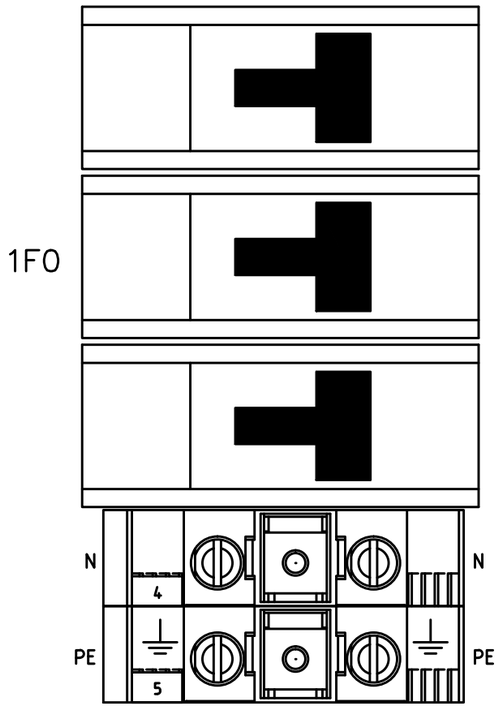


TERMOCOUPLE
INPUT
E/55112

				DATA	23/05/2019	pola e massa		BRUSHING 4/25/FA		=	
				DISEGN.	mkm					+	
				VISTO				–		SE1-1378	FG. 53
REV.	MODIFICA	DATA	FIRMA	APPR.		SOST. IL :	SOST. DA :	FILE : SE1-1378			F.S. 54

TB1

LINEA 400Vac
LINE 400Vac
LINEA ALIMENTACION



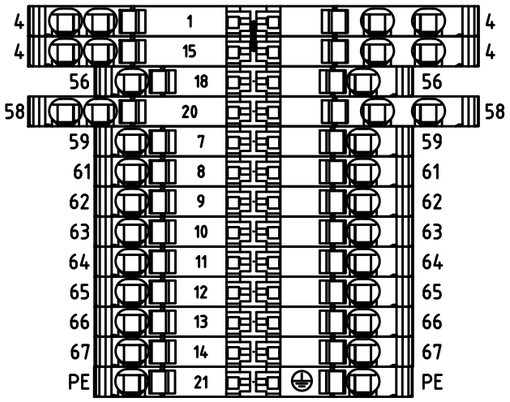
TB2

MOTORI
MOTORS

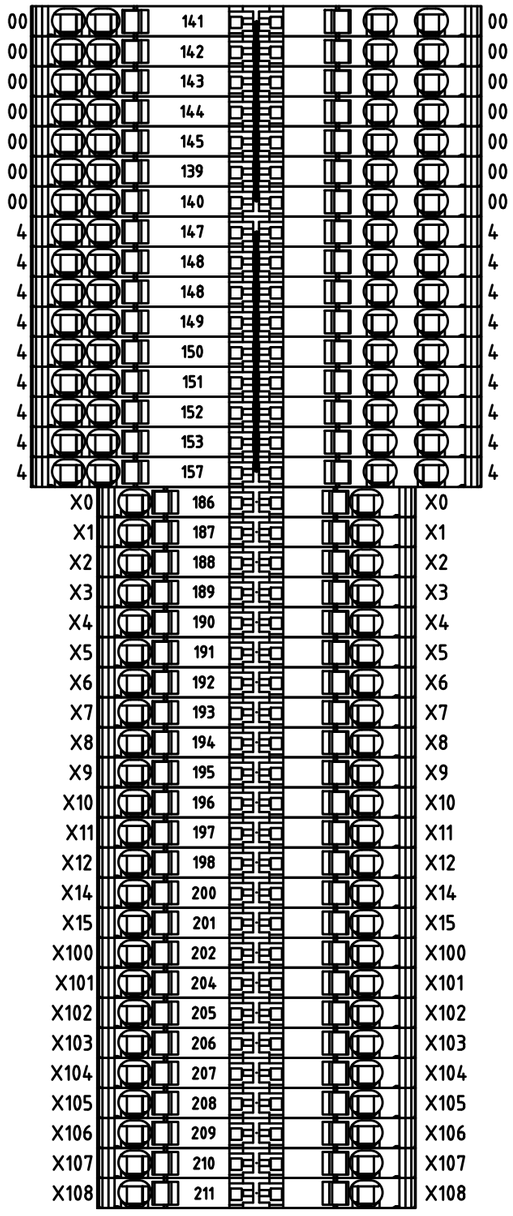
U1	1	U1		U11	40	U11	
V1	2	V1		V11	41	V11	
W1	3	W1		W11	42	W11	
SH	4	SH		PE	43	PE	⏚
PE	5	PE	⏚	U12	44	U12	
U2	6	U2		V12	45	V12	
V2	7	V2		W12	46	W12	
W2	8	W2		PE	47	PE	⏚
SH	9	SH		U012	48	U012	
PE	10	PE	⏚	V012	49	V012	
U3	11	U3		W012	50	W012	
V3	12	V3		PE	59	PE	⏚
W3	13	W3		U15	52	U15	
SH	14	SH		V15	53	V15	
PE	15	PE	⏚	W15	54	W15	
U4	16	U4		PE	55	PE	⏚
V4	17	V4		U16	56	U16	
W4	18	W4		V16	57	V16	
SH	19	SH		W16	58	W16	
PE	20	PE	⏚	PE	51	PE	⏚
U5	21	U5		U22	60	U22	
V5	22	V5		V22	61	V22	
W5	23	W5		W22	62	W22	
SH	24	SH		PE	63	PE	⏚
PE	25	PE	⏚	U23	64	U23	
U6	26	U6		V23	65	V23	
V6	27	V6		W23	66	W23	
W6	28	W6		PE	67	PE	⏚
SH	29	SH		U35	68	U35	
PE	30	PE	⏚	V35	69	V35	
U7	31	U7		W35	70	W35	
V7	32	V7		PE	67	PE	⏚
W7	33	W7					
SH	34	SH					
PE	35	PE	⏚				
U10	36	U10					
V10	37	V10					
W10	38	W10					
PE	39	PE	⏚				

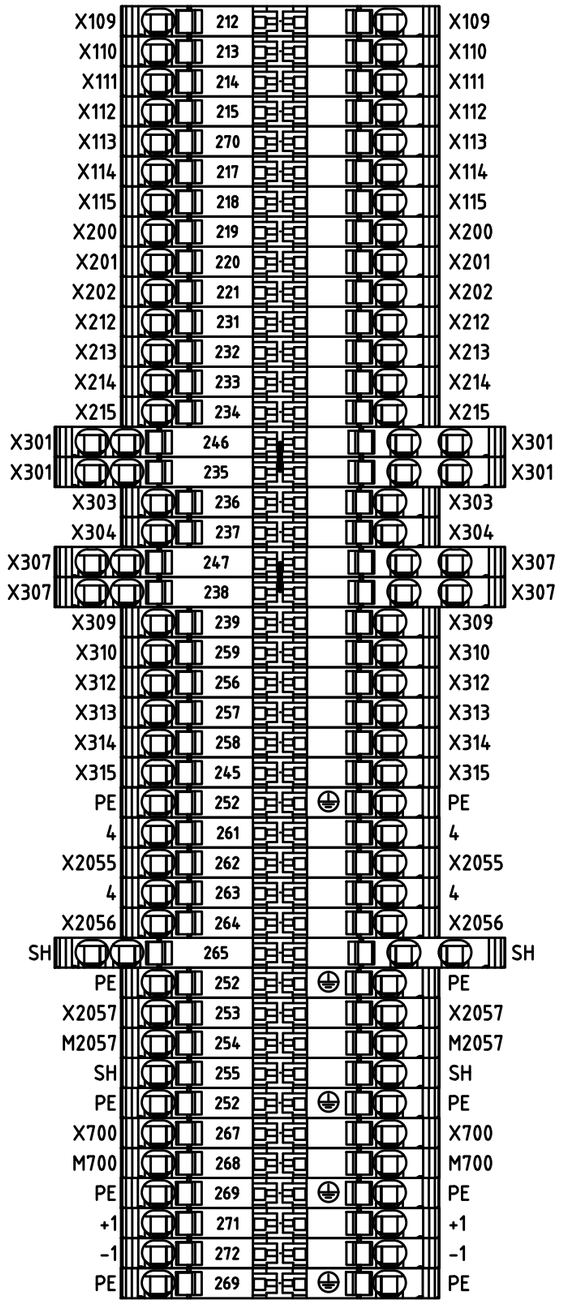
				DATA	23/05/2019	pola e massa		BRUSHING 4/25/FA	=
				DISEGN.	mkm				+
				VISTO				–	SE1-1378 FG. 54 F.S. 55
REV.	MODIFICA	DATA	FIRMA	APPR.		SOST. IL :	SOST. DA :	FILE : SE1–1378	

TB3
EMERGENZA



TB4
INPUT





REV.	MODIFICA	DATA	FIRMA	APPR.		SOST. IL :	SOST. DA :	FILE : SE1-1378
				VISTO				
				DISEGN.	mkm			
				DATA	23/05/2019			

pola e massa

BRUSHING 4/25/FA

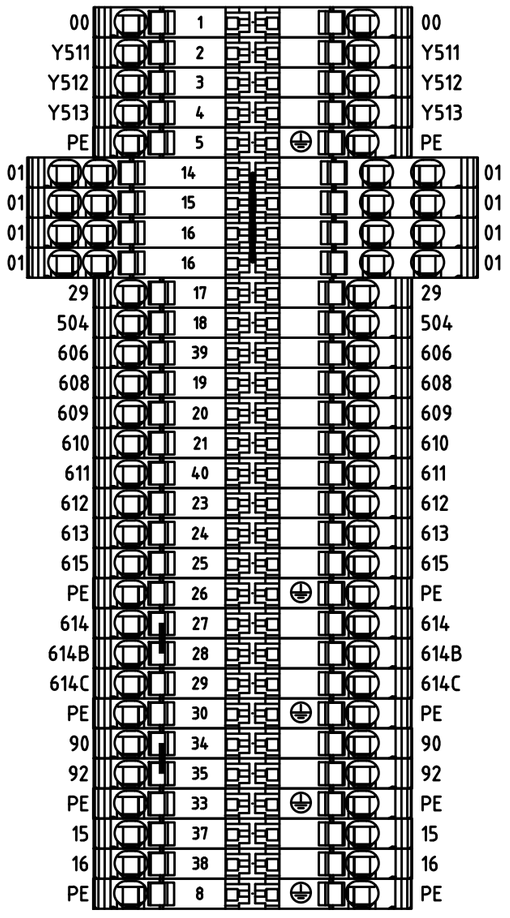
–

=
+

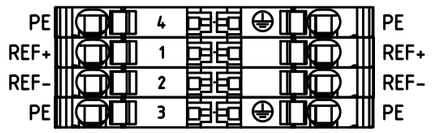
SE1-1378

FG. 55
F.S. 56

TB5
OUTPUT

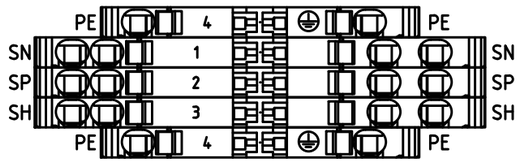


TB6
REF SPEED



MONTATA NELLA PIASTRA
FRONTALE DEL QUADRO

TB7
MODBUS



MONTATA NELLA PIASTRA
FRONTALE DEL QUADRO

REV.	MODIFICA	DATA	FIRMA	APPR.		SOST. IL :	SOST. DA :	FILE : SE1-1378
				VISTO				
				DISEGN.	mkm			
				DATA	23/05/2019			

pola e massa

BRUSHING 4/25/FA

–

SE1-1378

FG. 56
F.S. 57

57P0

FILTRO A CARTA
PAPER FILTER
PAPIERFILTER

U13	1	BLACK WIRE 2,5mmq L = 9m
V13	2	
W13	3	
U14	4	BLACK WIRE 1,5mmq L = 9m
V14	5	
W14	6	
01	7	RED WIRE 1mmq L = 9m
608	8	
612	9	
	10	
65	11	
66	12	
00	13	SHIELDED CABLE 10x0,5mmq L = 9m
4	14	
X303	15	
X310	16	
X311	17	
X312	18	
X313	19	
X314	20	
	21	
	22	
	23	
SH	24	
PE		

PE : GIALLO/VERDE 4mmq

PG21
L = 8m

OPTION ☒

57P5

CASSETTA FILTRO A CARTA
PAPER FILTER BOX

U14	1
V14	2
W14	3
	4
65	5
00	6
4	7
X303	8
X313	9
66	10
PE	PE

				DATA	23/05/2019	pola e massa		BRUSHING 4/25/FA		=	
				DISEGN.	mkm					+	
				VISTO				–		SE1-1378	FG. 57
REV.	MODIFICA	DATA	FIRMA	APPR.		SOST. IL :	SOST. DA :	FILE : SE1–1378			F.S. 58

58P0

FILTRO CENTRIFUGO "STA"
"STA" CENTRIFUGAL FILTER
"STA" ZENTRIFUGAL FILTER

R15	1	CORDINA NERA 4mmq
S15	2	
T15	3	
U13	4	CORDINA NERA 2,5mmq
V13	5	
W13	6	
	7	CORDINA ROSSA 1mmq
	8	
16	9	
15	10	
2	11	
01	12	
00	13	CAVO SCHERM. 2x1mmq
4	14	
SH	15	
	16	CAVO SCHERM. 10x0,5mmq
	17	
	18	
	19	
X114	20	
X303	21	
X308	22	
X311	23	
SH	24	
PE	PE	

PE : GIALLO/VERDE 4mmq

PG21

58P5

VASCA FILTRO CENTRIFUGO
CENTRIFUGAL FILTER TANK
ZENTRIFUGALFITER TANK

U32	1	CORDINA NERA 2,5mmq
V32	2	
W32	3	
U13	4	
V13	5	
W13	6	
	7	CORDINA ROSSA 1mmq
613	8	
612	9	
15	10	
2	11	
01	12	
00	13	CAVO SCHERM. 2x1mmq
4	14	
SH	15	
24V2	16	CORDINA BLU 1mmq
600	17	
601	18	
602	19	
X311	20	
	21	
	22	
S+	23	CAVO COMPENSATO 2x0,5mmq
S-	24	
PE	PE	

PE : GIALLO/VERDE 4mmq

PG21

ATTENZIONE!
FEMMINA VOLANTE
MOBILE FEMALE

OPTION

REV.	MODIFICA	DATA	FIRMA		
				DATA	23/05/2019
				DISEGN.	mkm
				VISTO	
				APPR.	

pola a massa

SOST. IL :

SOST. DA :

FILE : SE1-1378

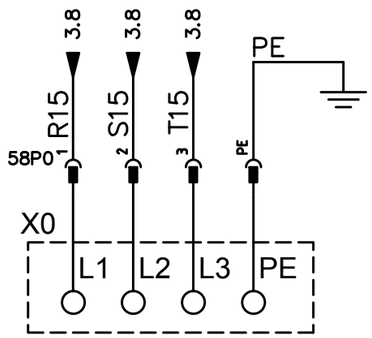
BRUSHING 4/25/FA

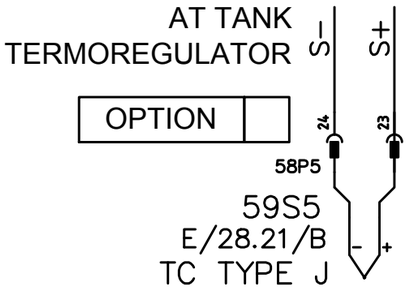
–

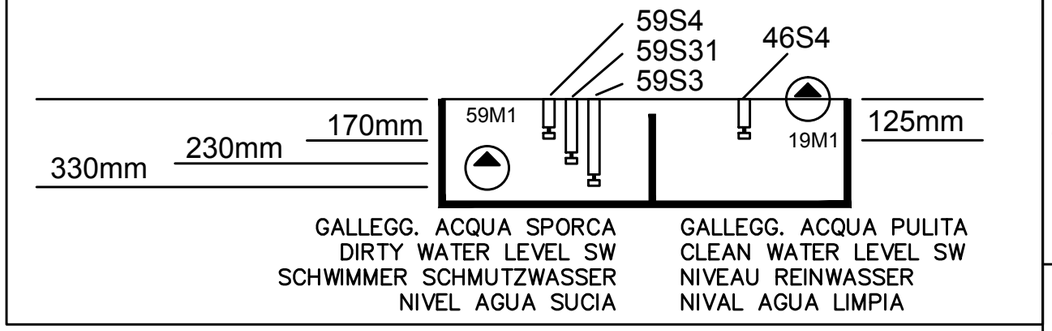
SE1-1378

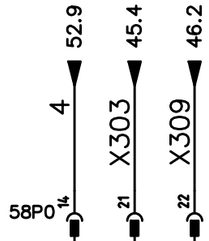
FG. 58
F.S. 59

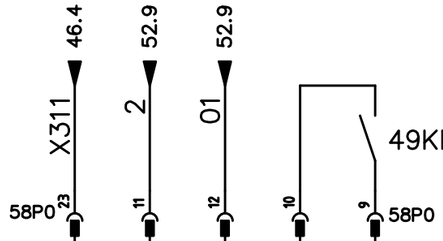
=
+

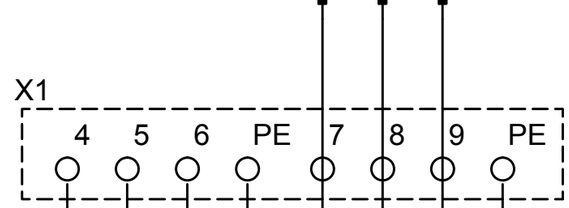


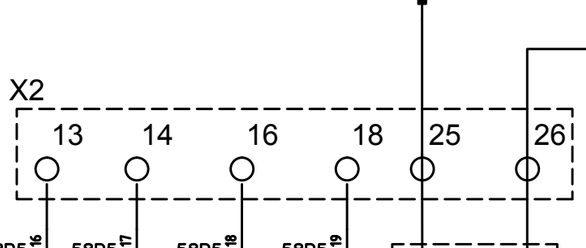


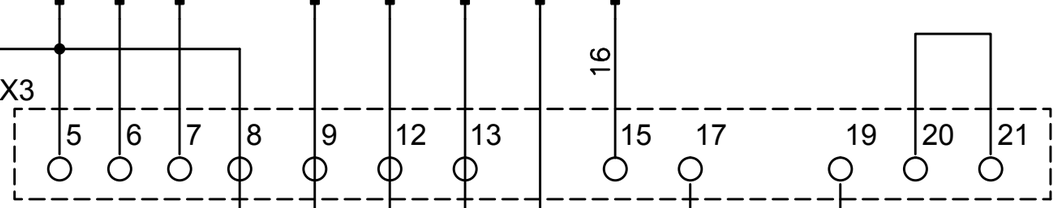


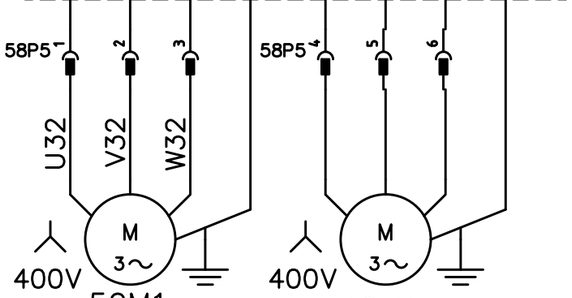


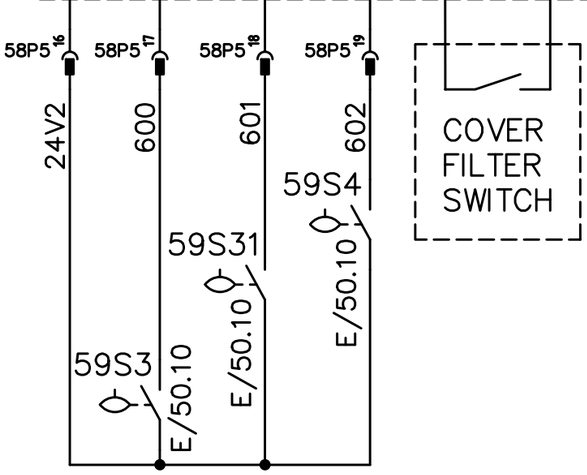


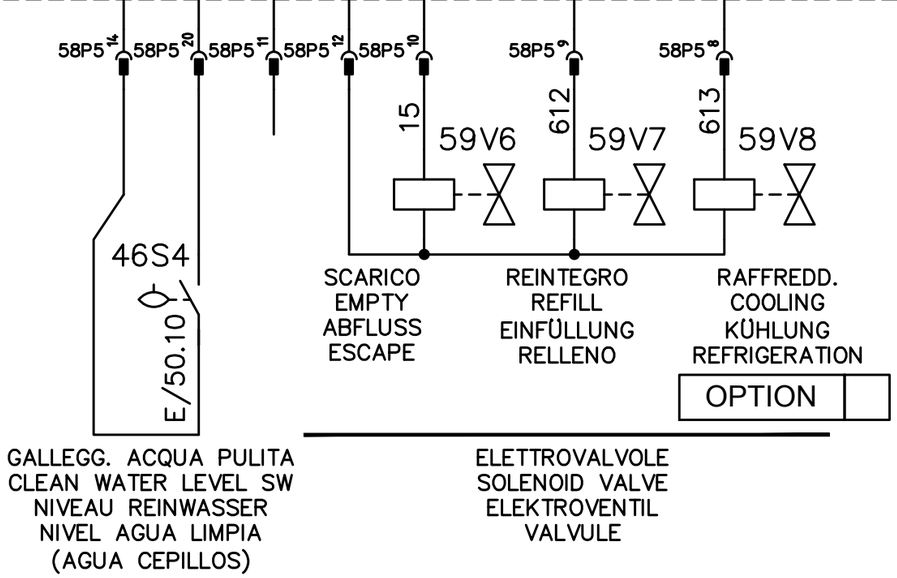












MORSETTI QUADRO FILTRO :
COLLEGAMENTI BRUSHING – FILTRO CENTRIFUGO "STA"
(VEDI SCHEMA DEL FILTRO PER DETTAGLI).
FILTER CABINET TERMINAL BLOCKS :
BRUSHING – "STA" CENTRIFUGAL FILTER WIRING
(SEE FILTER DIAGRAM FOR DETAIL)
BRUSHING – "STA"Zentrifugalfilters ANSCHLUSS
(SEHEN FILTER PLAN FÜR DETAIL)

OPTION

REV.	MODIFICA	DATA	FIRMA	APPR.	
				DATA	23/05/2019
				DISEGN.	mkm
				VISTO	

pola e massa

SOST. IL :

SOST. DA :

FILE : SE1-1378

BRUSHING 4/25/FA

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SE1-1378

FG. 59

F.S. 60

60P0

POMPE 100BAR
BOMBAS 100BAR

U30	1	SHIELDED CABLE 4x4mmq L = 7m
V30	2	
W30	3	
PE	4	
SH	5	
R03	6	BLACK WIRES 1,5mmq L = 6m
N03	7	
	8	
	9	
	10	
	11	
	12	
U31	13	SHIELDED CABLE 4x4mmq L = 7m
V31	14	
W31	15	
PE	16	
SH	17	
SH	18	SHIELDED CABLE 6x0,5mmq L = 6m
00	19	
4	20	
X113	21	
X307	22	
56	23	
58	24	
PE		

PE : GIALLO/VERDE 4mmq
L= 6m

PG29
L = 5m

REV.	MODIFICA	DATA	FIRMA	APPR.		SOST. IL :	SOST. DA :	FILE : SE1-1378
				VISTO				
				DISEGN.	mkm			
				DATA	23/05/2019			

pola e massa

BRUSHING 4/25/FA

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SE1-1378

FG. 60
F.S. 61

61P0

INGRESSO
ENTRY

00	1	SHIELDED CABLE 2x1mmq L = 7m
4	2	
SH	3	
X203	4	SHIELDED CABLE 10x0,5mmq L = 7m
X204	5	
X205	6	
X206	7	
X207	8	
X208	9	
X209	10	
X210	11	
X211	12	
00	13	SHIELDED CABLE 4x0,5mmq L = 7m
4	14	
X2058	15	
M2058	16	
SH	17	
X13	18	SHIELDED CABLE 4x0,5mmq L = 7m
X301	19	
	20	
X200	21	
	22	
SH	23	
SH	24	
PE		

PE : YELLOW/GREEN 2,5mmq L = 7m

PG21
L = 6m

61P5

INGRESSO
ENTRY

01	1	RED WIRE 1mmq L = 7m
2	2	
24	3	
504	4	
609	5	
610	6	
607	7	
	8	
	9	
	10	BLACK WIRE 2,5mmq L = 7m
	11	
	12	
59	13	BLUE WIRE 1mmq L = 7m
	14	
	15	
	16	
U32	17	
V32	18	
W32	19	
PE	20	
SH	21	
614	22	ORANGE WIRE 1mmq L = 7m
614B	23	
614C	24	
PE		

PE : YELLOW/GREEN 2,5mmq L = 7m

PG21
L = 6m

REV.	MODIFICA	DATA	FIRMA	APPR.	
				DATA	23/05/2019
				DISEGN.	mkm
				VISTO	

pola e massa

SOST. IL :

SOST. DA :

FILE : SE1-1378

BRUSHING 4/25/FA

–

SE1-1378

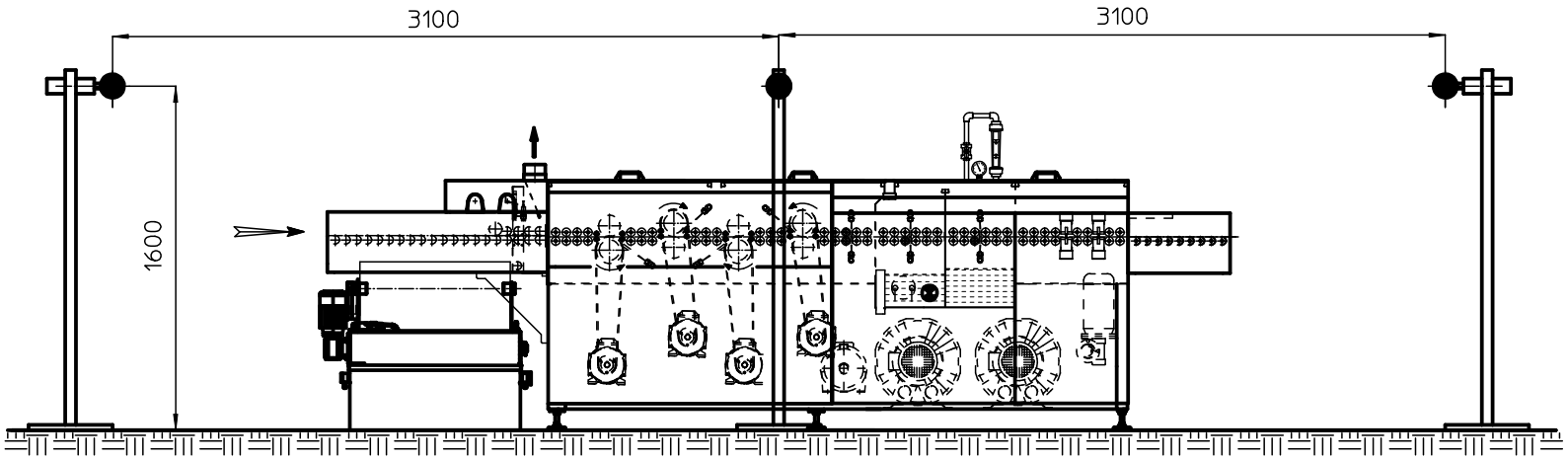
FG. 61
F.S. 62

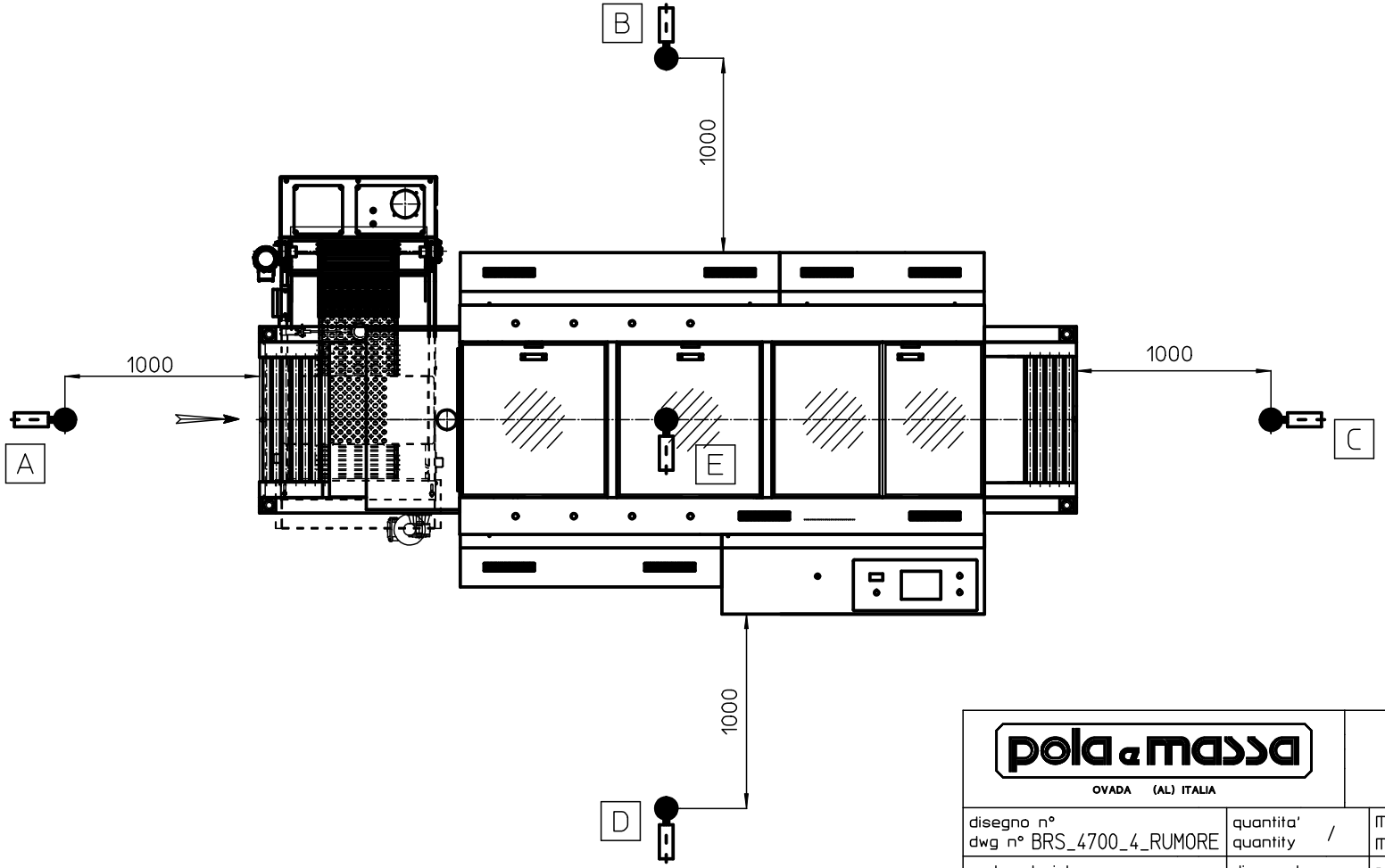
				DATA	23/05/2019	pola e massa		BRUSHING 4/25/FA	=
				DISEGN.	mkm				+
				VISTO				–	SE1-1378 FG. 62 F.S. /
REV.	MODIFICA	DATA	FIRMA	APPR.		SOST. IL :	SOST. DA :	FILE : SE1–1378	

SCHEDA DATI TECNICI / TECHNICAL DATA SHEET / TABLE DES DONNÉES TECHNIQUES

Tipo / Type / Type.	**BRS 4/25/FA-120**
Numero di serie / Serial no. / Numéro de série.	**307L65.414**
Larghezza piano di lavoro / Working width / Largeur du plan de travail.	**0,640 m**
Altezza piano di lavoro / Working height / Hauteur du plan de travail.	**0,900 m**
Tensione nominale / Voltage rating / Tension nominale.	**400 Vac**
Numero fasi / No. phases / Nombre de phases.	**3**
Frequenza / Frequency / Fréquence.	**50 Hz**
Corrente a pieno carico / Maximum current / Courant maximum.	**75 A**
Tensione ausiliaria / Auxiliary voltage / Tension auxiliaire.	**24 Vac**
Schema elettrico / Eletrical schematic / Schéma électrique.	**SE1-1378**
Pressione pneumatica di funzionamento / Working pneumatic pressure / Pression nominale pneumatique.	**500 Kpa** **PSI**
Consumo aria compressa / Compressed air consumption / Consommation en air comprime.	**200 nl/1**
Schema pneumatico / Pneumatic diagram / Schéma pneumatique.	**BRS_4700_SP_4**
Pressione idrica massima di alimentazione / Maximum hydraulic feeding pressure / Pression maximum du reseau d'alimentation en eau.	**300 Kpa**

Pressione idrica massima presente / Maximum hydraulic pressure in the machine / Pression maximum de l'eau en circulation.	10000 Kpa
Consumo idrico / Water consumption / Consommation en eau.	OPEN CIRCUIT l/1'
Schema idrico / Hydraulic diagram / Schéma hydraulique.	BRS_4700_SI_4
Temperatura aria massima presente / Maximum air temperature in the machine / Temperature maximum de l'air circulant.	60 °C °F
Umidità relativa (senza condensa) / Relative humidity (without condensate) / Humidité relative (sans condensat).	10 - 90 %
Rumorosità massima / Maximum noise / Niveau sonore maximum.	79 dB
Velocità massima rulliera / Maximum conveyor speed / Vitesse maximum du convoyeur.(UNI EN ISO 3746)	3 m/1'
Massa macchina / Mass / Poids de la machine.	2620 daN





REF: EN ISO 3746

RIF.	VALORI DICHIARATI DECLARED RESULTS
A	77
B	79
C	80
D	78
E	80
Average results: 79 db	

pola e massa
OVADA (AL) ITALIA

UNIBLOC SCRUBBING
4/25/FA special 120 mm
- ACOUSTIC TEST -

disegno n° dwg n° BRS_4700_4_RUMORE	quantita' quantity /	materiale material /		
cod. materiale material ref. /	dis. scala scale dwg 1:25	peso grezzo gross weight /	trattamento treatment /	data date 17/09/19