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BELT EDGE POLISHERS

FOR NATURAL STONE

TYPE: ***OMEGA 60 PENCIL***

SERIAL NUM.:

USE AND MAINTENANCE MANUAL

CUSTOMER : ***.....***

Translation of original instructions

© ***Comandulli*** *Costruzioni Meccaniche S.r.L.*		*Ed. 2019.01 Genr.*

INSPECTION CERTIFICATE

MODEL OMEGA PENCIL

SERIAL NO.

ELECTRIC MOTORS				
CALIBRATION GRINDING WHEEL QM	5.9	kW	3445	min^{-1}
RECTIFICATOR WHEEL	4	kW	3425	min^{-1}
BEVELLING UNIT (ROUGHING) N ° 2	2.55	kW	3410	min^{-1}
PUMP FOR GRINDING WHEEL ROTATION	25.3	kW	1765	min^{-1}
PUMP FOR GRINDING WHEEL OSCILLATION	13.2	kW	1745	min^{-1}
PUMP FOR ACCUMULATOR	0.63	kW	1680	min^{-1}
BEVELLING WHEELS n°4	1.3	kW	1100	min^{-1}
CONVEYOR BELT MOVEMENT	1.5	kW	1740	min^{-1}
SWIVEL UNIT MOVEMENT	0.43	kW	1103	min^{-1}
DIAMOND BEVELS DISPLACEMENT N ° 2	0.14	kW	1620	min^{-1}
VERTICAL SPINDLE	1,3	kW	1100	min^{-1}
CALIBRATOR VERTICAL DISPLACEMENT	0,44	kW	1670	min^{-1}
EDGE POLISHING GROUP N°5	1,3	kW	1100	min^{-1}
EDGE POLISHING DISPLACEMENT (FLOATING)	0,90	kW	1680	min^{-1}

PNEUMATIC EQUIPMENT	METALWORK
HYDRAULIC EQUIPMENT	ATOS / CASAPPA
ELECTRONIC EQUIPMENT	OMRON
ELECTRICAL EQUIPMENT	SIEMENS

VOLTAGE	480	Volt	FREQUENCY	60	Hz
RATED POWER	68	KW	WEIGHT	8000	Kg

TESTED _____ SIGNATURE _____

CUSTOMER _____

DATE OF DELIVERY _____

Il presente documento è proprietà di ***Comandulli S.r.l.*** *ogni riproduzione anche parziale è vietata.*

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AZIENDA CERTIFICATA - ISO 9001:2008

1 GENERAL INFORMATION AND DESCRIPTION OF THE MACHINE

1.1 Some notes on the User Manual

The supplied USER MANUAL is not an accessory of the machine, but it is an integral part of the machine and is a SAFETY REQUIREMENT.

For this reason, it must be kept in good condition, in the vicinity of the machine and given to any operator, user or subsequent owner, so that they can always make use of all the information necessary for which was drafted and also that it be a support to using the plant in the utmost SAFETY.

Any update must be inserted in the Manual as indicated by ***COMANDULLI S.r.L.*** *.*
The Manual must not be damaged, must remain intact (without tearing any sheets) and must be sheltered against humidity and heat.
While consulting the manual, do not get it greasy or ruin its legibility.

To make consultation easier, the Manual is divided into chapters, so as to facilitate the use by type of operator and to well formulate each phase.
Each topic is further divided into numbered points, at times recalled on drawings.
The parts requiring greater attention are highlighted with conventional symbols on the left side of the page.

With this precaution, ***COMANDULLI S.r.l.*** *intends on calling the reader's attention to CAUTIONS, WARNINGS AND DANGERS which regard him.*

We wish to emphasise that some of the figures present in the Manual have been inserted to help identify the described parts. They may not be completely similar to the machine you have purchased for obvious generalisation reasons.

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1.2 Addressees of the Manual

Addressees of this Manual and, more in general, of all the technical documentation supplied with the Machine are:

- *the machine operators;*
- *maintenance technicians;*
- *employees managing the plant (namely organisation of production, scheduling maintenance, supplying spare parts, etc.);*
- *personnel involved in initial assembly and final dismantling operations of the Machine;*
- *the owner;*
- *the Technical Manager;*
- *the Safety Technician (Safety Manager).*

1.3 Purpose of the Manual

The purpose of this document is to favour the safe, effective and efficient use of the Machine.

In particular, it is intended to provide addressees with an instrument useful to:

- *identify the machine*
- *be aware of the safety devices set up on the machine, of conduct to observe to keep it in safe conditions, of any Residual Risks, of standards of reference, etc.*
- *be instructed regarding the different main parts the Machine is made of, both regarding the terminology of reference and the different functions carried out*
- *correctly handle and transport of the machine, both during initial installation and final dismantling (Chapter 6);*
- *set up a suitable maintenance schedule.*

The Manual is divided into 14 Chapters, in turn divided into Paragraphs and Subparagraphs.
Chapters, Paragraphs and Subparagraphs are indicated with progressive numbers.

1.4 Use limits of the Manual.

The Manual does not substitute the remaining technical documentation; it is added to it, integrating it and linking it to the context of the machine.

Reading the Manual does not relieve the owner from obligation of general training and coordination of personnel regarding safety.

It is assumed that the addressees of this manual have sufficient professional capabilities and training to correctly interpret the instructions, indications and illustrations herein.

Given the complexity and delicate nature of the machine, the training this Manual provides cannot overlook an appropriate professionalism and experience which are obtained gradually on the field.

As reading this entire Use and Maintenance Manual may not be sufficient to know, run and manage the Machine, it must be considered, unless proven otherwise, as a necessary condition for all the indicated addressees so that each one may acquire the minimum training necessary to operate the machine according to one's task, in a proper manner and especially in safe conditions.

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1.5 Warranty conditions

For detailed information on the warranty conditions, refer to that indicated in the sales contract.
The warranty becomes null and void automatically in the event:

- *modifications are made to the machine without prior consent or consumables or spare parts are replaced with parts not supplied by* ***COMANDULLI S.r.L*** *(in particular during the warranty period).*

COMANDULLI S.r.l. *declines any liability for accidents, damage, and injury which should occur to persons and / or objects.*

1.6 General provisions

The user must inform personnel in charge of operating the Machine on the following topics relative to the safety requirements:

- *risks of injury;*
- *devices designed for the safety of the operator (PPE);*
- *general accident-prevention rules or those foreseen by international Directives and by the legislation in force in the country of destination of the machine.*

The operator, the personnel in charge of maintenance, cleaning, etc., must strictly comply with the accident-prevention standards in the country of destination of the machine.

ATTENTION
The operator, before starting work, must know the operation, and the features of the machine and must have fully read this Manual.
The instructions, warnings and general safety rules contained in this manual and in its annexes must be fully complied with.

1.7 Reproduction limits and Copyright

All rights are reserved to ***COMANDULLI S.r.L*** *.*
The structure and contents of this Manual cannot be reproduced, not even partially, without the express authorisation of ***COMANDULLI S.r.L*** *.*
They may not be stored on any support (magnetic, magneto-optical, optical, microfilm, photocopies, etc.) or transferred to third parties.

1.8 Characteristics of operators and language used

To understand the instructions (text and illustrations), operators must have (or else must acquire, through proper formation and training) at least the following characteristics:

- *general and technical culture at a sufficient level to read and understand the contents of the Manual in the parts which concern them, and to correctly interpret drawings and diagrams;*
- *capability of understanding and interpreting symbols and pictograms;*
- *knowledge of the main hygienic, accident-prevention and technological standards;*
- *overall knowledge of the machine;*
- *know how to behave in case of an emergency, where to find personal protection equipment and how to use it correctly.*

ATTENTION:
The maintenance technicians, in addition to the aforementioned characteristics, must also have good technical training and have the specific and specialist technical knowledge (mechanical, electrical, pneumatic) necessary for the tasks intended in this Manual.

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1.9 Keeping the Manual

Keep this Manual in a place that is easily accessible, near the machine and known to all the users (operators and maintenance personnel).
The operators and maintenance technicians must be able to quickly locate and consult, in any situation, the Manual and its attachments.

WARNING
The manual is an integral part of the Machine.

Therefore:

- *it must be kept intact (in all its parts), without changing any pages such as corrections, cancellations, abrasions or or anything else does not allow a clear reading;*
- *it must accompany the machine until its demolition (also in case of movements, sale, rental, lease, etc.);*
- *it must be kept updated and include any changes made;*
- *it must be kept available to anyone who needs to operate on the Machine;*
- *it must be updated ensuing construction modifications carried out in agreement with* ***COMANDULLI S.r.L*** *.*

1.10 Updating the Manual

The Use and Maintenance Manual reflects the state of technology at the time Machine was put on the market.
The manufacturer reserves the right to make changes to the machine and, consequentially, to the relative Manuals, without the obligation of updating the previous editions.
The user can, however, request information and updates which, when issued, become an integral part of the Use and Maintenance Manual.
If the machine is sold to another owner, the user is asked to hand over the manual as well and, in any case, to inform ***COMANDULLI S.r.L.*** *of the new owner, in order to be given subsequent integrations.*

1.11 Set-ups borne by Customer(according to that foreseen by contract)

The Customer (user) shall prepare, at his own charge, the installation site and the auxiliary plant accessories necessary to operate the machine, as listed below:

- *setting up premises;*
- *suitable lifting equipment for the handling of the machine;*
- *any safety devices upstream and downstream of the energy power supply lines (foreseen by legislation in force);*
- *pre-arrangement of auxiliary services adequate for the requirements of the Machine;*
- *tools and consumables required for mounting and installation.*

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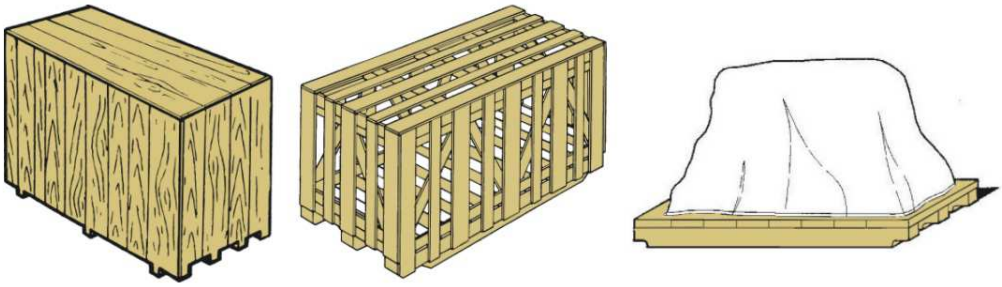
1.12 General notes upon delivery

The Machine and its parts and / or accessories can be shipped in a container or packed in crates (abroad).
Check that:

- *the packaging is intact;*
- *There is no damage to the machine or to the accessories*
- *the supply corresponds to the specifications of the order (see packing-list).*

In the event of damage or missing parts, immediately inform ***COMANDULLI S.r.l.*** *, the carrier and/or their insurance in full detail and/or with photos.*



1.13 Machine identification and number of the Manual

- *The serial number and the code of the model of the machine are shown on the identification plate.*
- *The number of this Manual is indicated on the cover and on the title page of the manual.*
- *Write the serial number, the code of the Machine model and the manual number in a safe place, so you can request a copy in the event they get lost.*

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1.14 Description of the Machine

Automatic machine for the processing the edges of slabs in stone material (marble, granite, rock).
The machining consists in the shaping and / or polishing the edges of the slabs.

The machine is essentially made up of an electro-welded structure with a conveyor belt placed horizontally.
The slabs to be processed, dragged by the belt, are subjected to the shaping and / or polishing of the edge by a series of tools distributed in sequence along the path of the piece.
These tools, normally diamond or abrasive grinding wheels, are driven by spindles installed on one side of the conveyor belt.
The conveyor belt is driven by a motorised drum and sent back on the idler drum. The belt rests, guided on a surface of idler rollers between the two drums.

The piece to be machined, dragged by the belt to the front of the spindles, is connected to the belt by a series of idler wheels pushed onto the piece by pneumatic clamps.
To be processed properly, the piece in transit must proceed in its path perfectly aligned to a hypothetical work surface parallel to the direction of travel of the belt.
This is achieved by placing a series of idler rollers along the route of the belt, perpendicular to the belt and spaced between the various spindles.
The tangent line of the above mentioned rollers represents the work surface of the spindles, corresponding to the edge of the slabs to be processed.
To make sure that the piece in transit always adheres to the alignment roller, the presser wheels are installed slightly tilted with respect to the transit line, in order to ensure a continuous side push facing the alignment rollers.

The equipment supplied allows it to carry out all the finishing operations on the marble and granite items used essentially in the construction and furnishing industry.
It can execute on steps, window sills, plinths, kitchen tables and other works with a thickness ranging from 10 to 60 mm: calibration, straight edges, toroidal edges, bevels, drip trays, milling of edges with shaped wheel.

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2 SAFETY PRESCRIPTIONS

2.1 Conventional symbols and definitions

The Use and Maintenance Manual makes use of some symbols, which are listed below together with their meaning.

GENERIC HAZARD

Informs concerned personnel that the described operation, if not carried out in compliance with safety standards, could be a source of possible injury or harm to persons.

ELECTROCUTION HAZARD

Informs concerned personnel that the described operation, if not carried out in compliance with safety standards, could be a source of possible injury or harm to persons resulting from an electrical shock.

NOTE

Provides assigned staff with information whose content is of significant consideration or importance and, if not respected, could cause damage to the machine.

WARNING

Provides assigned staff with information which, if not respected, could cause minor personal injuries.

ADVICE

It refers to a work mode experimented in the factory, knowing well that every operator will develop his own way of operating.

MACHINE OPERATOR

Staff with specific skills for the operation of the machine in normal conditions.
It is forbidden for the operator to perform operations that are the responsibility of the maintenance technician.

MECHANICAL MAINTENANCE TECHNICIAN

Qualified technician able to operate the Machine in normal conditions, to intervene on mechanical parts to perform all necessary adjustments, maintenance and repairs necessary.
He is not qualified to intervene on electrical systems in the presence of voltage.

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ELECTRICAL MAINTENANCE TECHNICIAN OR TRAINED PERSON

(See EN 60204-1 / 2006 paragraph 3.53)
Qualified technician able to operate the Machine in normal conditions, in charge of all interventions of an electrical nature for adjustment, maintenance and repair.
He is able to operate in the presence of voltage inside the electric board and boxes.
He is not qualified to intervene on the mechanical components of the Machine.

COMANDULLI S.r.l. MAINTENANCE TECHNICIAN (Extraordinary maintenance)

The Technician is authorised to perform extraordinary modifications on the machine and to replace components and instruments with features different than the ones replaced. The modifications shall be documented and a copy issued to the Customer.

DEPARTMENT MANAGER OR SAFETY MANAGER

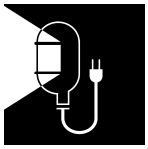
See Legislative Decree n ° 81/2008 of 9.04.2008.
National and European standards on the occupational health and safety

OBLIGATION OF READING THE MANUAL

Obligation of reading the Safety Requirements and in particular the whole Instruction Manual.

EXTRAORDINARY INTERVENTIONS

Any maintenance interventions highlighted by the symbol at the side are to be requested to ***COMANDULLI S.r.l.***



PORTABLE LAMPS

For cleaning, lubrication, maintenance operations, in dark places, it is good practice to use the portable lamps (at least 100 Lux). .
In any case, even in the presence of poor lighting.
DO NOT USE NAKED FLAMES .

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Personal protective equipment (PPE)

The presence of a symbol among those indicated below on the Machine or on the Manual mandatorily requires the use of personal protection equipment by the operator, as there is an implicit risk of injury.

	MANDATORY TO WEAR WORK GLOVES SUITABLE FOR THE ACTIVITY CARRIED OUT	• *HANDLING* • *FINE-TUNING* • *CLEANING* • *LUBRICATION* • *MAINTENANCE*
	MANDATORY TO WEAR WORK SHOES	• *OPERATORS* • *MAINTENANCE TECHNICIANS*
	MANDATORY TO WEAR A WORKSUIT TIGHT AROUND WRISTS AND / OR WITHOUT FLUTTERING PARTS	• *OPERATORS* • *MAINTENANCE TECHNICIANS*
	MANDATORY TO WEAR PROTECTIVE HELMET	• *OPERATORS* • *MAINTENANCE TECHNICIANS*
	MANDATORY TO WEAR NOISE PROOF EAR MUFFS	• *OPERATORS* • *MAINTENANCE TECHNICIANS*
	MANDATORY TO WEAR PROTECTIVE FACEMASK	• *OPERATORS* • *MAINTENANCE TECHNICIANS*

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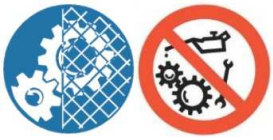
2.3 Residual risks, prohibition and obligation warning plates

When the machine is running, it is fully segregated and safe for the operator.
During FINE TUNING, CLEANING, LUBRICATION and MAINTENANCE, dangerous situations can arise, in that one is in the danger zones.
Therefore, ***COMANDULLI S.r.l.*** *has applied danger, prohibition and requirement signs near the concerned areas, repeated throughout this Manual.*
THESE SIGNS OR INDICATIONS MUST BE RESPECTED, FOLLOWED AND, IN CASE OF DETERIORATION OR ANY FORM OF ILLEGIBILITY, THEY MUST BE REPLACED IMMEDIATELY.
ONLY QUALIFIED TECHNICIANS CAN PERFORM THESE OPERATIONS.
THE FOLLOWING TABLE INDICATES THE TYPE OF SIGN, ASIDE FROM GENERIC AND ELECTRIC SHOCK DANGERS , ITS MEANING AND WHERE IT IS LOCATED.

POS.	PICTOGRAM	MEANING
A		*CRUSHING HAZARD*
		DUST INHALATION HAZARD
		MANDATORY TO WEAR PROTECTIVE GLOVES
		MANDATORY TO WEAR PROTECTIVE MASK
		*MANDATORY TO RESTORE PROTECTIONS* *DO NOT PERFORM MAINTENANCE WITH PARTS IN MOTION*

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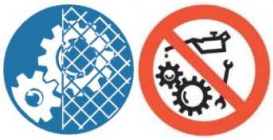
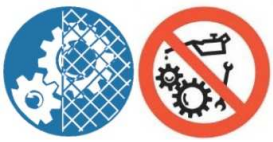
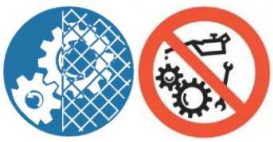
POS.	PICTOGRAM	MEANING
B		*MANDATORY TO READ THE MANUAL* *DO NOT TOUCH LIVE PARTS* *ELECTRIC SHOCK HAZARD* *DO NOT USE WATER TO PUT OUT FIRES ON ELECTRIC PARTS*
	400 V	*VOLTAGE 400 V*
	230 V	*VOLTAGE 230 V*
	24 V	*VOLTAGE 24 V*
C		*CRUSHING HAZARD*
		*MANDATORY TO RESTORE PROTECTIONS* *DO NOT PERFORM MAINTENANCE WITH PARTS IN MOTION*
D		*CRUSHING HAZARD*
		*MANDATORY TO RESTORE PROTECTIONS* *DO NOT PERFORM MAINTENANCE WITH PARTS IN MOTION*
E		*CRUSHING HAZARD*
		*MANDATORY TO RESTORE PROTECTIONS* *DO NOT PERFORM MAINTENANCE WITH PARTS IN MOTION*

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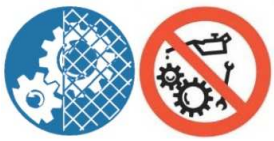
POS.	PICTOGRAM	MEANING
F		*DANGER OF SIDE BLOWS*
		CRUSHING HAZARD
		ACCESS FORBIDDEN TO UNAUTHORISED PERSONNEL
		*MANDATORY TO RESTORE PROTECTIONS* *DO NOT PERFORM MAINTENANCE WITH PARTS IN MOTION*
		OBLIGATION OF READING THE MANUAL
		MANDATORY TO WEAR PROTECTIVE HELMET
		ENTRAPMENT HAZARD

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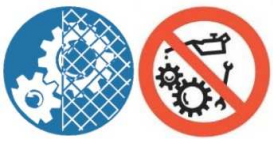
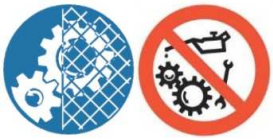
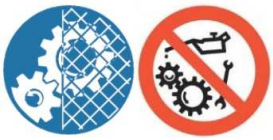
POS.	PICTOGRAM	MEANING
G		*CRUSHING HAZARD*
		*MANDATORY TO RESTORE PROTECTIONS* *DO NOT PERFORM MAINTENANCE WITH PARTS IN MOTION*
H		*CRUSHING HAZARD*
		*MANDATORY TO RESTORE PROTECTIONS* *DO NOT PERFORM MAINTENANCE WITH PARTS IN MOTION*
I		*HIGH PRESSURE FLUID EJECTION HAZARD*
		SLIPPING HAZARD
L		*CRUSHING HAZARD*
		*MANDATORY TO RESTORE PROTECTIONS* *DO NOT PERFORM MAINTENANCE WITH PARTS IN MOTION*

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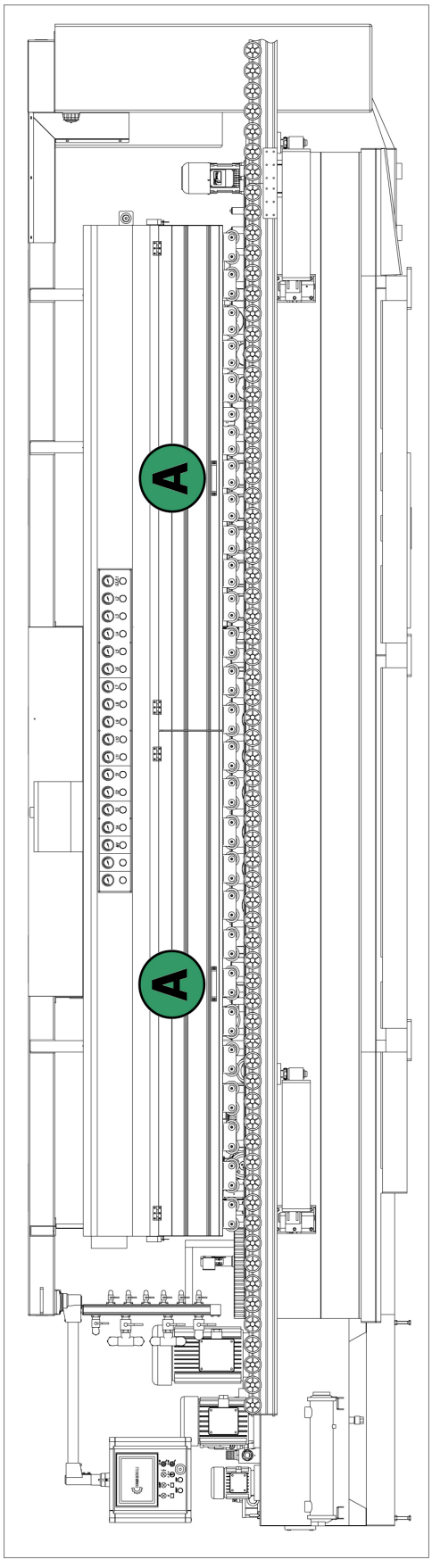

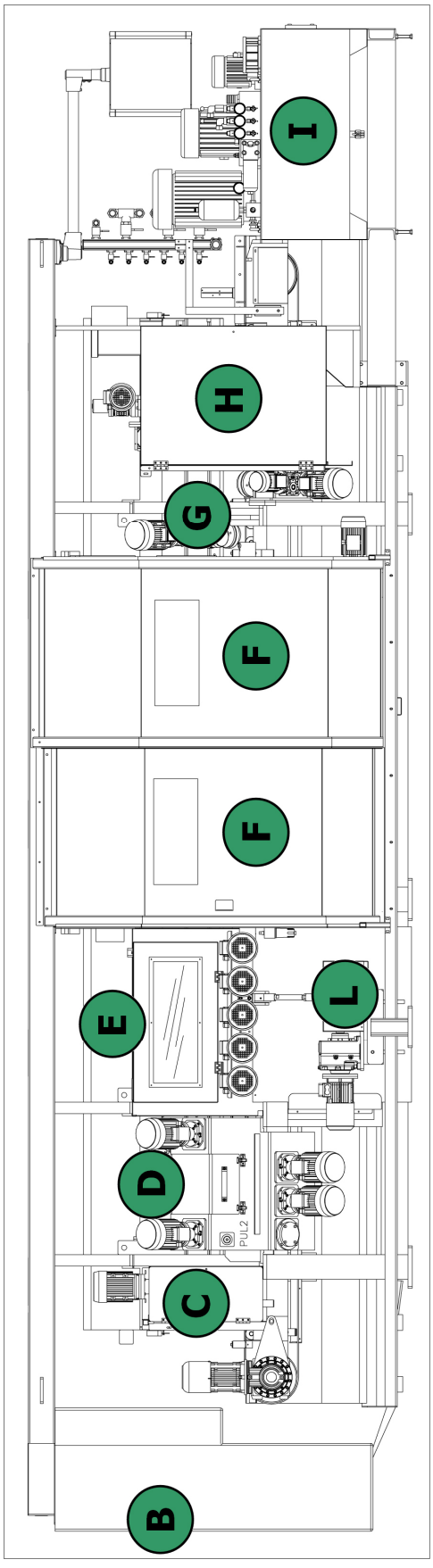

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2.4 General safety requirements

Below is a series of Safety Requirements valid for the Machine.

If envisaged by the contract, the Machine can be equipped, with an internal lighting system in the areas intended for inspections or maintenance.

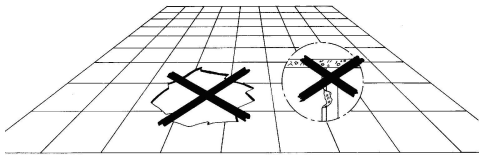
For cleaning, lubrications and maintenance in dark places, it is recommended to use portable lamps.

DEFINITION OF DANGER ZONE:
Any zone within and/or around machinery in which a person is subject to a risk to his health or safety (as described in Directive 2006/42/EC ann. I par. 1.1.1).

DEFINITION OF DANGEROUS SITUATION *:*
Any situation in which a person is exposed to at least one hazard (as described in Standard ISO 12100).

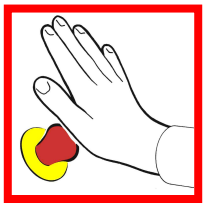
The Machine can be installed in closed rooms and equipped with all the systems foreseen by legislation in force in the country of installation, or outdoors.

Before installation of the Machine complete in all its parts, the Customer must ensure that the floor where the machine will be installed is sufficiently level, that it can bear the weight (Kg. 8000) and that technological set-ups are available (see Technical Manual).



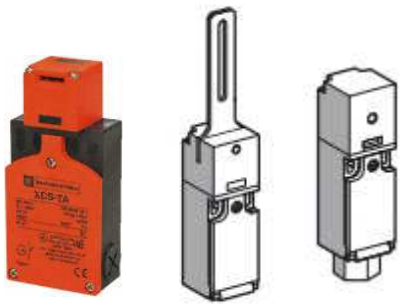
Carefully read the whole part of the Safety Requirements in this Instruction Manual, especially the indications relating to:

- *warning, prohibition and obligation plates;*
- *Machine operator;*
- *mechanic maintenance technician;*
- *electrical maintenance technician or trained person;*
- *function of the* ***EMERGENCY BUTTONS*** *: remember that :*
  it must be pressed for any emergency;



it must NOT *be used as a Machine stop button*

- *function of the* ***SAFETY MICRO-SWITCHES*** *;*
- *fine tuning;*
- *maintenance*



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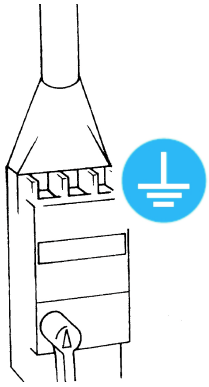
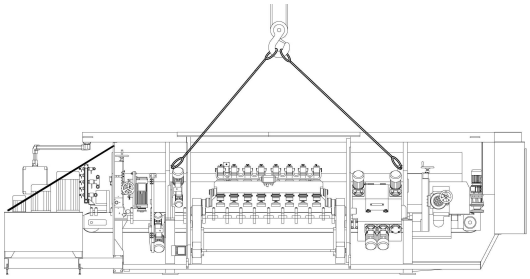
AZIENDA CERTIFICATA - ISO 9001:2008

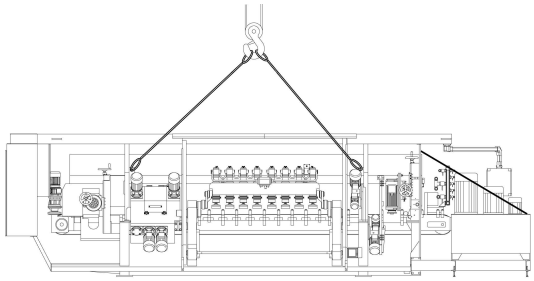
The personnel in charge of transportation, positioning, fine tuning for production, maintenance and cleaning must ***always*** *wear working gloves, accident-prevention shoes and a protective helmet.*



It is mandatory for the Customer *to verify that the mains electrical system where the machine is installed is provided with good earthing, enough for power consumption. If not, adjust the system.*

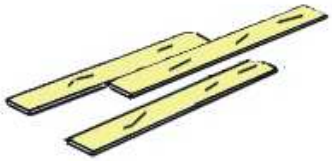
For operations regarding handling of the unpacked Machine, refer to chapter 4 "LIFTING, TRANSPORT AND INSTALLATION" of this manual.
In any case, do not lift the machine by the protruding parts. Use only the lifting devices provided in Chapter 4 of this Manual.





Before lifting the machine, make sure that the two ropes in tension of the control unit are in position and are well taut.

Remember, during handling, to protect the painted and machined parts with cardboard, pieces of wood, or cloths.



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The installation, assembly, fine tuning and extraordinary maintenance of the Machine must be carried out only by technicians from Comandulli S.r.l. (if available) or by trained Technicians of the Customer.
In any case, under their guidance and responsibility, as they know the procedures and equipment.

During the following phases:

- *Transport*
- *Positioning*
- *Installation*
- *Assembly of the guards*
- *Fine-tuning for production*
- *Maintenance, lubrication and cleaning of system*
- *Format Change*

pay the utmost attention to protruding parts:

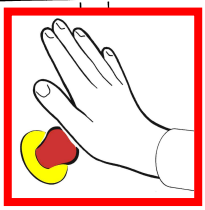
THERE IS THE RISK OF BLOWS TO THE HEAD OR WITH THE UPPER LIMBS
WEAR THE HELMET .

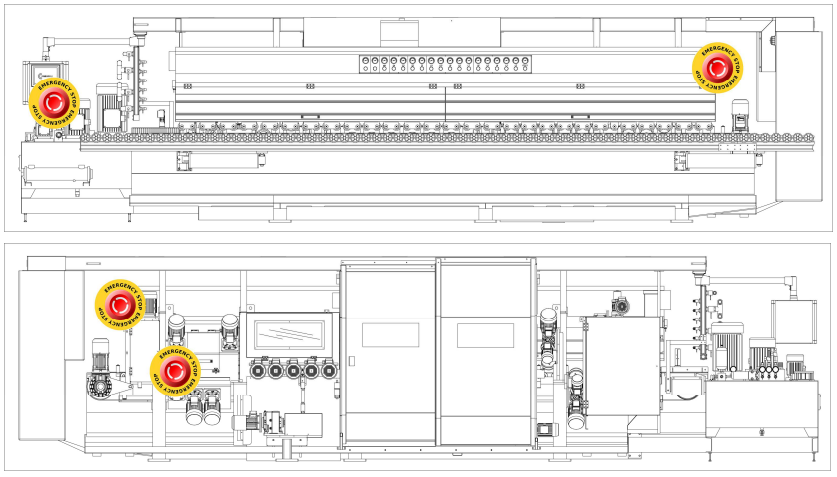
*For operations of maintenance, cleaning, lubrication, bring the system to the **ZERO ENERGY STATUS** (except where indicated otherwise), close off the area and indicate work in progress by placing a sign on the mains switch and on the protections.*

For any problem which arises during fine-tuning or the production cycle, press the EMERGENCY STOP button (2).

Remember that pressing the
EMERGENCY STOP button

immediately stops the Machine;
power is interrupted to the control circuits and to the auxiliary circuits.





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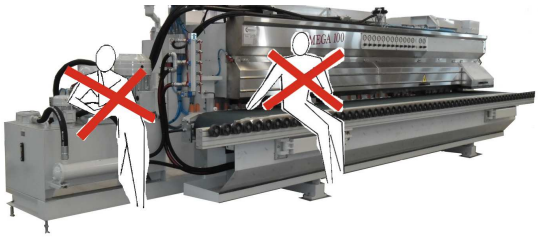
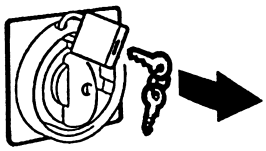
Never lean or sit on any part of the machine, either with parts in movement or stopped.



ATTENTION
ENTRAPMENT HAZARD

- ***NEVER go inside of the rear protective devices without having put the machine in maintenance status (ZERO ENERGY STATUS).***
- ***Bring the main switch (QF1) on the electrical cabinet to OFF.***
- ***Secure the master switch with a padlock and remove the key.***



The key must be kept by the maintenance technician or by the Safety Manager.

Never close the guards while performing a procedure inside the
Machine itself.

ATTENTION
DANGER

Before starting the Machine, the operator must always make sure that no one is found inside the protections (front or rear, if present).

Place a sign "MAINTENANCE IN PROGRESS" outside of the protections

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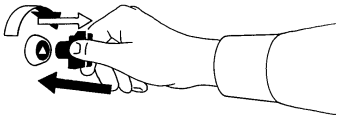
ATTENTION
ELECTROCUTION HAZARD
The inside of the electrical panel remains live.
Pay the utmost attention.

Do not deposit or place containers with liquid near electric parts (for example, electric panel, PLC, etc.).

The keys of the doors and access panels to the internal areas of the machine and the keys of the electrical cabinet must ***always and only be held by the Safety Manager or Maintenance Technician*** *of the Customer.*



The command keys of the control panel must never be left unattended.
They must ***always and only be held by the operator****.*

The work environment must be free of vapours or dust in such quantities as to pose danger for the exposed persons.
Provide adequate ventilation or extraction system.

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During the production cycle, the correct position in which the operator must stand is:

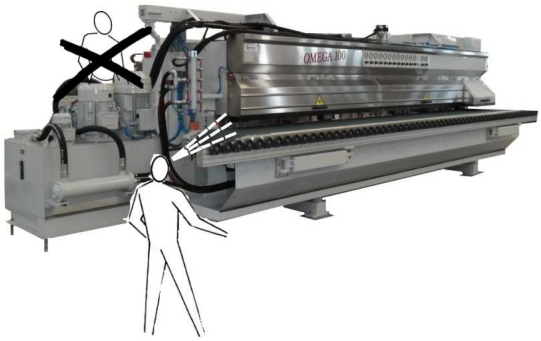
*- close to the control panel to set the processing data **(A)** and to unload material.*
*- in the material loading area **(B)** .*

It is not always possible that the person in charge of running it from those points can detect the presence of exposed persons in the area adjacent to the machine.

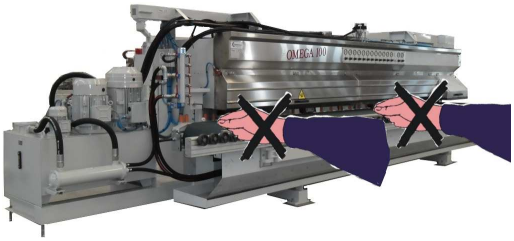
During the production cycle, do touch the pieces being processed for any reason whatsoever.

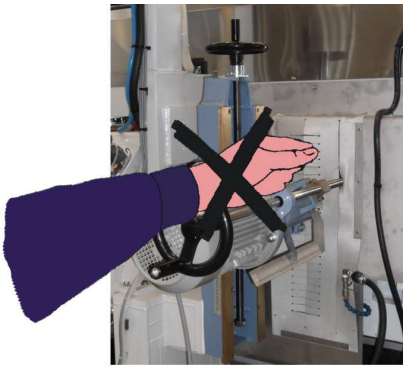
THEREFORE:
ONLY ONE OPERATOR CAN STAND IN FRONT OF THE WORKPLACE.

DURING OPERATION, NO OTHER PERSON IS AUTHORISED TO STAND IN THE VICINITY OF THE MACHINE.



ATTENTION
CRUSHING HAZARD
*During the production cycle, **never** place your hands between the slide belts and the clamps or the spindles.*





ATTENTION
FLUID EJECTION HAZARD
*During the production cycle, **never** place your hands on the pipes of the hydraulic control unit.*

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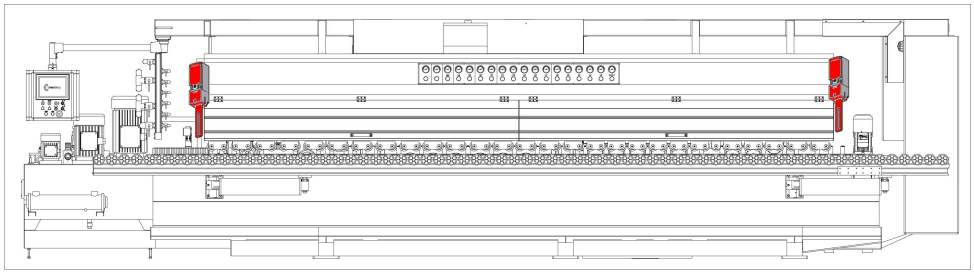
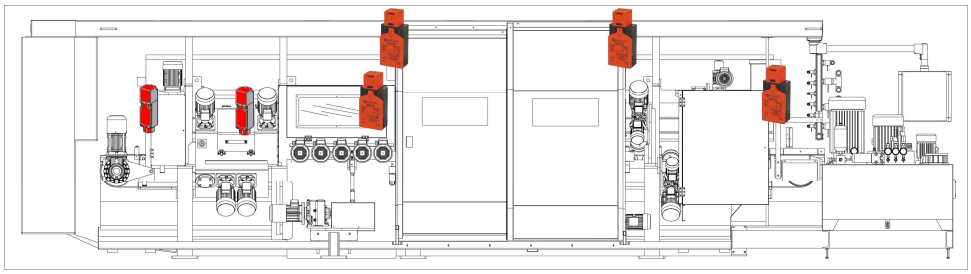
ATTENTION
DUST INHALATION HAZARD
During processing, moist dust can be produced containing a low concentration of tiny particles of material. This mixture can be harmful in particular in the presence of silica.

Therefore, during the production cycle, wear a suitable protective mask.

The operations of adjustment, maintenance and / or replacements or other interventions must only be carried out by the Customer's Maintenance technician, who must always wear protective gloves and helmet, and pay the utmost attention.
Entrust the operations of maintenance, adjustment, or any other operation outside of the tasks assigned to the Manager exclusively to the personnel in charge (maintenance technician).

Do not, for any reason, tamper with, inhibit or disconnect the safety microswitches, the magnetic microswitches of the front and rear guards or other safety devices, do not bypass or use the safety devices for purposes other than those established and for which they were installed.
Check their efficiency periodically.





Fine tuning, cleaning and maintenance must be carried out BY ONE PERSON ONLY,

NEVER BY SEVERAL PEOPLE, *(except where indicated otherwise).*

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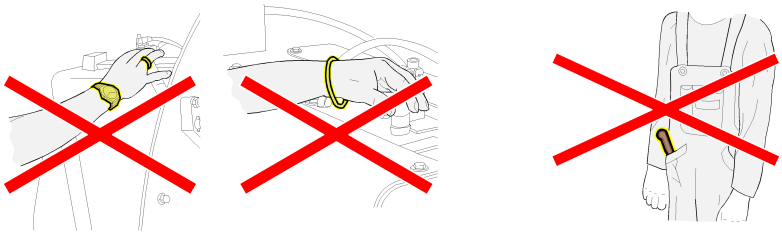
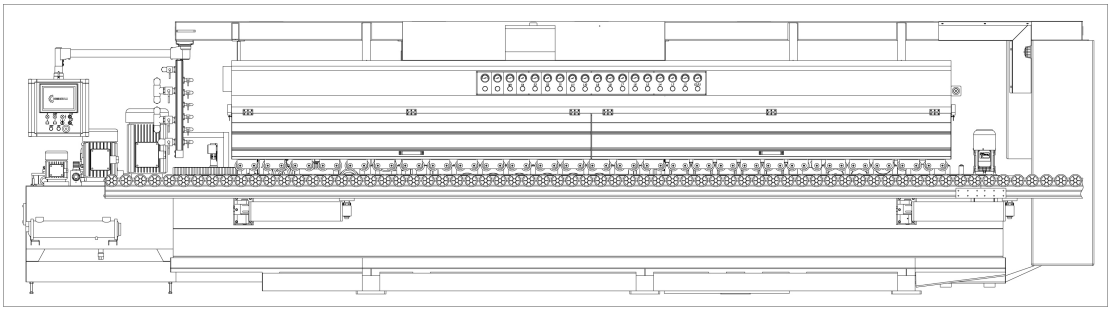
Protective goggles, cut-resistant and anti-scalding gloves and safety shoes must always be available and used when necessary.

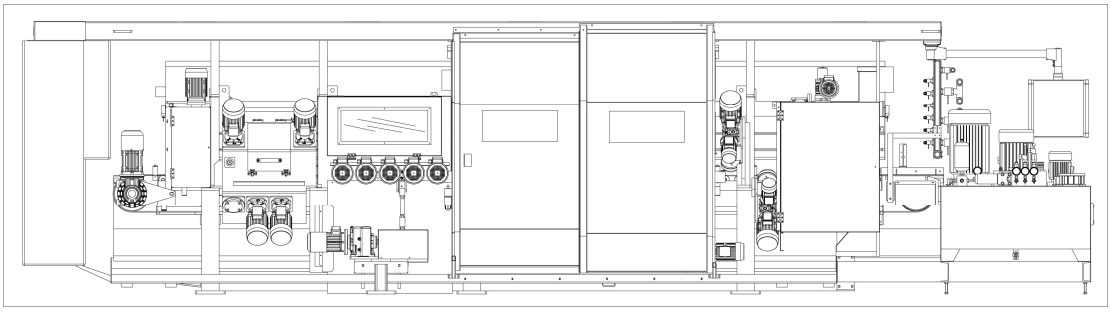
Moreover, it is necessary to wear work overalls tight around the wrists.
Tie long hair.

In any case, do not wear fluttering and/or lacerated objects and/or clothing (necklaces, watches, rings, bracelets, scarves, foulards, ties, etc.).

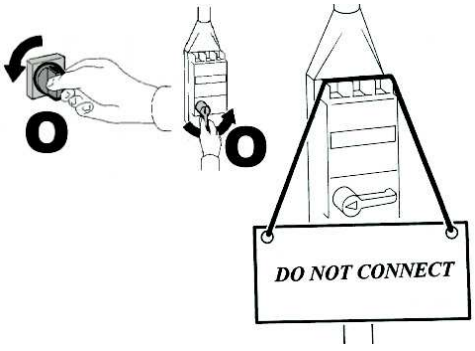


Remember that after every cleaning, lubrication, adjustment and maintenance operation, you must restore all the safety devices and refit and/or close all the protective casings, making sure that no one is operating inside.





During the maintenance, cleaning and lubrication operations, you must bring the plant to the zero energy state and, mandatorily close off the area and indicate work in progress.
Place a sign on the mains switch and on the fence.



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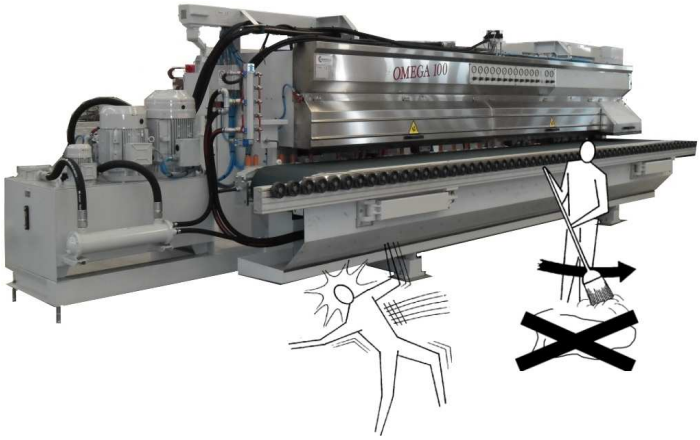
ATTENTION
SLIPPING HAZARD
Considering the large amount of water used for cooling, the operator must wear:

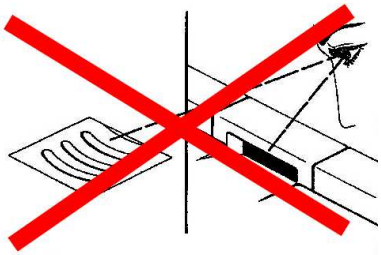
- non-slip shoes
- suitable protective gloves
- protective apron

- make sure that the space and the floor around the machine always are clean, in order to avoid slipping causing impacts and / or falling.



The machine is equipped with two points for draining water inside the water collection tank.

Pay the utmost attention to residues of the cooling water.
NEVER *release it into the environment.*



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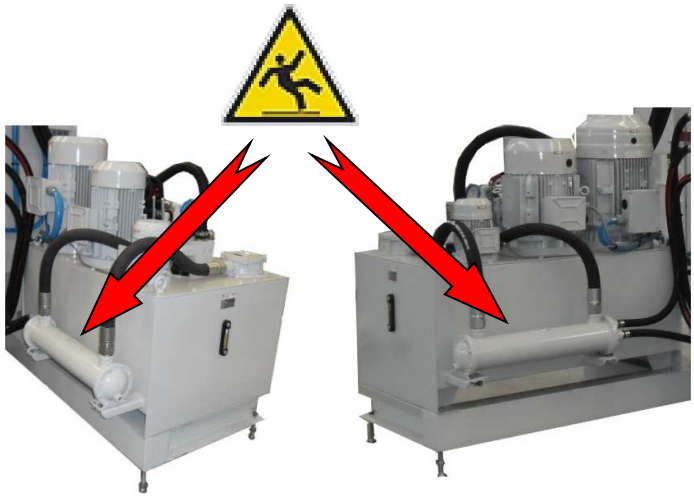
When topping up the oil, pay particular attention that no residual oil overflows or falls on the floor.
If necessary, clean immediately: there is the risk of slipping or falling.



ATTENTION
DANGER OF DAMAGE TO THE MACHINE AND TO THE OPERATOR
Use only tools suitable for the machine.
For no reason use tools that are not suitable or not recommended by Comandulli S.r.L..
This may cause damage or malfunctions to the machine and compromise the safety of the operator.

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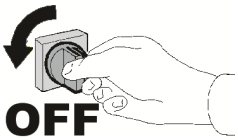
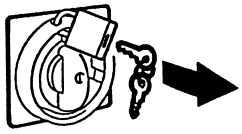
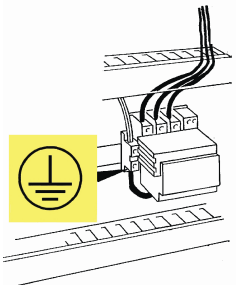
2.5 Machine at zero energy and in emergency status

By MACHINE AT ZERO ENERGY we mean the condition used by the Customer's maintenance technician for cleaning, lubrication and maintenance:

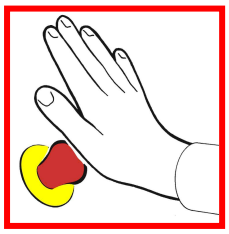
- *lever of the main switch (I.G) at **"O"** ;*
- *the line voltage remains in the input terminals inside the electrical panel;*
- *a padlock must be applied on the main switch (I.G): the keys must be given to the Safety Manager.*







MACHINE IN EMERGENCY STATUS



ATTENTION:
THE EMERGENCY STOP MUST NOT BE USED AS A NORMAL MACHINE STOP.

Emergency stop
Condition used only in case of danger.
*The emergency status is determined **only** by pressing the three red mushroom-shaped buttons for an emergency stop.*

The normal operation is restored by rearming the stop command (release emergency button)
and

by rotating the key selector (SA2) to ON (it goes back automatically to the central position).

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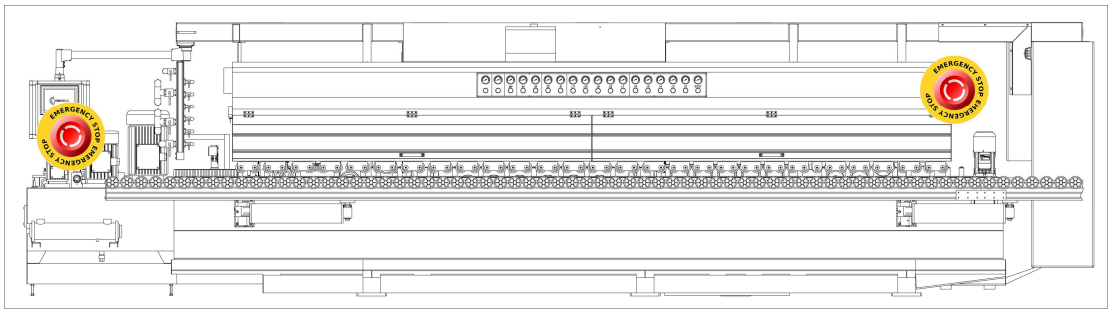
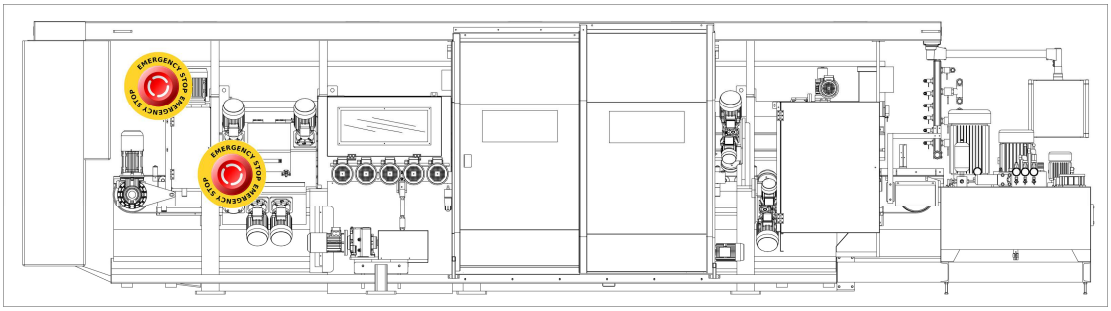
2.6 Safety devices used on the machine

The machine is equipped with the following safety devices:
Three mushroom-shaped emergency stop buttons





Ripari:

fissi, progettati e realizzati secondo le Norme EN 953, EN ISO 13857, EN 349 e UNI EN ISO 12100 p.ti 3.27.1 e 6.3.3.2;

mobili interbloccati, progettati e realizzati secondo le Norme EN 953, EN ISO 13857, EN 349 e UNI EN ISO 12100 p.ti 3.27.4 e 6.3.3.2;

general switch, on the electrical panel of the machine, that can be locked;

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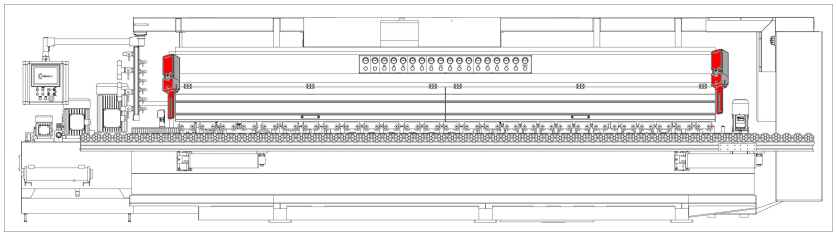
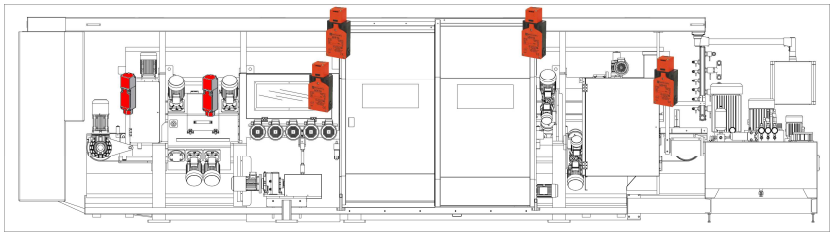
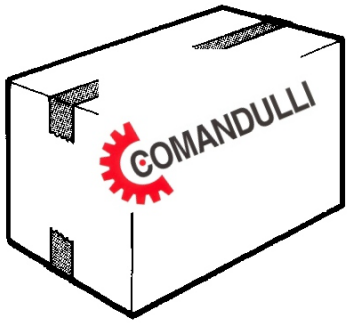
Safety microswitches;





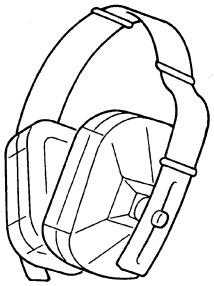
2.7 Spare parts

In the event you need to replace worn and/or broken parts, only use genuine COMANDULLI S.r.l. spare parts .
For the research and how to order them, refer to the attached Spare Parts List.



2.8 Noise emission

the machine is not noisy
<80 dB(A).
Should the exposure to noise, even slight, be continuous, we recommend the use of earmuffs or earplugs.



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2.9 What must always be done!

These points must be considered as an integral part of what was said previously.

Intended use, criteria and precautions of use.

The use of the machine must be limited to the purposes for which it has been constructed and namely: the processing of stone material (marble, granite, stone in general) for the building industry, funerary, furnishing etc. of predetermined size. It is forbidden to process any other materials.

The correct use of the machine allows you to take full advantage of the performance it is capable of supplying in complete safety.

These potentialities are only guaranteed whence strictly keeping to the indications provided below, and therefore:

**** ALWAYS:***

- *tension the lifting unit with slow and safe manoeuvres;*
- *operate in the best lighting conditions of the area and visibility of the load to be handled;*
- *operate outside of the range of action of the load lifted;*
- *avoid manoeuvres with abrupt movements, jerks and at high speed (>8m./min.);*
- *wait, before releasing the load, that the chains or the lifting ropes loosen tension;*
- *report any anomaly to the Department Manager;*
- *check the integrity and the wear of the various parts of the machine.*
- *follow the indications and instructions provided in the Instructions for Use and check their integrity;*
- *correctly position the fixing accessories of the Machine;*
- *during lifting and handling, only use lifting ropes that are intact and not worn;*
- *tension the lifting unit with slow and safe manoeuvres;*
- *operate in the best lighting conditions of the area and visibility of the load to be handled;*
- *avoid as much as possible to proceed with control pulses in quick succession; if available, use slow speeds;*
- *comply with the instructions provided in the programming manual*
- *comply with the indications provided in the wiring diagrams attached when performing electrical maintenance;*
- *strictly follow the procedures indicated in this Manual for the activation and deactivation;*
- *check the correspondence of the performances in relation to its specific service (work cycles, times of use);*
- *make sure that the machine runs in an environment protected against atmospheric agents;*
- *comply with the highlighted signals. Compliance with them also as an accident-prevention function; these signals must always be perfectly legible;*
- *before activating the machine, make sure that the operating area is free from obstacles;*
- *check the adequacy of the state of preservation (cleaning, lubrication) and maintenance of the machine and of all its parts;*
- *check the proper anchoring in place of the machine, of the mechanical and electrical limit switches;*
- *test operation of the stop/emergency buttons;*
- *check the integrity and efficiency of the control panel;*
- *disconnect the power supply voltage of the machine in case of inspections, repairs, and routine maintenance operations;*

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- *for all operations, use the Personal Protective Equipment (PPE) suitable for the activity to be carried out, in compliance with the Safety Standards in the work environment;*
- *report any operating anomaly (faulty behaviour, suspicion of breakage, incorrect movements and abnormal noise) to the Department Manager and put the machine out of service;*
- *respect the program of maintenance interventions and records;*
- *check the adequacy and integrity of the guards that close the operating area;*
- *check the functional efficiency of the safety devices installed on the guards;*
- *check the proper anchoring of the guards;*

2.10 What must never be done!

Unintended use, prohibited use, foreseeable misuse.

The use of the machine for unauthorised manoeuvres, improper use and lack of maintenance can imply risks of grave danger for the health and safety of the operator and the persons exposed, other than damage to the work environment and jeopardise the functionality and intrinsic safety of the machine.
The actions described below, which obviously cannot cover the entire array of potential possible "improper use" of the machine, represent however the most "reasonably" foreseeable ones, which are to be considered absolutely forbidden and therefore:

DANGER!

**** NEVER:***

- *allow the transit of people in the area of lifting and handling operations of the Machine;*
- *attempt to lift the Machine off balance or gripped outside of the centre of gravity;*
- *during the lifting phase, put your hands near the eyebolts; during tensioning, in the areas of contact with the hook of the lifting unit;*
- *during the lifting phase, leave the Machine suspended in air or unattended;*
- *during the lifting and handling phase, sway the Machine;*
- *perform abrupt direction changes during movement;*
- *heat the structure of the machine or its components with a blowtorch or other sources of heat;*
- *allow the Machine to be used by unqualified personnel or below the age of 16;*
- *use the Machine if not psychophysically fit;*
- *weld the Machine, nor intervene with welding fillers;*
- *operate in areas where the use of anti-spark components is required or in the presence of strong electromagnetic fields;*
- *modify its functional / service features;*
- *perform temporary repairs or restoration interventions nonconforming to that foreseen by this Instruction Manual;*
- *modify, alter the calibration or make electric safety devices inefficient and / or cause tampering with the equipment*
- *use non-original spare parts or not recommended by the Manufacturer;*
- *entrust maintenance and repair to staff not trained by the Manufacturer;*
- *abandon the Machine at the end of work without having implemented the relative safety procedure;*
- *during maintenance, use means, tools and equipment which are not suitable to the provisions in the Instruction Manual:*
- *use the machine for services other than those for which it was intended; avoid using it as support for ladders or base to replace lightbulbs, etc.;*

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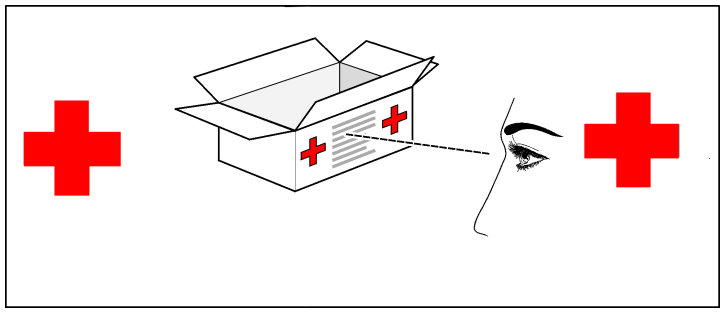
- *use the Machine for towing or dragging operations;*
- *use the structure as welders' earthing;*
- *use the Machine in unforeseen environmental conditions. Comply with the temperature values, which must range within + 5 ° C to + 35 ° C (average of 30 ° C) and humidity from 30% to 85% (without condensation);*
- *use the Machine outdoors;*
- *use the Machine in environments with risk of explosion;*
- *perform routine maintenance, inspections or repairs without having set the machine out of service and having implemented the relative safety procedure;*
- *during the maintenance phases:*
  - *use unsuitable equipment;*
  - *work without personal protective equipment;*
  - *intervene without having blocked the power supply disconnection switch and without providing the operating area with suitable lighting;*
  - *clean with aggressive liquids or harmful for its parts;*
  - *expose the manipulator and electric panel to the action of sprayed liquids;*
  - *clean inside the electric panel with compressed air;*
  - *disconnect the components of the pneumatic system without first having shut the delivery line and discharged residual pressure.*
  - *expose the Machine the action of sprayed liquids;*

2.11 Final part

In case of inhalation or contact with toxic substances, proceed as indicated on the package of the container and:
as soon as possible: ***INFORM A DOCTOR****.*



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3 TECHNICAL FEATURES

3.1 TECHNICAL DATA

MACHINE DESCRIPTION		***DATA***
Load surface height	*mm*	*950*
Belt speed	*m/1'*	*0÷3*
Abrasive grinding wheel diameter	*mm*	*130÷150*
Shimming/calibration wheel diameter	*mm*	*260*
Profile generating wheel diameter	*mm*	*130*
Disc diameter for upper/lower cuts	*mm*	*260*
Rated power	*Kw*	*66*
Water consumption	*l/1'*	*180 approx*
Air consumption	*l/1'*	*250 approx*
Overall dimensions (excluding rollers)	*mt*	*8,52x2,35x2,2.*
Approx. weight	*Kg.*	*8000.*

Environment
The electrical equipment of the machine is intended to work in the following environmental conditions:

- *- temperature : + 5 + 35 ° C (average 30 ° C)*
- *- humidity : 30-85% (without condensation)*
- *- altitude : 1000 m a.s.l.*
- *- protection : in warehouses sheltered against water*
- *- vibration s: less than 2.5 m / sec ²*
- *- lighting : recommended minimum degree 150 lux diffused*

Power supply
A three-phase line without neutral is required with tolerance of ± 10% and frequency ± 2.5%, protected against over-voltages however arising, filtered according to standards, to disturbances due to harmonics or various interferences.
The power supply equipment and the relative protections must be coordinated with those of the machine. ***(refer to chap. 4 Lifting, transportation and installation)***

Electrical grid network
See the attached wiring diagram

Line input terminal board
The power supply line of the machine is connected directly in the electrical panel to the input terminal board of the main switch QF1 (rated capacity 200 A).
The earth cable must be connected directly to the terminal board located inside the cabinet.

Regulation Systems.
All the operating units and some mechanisms installed on the machine are at a fixed speed (motors with single polarity); therefore no particular regulations are necessary.

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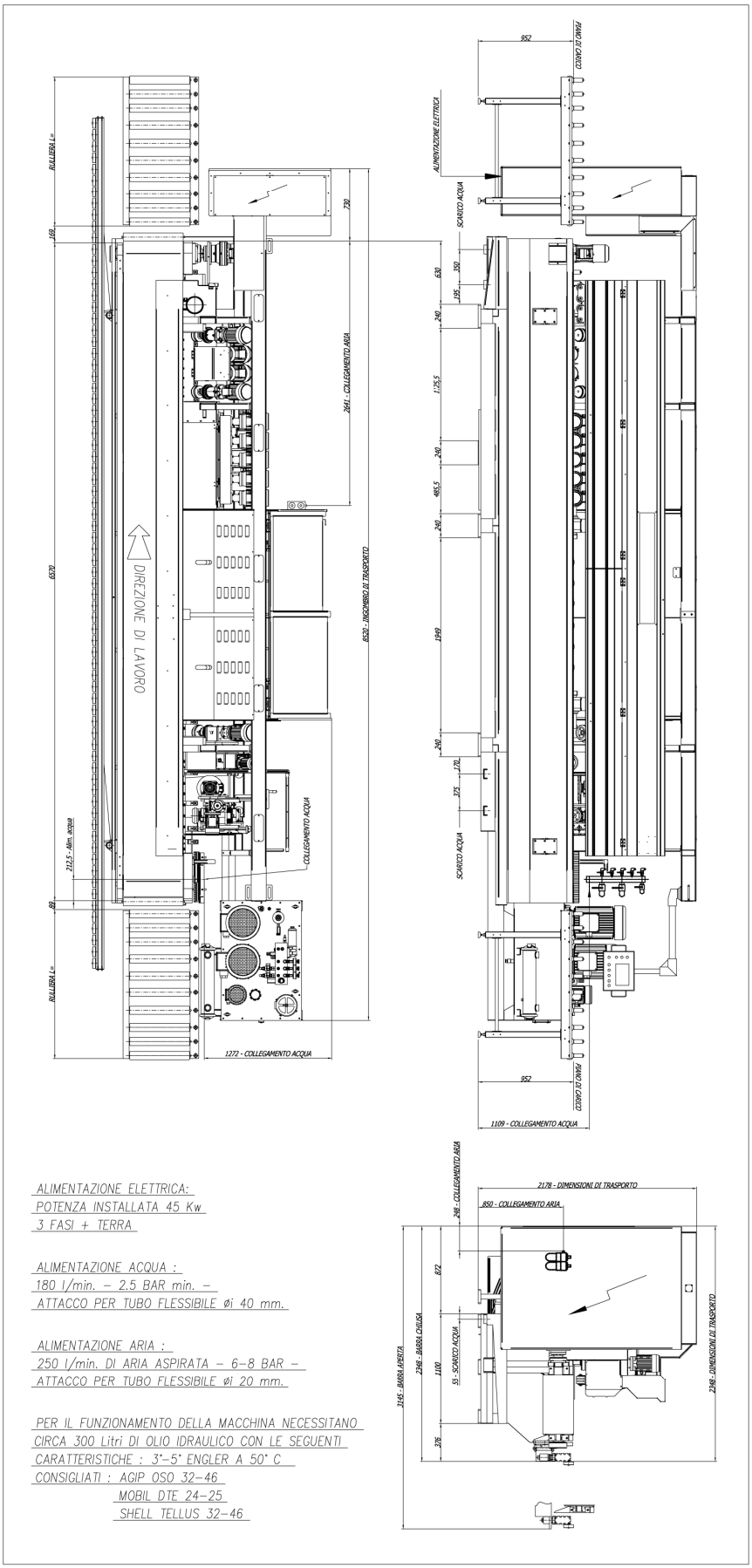
3.2 Overall dimensions



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3.3 Technical information

Machine structure in electro-welded steel, completely processed in the boring machine. Conveyor belt resting on a surface with idler rollers guided on specific grooves. Anchoring system of pieces to belt with pneumatic clamps.
Possibility of polishing straight edges simultaneously on the pieces of different thickness and shape.
Independent controls for every spindle.
Possibility to select the point of intervention or detachment of the grinding wheels during processing. Possibility of carrying out partial processing.

3.5 Purpose of the machine

The Omega Pencil edge polisher performs profiling and polishing on the edges of slabs by means of diamond and abrasive tools of the following materials:

- *all types of natural stone*
- *conglomerates*
- *brick*

The use for processing different materials, not intended by these instructions, may cause danger for persons and damage to the machine

The machine performs the following processes:
- *polishing the flat edges*
- *profiling and polishing of toroidal edges (bullnose, ½ bullnose, owl beak, etc.)*

The machine is equipped with the following movements:
- *spindle rotation*
- *conveyor belt advancement*
- *edge polisher spindle oscillation*
- *oscillation unit positioning*

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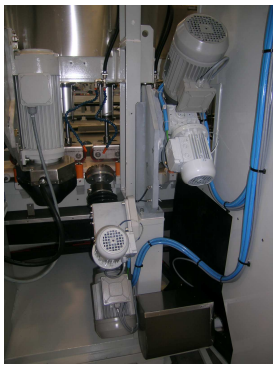
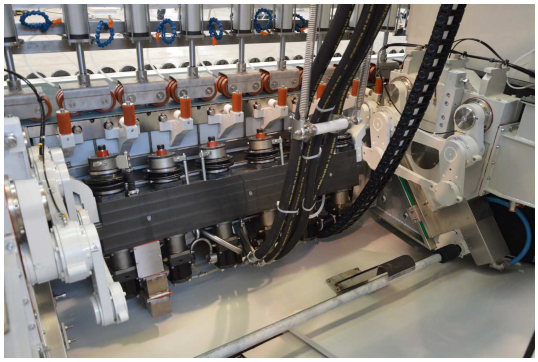
3.4 Dotazione di serie

- *It consists of an electro-spindle mounted on a horizontal slide for rectifying the straight edge and a second electro-spindle mounted on two orthogonal slides with automatic vertical positioning and controlled by the control panel and on a horizontal slide (manual adjustment with handwheel), has the possibility of inclination up to 45 ° for making inclined cuts ,. The vertical axis can be positioned automatically by programming the group from the touch screen panel. Different types of diamond tools can be used; on the spindle to grind the straight edge you need to mount a 155mm diameter grinding wheel (ref. drawing 11663R). On the calibrating spindle it is possible to mount a diamond wheel 260mm diameter (ref. Drawing 9043A) to calibrate the slab thickness on a max. strip. of 50 mm, while with a 260 mm diameter disc (ref. drawing 9489A) horizontal or inclined cuts are obtained in the coast (rotation with electric motors) - Power 6 KW for the calibrator and 4 kW for the rectifier.*

- *2 Diamond wheel holder spindles for 45° bevel (1 Upper/1 lower) for roughing of the first profile of shaping rounded profiles or for diamond execution of the bevel with automatic positioning (Rotation with electric motors) - Power 2.2 Kw each.*



N° 6 Spindles mounted on a single beam for profiling and polishing straight or toroidal edges: The 1st spindle, with ***automatic positioning,*** *can mount the diamond wheel generating the profile. The spindle holder beam oscillates by means of an original patented lever system, driven by hydraulic pistons controlled electronically. (Rotation with hydraulic motors) - Total power to the pump 22 Kw*



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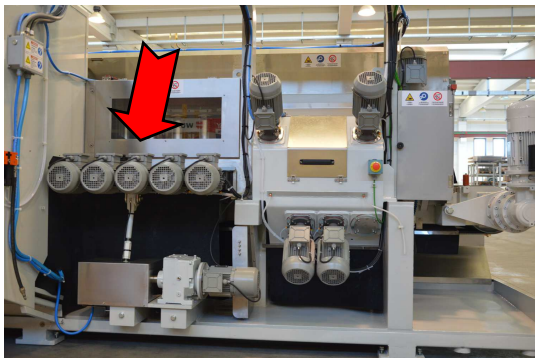
- *N ° 5 polishing spindles mounted on a beam and placed horizontally. The axis of each spindle can be pneumatically extended to allow the tool to adhere to the piece during the work phases and the detachment during the rest phases. Mount the tool consisting of a 130mm grinding wheel at one end. Their purpose is to polish the flat edge using in sequence abrasive wheels with graded grits.*



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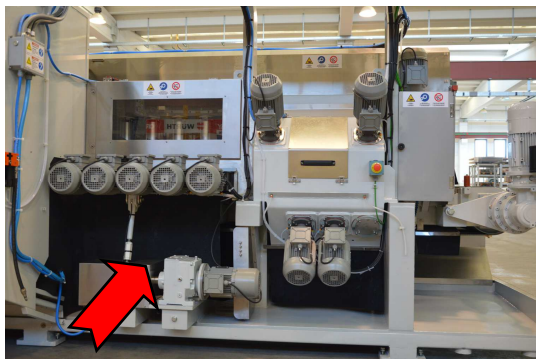
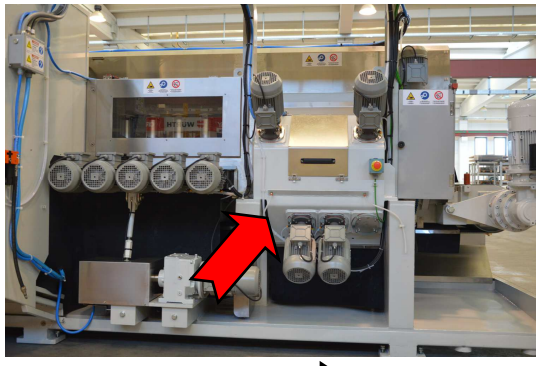
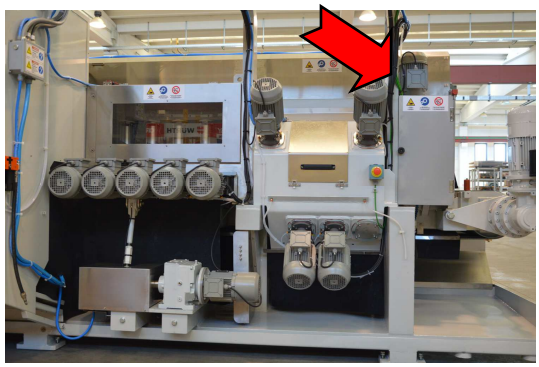
- *- N ° 1 floating system which allows the 5 edge polishing spindles to oscillate during processing, allowing a better polishing especially on high thicknesses or on edges out of square. The device can be activated or deactivated at the operator's choice.*



- *N ° 4 spindles for polishing the bevel at 45 ° (N. 2 sup. And N. 2 inf.). The axis of each spindle can be pneumatically extended to allow the tool to adhere to the piece during the work phases and the detachment during the rest phases. Mount the tool consisting of a 130mm grinding wheel at one end. Their purpose is to make a small bevel on the edge of the slab. (Rotation with electric motors) - Power 1.1 Kw each.*



- N ° 1 vertical spindle to smooth a strip on the plane of the slab of about 45mm. The spindle axis is pneumatically extensible to allow the tool to adhere to the piece during the work phases and the detachment during the resting phases. (Rotation with electric motor) - Power 1.1 Kw.



- *N°1 Bar with manual extension to hold large workpieces.*

- *2 Rollers (1 initial and 1 final) the length is at the Customer's request*

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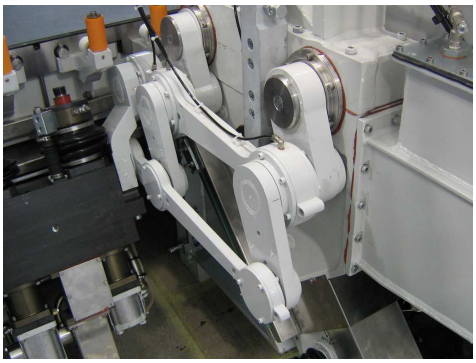
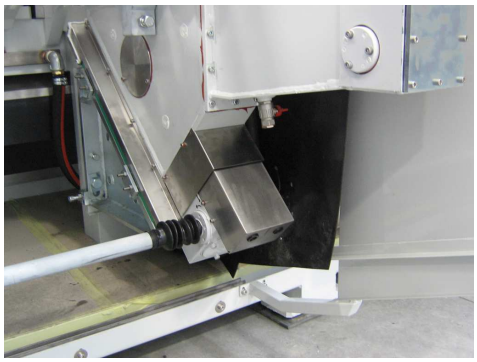
3.5 Additional equipment

- ***Belt traversing mechanism***
  It is made up of a variable speed drive which rotates a drum dragging the conveyor belt. A specific automatic control allows to vary the travel speed (from 0 to 3 m / 1ì) directly from the control panel.

- ***Edge polisher spindle oscillation***
  Two gear mechanisms and connecting rods allowing the edge polisher to oscillate during the 180° processing, allowing for the formation of the toroidal edges.
  The device can be activated or deactivated at the choice of the operator, according to the type of machining to be carried out. This mechanism is driven by hydraulic pistons controlled by proportional valves and circuit boards.



- ***Oscillation unit positioning***
  The oscillation unit is mounted on two slides at 45° and must be positioned according to the thickness to be processed at a certain height. Two specific motorised jacks allow these movements.



- ***Pneumatic workpiece clamps***
  These are mounted in series on a beam along the work surface. They have the task of blocking the workpiece on the belt during processing.

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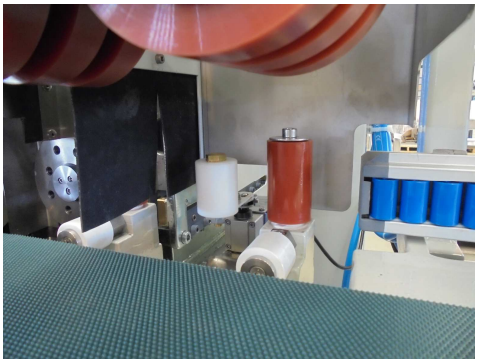
- ***Piece detector for workpiece clamps***
  It consists of a laser sensor placed at the beginning of the machine. The incoming piece is detected and automatically controls the intervention of the workpiece clamps.

- ***Piece detector for spindle control***
  It consists of a switch with wheel, mounted at the start of the machine and driven by the infeed workpiece, it controls the automatic intervention of the spindles.



- ***Hydraulic control unit***
  For operation of the edge polisher and relative oscillation mechanisms, a hydraulic system is provided consisting of a central unit placed on the material infeed side (see photo).
  The circuit on the machine includes a series of flexible hoses, valves, joints, hydraulic motors, pistons. (see hydraulic diagram).

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3.6 Tools for shaping and polishing

The machine uses the following types of tools:

- *Flat diamond wheel in our dwg. 9043A for calibration.*
- *diamond wheels in our dwg. 11663R for bevelling (roughing).*
- *flat diamond wheel in our dwg. 11199M for generation of toroidal profile.*
- *abrasive grinding wheels with a quick coupling on right nut ø 130 or ø 150.*
- *diamond disc in our dwg. 9489A for the drip tray.*

The tools are not supplied with the machine.

The user is responsible for the purchase and installation of the tools suitable for use.

Comply with the following standards when ordering:

- *order the tools, specifying the materials to be machined and the maximum rotation speed.*
- *request dynamic balancing of the diamond tools*
- *purchase the tools from qualified companies and of proven experience.*
- *request original certificates of proving compliance with the order data*

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4 LIFTING AND INSTALLATION INSTRUCTIONS

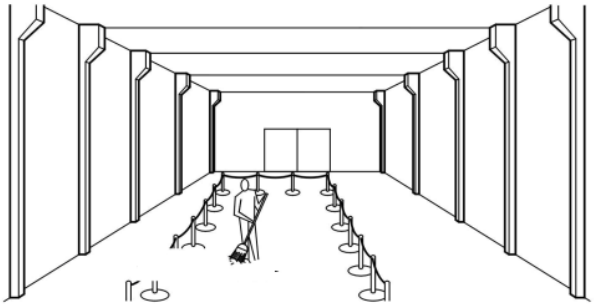
ATTENTION
DANGER OF CRUSHING, BLOW, ABRASION AND CUT
Personnel in charge of handling the Machine must have read the Safety Requirements at the start of this Manual (Chapter 2), must wear a worksuit, work gloves, accident-prevention shoes and helmet.

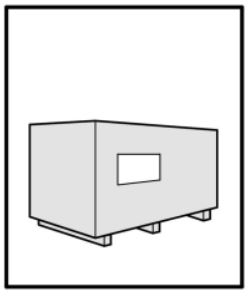
4.1 Foreword

Upon arrival of the packages, the handling operators must follow the indications provided in this entire Chapter.
The COMANDULLI Technician (if present) is the one that has disassembled or assisted at the disassembly in the factory after the test and who must always be referred to and will perform the assembly operations of the machine.

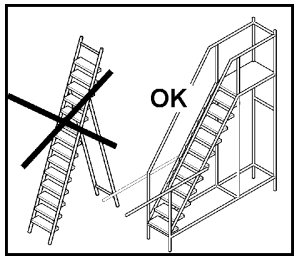
The indications in Chapter 4 are a memorandum should the handling of parts of the packaged Machine, unpacking and handling of parts of the unpacked Machine be carried out without supervision of the Technician in question.

Before positioning the Machine, make sure that the support surface and all the connections comply with the previously sent specifications and to the civil works layout (if present).
Copy of these specifications and of the layout is found in Chapter 12 "Diagrams and Attachments".

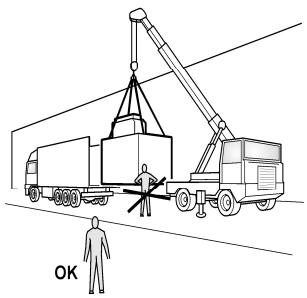




As assembly could entail accessing high parts, it is necessary to be equipped with a suitable safety ladder.



When proceeding with handling, the person in charge of the means of transport must observe that THERE ARE NO PEOPLE NEAR THE MACHINE.
The operations of lifting, handling and unpacking of the unit must be entrusted exclusively to personnel who are expert in that field of operations (crane operators).



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ATTENTION
RISK OF FALLS AND / OR TRIPPING AND CRUSHING
Close off or impede access to unauthorised personnel or those not aware of the dangers linked to this phase.
DO NOT REMOVE THE BARRIERS UNTIL THE POSITIONING AND FIXING OPERATIONS OF THE MACHINE HAVE BEEN COMPLETED.

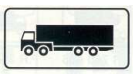
ATTENTION
CRUSHING HAZARD
For shipping purposes, the various components inside the crate are secured and separated with pieces of wood.
These fastenings (iron wires and ribs) and the spacers must not be removed when opening the crate cover.
There is the danger of crushing due to moved loads.

These fastenings will be removed when the component is removed.
For this reason, the operator in charge of removing and slinging the components must wear accident-prevention shoes, gloves, and helmet, and pay the utmost attention.

The machine is intended to operate in an industrial environment.
The workplace must be provided with devices that provide suitable artificial lighting to safeguard the safety and health of the operators.

The lighting of the room must be in compliance with the Laws in force in the Country where the Machine is installed and must, in any case, be uniform and guarantee good visibility in every point, not create dangerous reflections and allow the clear reading of the control panel and identification of the emergency button.
Lighting must allow the maintenance operations described in this Manual to be performed safely.

Sufficient space must be guaranteed for its maintenance (minimum 1 metre).
The Machine must be installed according to the indications provided in the layout attached to Chapter 11 "Diagrams and Attachments".



Transport by road
Transport by road takes place with a truck.
The Machine is fastened to a load-bearing platform (or cage) and covered with cellophane and bubble wrap, to protect it from atmospheric agents.

Transport by air or by sea
For this type of transport, the machine is protected with heat sealed barrier-bags, with dehydrating substances complying with standards in force inserted, and thereafter packed in a crate.

For the disposal of packaging, the customer is bound to comply with the regulations in force in their country (refer to Chapter 10 "Dismantling and Disposal").

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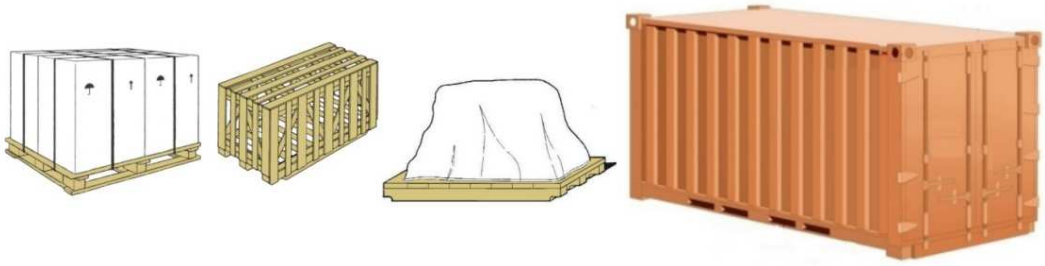
4.2 Handling parts of the machine (when packed)

The machine, when shipped packed, can be:

- *a in a crate;*
- *b in a cage;*
- *c on a pallet;*
- *d in a container.*

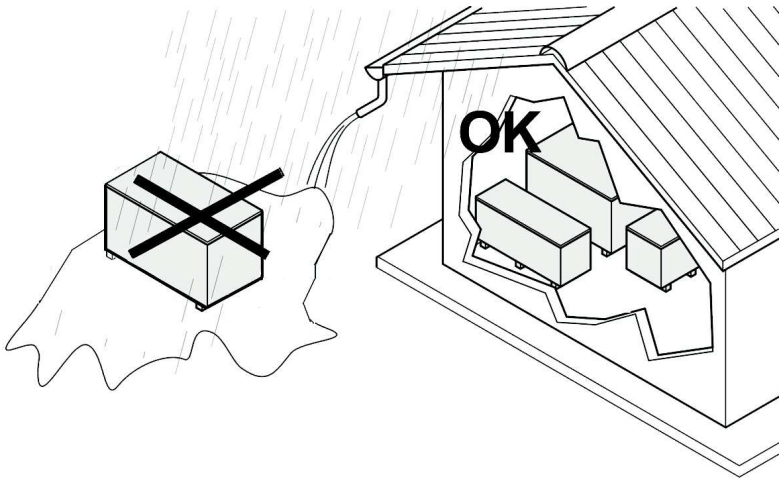


In any case, the machine is always shipped assembled in a single package.

The machine is supplied completely assembled.
Packaging and shipping are made according to the needs of the Client, of the means of transport used, of the final destination, the type and the amount of the supplied accessories.

NOTE

IF NOT UNPACKED IMMEDIATELY, STORE THE PACKAGED MACHINE IN A DRY AND SHELTERED ENVIRONMENT.



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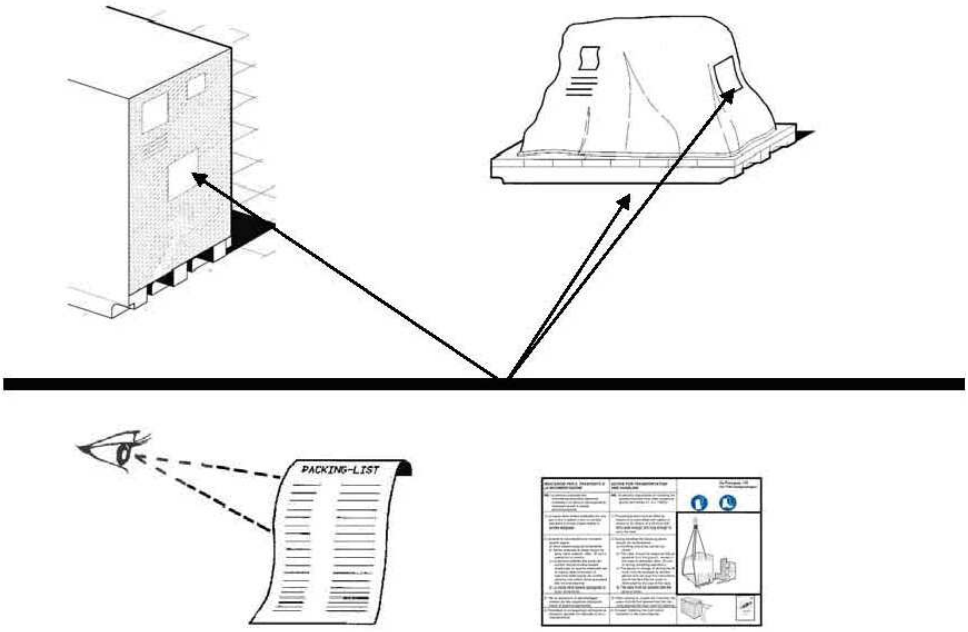
For the handling of the crates using a fork lift truck, follow that described in point 4.2.1.
For the handling of the crates using gantries and ropes, follow that described in point 4.2.2.
For the handling of the Machine on pallet with forklift truck, follow that described in point 4.2.3.
On pallets with gantry and ropes, follow that described in point 4.2.4.
For the handling of the container, follow that described in point 4.2.5.



When the Machine is shipped, the outside of the packaging contains all of the necessary indications for its handling, the Customer name, order, gross weight and net weight.

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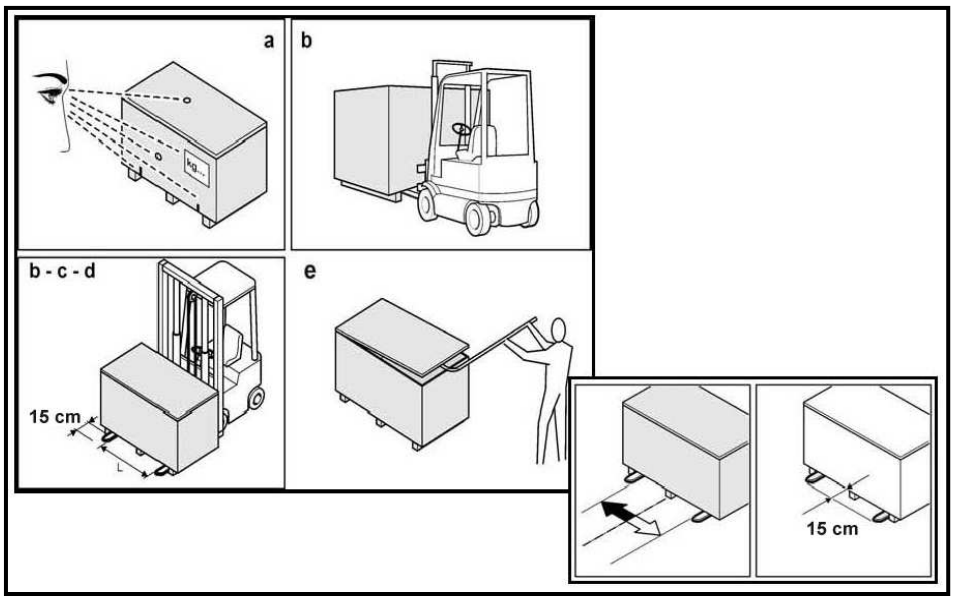
4.2.1 Handling of the crates using a fork lift truck



When you handle the crates with the aid of a fork lift truck, proceed as follows:

a) comply with the indications on the crate (especially the position of the forks and the centre of gravity): the position of the forks is the widest possible (L);

b-c-d) use a fork lift truck with suitable capacity; the forks must protrude from the crate by at least 15 cm;

b-c-d) move the crate slowly, at a minimum height from the ground (max 20 cm), helped by an assistant if the view is impaired;

b-c-d) set it delicately on the ground;

e) to open the crate, use an appropriate tool (e.g. crowbar), starting from the cover.

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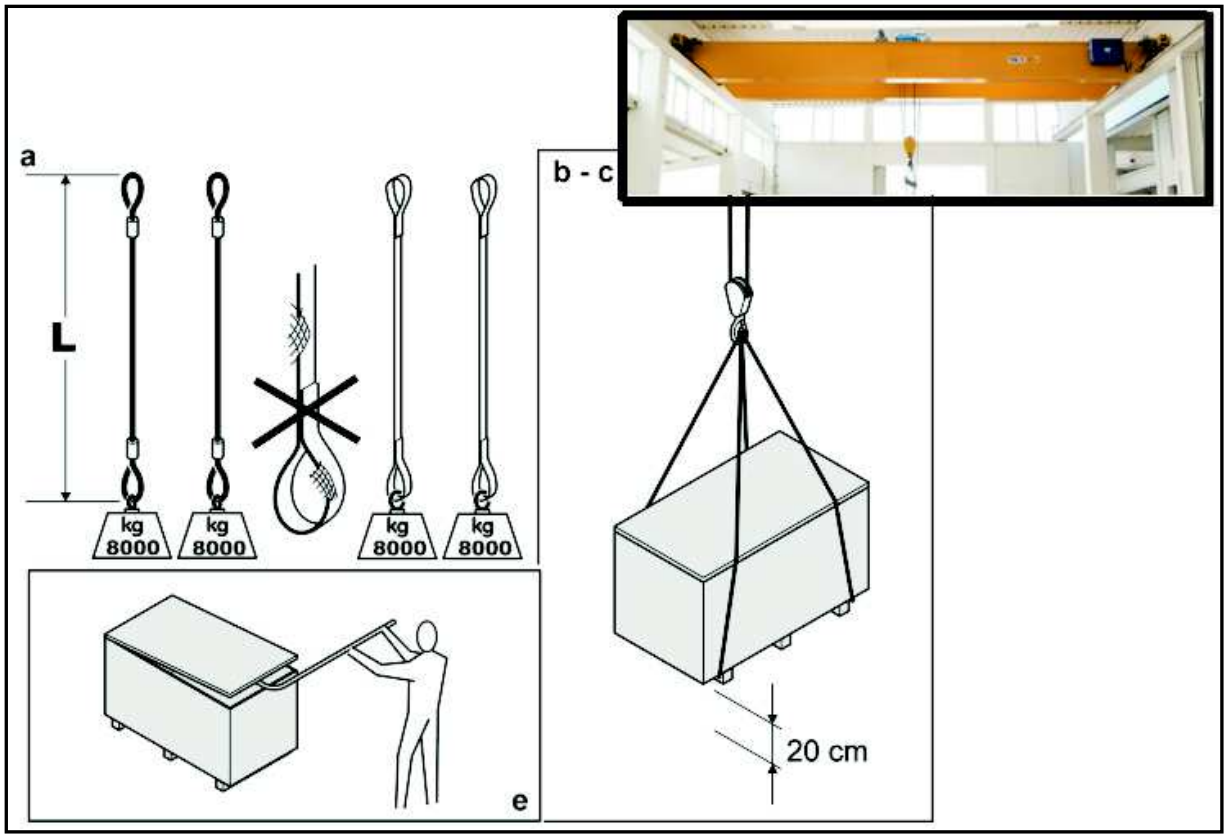
4.2.2 *HANDLING,* ***of crates with gantry and ropes***



When handling the crate with gantry and ropes, proceed as follows:

a) be equipped with two ropes or belts:
- *of minimum capacity* ***9000 Kg*** *each;*
- *of a length* ***L*** *such as to be able to lift the crate in safe conditions (see sheet outside of packaging);*
- *with intact eyelets at the ends;*

b) harness the crate, complying with the indications thereon (position of ropes, centre of gravity and weight);

c) move the crate slowly, at a minimum height from the ground (max 20 cm), helped by an assistant if the view is impaired;

d) set it delicately on the ground;

e) *to open the crate, use an appropriate tool (e.g. crowbar), starting from the cover.*

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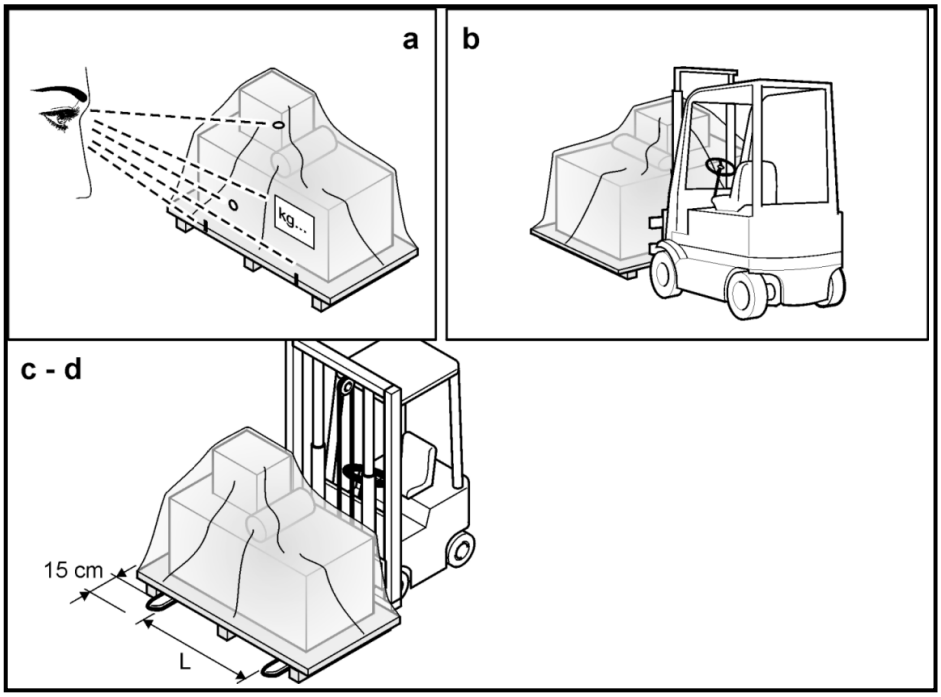
4.2.3 Handling machine on pallet with forklift truck



When handling the machine on pallet with the aid of a forklift truck with long and wide forks, proceed as follows:

*a) comply with the indications on the crate (especially the position of the forks and the centre of gravity): the position of the forks is the widest possible (**L**);*

b) be equipped with a forklift truck with long and wide forks of adequate capacity;

c) the forks must project from the base by at least 15 cm;

d) move the pallet slowly, at a minimum height from the ground (max 20 cm), helped by an assistant if the view is impaired;

e) set it delicately on the ground.

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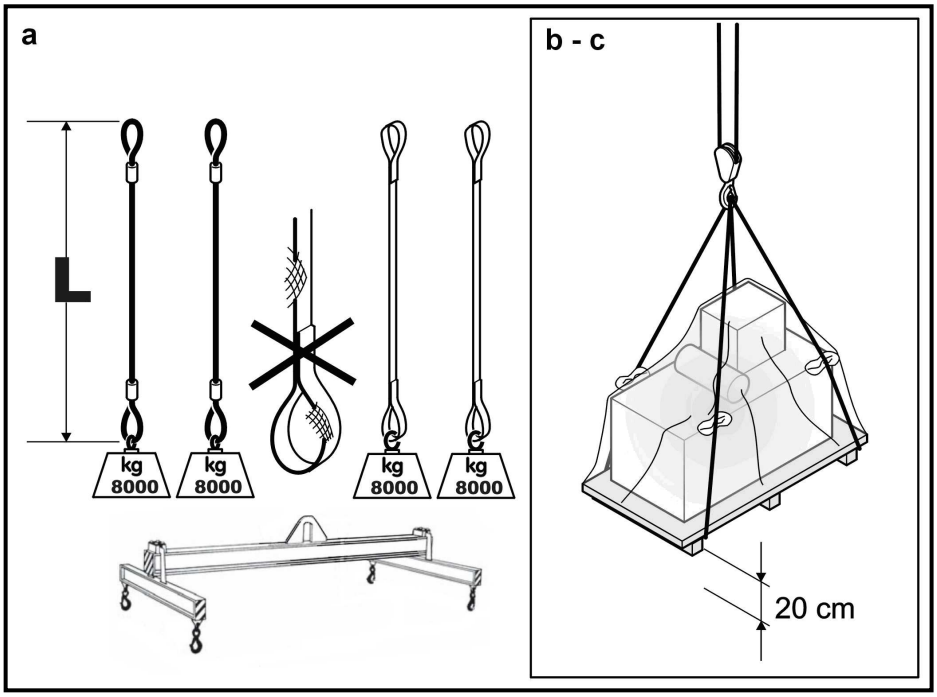
4.2.4 Handling the machine on pallets with gantry and ropes



When moving the machine on pallets with gantry and ropes, proceed as follows:

a) use two lifting beams (of suitable capacity and length) and two ropes or belts:

- *minimum capacity **9000 Kg** each;*
- *of the length **L** such as to be able to lift the crate in safe conditions (see sheet outside the packaging);*
- *with intact eyelets at the ends;*

b) harness the part, complying with the indications thereon (position of ropes, centre of gravity and weight);

c) move the pallet slowly, at a minimum height from the ground (max 20 cm), helped by an assistant if the view is impaired;

d) *set it delicately on the ground.*

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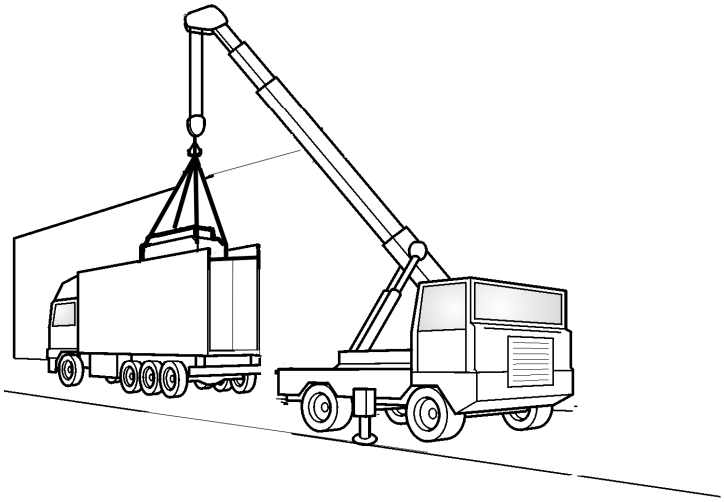
4.2.5 Handling of the container



Once the container has been prepared and opened, to the handle the machine, proceed as indicated in point "HANDLING OF UNPACKED MACHINE":

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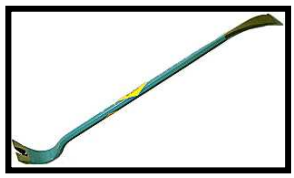
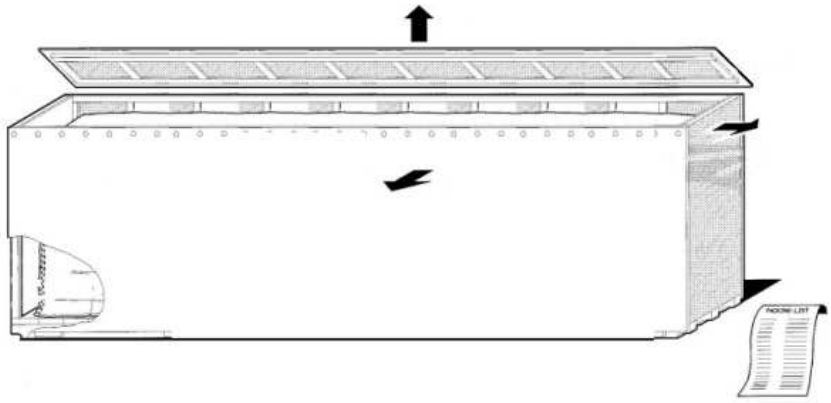
4.3 Unpacking



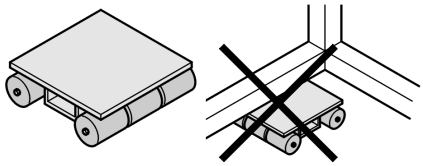
Unpack the crate with care, using a tool (e.g. crowbar) and starting from the cover.



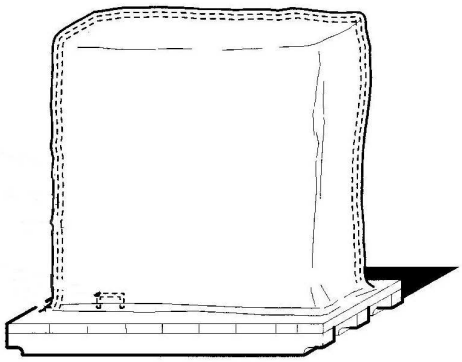
Remove the sides.

For local handling, use specific trolleys.

ATTENTION
These trolleys must be placed under the uprights or shoulders, NEVER ONLY UNDER THE CROSSBEAMS.



Remove the first heat-seal barrier cover.
Then remove the polyethylene cover.



Check that the content of the packaging has not suffered damage during transport.
If so, immediately inform COMANDULLI S.r.l. or its Agent.

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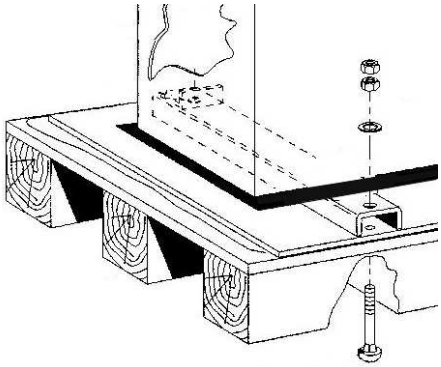
Prepare a list of components present in the package, comparing it with the packing list.
In case of pieces missing or inconsistencies, immediately inform COMANDULLI S.r.L. or its Agent.

Unscrew and remove the screws of the fixing brackets.



Follow the indications in Chapter 5.4, lift the machine and move it in proximity of the place of installation.

COMANDULLI S.r.L. recommends, in case of repacking of the machine, to keep the entire structure of the packaging and relative components in a dry place.

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4.4 Handling the unpacked machine

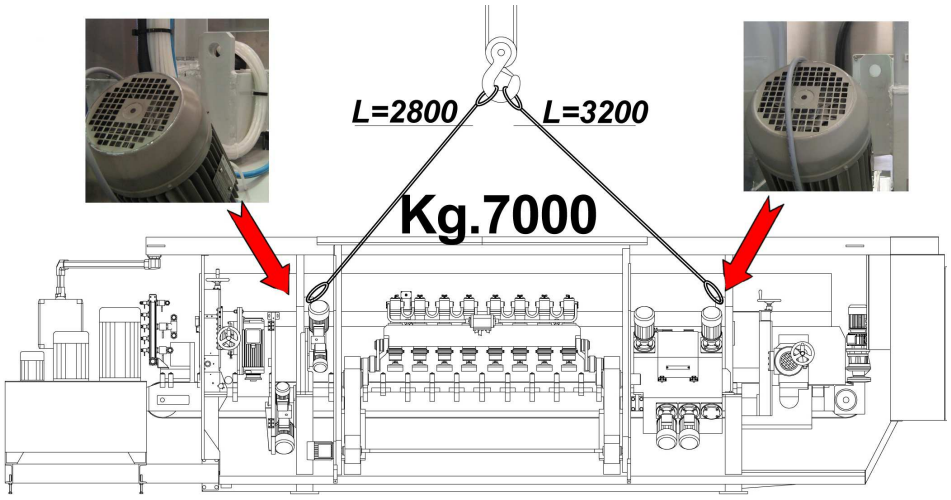
Once you have unpacked the machine, proceed as indicated below.

ATTENTION
DANGER OF SUSPENDED LOADS
PAY THE UTMOST ATTENTION.

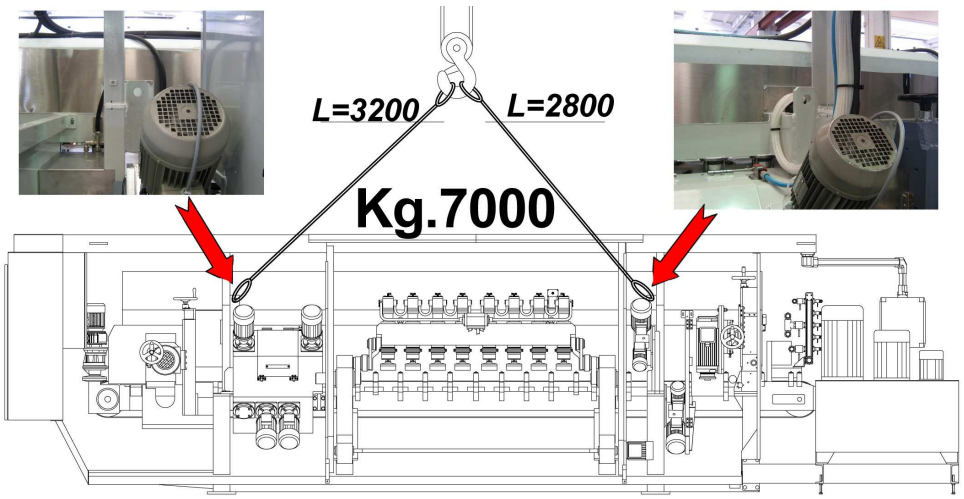
WARNING
The handling of the Machine must be carried out only as indicated in this chapter, in any case never harnessing it on protruding parts.

4.4.1 Handling the machine with a crane or gantry

Once you have set up the ropes, using the lifting points provided on the machine, in compliance with the following principles:



Machine with workpiece loading from the right



Machine with workpiece loading from the left

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Before lifting the machine, make sure that the two ropes in tension of the control unit are in position and are well taut.

a) be equipped with two ropes or belts of the length in the drawing and minimum capacity 8000 kg each, with intact eyelets at the ends;

b) harness the Machine;

c) observe the position of the centre of gravity;

d) move the Machine slowly, at a minimum height from the ground (max 20 cm), helped by an assistant if the view is impaired;

e) set it delicately on the ground.

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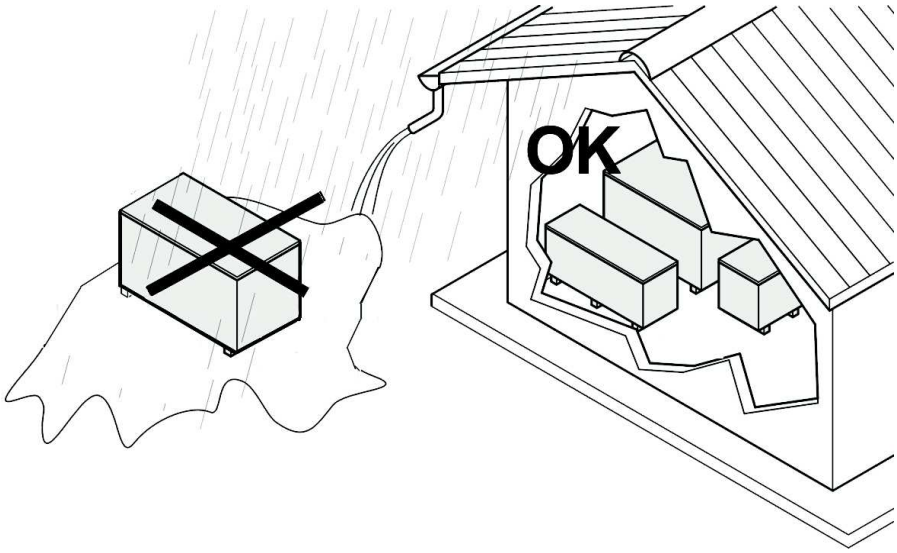
4.5 Storage

If the machine, still packed, must remain idle for a long period, COMANDULLI S.r.l. recommends to store it in a dry and sheltered place, at a temperature between 5°C and 35°C.

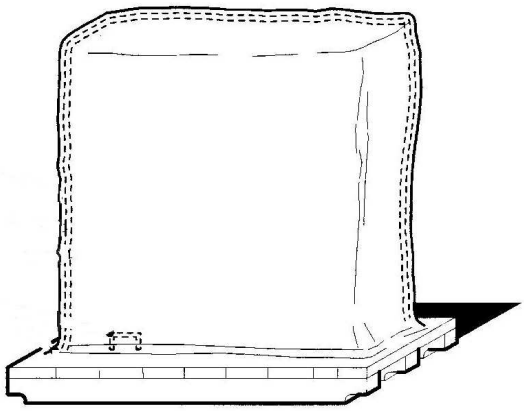


If the machine has already been unpacked and assembled or still divided into parts, making it quite difficult to protect it with the package, COMANDULLI S.r.l. recommends to store it in a dry place above a pallet or above the base of the packaging itself.

Make sure that all the metal parts, especially those external, are protected.

Then cover the machine with a canvas, which however allows residual inside humidity to evaporate.

Periodically, check the state of the Machine and the visible parts to keep superficial oxidation from forming.



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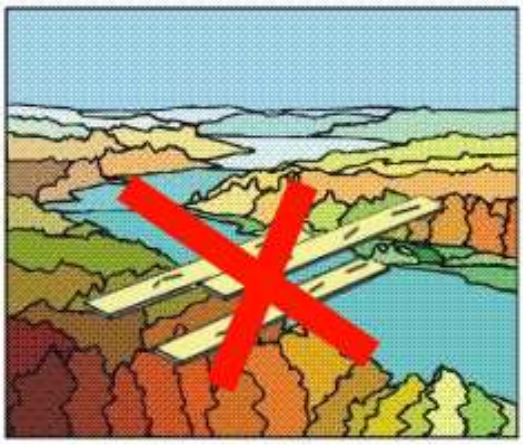
4.6 Disposal of packaging

Waste materials must be disposed of in compliance with standards in force in the country of the user, taking into account the nature of the materials:

- *straps, nails and metal parts;*
- *wood and plywood boards;*
- *plastic materials (protective covers, barrier bag).*



DO NOT RELEASE THE PACKAGING INTO THE ENVIRONMENT.

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4.7 Positioning and installation of the machine

ATTENTION DANGER OF SUSPENDED LOADS, CRUSHING, BLOW, ABRASION AND CUT

Personnel in charge of positioning and installing the Machine must have read the Safety Requirements at the start of this Manual (Chapter 2), must wear a worksuit, work gloves, accident-prevention shoes and helmet.

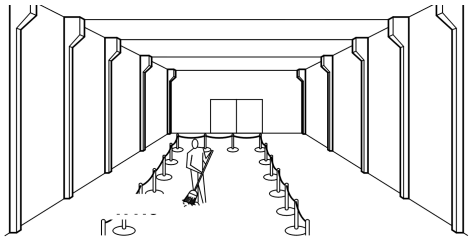
ATTENTION

The work area must never be engaged so that ***NOTHING AND NO ONE*** *interferes with the freedom of movement of the operator.*
In case of emergency, immediate access to the control devices of the Machine by the personnel in charge must be guaranteed.
Access is forbidden to the work area for people who are not directly involved in the operation of the machine.
This prohibition is necessary to avoid dangers due to inattention or negligence during the fulfilment of operational activities.
The operator therefore recommended to keep the work area always free from any Equipment and to prohibit the access to unauthorised persons, in order to achieve the ideal safety conditions to work on the Machine.
IF THESE CONDITIONS ARE NOT MET, CORRECT THEM BEFORE INSTALLATION.

4.7.1 Arrangements for installation

The Machine is intended exclusively for an industrial environment.
The environmental conditions for the machining operations must comply with legislation in force.
The industrial building must be lit and provided with a solid and level floor.

Clean the area around where the machine will be installed, in order to avoid slipping, tripping or falling.
Make sure that the route from the lorry to the installation area is clean.
Before positioning the Machine, make sure that all the connections comply with the technical specifications required by contract.



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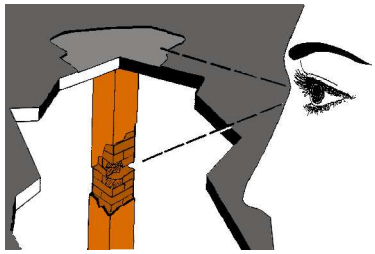
Check with the layout that the environment in which the machine must be installed has the following features:



- *the floor must be perfectly level, non-slip and with no unevenness;*

- *the floor must be able to bear the weight of the Machine (Kg. 7000 approximately).*

It is the Client's responsibility to perform the checks and / or dimensioning of the structure according to the static loads indicated by COMANDULLI S.r.l.;

- *The artificial lighting of the premises must be in compliance with legislation in force in the country in which the machine is installed.*
- *It must guarantee good visibility in every corner of the room and never create dangerous reflections and it must enable a clear reading of the control panel and the identification of the emergency buttons.*
- *Furthermore, lighting must allow the maintenance operations described in this Manual to be performed safely;*

- *sufficient space must be guaranteed for its maintenance (minimum 1 m).*
- *The Machine must be installed according to the indications provided in the layout attached to Chapter 11 "Diagrams and Attachments".*

COMANDULLI S.r.L. *recommend these as minimum space for maintenance operations, and in any case, the Machine must not be installed in the immediate vicinity of a place of transit (especially for persons and forklifts);*

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4.7.2 Assembly/installation instructions

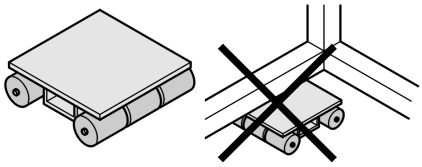
NOTE
The assembly of the entire machine must be carried out ***ONLY*** *:*

- *by* ***COMANDULLI S.r.l. staff*** *(if set forth in the contract);*
- *by the Customer's technician if trained for this operation.*

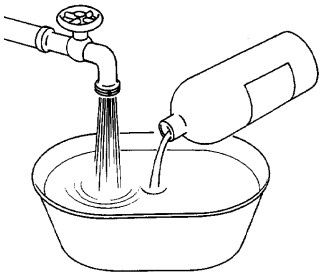
No other Technician is authorised to perform assembly operations.

Use trolleys for local handling.

WARNING
These trolleys must be placed under the uprights or shoulders, ***NEVER ONLY UNDER THE CROSSBEAMS****.*
To position the trolleys, use a tool (e.g. crowbar).



If necessary, clean the parts processed with grease or oil with a suitable detergent.



As assembly could entail accessing high parts, it is necessary to be equipped with a suitable safety ladder.

The machine does not need to be secured to the ground.

Use a spirit level.

With reference to that provided in the previous paragraphs of this chapter, position the machine in the point where it is used.

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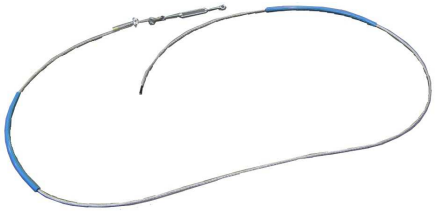
Position the spirit level on the upper belt.

Proceed to level the machine by acting on the adjustment screws mounted at the base of the structure.

Adjust the feet of the hydraulic control unit (see photo).

Once installation is complete, remove the two anchoring ropes of the hydraulic control unit / structure of the machine.

Keep them for any subsequent transport.



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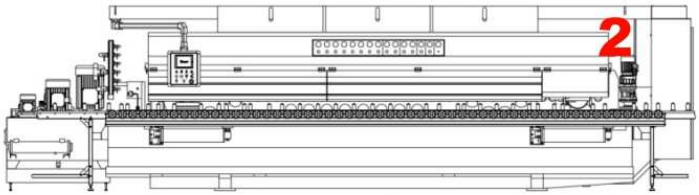
5 CONTROL DEVICES

5.1 Electric control devices



POS.	*CODE*	*DESCRIPTION OF CONTROLS*
1	*QF1*	***MAIN SWITCH ON POWER PANEL*** *The main switch has two positions:* *at "O": MAIN SWITCH RELEASE POSITION* *DISCONNECTS power to the machine;* *at "I": MAIN SWITCH CONNECT POSITION* *Powers the machine.*
2	*SB1* *SB1A* *SB1B*	***MUSHROOM-SHAPED BUTTON: EMERGENCY STOP*** *When pressed, it blocks any machine function.* a. *power is interrupted to the control circuits and to the auxiliary circuits;* b. *the line voltage remains in the input terminals inside the power panel on board of the machine;* *To cancel the emergency status, reset the mushroom shaped EMERGENCY STOP button, then rotate the selector switch 7 (* ***SA1*** *) .* *If any process was interrupted, it is necessary to restart the cycle from the beginning.* *NOTE: The causes of the alarm are indicated by the messages on the terminal display.*

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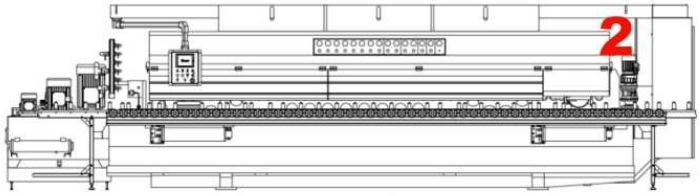

POS.	CODE	DESCRIPTION OF CONTROLS
3	**PLT**	***OPERATOR PANEL*** *For the identification of the guide, alarms and use of the terminal functions, refer to the Programming Manual.*
4	**HL5**	***WHITE "CYCLE IN PROGRESS" INDICATOR LIGHT*** *Off: the machine in stand-by.* *On fixed: Cycle in progress.* *Flashing: machine positioning.*
5	**HL2**	***RED "MACHINE FAILURE" INDICATOR LIGHT*** *Off: no fault.* *On: Machine in fault.* *See the message that appears on the programming terminal*
6	**HL1**	***GREEN AUX VOLTAGE ON INDICATOR LIGHT*** *The machine is ready for operation.* *Off: machine in emergency mode or control circuit not enabled.* *On: auxiliary circuit active*

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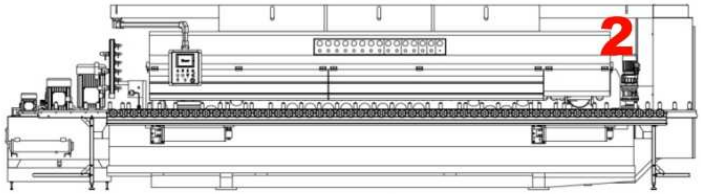

POS.	CODE	DESCRIPTION OF CONTROLS
7	SA1	***KEY SELECTOR TO RESET THE EMERGENCY CIRCUIT.*** *Turn it clockwise to ON to reset the emergency circuit.* *The operator must never leave the key unattended.* *He must always keep it when not used.*
8	HLE1 SBE1	***MULTIFUNCTION LUMINOUS WHITE BUTTON*** *On: Activation of the function indicated on the programming terminal.* *Refer to the paragraph of the manual controls of the programming manual.*
9	HLF1 SBF1	***MULTIFUNCTION LUMINOUS WHITE BUTTON*** *On: Activation of the function indicated on the programming terminal.* *Refer to the paragraph of the manual controls of the programming manual.*
10	SA3	***STABLE 3-POSITION SELECTOR*** *Selector switch for manually moving axes and motorised units.* *Refer to the paragraph of the manual controls of the programming manual.*

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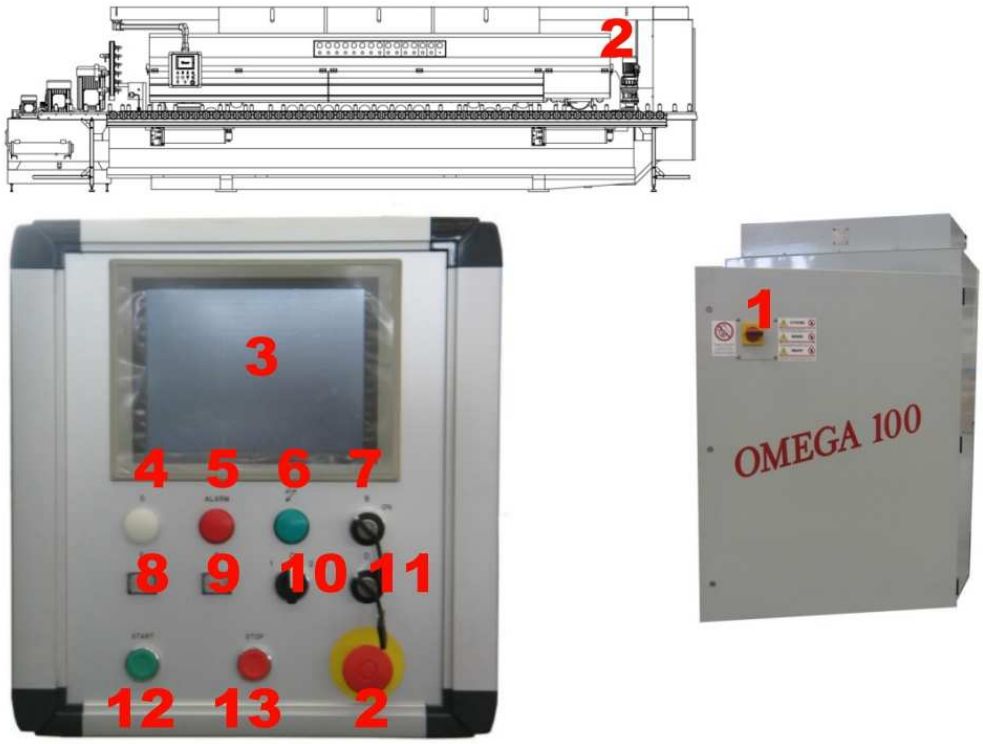

POS.	CODE	DESCRIPTION OF CONTROLS
11	**SA2**	***KEY SELECTOR TO RESTORE THE SAFETY CIRCUIT OF THE DOORS AND OF THE GUARDS.*** *Rotate clockwise to reset the safety circuit of the gates and guards equipped with safety microswitches.* *The operator must never leave the key unattended.* *He must always keep it when not used.*
12	**SB3**	***GREEN CYCLE START BUTTON*** *Pressing the button starts the Machine.*
13	**SB4**	***RED CYCLE STOP BUTTON*** *When pressed, it stops the functions of the machine, completing the work cycle in automatic mode.* *With these precautions:* *a) it does not put the machine in emergency status;* *b) it does not disconnect power to the control panel or to the electrical cabinet.* *c) It does not discharge the pneumatic system*

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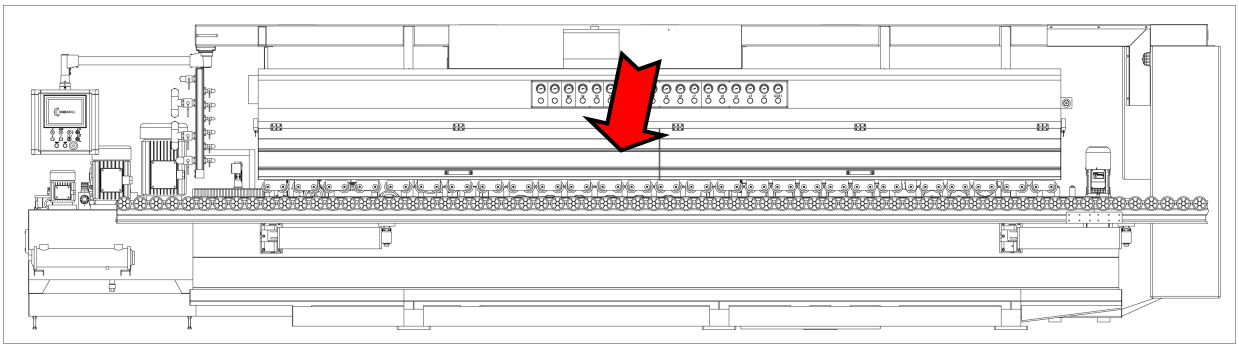
5.2 Pneumatic control devices

On the front centre of the control unit the pressure regulators with relative pressure gauges are installed, to manage the working thrust of the polishing spindles and of the workpiece clamps (see photo).



Spindle adjustment 1 ÷ 6

Adjust the pressure of the spindles by means of the specific pressure regulators (recommended: ~ 3÷4 bar).

Spindle adjustment 7÷11

Adjust the pressure of the spindles by means of the specific pressure regulators (recommended: ~ 3÷4 bar).

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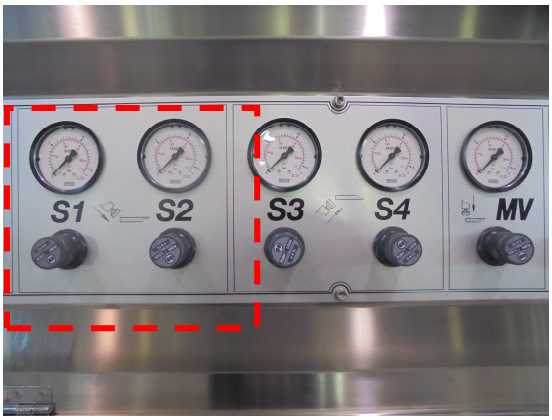
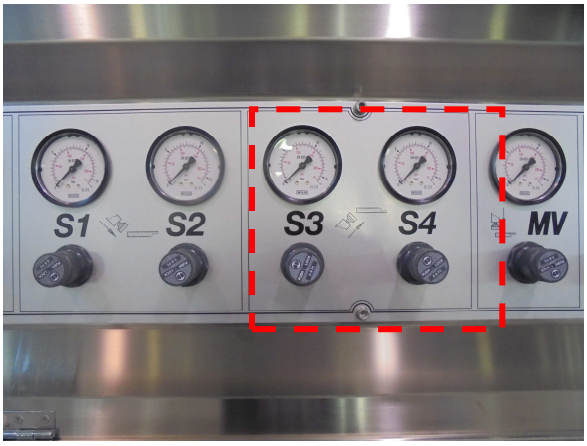


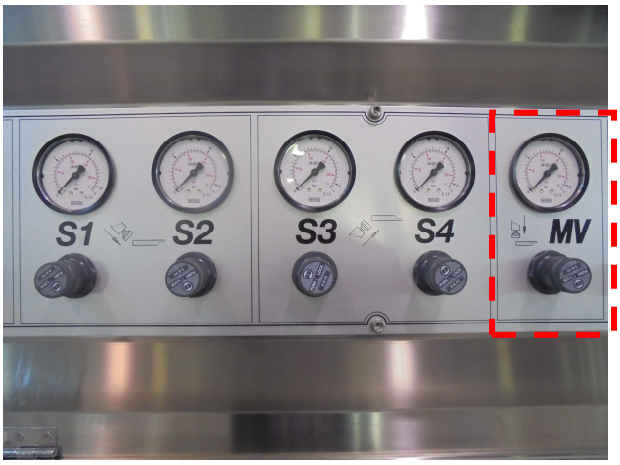
Upper bevels adjustment

Adjust the pressure of the upper bevels by means of the pressure regulator (recommended: ~ 3÷4 bar).



Lower bevels adjustment

Adjust the pressure of the lower bevels by means of the pressure regulator (recommended: ~ 3÷4 bar).



Vertical spindle adjustment

Adjust the pressure of the vertical spindle by means of the pressure regulator (recommended: ~ 3÷4 bar).

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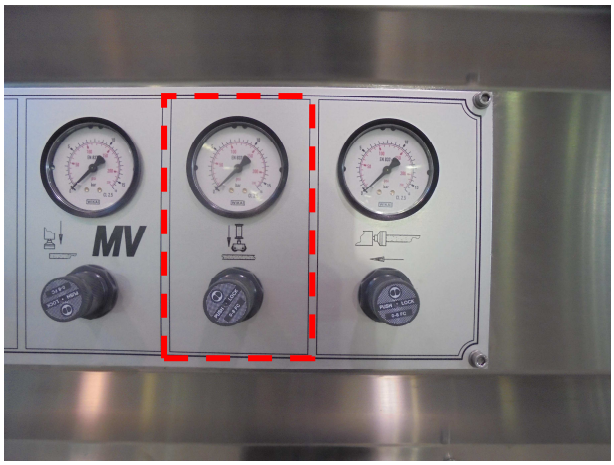
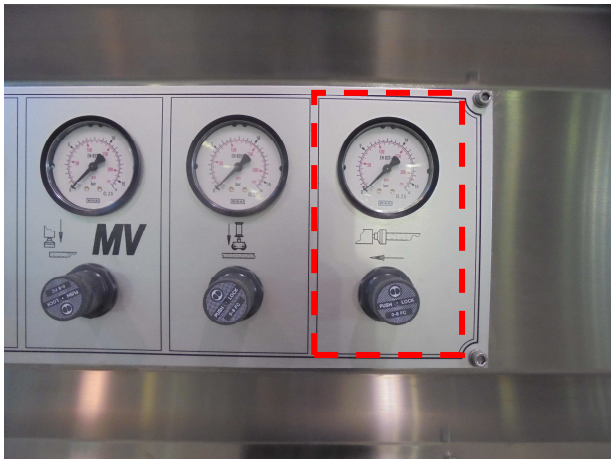


Workpiece clamps adjustment

Adjust the pressure of the workpiece clamps by means of the pressure regulator (recommended: ~ 6 bar).



Spindle backpressure adjustment

Adjust the backpressure of the spindles by means of the pressure regulator (recommended: ~ 2 bar).

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6 FINE-TUNING

The entire fine-tuning was carried out by the ***COMANDULLI S.r.l.*** *technician who tested and dismantled the machine at the plant.*

During the early fine-tuning and production start up stages, he must be assisted by an operator and, according to need, by the mechanical and electrical maintenance technician of the Client.

Open chapter 5 (Control devices) and the Programming manual in order to facilitate the consultation of the configuration of the Control panel and read all the functions.

In any case, the fine-tuning and start-up must be carried out by just ONE ***COMANDULLI S.r.L TECHNICIAN.*** *of by the CUSTOMER'S MAINTENANCE TECHNICIAN, NOT BY MORE THAN ONE.*

The fine-tuning described below reflects how the ***COMANDULLI S.r.L.*** *technician acted, one phase at a time, during the operation.*
It indicates the procedures which must be followed, if future fine-tuning is required.

Before each start of production, an initial fine-tuning must be carried out.

ATTENTION
Carefully read the whole Chapter 2 "safety requirements", in particular:

- *The function of the EMERGENCY BUTTON and remember that it must be pressed for any emergency.*
- *MACHINE IN MAINTENANCE MODE and SYSTEM AT ZERO ENERGY STATUS.*
- *MACHINE OPERATOR*
- *MECHANICAL MAINTENANCE TECHNICIAN.*
- *ELECTRICAL MAINTENANCE TECHNICIAN OR TRAINED PERSON.*
- *WARNING, PROHIBITION AND OBLIGATION PLATES.*
- *PERSONAL PROTECTIVE EQUIPMENT.*

The fine-tuning described below reflects how the ***COMANDULLI S.r.L. TECHNICIAN*** *acted, one phase at a time, during the operation.*
It indicates the procedures which must be followed, if future fine-tuning is required.

6.1 Foreword

The sequence of operations that the ***COMANDULLI S.r.L. TECHNICIAN*** *will have carried out before fine-tuning was as follows:*

- ✓ *Visual inspection of the area where the machine is installed.*
- ✓ *Observation of the assembly levelling.*
- ✓ *If relevant, he will have given instructions for the completion of the assembly.*
- ✓ *Connection from the electric mains line to the system.*
- ✓ *Checked the rotation direction of the motors.*
- ✓ *Connection from the compressed air line to the system and pressure regulation.*

NOTE
AT THIS POINT, HE WILL HAVE CALLED THE OPERATOR AND TECHNICIANS OF THE CLIENT *with whom:*

- ✓ *Together, they check the efficiency of the safety systems (EMERGENCY STOP buttons, doors of the protections and other safety devices).*

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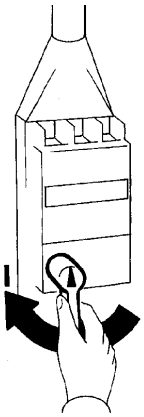
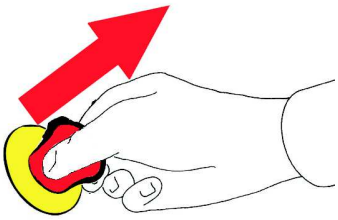
- ✓ *Perform a no-load operation of the machine, in order to carry out the first calibrations. Below are the references and adjustments following the sequence of the production cycle.*
- ✓ *Still no-load, he will have had the machine run full cycles, so that there are no interferences, obstacles or other impediments of the machine and, if it is the case, will have carried out the necessary adjustments.*
- ✓ *He will have shown the operator and Customer's Technicians this User Manual, attachments, diagrams, User Manuals of the components supplied externally and anything else necessary.*
- ✓ *He will have delivered the safety keys to the Department Manager*

6.2 Preliminary checks

Before carrying out any fine tuning, make sure that:



the lever of the main switch (QF1) is at "I";



the EMERGENCY STOP buttons are reset;

the door of the electric cabinet is closed;

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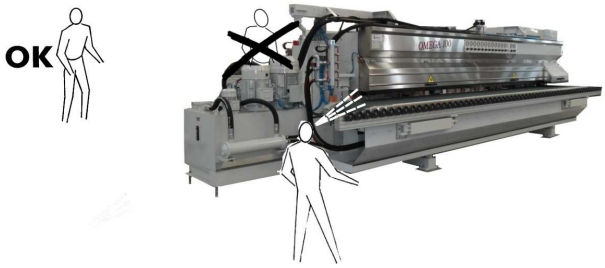
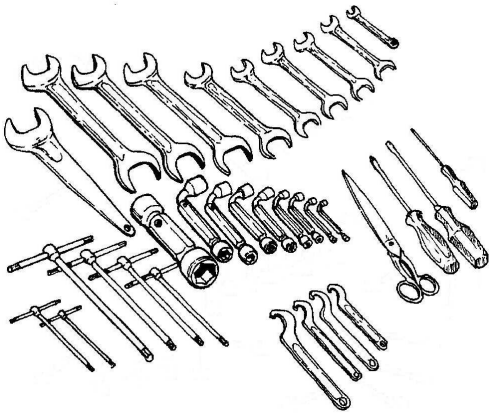
all guards of the mechanisms (mechanical and electrical) are installed correctly

there are no exposed persons in the vicinity of the Machine;



the specific workshop tools recommended for this type of operations are available;



Before starting the adjustment procedures described in the following paragraphs, carefully read the instructions below;

REGULATION OPERATIONS, REPLACING OF USED TOOLS AND CHECKING OF TOOL CENTRING MUST BE CARRIED OUT WITH THE MACHINE IN MAINTENANCE CONDITION:

Before starting the adjustment procedures described in the subsequent paragraphs, carefully read

THIS IS A SERIES OF ADJUSTMENTS OR OPERATIONS THE CLIENT'S TECHNICIAN, FOR WHICH IT IS NECESSARY TO OPERATE THE MACHINE.

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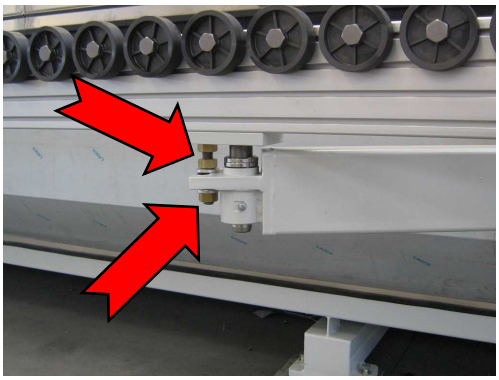
ATTENTION DANGER
OF CRUSHING AND IMPACT
SOME FINE TUNING OPERATIONS MUST BE PERFORMED WITH THE GUARDS OPEN.
THEREFORE, IT IS MANDATORY TO APPLY A SIGN READING "ATTENTION TEST IN PROGRESS" ON EACH DOOR .

ONLY STAFF TRAINED BY THE CUSTOMER MUST ACCESS THE INSIDE OF THE GUARDS AND ARE THE ONLY ONES AUTHORISED TO CARRY OUT THE OPERATIONS DESCRIBED BELOW.

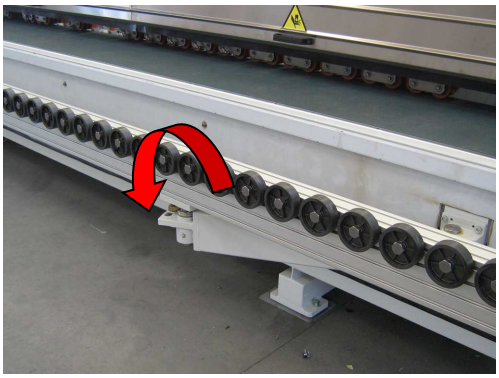
6.3 *Adjusting the workpiece support bar*

The machine is fitted with a bar with manual extension to hold large workpieces (max 1800mm).

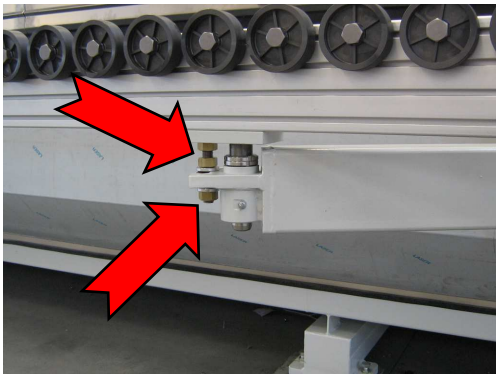
1. *Loosen the bolts on the first arm (piece infeed) of the bar support.*



2. *Open the contrast bar according to the piece to be machined*



3. *Retighten the two bolts*



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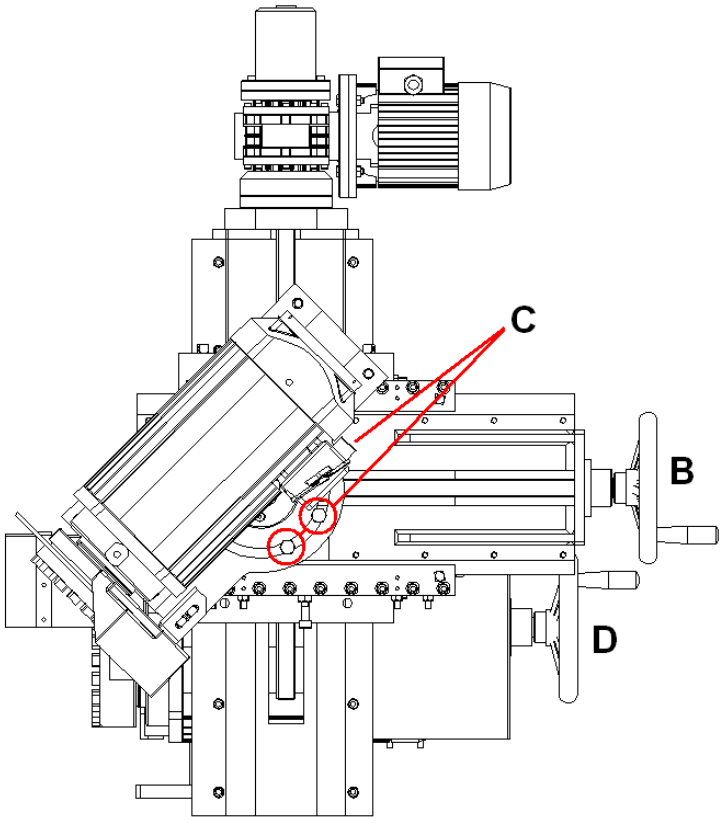
6.4 Rectifying - Calibrating Group

This multifunction unit is composed of a rectifying mandrel for the straight edge and the tiltable QM spindle.
Before starting the rotation of the spindles it is necessary to position them so as to carry out the work at the point and in the desired manner.
This group has the possibility of carrying out on the straight coast through the rectifying spindle and perpendicular or inclined works (45 °) on the slabs to be treated with the QM calibrator.
To work (grind) on the straight edge it is necessary, using the handwheel **D**, to bring the grinding spindle into the horizontal position desired, according to the work to be performed.
To operate perpendicularly, the unit moves automatically (according to the data set on the programming terminal) in the vertical position desired according to the work to be performed, then with the handwheel **B** position the disk (or grinding wheel) horizontally with respect to the slab to work.
To position the unit in an inclined way, it is necessary to unlock the screws **C** and when you feel that the unit is free tilt it in the desired position, then tighten the screws **C**.
By combining the movements of the A and B handwheels, perform positioning respect to the slab



The rectifying spindle rotation is powered by a 4 KW electric motor at 2800 rpm
The calibrating spindle rotation is powered by a 5.8 KW electric motor at 2800 rpm

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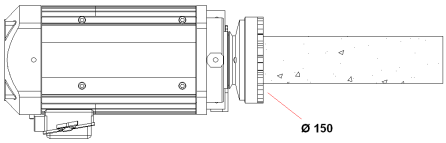
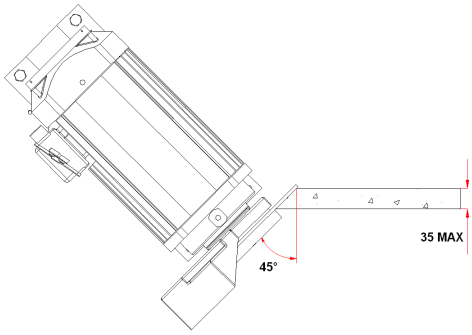
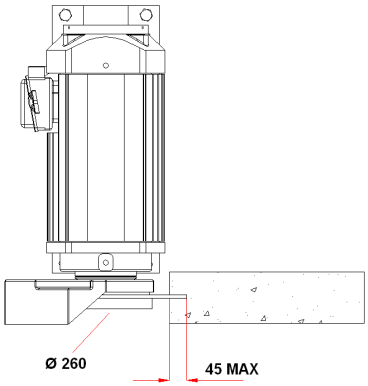
Work possibilities of the unit:



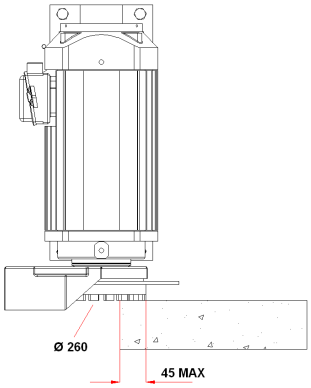
Rectify by horizontal spindle



Inclined cuts



Cuts in the edge



Calibrate

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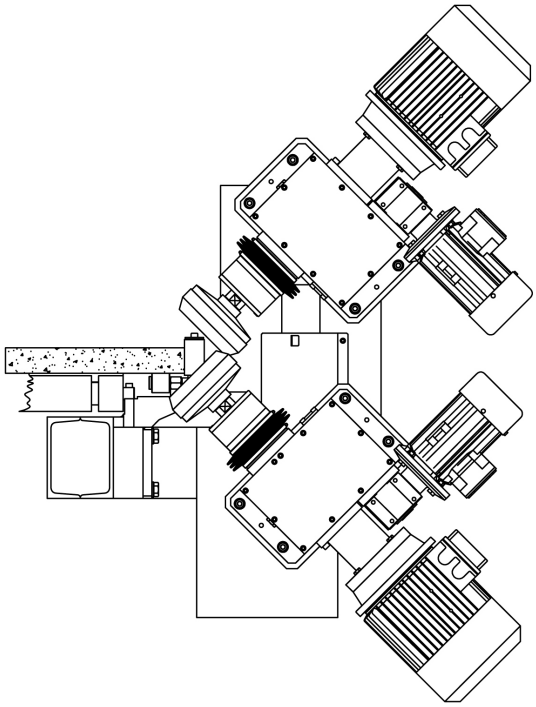
6.5 Adjusting the rougher spindles

For the execution of bevelling to process an edge in a toroidal shape, simply enter the thickness of the slab; the units will move automatically in a suitable manner.
To perform a bevel of a different size, set the values in the programming terminal (see PROGRAMMING manual).



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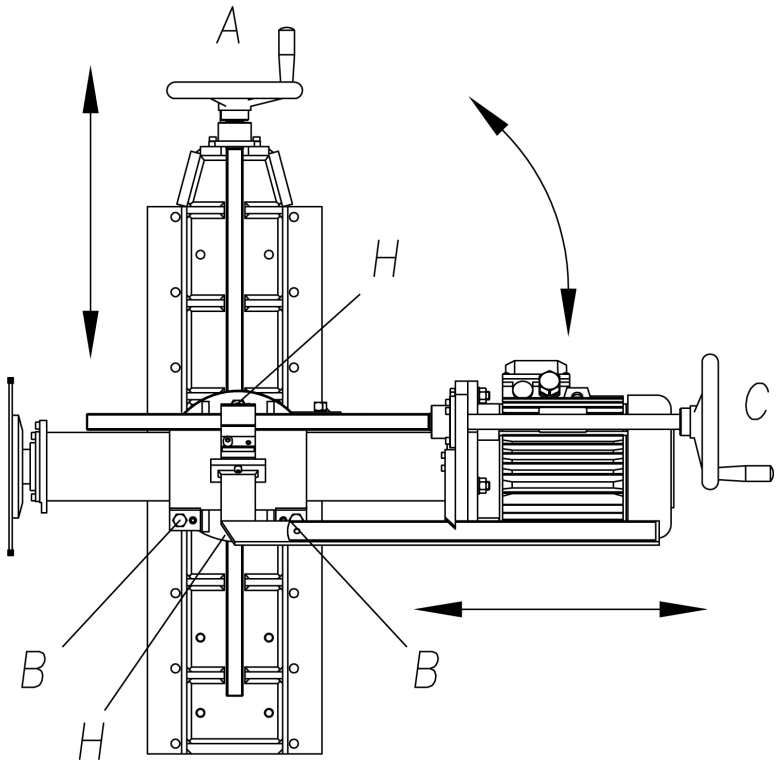
6.6 Adjusting the blade cutter unit/ drip tray NOT AVAILABLE

This unit has the possibility of working over the slab (blade cutter mode) or under the slab (drip tray mode). Therefore, for the correct use of the spindle, the operating mode must be set on the programming terminal.
Before starting the rotation of the unit spindle, position it so as to work at the point and in the way desired.

6.6.1 Tilting blade cutter mode (1) NOT AVAILABLE

This mode makes it possible to carry out perpendicular or inclined cuts (max. 45 °) on the slab to be processed.
*To position the unit to perform perpendicular cuts, using the handwheel **A**, move the disk to the desired vertical position, taking into account the cutting depth to be achieved.*
*At this point, release the screws **B** and by means of the handwheel **C** , move the disk to the desired horizontal position, taking into account the distance of the cut on the piece.*
*Once positioning is concluded, tighten the screws **B** .*
*To position the unit for angled cuts, it is necessary to release the screws **B** and slightly loosen the screws **H** at the same time supporting the same unit (pay attention).*
*When you hear that the unit is free, it is possible to tilt it to the desired position and then tighten the screws **H** .*
*By combining the movements of the handwheels, **A** and **C** perform positioning respect to the slab.*
*At the end of the operations, tighten the screws **B** and start rotating.*



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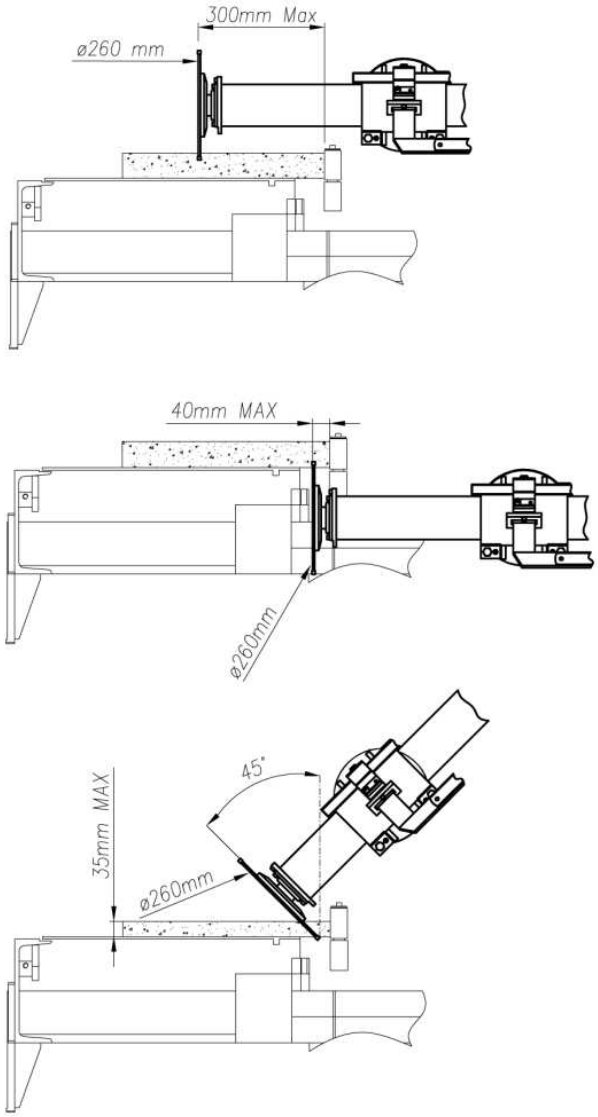
6.6.2 *DRIP TRAY MODE (2) NOT AVAILABLE*

Using the unit normally as a drip tray, inclination is not possible and therefore the spindle must be kept steady as for the perpendicular cuts. For its positioning, proceed as for the blade cutter mode with the difference that the disc must be placed under the slab to be processed.

Work possibilities of the unit:



The rotation of the disc of the drip tray - blade cutter unit is provided by a 5.5 HP motor at 2800 rpm.

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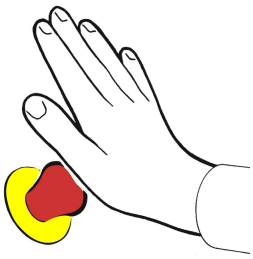
7 START-UP

7.1 Initial start-up phases

Open Chapter 5, in order to see the configuration of the Control Panel and read all the functions.

Remember to always pay attention to the indicator lights.

ATTENTION - GENERIC HAZARD
Carefully read the Safety Requirements at the start of this Manual (Chapter 2), in particular the operation of the emergency button.



Remember that, for any emergency, the EMERGENCY STOP button must be pressed

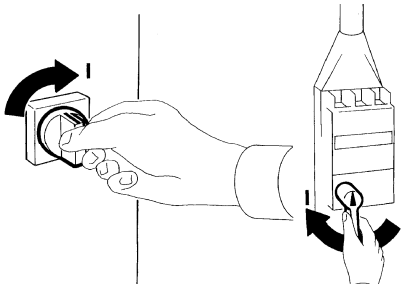
The start-up instructions described below, consider that the machine is in the ZERO ENERGY STATUS, that the loading and the fine tuning have been carried out as described in the previous Chapter, and that the system has been set by a COMANDULLI Technician in automatic mode.

NOTE
If during start-up and normal operation, the system stops, refer to the Programming manual, especially the chapter ALARMS, FAULTS AND SOLUTIONS and act according to the instructions indicated.

Before start-up check that:

- *all internal fixed guards are mounted;*
- *the door of the electrical cabinet is not open;*
- *there are no doors of protections open;*
- *check that there is no one in the vicinity of the Machine;*
- *before continuing with start-up: read all of this chapter.*

Open the compressed air and make sure that the main pressure gauge reads 6 / 8 bar.



Position the main switch at "ON" and the switches on the electrical panel at "ON".

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This way the machine is powered and the main screen appears on the Control panel.

Have the Safety Manager provide the keys of the selectors SA1 and SA2.

Stand in front of the main control panel.

Turn the key selector switch B (SA1) to the ON position to activate the safety circuit.
The indicator lights HL1 and HL2 switch on.

Turn the key selector D (SA2) to ON to activate the circuit of the safety devices.

If it is the first time that the machine is switched on, after the electrical connection to the service line, a connection error is displayed with the following message:

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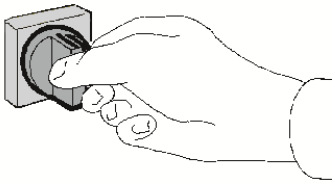
In this case:

Move the main switch on the electrical cabinet to OFF.

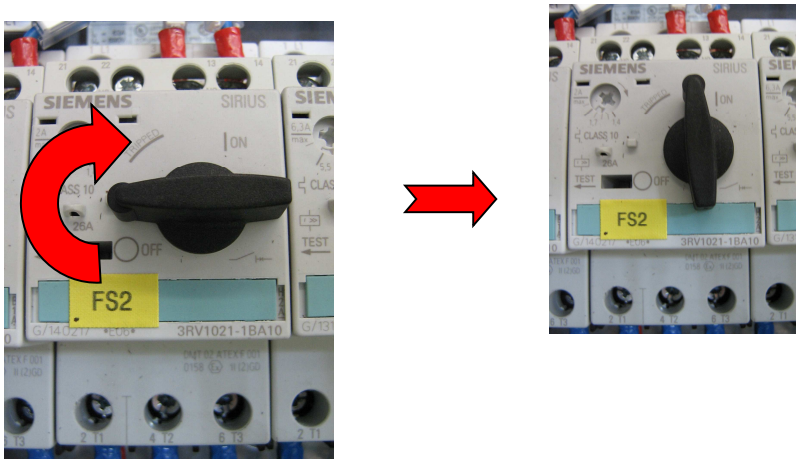


Open the electrical cabinet and check the position of the circuit breaker protection FS2:

Correct position

Wrong position

If it is in the correct position, swap the phases of the line R-S (L1-L2) on the main switch "QF1" or turn it back on.



Repeat the ignition and start-up phases of the machine.

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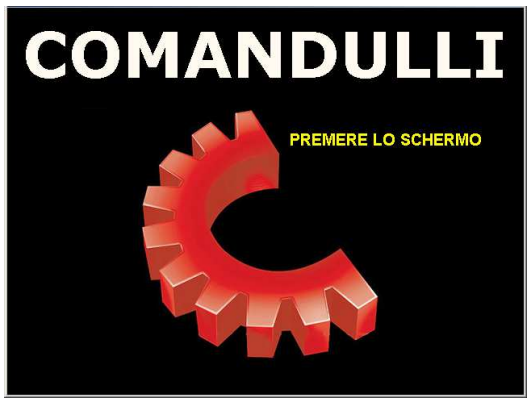
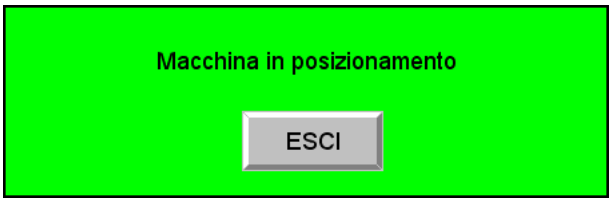
The display will show:



Press the screen; if the machine is not reset, it will show the message:

This operation is very important because all units are reset.
RESET means return to 0 (zero) of each motorised unit, which after every programming must move automatically to the set position.
Press the button E to start the operation, during the reset cycle, the following will appear:

If even only one of the axes does not reset to zero properly, the program does not move on and the indicator light G (HL5) flashes, indicating the partial reset operation.
If all the operations are carried out correctly, the program goes on automatically with the message:



As previously seen, even if only one axis is not positioned correctly, the program stops and the indicator light G (HL5) flashes to signal the partial reset of the axes.

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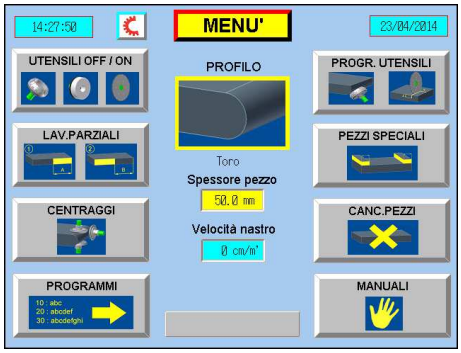
At the end, the MAIN MENU page will appear:



At this point it is possible to continue programming the machine.
Refer to the programming manual.

7.2 Preparing the machine for processing

- ✓ *Always program the processes in a rational way, selecting the most appropriate sequence for all the work phases.*
- ✓ *Process pieces in sizes that are compatible with the features of the machine.*
- ✓ *Use the type and diameter of tools most suitable for the programmed processing.*
- ✓ *In particular, check the integrity and efficiency of the tools and the correct installation on the spindles.*
- ✓ *Check that the work area around the machine is free from any debris or blocks.*
- ✓ *Check the correct electrical, pneumatic and water supply to the machine.*

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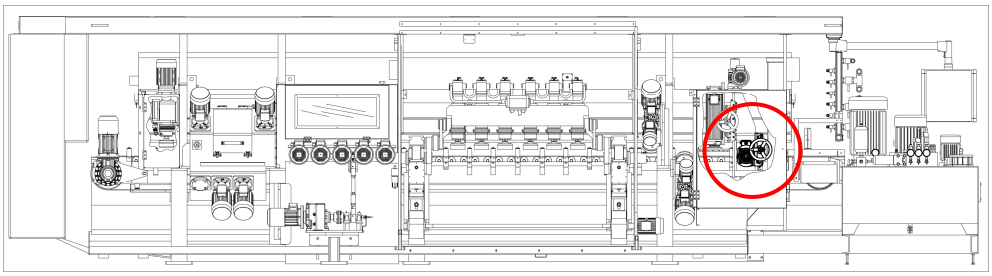
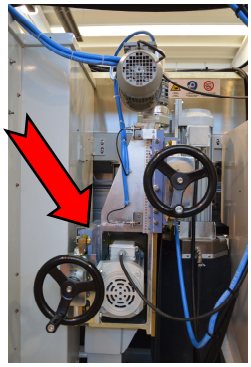
AZIENDA CERTIFICATA - ISO 9001:2008

7.3 Positioning and replacement of the abrasives

7.3.1 Positioning of the diamond tool on the Rectifying unit

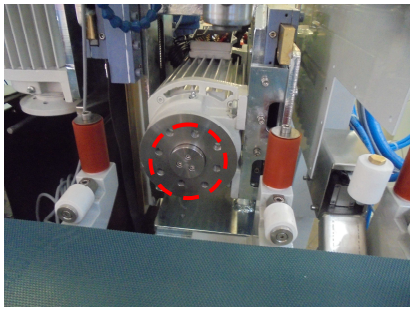




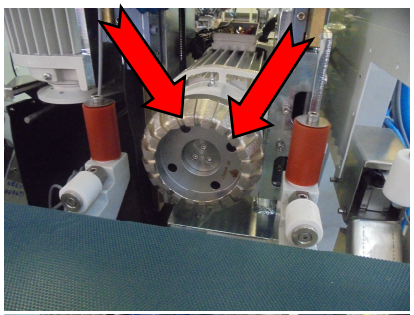
Authorised personnel: Only machine operators.
Note: Access from the rear part of the machine.

1. *Move the main switch on the electrical cabinet to OFF and lock it with a padlock. The key of the padlock must be kept by the person in charge of the processing or given to the safety manager. IT MUST NEVER BE LEFT IN THE LOCK.*

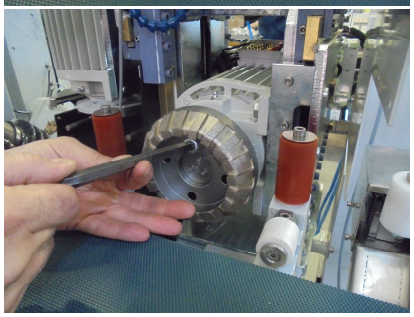
2. *Using a brush, apply a thin layer of grease on the tool holder connection as indicated.*



3. *Position the calibration wheel or the cutting disc and align the 4 holes with the attachment of the tool itself*



4. *Apply a thin layer of grease on the thread of the screws and tighten them using a spanner.*



5. *Reactivate the electric line.*

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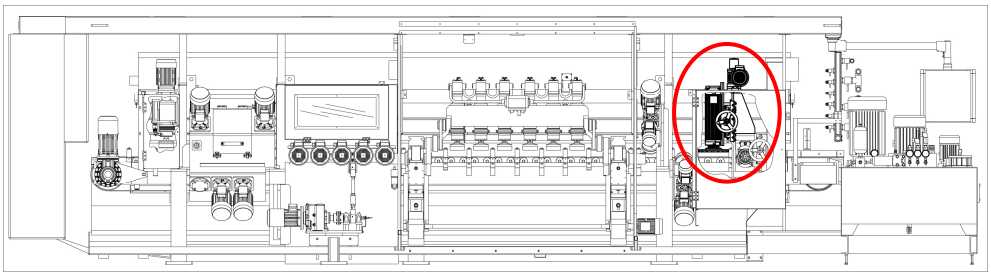
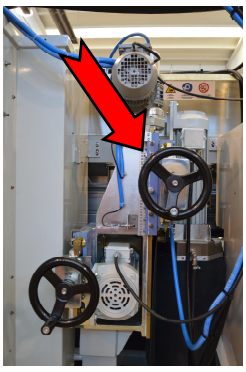
7.3.2 Posizionamento dell'utensile diamantato sul gruppo Calibratore QM

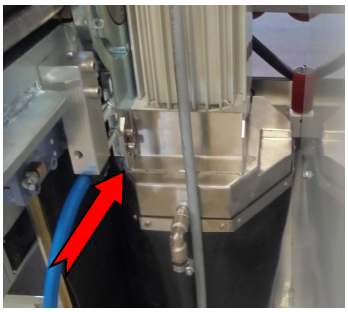




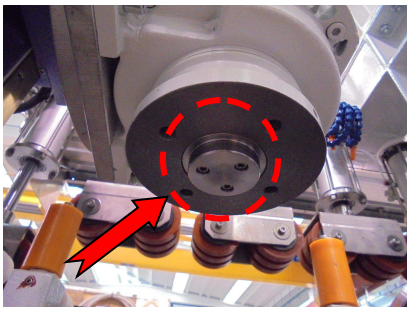
Authorised personnel: Only machine operators.
Note: Access from the rear part of the machine.

1. *Move the main switch on the electrical cabinet to OFF and lock it with a padlock. The key of the padlock must be kept by the person in charge of the processing or given to the safety manager. IT MUST NEVER BE LEFT IN THE LOCK.*

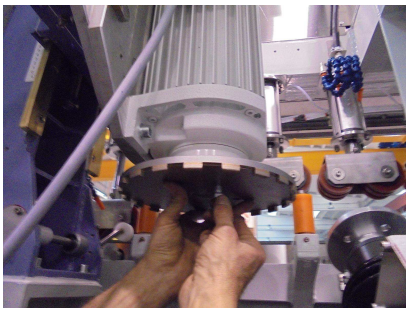
2. *Remove the protective casing from the unit in question.*



3. *Using a brush, apply a thin layer of grease on the tool holder connection as indicated.*



4. *Position the calibration wheel or the cutting disc and align the 4 holes with the attachment of the tool itself. Apply a thin layer of grease on the thread of the screws and tighten them using a spanner 19 mm.*
5. *Put the protective casing back in place.*
6. *Reactivate the electric line*



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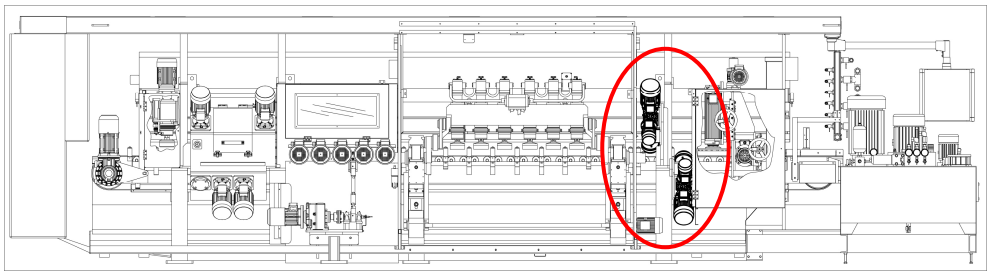
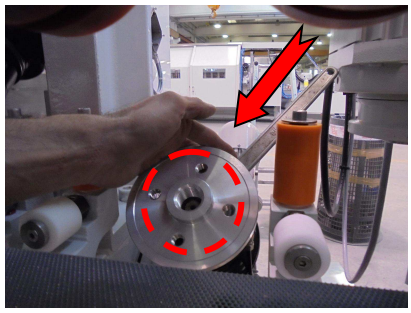
7.3.3 Positioning of the diamond tool on the Rougher units (G1 / G2).



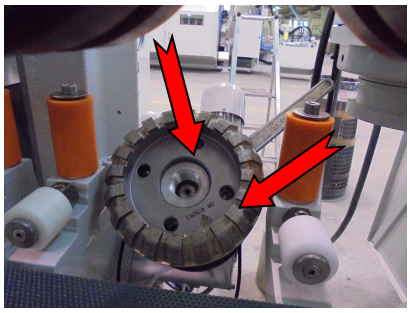
Authorised personnel: Only machine operators.
Note: Access from the front part of the machine.

1. *Move the main switch on the electrical cabinet to OFF and lock it with a padlock. The key of the padlock must be kept by the person in charge of the processing or given to the safety manager. **IT MUST NEVER BE LEFT IN THE LOCK**.*

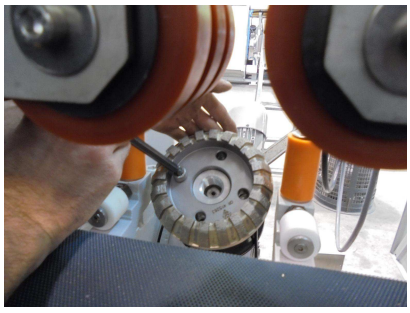
2. *Using a brush, apply a thin layer of grease on the tool holder connection as indicated..*



4. *Position the generation wheel and align the 4 holes with the attachment of the tool itself.*



5. *Apply a thin layer of grease on the thread of the screws and tighten them using an Allen key*



5. *Reactivate the electric line.*

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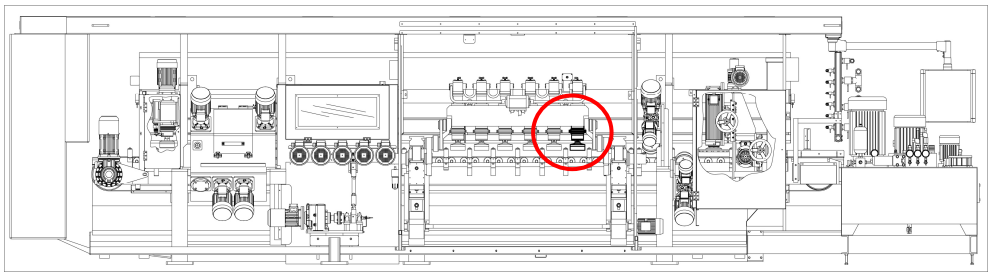
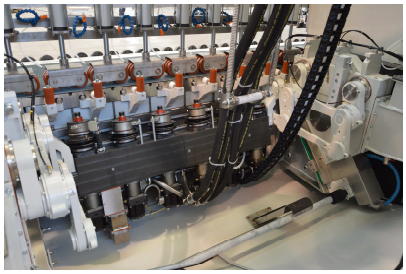
7.3.4 Positioning of the diamond tool on the first head of the oscillating unit G3

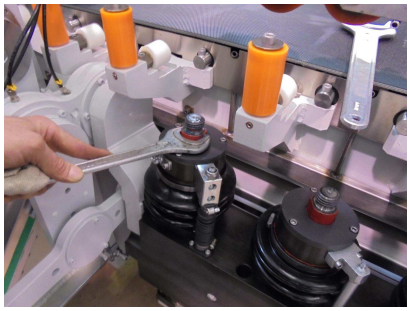




Authorised personnel: Only machine operators.
Note: Access from the front part of the machine.

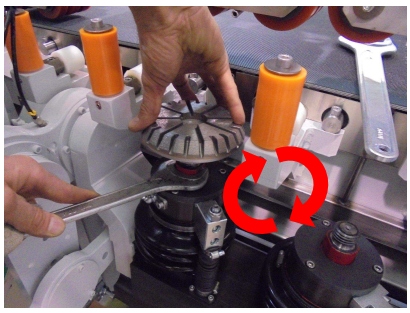
1. *Move the main switch on the electrical cabinet to OFF and lock it with a padlock. The key of the padlock must be kept by the person in charge of the processing or given to the safety manager.* ***IT MUST NEVER BE LEFT IN THE LOCK****.*

2. *Using a 34 mm spanner, hold the spindle shaft.*



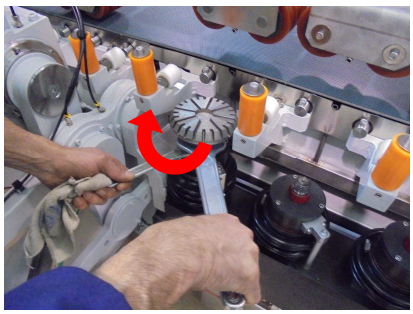
3. *Apply a thin layer of grease on the thread of the spindle shaft and keeping it still, screw the diamond tool by hand.*

.



4. *Holding the spindle shaft by means of a 46 mm spanner, slightly tighten the tool.*

5. *Reactivate the electric line.*



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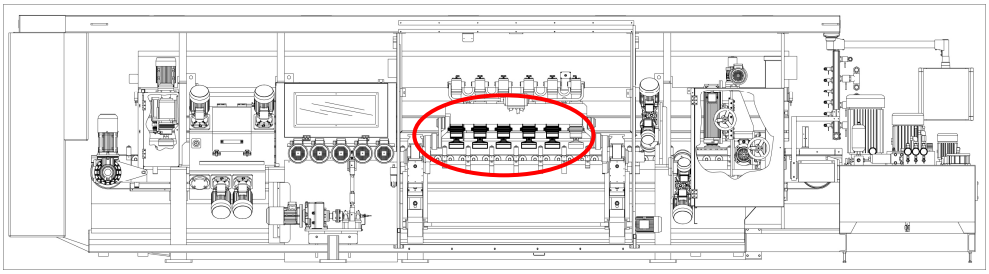
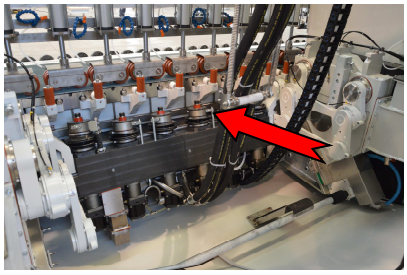
7.3.5 Positioning of the abrasives on the heads 2 ÷ 6 of the oscillating unit..

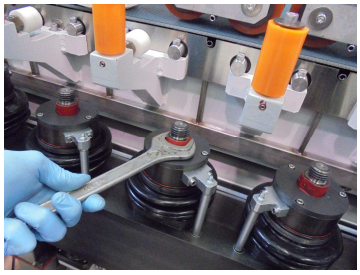




Authorised personnel: Only machine operators.
Note: Access from the front part of the machine.

1. *Move the main switch on the electrical cabinet to OFF and lock it with a padlock. The key of the padlock must be kept by the person in charge of the processing or given to the safety manager. **IT MUST NEVER BE LEFT IN THE LOCK**.*

2. .



2. *Using a 34 mm spanner, hold the spindle shaft.*

3. *Apply a thin layer of grease on the thread of the spindle shaft and keeping it still, screw the abrasive holder plate by hand.*

4. *Holding the spindle shaft by means of a 46 mm spanner, slightly tighten the abrasive holder plate.*

5. *Keeping the abrasive holder plate still with a 46 mm spanner, secure the abrasive to the plate by means of the nut connection.*

6. *Reactivate the electric line.*

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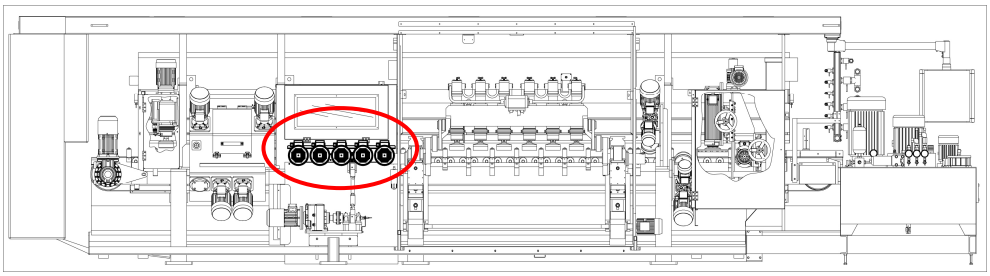
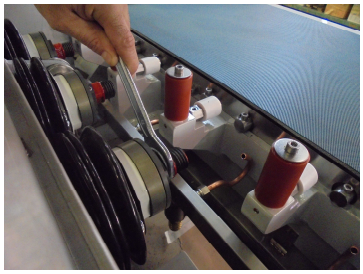
7.3.6 Posizionamento degli abrasivi sulle teste flottanti.



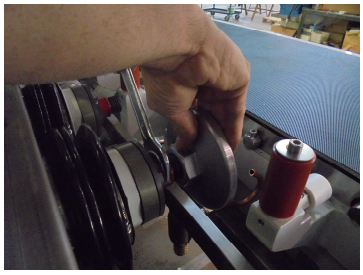
Authorised personnel: Only machine operators..
Note: Access from the front part of the machine.

*Move the main switch on the electrical cabinet to OFF and lock it with a padlock. The key of the padlock must be kept by the person in charge of the processing or given to the safety manager. **IT MUST NEVER BE LEFT IN THE LOCK**.*

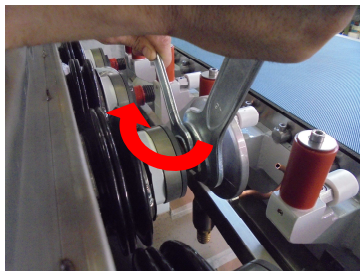
2. *Using a 27 mm spanner, hold the spindle shaft.*



3. *Apply a thin layer of grease on the thread of the spindle shaft and keeping it still, screw the abrasive holder plate by hand*

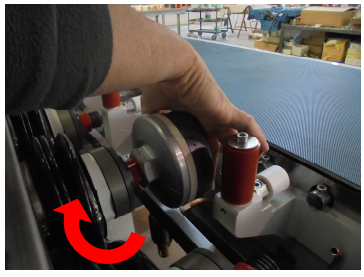


4. *Holding the spindle shaft by means of a 46 mm spanner, slightly tighten the abrasive holder plate.*



5. *Keeping the abrasive holder plate still with a 46 mm spanner, secure the abrasive to the plate by means of the nut connection..*

6. *Reactivate the electric line.*



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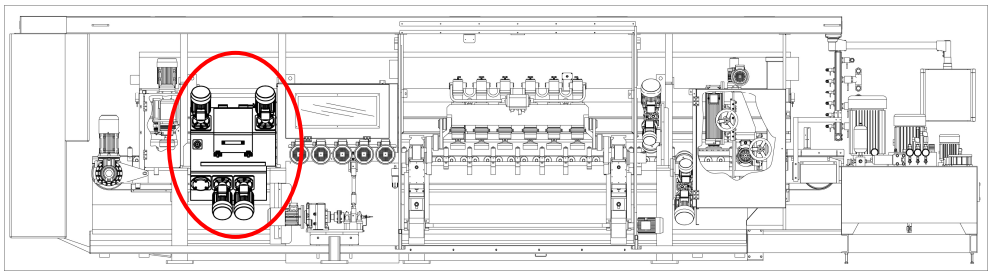
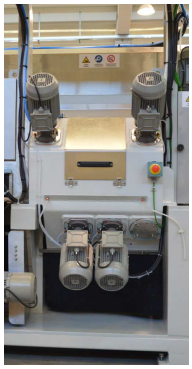
7.3.7 Positioning the abrasives on the bevels



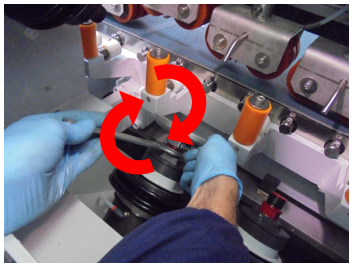


Authorised personnel: Only machine operators..
Note: Access from the front part of the machine.

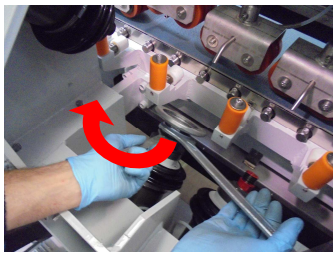
.

1. *Move the main switch on the electrical cabinet to OFF and lock it with a padlock. The key of the padlock must be kept by the person in charge of the processing or given to the safety manager.* ***IT MUST NEVER BE LEFT IN THE LOCK****.*

2. *Using a 27 mm spanner, hold the spindle shaft.*



3. *Apply a thin layer of grease on the thread of the spindle shaft and keeping it still, screw the abrasive holder plate by hand.*



4. *Holding the spindle shaft by means of a 46 mm spanner, slightly tighten the abrasive holder plate.*

5. *Keeping the abrasive holder plate still with a 46 mm spanner, secure the abrasive to the plate by means of the nut connection.*
6. *Reactivate the electric line.*

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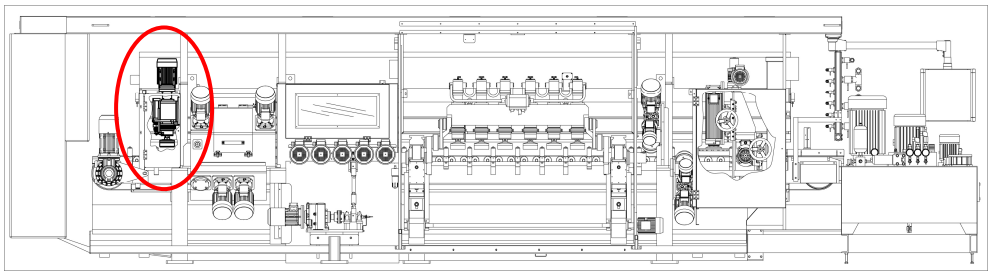
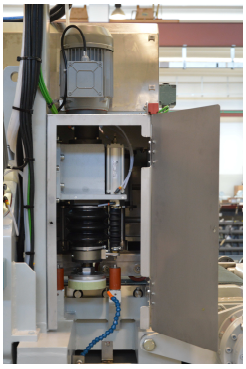
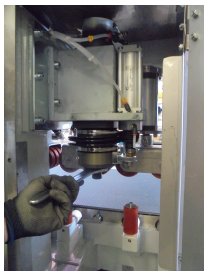
7.3.8 Positioning the abrasive on the vertical spindle





Authorised personnel: Only machine operators.
Note: Access from the rear part of the machine.

1. *Move the main switch on the electrical cabinet to OFF and lock it with a padlock. The key of the padlock must be kept by the person in charge of the processing or given to the safety manager. **IT MUST NEVER BE LEFT IN THE LOCK**..*



2. *Using a 34 mm spanner, hold the spindle shaft.*
3. .

3. *Apply a thin layer of grease on the thread of the spindle shaft and keeping it still, screw the abrasive holder plate by hand.*

4. *Holding the spindle shaft by means of a 46 mm spanner, slightly tighten the abrasive holder plate.*

5. *Keeping the abrasive holder plate still with a 46 mm spanner, secure the abrasive to the plate by means of the nut connection.*
6. *Reactivate the electric line.*

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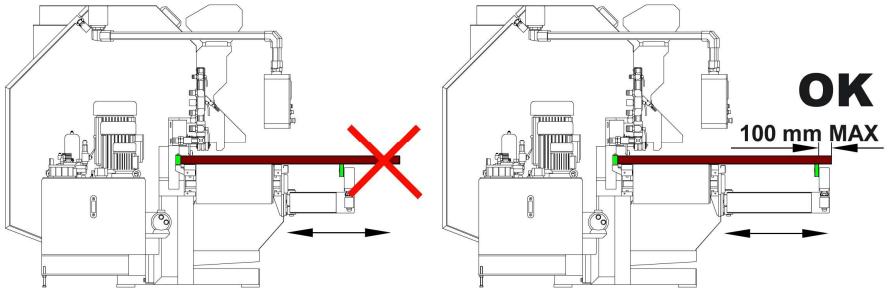
7.3 Loading the pieces on the machine

ATTENTION
DANGER OF CRUSHING DUE TO PIECES FALLING
PAY THE UTMOST ATTENTION!!

During the handling of the parts and the installation on the machine, pay the utmost attention to the risk of crushing persons or parts of the body.



- *To position the pieces, use suitable equipment, with sufficient capacity in relation to their weight.*
- *For handling parts, wear gloves and safety shoes*
- *Load the pieces on the machine without causing blows or anomalous stress.*
- *Never place pieces on the bench in an unstable position.*
- *The pieces must be loaded on the infeed roller conveyor, positioned completely against the alignment rollers. Then they must be pushed on the conveyor belt until they are dragged autonomously to the spindle work area.*

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7.4 Control of the machine

The machine can operate:

- *in manual mode, with the controls on the console to carry out operations in order to check regular functioning.*
- *in automatic mode, with programmed processes*

For the controls of the machine, follow the instructions provided in the programming manual.

7.5 Functions and possible processing

These are various processes that the machine can perform.

Calibration

It is carried out by enabling the calibrator spindle from the control panel by setting the positioning values so that the grinding wheel processes the desired thickness and depth.

Diamond bevelling (roughing)

It is carried out with the two diamonds at 45° using the diamond wheels for the formation of the toroidal profiles, removing the excess part before the creation of the profile.
It is enabled from the control panel. The extent of the bevel to be removed is automatically calculated by the PLC on board according to the machining set.
The tool is positioned by means of a gearmotor controlled by an encoder.

Polishing of the edge by oscillating unit

This is performed with the edge polisher spindles (from the 2nd to the 8th), enabled from the control panel. Abrasive grinding wheels are used in sequence of granulometry up to polishing.
For this operation it is necessary to keep the battery of the spindles in a horizontal position.

Polishing of toroidal edges

This is carried out with the 8 edge polishing spindles enabled from the control panel. A diamond wheel on the first spindle and a series of abrasive grinding wheels on other spindles are used in sequence of granulometry up to polishing.
For these processes, the battery of the spindles must oscillate around the profile to be created.

Execution of the drip tray

This is carried out with the final spindle enabled from the control panel, positioning it so that the disc makes the cut at the desired position and depth.

The operations described above may be carried out individually or all at the same time.

When processing the edge of a slab, after having established the operations to be carried out, it is necessary to check that any existing work units on the machine and not required momentarily, do not obstruct the passage of the slab itself.

To achieve the best results, it is important to keep the shiny surface of the slab on the conveyor belt, with the rough surface of the slab in contact with the clamps.

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7.6 Checks during processing

During machine operation, constantly check:

- *that there are no alarm signals*
- *that there are no noises, vibrations or anomalous overheating of parts of the machine*
- *that the noise level of the tools does not vary significantly.*
- *that the machine performs the programmed operations in the desired sequence*

In case of machine block, find out the causes and remove them before restoring operation.

ATTENTION
ENTRAPMENT HAZARD

In the event of blockage due to triggering of the safety devices on the access doors to the work area, before restoring, check that no one is inside the prohibited area

With malfunctions that are not ascertained or faults that cannot be repaired safely, request the intervention of our Technical Support Service.

7.7 Unloading of the machined parts

Comply with that described in paragraph 7.3 "Loading the pieces on the machine".

7.8 Checks after processing

Check the state of the tools and replace them if necessary.
Clean the machine, in particular eliminating debris and scrap pieces from the loading surface and from the floor and any deposits of dust and mud from the various parts of the machine itself (see also Chapter 9 "Maintenance and cleaning of the Machine"

If necessary, following the instructions given in chapter 8 "Stops" bring the machine to zero energy status.

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8 STOPPING THE MACHINE

Open Chapter 5 "Control devices" of this Manual and the Programming Manual in order to see the configuration of the control panel.

Below is a description of how to behave in each of the cases mentioned above.

8.1 Normal stop

For small breaks or when the operator does not have control of the Machine, it is always necessary to stop the machine.

*To do so, press the red cycle stop button (**SB4**): this stops the functions of the machine, completing the work cycle in automatic mode*

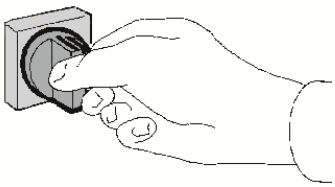
To restart the system, proceed as indicated in chapter 7 "Start-up".

8.2 Normal stop or stop at the end of the work day

For long pauses, proceed as follows:

*Press the red cycle stop button (**SB4**): this stops the functions of the machine, completing the work cycle in automatic mode.*

Note:
Moving the main switch to OFF, remember that to start it up again it is necessary to carry out the reset of the machine.
Operation that takes even 30 minutes.

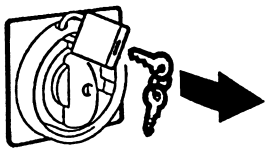


Move the main switch on the electrical cabinet to OFF.

Close it with a padlock)

The key of the padlock must be:

- *either kept by the operator;*
- *or given to the Safety Manager.*



IT MUST NEVER BE LEFT IN THE LOCK

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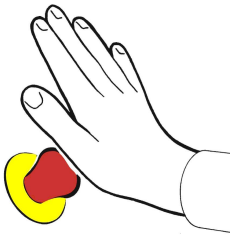
8.3 Emergency stop



Should the operator stop the machine due to an emergency, by pressing one of the three red mushroom-shaped buttons, it blocks any machine function and interrupts power to the control circuits and the auxiliary circuits.

*To cancel the emergency status, reset the mushroom-shaped EMERGENCY STOP button and then turn the key selector (**SA1**) .*

To restart the system, proceed as indicated in chapter 7 "Start-up".

8.4 Stop due to power failure

In case of stop due to a power failure, all the active functions (automatic and manual) are stopped completely.
The main switch remains at "ON".

In any case, check that there is power on the line.

When power returns to the line, proceed as indicated in Chapter 7 "Start-up" and, in any case, the restart of the automatic work cycles is at the discretion of the operator, upon reactivation of the auxiliary circuits and carrying out the reset cycle.

For the movements in MANUAL mode, it is not necessary to carry out the reset cycle, but the auxiliary circuits must be reactivated.

› for long downtime (holidays) or stopping for extraordinary maintenance

*To do so, press the red cycle stop button (**SB4**): this stops the functions of the machine, completing the work cycle in automatic mode*

The control panel (3) displays the message relative to the status of the machine.

To restart the system, proceed as indicated in chapter 7 "Start-up".

Operations to be carried out by the maintenance technician of the Client

Before restarting the machine, it is necessary to perform a complete check of the equipment.
This must include:

- *cleaning operations*
- *restore and, if necessary, tightening of the connections*
- *examination of the condition of the components and devices*
- *verification of electrical insulation*
- *control of the utilities*
- *verification of the continuity of the earth conductor.*
- *check normal environmental conditions*
- *carry out a complete operating test*

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9 TROUBLESHOOTING

This is a guide for the identification and the removal of some of the potential causes of stopping due to a failure or blockage.
If the block or failure does not fall within the cases indicated or is not always repairable by your technicians, please contact our After-Sales Assistance Service.

9.1 The machine does not start

Power missing	*1. Check the electric power supply mains.* *2. Check the QF1 main switch*
Emergency button pressed	1. *Identify and release the pressed emergency button*
Doors giving access to the work area not closed	*1. Close the open access door*
Power missing to electric motors	1. *Turn keys B and D on the panel for enabling motors to ON; the green machine reset indicator light must switch on.*
Green indicator light on the panel is not switched on.	*1. Check the fuse.* *2. Check the contactors KA100 - KA102* *3. Check the control units E9 - E10* 4. *Green indicator lights blown*

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9.2 The programming terminal does not switch-on

DISPLAY	*8.4 inch LCD display with high brightness. The entire display is made up from a touch screen, which acts as a device to enter data*		
RUN ***indicator***	***Green***	***Orange***	***Red***
On	***The terminal is working normally***	• *The file system check is in progress carried out immediately after ignition* • *The battery is almost flat or is not connected and the terminal runs regularly*	*An error has occurred at start up*
Flashing	***The transfer from the memory card has been completed correctly.***		
Off	• *The terminal is not powered* • *The fuse has blown* • *The system program is damaged and it is not possible to start the system*		
The terminal is not powered Power missing	1. *Check the electric power supply mains.* 2. *Check the QF1 main switch* 3. *check the circuit breaker FS.T1* 4. *check the transformer T1* 5. *check the power supply unit GS1*		

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9.3 The belt does not rotate or in alarm

Power is not on	*1. Turn keys B and D on the panel for enabling motors to ON; the green machine reset indicator light must switch on.*
Check the functioning in manual mode	*2. Command the rotation of the belt* *3. increase and decrease the speed of the belt* *4. Check the circuit breaker FS19*
Check whether the BELT ENCODER alarm is triggered	*1. Go to manual mode and check the operation of the sensor BQ1*
Mechanical failure	*Locate and remove*

9.4 The spindles do not rotate or intervene on the piece

Power is not on	*1. Turn keys B and D on the panel for enabling motors to ON; the green machine reset indicator light must switch on.*
Check the functioning in manual mode	*1. Individually check rotation of the spindles.* *2. Check the relative circuit breakers of the motors* *3. Check the individual infeed / outfeed movement of the spindles.* *4. Check the air solenoid valves*
Check the piece reading sensor	*Go to manual mode and check operation of the sensor*
Check the pneumatic pressure	*Check the pressure gauges*
Mechanical failure	*Locate and remove*

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9.5 The clamps do not intervene on the piece

Power is not on	*Turn keys B and D on the panel for enabling motors to ON; the green machine reset indicator light must switch on.*
Check the functioning in manual mode	*Individually check operation of the clamps.* *Check the air solenoid valves*
Check the piece reading sensor	*Go to manual mode and check operation of the sensor*
Check the pneumatic pressure	*Check the pressure gauges*
Mechanical failure	*Locate and remove*

9.6 Malfunction of the equipment

It is useless to specify the various types of failure and the relative diagnostic systems and solutions: this material is described in the dedicated manuals of the individual components, which must be referred to for in-depth analysis of the fault.
Normally the malfunctioning can be caused by random breakage or improper operating conditions. The first is less frequent as the components are tested. In any case, it is of the utmost importance to identify the origin of the malfunction. Often, to this purpose, diagnosis systems are set up, more or less sophisticated, intrinsic to the equipment itself.
In the cases in which it is possible to identify the fault in elementary parts (fuses, diodes, etc.), it is possible to proceed directly with the replacement; in other cases, it is recommended to contact the assistance service. In any case, it is absolutely not recommended, in order to restart the machine, to tamper with the cabinets or replace parts without full knowledge of the problem: such behaviour can cause very significant damage to the equipment.
The replaced components must be of the same type as those faulty. In case of an emergency, different ones can be mounted as long as they are equivalent. If in doubt, contact the after-sales assistance.
However, in order to avoid long and vain downtime due to failures, it is recommended, when you purchase the equipment, to buy the necessary spare parts and, in particular, of those recommended by the manufacturer, according to the amount and type defined in the relevant list.

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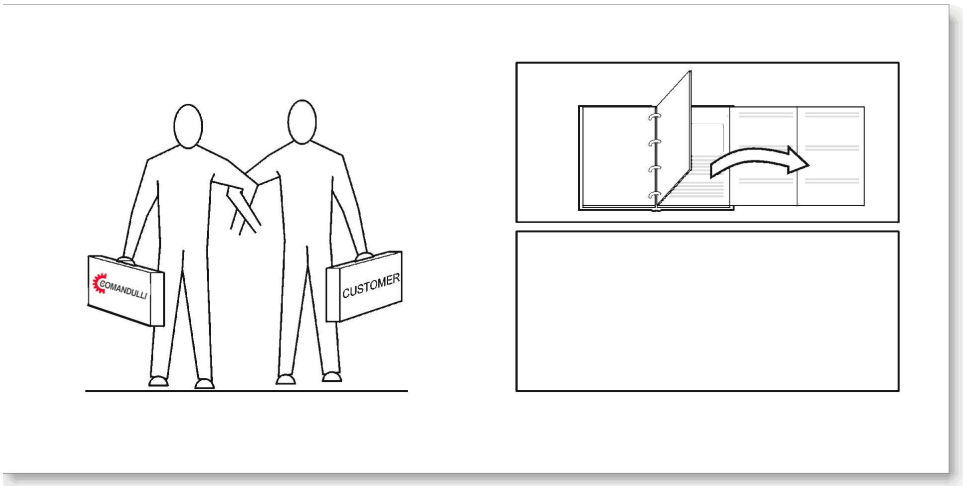
10 10 MAINTENANCE, CLEANING AND LUBRICATION



10.1 Foreword

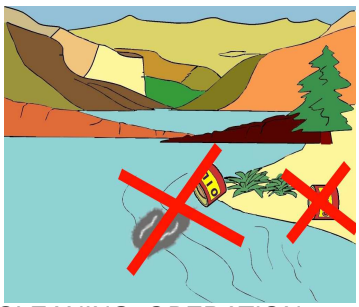
Any maintenance operation must be carried out with the Machine at zero energy, PPE worn and with any hot parts at room temperature.
The personnel in charge of Machine maintenance must have read all of Chapter 2 "Safety Requirements", especially:

- *FUNCTION OF THE EMERGENCY BUTTON: remember that it must be pressed for any emergency;*
- *FUNCTION OF THE OPERATOR PANEL;*
- *FUNCTION of SELECTORS (**SA1** and **SA2**) ;*
- *STATUS OF SYSTEM TO FIRST START-UP;*
- *SYSTEM AT ZERO ENERGY;*
- *the OPERATOR;*
- *the MECHANICAL MAINTENANCE TECHNICIAN;*
- *the ELECTRICAL MAINTENANCE TECHNICIAN OR TRAINED PERSON;*
- *the DEPARTMENT MANAGER OR SAFETY MANAGER;*
- *RESIDUAL RISKS, PROHIBITION, AND OBLIGATION WARNING PLATES;*
- *PERSONAL PROTECTIVE EQUIPMENT.*

In particular, how to bring the Machine to the ZERO ENERGY STATUS, essential to perform all operations in safety conditions, and the Personal Protective Equipment (PPE) to wear.

The maintenance, cleaning and lubrication operations described below reflect the way in which the COMANDULLI S.r.l. technician behaves, phase by phase.
Therefore they are the procedures which must be followed for future fine-tuning or maintenance.

DO NOT RELEASE OIL, GREASE, WASTE EQUIPMENT, AIR FILTERS, PLC BATTERY INTO THE ENVIRONMENT, BUT CONTACT AUTHORISED COMPANIES.



ANY MAINTENANCE, REPAIR, REPLACEMENT OR CLEANING OPERATION DESCRIBED IN THIS MANUAL, MUST ONLY BE CARRIED OUT BY THE CUSTOMER'S TECHNICIAN OR BY THE COMANDULLI S.r.l. TECHNICIAN .

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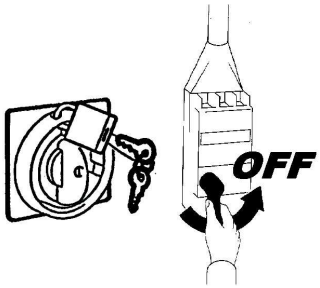
ATTENTION
GENERIC DANGERS
Each of these operations must be carried out by ***ONLY ONE*** *professionally qualified Technician (unless indicated differently),*

NEVER MORE THAN ONE PERSON.



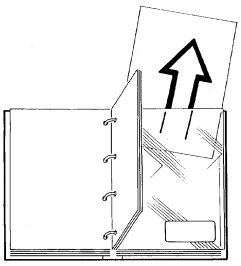
Check the absence of any type of energy on the Machine. Remember to put a padlock on the switch.

The key must be:

- *either kept by the Maintenance technician*
- *or given to the Safety Manager.*

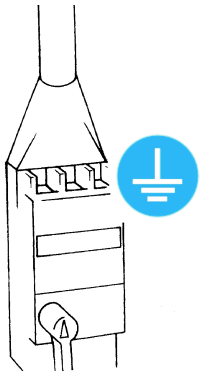
IT MUST NEVER BE LEFT IN THE LOCK

NOTE:
IF THE MACHINE IS MAINTAINED CONSTANTLY REGULATED AS DESCRIBED IN THIS MANUAL, NO FURTHER MAINTENANCE IS REQUIRED, EXCEPT FOR THAT INDICATED BELOW.



Comply with the operation frequency and methods indicated in this Manual.

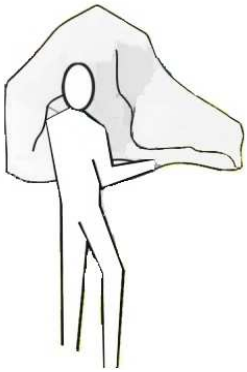
Always use the diagrams attached to this manual. (See Chapter 12 "Diagrams and Attachments"). Wiring, pneumatic and water.



ATTENTION
After disassembling / assembling important parts, always check the continuity of the earthing circuit.

It is forbidden to carry out maintenance with parts in motion.

At the end of the maintenance operations, it is mandatory to reassemble the fixed guards.



Cover the Motors with cellophane or appropriate material.

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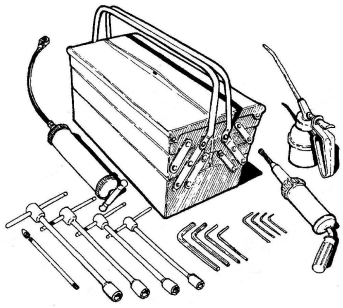
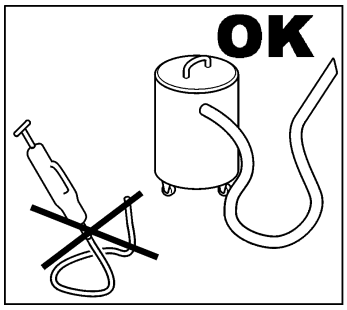
Close off the area and indicate work in progress by placing a sign on the mains switch and on the fence: “ ***MAINTENANCE IN PROGRESS ”****.*

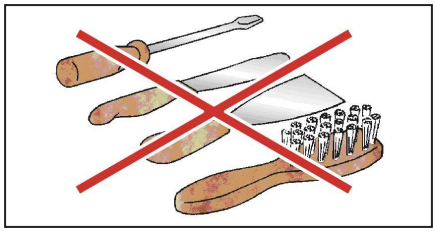
Never close the doors while working inside of the machine.

Only use suitable tools for maintenance operations.



WARNING
In order to correctly carry out cleaning, be equipped with a tool bag and detergents authorised in the Country where the Machine is installed and use them is needed.
NEVER *use tools with sharp edges which could damage the mechanical elements.*





It is forbidden to use solvents like petrol, trichloroethylene, thinners as they could damage the machine or its parts.

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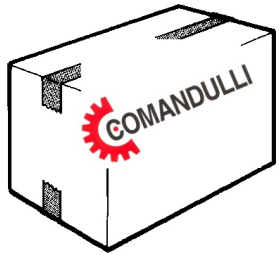
Use only genuine spare parts.



In case of need, contact ***COMANDULLI S.r.L*** .

When one of the main components has been removed, all its parts must be inspected in order to discover any wear or damage; pay particular attention to the following points.

1) Clean all parts with adequate products. Do not use alkaline solutions on the bearings or on the machined parts of the machine.
2) Check the gears in order to determine the wear and / or damage to the teeth.
3) Visually inspect the bushes in order to determine wear and / or damage
4) Inspect the bearings and lubricate them completely before reassembling them.
5) Check and, if necessary, carefully restore the finishing state of the shafts. You must pay particular attention to areas housing the seal gaskets, seal/ locking rings, keys.
6) Inspect the threaded parts and replace those parts that have damaged threads.

10.2 Scheduled maintenance

It should be remembered that maintenance operations correctly performed may reduce downtime after a fault to a minimum.
A repair carried out timely avoids further deterioration.
Based on the operating hours, maintenance interventions can be classified in:

scheduled maintenance: *these are the maintenance interventions at pre-established time intervals (for example lubrication or replacing consumables);*

It includes:
occasional maintenance: *maintenance interventions upon occurrence of a malfunction and / or accidental failure (for example replacing a fuse or light bulb).*
routine maintenance: *these are easy to perform interventions, for the most part moderate in terms of difficulty and cost;*

Extraordinary maintenance: *repair and / or replacement interventions of significant technical and / or economical relevance; normally they are required ensuing rare or unexpected failures and require the work of qualified personnel from* ***COMANDULLI S.r.L.*** *or of the Customer.*
In order to guarantee full efficiency of the entire machine, it is necessary to comply with the schedule and methods indicated below.
The checks closely linked to maintenance operations are:

- *checking the efficiency of the safety devices;*
- *checking integrity, efficiency and fixing of the protection devices;*
- *bearing noise check;*
- *calibration restoration;*
- *replacement of the transmission elements.*

The following table indicates the periodic maintenance operations and their frequency, the observance of which will allow you to keep the machine in perfect working order, so as to identify the problems before these can cause damage.

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(*Detailed instructions for lubrication are summarised in chapter 10.3)*

Paragraph	Operation	First intervention (h)	Subsequent interventions (h)	Notes
10.2.1	Cleaning the Machine	8	8	A (*)
10.2.2	Cleaning electric panels	300		A (*)
10.2.3	Checking anti-vibration blocking, noise or abnormal overheating of transmission components, bearings	300	500	C
10.2.4	Motor maintenance	500	1000	A
10.2.5	Checking efficiency of all doors, microswitches, readability of Residual Risk, Prohibitions and Obligations warning plates	500	1000	B
10.2.6	Checking all the components of the hydraulic system	300	1000	A-B
10.2.7	Checking operation of the pushbutton panels, of the control panel	300	1000	B
10.2.8	Checking the electrical equipment	500	2500	B
10.2.9	alignment rollers	500	1000	A-B
10.2.10	traversing reduction gear belt	500	500	A-B
10.2.11	oscillation reduction gear polishing spindles	500	500	A-B
10.2.12	spindles	1500	4000	A-B
10.2.13	calibrator guides slideways and drip tray	1500	1500	A-B

NOTES:
A indication of checks/operations to be carried out with Machine at zero energy status.
B indication of checks to be carried out with machine running.
C indication of checks to be carried out immediately after having stopped the machine.

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Paragraph	*Operation*	*First intervention (h)*	*Subsequent interventions (h)*	*Notes*
10.2.14	*nut connections for abrasive tools*	*1000.*	*1000*	*A-B*
10.2.15	*Checking all the components of the pneumatic system*	*300*	*1000*	*B*
10.2.16	*water infiltration or formation of condensation*	*300*	*1000*	*B*
10.2.17	*conveyor belt*	*40*	*300*	*B*
10.2.18	*hydraulic belt speed variator*	*300*	*1500*	*B*
10.2.19	*hydraulic system*	*300*	*1000*	*B*

NOTES:
A indication of checks/operations to be carried out with Machine at zero energy status.
B indication of checks to be carried out with machine running.
C indication of checks to be carried out immediately after having stopped the machine.

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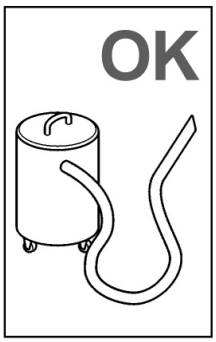
10.2.1 Cleaning the Machine

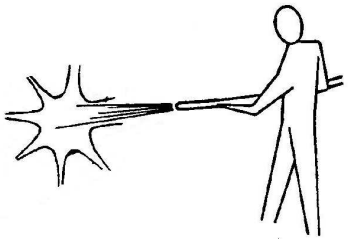


Before performing the cleaning operations, the operator must have read and understood the entire paragraph 10.1 "FOREWORD" of this chapter.

EVERY 8 hours
Using a vacuum cleaner, vacuum all the dust. In the event small lumps are found, use a cloth (or a sponge) slightly moistened with water.

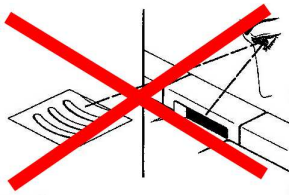
EVERY 2500 hours
Check that the drains on the bottom of the machine are free and not clogged.

Wash the machine (with the exception of the electrical equipment) with detergents that are not aggressive or with a low pressure water spray (up to 400 kPa [4 bar])

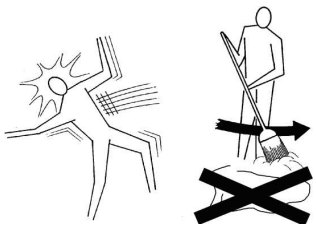


NEVER use high pressure washers or high pressure sprays.

DO NOT RELEASE WASHING RESIDUES INTO THE ENVIRONMENT, BUT MAKE A CONNECTION TO THE MACHINE DRAIN.



ATTENTION
SLIPPING AND CUTTING HAZARD
Clean any stain of water well as water and dust deposits become slippery.



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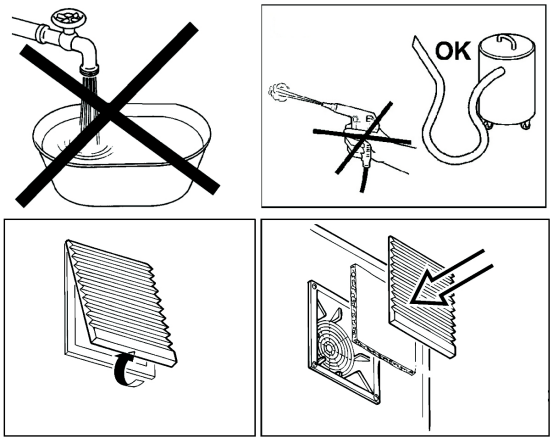
10.2.2 Cleaning electrical cabinet



The inside of the electrical cabinet must be cleaned from any dust deposits.

NEVER USE WATER
OR COMPRESSED AIR.

Clean the inside of the electric cabinet and the filters with a vacuum cleaner.

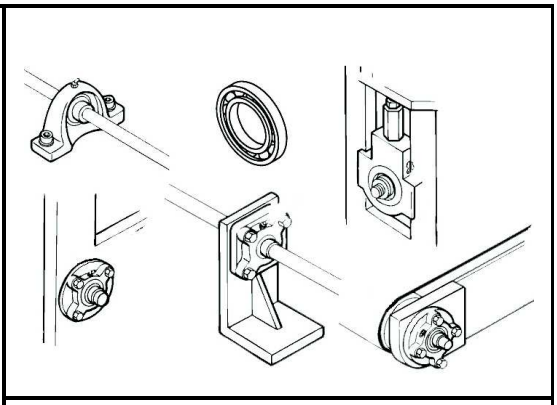
10.2.3 Checking blocks, noise or abnormal overheating of transmission components, bearings

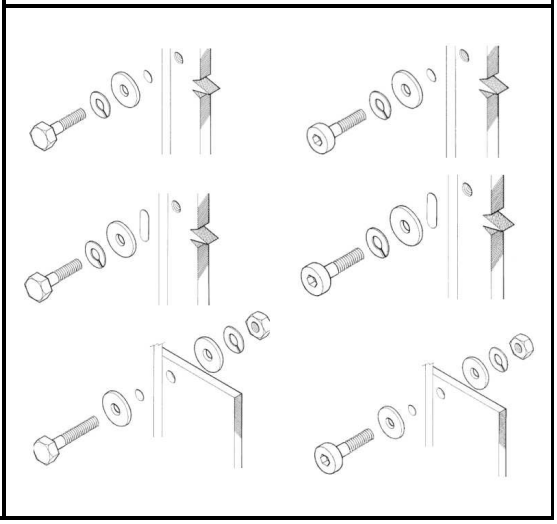
Visually and acoustically check that the various mechanical components do not generate noise or are excessively hot.

Checking correct fastening of the tightened parts

Check the tightness of all the screws, bolts and that there is the washer under the head of the screw.
Verify the correct tightening of all the screws joining the various structures. Make sure that they are tight and that they are not loosened.

Contact ***COMANDULLI S.r.l.***





Contact ***COMANDULLI S.r.l.*** *in case of need for assistance or spare parts*

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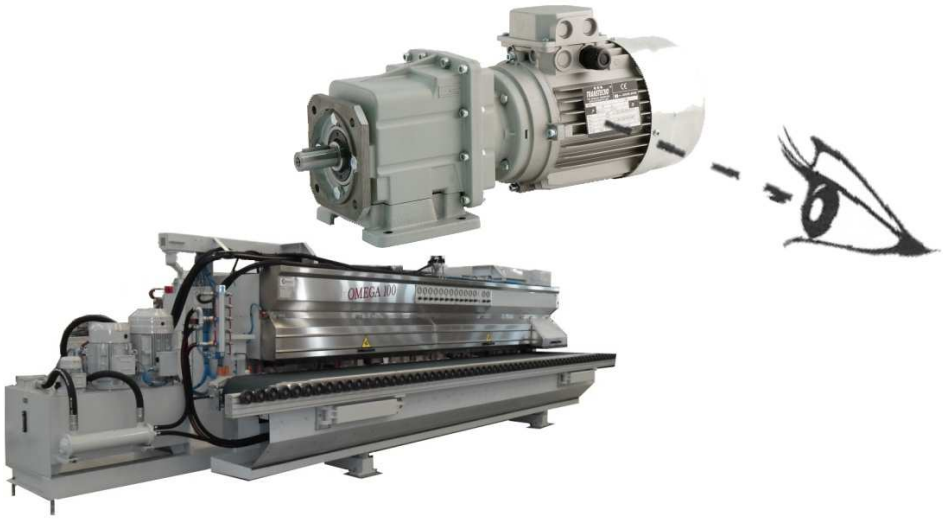
10.2.4 Motor maintenance

In case of maintenance and / or replacements, follow the instructions provided in the supplier's manuals attached (refer to chapter 12 "Diagrams and attachments"):
In any case, comply with:

- *the rating plate data shown on the plate of the motor;*
- *the circuit diagram contained in the connection box.*



10.2.5 Checking efficiency of all doors, microswitches, readability of residual risk, prohibition and obligation warning plates

Check the efficiency of all doors, microswitches and the readability of the residual risk, prohibition and obligation warning plates

Guards and doors
Check that all fixed and mobile interlocking guards applied are intact, not damaged and working properly

Check that the doors open properly, that the sliding tracks are intact, that the locks work correctly and that the gaskets guarantee tightness.

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Microswitches
Make sure all are connected and mounted correctly and that there are no elements that could lead to malfunctioning.

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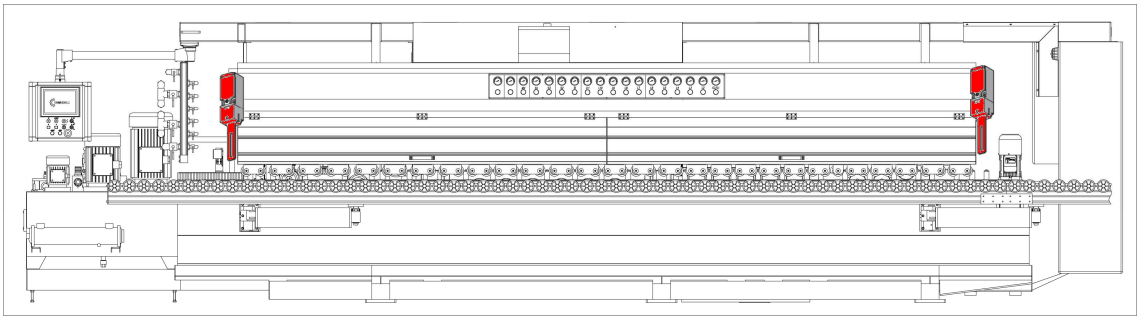
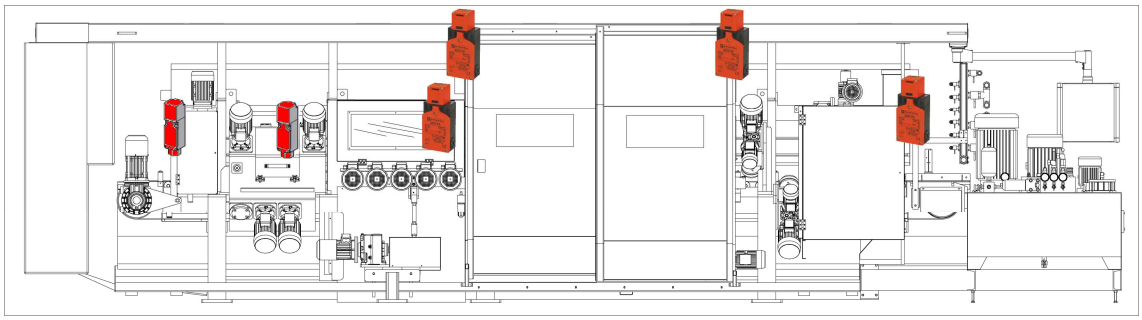
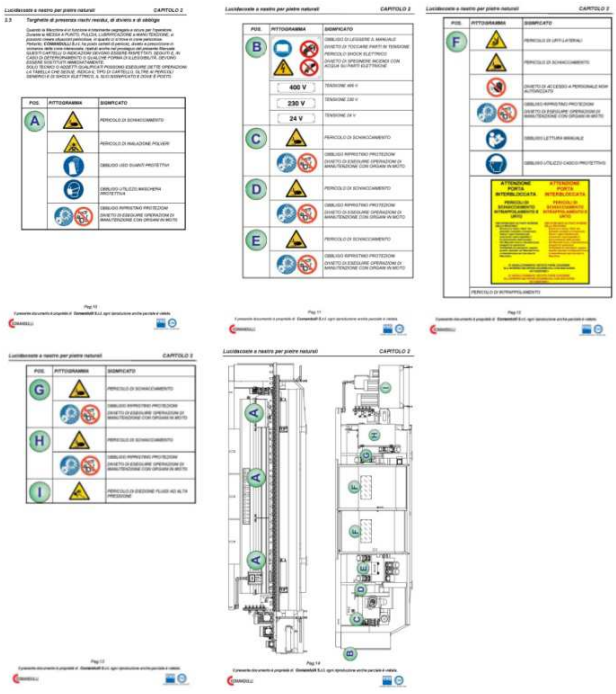
With the help of the wiring diagram, test any malfunctions and tighten all the fixing screws. If it is necessary to replace them, contact COMANDULLI S.r.l.





Residual Risk, prohibition and obligation warning plates.
Check that they are legible, not worn and intact.
If necessary, replace them immediately.



NOTE:
The new components replacing faulty ones must have the same technical features and the same performance; if they are safety components, they must be certified and belong to the same class as the original being replaced.

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10.2.6 Checking all the components of the hydraulic system

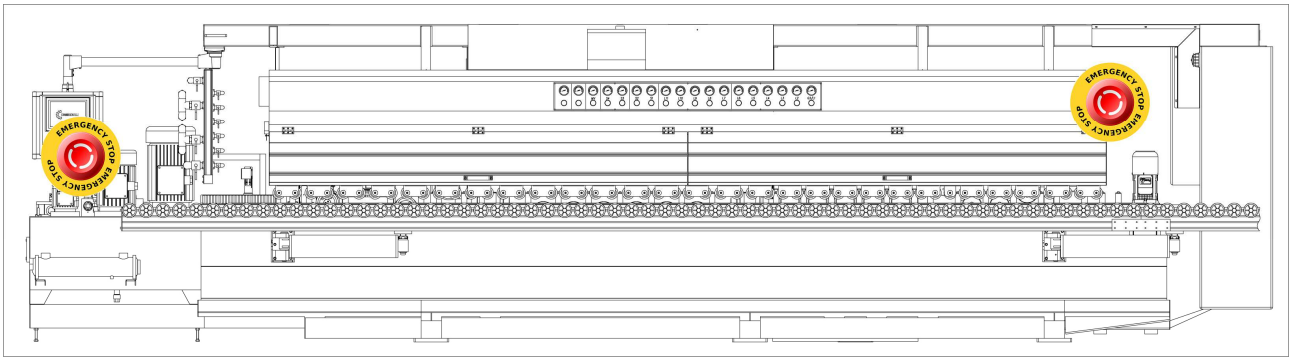
Check all the components of the hydraulic system:

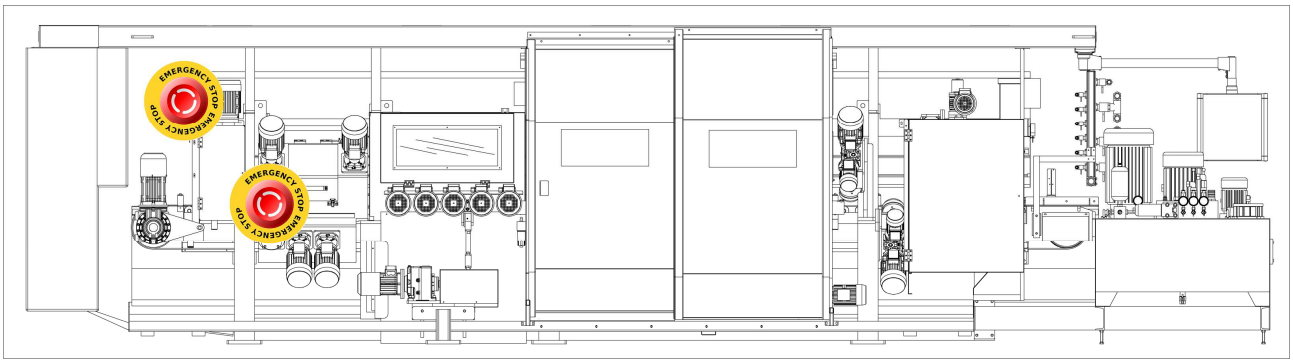
- *all the piping and connections;*
- *integrity and TIGHTNESS of the gaskets.*
- *drains.*

Immediately replace the worn parts.

10.2.7 Checking operation of pushbutton panels and of the control panel

Referring to Chapter 5 of this Manual, check that the indicator lights, the various buttons, valves, pressure gauges, and selector switches work properly.
In particular, check that all the ***Emergency Stop*** *buttons are in perfect working order.*





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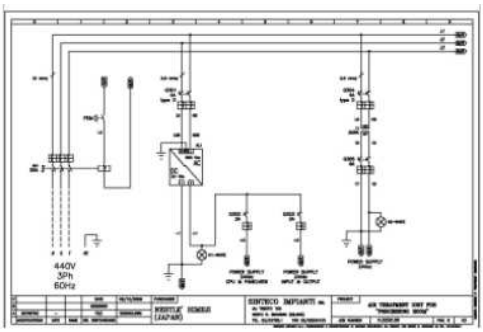
10.2.8 Checking the electrical equipment

ATTENTION
ELECTROCUTION HAZARD



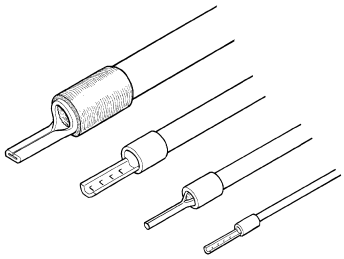
Wear adequate protective gloves.

Consult the attached wiring diagram diagram in Chapter 12 "Diagrams and attachments"

NOTE
This operation must only be carried out by the ELECTRICAL MAINTENANCE TECHNICIAN OF THE CLIENT.

Check all the components of the electrical system (they must not exceed 2500 hours of operation):

- *state of wear of cables, that they are intact and not frayed;*
- *tightening of cables on terminal boards;*
- *state of wear of the screw terminals;*
- *state of wear of switch contacts;*
- *sealing of electrical boxes.*



Asynchronous motors
After each replacement of an asynchronous motor, always make sure that the ROTATION DIRECTION coincides with that mounted previously.
To check the direction of rotation, follow the instructions supplied with the control manual.

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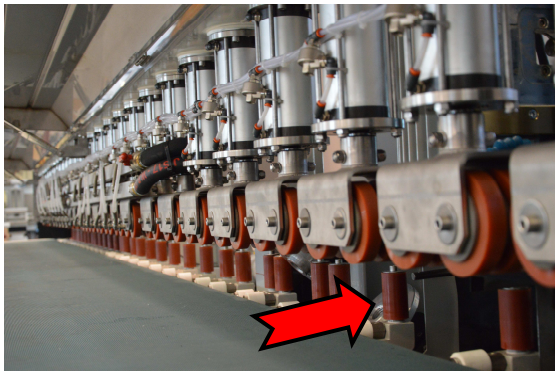
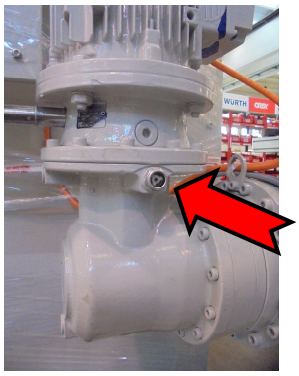
10.2.9 Alignment rollers

Controllo stato di usura e pulizia.
Se necessario sostituire



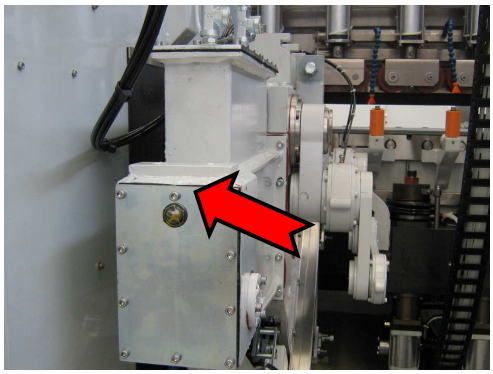
10.2.10 Belt traversing reduction gear

Check oil level: if necessary, top up
(oil change every 3000 hours).



10.2.11 Polishing spindles oscillation reduction gear

Check oil level: if necessary, top up
(oil change every 3000 hours).



10.2.12 Spindles

Cleaning.
Check noise and heating of bearings.

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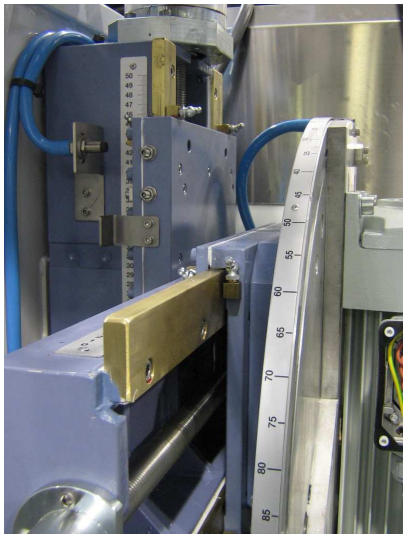
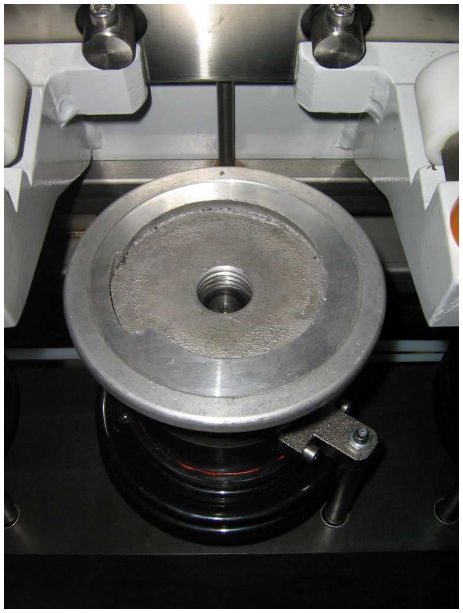
10.2.13 Calibrator guides slideways and drip tray

Check the state of wear and cleanliness.
If necessary, adjust play



10.2.14 Nut connections for abrasive tools

Check wear and carry out a thorough cleaning.



10.2.15 Checking all the components of the pneumatic system

Check:

- *State of wear of the pneumatic cylinders.*
- *State of wear of connections.*
- *State of wear of inside particularly stressed components.*

Refer to the pneumatic diagram attached to this Manual to visually check the wear state of the various pneumatic components.
Immediately replace the worn parts.
For replacement, cleaning and maintenance operations, refer to the specific Manuals attached to this Manual.

10.2.16 Water infiltration or formation of condensation

Visually check the sealing systems according to the degree of protection and internal and external conditioning.
Immediately remove the water with a vacuum cleaner for liquids.

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10.2.17 Conveyor belt

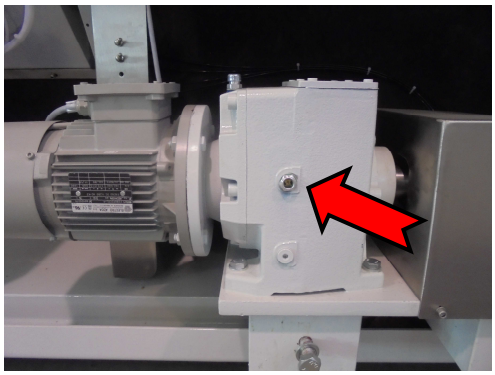
Check that the belt is intact in all its parts.
If necessary, adjust the tension of the belts.

ATTENTION
Tensioning must always be carried out on both sides.
Failure to comply with this condition may lead to an irregular transport with possible damage to the belt dragging device.
Loosen the lock nut on both sides, unscrew the nut located on each of the tighteners.
Upon reaching the desired tension, check the correct centring of the belt (it must not skid!)
If everything is in place, tighten the lock nuts on both sides .

The belts must be cleaned with a no-scratch cloth slightly dampened with approved detergents.

It is forbidden to use solvents like petrol, trichloroethylene, thinners as they could damage the belt.
If necessary, use a vacuum cleaner with a suitable capacity to eliminate any residue.

▪ *10.2.18 Floating system*



Check oil level: if necessary, top up (oil change every 3000 hours).

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10.2.19 Hydraulic system

Clean external components
Clean filters
Clean heat exchanger
Check oil level
Tightness of pipes and fittings
Oil temperature
(it must not exceed 60°C)

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10.3 Greasing

ATTENTION!
While greasing, make sure that the grease does not leak.

Use a manual lubricator and a brush to grease the various parts.

It is recommended to perform periodic lubrication as follows:

10.3.1 Key lubrication points

Pos.	Description
1	infeed drum supports
2	outfeed drum support
3	front bearing of calibrator
4	HORIZONTAL calibrator slide
5	VERTICAL calibrator slide
6	rougher unit
7	Oscillation reduction gear box oil level check
7A	Oscillation reduction gear boxes oil top up point
8	oscillation kinematism
9	edge polisher spindle bearings
10	edge polisher spindle bearings
11	edge polisher spindle slide
12	blade cutter slides
13	conveyor belt reduction gear oil level indicator
13A	conveyor belt reduction gear oil top up point
14	conveyor belt motor oil level indicator
14A	conveyor belt motor oil top up point
15	contrast bar hinges
16	contrast bar hinges
17	control unit oil level indicator
17A	control unit oil top up point
18	hydraulic control unit filter
19	Air lubricator filter

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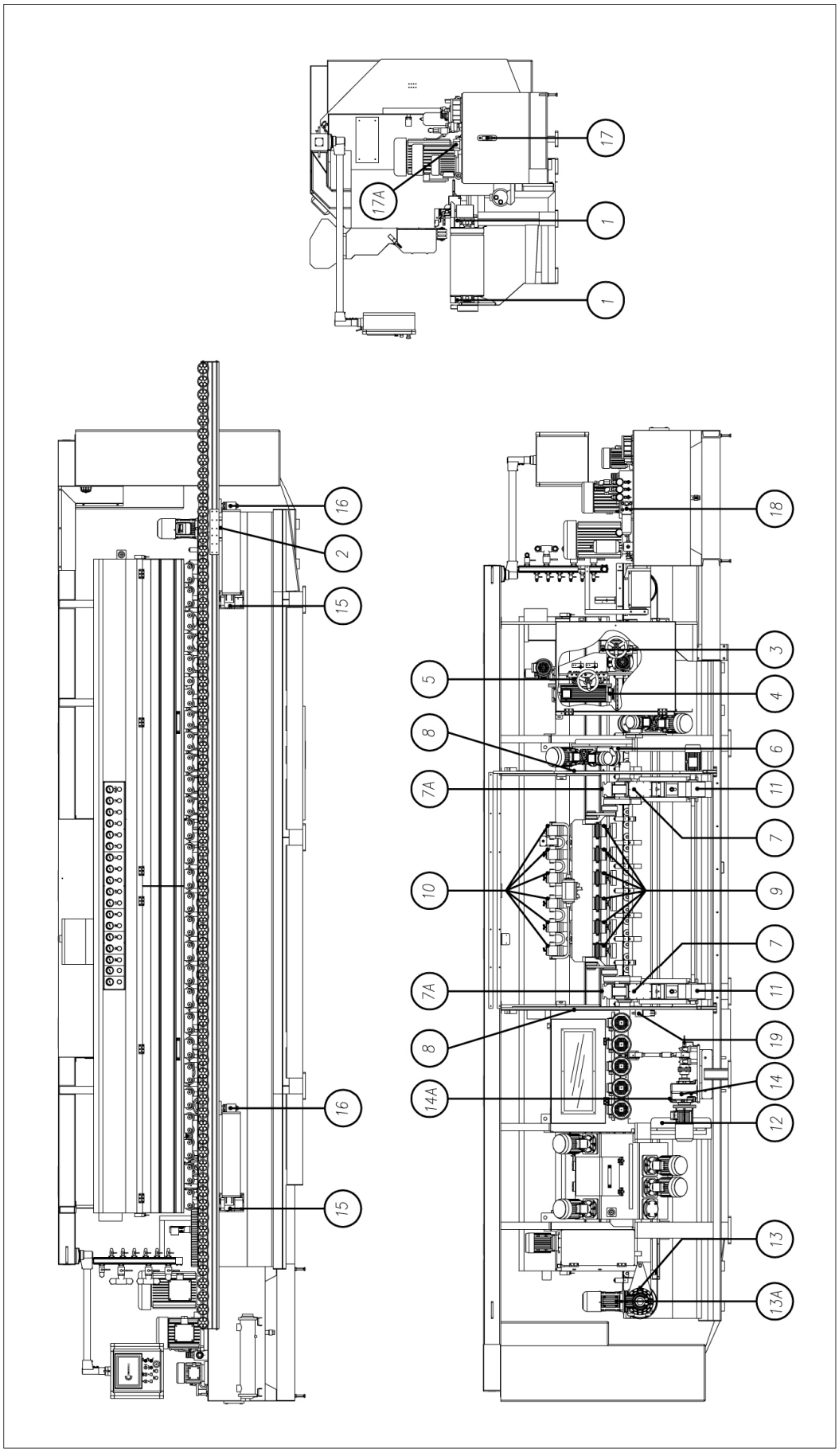

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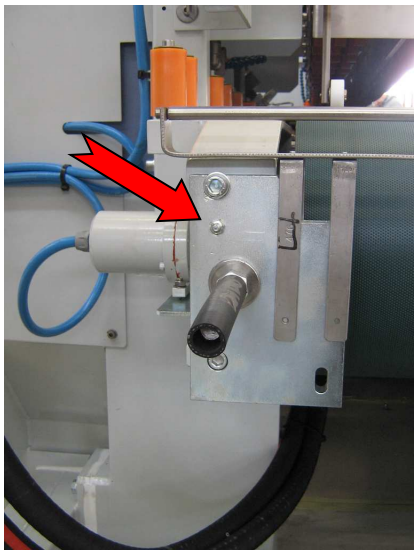
10.3.2 GREASING THE INFEED DRUM SUPPORTS

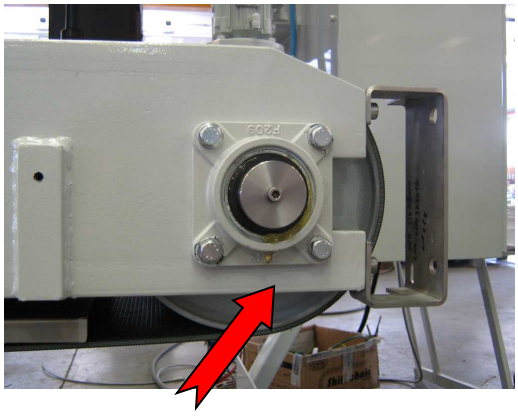
Using the manual grease pump, introduce grease into the grease nipples on the supports of the infeed belt drum (a pump stroke).



500 h		*GR MU2*	BEACON EP 2	SUPER GREASE EP2	MOBILUX EP2
Frequency of lubrication	*Frequency of control*	*AGIP*	*ESSO*	*SHELL*	*MOBIL*
		TYPES OF OIL OR GREASE			

10.3.3 GREASING THE FRONT CALIBRATOR BEARING

Using the manual grease pump, introduce grease into the grease nipple of the front bearing of the calibrator (a pump stroke)



500 h		*GR MU2*	BEACON EP 2	SUPER GREASE EP2	MOBILUX EP2
Frequency of lubrication	*Frequency of control*	*AGIP*	*ESSO*	*SHELL*	*MOBIL*
		TYPES OF OIL OR GREASE			

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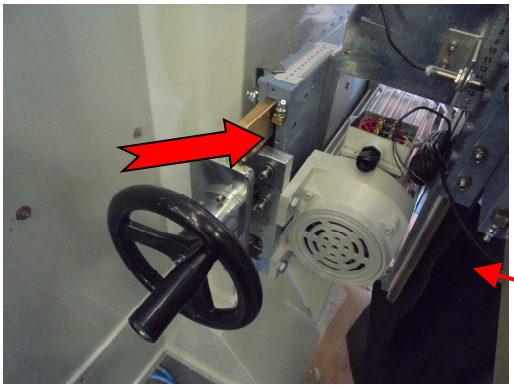
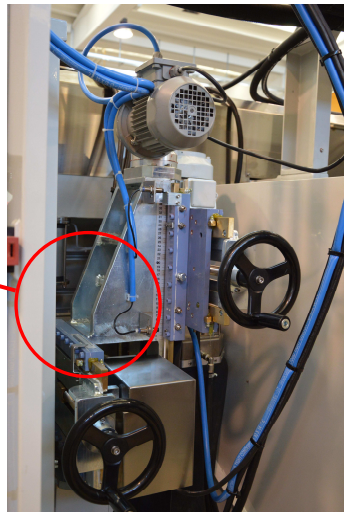
10.3.4 GREASING CALIBRATOR SLIDES

Using the manual grease pump, introduce grease into the grease nipples of the horizontal / vertical slides of the calibrator (a pump stroke)

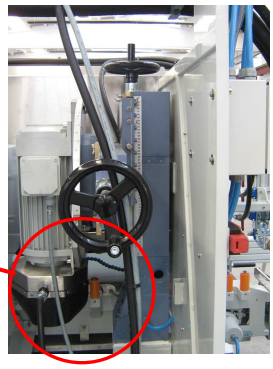




500 h		*GR MU2*	BEACON EP 2	SUPER GREASE EP2	MOBILUX EP2
Frequency of lubrication	*Frequency of control*	*AGIP*	*ESSO*	*SHELL*	*MOBIL*
		TYPES OF OIL OR GREASE			

10.3.5 INGRASSAGGIO DEL CUSCINETTO ANTERIORE CALIBRATORE

Utilizzando l'ingrassatore manuale, immettere il grasso nell'ingrassatore del cuscinetto anteriore del calibratore (una pompata)



500 h		*GR MU2*	BEACON EP 2	SUPER GREASE EP2	MOBILUX EP2
Frequency of lubrication	*Frequency of control*	*AGIP*	*ESSO*	*SHELL*	*MOBIL*
		TYPES OF OIL OR GREASE			

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10.3.6 GREASING CALIBRATOR SLIDES

Using the manual grease pump, introduce grease into the grease nipples of the horizontal / vertical slides of the calibrator (a pump stroke)

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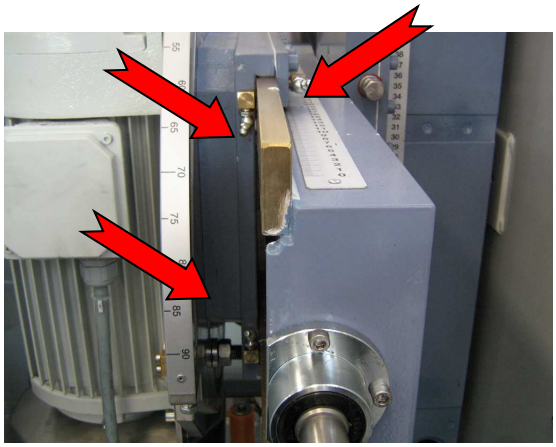

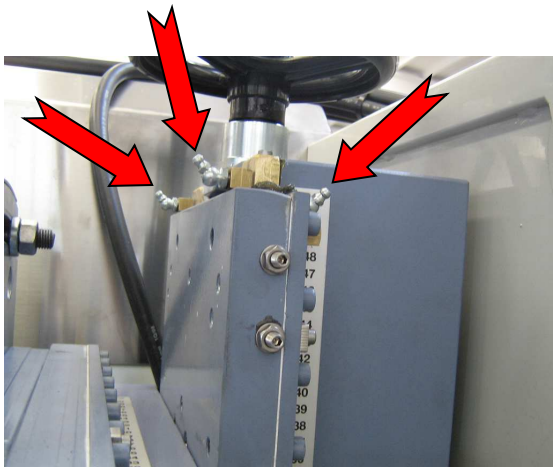

500 h		*GR MU2*	BEACON EP 2	SUPER GREASE EP2	MOBILUX EP2
Frequency of lubrication	*Frequency of control*	*AGIP*	*ESSO*	*SHELL*	*MOBIL*
		TYPES OF OIL OR GREASE			

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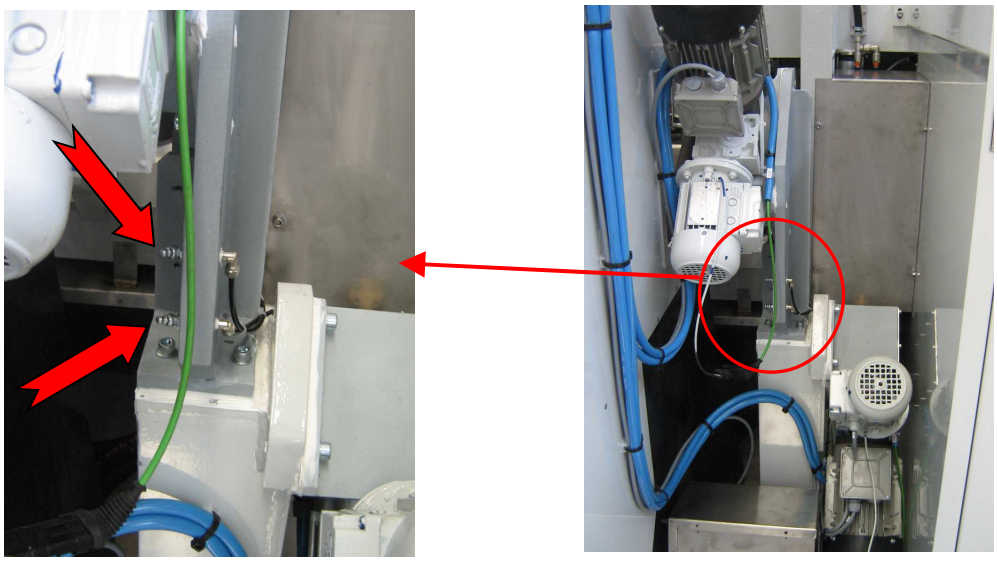
10.3.6 GREASING ROUGHER UNIT

Using the manual grease pump, introduce grease into the grease nipples of the bearings of the rougher spindles (a pump stroke).



250 h		*GR MU2*	BEACON EP 2	SUPER GREASE EP2	MOBILUX EP2
Frequency of lubrication	*Frequency of control*	*AGIP*	*ESSO*	*SHELL*	*MOBIL*
		TYPES OF OIL OR GREASE			

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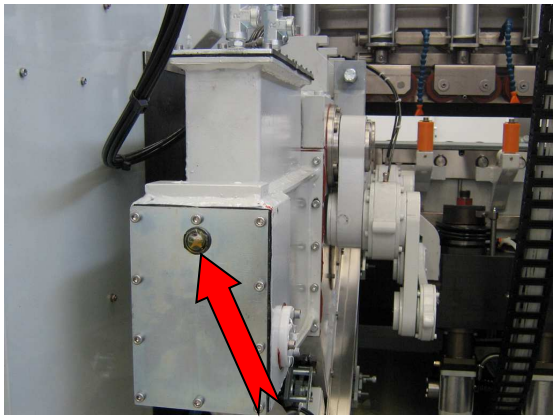
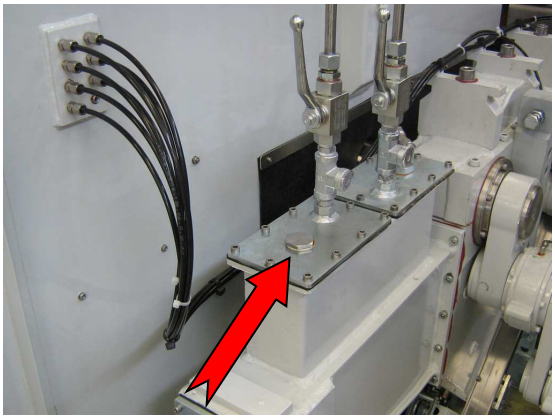
10.3.7 LUBRICATION OF OSCILLATION REDUCTION GEAR BOXES

Periodically check the amount of lubricant oil in the reduction gear boxes via the level indicator located on the front of the reduction gear and top up, if necessary, until the level of the oil completely covers the level indicator. Place lubricating oil in the point indicated.



LEVEL INDICATOR



OIL TOP-UP POINT

250 h		*BLASIA 220*	*SPARTAN EP 220*	*OMALA OIL 220*	*MOBILGEAR 600 XP 220*
Frequency of lubrication	*Frequency of control*	*AGIP*	*ESSO*	*SHELL*	*MOBIL*
		TYPES OF OIL OR GREASE			

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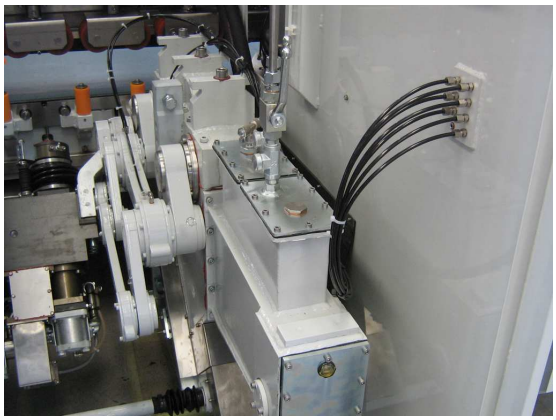
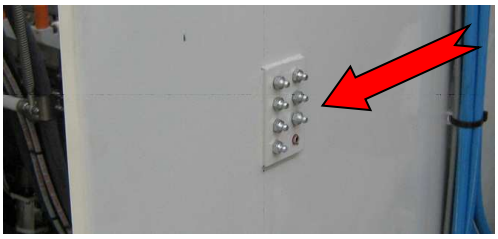
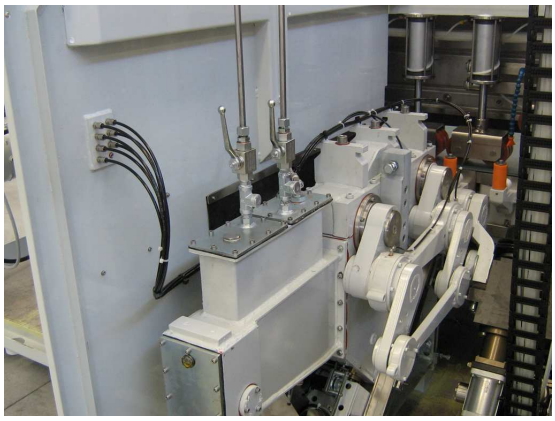
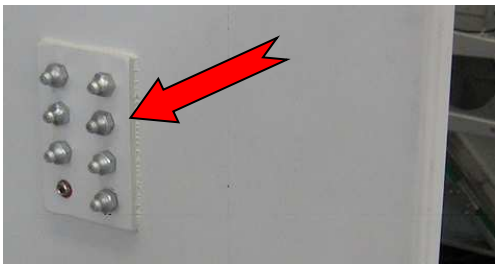
10.3.8 GREASING OSCILLATION KINEMATISM

Using the manual grease pump, introduce grease into the grease nipples of the oscillation kinematism (a pump stroke).
All the grease nipples of the oscillation kinematism refer to two external blocks applied to the bulkheads.









250 h		*GR MU2*	BEACON EP 2	SUPER GREASE EP2	MOBILUX EP2
Frequency of lubrication	*Frequency of control*	*AGIP*	*ESSO*	*SHELL*	*MOBIL*
		TYPES OF OIL OR GREASE			

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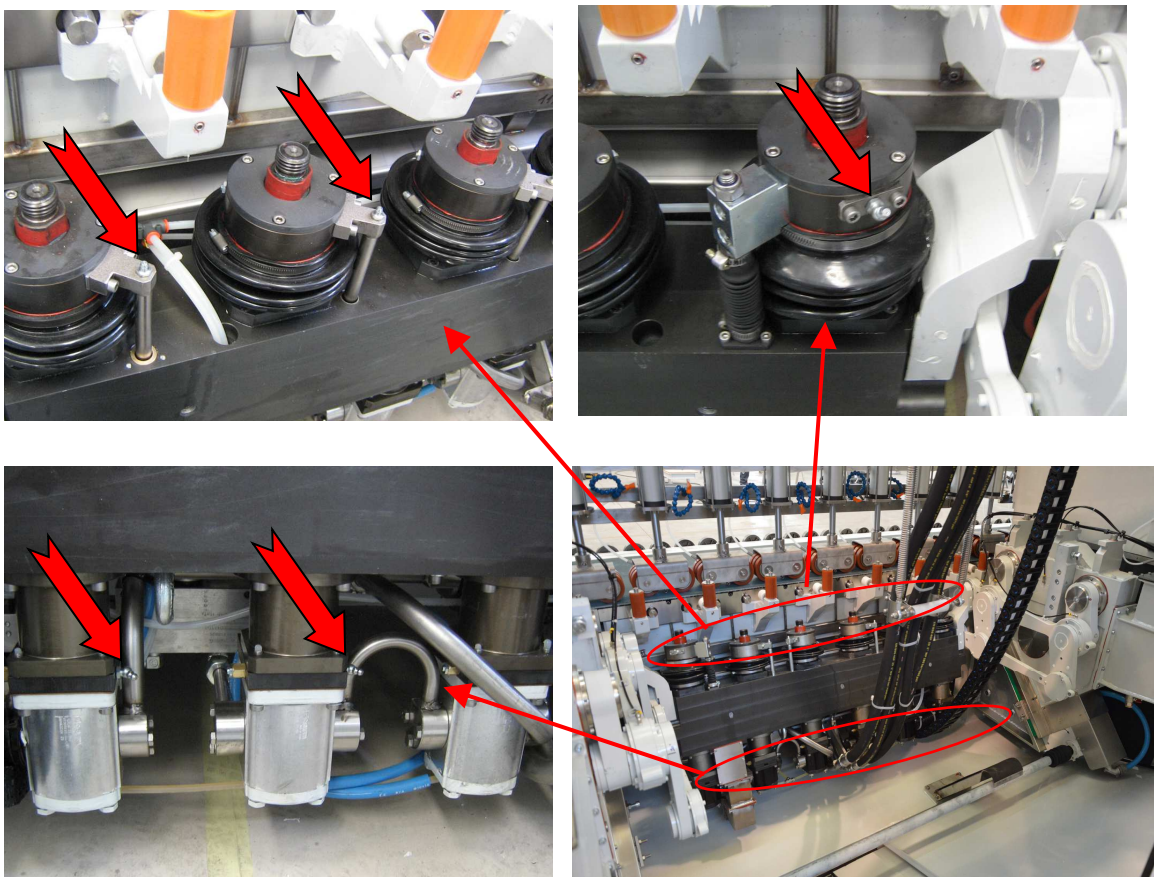
10.3.9 GREASING THE EDGE POLISHER SPINDLE BEARINGS

Using the manual grease pump, introduce grease into the grease nipples of the front and rear bearings of edge polisher (a pump stroke)



250 h		*GR MU2*	BEACON EP 2	SUPER GREASE EP2	MOBILUX EP2
Frequency of lubrication	*Frequency of control*	*AGIP*	*ESSO*	*SHELL*	*MOBIL*
		TYPES OF OIL OR GREASE			

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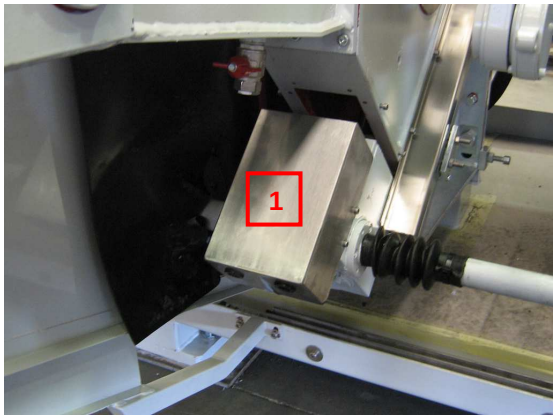
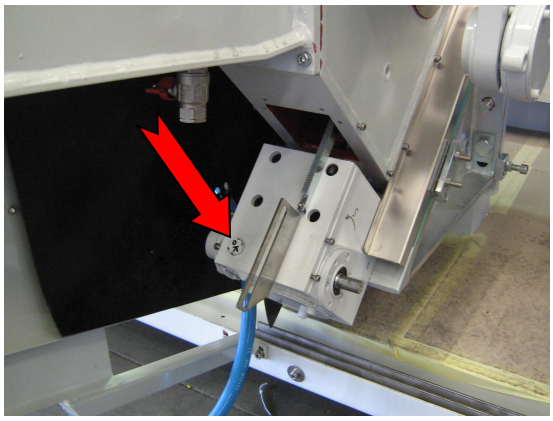
10.3.10 LUBRICATION OF EDGE POLISHER SPINDLE SLIDE

Periodically check the amount of lubricant oil in the slide boxes, and top it up if necessary.





remove the protective casing (1).

Loosen the bolt shown

using a small rod, check the oil level

top up if necessary.

tighten the bolt again and put the protective casing back in place

250 h		*BLASIA 220*	*SPARTAN EP 220*	*OMALA OIL 220*	*MOBILGEAR 600 XP 220*
Frequency of lubrication	*Frequency of control*	*AGIP*	*ESSO*	*SHELL*	*MOBIL*
		TYPES OF OIL OR GREASE			

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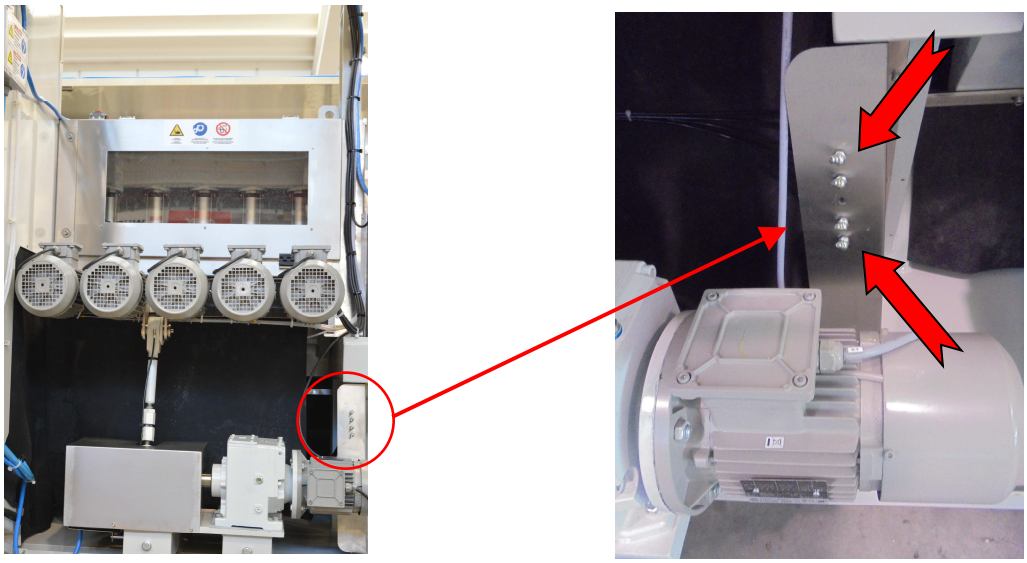
10.3.12 GREASING OF FLOATING SYSTEM

Using the manual grease pump, introduce grease into the grease nipples of the front and rear bearings of edge polisher (a pump stroke)



250 h		*BLASIA 220*	*SPARTAN EP 220*	*OMALA OIL 220*	*MOBILGEAR 600 XP 220*
Frequency of lubrication	*Frequency of control*	*AGIP*	*ESSO*	*SHELL*	*MOBIL*
		TYPES OF OIL OR GREASE			

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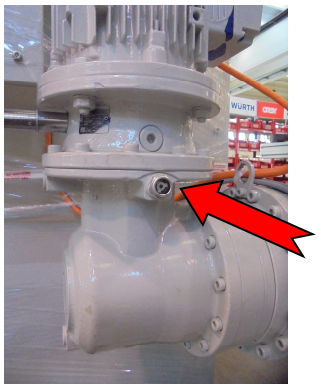
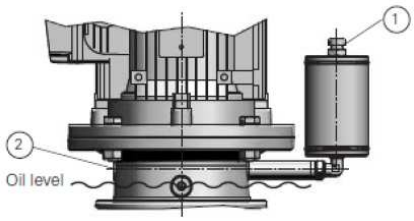
10.3.12 LUBRICATION OF CONVEYOR BELT MOTOR / REDUCTION GEAR

Periodically check the amount of lubricant oil in the belt reduction gear and motor via the level indicator located on them and top up, if necessary, until the level of the oil completely covers the level indicator. Place lubricating oil in the point indicated.



If it is necessary to top up the oil proceed as follows:



- *Open caps 1 and 2*
- *Fill with oil through the plug 1 until the correct level is reached.*
- *Close caps 1 and 2*

Warning: *conveyor belt motor / reduction gear must be filled with synthetic oil type PAO ISO VG 320*

~ 2 years		*BLASIA SX*	*ALPHASYN T*	*OMALA S4 GX*	*MOBIL SHC Gear*
Frequency of lubrication	*Frequency of control*	*AGIP*	*ESSO*	*SHELL*	*MOBIL*
		TYPES OF OIL OR GREASE			

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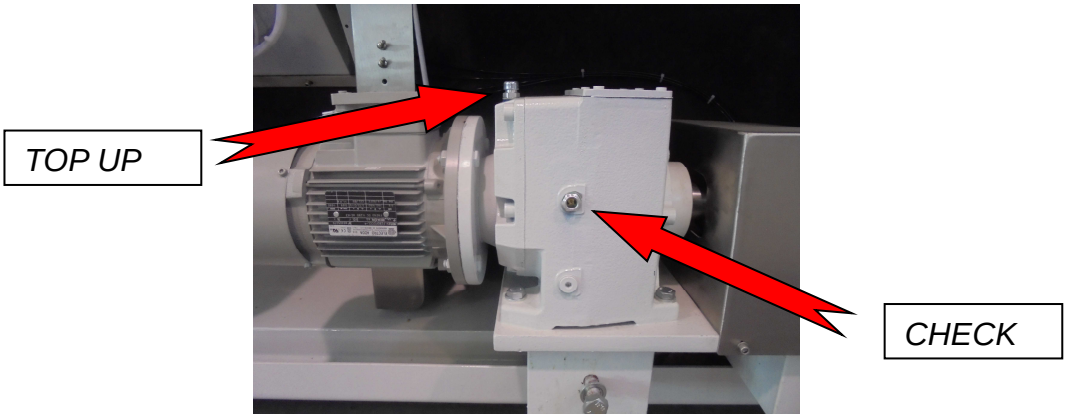
10.3.14 LUBRICATION OF THE FLOATING REDUCTION GEAR

Periodically check the quantity of lubricating oil in the reducer of the floating unit through the level indicator on the latter; top up if necessary until the oil level completely covers the level gauge. Put lubricating oil in the indicated point.



~ 2 years		*BLASIA 220*	*SPARTAN EP 220*	*OMALA OIL 220*	*MOBILGEAR 600 XP 220*
Frequency of lubrication	*Frequency of control*	*AGIP*	*ESSO*	*SHELL*	*MOBIL*
		TYPES OF OIL OR GREASE			

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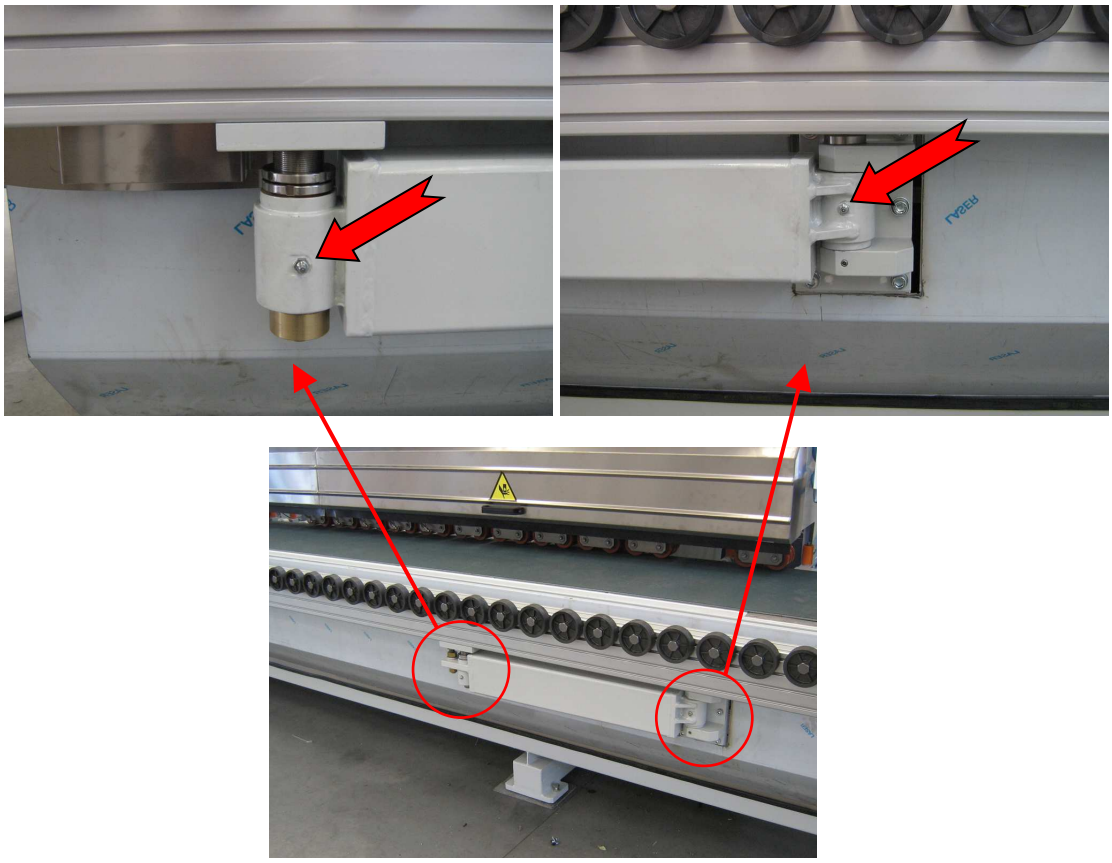
10.3.15 GREASING CONTRAST BAR HINGES

Using the manual grease pump, introduce grease into the grease nipples of the contest bar opening hinges (a pump stroke).



250 h		*GR MU2*	BEACON EP 2	SUPER GREASE EP2	MOBILUX EP2
Frequency of lubrication	*Frequency of control*	*AGIP*	*ESSO*	*SHELL*	*MOBIL*
		TYPES OF OIL OR GREASE			

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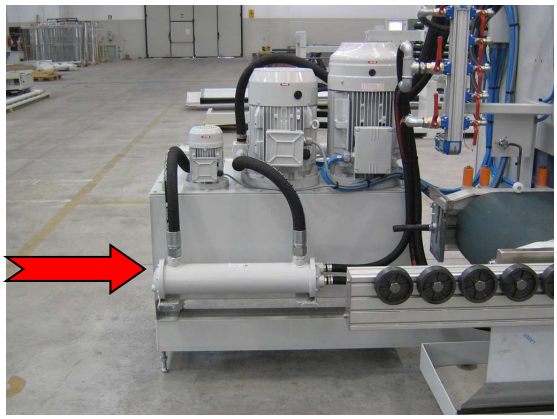
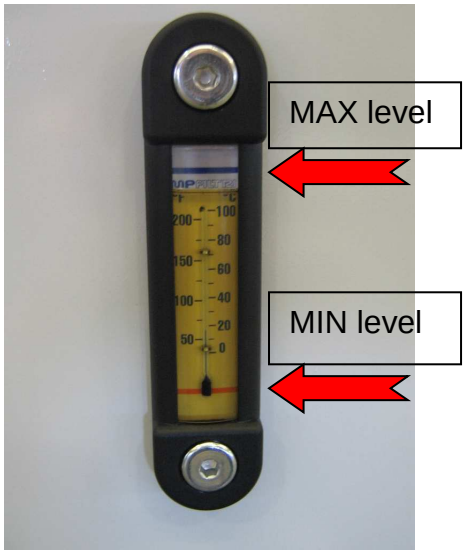
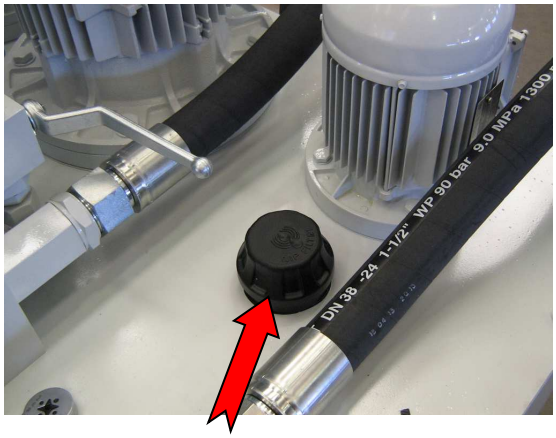
10.4 Maintenance of hydraulic control unit

Periodically check the amount of hydraulic oil in the control unit through the level indicator located on the latter.



Top up if necessary; the oil must NEVER reach the maximum level. Introduce the hydraulic oil in the point indicated.





250 h		*OSO 32*	*NUTO H 32*	*TELLUS 32*	*DTE 24*
Frequency of lubrication	*Frequency of control*	*AGIP*	*ESSO*	*SHELL*	*MOBIL*
		TYPES OF OIL OR GREASE			

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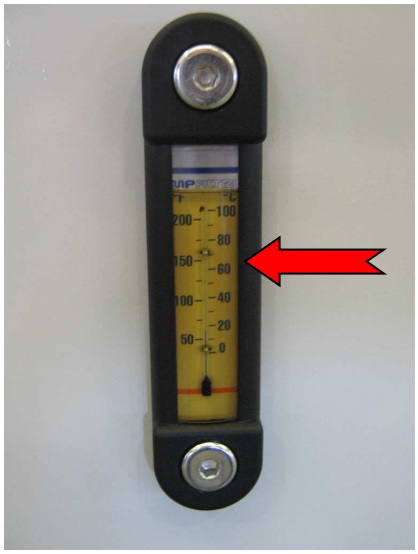
Tank fluid level: *if the level quickly drops there are leaks towards the outside; if the level rises the cause may be a water leakage of the cooling system, or the draining of piping during the stops.*

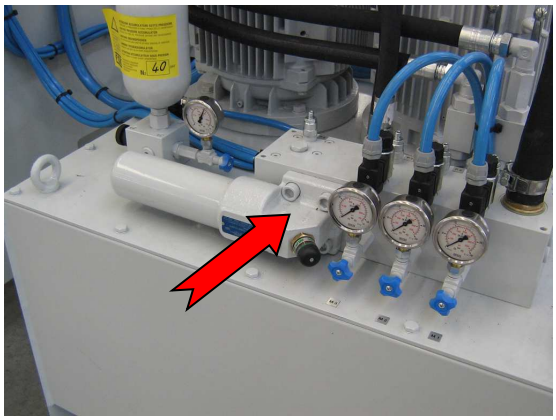


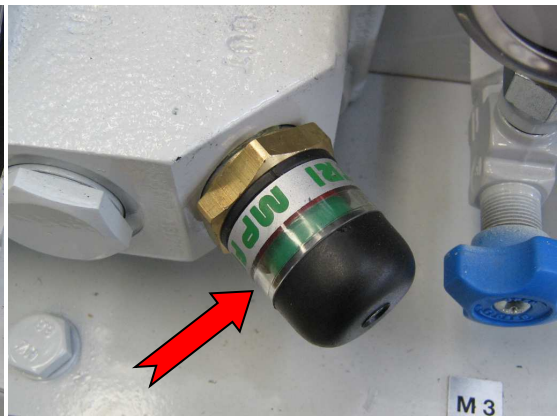
Fluid temperature: *the fluid must never exceed 60°C, exceeding this temperature causes the deterioration of gaskets and mechanical parts.*

Seal to the outside: *visually check the pipes, fittings and the support surfaces of the components; keep the plant clean for quick locating of the leaks.*

Calibration of pressure: *check the triggering value of the pressure limit, reducer, sequence valves.*

Clogged filters: *check the optical indicator: if the indicator is green, the filter is clean, if it is red, the filter is clogged; when clogged filter is indicated, replace the filtering element within 8 working hours.*





Flexible hoses: *ensure the hoses do not show any: cracking, abrasions, warping, bubbles, tears of the cover, bulging, sticky areas on the surface of the hose or leaks; the presence of one of the above anomalies makes it necessary to replace the hose.*

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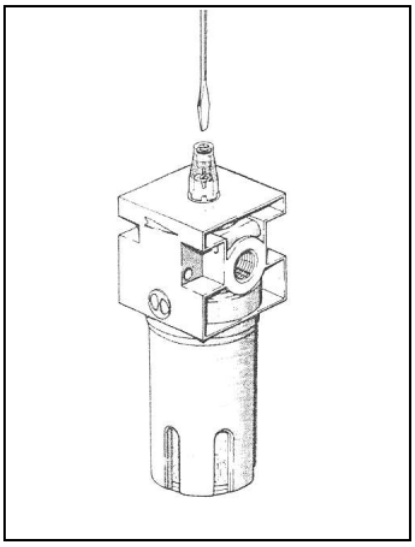
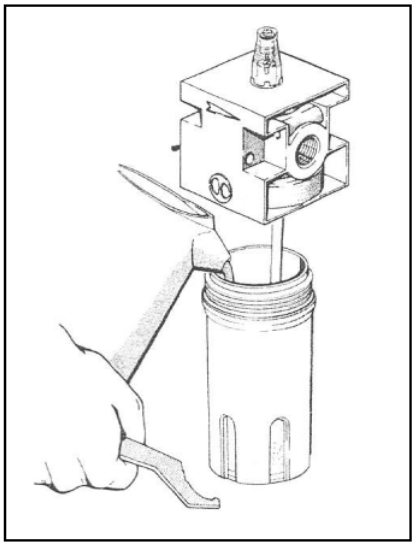
10.5 Air lubricator filter

Periodically check the amount of oil in the air lubricator filter.
If the lubricant level is too low, top it up.

250 h		*OSO 22*	*SPINESSO 22*	*TELLUS OIL C22*	*MOBIL DTE 22*
Frequency of lubrication	*Frequency of control*	*AGIP*	*ESSO*	*SHELL*	*MOBIL*
		TYPES OF OIL OR GREASE			



Lubrication setting



Introduction of oil in the container

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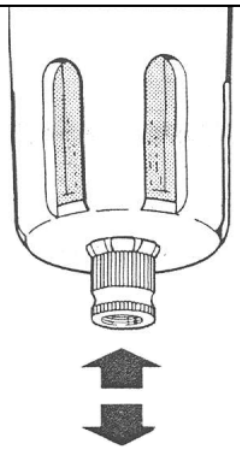
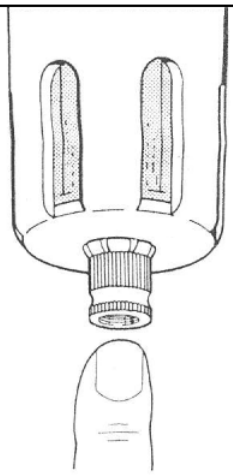
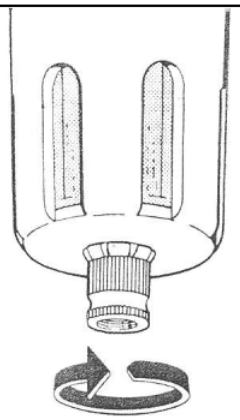


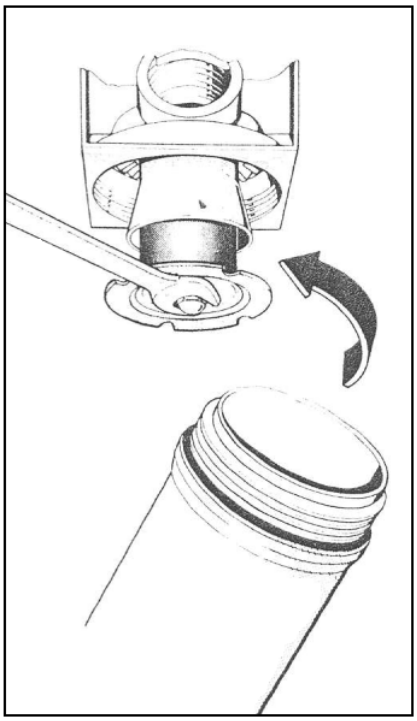
With button in central position, the valve is semi-automatic, with condensation drainage in the absence of pressure in the system, and closure in presence of pressure.



by pressing the button, the condensate is drained "in presence of pressure".



Turn the button clockwise to manually closing the valve "closing both in presence and absence of pressure"



To clean or replace the insert, loosen the centrifugal unit guard. Unscrew the cup using a suitable wrench

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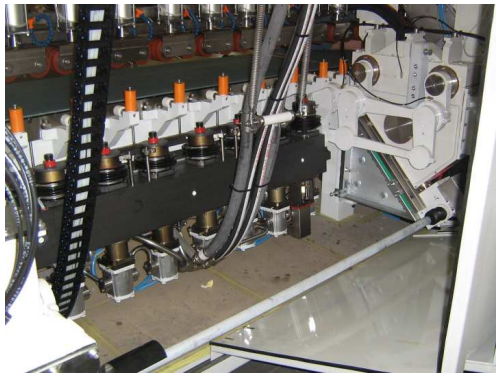
10.6 Tool maintenance

10.6.1 REPLACING TOOLS

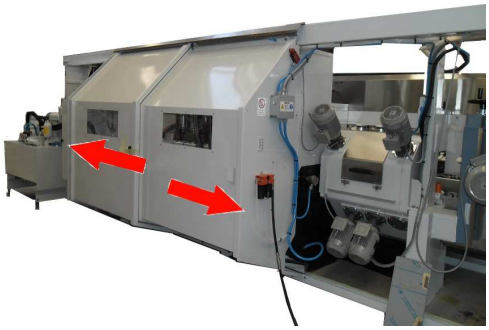


During a work cycle, in the event of excessive consumption of the tool, it must be replaced following the instructions below:

Press the red cycle stop button (SB4): this stops the functions of the machine, completing the work cycle in automatic mode

The control panel (3) displays the message relative to the status of the machine.

Operations to be carried out by the maintenance technician of the Client



Open the rear doors (with triggering of the electrical limit switches of safety devices that prevent pumps from starting)

Proceed with the disassembly and replacement of the tool.

Close the doors.

ATTENTION
ENTRAPMENT HAZARD
Do not close yourself inside the guards for any reason whatsoever.
There are crushing and side impact hazards

Refer to chapter 7 Start-up to restart the machine.

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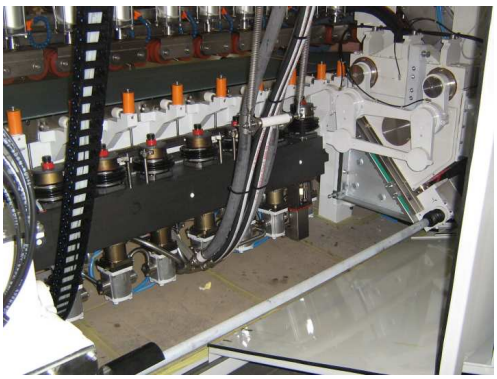
10.6.2 CHECKING CENTRING OF THE TOOL

At the start of the work cycle or between one cycle and another, it may be necessary to check the correct centring of the tool as follows:



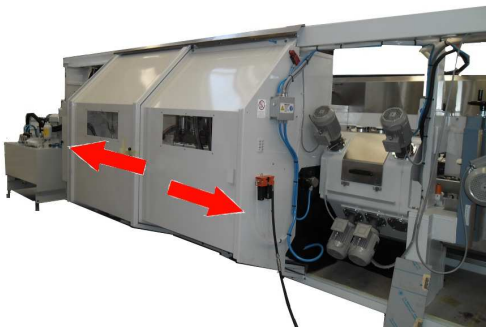
Position the unit in the position dedicated to verification.

*Press the red cycle stop button (**SB4**): (SB4): this stops the functions of the machine, completing the work cycle in automatic mode*

The control panel (3) displays the message relative to the status of the machine.

Operations to be carried out by the maintenance technician of the Client

Open the rear doors (with triggering of the electrical limit switches of safety devices that prevent pumps from starting)



Adjust the position with the manual regulation command (Jog) of tool movement (spindle forwards and backwards).

Once the adjustment is complete, close the doors

ATTENTION
ENTRAPMENT HAZARD
Do not close yourself inside the guards for any reason whatsoever.
There are crushing and side impact hazards

Position the unit in the second position dedicated to verification.

Refer to chapter 7 Start-up to restart the machine.

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11 DISMANTLING AND DECOMMISSIONING

Once the machine has reached the end of its technical life, it must be put out of service so that it is not used for purposes other than for which it was designed, and make it possible to reuse the parts and the materials with which it was built.
The machine must be deactivated and scrapped safely to avoid the risk of impacts caused by the presence of movable parts or stored energy.
In particular, disconnections of the pneumatic, hydraulic and electric systems must be carried out following the indications and warnings provided in Chapter 4 (Transport and Installation).
COMANDULLI S.r.l. *will not be held liable for damage to persons or objects deriving from the re-use of individual parts of the machine for functions different to those for which they were initially intended.*

WARNING
Before starting dismantling operations, operators must have read and the properly understood the Safety Requirements (Chapter 2) at the beginning of this manual and wear Personal Protective Equipment (work gloves, accident-prevention shoes, working overalls, hard hat, etc.).

DO NOT RELEASE POLLUTING MATERIALS, SUCH AS OILS, GREASE, EMULSIFIED WATER, PRODUCTION WASTE, RAW MATERIALS RESIDUES, ETC. INTO THE ENVIRONMENT .

DURING DISMANTLING OPERATIONS, SEPARATE THE VARIOUS TYPES OF MATERIAL.

To perform dismantling, proceed as follows while paying the UTMOST ATTENTION.

ATTENTION
DANGER OF CUTTING, CRUSHING, BLOW AND ABRASION

Detach the connections of the service systems:

- *the sheathes of the electric system (detach the connectors or terminal cables from the board and wrap the sheathe on the various utilities);*
- *the piping of the hydraulic system;*
- *disconnect the circuits, paying particular attention to the fluids and liquids or solutions that require specific waste disposal.*

Block the moving parts:
- *block the slides and oscillation of the lever mechanisms.*

Disconnect the connections:
- *the junction braids of the earthing bars;*
- *the bus in series of the PLC circuit;*
- *the piping of the hydraulic system;*
- *all the connectors of the devices;*
- *all the protections;*
- *disassemble the structure.*

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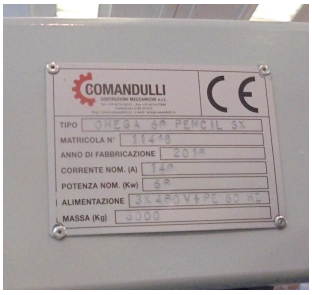
In particular, remember that:
polizene;
vulkolan;
neoprene;
the filters (must be sealed in an appropriate watertight casing);
the dangerous fluids;

MUST BE DISPOSED OF BY SPECIFIC AUTHORISED COMPANIES FOR THE INDIVIDUAL ELEMENT AND IN COMPLIANCE WITH LAWS IN FORCE.

The identification plate of the machine



and

this Instruction Manual must be returned to ***COMANDULLI S.r.l*** .

Follow the indications provided in chapter 4 "LIFTING AND INSTALLATION INSTRUCTIONS" to bring all the materials to the Disposal Centres.

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12 DIAGRAMS AND ATTACHMENTS

This chapter includes all the documentation attached upon delivery of the machine, which completes this Instruction Manual, to be used during installation, fine-tuning and maintenance.

POSITION	***DESCRIPTION***
12.1	*Pneumatic diagram*
12.2	*Hydraulic diagram*
12.3	*Wiring diagram*
12.4	*Layout and work area*
12.5	*Declaration of Conformity (ann. II A)*

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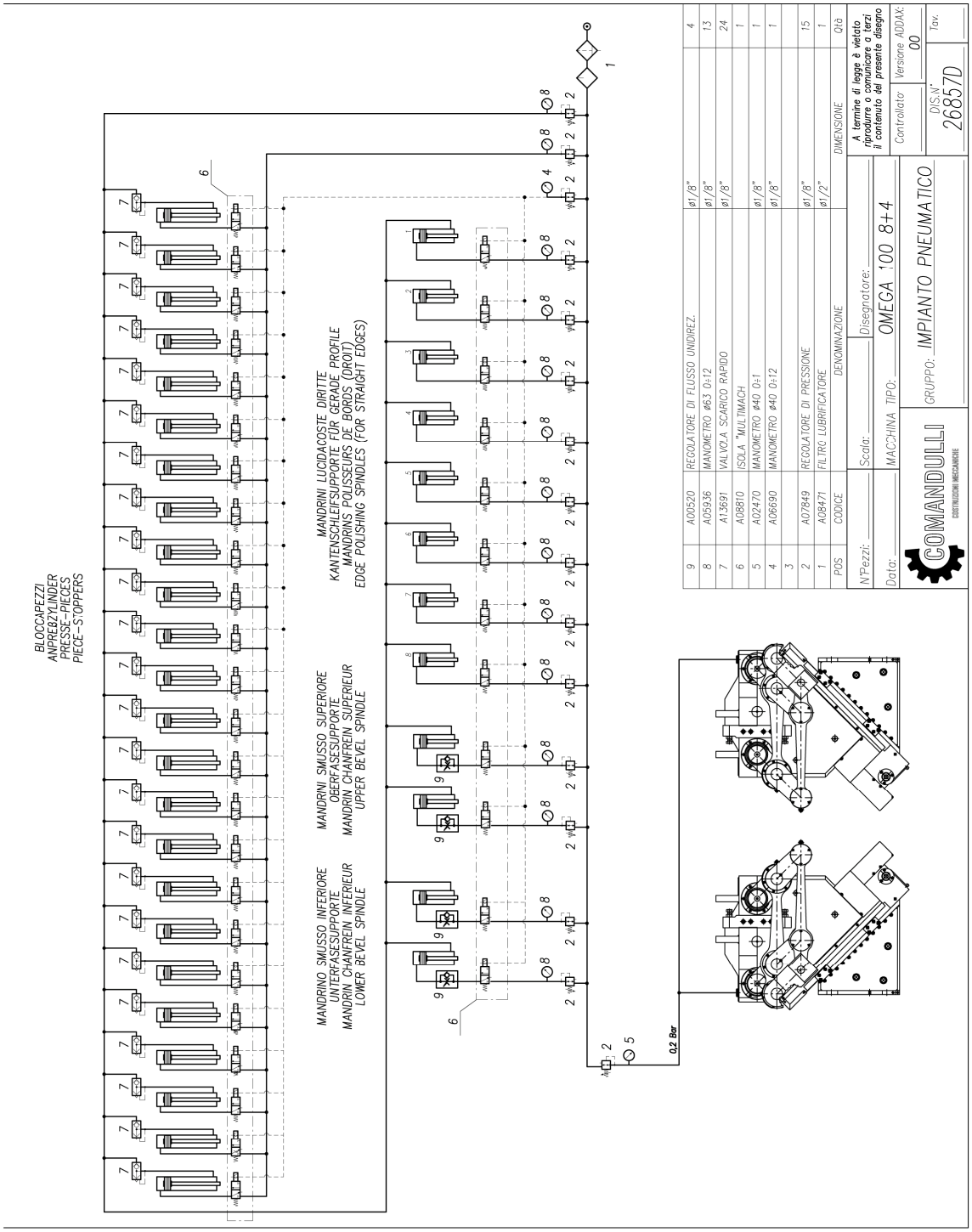
12.1 Pneumatic diagram



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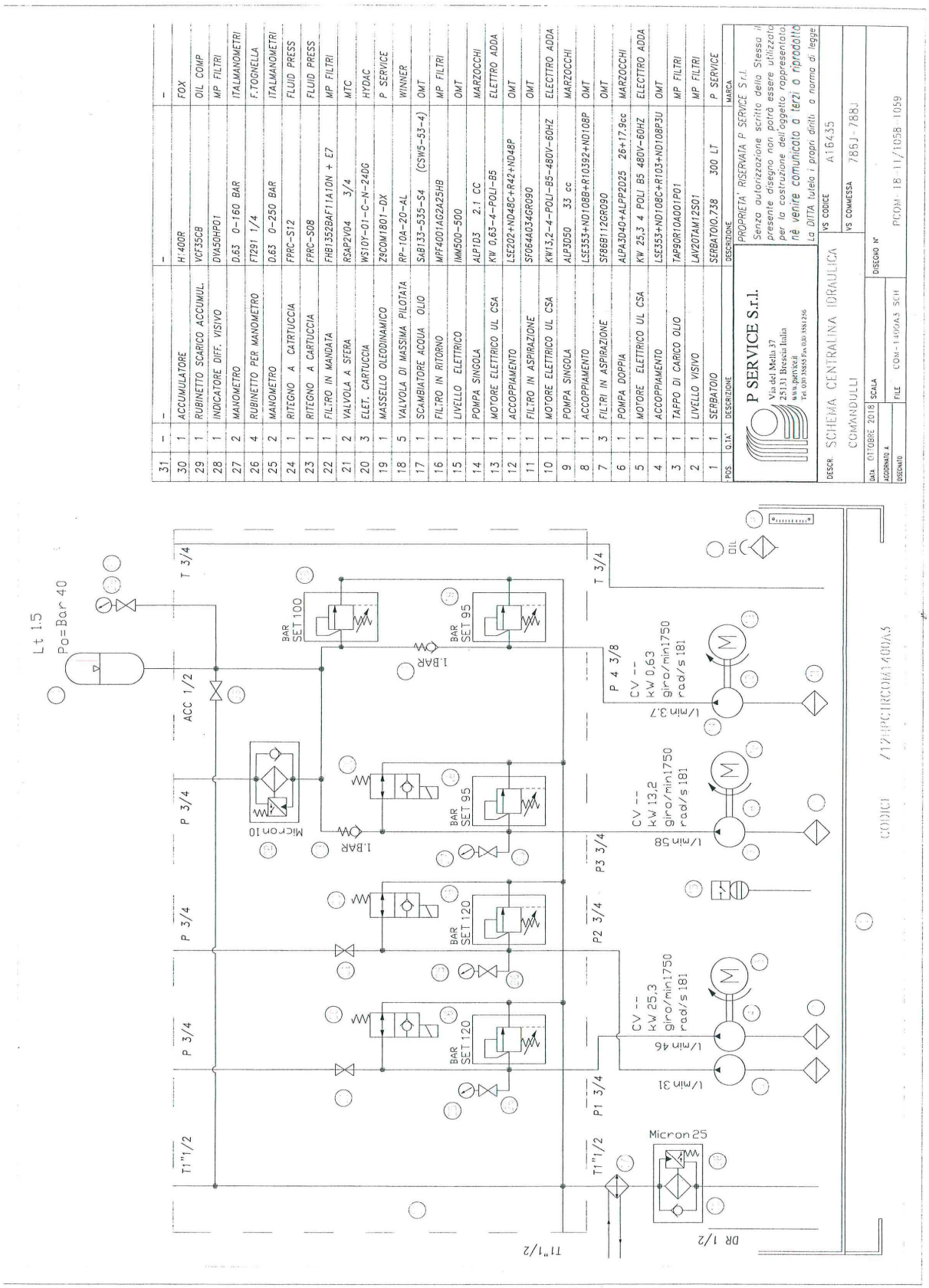
12.2 Hydraulic diagram



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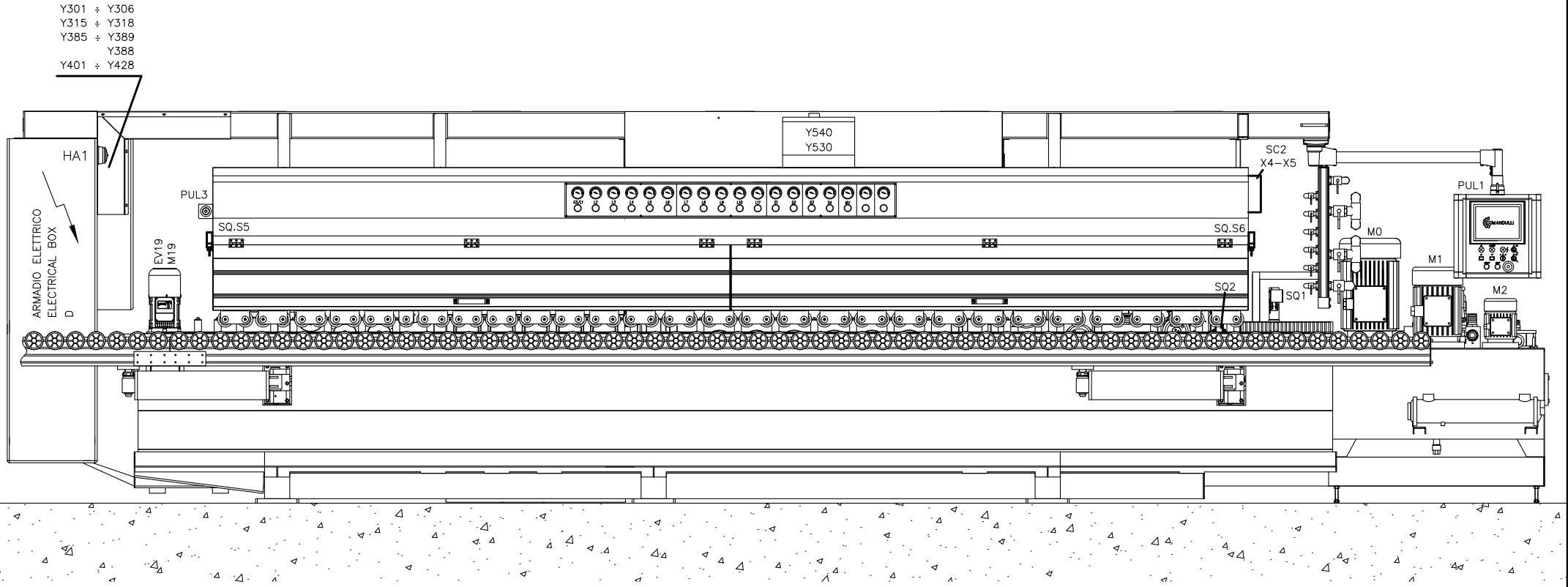
MACCHINA CON CARICAMENTO PEZZI DA DESTRA
MACHINE WITH RIGHT PIECE LOADING
D



ALIMENTAZIONE MACCHINA MACHINE POWER SUPPLY VERSORGUNGSSPANNUNG F ALIMENTACION MAQUINA P	3x480+PE 60 Hz	POTENZA TOTALE TOTAL POWER GESAMTE INSTALLIERTE LEISTUNG F POTENCIA TOTAL P	68 Kw 90 HP	CORRENTE NOMINALE RATED OUTPUT NENNSTROM F CORRIENTE NOMINAL P	140 Amp.

COMANDULLI
COSTRUZIONI MECCANICHE

DATA	23/01/2019
DISEGN.	MORO PAOLO
VISTO	MNM
APPR.	MNM

Comandulli Costruzioni Meccaniche S.r.l.
SEDE: Via Medaglie d'Argento, 20 Z.I.
26012 CASTELLEONE – (Cremona) ITALY

SOST. IL : | SOST. DA :

MATRICOLA:	02319
COMMESSA:	791J
FILE :	OMEGA10011-UL

LUCIDACOSTE A NASTRO Mod.: OMEGA 60 PENCIL
BELT EDGE POLISHING MACHINE Mod.: OMEGA 60 PENCIL

MACCHINA
MACHINE

– 02519 –

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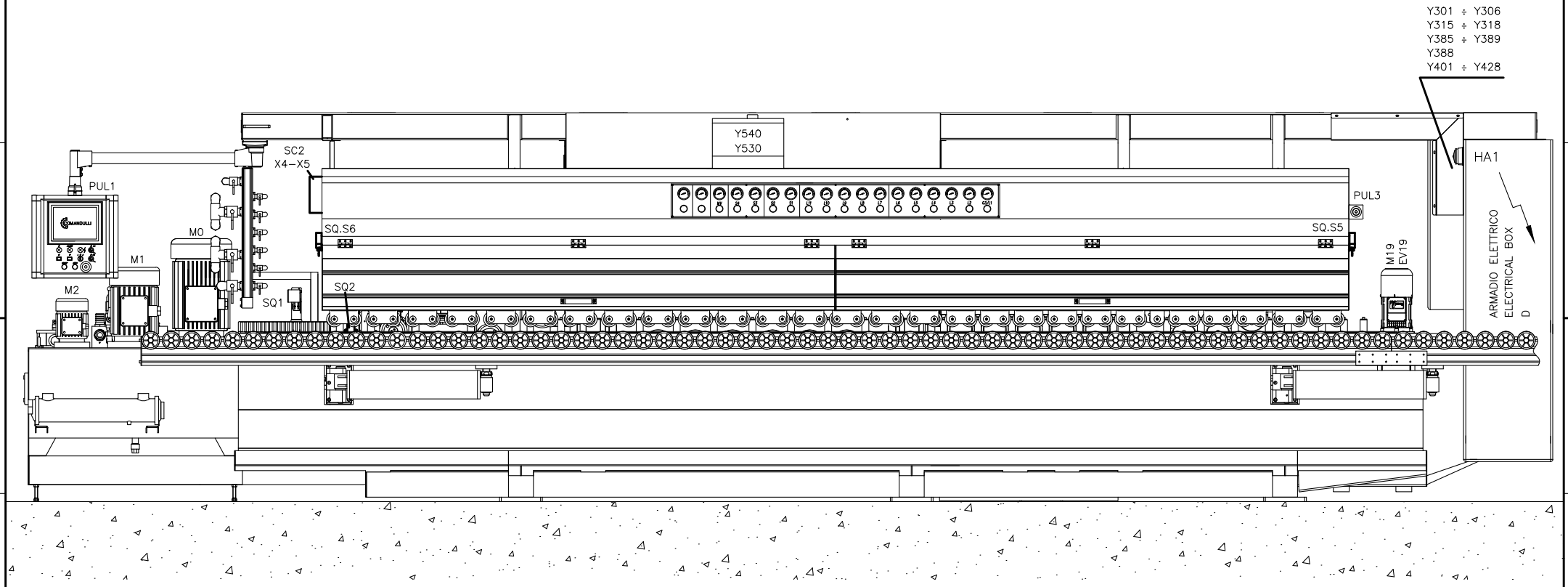
FG. 1A
F.S. 2A

MACCHINA CON CARICAMENTO PEZZI DA SINISTRA
MACHINE WITH LEFT PIECE LOADING
D



ALIMENTAZIONE MACCHINA MACHINE POWER SUPPLY VERSORGUNGSSPANNUNG F ALIMENTACION MAQUINA P	3x480+PE 60 Hz	POTENZA TOTALE TOTAL POWER GESAMTE INSTALLIERTE LEISTUNG F POTENCIA TOTAL P	68 Kw 90 HP	CORRENTE NOMINALE RATED OUTPUT NENNSTROM F CORRIENTE NOMINAL P	140 Amp.

COMANDULLI
COSTRUZIONI MECCANICHE

DATA	23/01/2019
DISEGN.	MORO PAOLO
VISTO	MNM
APPR.	MNM

Comandulli Costruzioni Meccaniche S.r.l.
SEDE: Via Medaglie d'Argento, 20 Z.I.
26012 CASTELLEONE – (Cremona) ITALY

SOST. IL : | SOST. DA :

MATRICOLA:	02319
COMMESSA:	791J
FILE :	OMEGA10011–UL

LUCIDACOSTE A NASTRO Mod.: OMEGA 60 PENCIL
BELT EDGE POLISHING MACHINE Mod.: OMEGA 60 PENCIL

MACCHINA
MACHINE

– 02519 –

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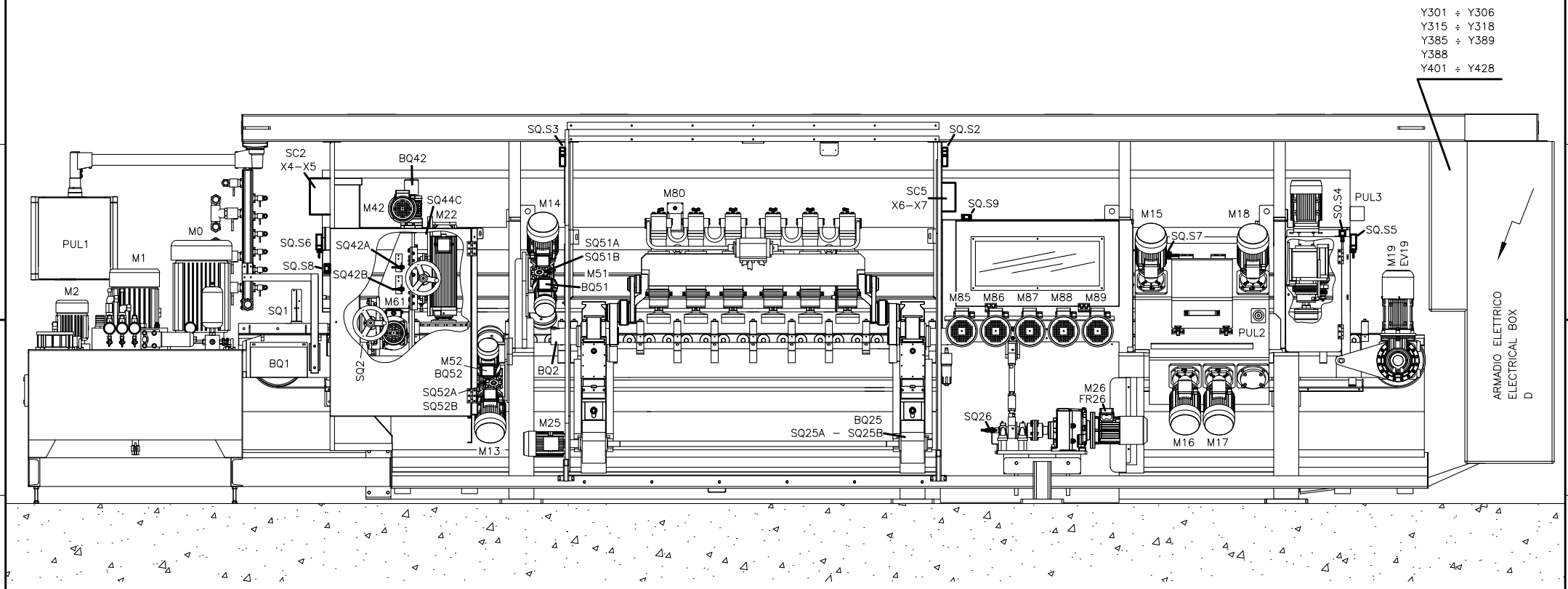
FG. 2A
F.S. 3A

MACCHINA CON CARICAMENTO PEZZI DA DESTRA
MACHINE WITH RIGHT PIECE LOADING
D



ALIMENTAZIONE MACCHINA MACHINE POWER SUPPLY VERSORGUNGSSPANNUNG F ALIMENTACION MAQUINA P	3x480+PE 60 Hz	POTENZA TOTALE TOTAL POWER GESAMTE INSTALLIERTE LEISTUNG F POTENCIA TOTAL P	68 Kw 90 HP	CORRENTE NOMINALE RATED OUTPUT NENNSTROM F CORRIENTE NOMINAL P	140 Amp.

COMANDULLI
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APPR.	MNM

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COMMESSA:	791J
FILE :	OMEGA10011–UL

LUCIDACOSTE A NASTRO Mod.: OMEGA 60 PENCIL
BELT EDGE POLISHING MACHINE Mod.: OMEGA 60 PENCIL

MACCHINA
MACHINE

– 02519 –

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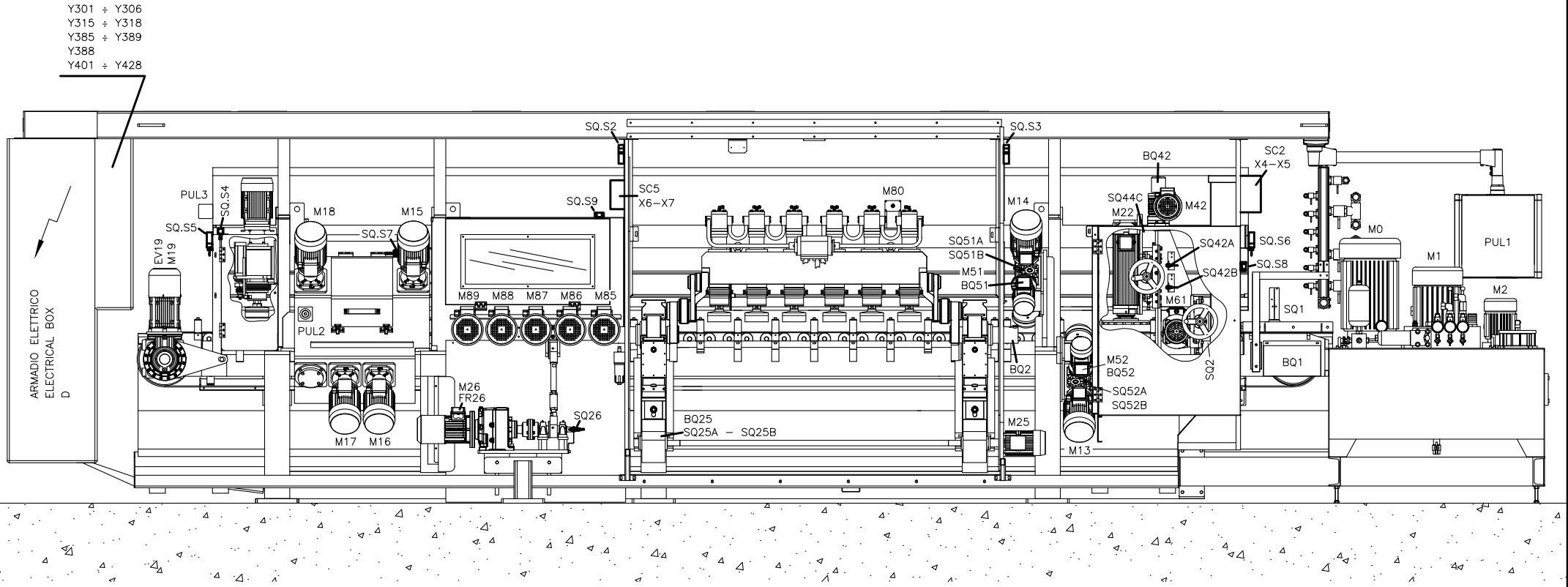
FG. **3A**
F.S. **4A**

MACCHINA CON CARICAMENTO PEZZI DA SINISTRA
MACHINE WITH LEFT PIECE LOADING
D



ALIMENTAZIONE MACCHINA MACHINE POWER SUPPLY VERSORGUNGSSPANNUNG F ALIMENTACION MAQUINA P	3x480+PE 60 Hz	POTENZA TOTALE TOTAL POWER GESAMTE INSTALLIERTE LEISTUNG F POTENCIA TOTAL P	68 Kw 90 HP	CORRENTE NOMINALE RATED OUTPUT NENNSTROM F CORRIENTE NOMINAL P	140 Amp.

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VISTO	MNM
APPR.	MNM

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MATRICOLA:	02319
COMMESSA:	791J
FILE :	OMEGA10011–UL

LUCIDACOSTE A NASTRO Mod.: OMEGA 60 PENCIL
BELT EDGE POLISHING MACHINE Mod.: OMEGA 60 PENCIL

MACCHINA
MACHINE

– 02519 –

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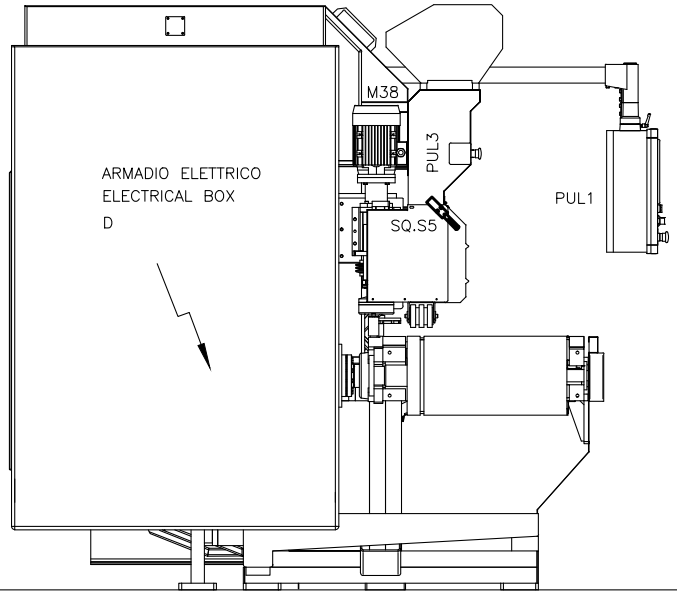
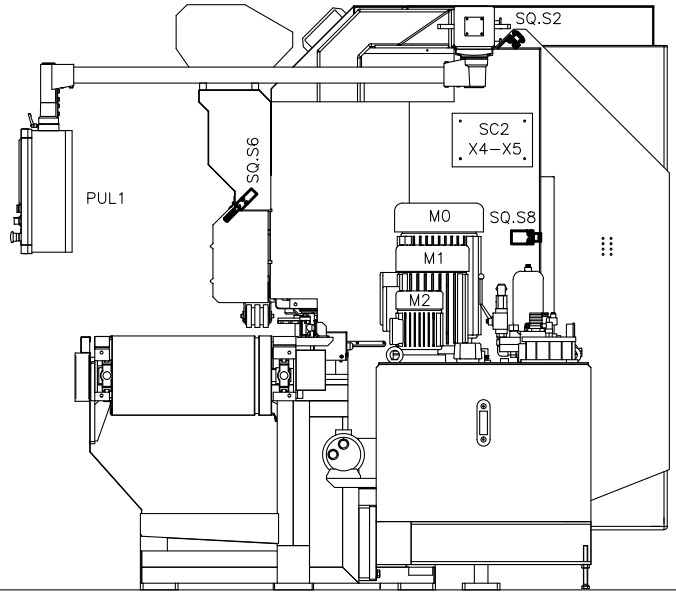
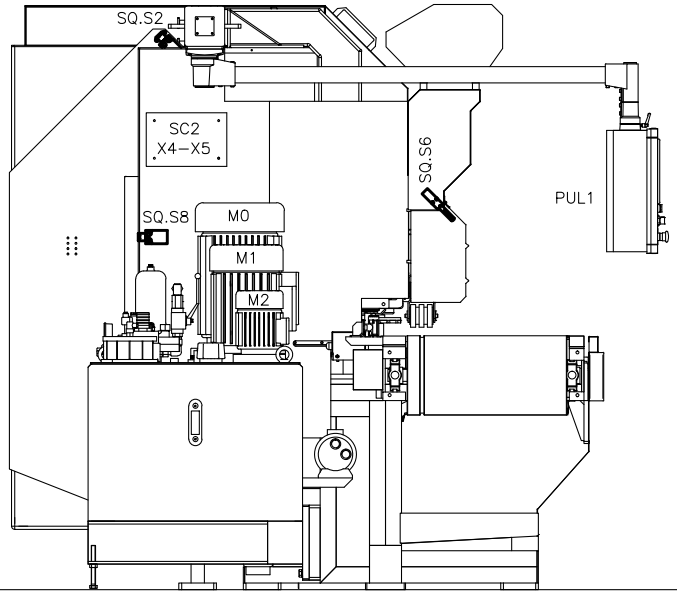
FG. 4A
F.S. 5A

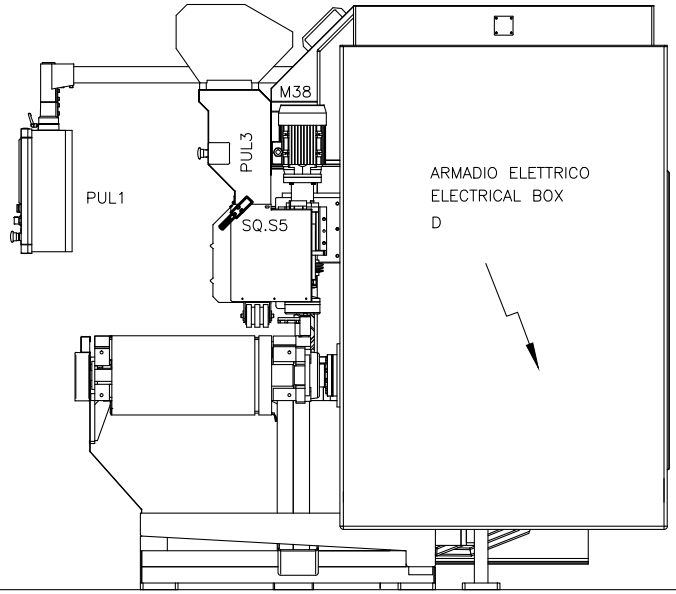


MACCHINA CON CARICAMENTO PEZZI DA DESTRA
MACHINE WITH RIGHT PIECE LOADING
D





MACCHINA CON CARICAMENTO PEZZI DA SINISTRA
MACHINE WITH LEFT PIECE LOADING
D



COMANDULLI COSTRUZIONI MECCANICHE	DATA	23/01/2019	Comandulli Costruzioni Meccaniche S.r.l. SEDE: Via Medaglie d'Argento, 20 Z.I. 26012 CASTELLEONE – (Cremona) ITALY	MATRICOLA:	02319	LUCIDACOSTE A NASTRO Mod.: OMEGA 60 PENCIL BELT EDGE POLISHING MACHINE Mod.: OMEGA 60 PENCIL	– 02519 –
	DISEGN.	MORO PAOLO		COMMESSA:	791J	MACCHINA MACHINE	
	VISTO	MNM					
	APPR.	MNM	SOST. IL :	SOST. DA :	FILE : OMEGA10011–UL		

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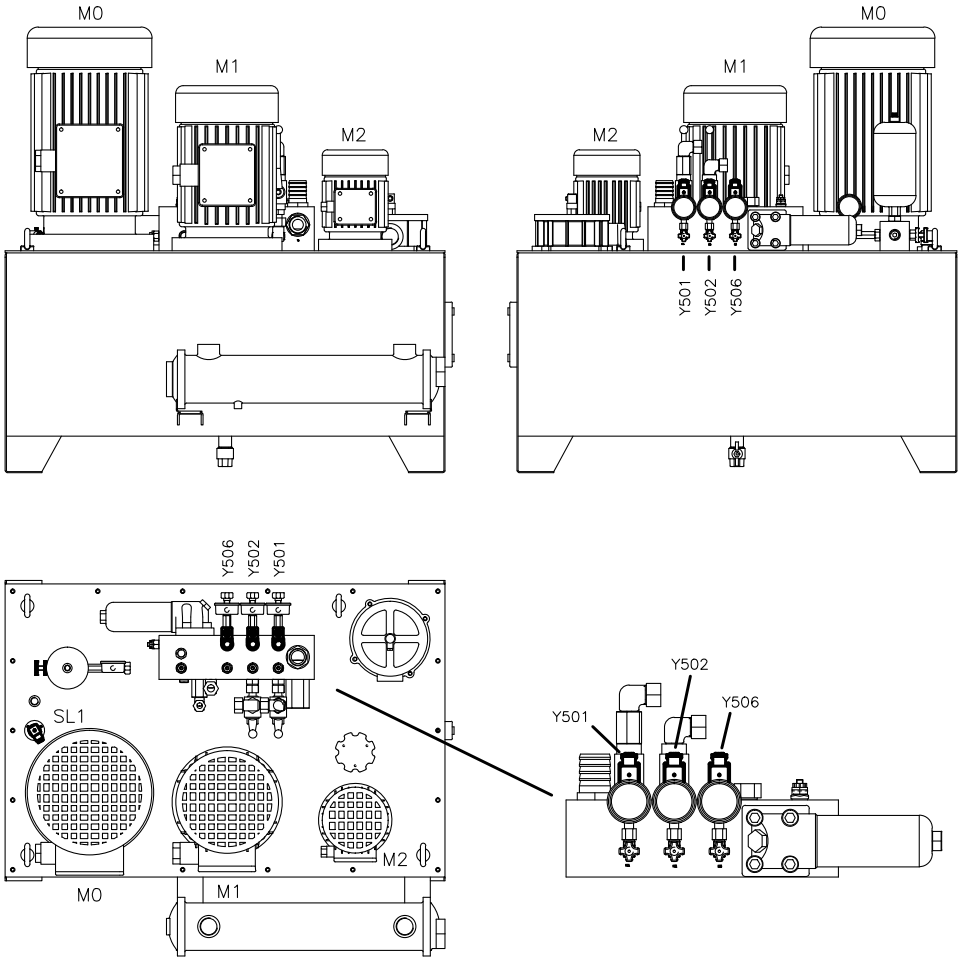
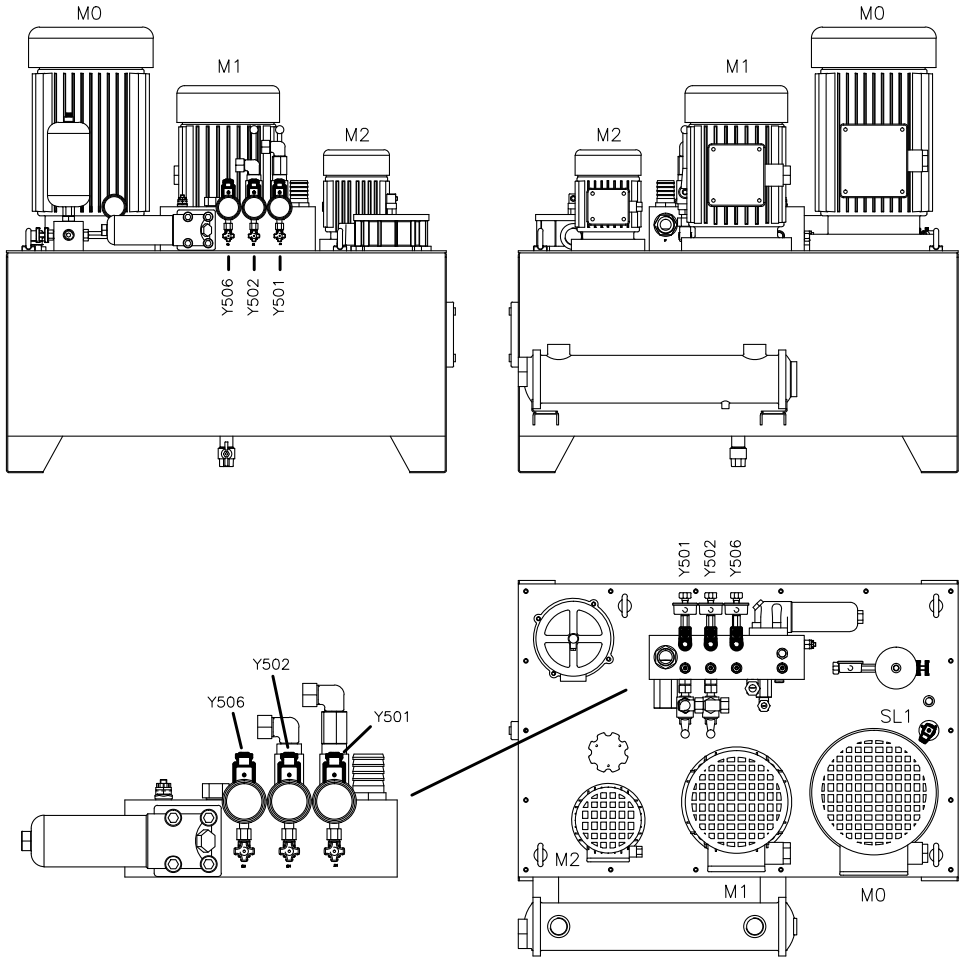
FG. 5A
F.S. 6A

MACCHINA CON CARICAMENTO PEZZI DA DESTRA
MACHINE WITH RIGHT PIECE LOADING
D



MACCHINA CON CARICAMENTO PEZZI DA SINISTRA
MACHINE WITH LEFT PIECE LOADING
D



COMANDULLI COSTRUZIONI MECCANICHE	DATA	23/01/2019	Comandulli Costruzioni Meccaniche S.r.l. SEDE: Via Medaglie d'Argento, 20 Z.I. 26012 CASTELLEONE – (Cremona) ITALY	MATRICOLA:	02319	LUCIDACOSTE A NASTRO Mod.: OMEGA 60 PENCIL BELT EDGE POLISHING MACHINE Mod.: OMEGA 60 PENCIL	– 02519 –
	DISEGN.	MORO PAOLO		COMMESSA:	791J	MACCHINA MACHINE	
	VISTO	MNM					
	APPR.	MNM	SOST. IL :	SOST. DA :	FILE : OMEGA10011–UL		

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FG. 6A
F.S. 7A

BQ1	ENCODER NASTRO TRASPORTATORE CONVEYOR BELT ENCODER	ENCODER FÖRDERBAND ENCODEUR TAPIS TRANSPORTEUR	ENCODER CINTA TRASPORTADORA P
BQ2	ENCODER OSCILLAZIONE MANDRINI LUCIDANTI POLISHING SPINDLE OSCILLATION ENCODER	D ENCODER OSCILLATION GROUPE POLISSEUR	ENCODER OSCILACION GRUPO PULIDOR P
BQ25	ENCODER SLITTA MANDRINI LUCIDANTI POLISHING SPINDLE SLIDE ENCODER	D ENCODER GLISSIERE POLISSEUR	ENCODER PATIN GRUPO PULIDOR ENCODER SAPATA POLIMENTO
BQ42	ENCODER SPOSTAMENTO VERTICALE CALIBRATORE CHANGE ENCODER IN CALIBRATOR VERTICAL	D F	E P
BQ51	ENCODER SPOSTAMENTO SECONDO SMUSSO (SGROSSATORE) 2° BEVEL MOVEMENT ENCODER (ROUGHING)	D F	E P
BQ52	ENCODER SPOSTAMENTO PRIMO SMUSSO (SGROSSATORE) 1° BEVEL MOVEMENT ENCODER (ROUGHING)	D F	E P
EV19	VENTILAZIONE MOTORE NASTRO TRASPORTATORE FAN MOTOR CONVEYOR BELT	D F	E P
FR26	FRENO MOTORE FLOTTANTE FLOATING MOTOR BRAKE	D F	E P
HA1	SIRENA SIREN	D F	E P
MO	MOTORE POMPA ROTAZIONE MANDRINI LUCIDANTI POLISHING SPINDLE ROTATION PUMP MOTOR	MOTOR PUMPE DREHUNG SCHLEIFSCHEIBEN MOTEUR POMPE ROTATION MEULES	MOTOR BOMBA ROTACIÒN MUELAS P
M1	MOTORE POMPA OSCILLAZIONE MANDRINI LUCIDANTI POLISHING SPINDLE OSCILLATION PUMP MOTOR	MOTOR OSCILLATION MOTEUR OSCILLATION	MOTOR OSCILACIÒN MOTOR BOMBA ROTAÇAO
M2	MOTORE POMPA BRETELLA IDRAULICA SPINDLE HOLDING CROSSBAR PUMP	PUMPE ZUM FIXIEREN DESQUESUPPORT POMPE POUR POSITION DE BLOCAGE	MOTOR BOMBA TIRADOR BOMBA HIDRàULICA BOMBA PARA BY-PASS HIDRAULICO
M13	MOTORE PRIMO SMUSSO (SGROSSATORE) 1° BEVEL MOTOR (ROUGHING)	MOTOR OBERFASENSUPPORT MOTEUR CHANFREIN SUPERIEUR	MOTOR BISEL SUPERIOR ARESTA SUPERIORA
M14	MOTORE SECONDO SMUSSO (SGROSSATORE) 2° BEVEL MOTOR (ROUGHING)	MOTOR UNTERFASENSUPPORT MOTEUR CHANFREIN SUPERIEUR	MOTOR BISEL INFERIOR ARESTA INFERIORA
M15	MOTORE TERZO SMUSSO 3° BEVEL MOTOR	D F	E P
M16	MOTORE QUARTO SMUSSO 4° BEVEL MOTOR	D F	E P
M17	MOTORE QUINTO SMUSSO 5° BEVEL MOTOR	D F	E P
M18	MOTORE SESTO SMUSSO 6° BEVEL MOTOR	D F	E P
M19	MOTORE NASTRO TRASPORTATORE GB	MOTOR FÖRDERBAND MOTEUR TAPIS	MOTOR CINTA FITA TRASPORTADORA

COMANDULLI
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26012 CASTELLEONE – (Cremona) ITALY

SOST. IL : | SOST. DA :

MATRICOLA:	02319
COMMESSA:	791J
FILE :	OMEGA10011-UL

LUCIDACOSTE A NASTRO Mod.: OMEGA 60 PENCIL
BELT EDGE POLISHING MACHINE Mod.: OMEGA 60 PENCIL

DESCRIZIONE COMPONENTI
DESCRIPTION OF COMPONENTS

– 02519 –

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FG. 7A
F.S. 8A

M21	MOTORE DISCO TAGLIOLAMA REVERSIBILE REVERSIBLE UPPER GROOVE DISK MOTOR	BLATT WASSERNASENSUPPORT OBEN DISQUE TAILLE–LAME	MOTOR DISCO LADO CORTE A HOJA P
M22	MOTORE CALIBRATORE "QM" CALIBRATING WHEEL " QM " MOTOR	SCHLEIFSCHEISSE QM KALIBREINHEIT MOTEUR MEULE CALIBRAGE QM	MOTOR MUELA CALIBRACIòN QM P
M25	MOTORE SPOSTAMENTO SLITTA MANDRINI LUCIDANTI POLISHING SPINDLE SLIDE MOVEMENT MOTOR	MOTOR SCHLITTEN SCHLEIFEINHEIT MOTEUR GLISSIERE GROUPE POLISSEUR	MOTOR PATIN GRUPO POLIDOR MOTOR SAPATA GRUPO DE POLIMENTO
M26	MOTORE FLOTTANTE FLOATING MOTOR	D F	E P
M29	MOTORE REGOLAZIONE VELOCITA' NASTRO MOTOR SPEED ADJUSTMENT 'TAPE	D F	E P
M38	MOTORE MANDRINO VERTICALE VERTICAL SPINDLE MOTOR	D F	E P
M39	MOTORE MANDRINO ORIZZONTALE HORIZONTAL SPINDLE MOTOR	D F	E P
M42	MOTORE SPOSTAMENTO VERTICALE CALIBRATORE QM MOTOR CHANGE IN VERTICAL CALIBRATOR QM	D F	E P
M51	MOTORE SPOSTAMENTO 2° SMUSSO (SGROSSATORE) N° 2 BEVEL MOVEMENT MOTOR (ROUGHING)	D F	E P
M52	MOTORE SPOSTAMENTO 1° SMUSSO (SGROSSATORE) N° 1 BEVEL MOVEMENT MOTOR (ROUGHING)	D F	E P
M61	MOTORE RETTIFICATORE RECTIFIER MOTOR	D F	E P
M80	MOTORE PASSO–PASSO MANDRINO GENERANTE STEPPER MOTOR SPINDLE GENERATING	D F	E P
M85	MOTORE PRIMO MANDRINO LUCIDACOSTE EDGE POLISHING WELL FIRST MOTOR	D F	E P
M86	MOTORE SECONDO MANDRINO LUCIDACOSTE EDGE POLISHING WELL UNDER MOTOR	D F	E P
M87	MOTORE TERZO MANDRINO LUCIDACOSTE EDGE POLISHING WELL THIRD MOTOR	D F	E P
M88	MOTORE QUARTO MANDRINO LUCIDACOSTE EDGE POLISHING WELL FOURTH MOTOR	D F	E P
M89	MOTORE QUINTO MANDRINO LUCIDACOSTE EDGE POLISHING WELL FIFTH MOTOR	D F	E P
PUL1	PULSANTIERA COMANDI E PROGRAMMAZIONE PUSH–BUTTON AND PROGRAMMING CONTROL PANEL	D F	E P
PUL2–PUL3	PULSANTIERE COMANDI PUSH–BUTTON CONTROL PANEL	D F	E P

COMANDULLI
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SOST. IL : | SOST. DA :

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FILE :	OMEGA10011–UL

LUCIDACOSTE A NASTRO Mod.: OMEGA 60 PENCIL
BELT EDGE POLISHING MACHINE Mod.: OMEGA 60 PENCIL

DESCRIZIONE COMPONENTI
DESCRIPTION OF COMPONENTS

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FG. 8A
F.S. 9A

SL1	LIVELLOSTATO OLIO OIL GAUGE	D F	E P
SQ.S3–SQ.S2	SICUREZZE PORTE POSTERIORI BACK DOOR SAFETY DEVICE	D F	E P
SQ.S4	SICUREZZE SPORTELLO MANDRINO VERTICALE GB	D F	E P
SQ.S5–SQ.S6	SICUREZZE CARTER RIBALTABILI FOLDING COVER SAFETY DEVICE	D F	E P
SQ.S7	SICUREZZA SPORTELLO CAMBIO ABRASIVI SMUSSI BEVELLING GROUP ABRASIVE CHANGE SAFETY DEVICE	D F	E P
SQ.S8	SICUREZZA CANCELLO CALIBRATORE QM CALIBRATING WHEEL QM GATE SAFETY DEVICE	D F	E P
SQ.S9	PORTA MANDRINI LUCIDACOSTE DOOR SPINDLES EDGE POLISHER	D F	E P
SQ1	PRIMO SENSORE LETTURA PEZZO PIECE READING FIRST SENSOR	1 PROXIMITY WERKSTUK–ABTASTUNG 1 PROXIMITY PRESENCE PIECE	1 SENSOR DE PROXIMIDAD PRESENCIA PIEZA 1 PROXIMITY PRESENÇA PEGA
SQ2	SECONDO SENSORE LETTURA PEZZO PIECE READING SECOND SENSOR	2 PROXIMITY WERKSTUK–ABTASTUNG 2 PROXIMITY PRESENCE PIECE	2 SENSOR DE PROXIMIDAD PRESENCIA PIEZA 2 PROXIMITY PRESENÇA PEGA
SQ25A	FINECORSA SALITA SLITTA MANDRINI LUCIDANTI POLISHING SPINDLE SLIDE UPWARD LIMIT SWITCH	PROXIMITY HAUFFAHREN SCHLITTEN SCHLEIFEINHEIT PROXIMITY MONTEE GLISSIERE GENERATEUR	SENSOR DE PROXIMIDAD SUBIDA PATìN POLIDOR PROXIMITY SUBIDA SAPATA DE POLIMENTO
SQ25B	FINECORSA DISCESA SLITTA MANDRINI LUCIDANTI POLISHING SPINDLE SLIDE DOWNWARD LIMIT SWITCH	PROXIMITY ABFAHREN SCHLITTEN SCHLEIFEINHEIT PROXIMITY DESCENTE GLISSIERE POLISSEUR	SENSOR DE PROXIMIDAD BAJADA PATIN POLIDOR PROXIMITY DESCIDA SAPATA DE POLIMENTO
SQ26	GRUPPO FLOTTANTE A 90 GRADI 90° FLOATING GROUP	D F	E P
– – –	FINECORSA SALITA DISCO TAGLIOLAMA GB	D F	E P
SQ42A	FINECORSA SALITA CALIBRATORE QM GB	D F	E P
SQ42B	FINECORSA DISCESA CALIBRATORE QM GB	D F	E P
– – –	FINECORSA INCLINAZIONE CALIBRATORE QM GB	D F	E P
SQ51A	FINECORSA AVANTI SMUSSO N° 2 (SGROSSATORE) N° 2 BEVEL FORWARD LIMIT SWITCH (ROUGHING)	D F	E P
SQ51B	FINECORSA INDIETRO SMUSSO N° 2 (SGROSSATORE) N° 2 BEVEL BACKWARD LIMIT SWITCH (ROUGHING)	D F	E P
SQ52A	FINECORSA AVANTI SMUSSO N° 1 (SGROSSATORE) N° 1 BEVEL FORWARD LIMIT SWITCH (ROUGHING)	D F	E P

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LUCIDACOSTE A NASTRO Mod.: OMEGA 60 PENCIL
BELT EDGE POLISHING MACHINE Mod.: OMEGA 60 PENCIL

DESCRIZIONE COMPONENTI
DESCRIPTION OF COMPONENTS

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FG. 9A
F.S. 10A

SQ52B	FINECORSA INDIETRO SMUSSO N°1 (SGROSSATORE) N° 1 BEVEL BACKWARD LIMIT SWITCH (ROUGHING)	D F	E P
–––	I GB	D F	E P
Y301 ÷ Y306	ELETTROVALVOLE ARIA MANDRINI LUCIDACOSTE POLISHING SPINDLE AIR SOLENOID VALVES	D F	E P
Y315 ÷ Y318	ELETTROVALVOLA ARIA MANDRINI SMUSSATORI LUCIDANTI POLISHING BEVELLING SPINDLE AIR SOLENOID VALVES	D F	E P
Y338	ELETTROVALVOLA ARIA MANDRINO VERTICALE VERTICAL SPINDLE AIR SOLENOID VALVE	D F	E P
–––	ELETTROVALVOLA ARIA MANDRINO ORIZZONTALE HORIZONTAL SPINDLE AIR SOLENOID VALVE	D F	E P
Y385 ÷ Y389	ELETTROVALVOLA ARIA MANDRINI LUCIDACOSTE LUCIDANTI POLISHING SPINDLE AIR SOLENOID VALVES	D F	E P
Y401 ÷ Y428	ELETTROVALVOLE ARIA PRESSORI BLOCCAPEZZO SLAB HOLDER AIR SOLENOID VALVES	D F	E P
–––	I GB	D F	E P
Y501	ELETTROV. IDRAULICA ROTAZIONE MANDRINI LUCIDANTI 1–2–3–4 1–2–3–4 POLISH. SPINDLE ROTATION HYDR. SOLENOID VALVES	D F	E P
Y502	ELETTROV. IDRAULICA ROTAZIONE MANDRINI LUCIDANTI 5–6–7–8 5–6–7–8 POLISH. SPINDLE ROTATION HYDR. SOLENOID VALVES	D F	E P
Y506	ELETTROV. IDRAULICA OSCILLAZIONE MANDRINI POLISH. SPINDLE ROTATION HYDR. SOLENOID VALVE	D F	E P
–––	I GB	D F	E P
Y530–Y540	ELTROVALVOLE PROPORZIONALI OSCILLAZIONE MANDRINI LUCIDANTI POLISH. SPINDLE OSCILL. PROPORTIONAL SOLENOID VALVES	D F	E P
–––	I GB	D F	E P
X4 – X5 X6 – X7	MORSETTIERE TERMINAL BOARDS	D F	E P
–––	I GB	D F	E P
–––	I GB	D F	E P
–––	I GB	D F	E P

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LUCIDACOSTE A NASTRO Mod.: OMEGA 60 PENCIL
BELT EDGE POLISHING MACHINE Mod.: OMEGA 60 PENCIL

DESCRIZIONE COMPONENTI
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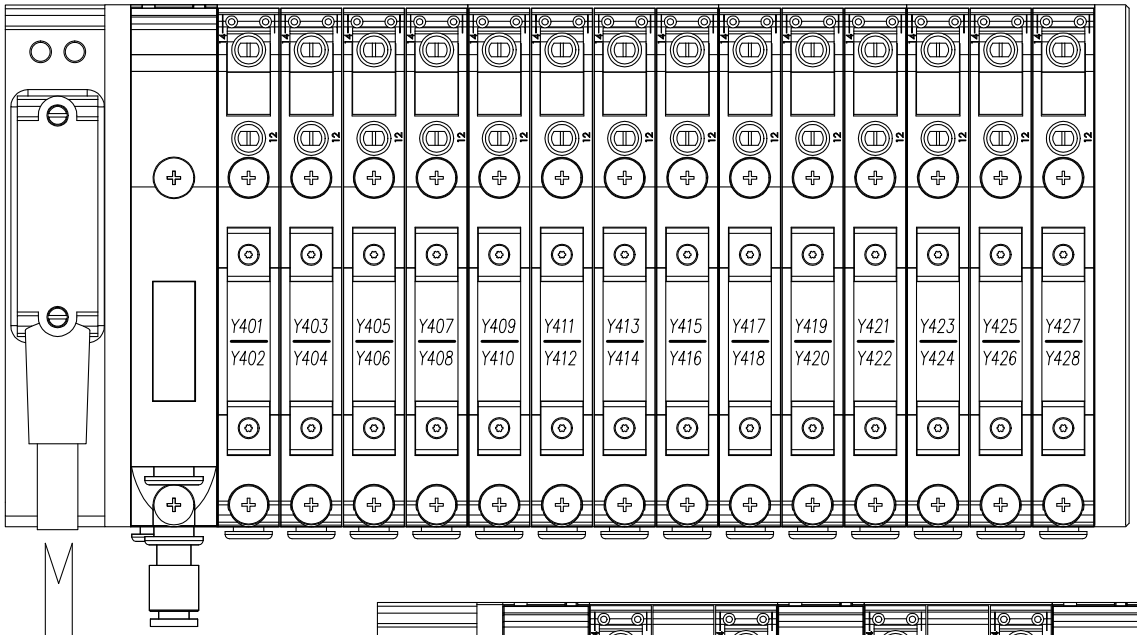
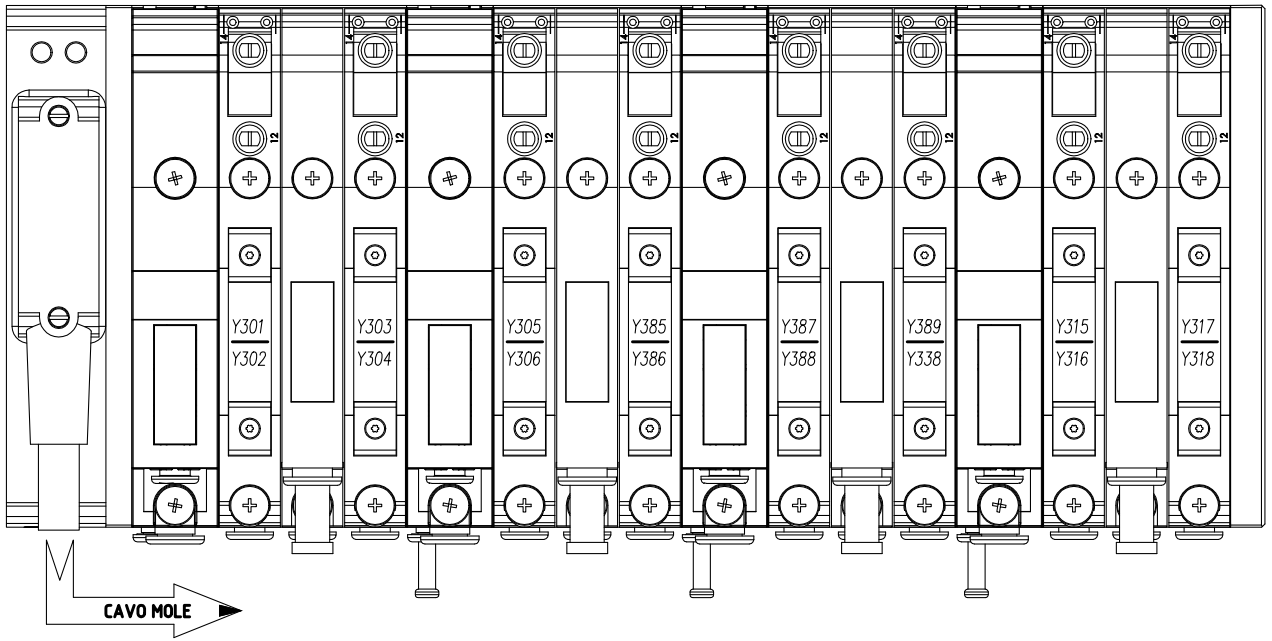
FG. 10A
F.S. 11A



ELETTROVALVOLE PRESSORI BLOCCAPEZZO
HOLDING PISTONS VALVES
D



ELETTROVALVOLE MANDRINI
SPINDLES VALVES
D

COMANDULLI COSTRUZIONI MECCANICHE	DATA	23/01/2019	Comandulli Costruzioni Meccaniche S.r.l. SEDE: Via Medaglie d'Argento, 20 Z.I. 26012 CASTELLEONE – (Cremona) ITALY	MATRICOLA:	02319	LUCIDACOSTE A NASTRO Mod.: OMEGA 60 PENCIL BELT EDGE POLISHING MACHINE Mod.: OMEGA 60 PENCIL	– 02519 –
	DISEGN.	MORO PAOLO		COMMESSA:	791J	ELETTROVALVOLE ARIA AIR SOLENOID VALVES	
	VISTO	MNM					
	APPR.	MNM	SOST. IL :	SOST. DA :	FILE : OMEGA10011–UL		

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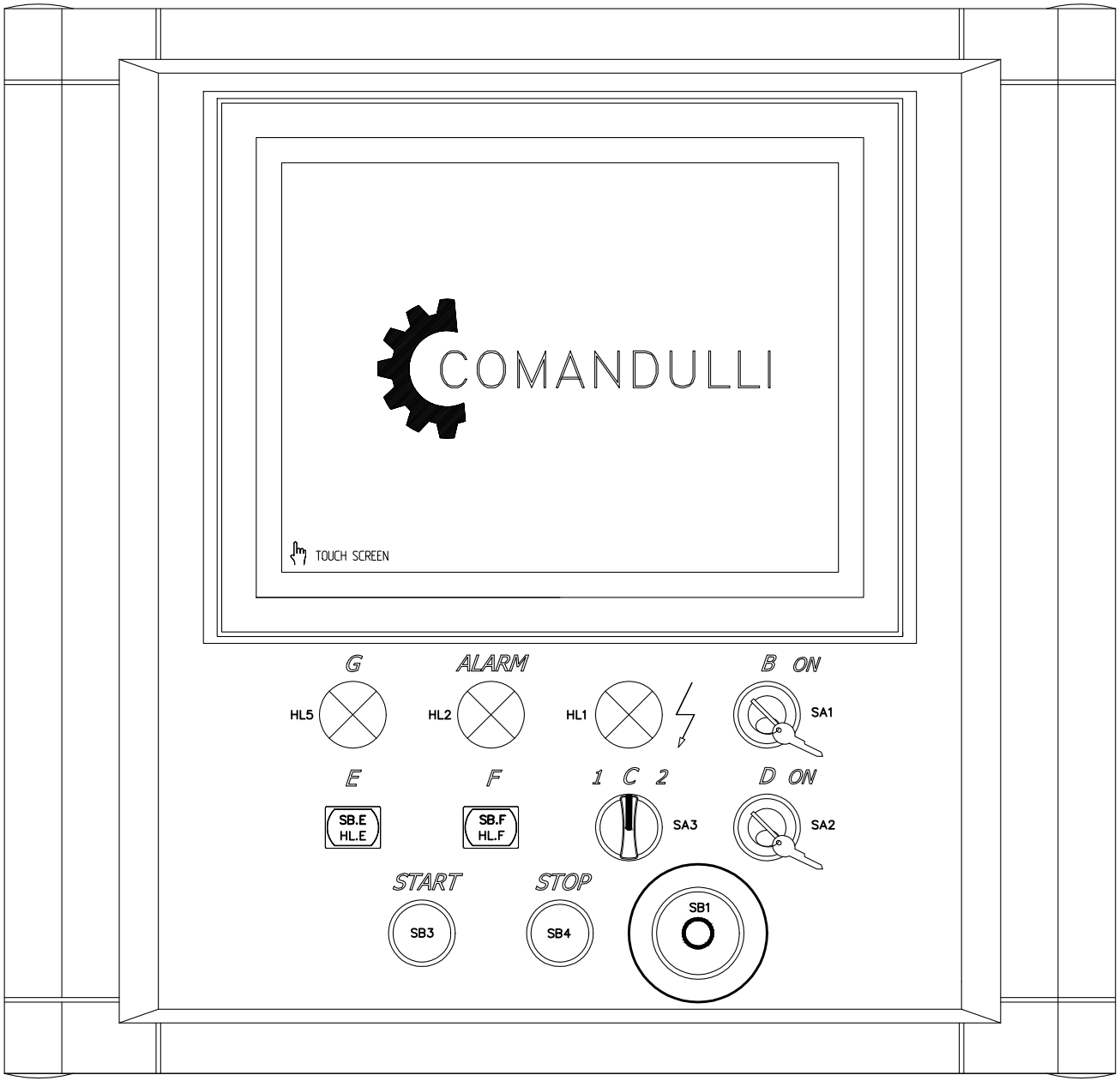
FG. 11A
F.S. 12A



PUL1

COMANDULLI COSTRUZIONI MECCANICHE	DATA	23/01/2019	Comandulli Costruzioni Meccaniche S.r.l. SEDE: Via Medaglie d'Argento, 20 Z.I. 26012 CASTELLEONE – (Cremona) ITALY	MATRICOLA:	02319	LUCIDACOSTE A NASTRO Mod.: OMEGA 60 PENCIL BELT EDGE POLISHING MACHINE Mod.: OMEGA 60 PENCIL	– 02519 –
	DISEGN.	MORO PAOLO		COMMESSA:	791J	COMANDI MACCHINA MACHINE CONTROLS BUTTONS	
	VISTO	MNM					
	APPR.	MNM	SOST. IL :	SOST. DA :	FILE : OMEGA10011–UL		

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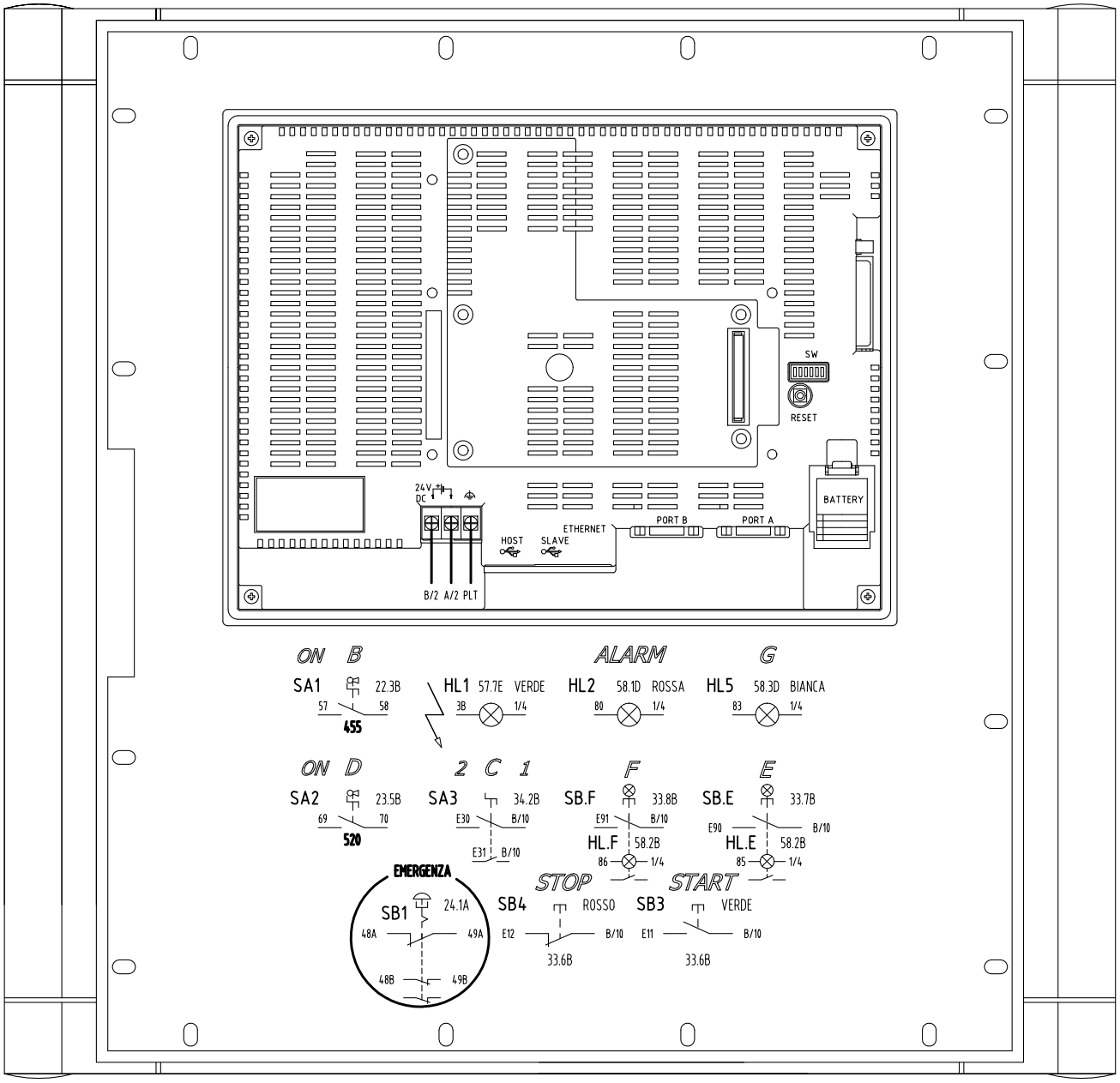
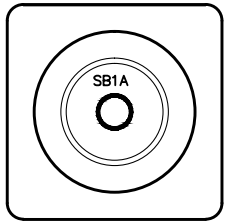
FG. 12A
F.S. 13A



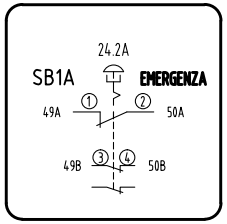
PUL1

RETRO PULSANTIERA

COMANDULLI COSTRUZIONI MECCANICHE	DATA	23/01/2019	Comandulli Costruzioni Meccaniche S.r.l. SEDE: Via Medaglie d'Argento, 20 Z.I. 26012 CASTELLEONE – (Cremona) ITALY	MATRICOLA: 02319	LUCIDACOSTE A NASTRO Mod.: OMEGA 60 PENCIL BELT EDGE POLISHING MACHINE Mod.: OMEGA 60 PENCIL	– 02519 –	=
	DISEGN.	MORO PAOLO		COMMESSA: 791J	COMANDI MACCHINA MACHINE CONTROLS BUTTONS		+
	VISTO	MNM				Il presente disegno è di proprietà della ditta Comandulli S.r.l. Ne è vietata la riproduzione e la diffusione non autorizzata	FG. 13A
	APPR.	MNM	SOST. IL : SOST. DA :	FILE : OMEGA10011–UL			F.S. 14A

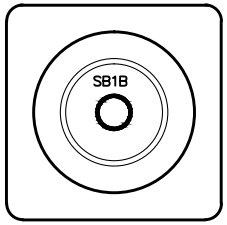


PUL2

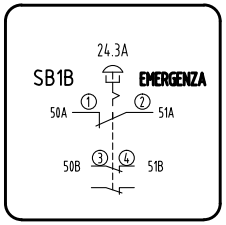


RETRO
PULSANTIERA

CAVO PUL2	
N° FILO CAVO	FUNZIONE
1	49A
2	50A
3	49B
4	50B
GIALLO/VERDE	⏚



PUL3



RETRO
PULSANTIERA

CAVO PUL3	
N° FILO CAVO	FUNZIONE
1	50A
2	51A
3	50B
4	51B
GIALLO/VERDE	⏚

HL1	SEGNALAZIONE MACCHINA PRONTA PILOT LIGHT : MACHINE IS READY ANZEIGER MASCHINE BETRIEBSBEREIT SEGNALISATION MACHINE PRETE
HL2	SEGNALAZIONE AVARIA MACCHINA PILOT LIGHT : MACHINE FAILURE ANZEIGER MACHINESTÖRUNG SEGNALITATION AVARIE
HL5	SEGNALAZIONI FUNZIONI MACCHINA PILOT LAMP MACHINE FUNCTIONS ANZEIGER MACHINEFUNKTIONEN SIGNALISATION FONCTIONS MACHINE
HL. E	LAMPADINA TASTO FUNZIONE < E > PILOT LIGHT KEY E D
HL. F	LAMPADINA TASTO FUNZIONE < F > PILOT LIGHT KEY F D
PLT	TERMINALE PROGRAMMABILE PROGRAMMABLE LOGIC TERMINAL PROGRAMMIERTERMINAL F
SA1	INSERZIONE TENSIONE AUSILIARIA AUXILIARY POWER CONNECTION VERBLALDUNG VON HILFSSPANNUNG CONNECTION PUISSANCE AUXILIARE

SA2	RIPRISTINO PROTEZIONE ELETTRICHE (RIPARI) ELECTRICAL PROTECTION RESET (COVERS) RÜCKSTELLUNG VON ELEKTRISCHEN SCHUTZVORRICHTUNGEN (ABDECKUNGEN) RETABLISSEMENT PROTECTIONS ELECTRIQUES (CARTERS)
SA3	SPOSTAMENTO MANUALE GRUPPI GROUP MOVEMENT BEWEGUNG EINHEITEN F
SB1 SB1A SB1B	EMERGENZA EMERGENCY NOTSTOPTASTE EMERGENCE EMERGENNCIA EMERGêNCIA
SB3	START CICLO CYCLE START ZYKLUSSTART MARCHE CYCLE START CICLO START CICLO
SB4	STOP CICLO CYCLE STOP ZYKLUSSTOP ARRET CYCLE STOP CICLO STOP CICLO
SB.E	TASTO FUNZIONE E FUNCTION E KEY FUNKTION TASTE E FONCTION E FUNCION E FUNÇAO E
SB.F	TASTO FUNZIONE F FUNCTION F KEY FUNKTION TASTE F FONCION F FUNCION F FUNÇAO F

COMANDULLI COSTRUZIONI MECCANICHE	DATA	23/01/2019	Comandulli Costruzioni Meccaniche S.r.l. SEDE: Via Medaglie d'Argento, 20 Z.I. 26012 CASTELLEONE – (Cremona) ITALY	MATRICOLA:	02319	LUCIDACOSTE A NASTRO Mod.: OMEGA 60 PENCIL BELT EDGE POLISHING MACHINE Mod.: OMEGA 60 PENCIL	– 02519 –
	DISEGN.	MORO PAOLO		COMMESSA:	791J	COMANDI MACCHINA MACHINE CONTROLS BUTTONS	
	VISTO	MNM					
	APPR.	MNM	SOST. IL :	SOST. DA :	FILE : OMEGA10011–UL		

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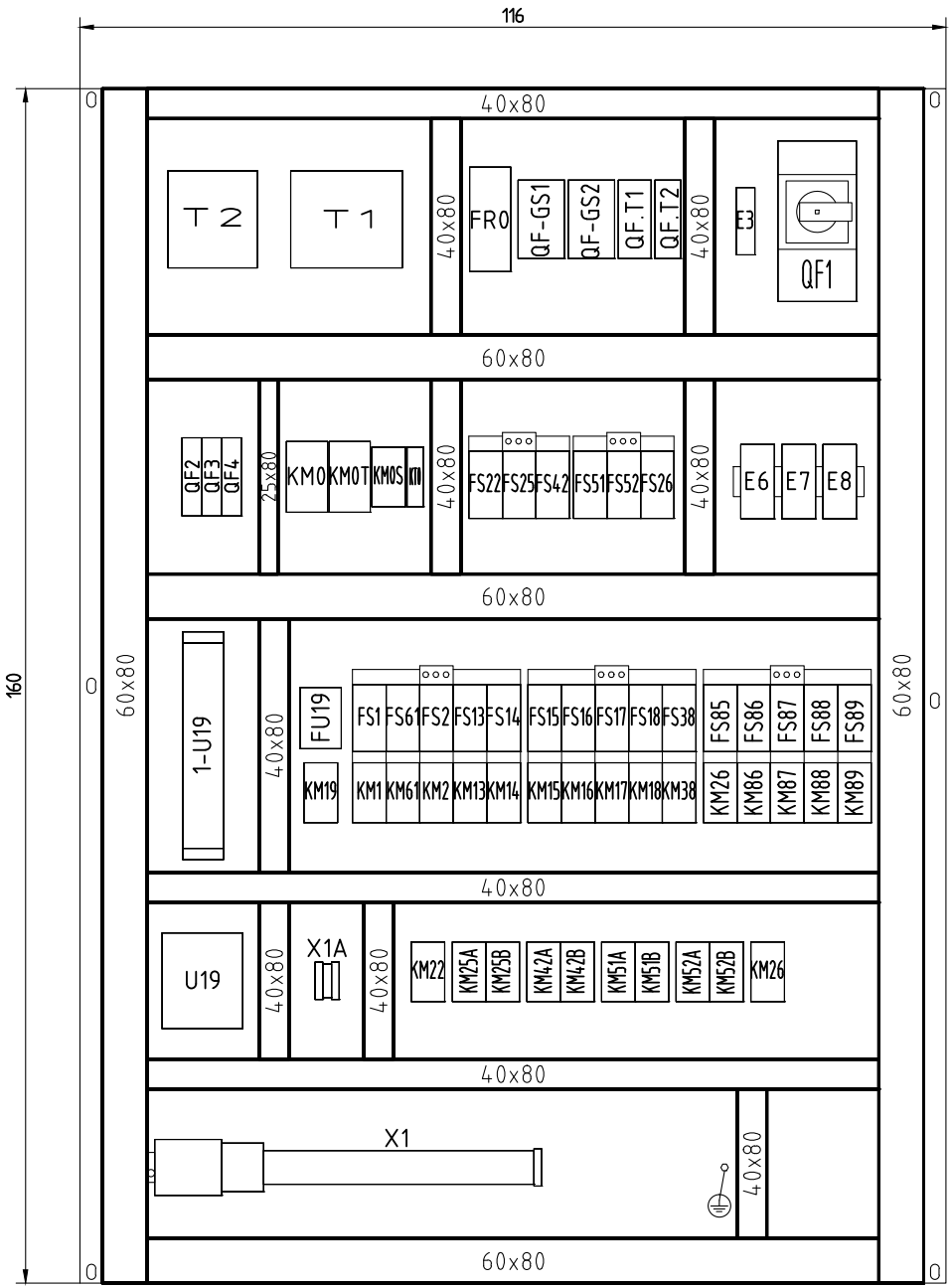
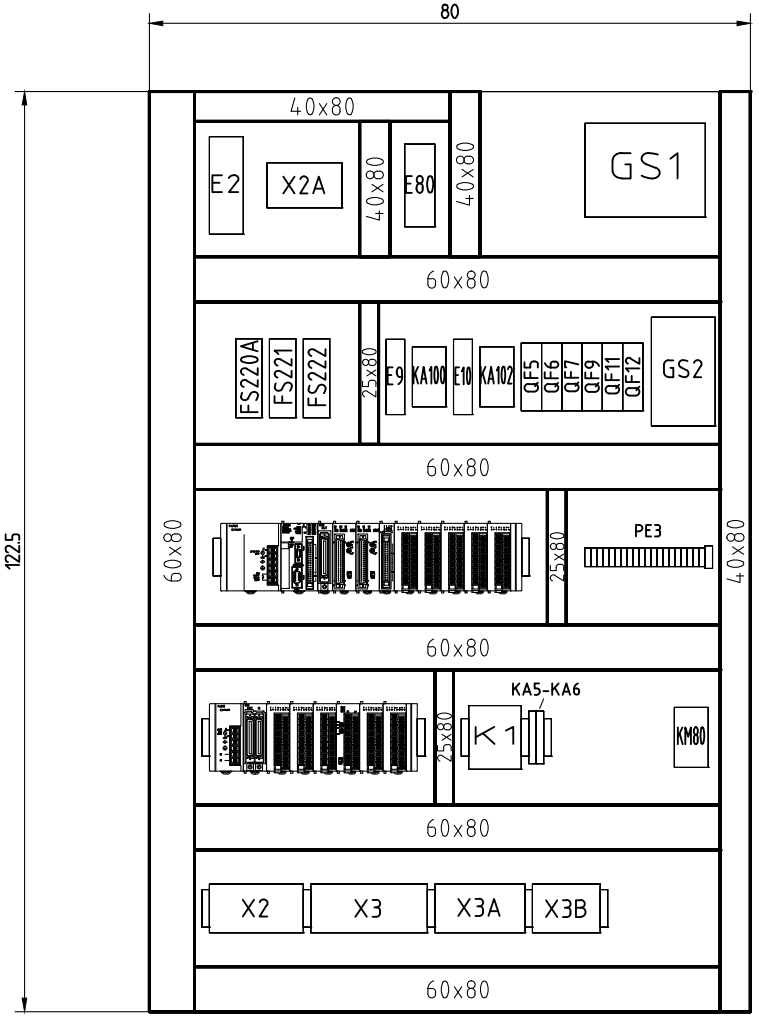
FG. 14A
F.S. 15A

MACCHINA CON CARICAMENTO PEZZI DA DESTRA
MACHINE WITH RIGHT PIECE LOADING
D





COMANDULLI COSTRUZIONI MECCANICHE	DATA	23/01/2019	Comandulli Costruzioni Meccaniche S.r.l. SEDE: Via Medaglie d'Argento, 20 Z.I. 26012 CASTELLEONE – (Cremona) ITALY	MATRICOLA:	02319	*LUCIDACOSTE A NASTRO Mod.: OMEGA 60 PENCIL* *BELT EDGE POLISHING MACHINE Mod.: OMEGA 60 PENCIL*	– 02519 –
	DISEGN.	MORO PAOLO		COMMESSA:	791J	COMPONENTI ARMADIO ELETTRICO *ELECTRICAL BOX COMPONENTS*	
	VISTO	MNM					
	APPR.	MNM	SOST. IL :	SOST. DA :	FILE : OMEGA10011–UL		

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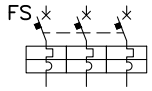
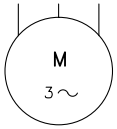
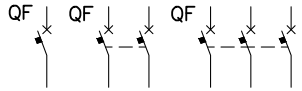
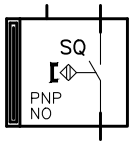
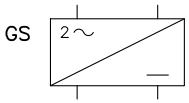
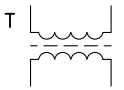
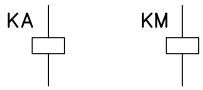
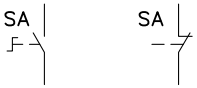
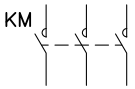
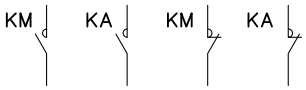
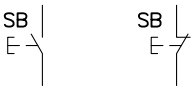
FG. 15A
F.S. 1

SIMBOLOGIE ELETTRICHE UTILIZZATE / *ELECTRICAL USED SYMBOLS*

	INTERRUTTORI MAGNETOTERMICI ***THERMAL SWITCHES***		MOTORE TRIFASE ***THREE-PHASE MOTOR***		FINECORSA MECCANICO ***MECHANICAL LIMIT SWITCH***
	CONTATTO AUSILIARIO MAGNETOTERMICO ***THERMAL AUXILIARY CONTACTS***		INTERRUTTORE DI POTENZA AUTOMATICO ***AUTOMATIC POWER SWITCH***		SENSORE INDUTTIVO ***INDUCTIVE SENSOR***
	ALIMENTATORE MONOFASE ***SINGLE-PHASE POWER SUPPLIER***		CONTATTO AUSILIARIO INTERRUTTORE DI POTENZA ***AUXILIARY CONTACT OF POWER SWITCH***		TRASFORMATORE MONOFASE ***SINGLE-PHASE TRANSFORMER***
	LAMPADA ***LAMP***		SELETTRORE A CHIAVE ***KEY SELECTOR***		ELETTROVALVOLA ***SOLENOID VALVE***
	BOBINE RELE ***RELAY COILS***		SELETTORE ***SELECTOR***		MORSETTO ***CLAMP***
	CONTATTI DI POTENZA ***POWER CONTACTS***		PULSANTE EMERGENZA ***EMERGENCY PUSH BUTTON***		
	CONTATTI AUSILIARI ***AUXILIARY CONTACTS***		PULSANTE MANUALE ***MANUAL PUSH BUTTON***		

COMANDULLI COSTRUZIONI MECCANICHE	DATA	23/01/2019	Comandulli Costruzioni Meccaniche S.r.l. SEDE: Via Medaglie d'Argento, 20 Z.I. 26012 CASTELLEONE – (Cremona) ITALY	MATRICOLA:	02519	*LUCIDACOSTE A NASTRO Mod.: OMEGA 60 PENCIL BELT EDGE POLISHING MACHINE Mod.: OMEGA 60 PENCIL*	– 02519 –
	DISEGN.	MORO PAOLO		COMMESSA:	791J	ELENCO SIMBOLI UTILIZZATI *USED SYMBOLS LIST*	
	VISTO	MNM					
	APPR.	MNM	SOST. IL :	SOST. DA :	FILE : OMEGA10004-UL		

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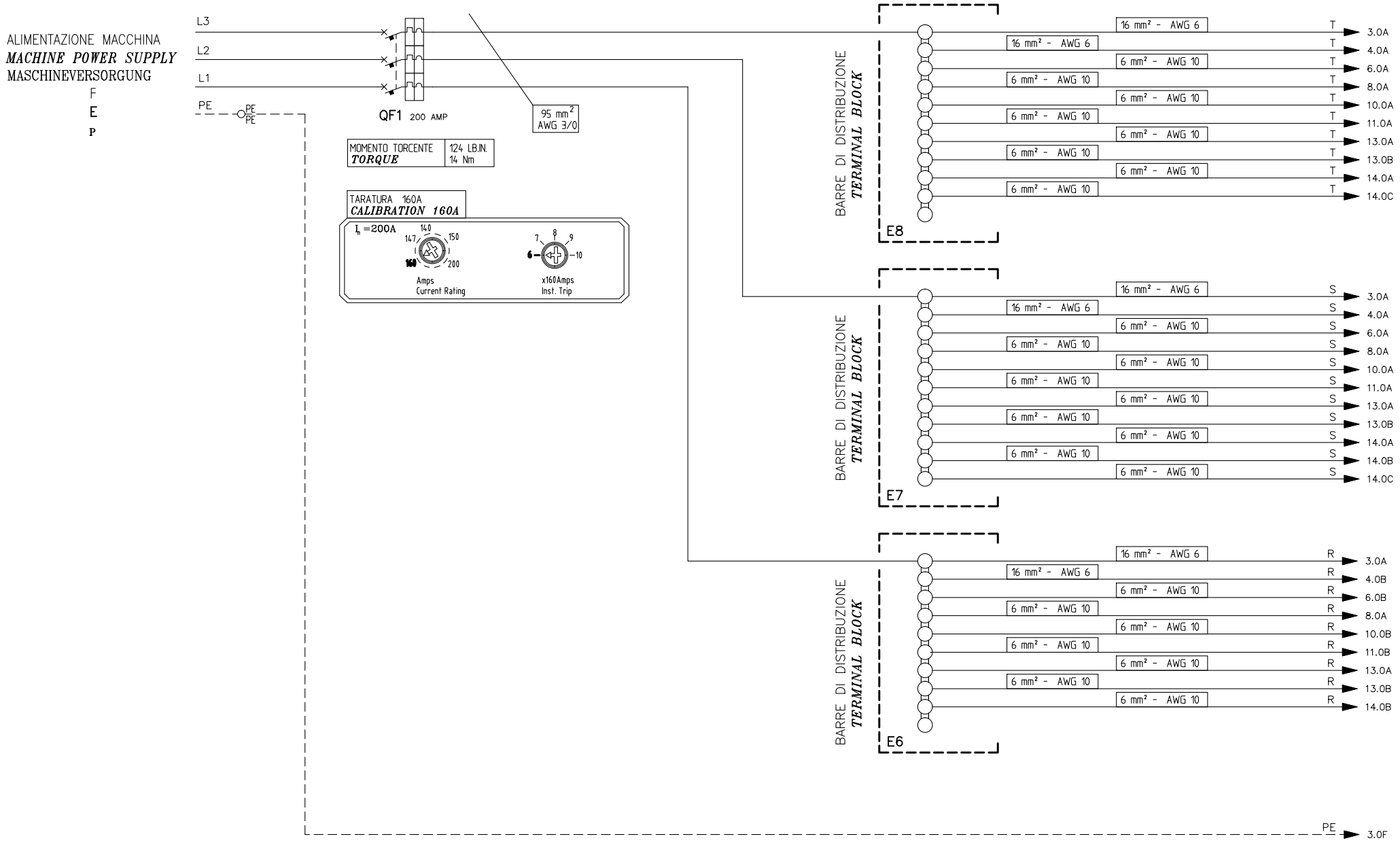
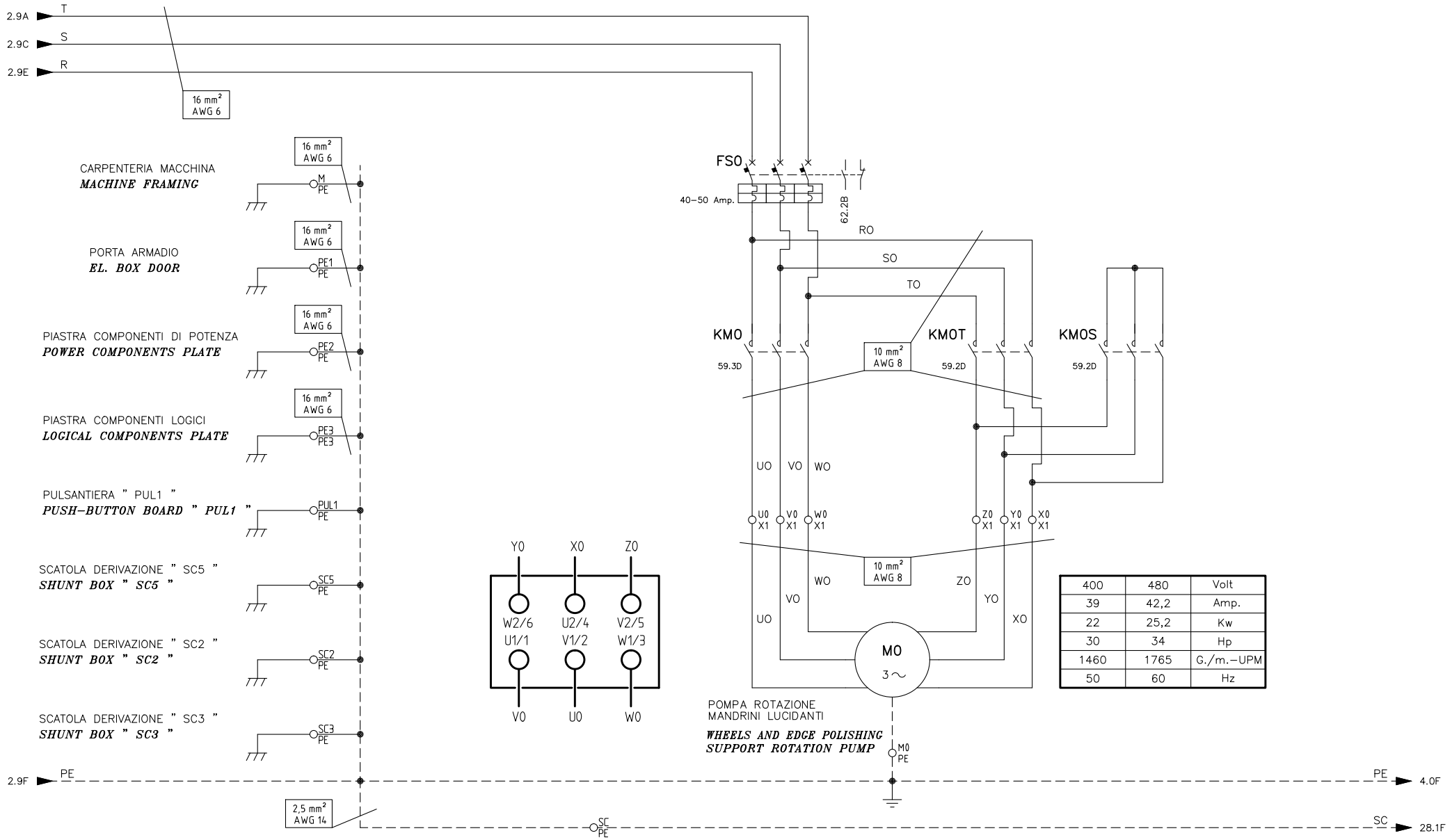
FG. 1
F.S. 2



COMANDULLI COSTRUZIONI MECCANICHE	DATA	23/01/2019	Comandulli Costruzioni Meccaniche S.r.l. SEDE: Via Medaglie d'Argento, 20 Z.I. 26012 CASTELLEONE – (Cremona) ITALY	MATRICOLA:	02519	LUCIDACOSTE A NASTRO Mod.: OMEGA 60 PENCIL BELT EDGE POLISHING MACHINE Mod.: OMEGA 60 PENCIL	– 02519 –
	DISEGN.	MORO PAOLO		COMMESSA:	791J	POTENZA POWER	= +
	VISTO	MNM					Il presente disegno è di proprietà della ditta Comandulli S.r.l. Ne è vietata la riproduzione e la diffusione non autorizzata
	APPR.	MNM	SOST. IL :	SOST. DA :	FILE : OMEGA10004–UL		FG. 2 F.S. 3



400	480	Volt
39	42,2	Amp.
22	25,2	Kw
30	34	Hp
1460	1765	G./m.-UPM
50	60	Hz

COMANDULLI
COSTRUZIONI MECCANICHE

DATA	23/01/2019
DISEGN.	MORO PAOLO
VISTO	MNM
APPR.	MNM

Comandulli Costruzioni Meccaniche S.r.l.
SEDE: Via Medaglie d'Argento, 20 Z.I.
26012 CASTELLEONE - (Cremona) ITALY

SOST. IL : | SOST. DA :

MATRICOLA:	02519
COMMESSA:	791J
FILE :	OMEGA10004-UL

LUCIDACOSTE A NASTRO Mod.: OMEGA 60 PENCIL
BELT EDGE POLISHING MACHINE Mod.: OMEGA 60 PENCIL

POTENZA
POWER

- 02519 -

= +

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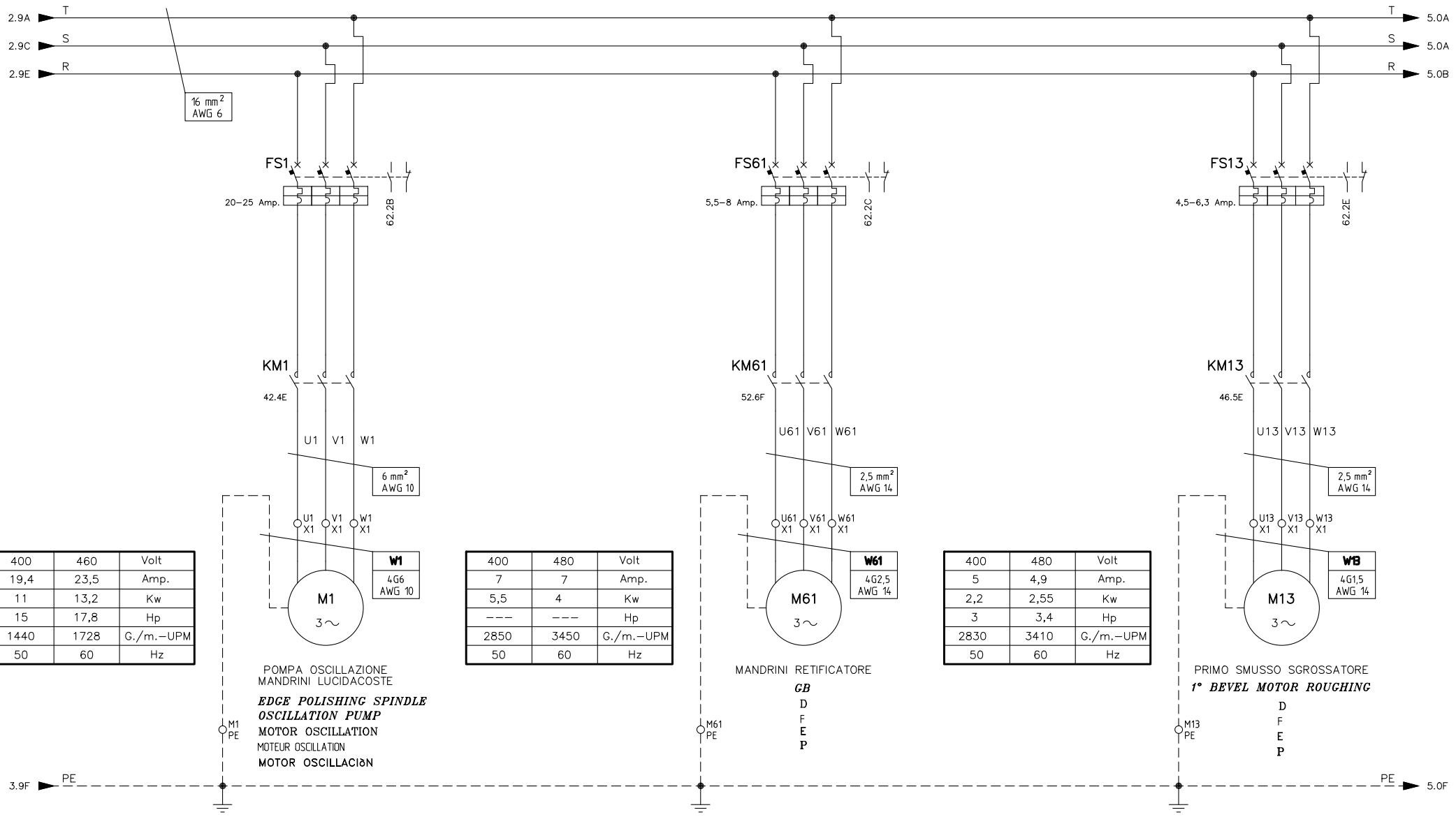
FG. 3
F.S. 4



400	460	Volt
19,4	23,5	Amp.
11	13,2	Kw
15	17,8	Hp
1440	1728	G./m.–UPM
50	60	Hz

POMPA OSCILLAZIONE
MANDRINI LUCIDACOSTE
EDGE POLISHING SPINDLE OSCILLATION PUMP
MOTOR OSCILLATION
MOTEUR OSCILLATION
MOTOR OSCILLACIòN

400	480	Volt
7	7	Amp.
5,5	4	Kw
---	---	Hp
2850	3450	G./m.–UPM
50	60	Hz

MANDRINI RETIFICATORE
GB
D
F
E
P

400	480	Volt
5	4,9	Amp.
2,2	2,55	Kw
3	3,4	Hp
2830	3410	G./m.–UPM
50	60	Hz

PRIMO SMUSSO SGROSSATORE
1° BEVEL MOTOR ROUGHING
D
F
E
P

COMANDULLI
COSTRUZIONI MECCANICHE

DATA	23/01/2019
DISEGN.	MORO PAOLO
VISTO	MNM
APPR.	MNM

Comandulli Costruzioni Meccaniche S.r.l.
SEDE: Via Medaglie d'Argento, 20 Z.I.
26012 CASTELLEONE – (Cremona) ITALY
SOST. IL : SOST. DA :

MATRICOLA:	02519
COMMESSA:	791J
FILE :	OMEGA10004–UL

LUCIDACOSTE A NASTRO Mod.: OMEGA 60 PENCIL
BELT EDGE POLISHING MACHINE Mod.: OMEGA 60 PENCIL
POTENZA
POWER

– 02519 –

=
+

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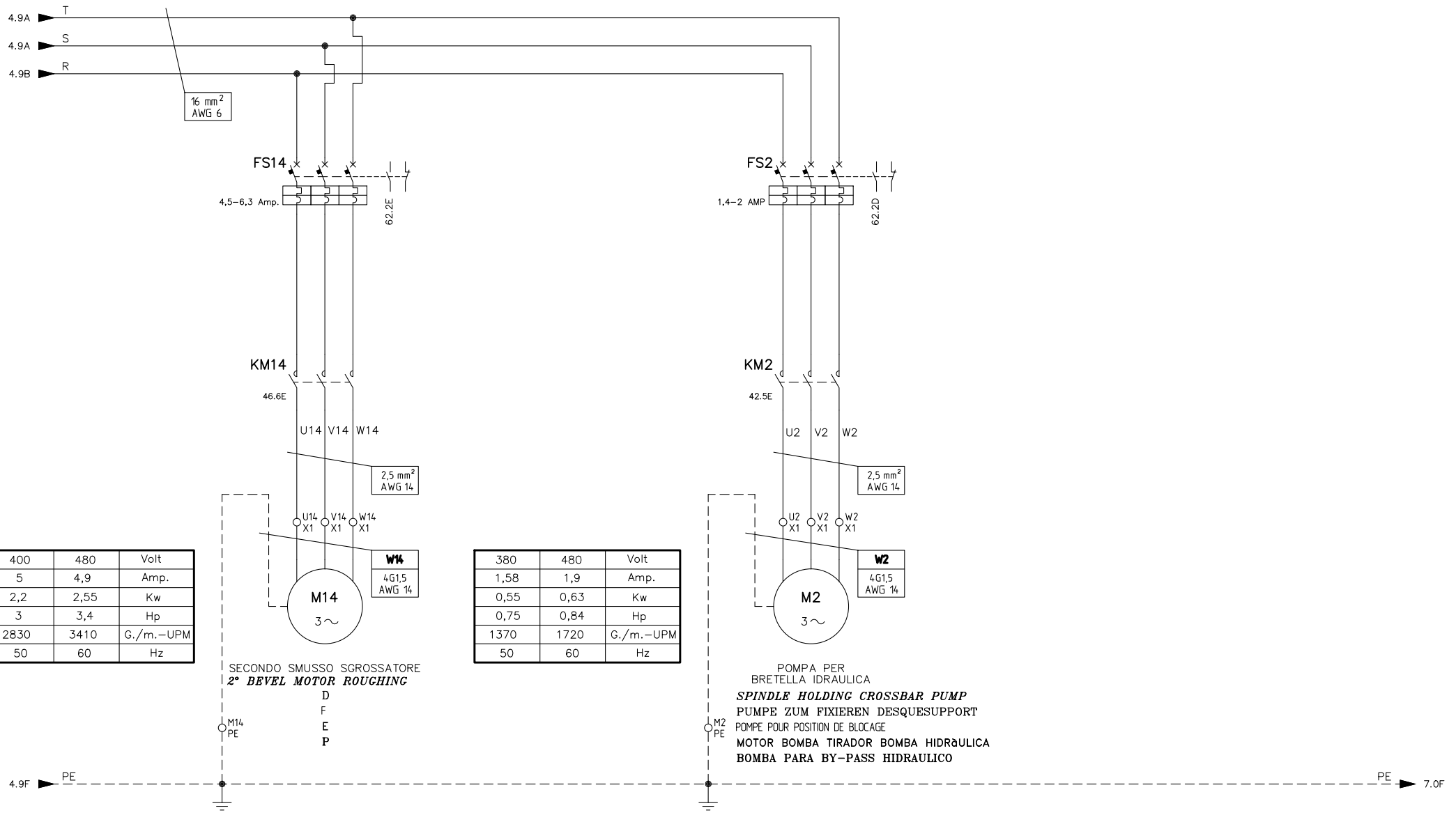
FG. 4
F.S. 5



400	480	Volt
5	4,9	Amp.
2,2	2,55	Kw
3	3,4	Hp
2830	3410	G./m.–UPM
50	60	Hz

380	480	Volt
1,58	1,9	Amp.
0,55	0,63	Kw
0,75	0,84	Hp
1370	1720	G./m.–UPM
50	60	Hz

COMANDULLI COSTRUZIONI MECCANICHE	DATA	23/01/2019	Comandulli Costruzioni Meccaniche S.r.l. SEDE: Via Medaglie d'Argento, 20 Z.I. 26012 CASTELLEONE – (Cremona) ITALY	MATRICOLA:	02519	LUCIDACOSTE A NASTRO Mod.: OMEGA 60 PENCIL BELT EDGE POLISHING MACHINE Mod.: OMEGA 60 PENCIL	– 02519 –
	DISEGN.	MORO PAOLO		COMMESSA:	791J	POTENZA POWER	
	VISTO	MNM					
	APPR.	MNM	SOST. IL :	SOST. DA :	FILE : OMEGA10004–UL		

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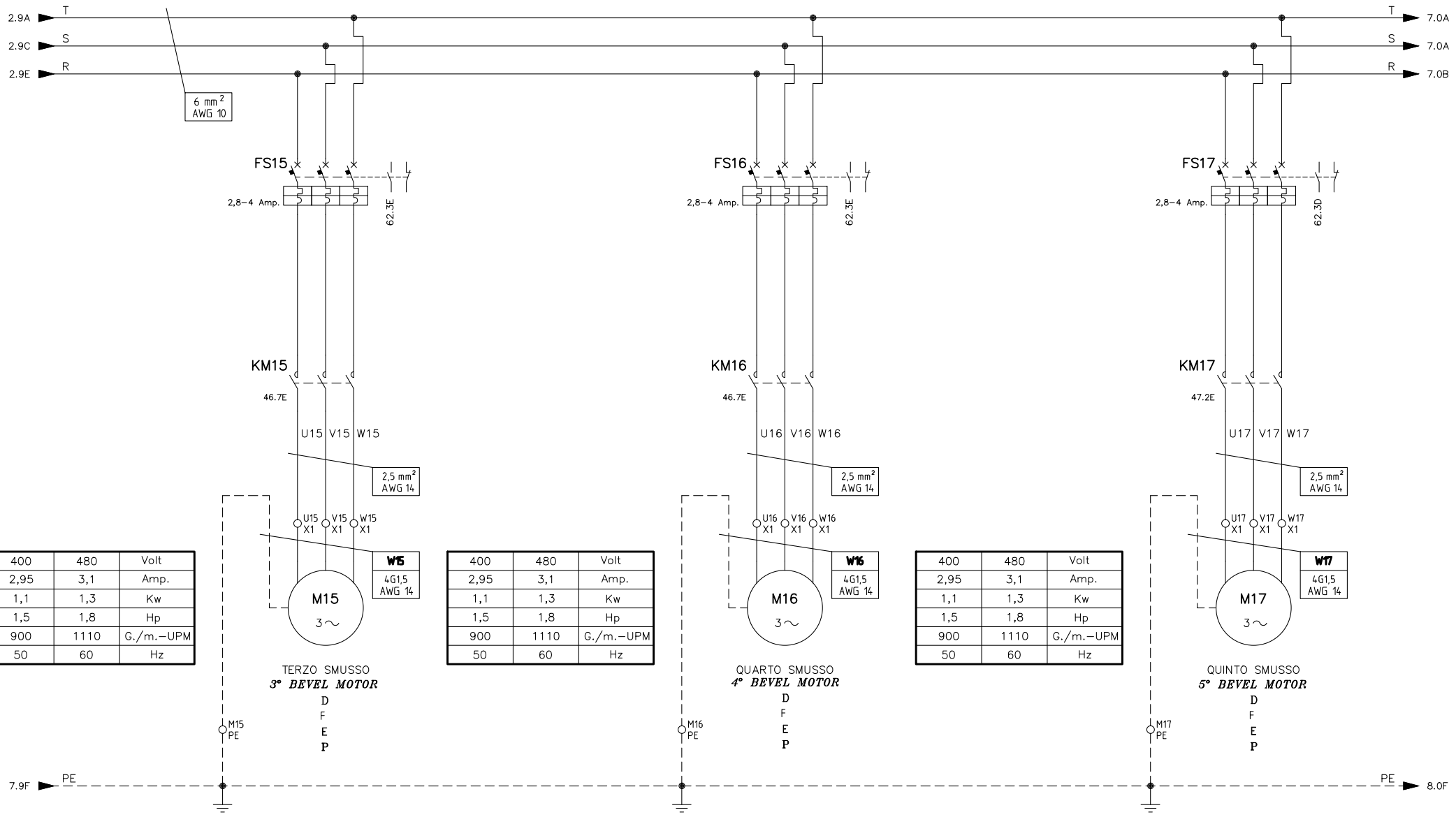
FG. 5
F.S. 6



400	480	Volt
2,95	3,1	Amp.
1,1	1,3	Kw
1,5	1,8	Hp
900	1110	G./m.–UPM
50	60	Hz

TERZO SMUSSO
3° BEVEL MOTOR
D F E P

400	480	Volt
2,95	3,1	Amp.
1,1	1,3	Kw
1,5	1,8	Hp
900	1110	G./m.–UPM
50	60	Hz

QUARTO SMUSSO
4° BEVEL MOTOR
D F E P

400	480	Volt
2,95	3,1	Amp.
1,1	1,3	Kw
1,5	1,8	Hp
900	1110	G./m.–UPM
50	60	Hz

QUINTO SMUSSO
5° BEVEL MOTOR
D F E P

COMANDULLI
COSTRUZIONI MECCANICHE

DATA	23/01/2019
DISEGN.	MORO PAOLO
VISTO	MNM
APPR.	MNM

Comandulli Costruzioni Meccaniche S.r.l.
SEDE: Via Medaglie d'Argento, 20 Z.I.
26012 CASTELLEONE – (Cremona) ITALY
SOST. IL : SOST. DA :

MATRICOLA:	02519
COMMESSA:	791J
FILE :	OMEGA10004–UL

LUCIDACOSTE A NASTRO Mod.: OMEGA 60 PENCIL
BELT EDGE POLISHING MACHINE Mod.: OMEGA 60 PENCIL

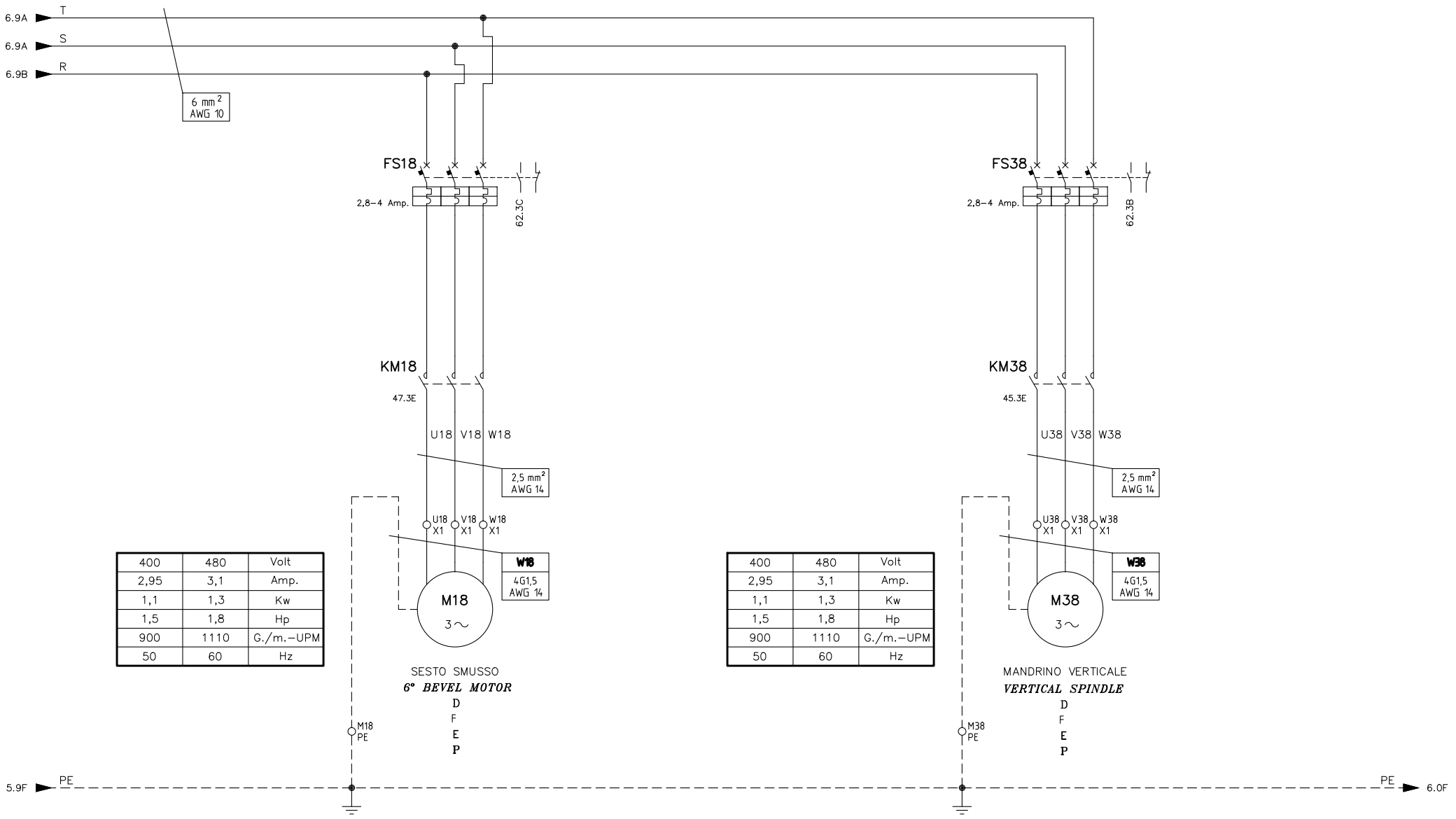
POTENZA
POWER

– 02519 –

= +

Il presente disegno è di proprietà della ditta Comandulli S.r.l. Ne è vietata la riproduzione e la diffusione non autorizzata

FG. 6
F.S. 7



400	480	Volt
2,95	3,1	Amp.
1,1	1,3	Kw
1,5	1,8	Hp
900	1110	G./m.–UPM
50	60	Hz

400	480	Volt
2,95	3,1	Amp.
1,1	1,3	Kw
1,5	1,8	Hp
900	1110	G./m.–UPM
50	60	Hz

COMANDULLI
COSTRUZIONI MECCANICHE

DATA	23/01/2019
DISEGN.	MORO PAOLO
VISTO	MNM
APPR.	MNM

Comandulli Costruzioni Meccaniche S.r.l.
SEDE: Via Medaglie d'Argento, 20 Z.I.
26012 CASTELLEONE – (Cremona) ITALY

SOST. IL : | SOST. DA :

MATRICOLA:	02519
COMMESSA:	791J
FILE :	OMEGA10004–UL

LUCIDACOSTE A NASTRO Mod.: OMEGA 60 PENCIL
BELT EDGE POLISHING MACHINE Mod.: OMEGA 60 PENCIL

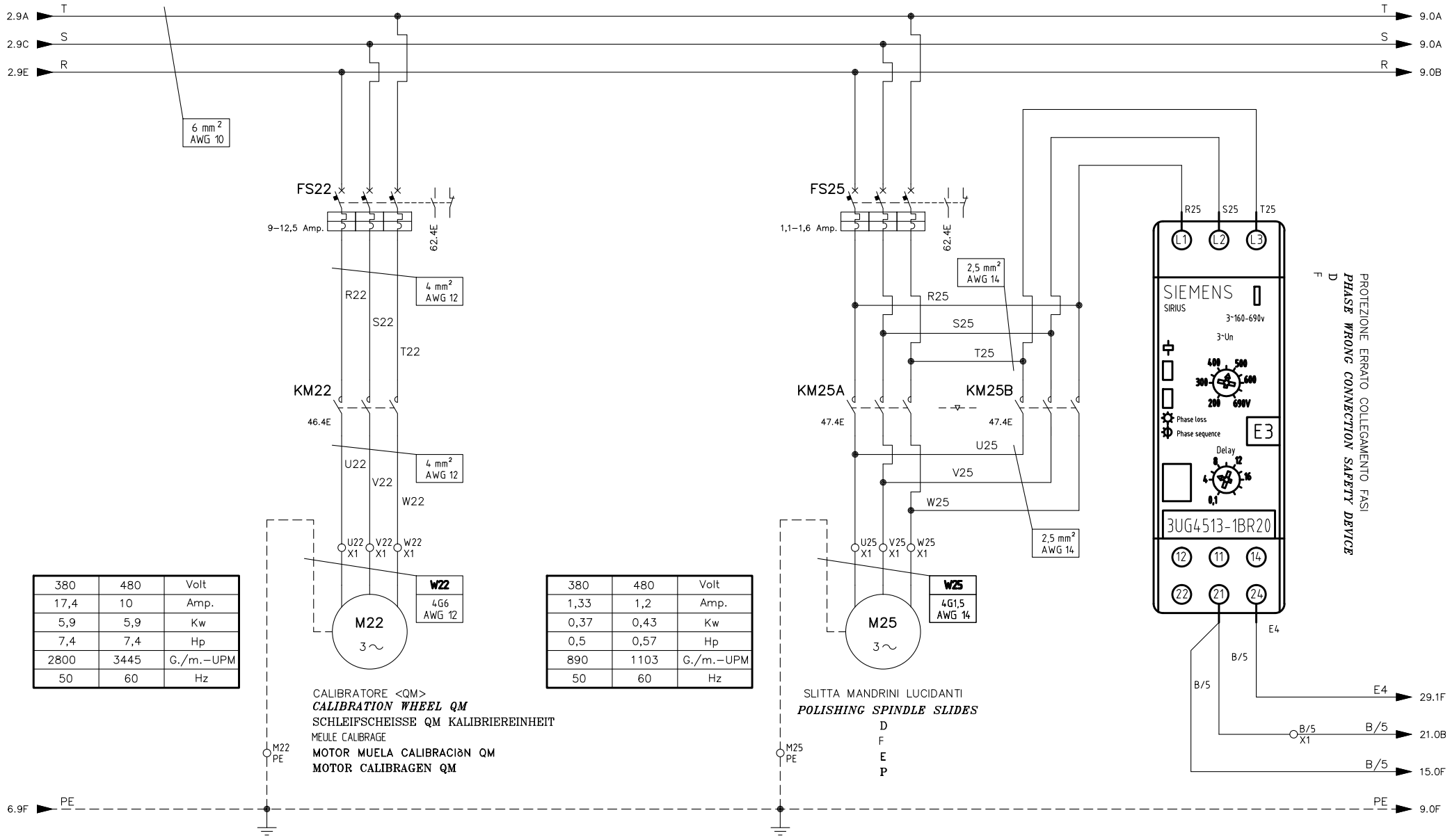
POTENZA
POWER

– 02519 –

= +

Il presente disegno è di proprietà della ditta Comandulli S.r.l. Ne è vietata la riproduzione e la diffusione non autorizzata

FG. 7
F.S. 8



380	480	Volt
17,4	10	Amp.
5,9	5,9	Kw
7,4	7,4	Hp
2800	3445	G./m.–UPM
50	60	Hz

CALIBRATORE <QM>
CALIBRATION WHEEL QM
SCHLEIFSCHEISSE QM KALIBRIEREINHEIT
MEULE CALIBRAGE
MOTOR MUELA CALIBRACIðN QM
MOTOR CALIBRAGEN QM

380	480	Volt
1,33	1,2	Amp.
0,37	0,43	Kw
0,5	0,57	Hp
890	1103	G./m.–UPM
50	60	Hz

SLITTA MANDRINI LUCIDANTI
POLISHING SPINDLE SLIDES
D
F
E
P

COMANDULLI
COSTRUZIONI MECCANICHE

DATA	23/01/2019
DISEGN.	MORO PAOLO
VISTO	MNM
APPR.	MNM

Comandulli Costruzioni Meccaniche S.r.l.
SEDE: Via Medaglie d'Argento, 20 Z.I.
26012 CASTELLEONE – (Cremona) ITALY

SOST. IL : | SOST. DA :

MATRICOLA:	02519
COMMESSA:	791J
FILE :	OMEGA10004–UL

LUCIDACOSTE A NASTRO Mod.: OMEGA 60 PENCIL
BELT EDGE POLISHING MACHINE Mod.: OMEGA 60 PENCIL

POTENZA
POWER

– 02519 –

=
+

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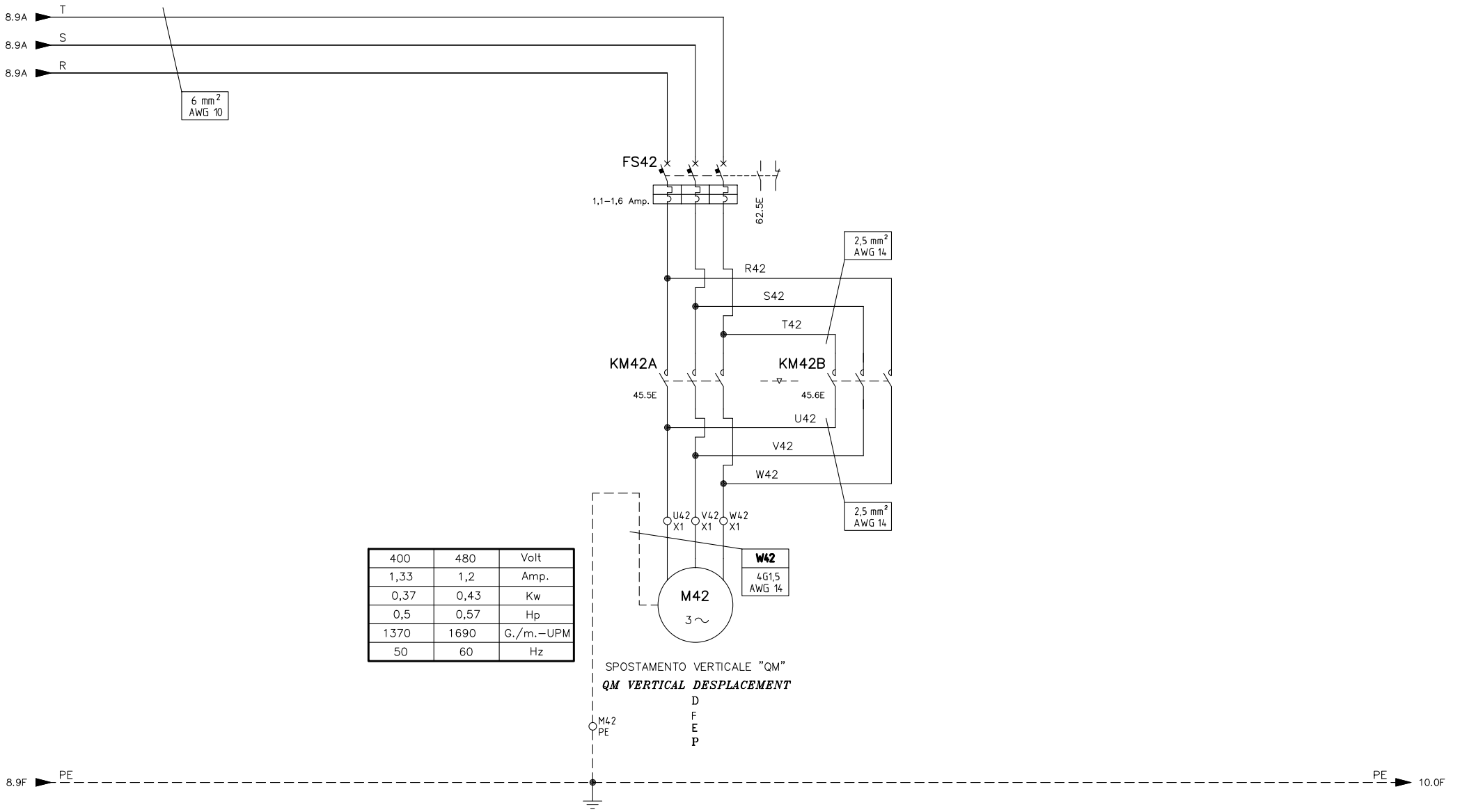
FG. 8
F.S. 9



400	480	Volt
1,33	1,2	Amp.
0,37	0,43	Kw
0,5	0,57	Hp
1370	1690	G./m.–UPM
50	60	Hz

COMANDULLI
COSTRUZIONI MECCANICHE

DATA	23/01/2019
DISEGN.	MORO PAOLO
VISTO	MNM
APPR.	MNM

Comandulli Costruzioni Meccaniche S.r.l.
SEDE: Via Medaglie d'Argento, 20 Z.I.
26012 CASTELLEONE – (Cremona) ITALY

SOST. IL : | SOST. DA :

MATRICOLA:	02519
COMMESSA:	791J
FILE :	OMEGA10004–UL

LUCIDACOSTE A NASTRO Mod.: OMEGA 60 PENCIL
BELT EDGE POLISHING MACHINE Mod.: OMEGA 60 PENCIL

POTENZA
POWER

– 02519 –

=
+

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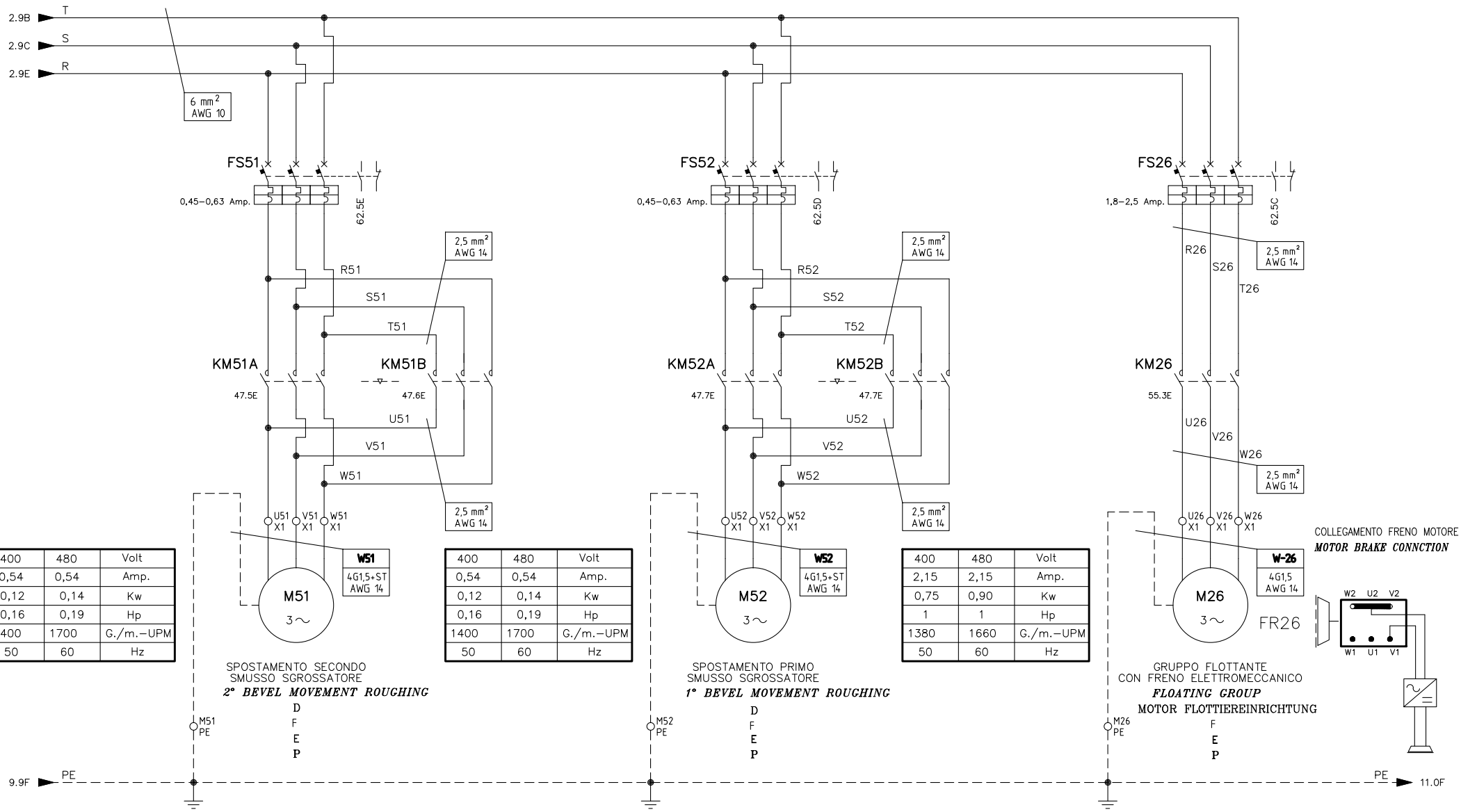
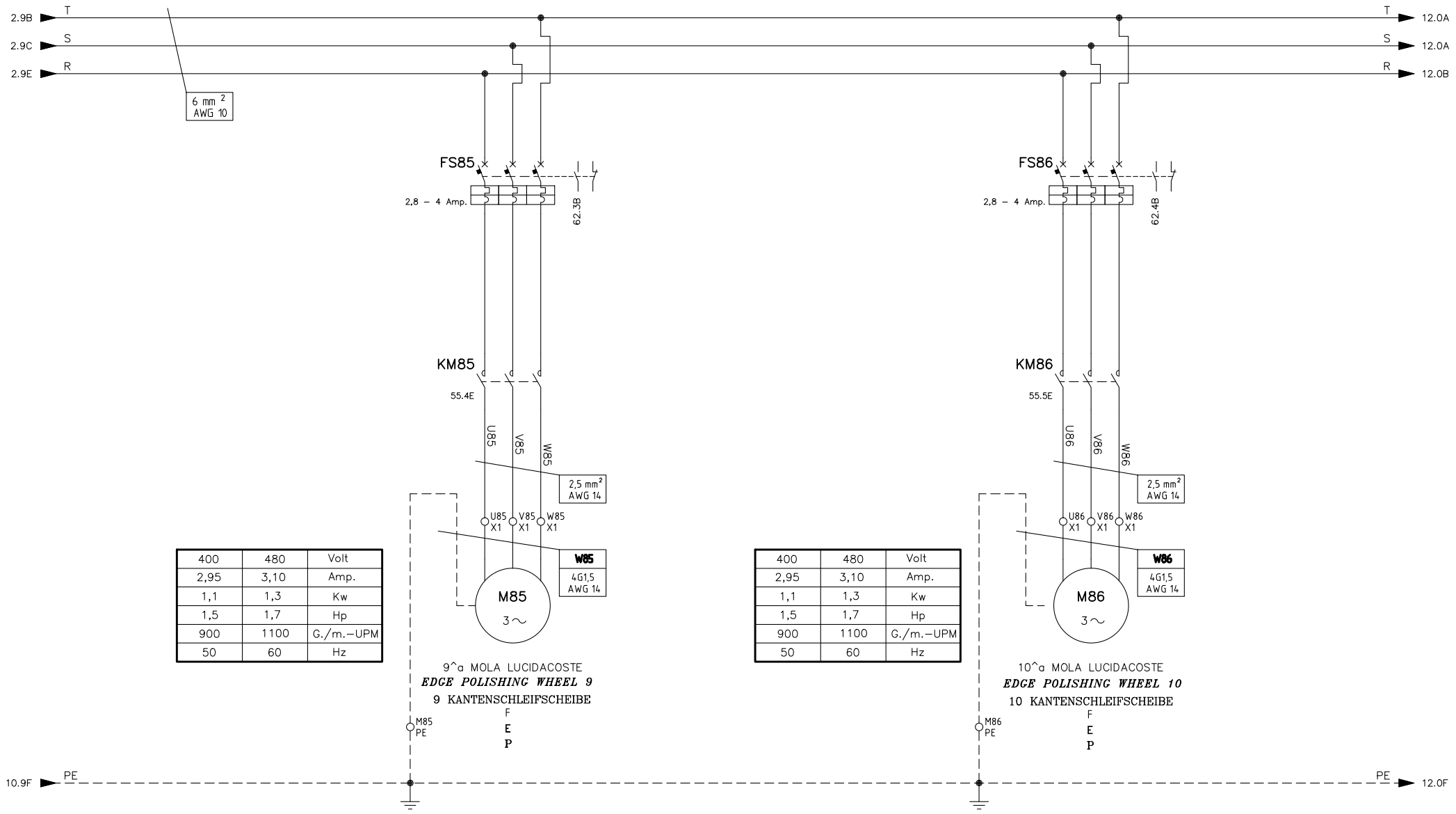
FG. 9
F.S. 10



COMANDULLI COSTRUZIONI MECCANICHE	DATA	23/01/2019	Comandulli Costruzioni Meccaniche S.r.l. SEDE: Via Medaglie d'Argento, 20 Z.I. 26012 CASTELLEONE – (Cremona) ITALY	MATRICOLA:	02519	LUCIDACOSTE A NASTRO Mod.: OMEGA 60 PENCIL BELT EDGE POLISHING MACHINE Mod.: OMEGA 60 PENCIL	– 02519 –
	DISEGN.	MORO PAOLO		COMMESSA:	791J	POTENZA POWER	= +
	VISTO	MNM					Il presente disegno è di proprietà della ditta Comandulli S.r.l. Ne è vietata la riproduzione e la diffusione non autorizzata
	APPR.	MNM	SOST. IL :	SOST. DA :	FILE : OMEGA10004–UL		FG. 10 F.S. 11



400	480	Volt
2,95	3,10	Amp.
1,1	1,3	Kw
1,5	1,7	Hp
900	1100	G./m.–UPM
50	60	Hz

400	480	Volt
2,95	3,10	Amp.
1,1	1,3	Kw
1,5	1,7	Hp
900	1100	G./m.–UPM
50	60	Hz

COMANDULLI
COSTRUZIONI MECCANICHE

DATA	23/01/2019
DISEGN.	MORO PAOLO
VISTO	MNM
APPR.	MNM

Comandulli Costruzioni Meccaniche S.r.l.
SEDE: Via Medaglie d'Argento, 20 Z.I.
26012 CASTELLEONE – (Cremona) ITALY

SOST. IL : | SOST. DA :

MATRICOLA:	02519
COMMESSA:	791J
FILE :	OMEGA10004–UL

LUCIDACOSTE A NASTRO Mod.: OMEGA 60 PENCIL
BELT EDGE POLISHING MACHINE Mod.: OMEGA 60 PENCIL

POTENZA
POWER

– 02519 –

=
+

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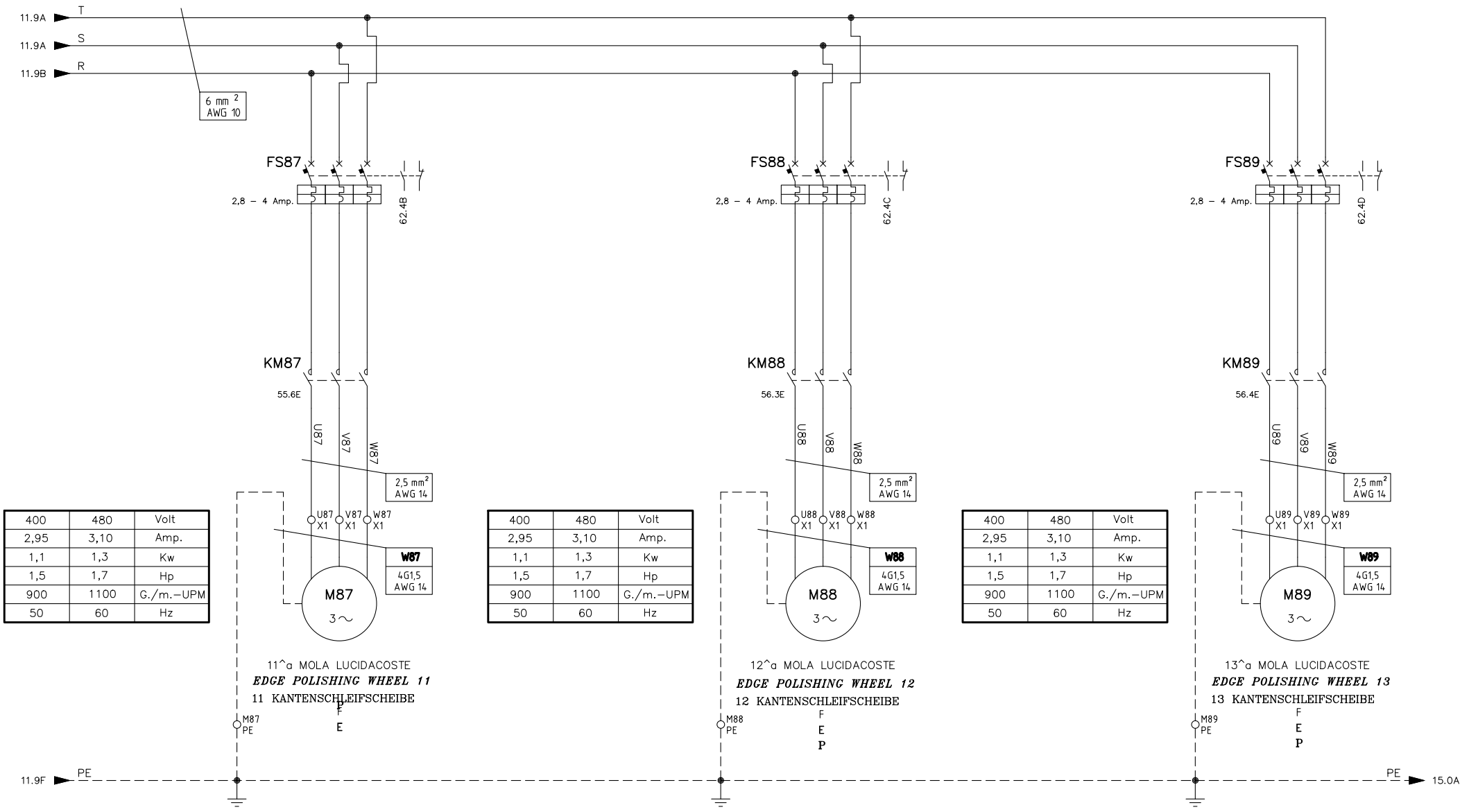
FG. 11
F.S. 12



COMANDULLI COSTRUZIONI MECCANICHE	DATA	23/01/2019	Comandulli Costruzioni Meccaniche S.r.l. SEDE: Via Medaglie d'Argento, 20 Z.I. 26012 CASTELLEONE – (Cremona) ITALY	MATRICOLA:	02519	LUCIDACOSTE A NASTRO Mod.: OMEGA 60 PENCIL BELT EDGE POLISHING MACHINE Mod.: OMEGA 60 PENCIL	– 02519 –
	DISEGN.	MORO PAOLO		COMMESSA:	791J	POTENZA POWER	
	VISTO	MNM					
	APPR.	MNM	SOST. IL :	SOST. DA :	FILE : OMEGA10004–UL		

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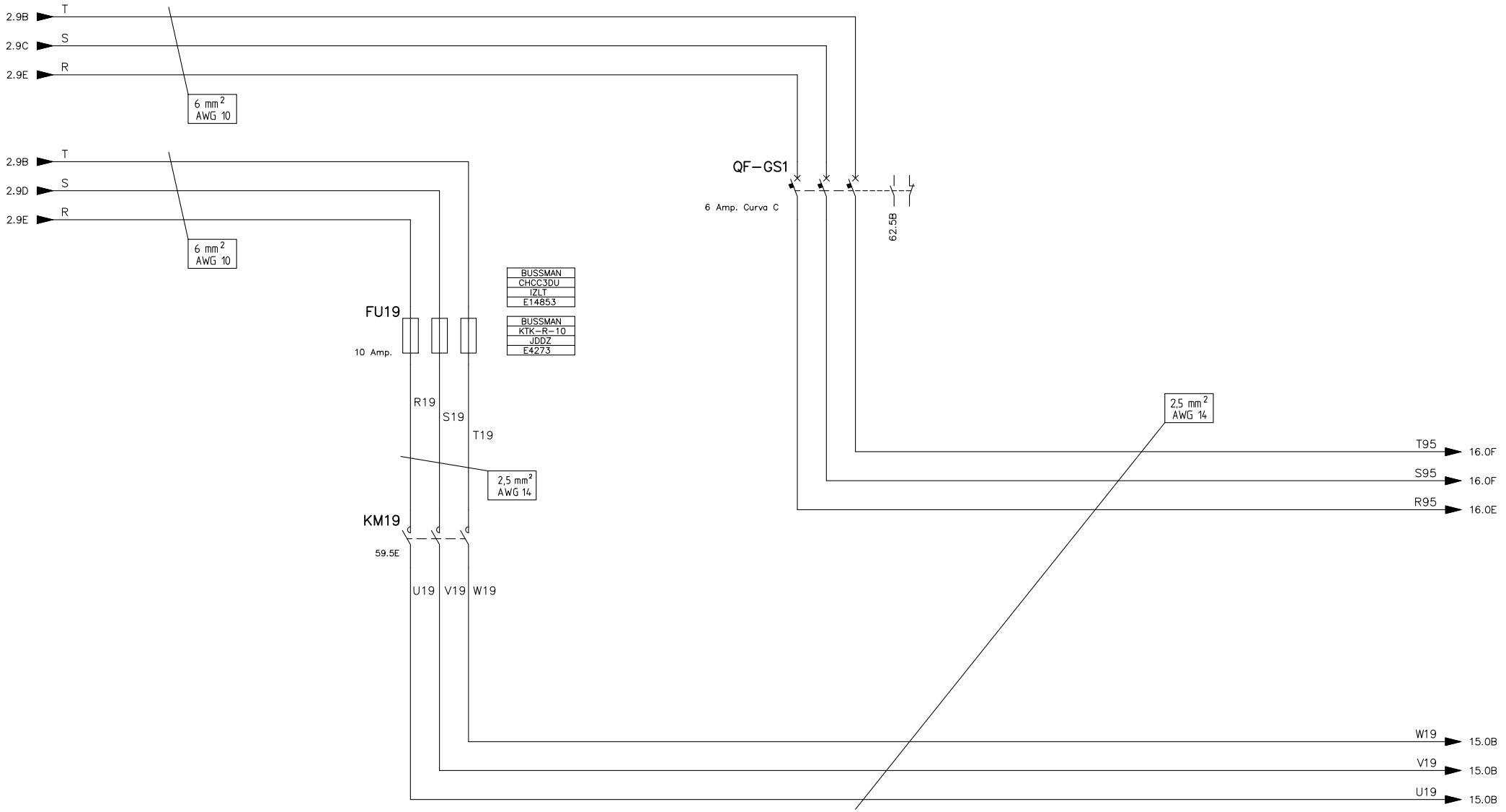
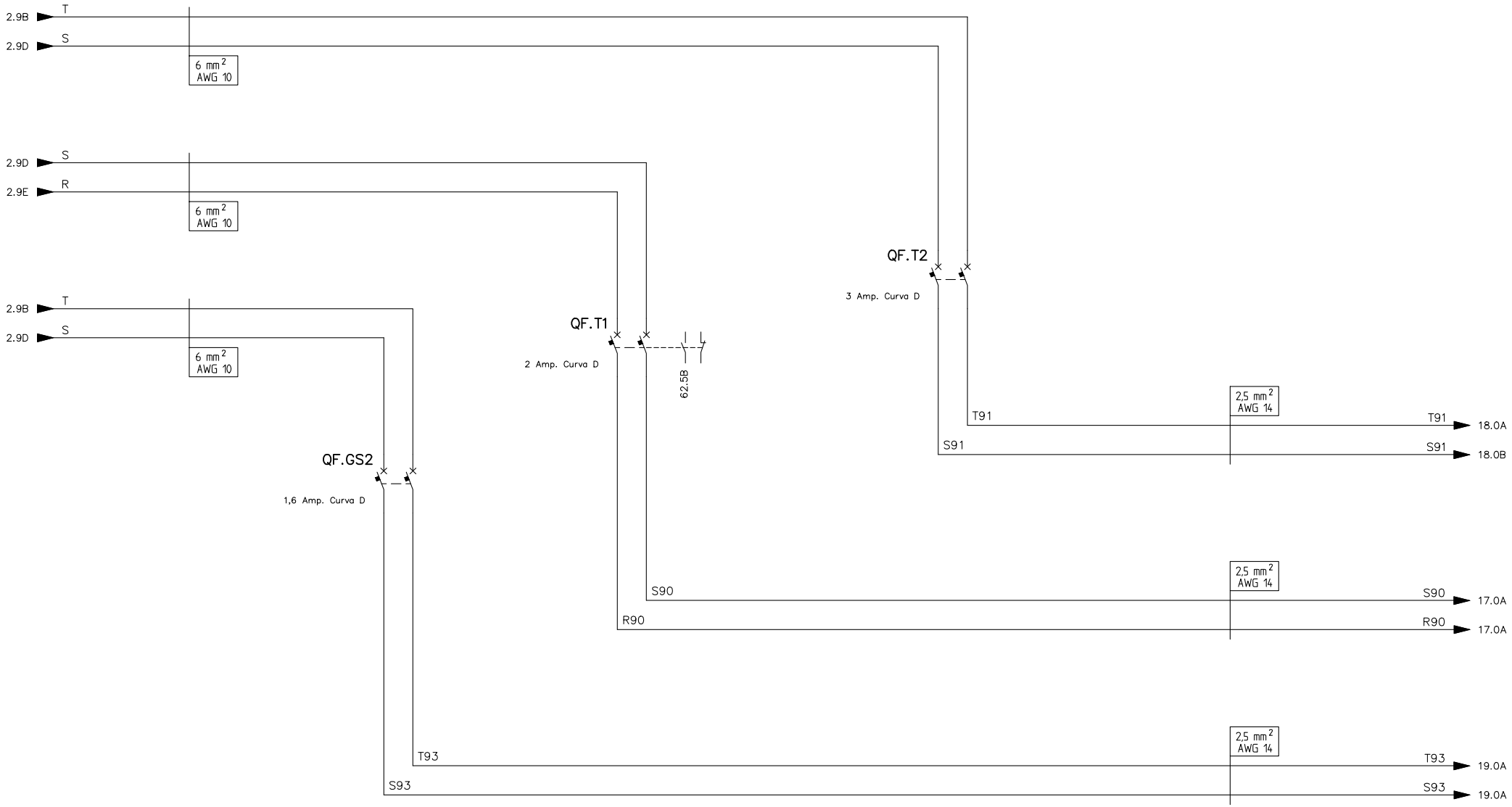
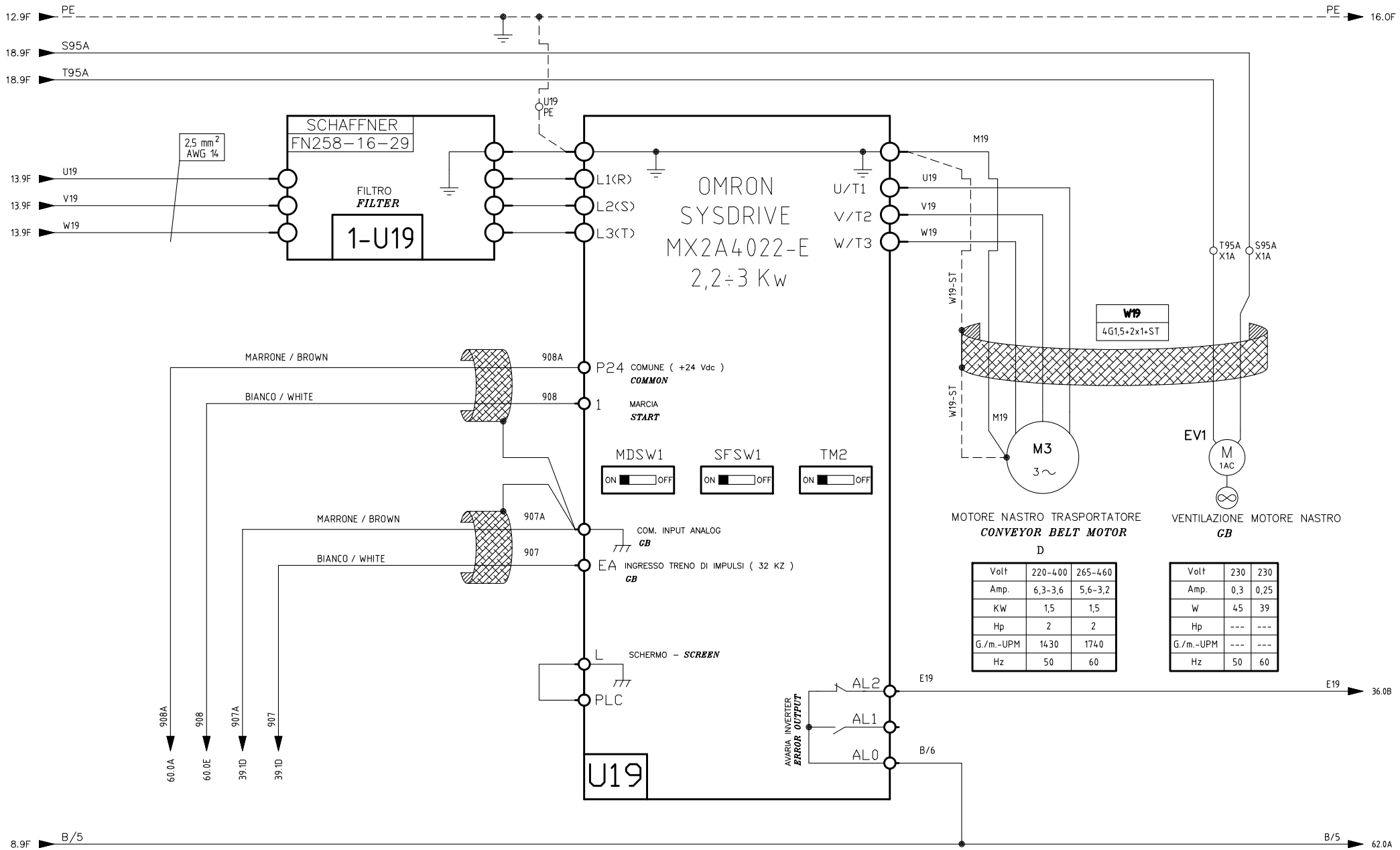
FG. 12
F.S. 13



COMANDULLI COSTRUZIONI MECCANICHE	DATA	23/01/2019	Comandulli Costruzioni Meccaniche S.r.l. SEDE: Via Medaglie d'Argento, 20 Z.I. 26012 CASTELLEONE – (Cremona) ITALY	MATRICOLA: 02519	LUCIDACOSTE A NASTRO Mod.: OMEGA 60 PENCIL BELT EDGE POLISHING MACHINE Mod.: OMEGA 60 PENCIL	– 02519 –	=
	DISEGN.	MORO PAOLO		COMMESSA: 791J	POTENZA - ALIMENTAZIONE AUSILIARI POWER - AUXILIARY POWER SUPPLY		+
	VISTO	MNM				Il presente disegno è di proprietà della ditta Comandulli S.r.l. Ne è vietata la riproduzione e la diffusione non autorizzata	FG. 13
	APPR.	MNM	SOST. IL :	SOST. DA :	FILE : OMEGA10004-UL		F.S. 14



COMANDULLI COSTRUZIONI MECCANICHE	DATA	23/01/2019	Comandulli Costruzioni Meccaniche S.r.l. SEDE: Via Medaglie d'Argento, 20 Z.I. 26012 CASTELLEONE – (Cremona) ITALY	MATRICOLA: 02519	*LUCIDACOSTE A NASTRO Mod.: OMEGA 60 PENCIL* *BELT EDGE POLISHING MACHINE Mod.: OMEGA 60 PENCIL*	– 02519 –	=
	DISEGN.	MORO PAOLO		COMMESSA: 791J	ALIMENTAZIONE AUSILIARI *AUXILIARY POWER SUPPLY*		+
	VISTO	MNM				Il presente disegno è di proprietà della ditta Comandulli S.r.l. Ne è vietata la riproduzione e la diffusione non autorizzata	FG. 14
	APPR.	MNM	SOST. IL : SOST. DA :	FILE : OMEGA10004–UL			F.S. 15



D

Volt	220-400	265-460
Amp.	6,3-3,6	5,6-3,2
KW	1,5	1,5
Hp	2	2
G./m.-UPM	1430	1740
Hz	50	60

Volt	230	230
Amp.	0,3	0,25
W	45	39
Hp	---	---
G./m.-UPM	---	---
Hz	50	60

COMANDULLI
COSTRUZIONI MECCANICHE

DATA	23/01/2019
DISEGN.	MORO PAOLO
VISTO	MNM
APPR.	MNM

Comandulli Costruzioni Meccaniche S.r.l.
SEDE: Via Medaglie d'Argento, 20 Z.I.
26012 CASTELLEONE – (Cremona) ITALY

SOST. IL : | SOST. DA :

MATRICOLA:	02519
COMMESSA:	791J
FILE :	OMEGA10004-UL

LUCIDACOSTE A NASTRO Mod.: OMEGA 60 PENCIL
BELT EDGE POLISHING MACHINE Mod.: OMEGA 60 PENCIL

POTENZA
POWER

– 02519 –

= +

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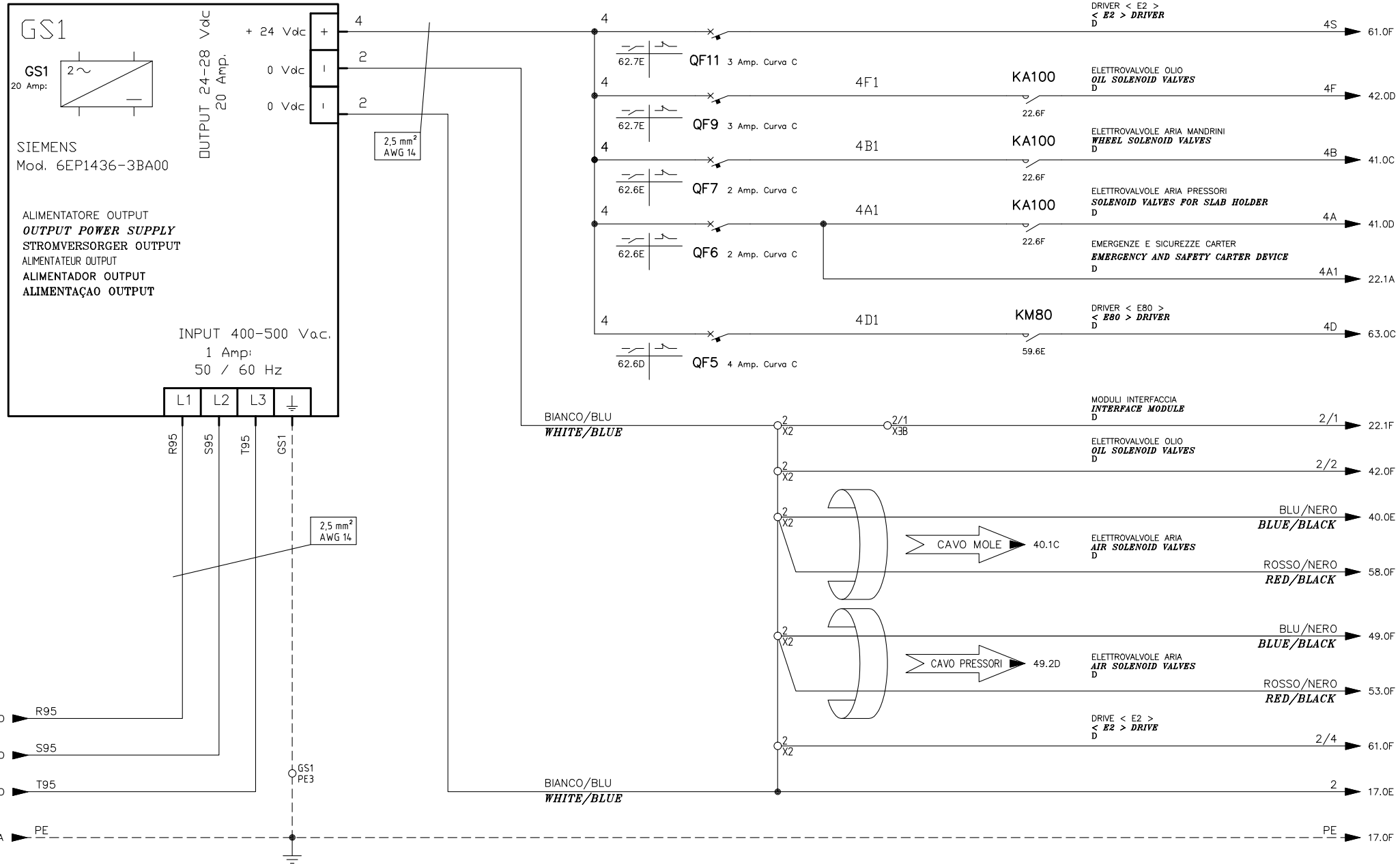
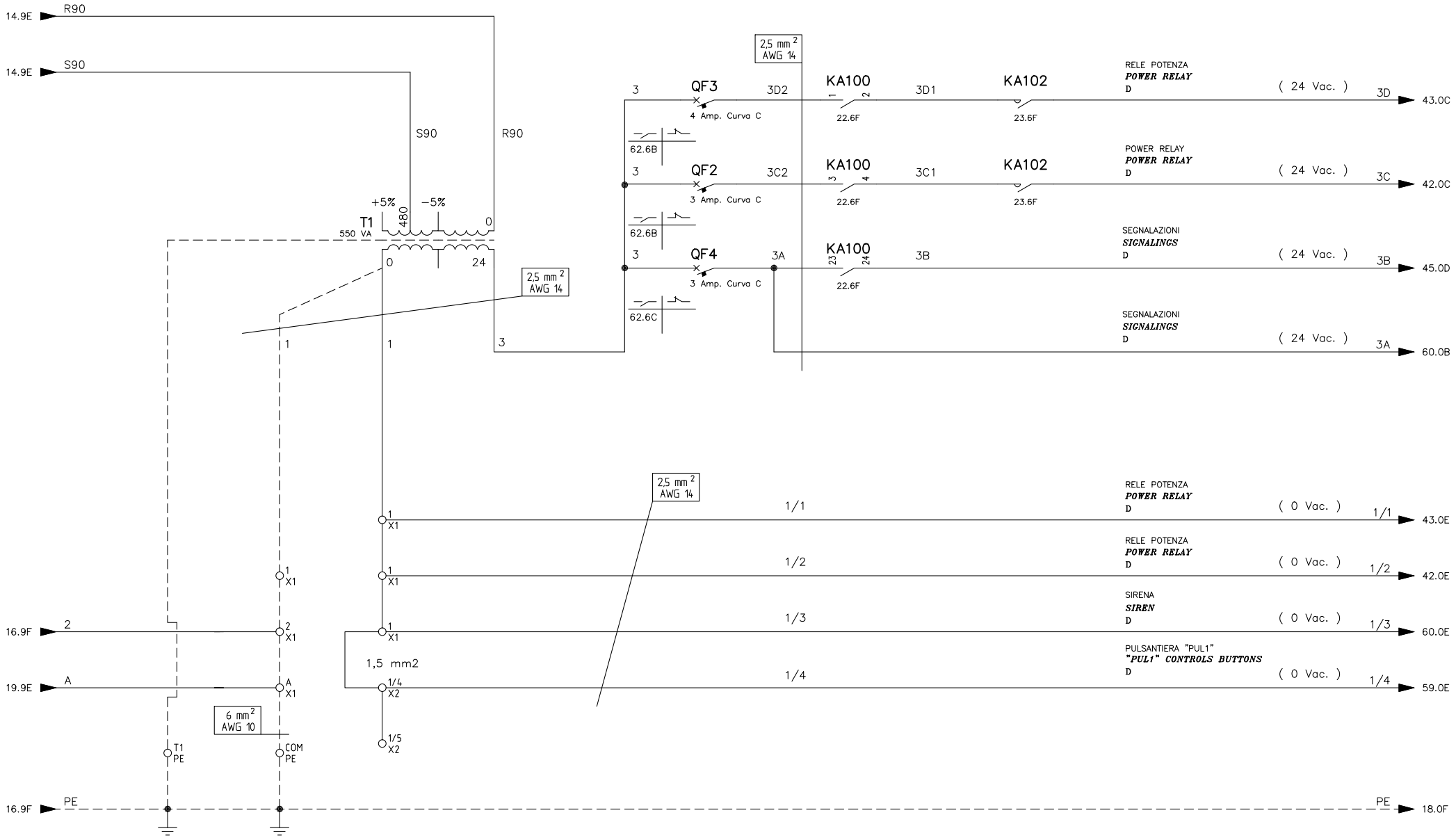
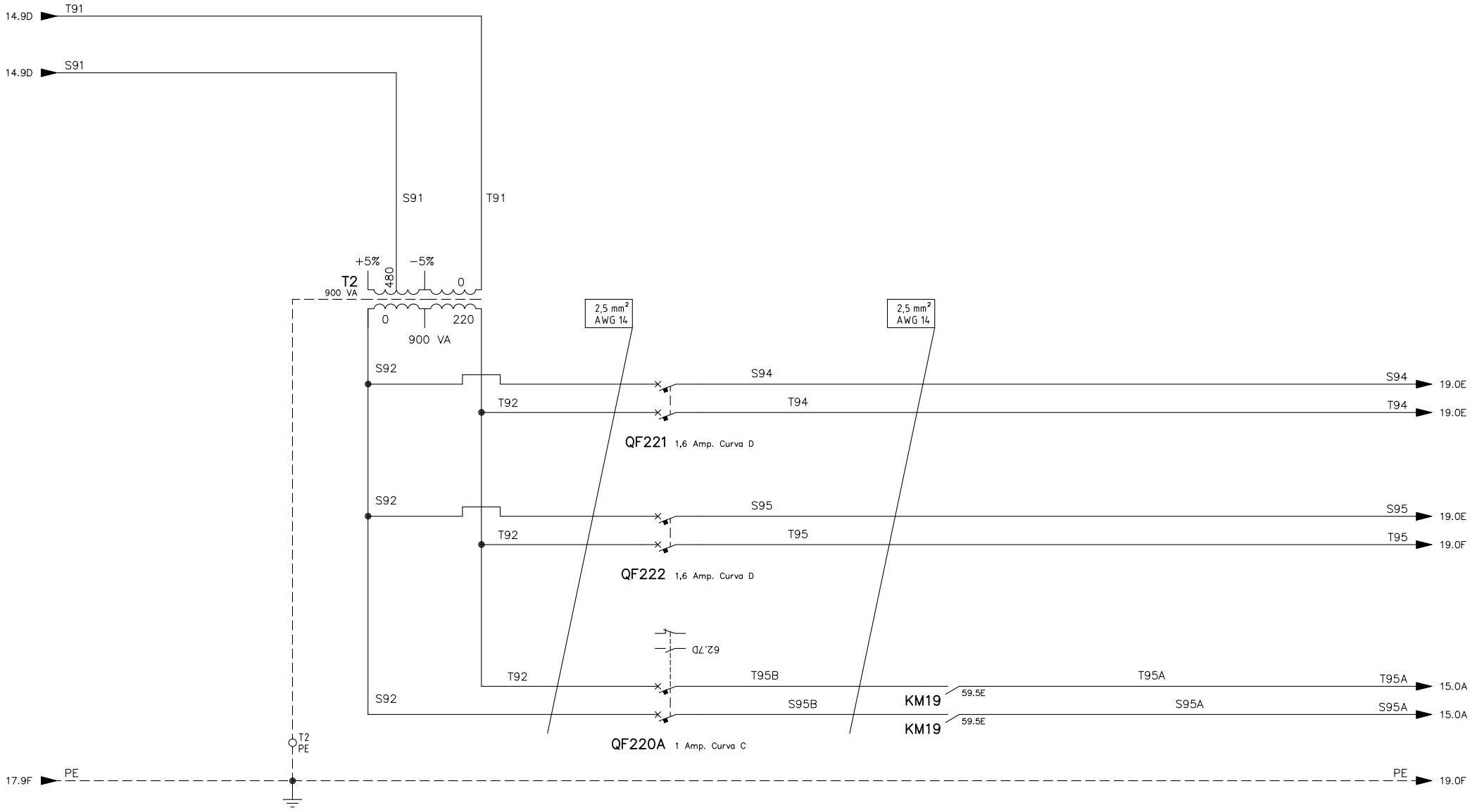
FG. 15
F.S. 16



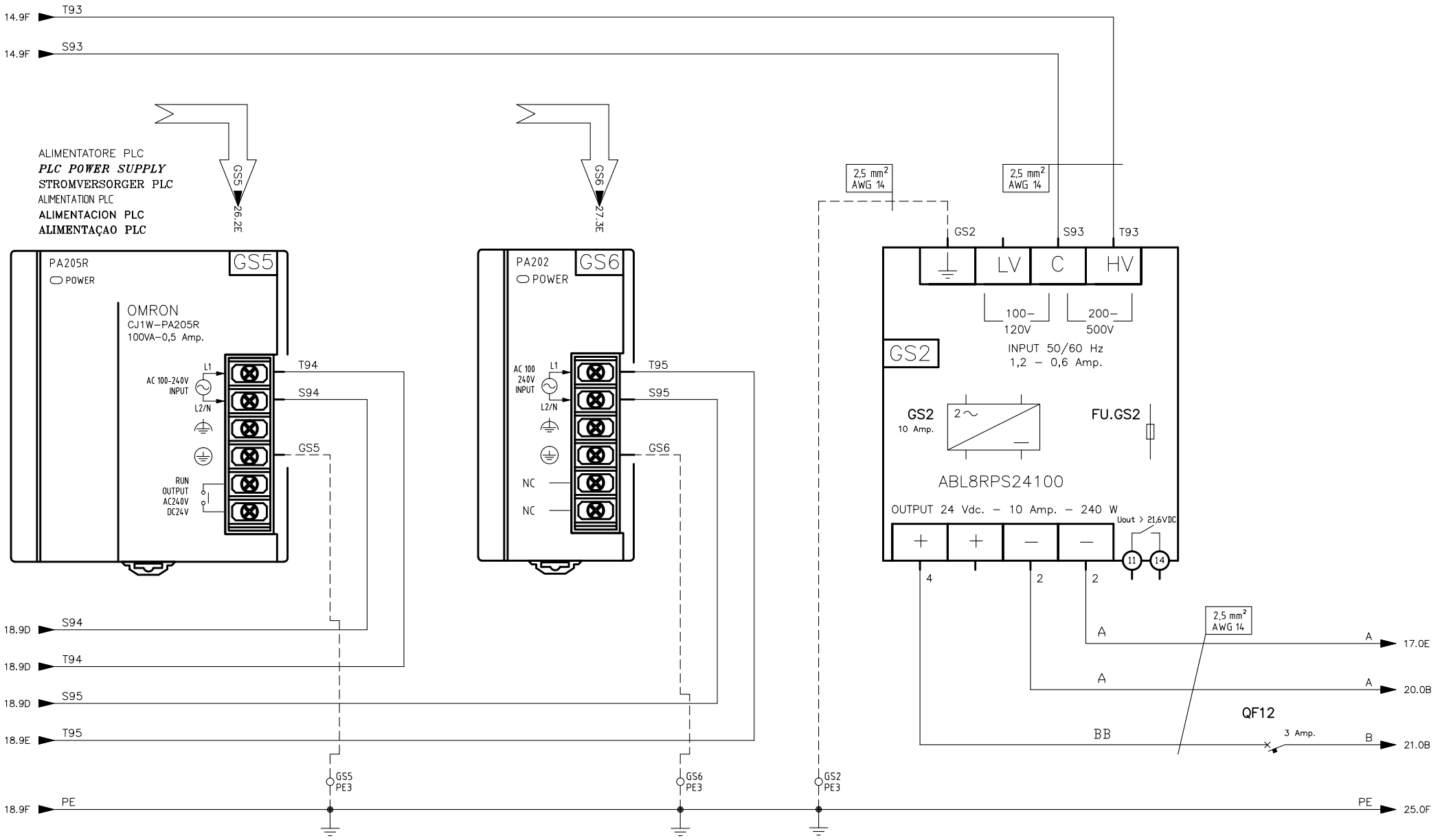
COMANDULLI COSTRUZIONI MECCANICHE	DATA	23/01/2019	Comandulli Costruzioni Meccaniche S.r.l. SEDE: Via Medaglie d'Argento, 20 Z.I. 26012 CASTELLEONE – (Cremona) ITALY	MATRICOLA: 02519	LUCIDACOSTE A NASTRO Mod.: OMEGA 60 PENCIL BELT EDGE POLISHING MACHINE Mod.: OMEGA 60 PENCIL	– 02519 –	=
	DISEGN.	MORO PAOLO		COMMESSA: 791J	ALIMENTAZIONE AUSILIARI AUXILIARY POWER SUPPLY		+
	VISTO	MNM				Il presente disegno è di proprietà della ditta Comandulli S.r.l. Ne è vietata la riproduzione e la diffusione non autorizzata	FG. 16
	APPR.	MNM	SOST. IL :	SOST. DA :	FILE : OMEGA10004-UL		F.S. 17



COMANDULLI COSTRUZIONI MECCANICHE	DATA	23/01/2019	Comandulli Costruzioni Meccaniche S.r.l. SEDE: Via Medaglie d'Argento, 20 Z.I. 26012 CASTELLEONE – (Cremona) ITALY	MATRICOLA: 02519	LUCIDACOSTE A NASTRO Mod.: OMEGA 60 PENCIL BELT EDGE POLISHING MACHINE Mod.: OMEGA 60 PENCIL	– 02519 –	=
	DISEGN.	MORO PAOLO		COMMESSA: 791J	ALIMENTAZIONE AUSILIARI AUXILIARY POWER SUPPLY		+
	VISTO	MNM				Il presente disegno è di proprietà della ditta Comandulli S.r.l. Ne è vietata la riproduzione e la diffusione non autorizzata	FG. 17
	APPR.	MNM	SOST. IL :	SOST. DA :	FILE : OMEGA10004–UL		F.S. 18



COMANDULLI COSTRUZIONI MECCANICHE	DATA	23/01/2019	Comandulli Costruzioni Meccaniche S.r.l. SEDE: Via Medaglie d'Argento, 20 Z.I. 26012 CASTELLEONE – (Cremona) ITALY	MATRICOLA: 02519	LUCIDACOSTE A NASTRO Mod.: OMEGA 60 PENCIL BELT EDGE POLISHING MACHINE Mod.: OMEGA 60 PENCIL	– 02519 –	=
	DISEGN.	MORO PAOLO		COMMESSA: 791J	ALIMENTAZIONE AUSILIARI AUXILIARY POWER SUPPLY		+
	VISTO	MNM				Il presente disegno è di proprietà della ditta Comandulli S.r.l. Ne è vietata la riproduzione e la diffusione non autorizzata	FG. 18
	APPR.	MNM	SOST. IL :	SOST. DA :	FILE : OMEGA10004–UL		F.S. 19



COMANDULLI COSTRUZIONI MECCANICHE	DATA	23/01/2019	Comandulli Costruzioni Meccaniche S.r.l. SEDE: Via Medaglie d'Argento, 20 Z.I. 26012 CASTELLEONE – (Cremona) ITALY	MATRICOLA:	02519	LUCIDACOSTE A NASTRO Mod.: OMEGA 60 PENCIL BELT EDGE POLISHING MACHINE Mod.: OMEGA 60 PENCIL	– 02519 –
	DISEGN.	MORO PAOLO		COMMESSA:	791J	ALIMENTAZIONE AUSILIARI AUXILIARY POWER SUPPLY	
	VISTO	MNM					
	APPR.	MNM	SOST. IL :	SOST. DA :	FILE : OMEGA10004-UL		

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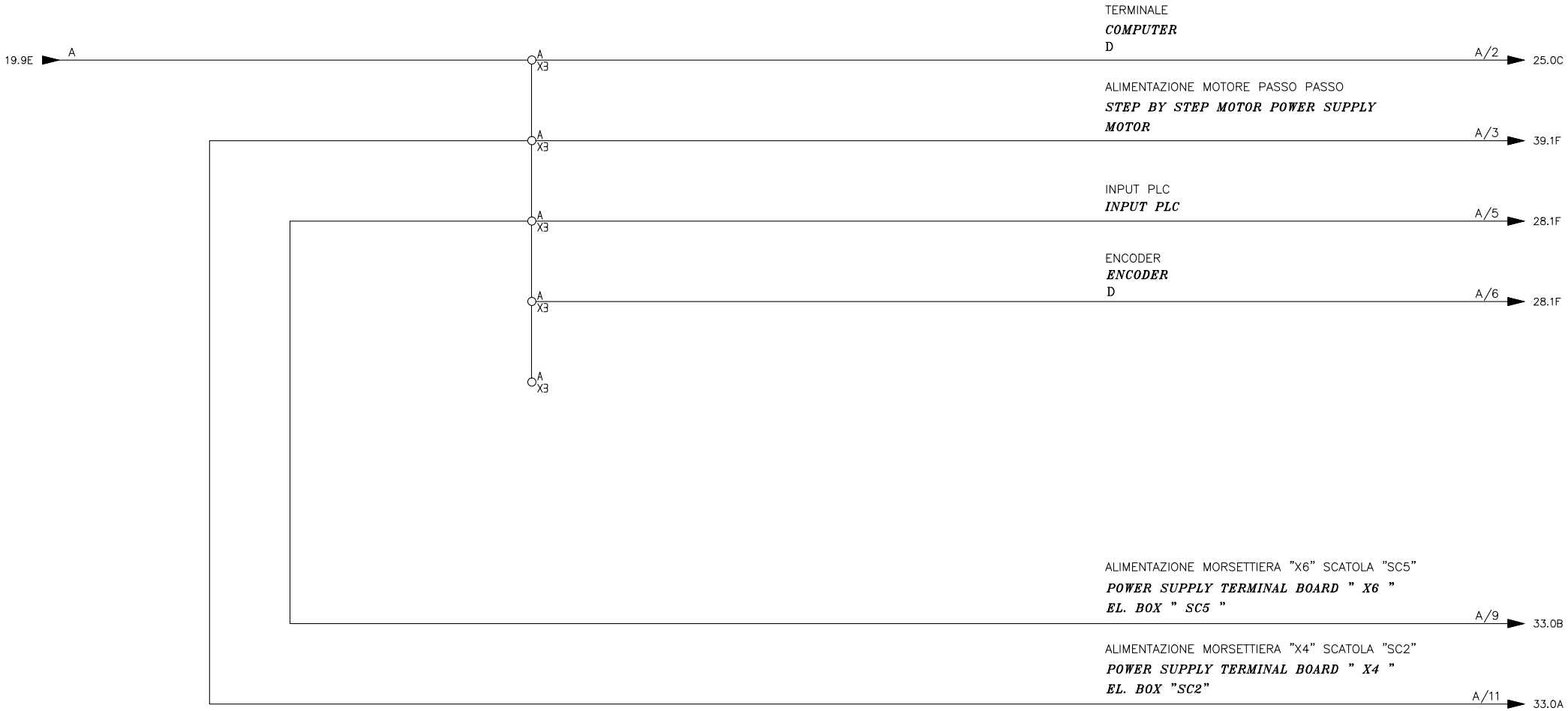
FG. 19
F.S. 20



COMANDULLI
COSTRUZIONI MECCANICHE

DATA	23/01/2019
DISEGN.	MORO PAOLO
VISTO	MNM
APPR.	MNM

Comandulli Costruzioni Meccaniche S.r.l.
SEDE: Via Medaglie d'Argento, 20 Z.I.
26012 CASTELLEONE – (Cremona) ITALY
SOST. IL : SOST. DA :

MATRICOLA:	02519
COMMESSA:	791J
FILE :	OMEGA10004-UL

LUCIDACOSTE A NASTRO Mod.: OMEGA 60 PENCIL
BELT EDGE POLISHING MACHINE Mod.: OMEGA 60 PENCIL

ALIMENTAZIONE AUSILIARI
AUXILIARY POWER SUPPLY

– 02519 –

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FG. 20
F.S. 21

COMANDULLI
COSTRUZIONI MECCANICHE

DATA	23/01/2019
DISEGN.	MORO PAOLO
VISTO	MNM
APPR.	MNM

Comandulli Costruzioni Meccaniche S.r.l.
SEDE: Via Medaglie d'Argento, 20 Z.I.
26012 CASTELLEONE – (Cremona) ITALY

SOST. IL : | SOST. DA :

MATRICOLA:	02519
COMMESSA:	791J
FILE :	OMEGA10004–UL

LUCIDACOSTE A NASTRO Mod.: OMEGA 60 PENCIL
BELT EDGE POLISHING MACHINE Mod.: OMEGA 60 PENCIL

ALIMENTAZIONE AUSILIARI
AUXILIARY POWER SUPPLY

– 02519 –

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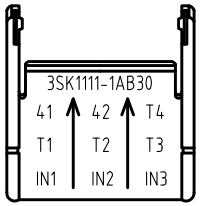
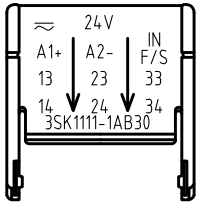
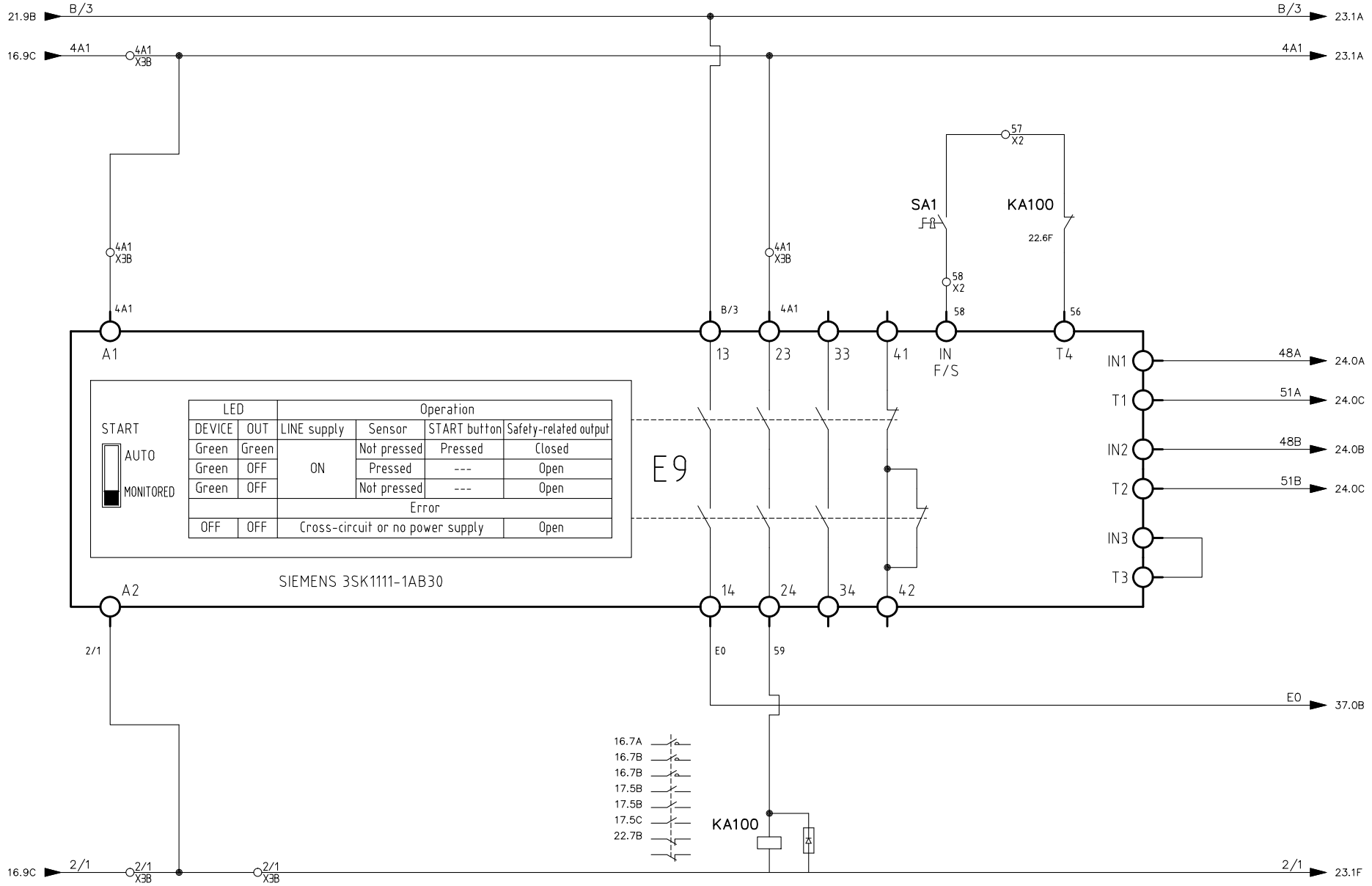
FG. 21
F.S. 22







COMANDULLI COSTRUZIONI MECCANICHE	DATA	23/01/2019	Comandulli Costruzioni Meccaniche S.r.l. SEDE: Via Medaglie d'Argento, 20 Z.I. 26012 CASTELLEONE – (Cremona) ITALY	MATRICOLA:	02519	LUCIDACOSTE A NASTRO Mod.: OMEGA 60 PENCIL BELT EDGE POLISHING MACHINE Mod.: OMEGA 60 PENCIL	– 02519 –
	DISEGN.	MORO PAOLO		COMMESSA:	791J	CIRCUITO EMERGENZA SAFETY CIRCUIT	
	VISTO	MNM					
	APPR.	MNM	SOST. IL :	SOST. DA :	FILE : OMEGA10004–UL		

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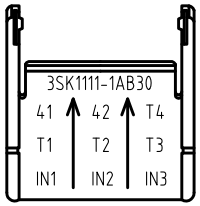
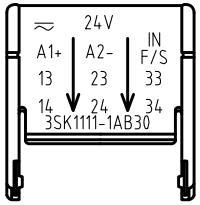
FG. 22
F.S. 23





22.9A B/3 → B/3 33.0A

22.9A 4A1 — 4A1 X3B

4A1 X3B

SA2 KA102 23.6F

69 X2

70 X2

4A1 B/3 4A1 68

A1 13 23 33 41 IN F/S T4

IN1 T1 IN2 T2 IN3 T3

60A → 24.0D

68A → 24.0F

60B → 24.0E

68B → 24.0E

START	LED		Operation			
	DEVICE	OUT	LINE supply	Sensor	START button	Safety-related output
AUTO	Green	Green	ON	Not pressed	Pressed	Closed
MONITORED	Green	OFF		Pressed	---	Open
	Green	OFF		Not pressed	---	Open
			Error			
	OFF	OFF	Cross-circuit or no power supply			Open

E10

SIEMENS 3SK1111-1AB30

A2 14 24 34 42

2/1 67

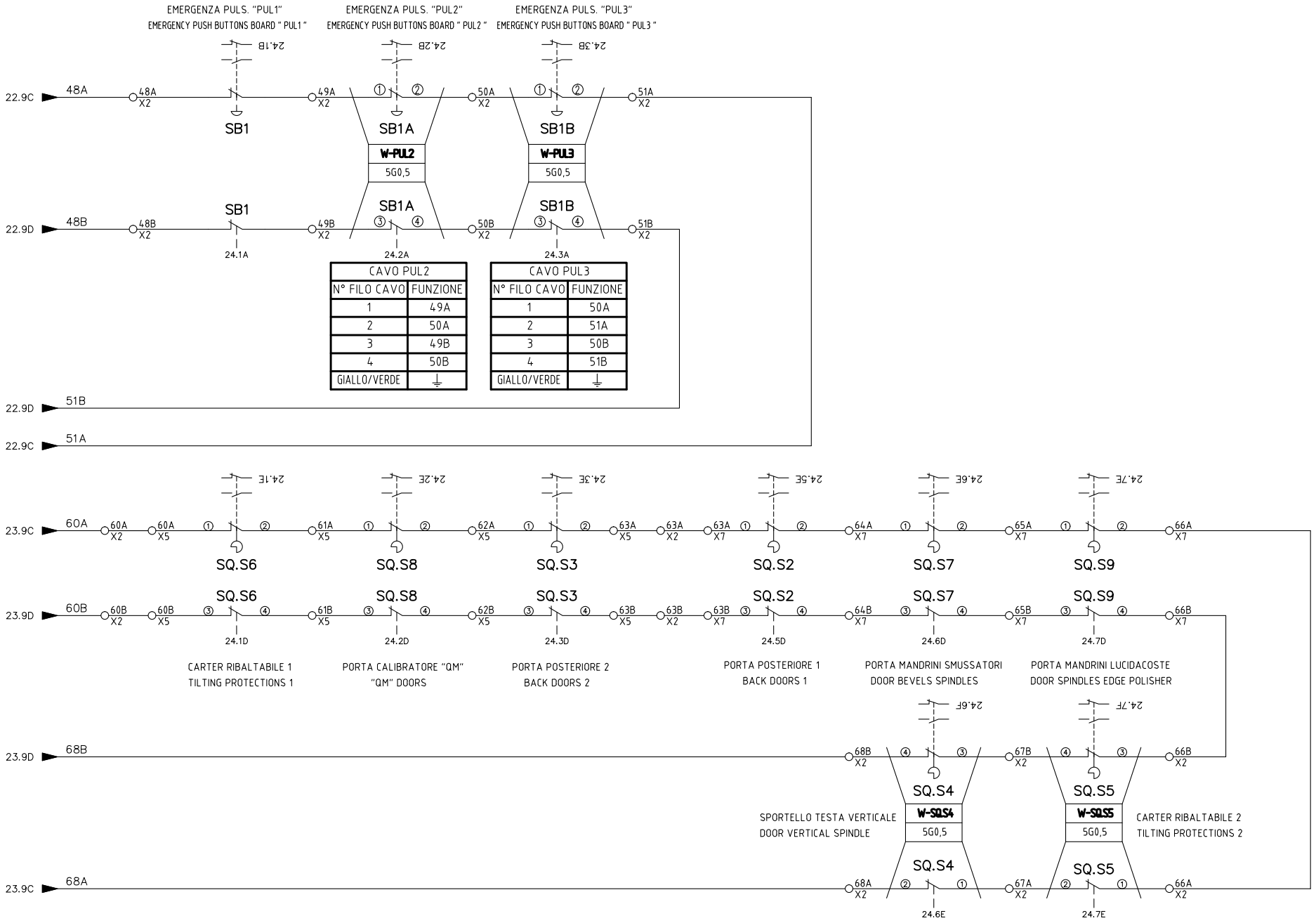
17.6B
17.6B
33.2B
23.7B
KA102

22.9F 2/1 — 2/1 X3B — 2/1 X3B — 2/1 → 41.0C

COMANDULLI COSTRUZIONI MECCANICHE	DATA	23/01/2019	Comandulli Costruzioni Meccaniche S.r.l. SEDE: Via Medaglie d'Argento, 20 Z.I. 26012 CASTELLEONE – (Cremona) ITALY	MATRICOLA:	02519	LUCIDACOSTE A NASTRO Mod.: OMEGA 60 PENCIL BELT EDGE POLISHING MACHINE Mod.: OMEGA 60 PENCIL	– 02519 –
	DISEGN.	MORO PAOLO		COMMESSA:	791J	CIRCUITO EMERGENZA SAFETY CIRCUIT	
	VISTO	MNM					
	APPR.	MNM	SOST. IL :	SOST. DA :	FILE : OMEGA10004–UL		

Il presente disegno è di proprietà della ditta Comandulli S.r.l. Ne è vietata la riproduzione e la diffusione non autorizzata

FG. 23
F.S. 24



CAVO PUL2	
N° FILO CAVO	FUNZIONE
1	49A
2	50A
3	49B
4	50B
GIALLO/VERDE	⏚

CAVO PUL3	
N° FILO CAVO	FUNZIONE
1	50A
2	51A
3	50B
4	51B
GIALLO/VERDE	⏚

CAVO SQ.S4	
N° FILO CAVO	FUNZIONE
1	67A
2	68A
3	67B
4	68B
GIALLO/VERDE	⏚

CAVO SQ.S5	
N° FILO CAVO	FUNZIONE
1	66A
2	67A
3	66B
4	67B
GIALLO/VERDE	⏚

COMANDULLI
COSTRUZIONI MECCANICHE

DATA	23/01/2019
DISEGN.	MORO PAOLO
VISTO	MNM
APPR.	MNM

Comandulli Costruzioni Meccaniche S.r.l.
SEDE: Via Medaglie d'Argento, 20 Z.I.
26012 CASTELLEONE – (Cremona) ITALY

SOST. IL : | SOST. DA :

MATRICOLA:	02519
COMMESSA:	791J
FILE :	OMEGA10004-UL

LUCIDACOSTE A NASTRO Mod.: OMEGA 60 PENCIL
BELT EDGE POLISHING MACHINE Mod.: OMEGA 60 PENCIL

CIRCUITO EMERGENZA
SAFETY CIRCUIT

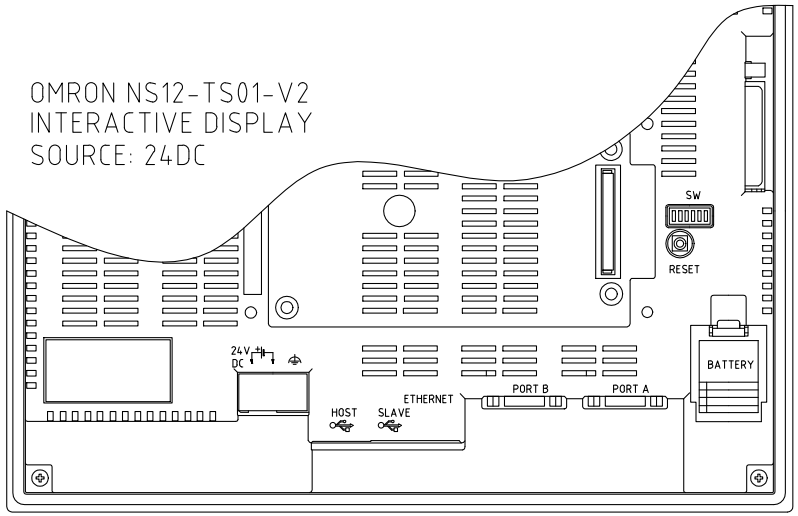
– 02519 –

= +

Il presente disegno è di proprietà della ditta Comandulli S.r.l. Ne è vietata la riproduzione e la diffusione non autorizzata

FG. 24
F.S. 25

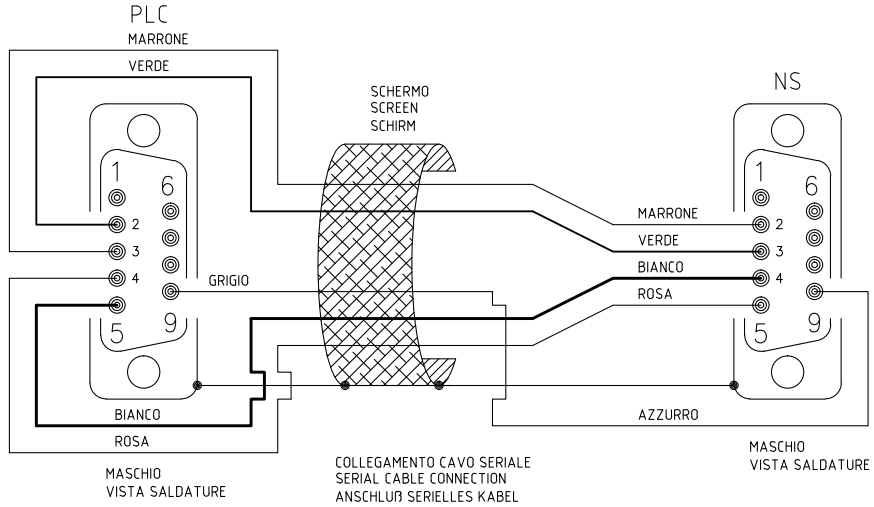
OMRON NS12-TS01-V2
INTERACTIVE DISPLAY
SOURCE: 24DC



21.9B B/2 — +24 V
20.9B A/2 — 0V
GROUND

TOUCH SREEN
TOUCH SCREEN
TOUCH SCREEN

PORT ▶ 26.2E



PLT PE
19.9F PE — PE 61.0F

COMANDULLI COSTRUZIONI MECCANICHE	DATA	23/01/2019	Comandulli Costruzioni Meccaniche S.r.l. SEDE: Via Medaglie d'Argento, 20 Z.I. 26012 CASTELLEONE – (Cremona) ITALY	MATRICOLA:	02519	LUCIDACOSTE A NASTRO Mod.: OMEGA 60 PENCIL BELT EDGE POLISHING MACHINE Mod.: OMEGA 60 PENCIL	– 02519 –
	DISEGN.	MORO PAOLO		COMMESSA:	791J	TERMINALE DI PROGRAMMAZIONE PROGRAMMING TERMINAL	
	VISTO	MNM					
	APPR.	MNM	SOST. IL :	SOST. DA :	FILE : OMEGA10004-UL		

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FG. 25
F.S. 26

MODULO ALIMENTATORE
POWER SUPPLY MODULE

MODULO CPU
CPU MODULE

MODULO ESPANSIONE DEL BUS
GB

MODULO CONTATORE VELOCE
GB

MODULO CONTATORE VELOCE
GB

MODULO 32 INPUT
32 INPUT MODULE

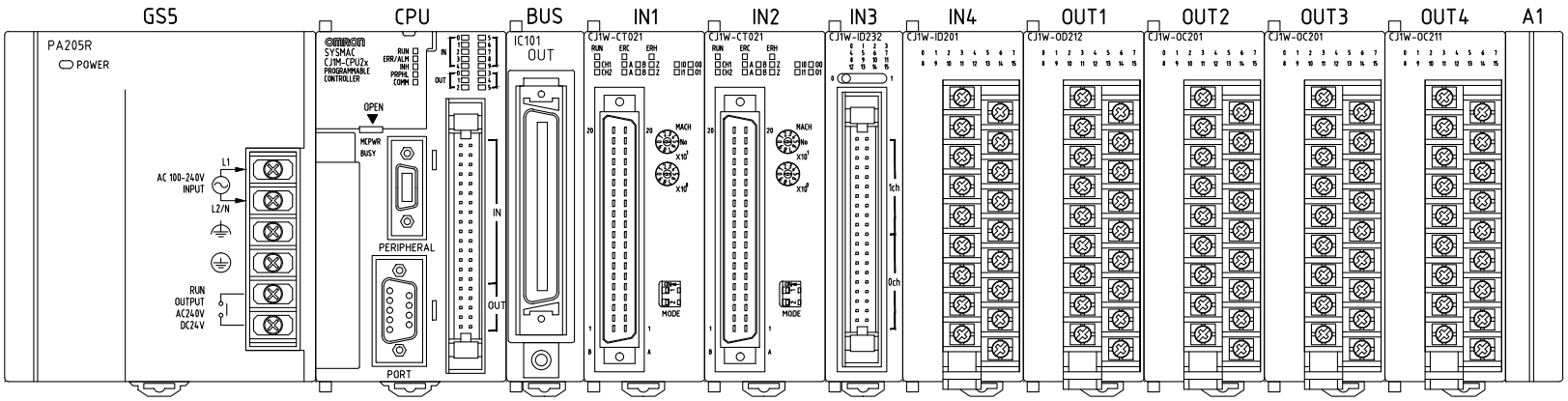
MODULO 8 INPUT
8 INPUT MODULE

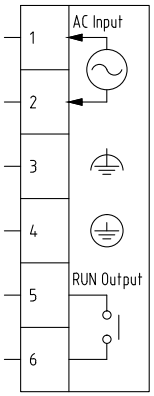
MODULO 16 OUTPUT A TRANSISTOR
GB

MODULO 8 OUTPUT A RELE
RELAY OUTPUT 8 MODULE

MODULO 8 OUTPUT A RELE
RELAY OUTPUT 8 MODULE

MODULO 16 OUTPUT A RELE
RELAY OUTPUT 16 MODULE





GS5 19.1B
PORT 25.3D
CPU 28.2B
BUS 27.3B
IN1 31.6E
IN2 32.6E
IN3 33.0D
IN4 37.1D
OUT1 40.1B
OUT2 42.1B
OUT3 44.1B
OUT4 46.1B

COMANDULLI
COSTRUZIONI MECCANICHE

DATA	23/01/2019
DISEGN.	MORO PAOLO
VISTO	MNM
APPR.	MNM

Comandulli Costruzioni Meccaniche S.r.l.
SEDE: Via Medaglie d'Argento, 20 Z.I.
26012 CASTELLEONE – (Cremona) ITALY

SOST. IL : | SOST. DA :

MATRICOLA:	02519
COMMESSA:	791J
FILE :	OMEGA10004-UL

LUCIDACOSTE A NASTRO Mod.: OMEGA 60 PENCIL
BELT EDGE POLISHING MACHINE Mod.: OMEGA 60 PENCIL

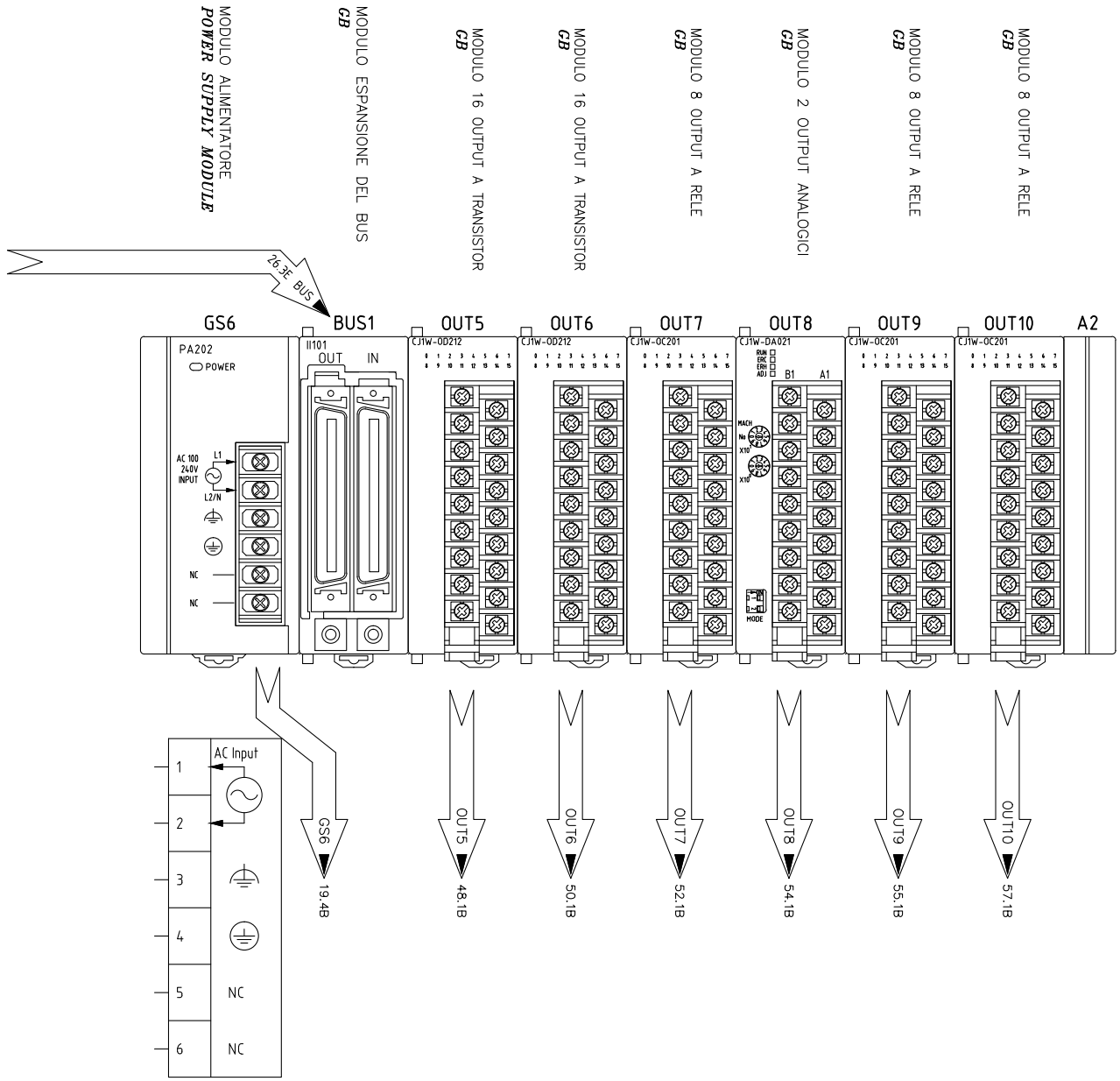
MODULI PLC
PLC MODULES

– 02519 –

=
+

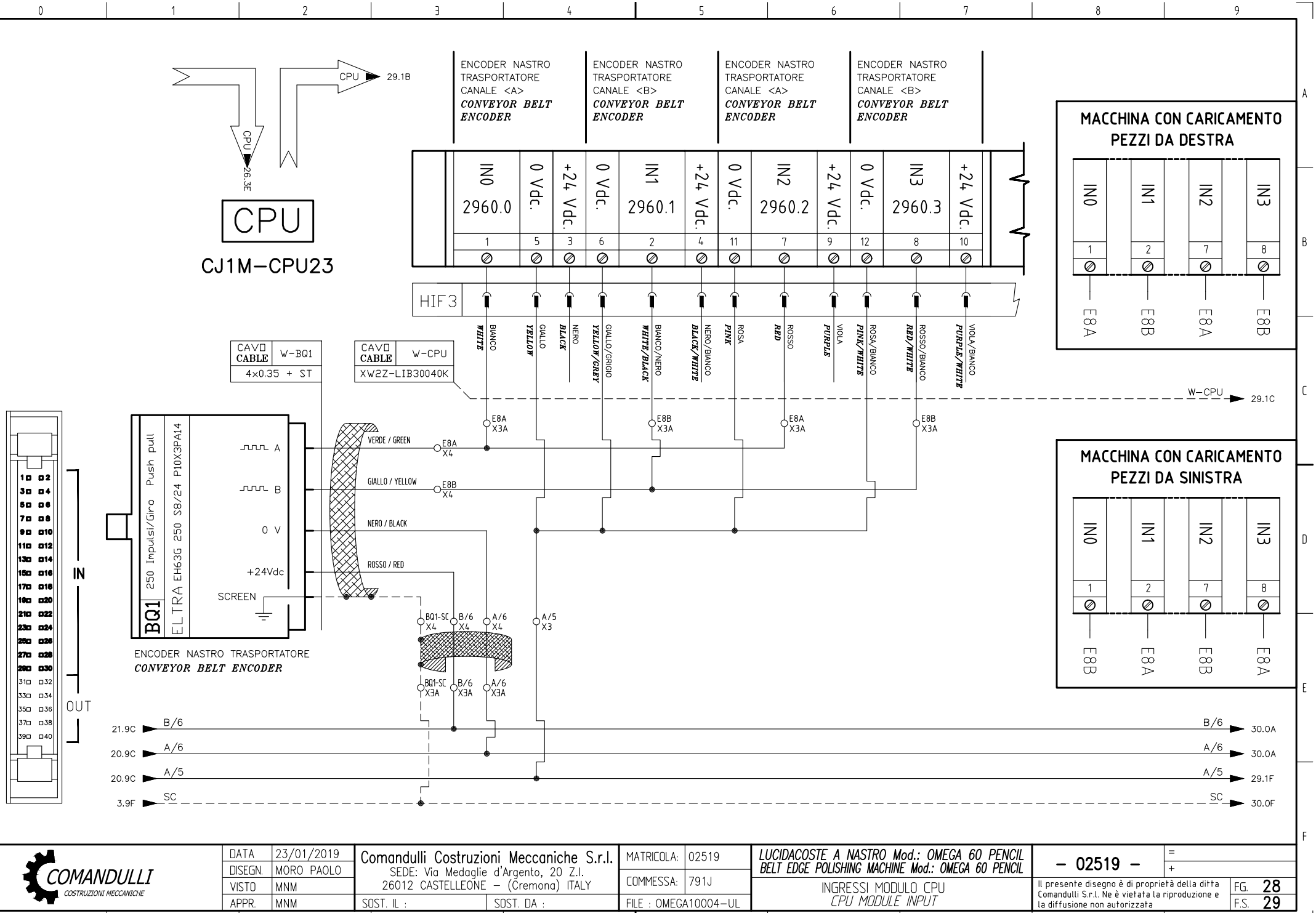
Il presente disegno è di proprietà della ditta Comandulli S.r.l. Ne è vietata la riproduzione e la diffusione non autorizzata

FG. 26
F.S. 27

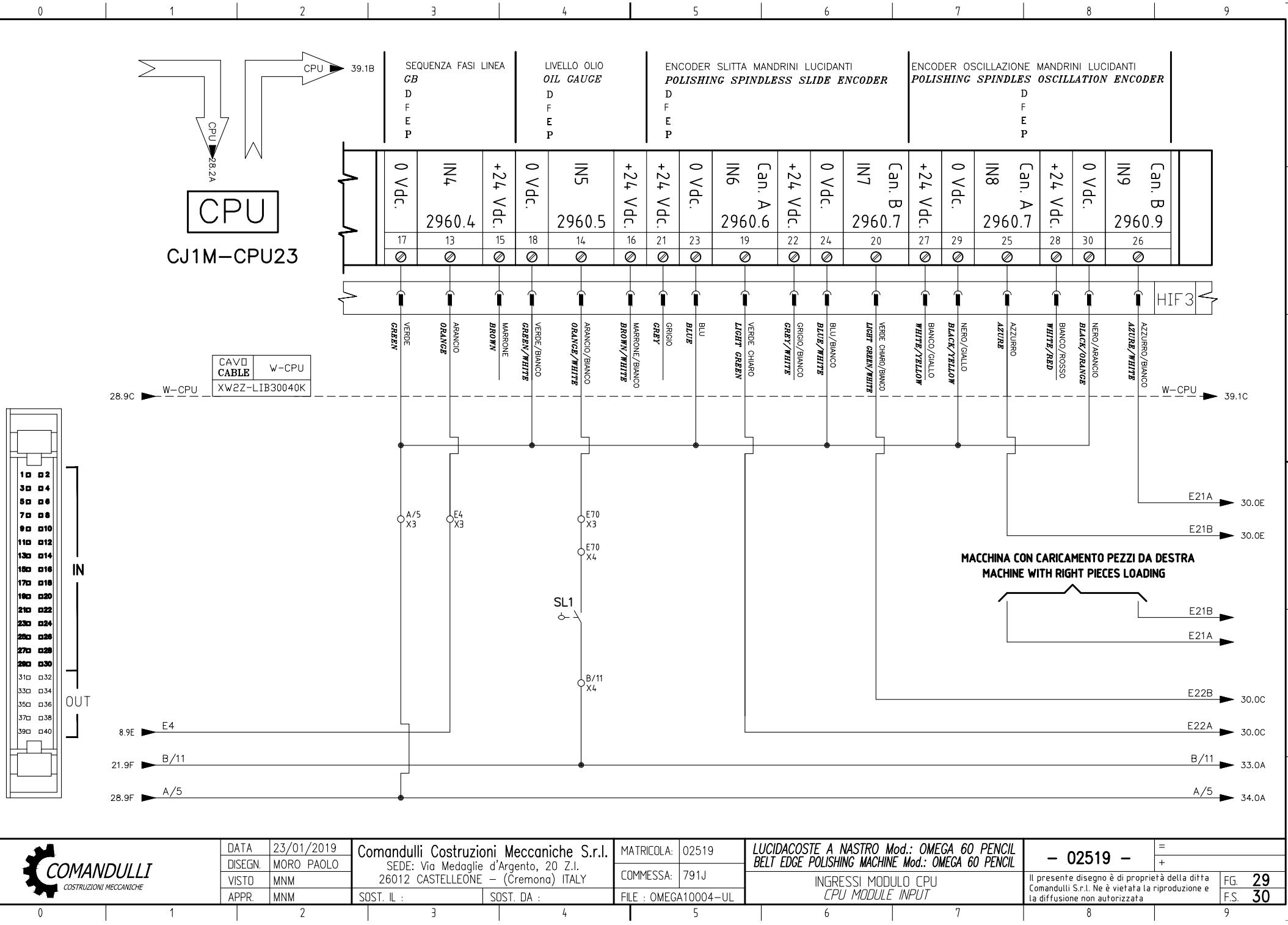


COMANDULLI COSTRUZIONI MECCANICHE	DATA	23/01/2019	Comandulli Costruzioni Meccaniche S.r.l. SEDE: Via Medaglie d'Argento, 20 Z.I. 26012 CASTELLEONE – (Cremona) ITALY	MATRICOLA:	02519	LUCIDACOSTE A NASTRO Mod.: OMEGA 60 PENCIL BELT EDGE POLISHING MACHINE Mod.: OMEGA 60 PENCIL	– 02519 –
	DISEGN.	MORO PAOLO		COMMESSA:	791J	MODULI PLC PLC MODULES	
	VISTO	MNM					
	APPR.	MNM	SOST. IL :	SOST. DA :	FILE : OMEGA10004-UL		

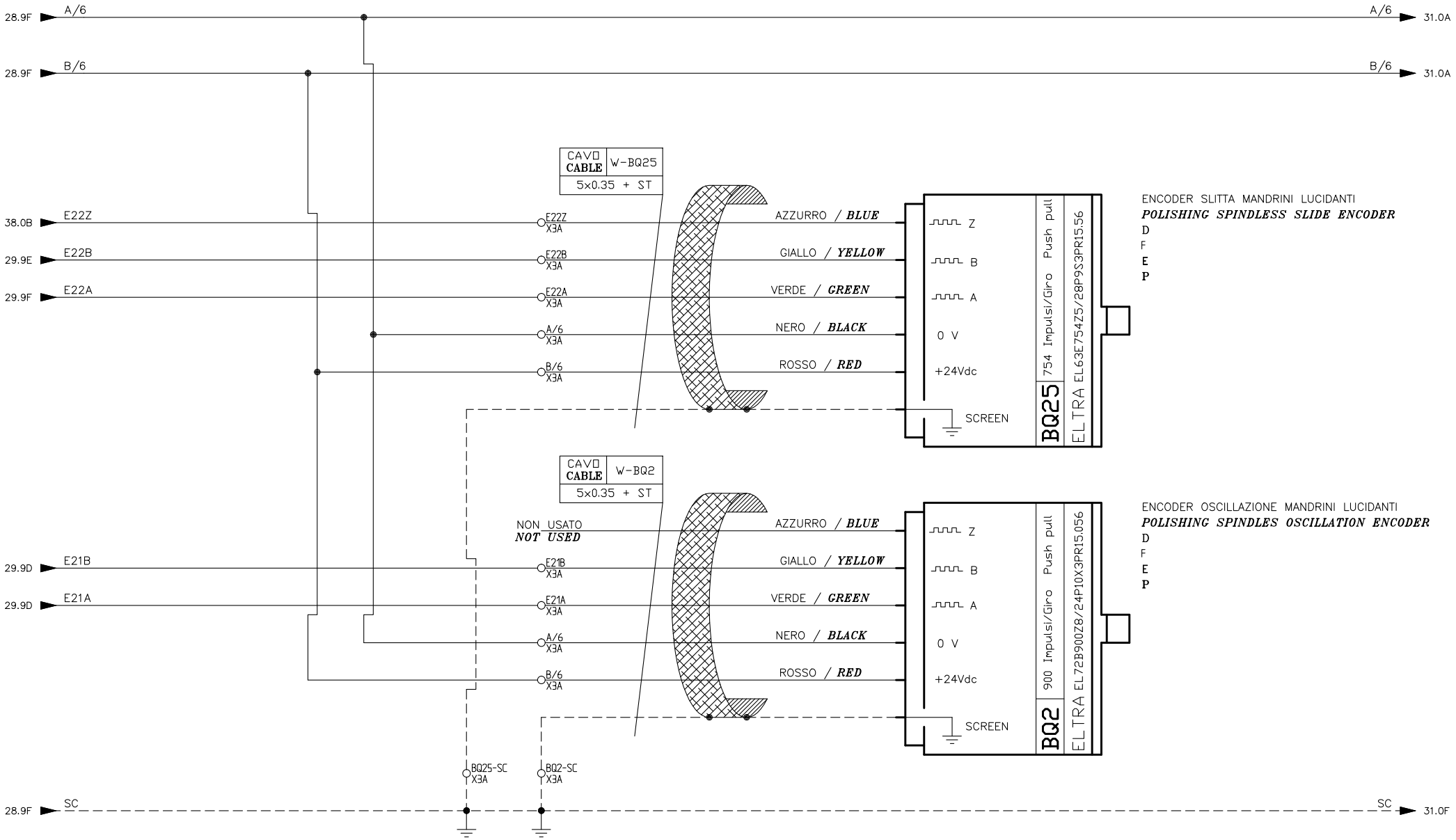
Il presente disegno è di proprietà della ditta Comandulli S.r.l. Ne è vietata la riproduzione e la diffusione non autorizzata



COMANDULLI COSTRUZIONI MECCANICHE	DATA	23/01/2019	Comandulli Costruzioni Meccaniche S.r.l. SEDE: Via Medaglie d'Argento, 20 Z.I. 26012 CASTELLEONE – (Cremona) ITALY	MATRICOLA: 02519	LUCIDACOSTE A NASTRO Mod.: OMEGA 60 PENCIL BELT EDGE POLISHING MACHINE Mod.: OMEGA 60 PENCIL	– 02519 –	=
	DISEGN.	MORO PAOLO		COMMESSA: 791J	INGRESSI MODULO CPU CPU MODULE INPUT		+
	VISTO	MNM				Il presente disegno è di proprietà della ditta Comandulli S.r.l. Ne è vietata la riproduzione e la diffusione non autorizzata	FG. 28
	APPR.	MNM	SOST. IL :	SOST. DA :	FILE : OMEGA10004-UL		F.S. 29



COMANDULLI COSTRUZIONI MECCANICHE	DATA	23/01/2019	Comandulli Costruzioni Meccaniche S.r.l. SEDE: Via Medaglie d'Argento, 20 Z.I. 26012 CASTELLEONE – (Cremona) ITALY	MATRICOLA: 02519	LUCIDACOSTE A NASTRO Mod.: OMEGA 60 PENCIL BELT EDGE POLISHING MACHINE Mod.: OMEGA 60 PENCIL	– 02519 –	=
	DISEGN.	MORO PAOLO		COMMESSA: 791J	INGRESSI MODULO CPU CPU MODULE INPUT		+
	VISTO	MNM				Il presente disegno è di proprietà della ditta Comandulli S.r.l. Ne è vietata la riproduzione e la diffusione non autorizzata	FG. 29
	APPR.	MNM	SOST. IL :	SOST. DA :	FILE : OMEGA10004–UL		F.S. 30



COMANDULLI COSTRUZIONI MECCANICHE	DATA 23/01/2019	Comandulli Costruzioni Meccaniche S.r.l. SEDE: Via Medaglie d'Argento, 20 Z.I. 26012 CASTELLEONE – (Cremona) ITALY	MATRICOLA: 02519	LUCIDACOSTE A NASTRO Mod.: OMEGA 60 PENCIL BELT EDGE POLISHING MACHINE Mod.: OMEGA 60 PENCIL	– 02519 –	=	
	DISEGN. MORO PAOLO		COMMESSA: 791J	ENCODER ENCODER		+	
	VISTO MNM				Il presente disegno è di proprietà della ditta Comandulli S.r.l. Ne è vietata la riproduzione e la diffusione non autorizzata	FG. 30	
	APPR. MNM	SOST. IL :	SOST. DA : FILE : OMEGA10004-UL			F.S. 31	

ENCODER SMUSSO DIAMANTATO INFERIORE
LOWER DIAMOND BEVEL ENCODER
D

BQ52 ELTRA 32 Impulsi/Giro
EL58PFA32S5/28P10S3PR3+M12.162

+24Vdc.	ROSSO/RED	2	MARRONE/BROWN	B/6 X3A
0 V	NERO/BLACK	4	BIANCO/WHITE	A/6 X3A
A	VERDE/GREEN	3	VERDE/GREEN	E52A X3A
B	GIALLO/YELLOW	1	GIALLO/YELLOW	E52B X3A
Z	BLU/BLUE	5		

ENCODER SMUSSO DIAMANTATO SUPERIORE
UPPER DIAMOND BEVEL ENCODER
D

BQ51 ELTRA 32 Impulsi/Giro
EL58PFA32S5/28P10S3PR3+M12.162

+24Vdc.	ROSSO/RED	2	MARRONE/BROWN	B/6 X3A
0 V	NERO/BLACK	4	BIANCO/WHITE	A/6 X3A
A	VERDE/GREEN	3	VERDE/GREEN	E51A X3A
B	GIALLO/YELLOW	1	GIALLO/YELLOW	E51B X3A
Z	BLU/BLUE	5		

30.9A B/6 → B/6 32.0C
30.9A A/6 → A/6 32.0D

IN1
A/6 X3A
B/6 X3A
A/6 A1 — B1 B/6
E52A A8 — B9 B/6
E52B A10 — B11 B/6
E51A A15 — B16 B/6
E51B A17 — B18 B/6

SCHEDA < CJ1W-CT021 >
CONTATORE ALTA VELOCITA

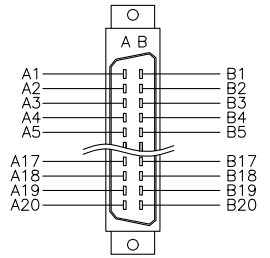
26.3E → IN1

BQ51-SC X3A
BQ52-SC X3A
30.9F SC → SC 32.0F

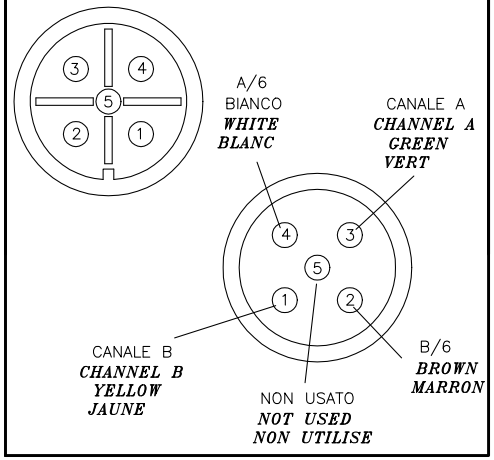
COLLEGAMENTO CONNETTORE < CJ1W-CT021 >
GB

ENTRATA PEZZI DA DESTRA *GB*			ENTRATA PEZZI DA SINISTRA *GB*		
MORS.	COLORE	PIN	MORS.	COLORE	PIN
E52A	BLU	A8	E52B	BLU	A8
E52B	BLU	A10	E52A	BLU	A10
E51A	BLU	A15	E51B	BLU	A15
E51B	BLU	A17	E51A	BLU	A17

VISTA LATO SALDATURE



CONNESSIONE
CONNECTION



COMANDULLI COSTRUZIONI MECCANICHE	DATA	23/01/2019	Comandulli Costruzioni Meccaniche S.r.l. SEDE: Via Medaglie d'Argento, 20 Z.I. 26012 CASTELLEONE – (Cremona) ITALY	MATRICOLA:	02519	LUCIDACOSTE A NASTRO Mod.: OMEGA 60 PENCIL BELT EDGE POLISHING MACHINE Mod.: OMEGA 60 PENCIL	– 02519 –
	DISEGN.	MORO PAOLO		COMMESSA:	791J	ENCODER - IN1 - ENCODER - IN1 -	
	VISTO	MNM					
	APPR.	MNM	SOST. IL :	SOST. DA :	FILE : OMEGA10004-UL		

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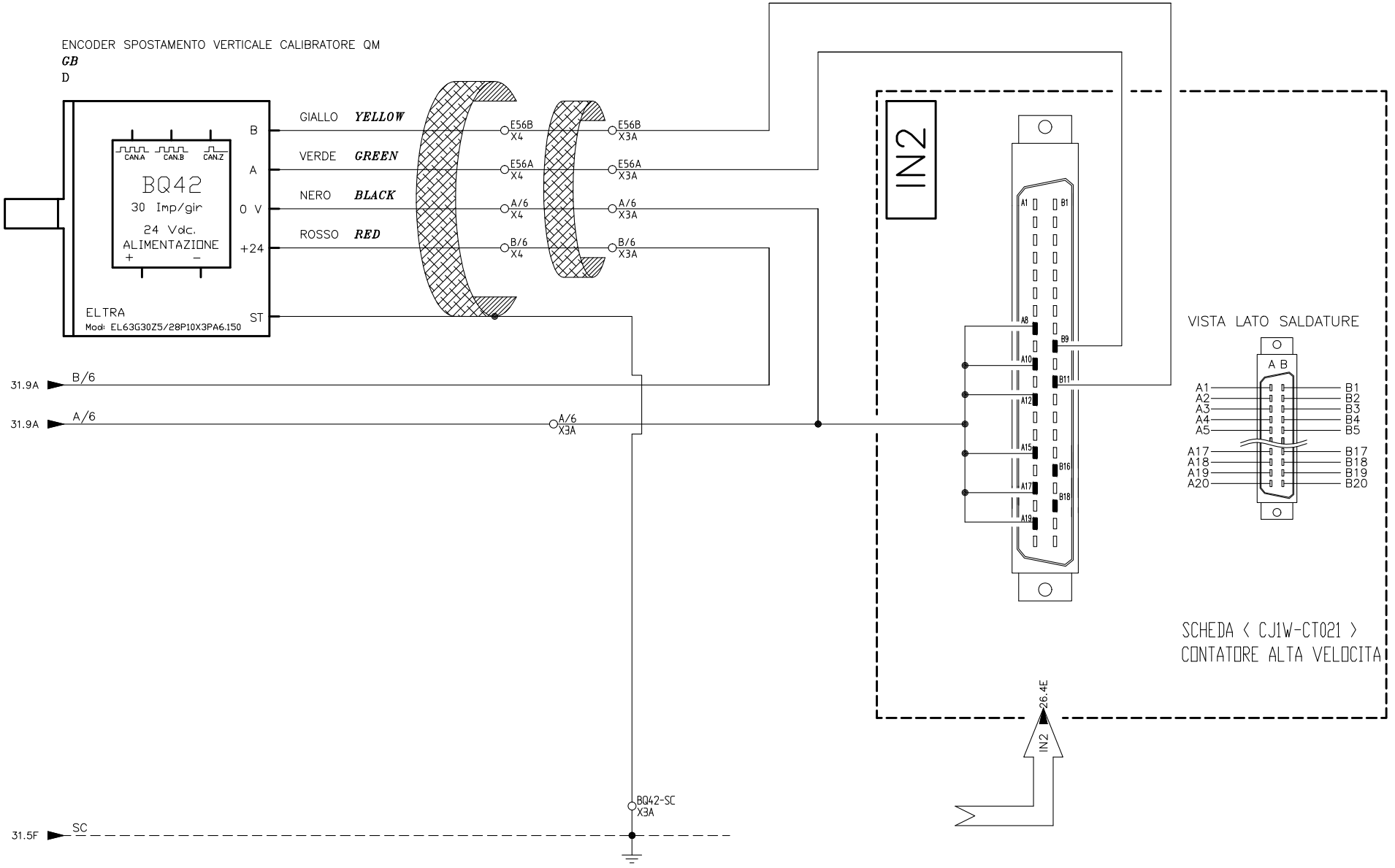
FG. 31
F.S. 32

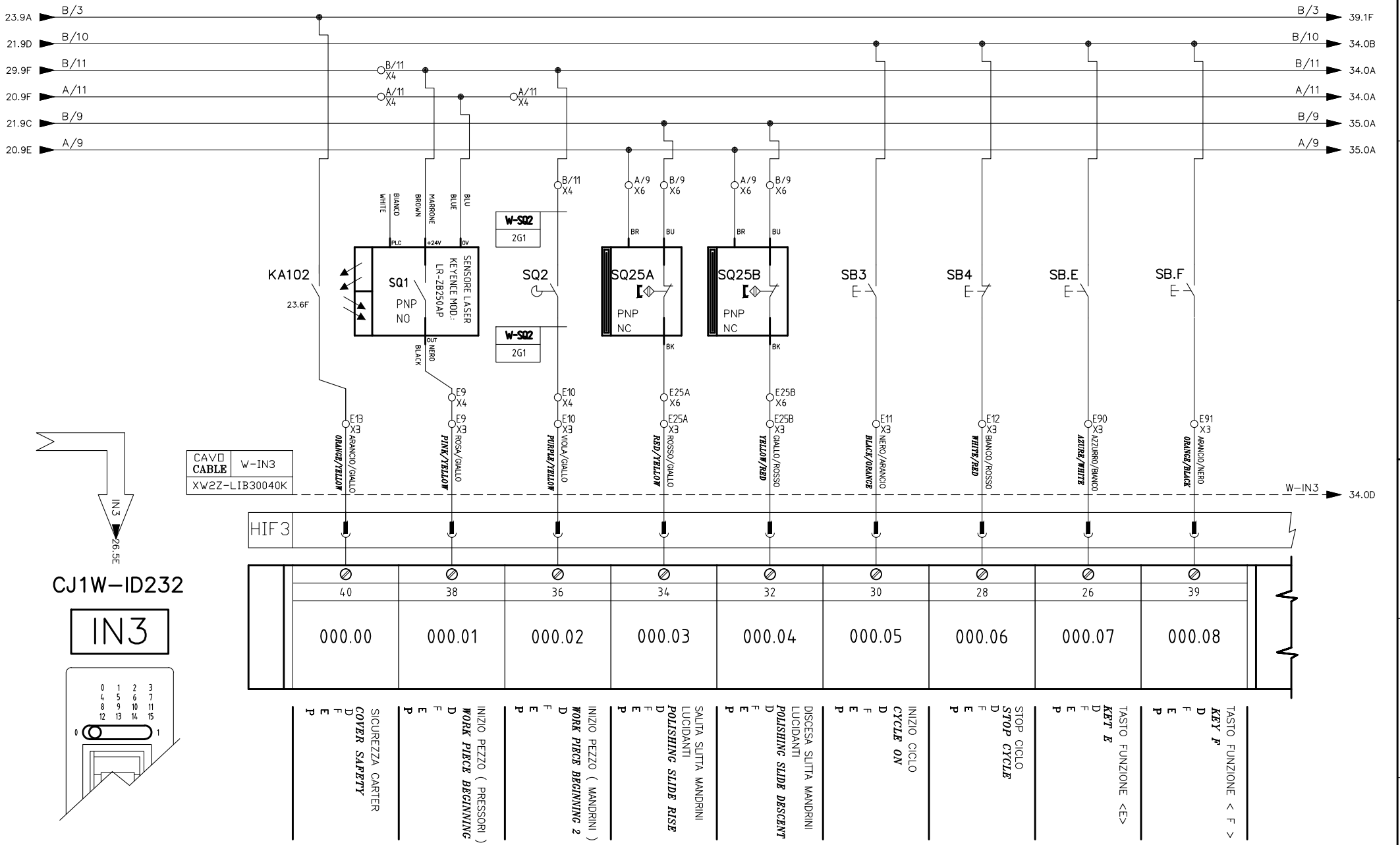
ENCODER SPOSTAMENTO VERTICALE CALIBRATORE QM

GB

D



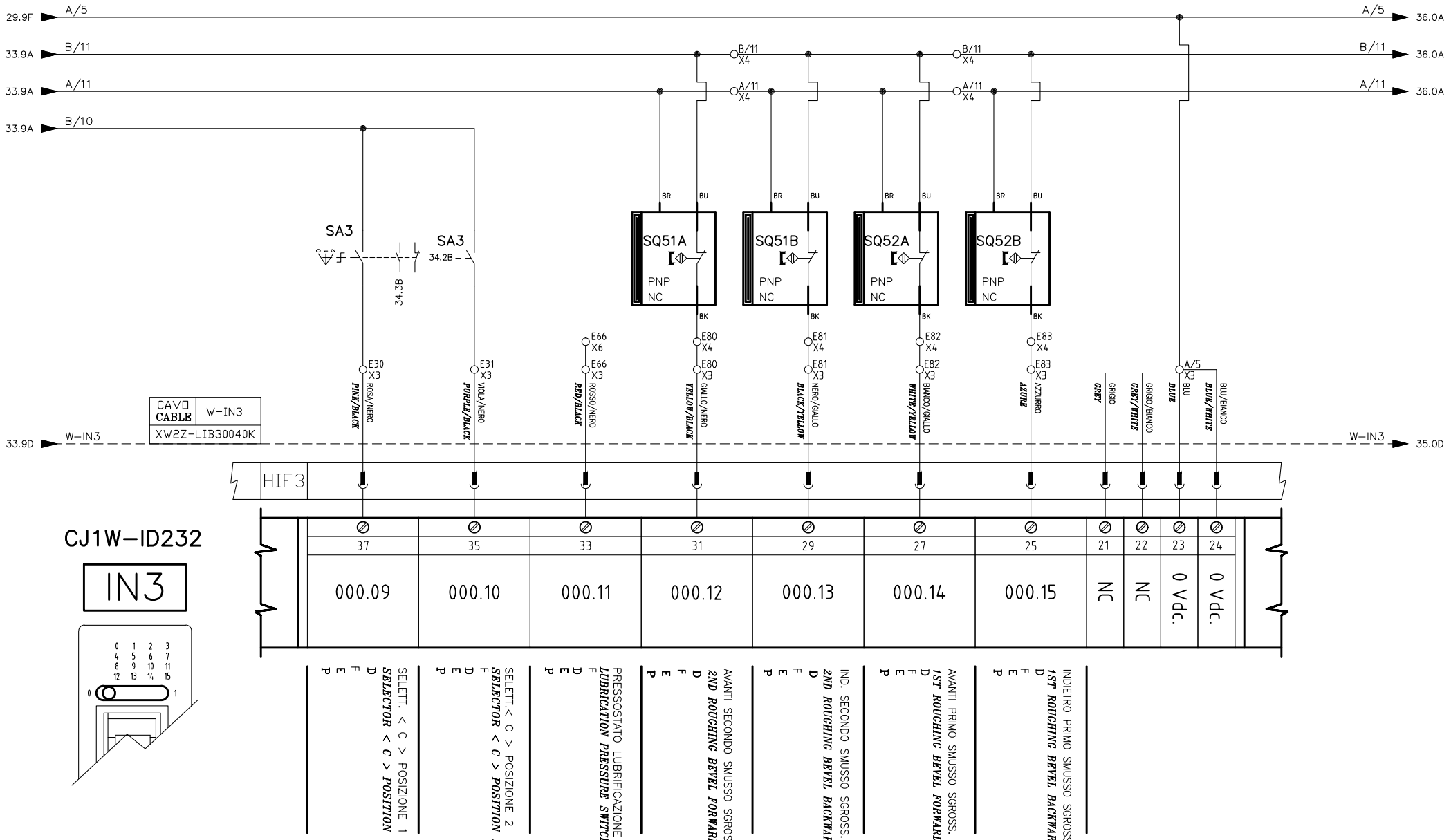
COMANDULLI COSTRUZIONI MECCANICHE	DATA	23/01/2019	Comandulli Costruzioni Meccaniche S.r.l. SEDE: Via Medaglie d'Argento, 20 Z.I. 26012 CASTELLEONE – (Cremona) ITALY	MATRICOLA: 02519	*LUCIDACOSTE A NASTRO Mod.: OMEGA 60 PENCIL* *BELT EDGE POLISHING MACHINE Mod.: OMEGA 60 PENCIL*	– 02519 –	=
	DISEGN.	MORO PAOLO		COMMESSA: 791J	ENCODER - IN2 - *ENCODER - IN2 -*		+
	VISTO	MNM				Il presente disegno è di proprietà della ditta Comandulli S.r.l. Ne è vietata la riproduzione e la diffusione non autorizzata	FG. 32
	APPR.	MNM	SOST. IL :	SOST. DA :	FILE : OMEGA10004–UL		F.S. 33



COMANDULLI COSTRUZIONI MECCANICHE	DATA	23/01/2019	Comandulli Costruzioni Meccaniche S.r.l. SEDE: Via Medaglie d'Argento, 20 Z.I. 26012 CASTELLEONE – (Cremona) ITALY	MATRICOLA:	02519	LUCIDACOSTE A NASTRO Mod.: OMEGA 60 PENCIL BELT EDGE POLISHING MACHINE Mod.: OMEGA 60 PENCIL	– 02519 –
	DISEGN.	MORO PAOLO		COMMESSA:	791J	INGRESSI PLC - IN3 - PLC INPUT - IN3 -	
	VISTO	MNM					
	APPR.	MNM	SOST. IL :	SOST. DA :	FILE : OMEGA10004-UL		

Il presente disegno è di proprietà della ditta Comandulli S.r.l. Ne è vietata la riproduzione e la diffusione non autorizzata

FG. 33
F.S. 34



COMANDULLI COSTRUZIONI MECCANICHE	DATA	23/01/2019	Comandulli Costruzioni Meccaniche S.r.l. SEDE: Via Medaglie d'Argento, 20 Z.I. 26012 CASTELLEONE – (Cremona) ITALY	MATRICOLA:	02519	LUCIDACOSTE A NASTRO Mod.: OMEGA 60 PENCIL BELT EDGE POLISHING MACHINE Mod.: OMEGA 60 PENCIL	– 02519 –
	DISEGN.	MORO PAOLO		COMMESSA:	791J	INGRESSI PLC - IN3 - PLC INPUT - IN3 -	= +
	VISTO	MNM					
	APPR.	MNM	SOST. IL :	SOST. DA :	FILE : OMEGA10004-UL		FG. 34 F.S. 35

Il presente disegno è di proprietà della ditta Comandulli S.r.l. Ne è vietata la riproduzione e la diffusione non autorizzata

33.9A B/9

33.9B A/9

A/9 X6 — B/9 X6

BU — BR

SQ26

PNP

NO

BK

E26 X6

E26 X3

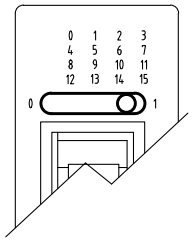
CAVO CABLE	W-IN3
	XW2Z-LIB30040K

34.9D W-IN3 — W-IN3 36.0D

	VERDE CHIARO/BIANCO LIGHT GREEN/WHITE	VERDE/BIANCO GREEN/WHITE	MARRONE/BIANCO BROWN/WHITE	ARANCIO/BIANCO ORANGE/WHITE	ROSA/BIANCO PINK/WHITE	VIOLA/BIANCO PURPLE/WHITE	ROSSO/BIANCO RED/WHITE	GIALLO/GRIGIO YELLOW/GREY	VERDE CHIARO LIGHT GREEN
HIF3	20	18	16	14	12	10	8	6	19
	001.00	001.01	001.02	001.03	001.04	001.05	001.06	001.07	001.08

CJ1W-ID232

IN3



SEL.MAN.SALITA TAGLIOL. GB / SEL.MAN.SALITA TAGLIOL. DEUTSCH / SEL.MAN.SALITA TAGLIOL. FRANÇAIS / SEL.MAN.SALITA TAGLIOL. ESPAÑOL

SEL.MAN.DISCESA TAGLIOLAMA GB / SEL.MAN.DISCESA TAGLIOLAMA DEUTSCH / SEL.MAN.DISCESA TAGLIOLAMA FRANÇAIS / SEL.MAN.DISCESA TAGLIOLAMA ESPAÑOL

SALITA TAGLIOLAMA GB / SALITA TAGLIOLAMA DEUTSCH / SALITA TAGLIOLAMA FRANÇAIS / SALITA TAGLIOLAMA ESPAÑOL

DISCESA TAGLIOLAMA GB / DISCESA TAGLIOLAMA DEUTSCH / DISCESA TAGLIOLAMA FRANÇAIS / DISCESA TAGLIOLAMA ESPAÑOL

MANDRINI LUCIDACOSTE A 90° SPINDLES POLISHING 90 ° GB / MANDRINI LUCIDACOSTE A 90° DEUTSCH / MANDRINI LUCIDACOSTE A 90° FRANÇAIS / MANDRINI LUCIDACOSTE A 90° ESPAÑOL

FC DISCESA GOCCIOLATOIO GB / FC DISCESA GOCCIOLATOIO DEUTSCH / FC DISCESA GOCCIOLATOIO FRANÇAIS / FC DISCESA GOCCIOLATOIO ESPAÑOL

FC SALITA GOCCIOLATOIO GB / FC SALITA GOCCIOLATOIO DEUTSCH / FC SALITA GOCCIOLATOIO FRANÇAIS / FC SALITA GOCCIOLATOIO ESPAÑOL

TASTO FUNZIONE E1 GB / TASTO FUNZIONE E1 DEUTSCH / TASTO FUNZIONE E1 FRANÇAIS / TASTO FUNZIONE E1 ESPAÑOL

TASTO FUNZIONE F1 GB / TASTO FUNZIONE F1 DEUTSCH / TASTO FUNZIONE F1 FRANÇAIS / TASTO FUNZIONE F1 ESPAÑOL

COMANDULLI
COSTRUZIONI MECCANICHE

DATA	23/01/2019
DISEGN.	MORO PAOLO
VISTO	MNM
APPR.	MNM

Comandulli Costruzioni Meccaniche S.r.l.
SEDE: Via Medaglie d'Argento, 20 Z.I.
26012 CASTELLEONE – (Cremona) ITALY

SOST. IL : — SOST. DA :

MATRICOLA:	02519
COMMESSA:	791J
FILE :	OMEGA10004-UL

LUCIDACOSTE A NASTRO Mod.: OMEGA 60 PENCIL
BELT EDGE POLISHING MACHINE Mod.: OMEGA 60 PENCIL

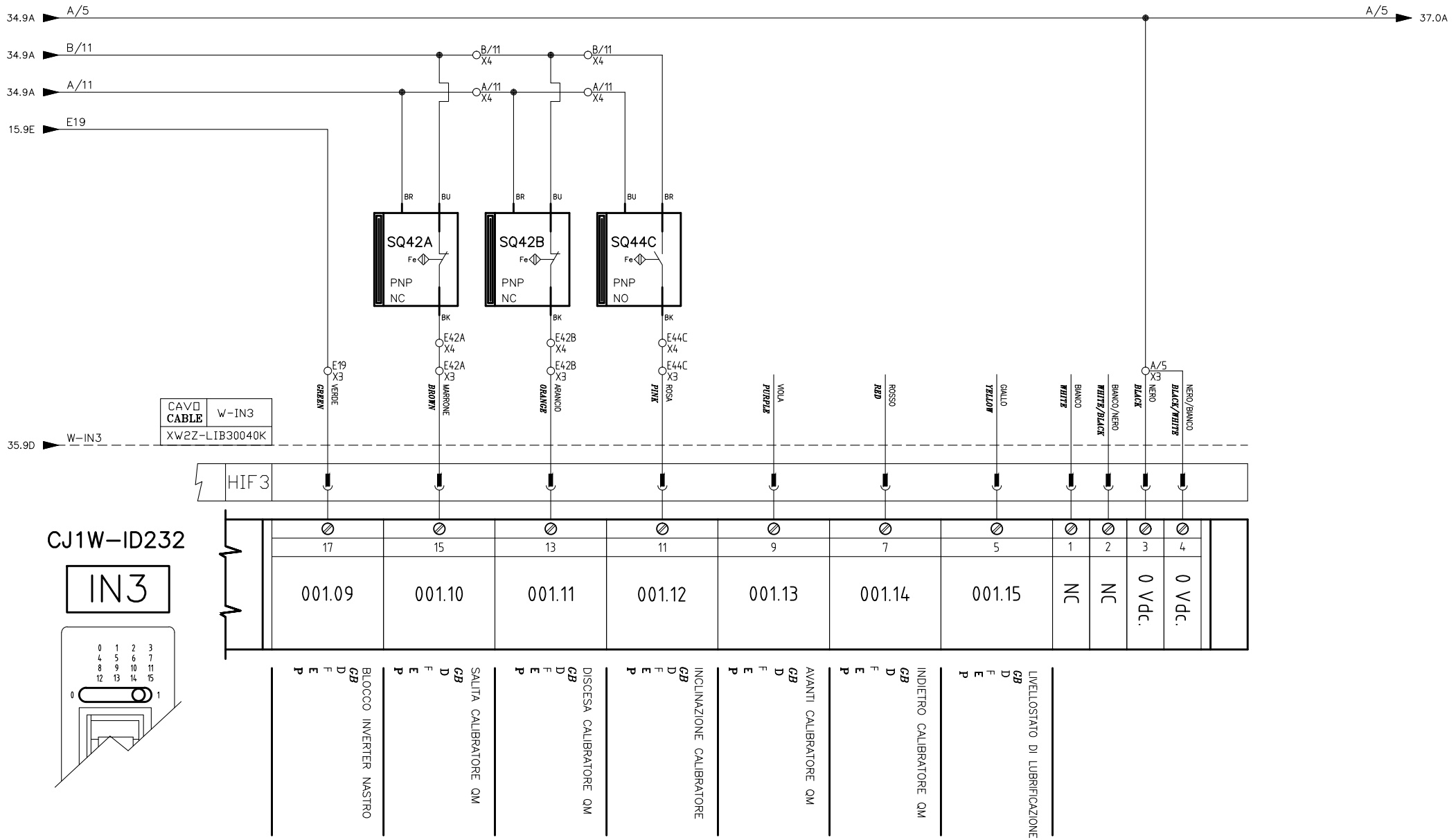
INGRESSI PLC - IN3 -
PLC INPUT - IN3 -

– 02519 –

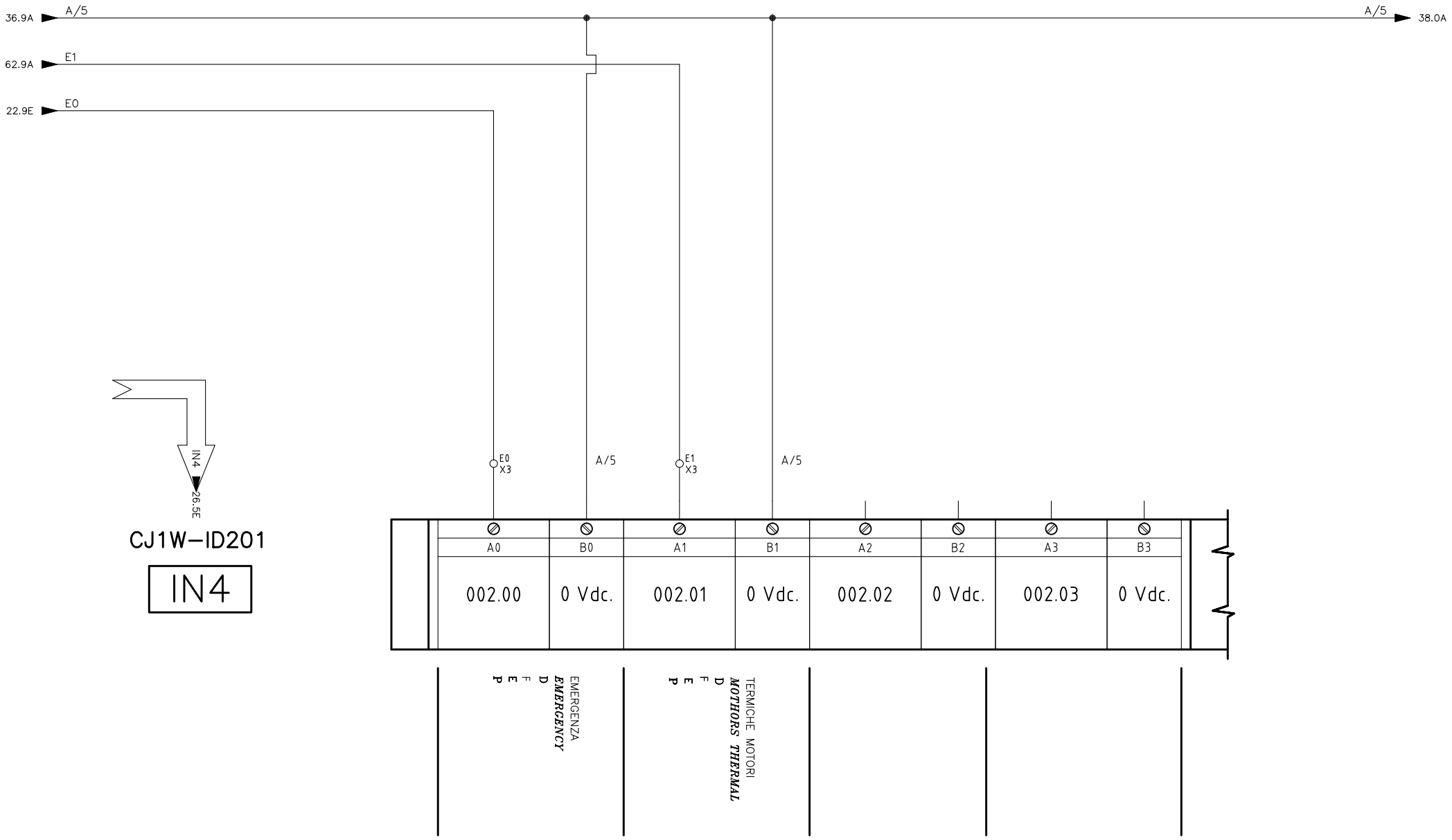
=
+

Il presente disegno è di proprietà della ditta Comandulli S.r.l. Ne è vietata la riproduzione e la diffusione non autorizzata

FG. 35
F.S. 36



COMANDULLI COSTRUZIONI MECCANICHE	DATA	23/01/2019	Comandulli Costruzioni Meccaniche S.r.l. SEDE: Via Medaglie d'Argento, 20 Z.I. 26012 CASTELLEONE – (Cremona) ITALY	MATRICOLA: 02519	LUCIDACOSTE A NASTRO Mod.: OMEGA 60 PENCIL BELT EDGE POLISHING MACHINE Mod.: OMEGA 60 PENCIL	– 02519 –	= +
	DISEGN.	MORO PAOLO		COMMESSA: 791J	INGRESSI PLC - IN3 - PLC INPUT - IN3 -	Il presente disegno è di proprietà della ditta Comandulli S.r.l. Ne è vietata la riproduzione e la diffusione non autorizzata	FG. 36
	VISTO	MNM					F.S. 37
	APPR.	MNM	SOST. IL :	SOST. DA :	FILE : OMEGA10004-UL		



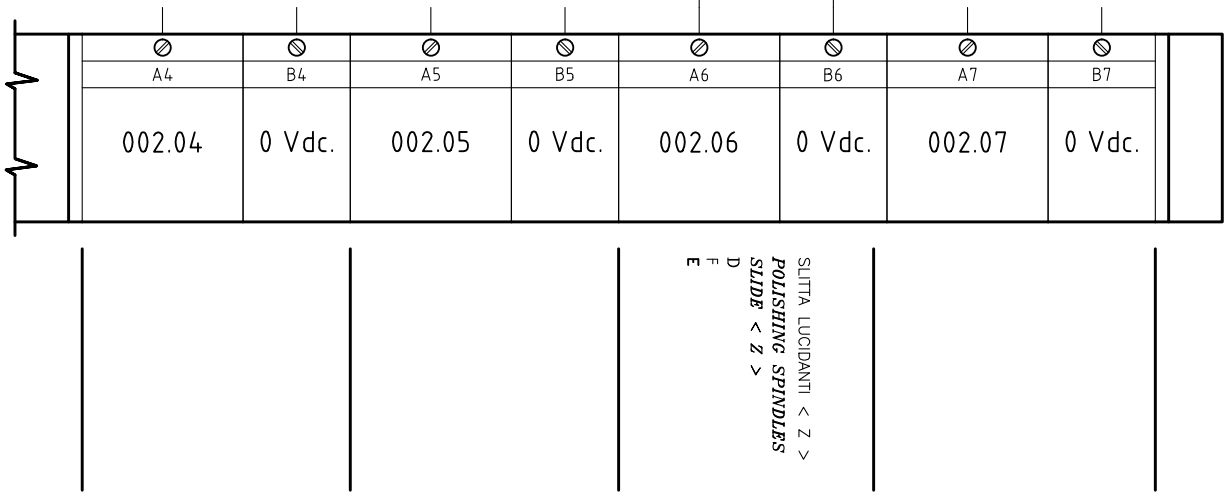
COMANDULLI COSTRUZIONI MECCANICHE	DATA	23/01/2019	Comandulli Costruzioni Meccaniche S.r.l. SEDE: Via Medaglie d'Argento, 20 Z.I. 26012 CASTELLEONE – (Cremona) ITALY	MATRICOLA: 02519	LUCIDACOSTE A NASTRO Mod.: OMEGA 60 PENCIL BELT EDGE POLISHING MACHINE Mod.: OMEGA 60 PENCIL	– 02519 –	=
	DISEGN.	MORO PAOLO		COMMESSA: 791J	INGRESSI PLC - IN4 - PLC INPUT - IN4 -		+
	VISTO	MNM				Il presente disegno è di proprietà della ditta Comandulli S.r.l. Ne è vietata la riproduzione e la diffusione non autorizzata	FG. 37
	APPR.	MNM	SOST. IL :	SOST. DA :	FILE : OMEGA10004–UL		F.S. 38

37.9A A/5

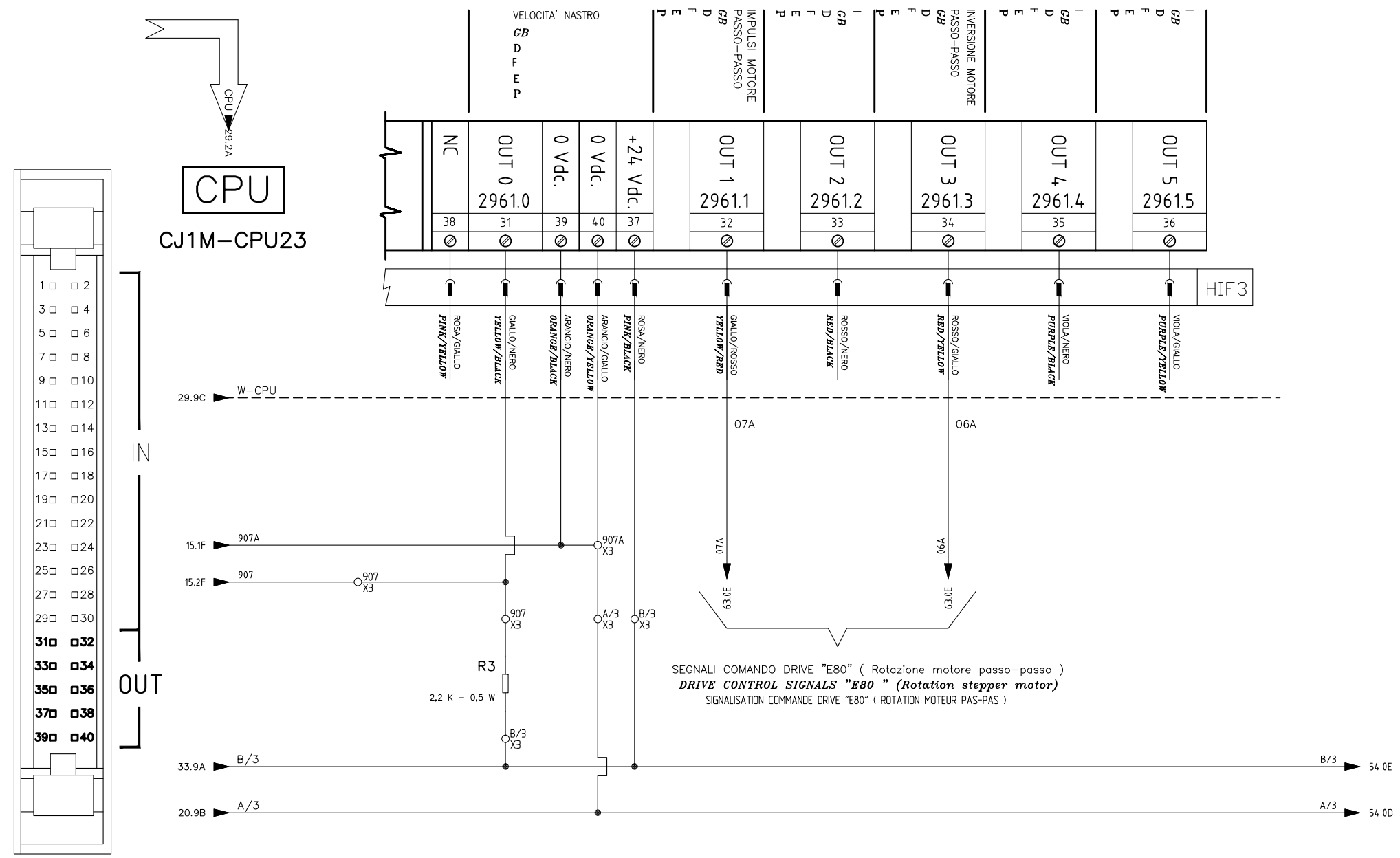
30.0B E22Z

CJ1W–ID201

IN4



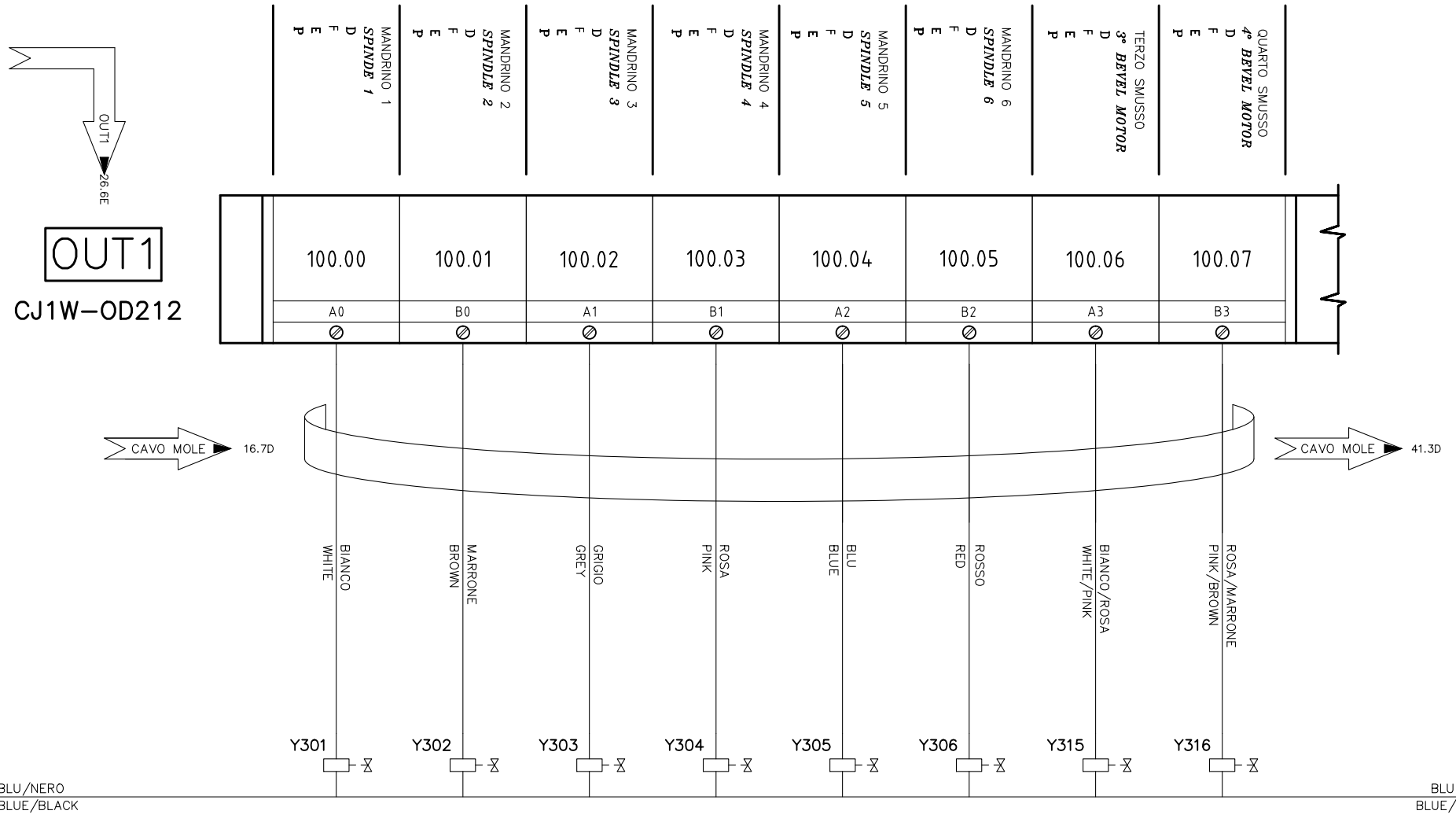
COMANDULLI COSTRUZIONI MECCANICHE	DATA	23/01/2019	Comandulli Costruzioni Meccaniche S.r.l. SEDE: Via Medaglie d'Argento, 20 Z.I. 26012 CASTELLEONE – (Cremona) ITALY	MATRICOLA: 02519	LUCIDACOSTE A NASTRO Mod.: OMEGA 60 PENCIL BELT EDGE POLISHING MACHINE Mod.: OMEGA 60 PENCIL	– 02519 –	=
	DISEGN.	MORO PAOLO		COMMESSA: 791J			+
	VISTO	MNM			INGRESSI PLC - IN4 - PLC INPUT - IN4 -	Il presente disegno è di proprietà della ditta Comandulli S.r.l. Ne è vietata la riproduzione e la diffusione non autorizzata	FG. 38
	APPR.	MNM	SOST. IL : SOST. DA :	FILE : OMEGA10004–UL			F.S. 39



COMANDULLI COSTRUZIONI MECCANICHE	DATA	23/01/2019	Comandulli Costruzioni Meccaniche S.r.l. SEDE: Via Medaglie d'Argento, 20 Z.I. 26012 CASTELLEONE – (Cremona) ITALY	MATRICOLA:	02519	LUCIDACOSTE A NASTRO Mod.: OMEGA 60 PENCIL BELT EDGE POLISHING MACHINE Mod.: OMEGA 60 PENCIL	– 02519 –
	DISEGN.	MORO PAOLO		COMMESSA:	791J	USCITE MODULO CPU CPU OUTPUT MODULE	
	VISTO	MNM					
	APPR.	MNM	SOST. IL :	SOST. DA :	FILE : OMEGA10004–UL		

Il presente disegno è di proprietà della ditta Comandulli S.r.l. Ne è vietata la riproduzione e la diffusione non autorizzata

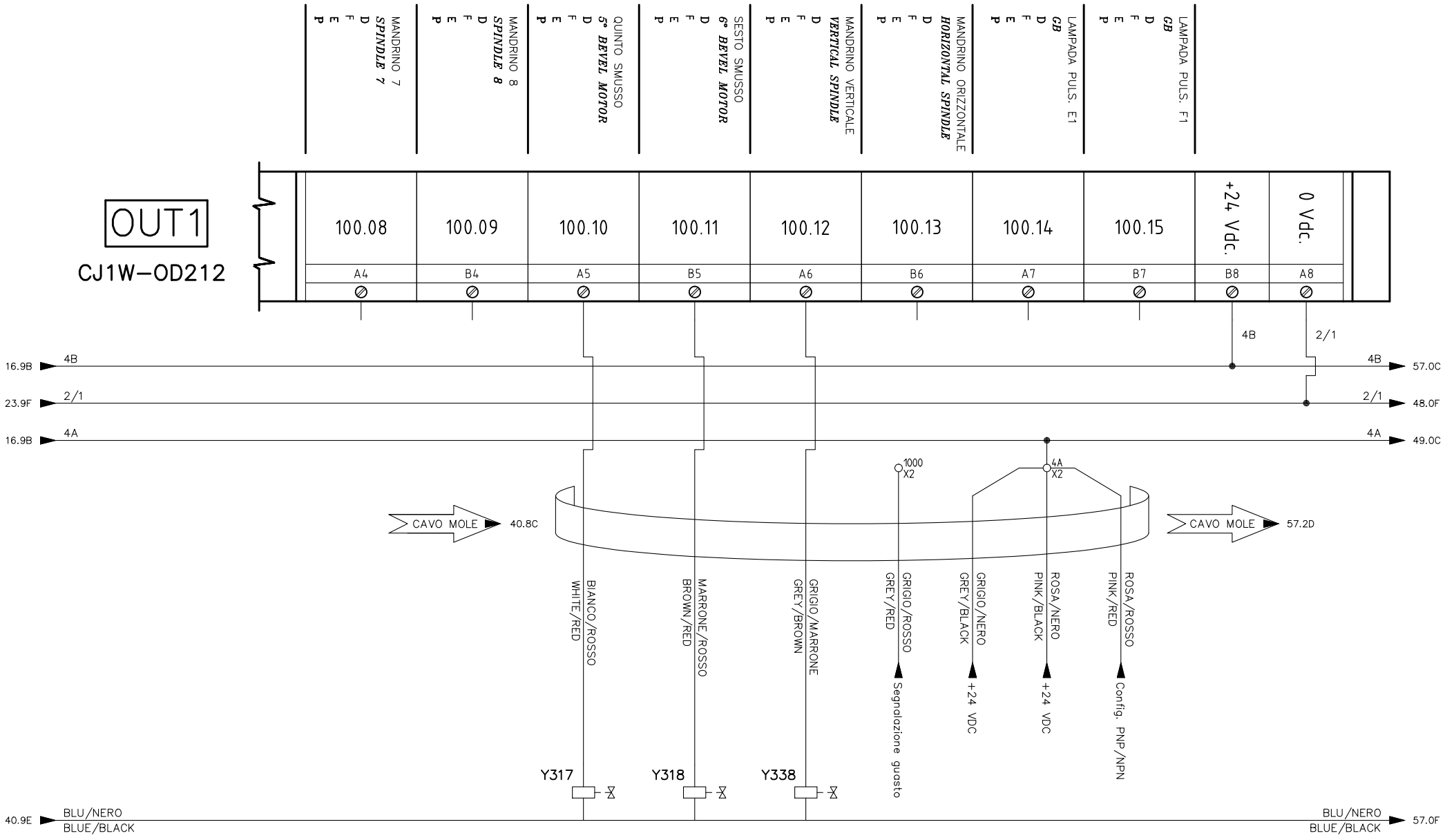
FG. 39
F.S. 40



COMANDULLI COSTRUZIONI MECCANICHE	DATA	23/01/2019	Comandulli Costruzioni Meccaniche S.r.l. SEDE: Via Medaglie d'Argento, 20 Z.I. 26012 CASTELLEONE – (Cremona) ITALY	MATRICOLA:	02519	LUCIDACOSTE A NASTRO Mod.: OMEGA 60 PENCIL BELT EDGE POLISHING MACHINE Mod.: OMEGA 60 PENCIL	– 02519 –
	DISEGN.	MORO PAOLO		COMMESSA:	791J	USCITE PLC - OUT1 - PLC OUTPUT - OUT1 -	
	VISTO	MNM					
	APPR.	MNM	SOST. IL :	SOST. DA :	FILE : OMEGA10004-UL		

Il presente disegno è di proprietà della ditta Comandulli S.r.l. Ne è vietata la riproduzione e la diffusione non autorizzata

FG. 40
F.S. 41



COMANDULLI COSTRUZIONI MECCANICHE	DATA	23/01/2019	Comandulli Costruzioni Meccaniche S.r.l. SEDE: Via Medaglie d'Argento, 20 Z.I. 26012 CASTELLEONE – (Cremona) ITALY	MATRICOLA: 02519	LUCIDACOSTE A NASTRO Mod.: OMEGA 60 PENCIL BELT EDGE POLISHING MACHINE Mod.: OMEGA 60 PENCIL	– 02519 –	=
	DISEGN.	MORO PAOLO		COMMESSA: 791J	USCITE PLC - OUT1 - PLC OUTPUT - OUT1 -		+
	VISTO	MNM				Il presente disegno è di proprietà della ditta Comandulli S.r.l. Ne è vietata la riproduzione e la diffusione non autorizzata	FG. 41
	APPR.	MNM	SOST. IL :	SOST. DA :	FILE : OMEGA10004-UL		F.S. 42

POMPA ROTAZIONE MANDRINI LUCIDACOSTE	OSCILLAZIONE MANDRINI LUCIDACOSTE	BRETELLA IDRAULICA	ROTAZIONE MANDRINI 1–2–3–4
EDGE POLISHING SPINDLES ROTATION PUMP	*EDGE POLISHING SPINDLES OSCILLATION*	*HYDRAULIC EDGE POLISHING SUPPORT*	*SPINDLE RATATION 1–2–3–4*
MOTOR PUMPE DREHUNG SCHLEIFSCHEIBEN	MOTOR OSCILLATION	PUMPE ZUM FIXIEREN DESQUESUPPORT	D
MOTEUR POMPE ROTATION MEULES	MOTEUR OSCILLATION	POMPE POUR POSITION DE BLOCAGE	F
MOTOR BOMBA ROTACION MEULAS	MOTOR OSCILLACIÒN	MOTOR BOMBA TIRADOT	E
	MOTOR BOMBA ROTAÇAO	BOMBA HIDRàULICA	P

OUT2 26.6E

OUT2

CJ1W–OC201

+24 Vac.	101.00	+24 Vac.	101.01	+24 Vac.	101.02	+24 Vac.	101.03
A0	B0	A1	B1	A2	B2	A3	B3

59.9A 100
17.9B 3C
16.9A 4F
17.9E 1/2
16.9D 2/2

3C 100 3C 101 3C 102 4F 501

101 102 501 X2

KM1 KM2

4.2C 4.2C 4.2C
5.5C 5.5C 5.5C

Y501

2/2 X5

4F → 43.0C
1/2 → 59.0D
2/2 → 43.0E

COMANDULLI COSTRUZIONI MECCANICHE	DATA	23/01/2019	Comandulli Costruzioni Meccaniche S.r.l. SEDE: Via Medaglie d'Argento, 20 Z.I. 26012 CASTELLEONE – (Cremona) ITALY	MATRICOLA:	02519	LUCIDACOSTE A NASTRO Mod.: OMEGA 60 PENCIL BELT EDGE POLISHING MACHINE Mod.: OMEGA 60 PENCIL	– 02519 –
	DISEGN.	MORO PAOLO		COMMESSA:	791J	USCITE PLC - OUT2 - PLC OUTPUT - OUT2 -	
	VISTO	MNM					
	APPR.	MNM	SOST. IL :	SOST. DA :	FILE : OMEGA10004–UL		

Il presente disegno è di proprietà della ditta Comandulli S.r.l. Ne è vietata la riproduzione e la diffusione non autorizzata

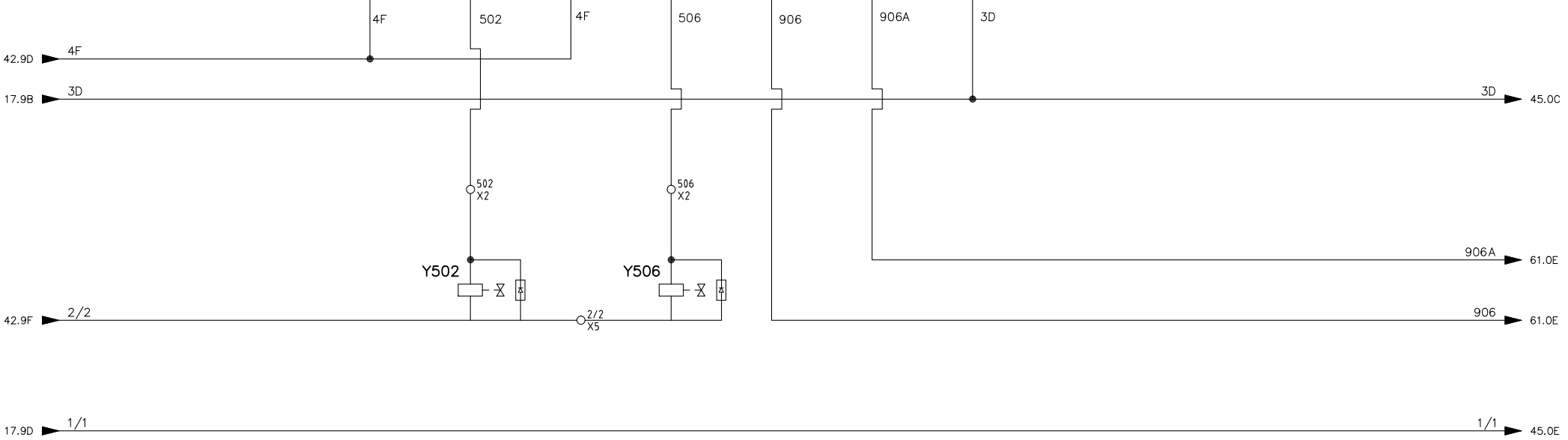
FG. 42
F.S. 43

ROTAZIONE MANDRINI 5-6-7-8	OSCILLAZIONE MANDRINI	ABILITAZIONE DRIVER E2	I
SPINDLE RATATION 5-6-7-8	***SPINDLES OSCILLATION***	***DRIVE ENABLE E2***	***GB***
D	D	D	D
F	F	F	E
E	**E**	**E**	**P**
P	**P**	**P**	F

OUT2

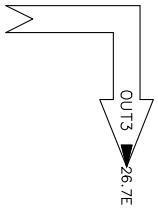
CJ1W-OC201

+24 Vac.	101.04	+24 Vac.	101.05	+24 Vac.	101.06	+24 Vac.	101.07	NC	NC
A4	B4	A5	B5	A6	B6	A7	B7	A8	B8



COMANDULLI COSTRUZIONI MECCANICHE	DATA	23/01/2019	Comandulli Costruzioni Meccaniche S.r.l. SEDE: Via Medaglie d'Argento, 20 Z.I. 26012 CASTELLEONE – (Cremona) ITALY	MATRICOLA:	02519	*LUCIDACOSTE A NASTRO Mod.: OMEGA 60 PENCIL BELT EDGE POLISHING MACHINE Mod.: OMEGA 60 PENCIL*	– 02519 –
	DISEGN.	MORO PAOLO		COMMESSA:	791J	USCITE PLC - OUT2 - *PLC OUTPUT - OUT2 -*	= +
	VISTO	MNM					
	APPR.	MNM	SOST. IL :	SOST. DA :	FILE : OMEGA10004-UL		FG. 43 F.S. 44

Il presente disegno è di proprietà della ditta Comandulli S.r.l. Ne è vietata la riproduzione e la diffusione non autorizzata



OUT3

CJ1W–OC201

SALITA TAGLIOLAMA	DISCESA TAGLIOLAMA	RAPIDO TAGLIOLAMA	LENTO TAGLIOLAMA
CB	***CB***	***CB***	***CB***
D	**D**	**D**	**D**
F	F	F	F
E	**E**	**E**	**E**
P	**P**	**P**	**P**

+24 Vac.	102.00	+24 Vdc.	102.01	+24 Vac.	102.02	+24 Vac.	102.03
A0	B0	A1	B1	A2	B2	A3	B3
⊘	⊘	⊘	⊘	⊘	⊘	⊘	⊘

COMANDULLI
COSTRUZIONI MECCANICHE

DATA	23/01/2019
DISEGN.	MORO PAOLO
VISTO	MNM
APPR.	MNM

Comandulli Costruzioni Meccaniche S.r.l.
SEDE: Via Medaglie d'Argento, 20 Z.I.
26012 CASTELLEONE – (Cremona) ITALY

SOST. IL : | SOST. DA :

MATRICOLA:	02519
COMMESSA:	791J
FILE :	OMEGA10004–UL

LUCIDACOSTE A NASTRO Mod.: OMEGA 60 PENCIL
BELT EDGE POLISHING MACHINE Mod.: OMEGA 60 PENCIL

USCITE PLC - OUT3 -
PLC OUTPUT - OUT3 -

– 02519 –

=
+

Il presente disegno è di proprietà della ditta Comandulli S.r.l. Ne è vietata la riproduzione e la diffusione non autorizzata

FG. 44
F.S. 45

MANDRINO VERTICALE
GB
D
F
E
P

MANDRINO ORIZZONTALE
GB
D
F
E
P

SALITA QM
GB
D
F
E
P

DISCESA QM
GB
D
F
E
P

OUT3

CJ1W–OC201

+24 Vac.	102.04	+24 Vac.	102.05	+24 Vac.	102.06	+24 Vac.	102.07	NC	NC
A4	B4	A5	B5	A6	B6	A7	B7	A8	B8

3D 138 3D 3B 142 3B 142B

43.9C 3D → 3D 47.0C

17.9C 3B → 3B 59.0A

KM42B 45.6E 142A

KM42A 45.5E 142C

138

KM38 KM42A KM42B

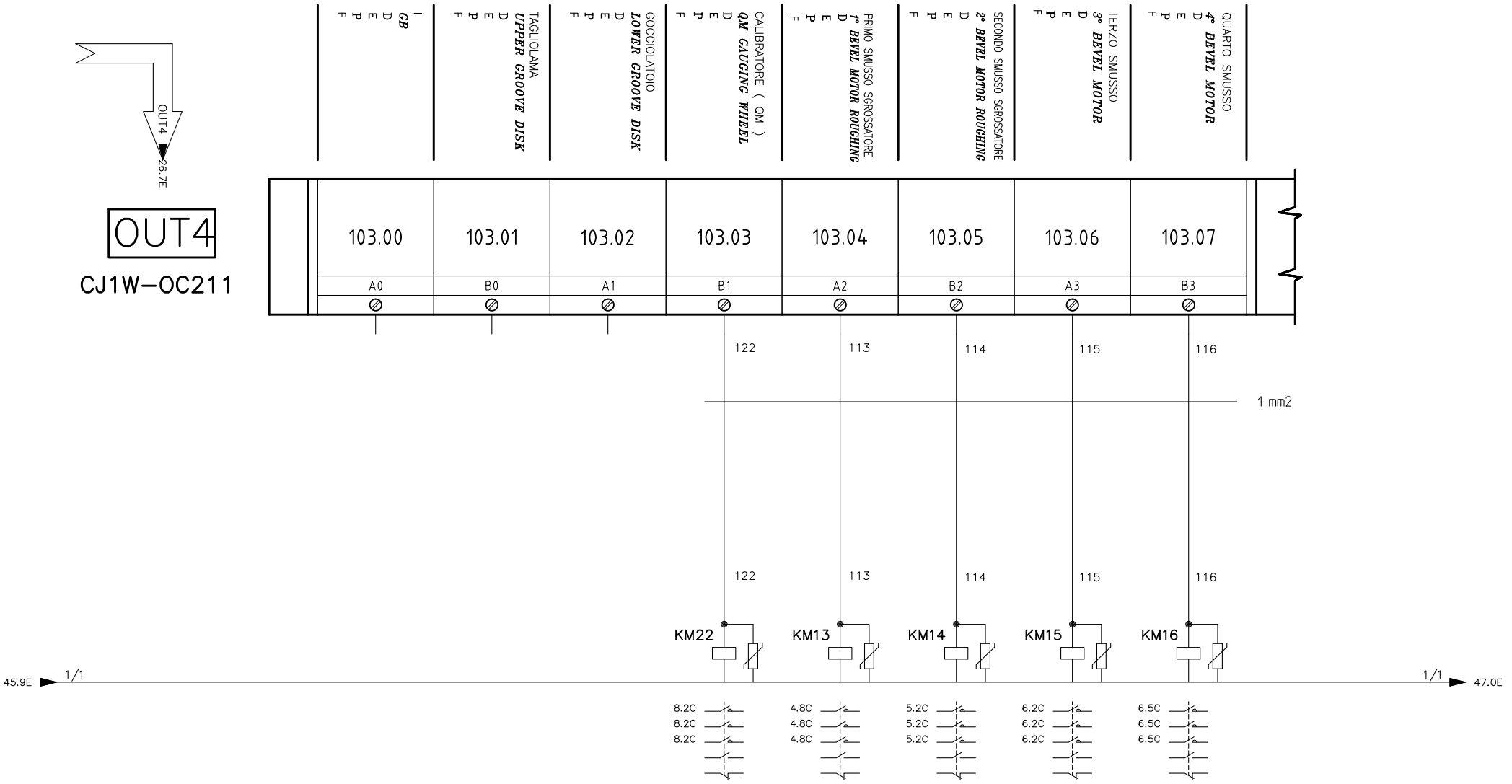
43.9E 1/1 → 1/1 46.0E

7.7C 7.7C 7.7C

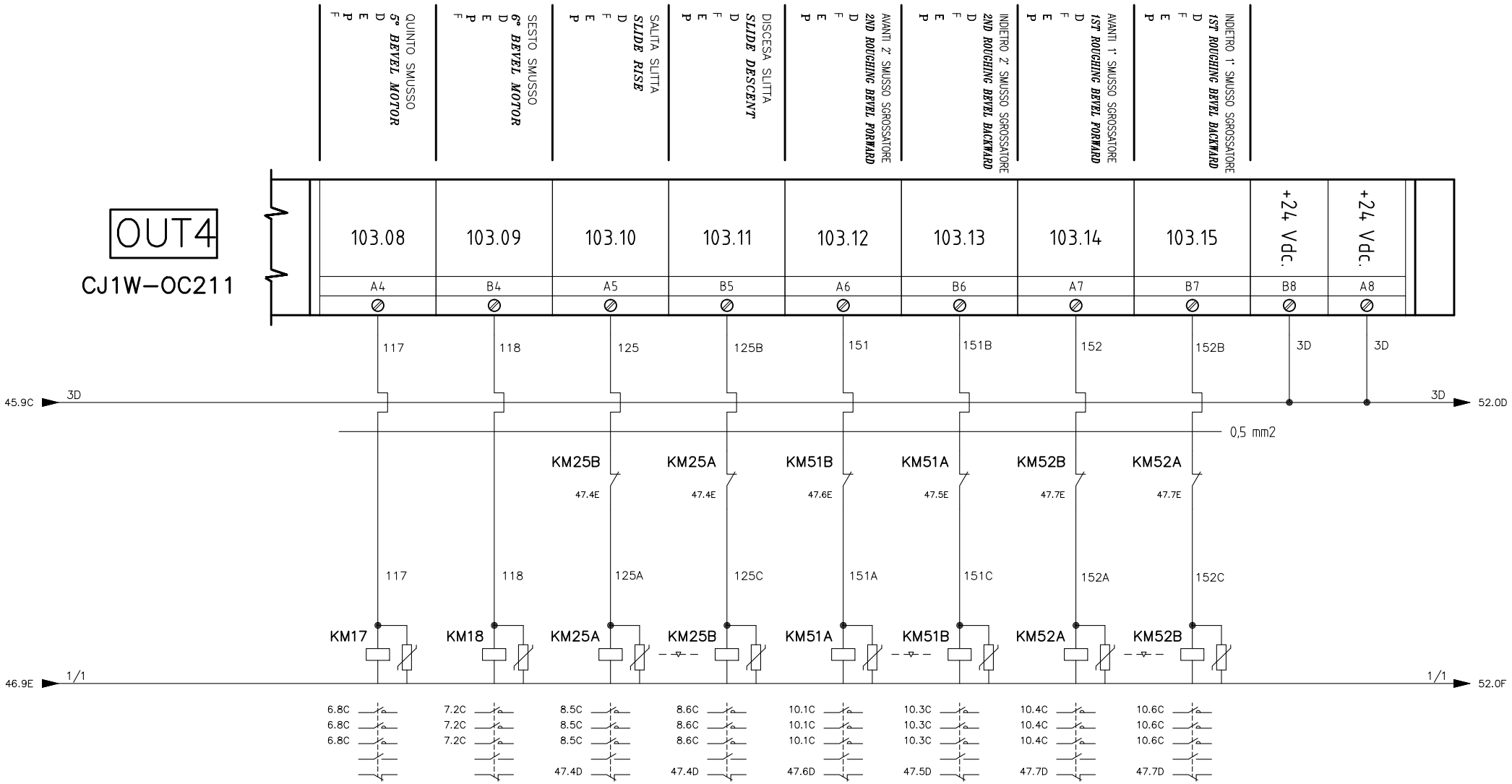
9.4C 9.4C 9.4C 45.6D

9.5C 9.5C 9.5C 45.5D

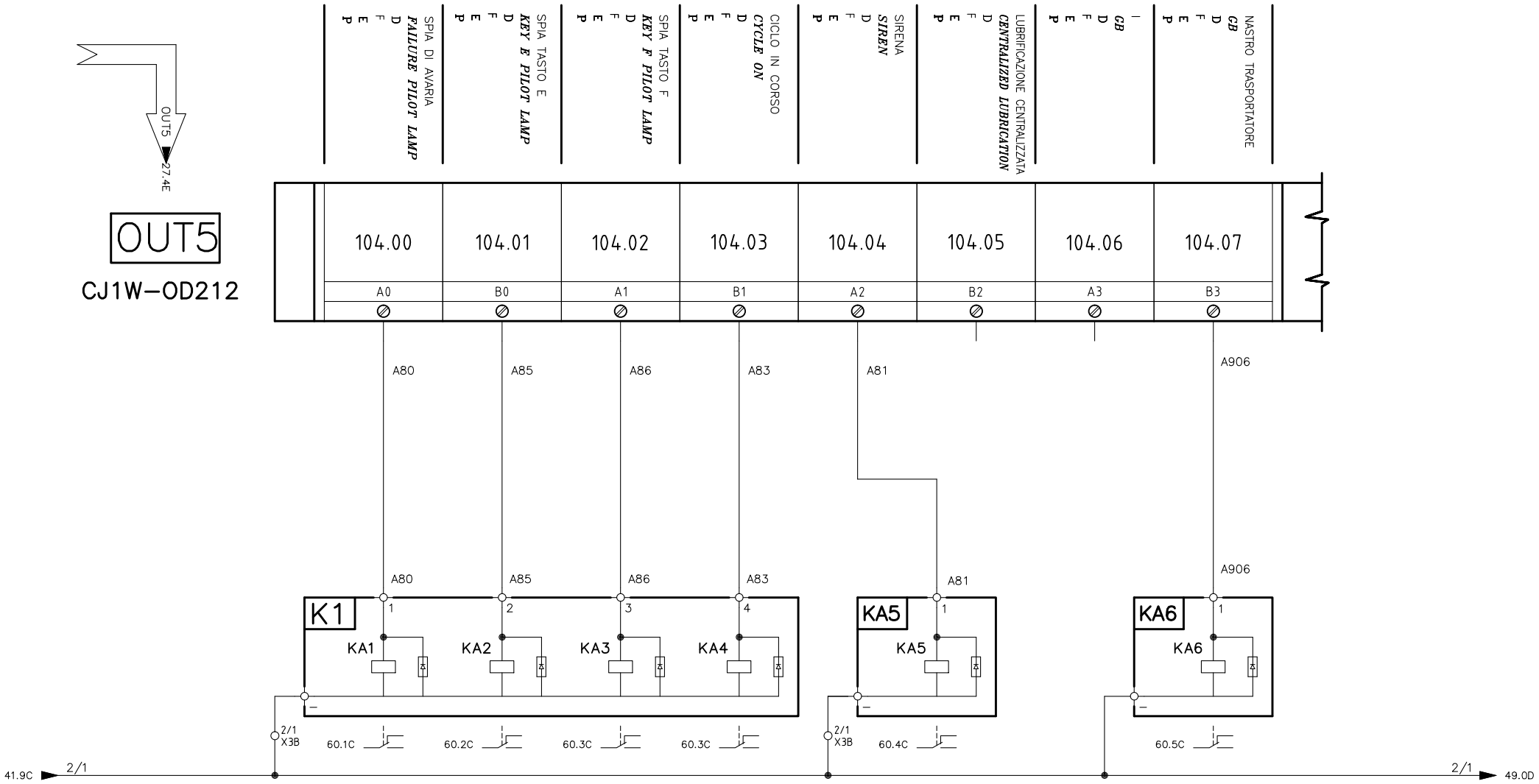
COMANDULLI COSTRUZIONI MECCANICHE	DATA	23/01/2019	Comandulli Costruzioni Meccaniche S.r.l. SEDE: Via Medaglie d'Argento, 20 Z.I. 26012 CASTELLEONE – (Cremona) ITALY	MATRICOLA: 02519	*LUCIDACOSTE A NASTRO Mod.: OMEGA 60 PENCIL* *BELT EDGE POLISHING MACHINE Mod.: OMEGA 60 PENCIL*	– 02519 –	=
	DISEGN.	MORO PAOLO		COMMESSA: 791J	USCITE PLC - OUT3 - *PLC OUTPUT - OUT3 -*		+
	VISTO	MNM				Il presente disegno è di proprietà della ditta Comandulli S.r.l. Ne è vietata la riproduzione e la diffusione non autorizzata	FG. 45
	APPR.	MNM	SOST. IL : SOST. DA :	FILE : OMEGA10004–UL			F.S. 46



COMANDULLI COSTRUZIONI MECCANICHE	DATA	23/01/2019	Comandulli Costruzioni Meccaniche S.r.l. SEDE: Via Medaglie d'Argento, 20 Z.I. 26012 CASTELLEONE – (Cremona) ITALY	MATRICOLA: 02519	LUCIDACOSTE A NASTRO Mod.: OMEGA 60 PENCIL BELT EDGE POLISHING MACHINE Mod.: OMEGA 60 PENCIL	– 02519 –	=
	DISEGN.	MORO PAOLO		COMMESSA: 791J	USCITE PLC - OUT4 - PLC OUTPUT - OUT4 -		+
	VISTO	MNM				Il presente disegno è di proprietà della ditta Comandulli S.r.l. Ne è vietata la riproduzione e la diffusione non autorizzata	FG. 46
	APPR.	MNM	SOST. IL : SOST. DA :	FILE : OMEGA10004–UL			F.S. 47



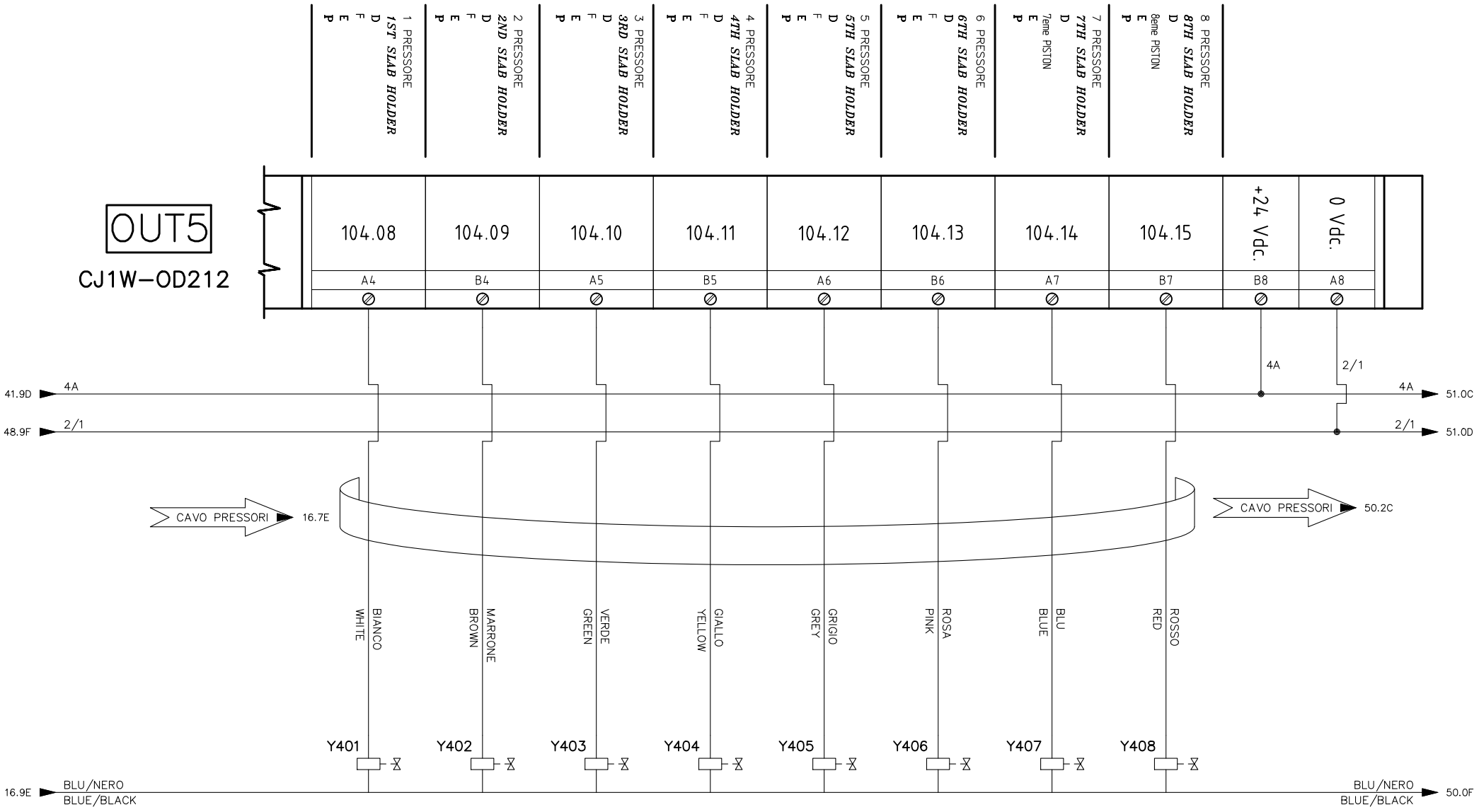
COMANDULLI COSTRUZIONI MECCANICHE	DATA	23/01/2019	Comandulli Costruzioni Meccaniche S.r.l. SEDE: Via Medaglie d'Argento, 20 Z.I. 26012 CASTELLEONE – (Cremona) ITALY	MATRICOLA: 02519	LUCIDACOSTE A NASTRO Mod.: OMEGA 60 PENCIL BELT EDGE POLISHING MACHINE Mod.: OMEGA 60 PENCIL	– 02519 –	=
	DISEGN.	MORO PAOLO		COMMESSA: 791J	USCITE PLC - OUT4 - PLC OUTPUT - OUT4 -		+
	VISTO	MNM				Il presente disegno è di proprietà della ditta Comandulli S.r.l. Ne è vietata la riproduzione e la diffusione non autorizzata	FG. 47
	APPR.	MNM	SOST. IL : SOST. DA :	FILE : OMEGA10004-UL			F.S. 48



COMANDULLI COSTRUZIONI MECCANICHE	DATA	23/01/2019	Comandulli Costruzioni Meccaniche S.r.l. SEDE: Via Medaglie d'Argento, 20 Z.I. 26012 CASTELLEONE – (Cremona) ITALY	MATRICOLA:	02519	LUCIDACOSTE A NASTRO Mod.: OMEGA 60 PENCIL BELT EDGE POLISHING MACHINE Mod.: OMEGA 60 PENCIL	– 02519 –
	DISEGN.	MORO PAOLO		COMMESSA:	791J	USCITE PLC - OUT5 - PLC OUTPUT - OUT5 -	
	VISTO	MNM					
	APPR.	MNM	SOST. IL :	SOST. DA :	FILE : OMEGA10004–UL		

Il presente disegno è di proprietà della ditta Comandulli S.r.l. Ne è vietata la riproduzione e la diffusione non autorizzata

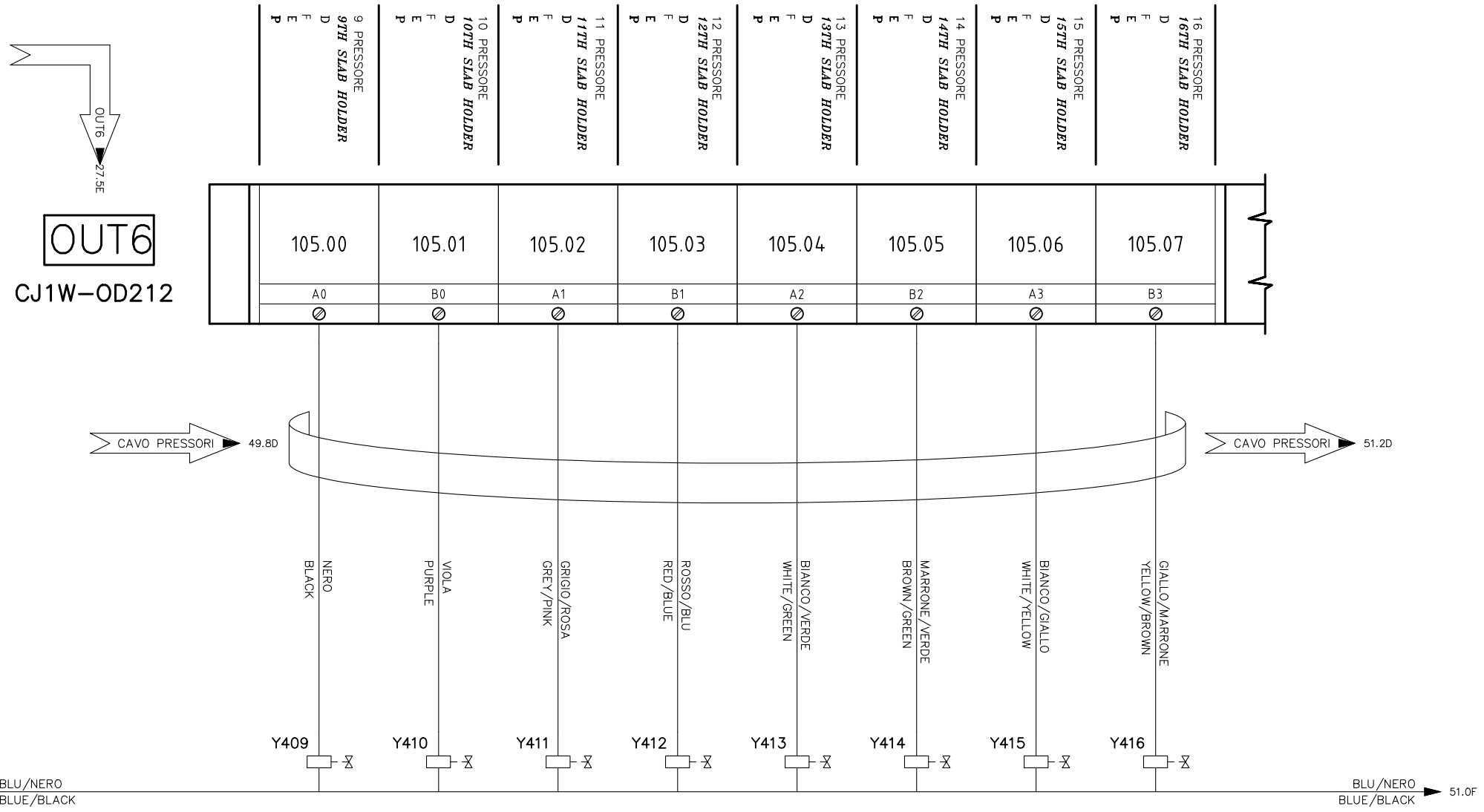
FG. 48
F.S. 49



COMANDULLI COSTRUZIONI MECCANICHE	DATA	23/01/2019	Comandulli Costruzioni Meccaniche S.r.l. SEDE: Via Medaglie d'Argento, 20 Z.I. 26012 CASTELLEONE – (Cremona) ITALY	MATRICOLA:	02519	LUCIDACOSTE A NASTRO Mod.: OMEGA 60 PENCIL BELT EDGE POLISHING MACHINE Mod.: OMEGA 60 PENCIL	– 02519 –
	DISEGN.	MORO PAOLO		COMMESSA:	791J	USCITE PLC - OUT5 - PLC OUTPUT - OUT5 -	
	VISTO	MNM					
	APPR.	MNM	SOST. IL :	SOST. DA :	FILE : OMEGA10004-UL		

Il presente disegno è di proprietà della ditta Comandulli S.r.l. Ne è vietata la riproduzione e la diffusione non autorizzata

FG. 49
F.S. 50



COMANDULLI
COSTRUZIONI MECCANICHE

DATA	23/01/2019
DISEGN.	MORO PAOLO
VISTO	MNM
APPR.	MNM

Comandulli Costruzioni Meccaniche S.r.l.
SEDE: Via Medaglie d'Argento, 20 Z.I.
26012 CASTELLEONE – (Cremona) ITALY

SOST. IL : | SOST. DA :

MATRICOLA:	02519
COMMESSA:	791J
FILE :	OMEGA10004-UL

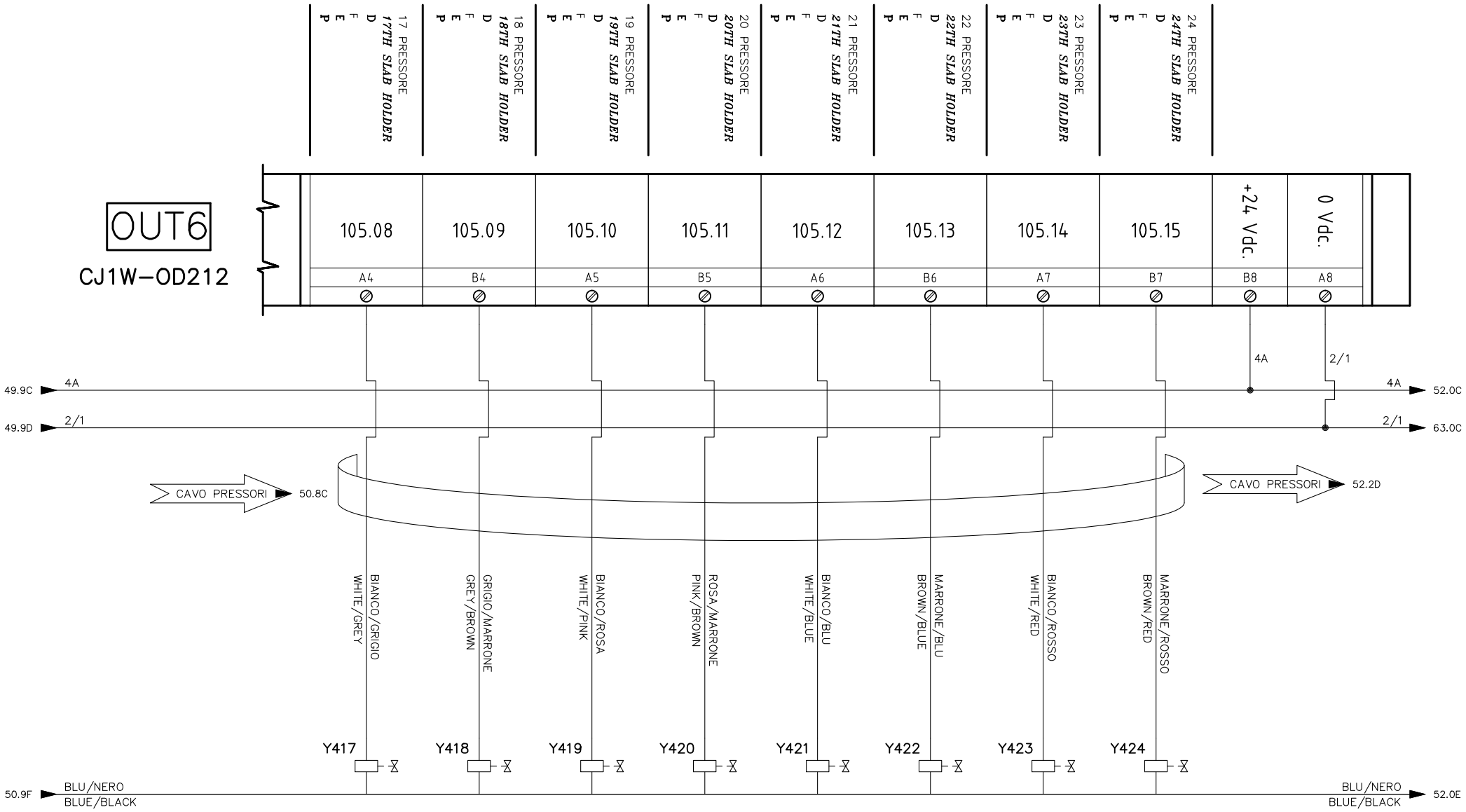
LUCIDACOSTE A NASTRO Mod.: OMEGA 60 PENCIL
BELT EDGE POLISHING MACHINE Mod.: OMEGA 60 PENCIL

USCITE PLC - OUT6 -
PLC OUTPUT - OUT6 -

– 02519 –

Il presente disegno è di proprietà della ditta Comandulli S.r.l. Ne è vietata la riproduzione e la diffusione non autorizzata

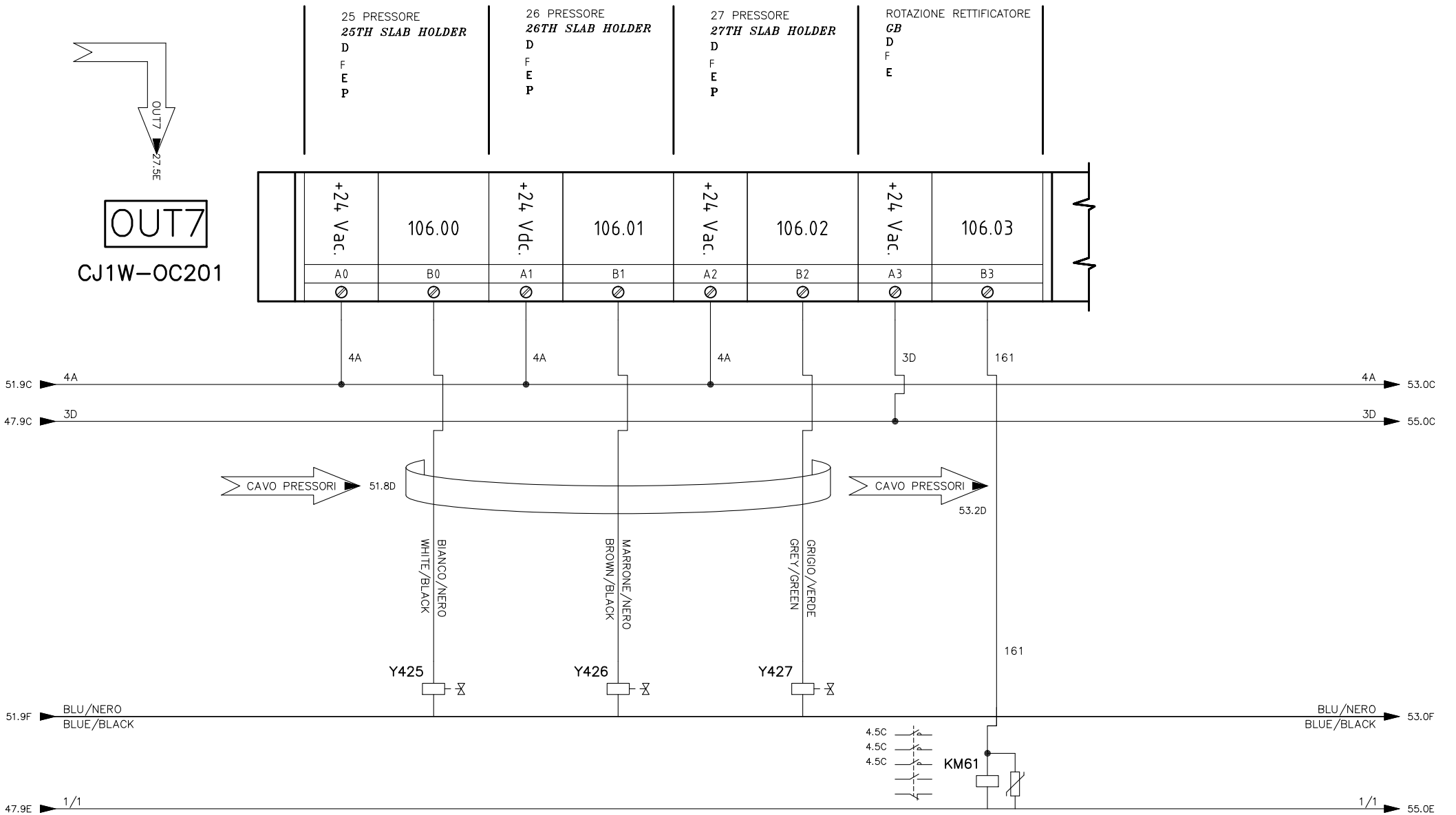
FG. 50
F.S. 51



COMANDULLI COSTRUZIONI MECCANICHE	DATA	23/01/2019	Comandulli Costruzioni Meccaniche S.r.l. SEDE: Via Medaglie d'Argento, 20 Z.I. 26012 CASTELLEONE – (Cremona) ITALY	MATRICOLA:	02519	LUCIDACOSTE A NASTRO Mod.: OMEGA 60 PENCIL BELT EDGE POLISHING MACHINE Mod.: OMEGA 60 PENCIL	– 02519 –
	DISEGN.	MORO PAOLO		COMMESSA:	791J	USCITE PLC - OUT6 - PLC OUTPUT - OUT6 -	
	VISTO	MNM					
	APPR.	MNM	SOST. IL :	SOST. DA :	FILE : OMEGA10004-UL		

Il presente disegno è di proprietà della ditta Comandulli S.r.l. Ne è vietata la riproduzione e la diffusione non autorizzata

FG. 51
F.S. 52



COMANDULLI COSTRUZIONI MECCANICHE	DATA	23/01/2019	Comandulli Costruzioni Meccaniche S.r.l. SEDE: Via Medaglie d'Argento, 20 Z.I. 26012 CASTELLEONE – (Cremona) ITALY	MATRICOLA: 02519	LUCIDACOSTE A NASTRO Mod.: OMEGA 60 PENCIL BELT EDGE POLISHING MACHINE Mod.: OMEGA 60 PENCIL	– 02519 –	=
	DISEGN.	MORO PAOLO		COMMESSA: 791J	USCITE PLC - OUT7 - PLC OUTPUT - OUT7 -		+
	VISTO	MNM				Il presente disegno è di proprietà della ditta Comandulli S.r.l. Ne è vietata la riproduzione e la diffusione non autorizzata	FG. 52
	APPR.	MNM	SOST. IL :	SOST. DA :	FILE : OMEGA10004-UL		F.S. 53

28 PRESSORE
28TH SLAB HOLDER
D
F
E
P

29 PRESSORE
29TH SLAB HOLDER
D
F
E
P

30 PRESSORE
30TH SLAB HOLDER
D
F
E
P

31 PRESSORE
31ST SLAB HOLDER
D
F
E
P

OUT7

CJ1W–OC201

+24 Vac.	106.04	+24 Vac.	106.05	+24 Vac.	106.06	+24 Vac.	106.07	NC	NC
A4	B4	A5	B5	A6	B6	A7	B7	A8	B8

4A

52.9C 4A

1001 X2

4A X2

CAVO PRESSORI 52.6D

YELLOW/GREY GIALLO/GRIGIO

GREY/RED GRIGIO/ROSSO — Segnalazione guasto

GREY/BLACK GRIGIO/NERO — +24 VDC

PINK/BLACK ROSA/NERO — +24 VDC

PINK/RED ROSA/ROSSO — Config. PNP/NPN

Y428

52.9E BLU/NERO
BLUE/BLACK

16.9E ROSSO/NERO
RED/BLACK

COMANDULLI
COSTRUZIONI MECCANICHE

DATA	23/01/2019
DISEGN.	MORO PAOLO
VISTO	MNM
APPR.	MNM

Comandulli Costruzioni Meccaniche S.r.l.
SEDE: Via Medaglie d'Argento, 20 Z.I.
26012 CASTELLEONE – (Cremona) ITALY

SOST. IL : SOST. DA :

MATRICOLA:	02519
COMMESSA:	791J
FILE :	OMEGA10004–UL

LUCIDACOSTE A NASTRO Mod.: OMEGA 60 PENCIL
BELT EDGE POLISHING MACHINE Mod.: OMEGA 60 PENCIL

USCITE PLC - OUT7 -
PLC OUTPUT - OUT7 -

– 02519 –

= +

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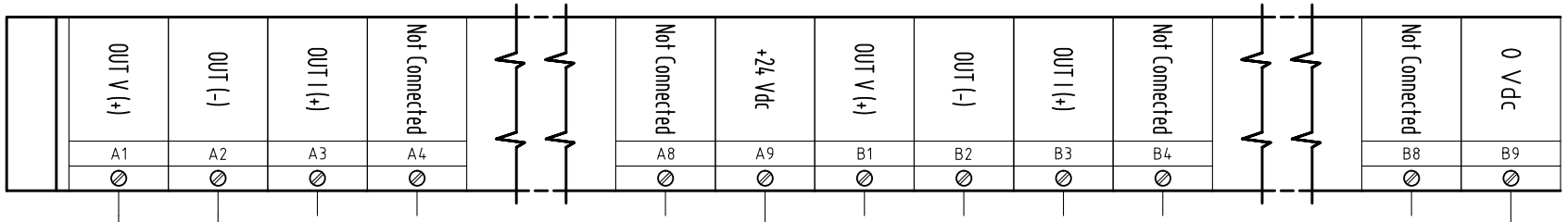
FG. 53
F.S. 54

REGOLAZIONE VELOCITA' MANDRINI LUCIDANTI
GB
D
F
E
P

OUT8 27.6E

OUT8

CJ1W–DA021



610
611
B/3
A/3

61.9D 610
61.9D 611
39.9F A/3
39.9F B/3
B/3 63.0F

COMANDULLI COSTRUZIONI MECCANICHE	DATA	23/01/2019	Comandulli Costruzioni Meccaniche S.r.l. SEDE: Via Medaglie d'Argento, 20 Z.I. 26012 CASTELLEONE – (Cremona) ITALY	MATRICOLA:	02519	*LUCIDACOSTE A NASTRO Mod.: OMEGA 60 PENCIL BELT EDGE POLISHING MACHINE Mod.: OMEGA 60 PENCIL*	– 02519 –
	DISEGN.	MORO PAOLO		COMMESSA:	791J	USCITE PLC - OUT8 - *PLC OUTPUT - OUT8 -*	
	VISTO	MNM					
	APPR.	MNM	SOST. IL :	SOST. DA :	FILE : OMEGA10004–UL		

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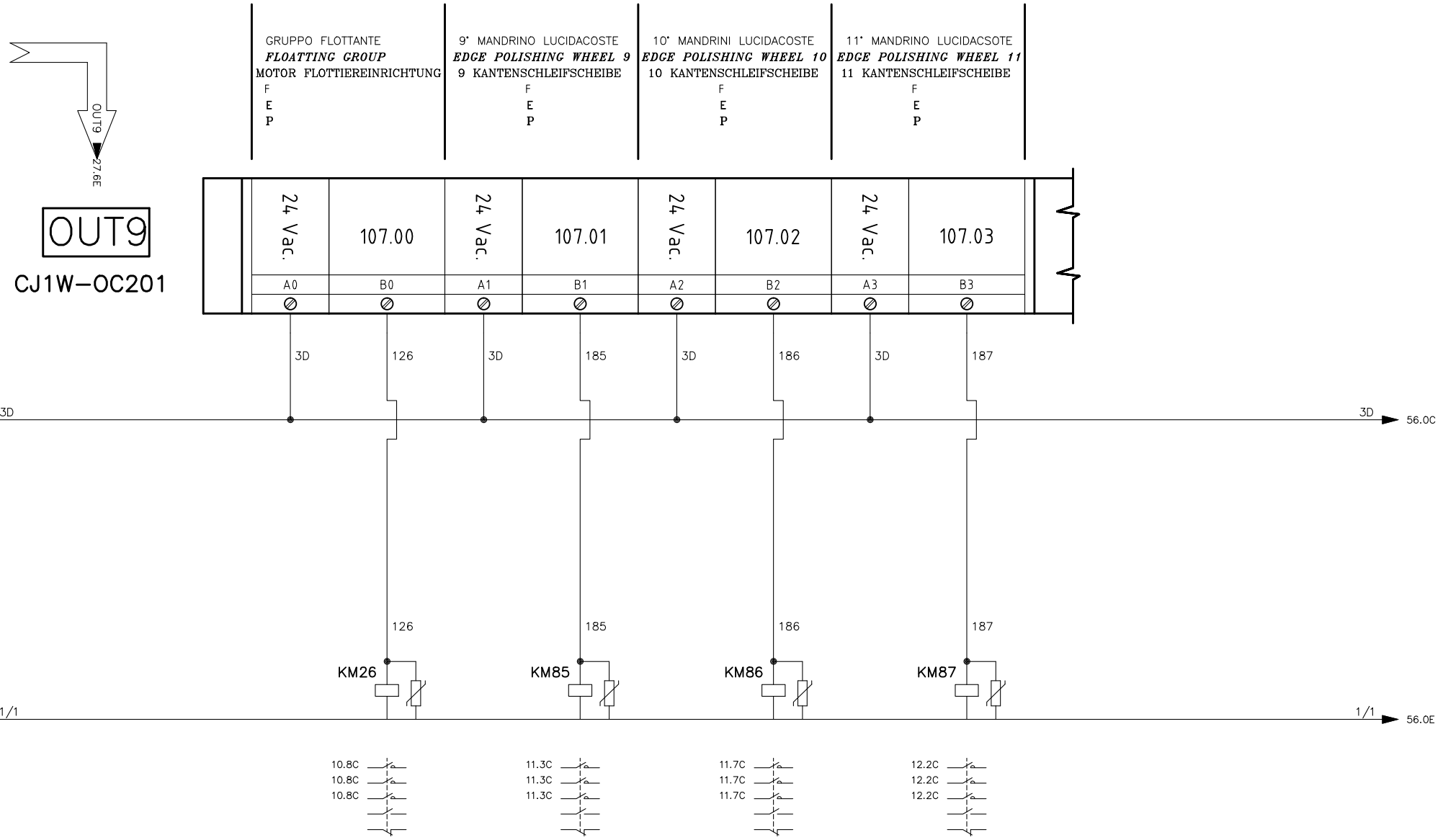
FG. 54
F.S. 55



COMANDULLI COSTRUZIONI MECCANICHE	DATA	23/01/2019	Comandulli Costruzioni Meccaniche S.r.l. SEDE: Via Medaglie d'Argento, 20 Z.I. 26012 CASTELLEONE – (Cremona) ITALY	MATRICOLA:	02519	LUCIDACOSTE A NASTRO Mod.: OMEGA 60 PENCIL BELT EDGE POLISHING MACHINE Mod.: OMEGA 60 PENCIL	– 02519 –
	DISEGN.	MORO PAOLO		COMMESSA:	791J	USCITE PLC - OUT9 - PLC OUTPUT - OUT9 -	
	VISTO	MNM					
	APPR.	MNM	SOST. IL :	SOST. DA :	FILE : OMEGA10004–UL		

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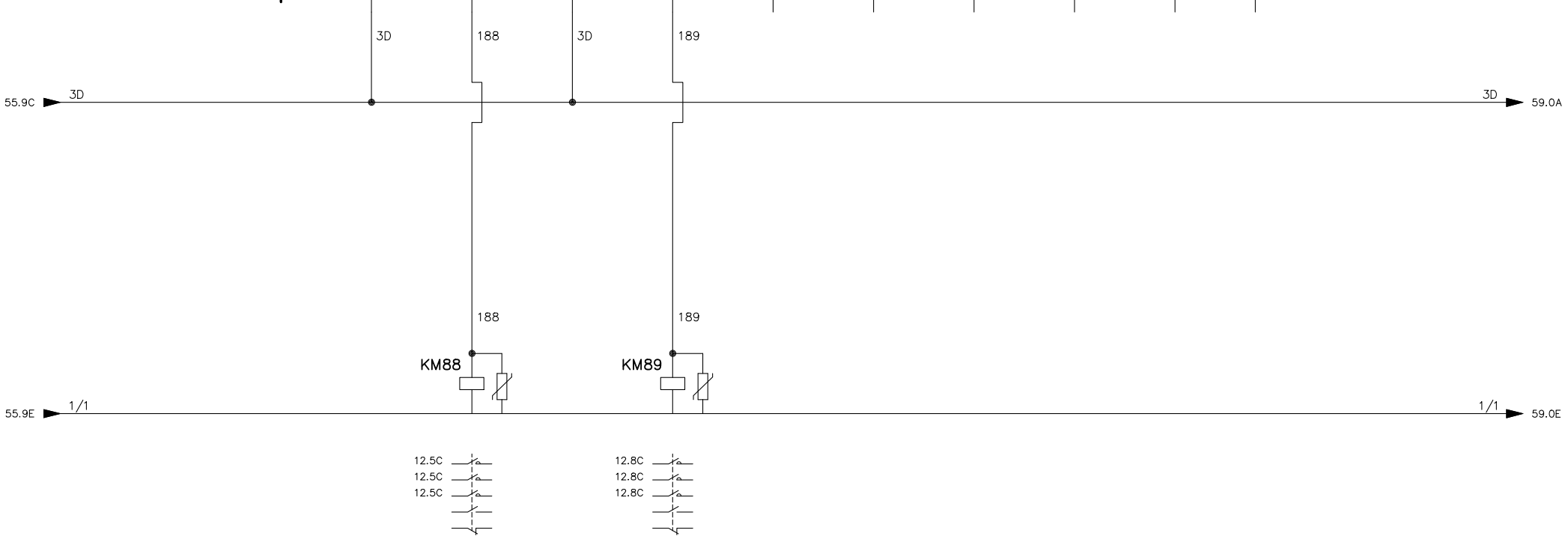
FG. 55
F.S. 56

12° MANDRINO LUCIDACOSTE *EDGE POLISHING WHEEL 12* 12 KANTENSCHLEIFSCHEIBE F E P	13° MANDRINI LUCIDACOSTE *EDGE POLISHING WHEEL 13* 13 KANTENSCHLEIFSCHEIBE F E P	NON USATO *NOT USED* D F E P	NON USATO *NOT USED* D F E P

OUT9

CJ1W–OC201

24 Vac.	107.04	24 Vac.	107.05	COM	107.06	COM	107.07	NC	NC
A4	B4	A5	B5	A6	B6	A7	B7	A8	B8



COMANDULLI COSTRUZIONI MECCANICHE	DATA	23/01/2019	Comandulli Costruzioni Meccaniche S.r.l. SEDE: Via Medaglie d'Argento, 20 Z.I. 26012 CASTELLEONE – (Cremona) ITALY	MATRICOLA:	02519	*LUCIDACOSTE A NASTRO Mod.: OMEGA 60 PENCIL* *BELT EDGE POLISHING MACHINE Mod.: OMEGA 60 PENCIL* USCITE PLC - OUT9 - *PLC OUTPUT - OUT9 -*	– 02519 –
	DISEGN.	MORO PAOLO		COMMESSA:	791J		
	VISTO	MNM					
	APPR.	MNM	SOST. IL : / SOST. DA :	FILE :	OMEGA10004–UL		

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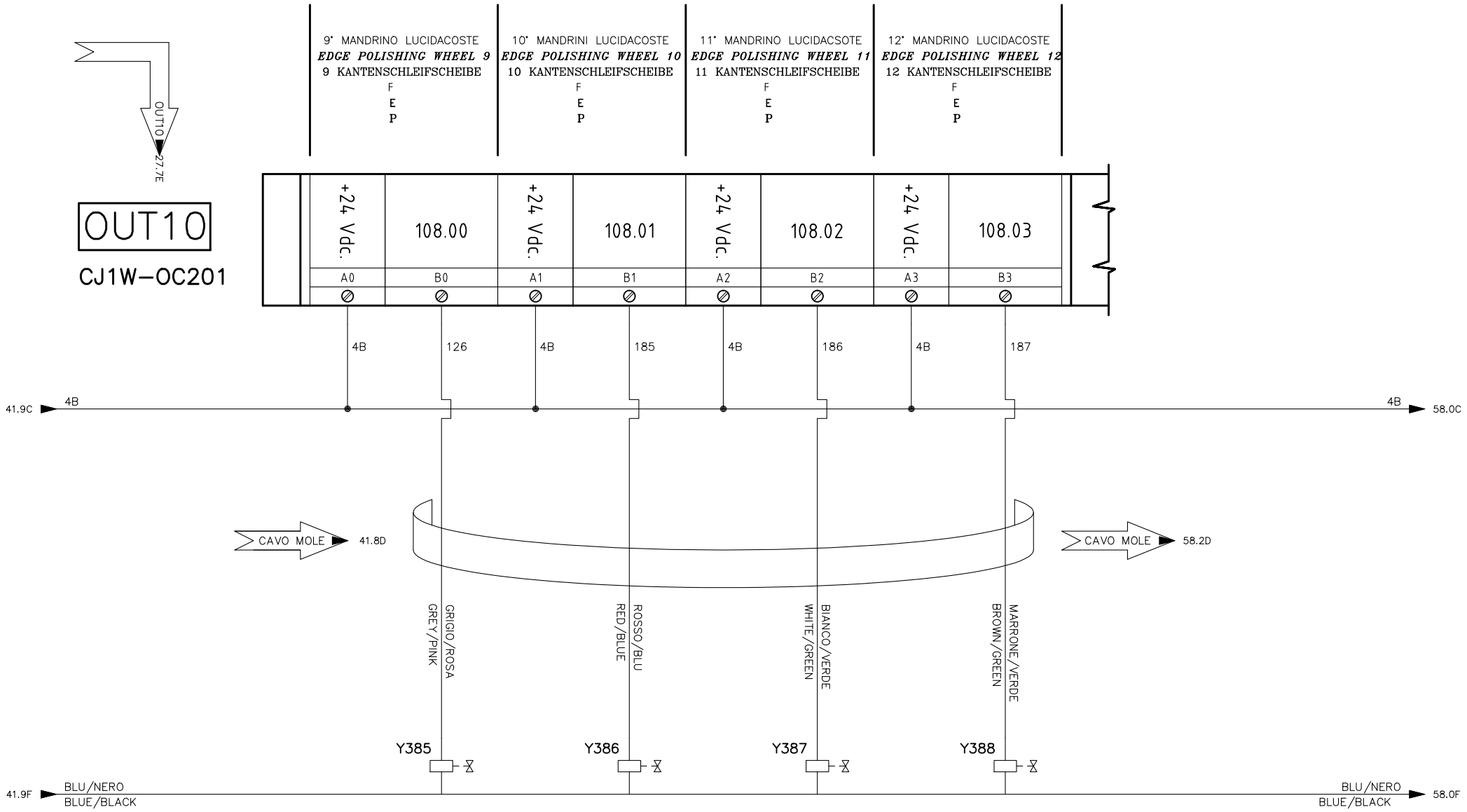
FG. 56
F.S. 57



COMANDULLI COSTRUZIONI MECCANICHE	DATA	23/01/2019	Comandulli Costruzioni Meccaniche S.r.l. SEDE: Via Medaglie d'Argento, 20 Z.I. 26012 CASTELLEONE – (Cremona) ITALY	MATRICOLA:	02519	LUCIDACOSTE A NASTRO Mod.: OMEGA 60 PENCIL BELT EDGE POLISHING MACHINE Mod.: OMEGA 60 PENCIL	– 02519 –
	DISEGN.	MORO PAOLO		COMMESSA:	791J	USCITE PLC - OUT10 - PLC OUTPUT - OUT10 -	
	VISTO	MNM					
	APPR.	MNM	SOST. IL :	SOST. DA :	FILE : OMEGA10004–UL		

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FG. 57
F.S. 58

13° MANDRINI LUCIDACOSTE
EDGE POLISHING WHEEL 13
13 KANTENSCHLEIFSCHEIBE
F
E
P

OUT10

CJ1W–OC201

	24 Vac.	108.04	24 Vac.	108.05	COM	108.06	COM	108.07	NC	NC
	A4	B4	A5	B5	A6	B6	A7	B7	A8	B8

4B 188 4B 4B 4B

57.9C 4B

CAVO MOLE 57.7D

BIANCO/GRIGIO
WHITE/GREY

Y389

57.9F BLU/NERO
BLUE/BLACK

16.9D ROSSO/NERO
RED/BLACK

COMANDULLI COSTRUZIONI MECCANICHE	DATA 23/01/2019	Comandulli Costruzioni Meccaniche S.r.l. SEDE: Via Medaglie d'Argento, 20 Z.I. 26012 CASTELLEONE – (Cremona) ITALY	MATRICOLA: 02519	*LUCIDACOSTE A NASTRO Mod.: OMEGA 60 PENCIL BELT EDGE POLISHING MACHINE Mod.: OMEGA 60 PENCIL*	– 02519 –
	DISEGN. MORO PAOLO		COMMESSA: 791J	USCITE PLC - OUT10 - *PLC OUTPUT - OUT10 -*	
	VISTO MNM				
	APPR. MNM	SOST. IL : SOST. DA :	FILE : OMEGA10004–UL		

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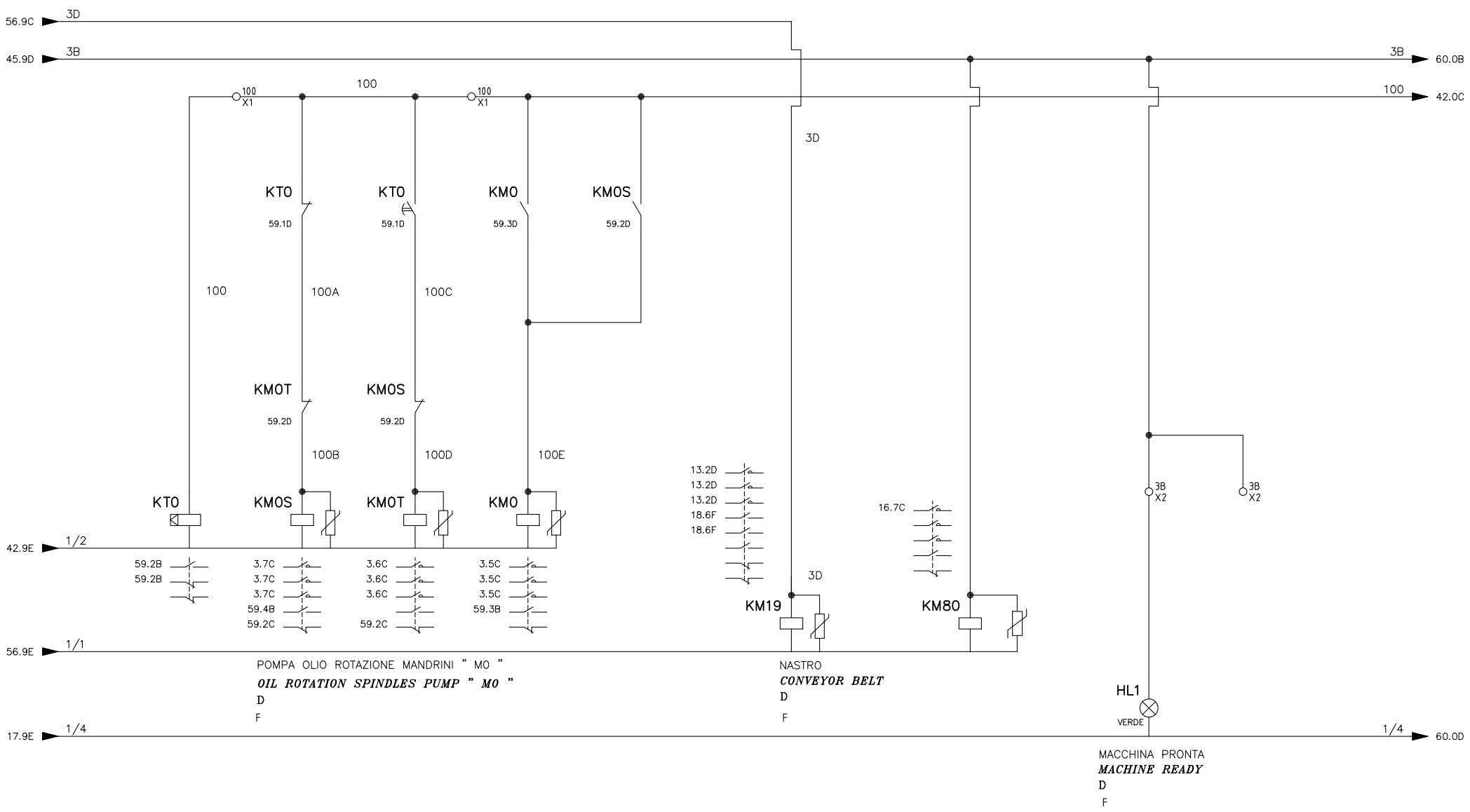
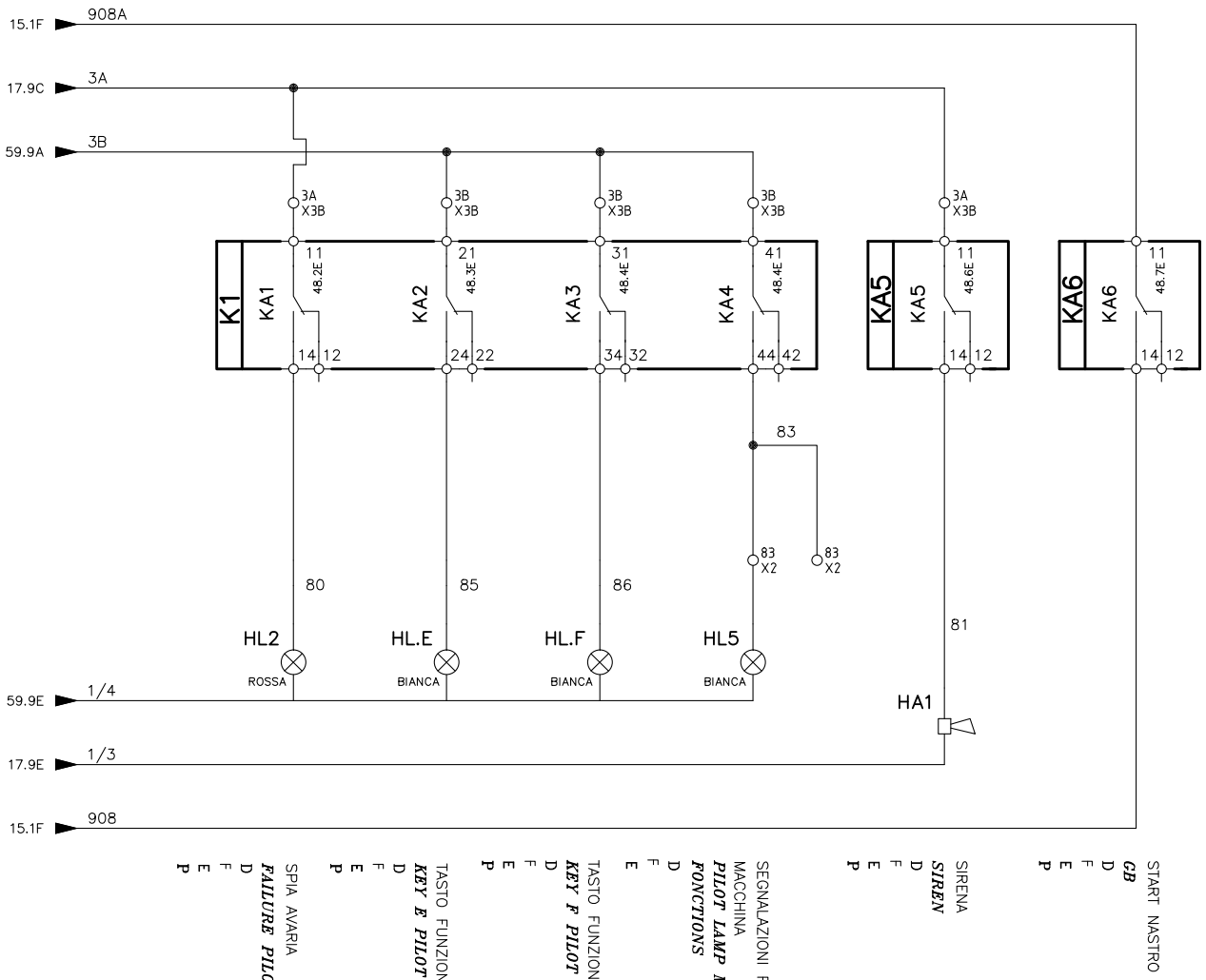
FG. 58
F.S. 59



COMANDULLI COSTRUZIONI MECCANICHE	DATA	23/01/2019	Comandulli Costruzioni Meccaniche S.r.l. SEDE: Via Medaglie d'Argento, 20 Z.I. 26012 CASTELLEONE – (Cremona) ITALY	MATRICOLA: 02519	LUCIDACOSTE A NASTRO Mod.: OMEGA 60 PENCIL BELT EDGE POLISHING MACHINE Mod.: OMEGA 60 PENCIL	– 02519 –	=
	DISEGN.	MORO PAOLO		COMMESSA: 791J	INTERFACCIA OUTPUT OUTPUT INTERFACE		+
	VISTO	MNM				Il presente disegno è di proprietà della ditta Comandulli S.r.l. Ne è vietata la riproduzione e la diffusione non autorizzata	FG. 59
	APPR.	MNM	SOST. IL :	SOST. DA : FILE : OMEGA10004–UL			F.S. 60



COMANDULLI COSTRUZIONI MECCANICHE	DATA	23/01/2019	Comandulli Costruzioni Meccaniche S.r.l. SEDE: Via Medaglie d'Argento, 20 Z.I. 26012 CASTELLEONE – (Cremona) ITALY	MATRICOLA:	02519	LUCIDACOSTE A NASTRO Mod.: OMEGA 60 PENCIL BELT EDGE POLISHING MACHINE Mod.: OMEGA 60 PENCIL	– 02519 –
	DISEGN.	MORO PAOLO		COMMESSA:	791J	INTERFACCIA OUTPUT OUTPUT INTERFACE	
	VISTO	MNM					
	APPR.	MNM	SOST. IL :	SOST. DA :	FILE : OMEGA10004–UL		

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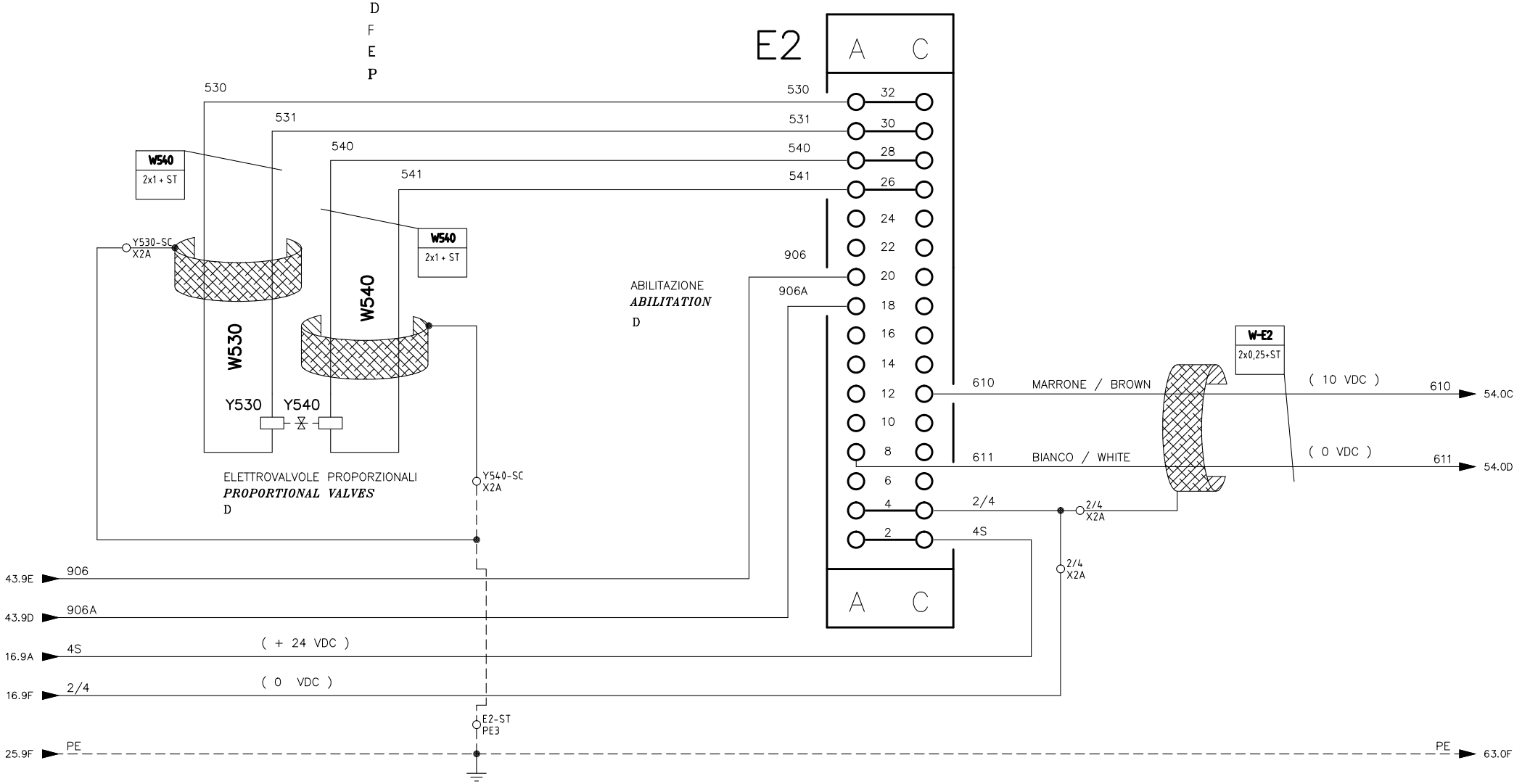
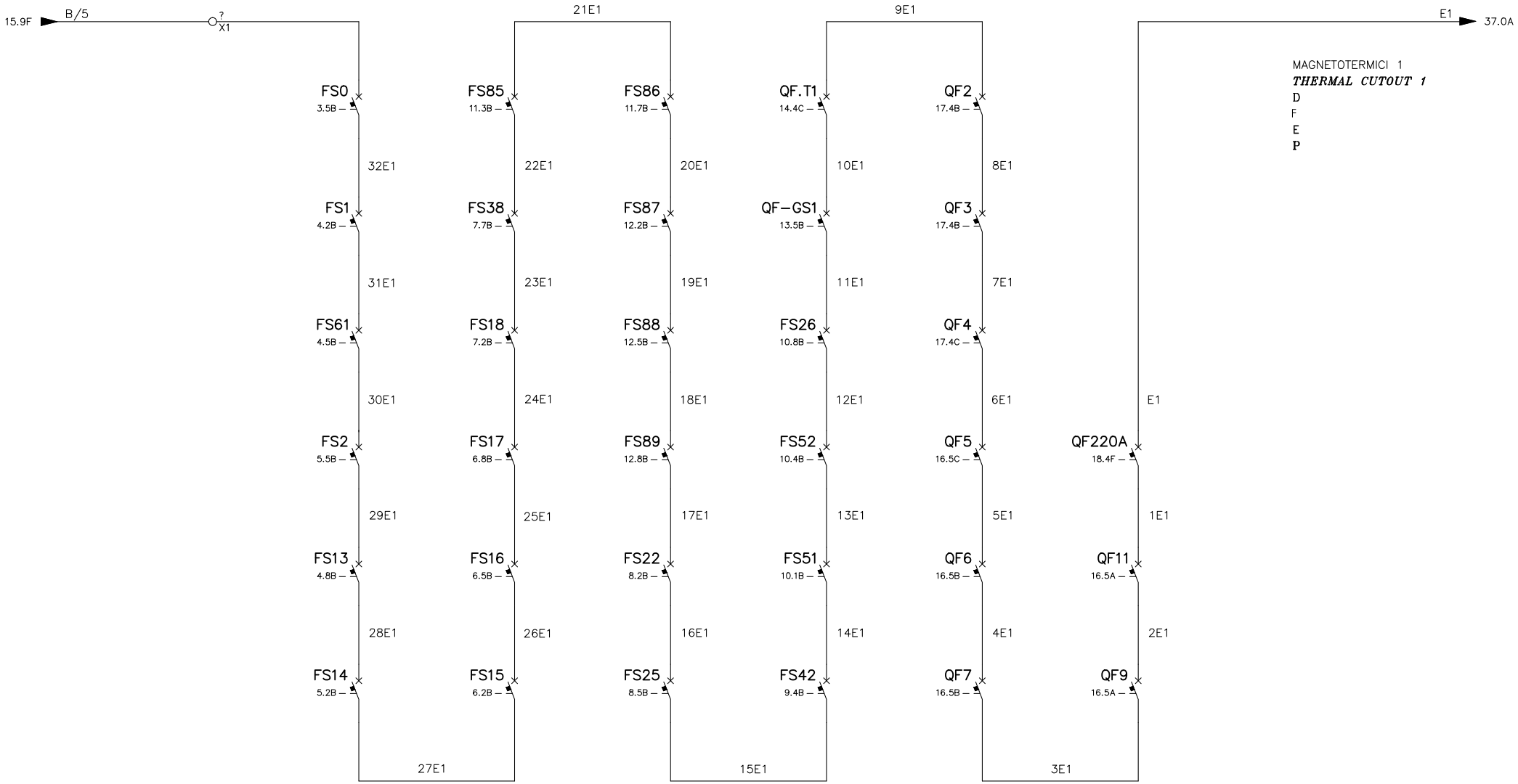
FG. 60
F.S. 61

CONTROLLO OSCILLAZIONE MANDRINI LUCIDANTI
POLISHING SPINDLE OSCILLATION CHECK
D
F
E
P

ATOS
E-ME-AC-05F/RR



COMANDULLI COSTRUZIONI MECCANICHE	DATA	23/01/2019	Comandulli Costruzioni Meccaniche S.r.l. SEDE: Via Medaglie d'Argento, 20 Z.I. 26012 CASTELLEONE – (Cremona) ITALY	MATRICOLA: 02519	*LUCIDACOSTE A NASTRO Mod.: OMEGA 60 PENCIL* *BELT EDGE POLISHING MACHINE Mod.: OMEGA 60 PENCIL*	– 02519 –	=
	DISEGN.	MORO PAOLO		COMMESSA: 791J	VALVOLA ATOS *ATOS VALVE*		+
	VISTO	MNM				Il presente disegno è di proprietà della ditta Comandulli S.r.l. Ne è vietata la riproduzione e la diffusione non autorizzata	FG. 61
	APPR.	MNM	SOST. IL :	SOST. DA :	FILE : OMEGA10004-UL		F.S. 62



COMANDULLI COSTRUZIONI MECCANICHE	DATA	23/01/2019	Comandulli Costruzioni Meccaniche S.r.l. SEDE: Via Medaglie d'Argento, 20 Z.I. 26012 CASTELLEONE – (Cremona) ITALY	MATRICOLA:	02519	LUCIDACOSTE A NASTRO Mod.: OMEGA 60 PENCIL BELT EDGE POLISHING MACHINE Mod.: OMEGA 60 PENCIL	– 02519 –
	DISEGN.	MORO PAOLO		COMMESSA:	791J	MAGNETOTERMICI MOTORI MOTOR THERMAL SWITCHES	
	VISTO	MNM					
	APPR.	MNM	SOST. IL :	SOST. DA :	FILE : OMEGA10004-UL		

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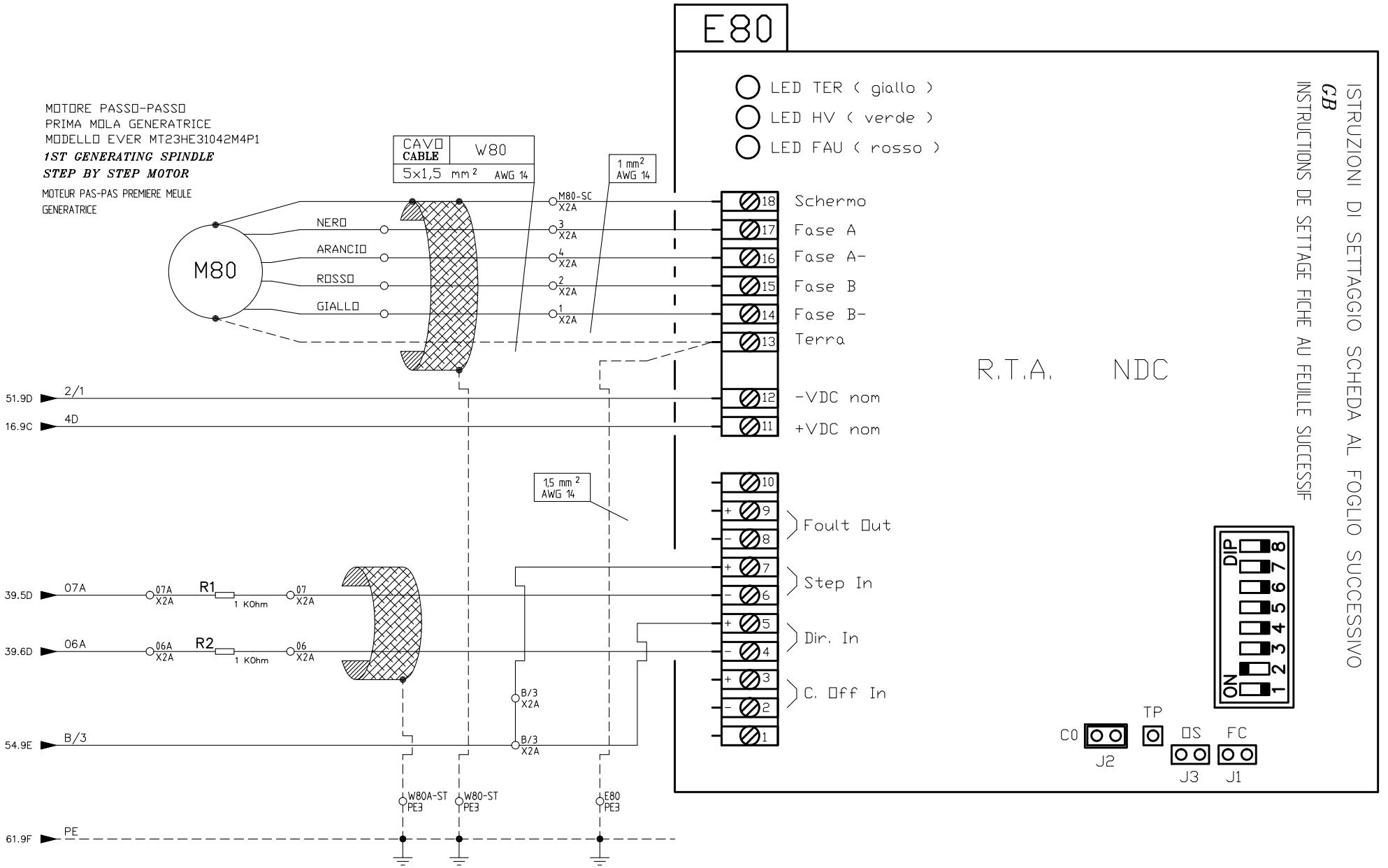
FG. 62
F.S. 63

MOTORE PASSO-PASSO
PRIMA MOLA GENERATRICE
MODELLO EVER MT23HE31042M4P1
1ST GENERATING SPINDLE
STEP BY STEP MOTOR
MOTEUR PAS-PAS PREMIERE MEULE GENERATRICE



COMANDULLI COSTRUZIONI MECCANICHE	DATA	23/01/2019	Comandulli Costruzioni Meccaniche S.r.l. SEDE: Via Medaglie d'Argento, 20 Z.I. 26012 CASTELLEONE – (Cremona) ITALY	MATRICOLA: 02519	*LUCIDACOSTE A NASTRO Mod.: OMEGA 60 PENCIL BELT EDGE POLISHING MACHINE Mod.: OMEGA 60 PENCIL*	– 02519 –	=
	DISEGN.	MORO PAOLO		COMMESSA: 791J	SCHEDA MOTORE PASSO-PASSO *STEP BY STEP MOTOR CARD*		+
	VISTO	MNM				Il presente disegno è di proprietà della ditta Comandulli S.r.l. Ne è vietata la riproduzione e la diffusione non autorizzata	FG. 63
	APPR.	MNM	SOST. IL :	SOST. DA :	FILE : OMEGA10004-UL		F.S. 64

E80

LED HV: ON = azionamento alimentato entro il corretto range di tensione
gb

LED HV: OFF = azionamento non alimentato o alimentato con un valore di tensione fuori dal corretto range
gb

LED FAU: ON = azionamento bloccato da una delle seguenti protezioni
gb

a) termica se LED TER è acceso
gb

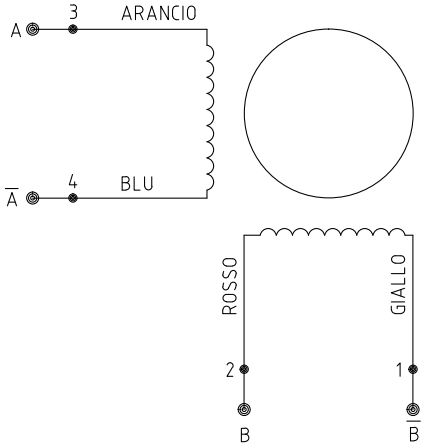
b) Max o min tensione se LED HV è spento
gb

c) Corto circuito o errore nel collegamento motore se il LED HV è acceso
gb

OFF = azionamento attivo purchè sia acceso il LED HV

LED TER: ON = azionamento bloccato dall'intervento protezione termica
gb

OFF = azionamento attivo purchè sia acceso il LED HV
active operation



CONNESSIONE TRA' AZIONAMENTO E MOTORE

CONNECTION BETWEEN CONTROLS AND MOTOR

CORRENTE NOMINALE Inf in Ampere Dip 1, 2 e 3)			
Dip 1	Dip 2	Dip 3	Corrente nom.
ON	ON	ON	1,9
ON	ON	OFF	2,3
ON	OFF	ON	2,7
ON	OFF	OFF	3,1
OFF	ON	ON	3,6
OFF	ON	OFF	4,3
OFF	OFF	ON	5,1
OFF	OFF	OFF	6,0

Impostazione dei dip 1,2 e 3 in funzione della corrente nominale necessaria per la specifica applicazione

SMORZAMENTO (Dip 4)	
Dip 4	
ON	INSERITO
OFF	ESCLUSO

Attenuazione delle vibrazioni e della rumorosità del motore passo passo.

MODO DI FUNZIONAMENTO - PASSI PER GIRO (Dip 6, 7 e 8)			
Dip 7	Dip 8	Dip 6 ON	Dip 6 OFF
ON	ON	4000	3200
ON	OFF	2000	1600
OFF	ON	1000	800
OFF	OFF	500	400

DIP 5: RISERVATO LASCIARE A OFF

Con i Dip Switches 5 e 6 si imposta la frequenza dell'oscillatore, con i Dip Switches 7 e 8 si imposta la risoluzione in passi per giro.

► = impostazioni di default di fabbrica.
▷ = impostazioni ditta COMANDULLI

COMANDULLI COSTRUZIONI MECCANICHE	DATA	23/01/2019	Comandulli Costruzioni Meccaniche S.r.l. SEDE: Via Medaglie d'Argento, 20 Z.I. 26012 CASTELLEONE – (Cremona) ITALY	MATRICOLA:	02519	*LUCIDACOSTE A NASTRO Mod.: OMEGA 60 PENCIL BELT EDGE POLISHING MACHINE Mod.: OMEGA 60 PENCIL*	– 02519 –
	DISEGN.	MORO PAOLO		COMMESSA:	791J	SCHEDA MOTORE PASSO-PASSO *STEP BY STEP MOTOR CARD*	
	VISTO	MNM					
	APPR.	MNM	SOST. IL :	SOST. DA :	FILE : OMEGA10004–UL		

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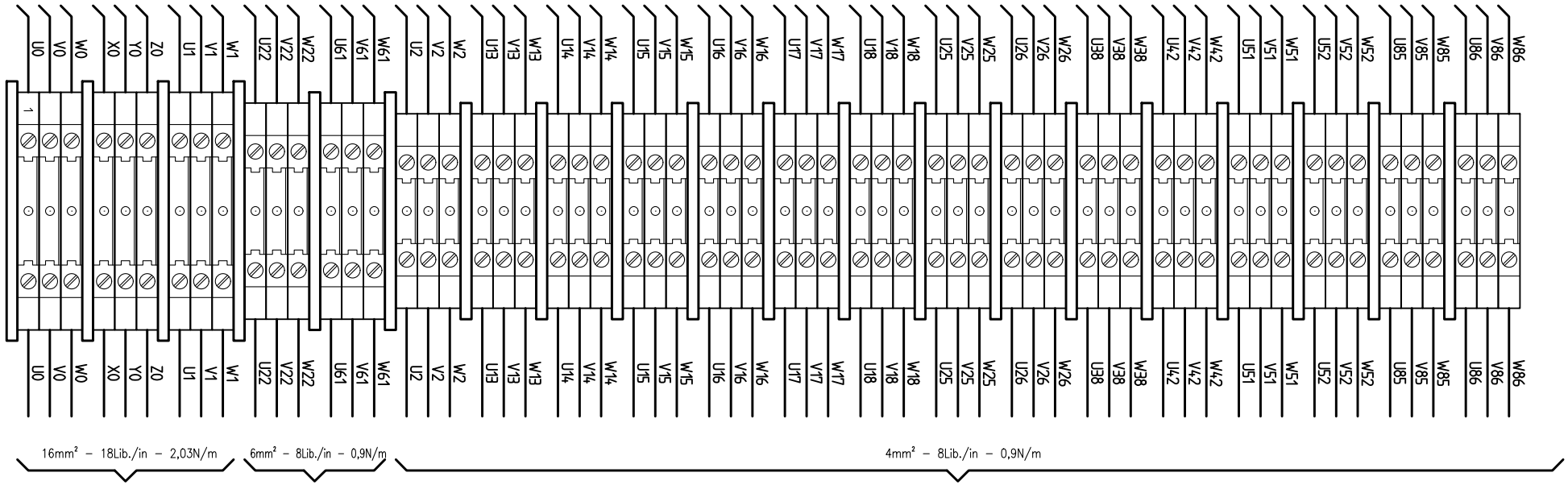
FG. 64
F.S. 65

MODELLO *MODEL*	FORZA DI SERRAGGIO *TIGHTENING POWER*	SEZIONE CAVO *WIRE SIZE*
2,5 mmq 8WA1–011–1DF11	0,7 N/m 6 Lib	2,5 mm² ЯU AWG 22–12 CSA AWG 18–12
4 mmq 8WA1–011–1DG11 8WA1–011–2DG11 8WA1–011–6DG11	0,9 N/m 8 Lib/in	4 mm² ЯU AWG 18–10 CSA AWG 18–10
6 mmq 8WA1–011–1DH11	0,9 N/m 8 Lib/in	6 mm² ЯU AWG 14–8 CSA AWG 16–8
16 mmq 8WA1–204	2,03 N/m 18 Lib/in	16 mm² ЯU AWG 12–4 CSA AWG 14–6

QUADRO "QG"
MORSETTIERA "X1"
BOX "QG"
TERMINAL BOARD "X1"



COMANDULLI COSTRUZIONI MECCANICHE	DATA	23/01/2019	Comandulli Costruzioni Meccaniche S.r.l. SEDE: Via Medaglie d'Argento, 20 Z.I. 26012 CASTELLEONE – (Cremona) ITALY	MATRICOLA:	02519	*LUCIDACOSTE A NASTRO Mod.: OMEGA 60 PENCIL* *BELT EDGE POLISHING MACHINE Mod.: OMEGA 60 PENCIL*	– 02519 –
	DISEGN.	MORO PAOLO		COMMESSA:	791J	MORSETTIERE *TERMINAL BOARD*	
	VISTO	MNM					
	APPR.	MNM	SOST. IL :	SOST. DA :	FILE : OMEGA10004–UL		

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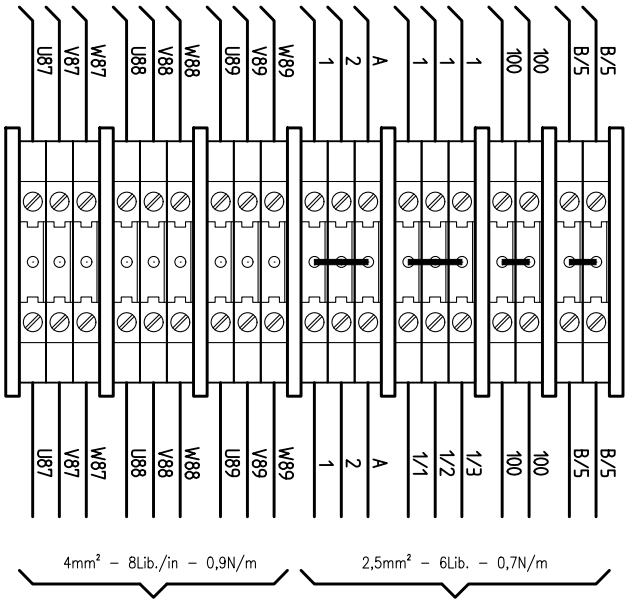
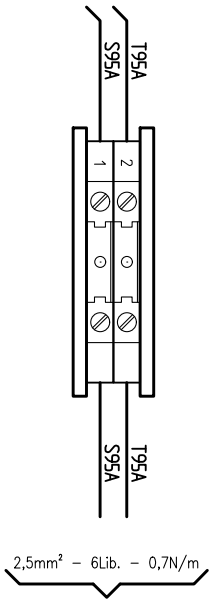
FG. 65
F.S. 66

MODELLO *MODEL*	FORZA DI SERRAGGIO *TIGHTENING POWER*	SEZIONE CAVO *WIRE SIZE*
2,5 mmq 8WA1–011–1DF11	0,7 N/m 6 Lib	2,5 mm² ЯU AWG 22–12 CSA AWG 18–12
4 mmq 8WA1–011–1DG11 8WA1–011–2DG11 8WA1–011–6DG11	0,9 N/m 8 Lib/in	4 mm² ЯU AWG 18–10 CSA AWG 18–10
6 mmq 8WA1–011–1DH11	0,9 N/m 8 Lib/in	6 mm² ЯU AWG 14–8 CSA AWG 16–8
16 mmq 8WA1–204	2,03 N/m 18 Lib/in	16 mm² ЯU AWG 12–4 CSA AWG 14–6

QUADRO "QG"
MORSETTIERA "X1"
BOX "QG"
TERMINAL BOARD "X1"



QUADRO "QG"
MORSETTIERA "X1A"
BOX "QG"
TERMINAL BOARD "X1A"



COMANDULLI COSTRUZIONI MECCANICHE	DATA	23/01/2019	Comandulli Costruzioni Meccaniche S.r.l. SEDE: Via Medaglie d'Argento, 20 Z.I. 26012 CASTELLEONE – (Cremona) ITALY	MATRICOLA:	02519	*LUCIDACOSTE A NASTRO Mod.: OMEGA 60 PENCIL* *BELT EDGE POLISHING MACHINE Mod.: OMEGA 60 PENCIL*	– 02519 –
	DISEGN.	MORO PAOLO		COMMESSA:	791J	MORSETTIERE *TERMINAL BOARD*	
	VISTO	MNM					
	APPR.	MNM	SOST. IL :	SOST. DA :	FILE : OMEGA10004–UL		

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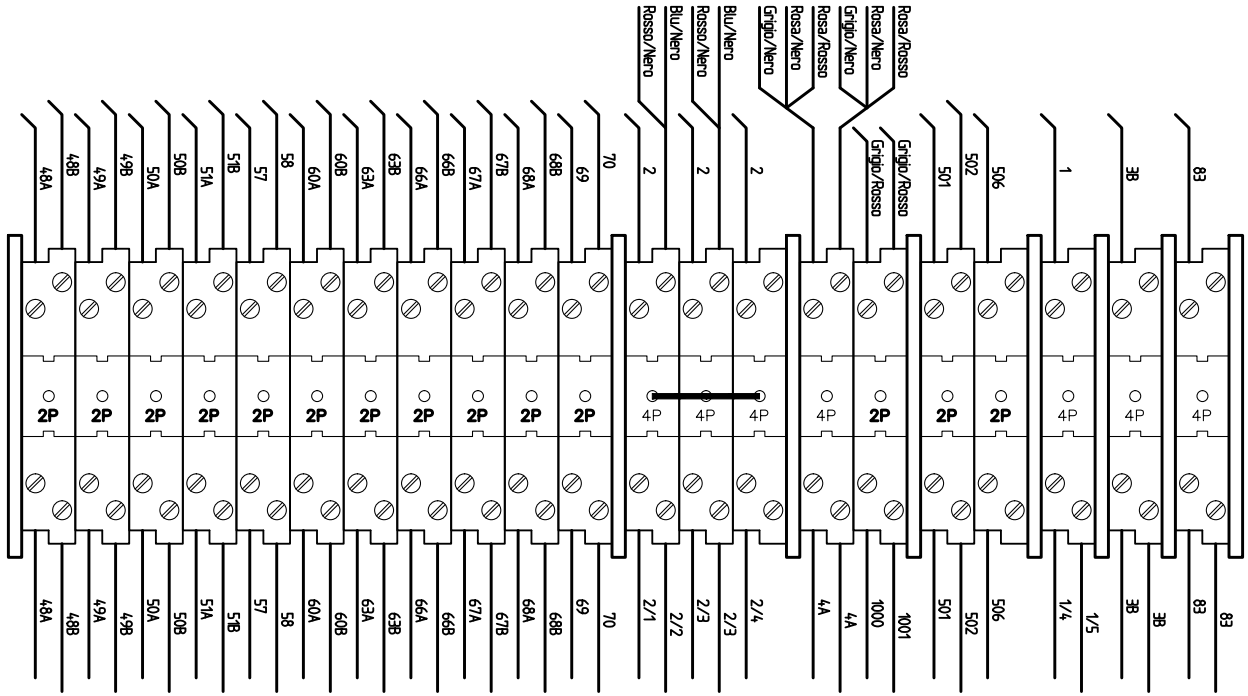
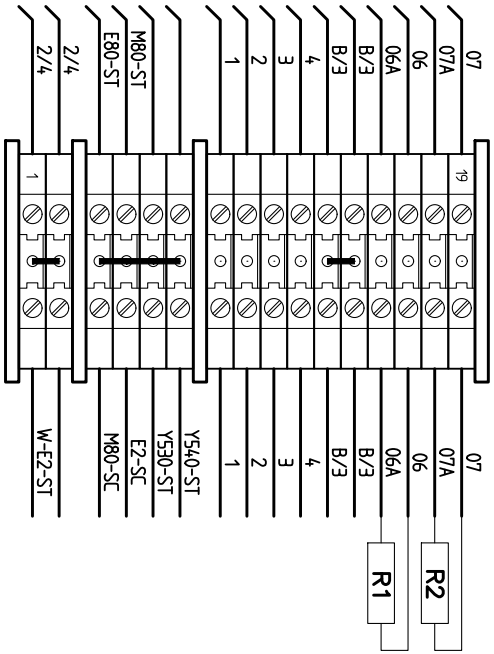
FG. 66
F.S. 67

QUADRO "QG"
MORSETTIERA "X2"
BOX "QG"
TERMINAL BOARD "X2"



COMANDULLI COSTRUZIONI MECCANICHE	DATA	23/01/2019	Comandulli Costruzioni Meccaniche S.r.l. SEDE: Via Medaglie d'Argento, 20 Z.I. 26012 CASTELLEONE – (Cremona) ITALY	MATRICOLA: 02519	*LUCIDACOSTE A NASTRO Mod.: OMEGA 60 PENCIL* *BELT EDGE POLISHING MACHINE Mod.: OMEGA 60 PENCIL*	– 02519 –	=
	DISEGN.	MORO PAOLO		COMMESSA: 791J	MORSETTIERE *TERMINAL BOARD*		+
	VISTO	MNM				Il presente disegno è di proprietà della ditta Comandulli S.r.l. Ne è vietata la riproduzione e la diffusione non autorizzata	FG. 67
	APPR.	MNM	SOST. IL :	SOST. DA :	FILE : OMEGA10004–UL		F.S. 68

QUADRO "QG"
MORSETTIERA "X2A"
BOX "QG"
TERMINAL BOARD "X2A"



QUADRO "QG"
MORSETTIERA "PE"
BOX "QG"
TERMINAL BOARD "PE"

PE3
PE2
PE1
COM
T2
T1
U19
M89
M88
M87
M86
M85
M61
M52
M51
M42
M38
M26
M25
M18
M17
M16
M15
M14
M13
M22
M2
M1
M1
M0
PE

QUADRO "QG"
MORSETTIERA "PE3"
BOX "QG"
TERMINAL BOARD "PE3"

PE3
E2-ST
BQ-ST
SC
PUL2
SC5
PUL3
SQ.S4
SCHERMO/SCREEN
SQ.S5
GS1
GS2
GS5
GS6
E80
PLT
SCHERMO/SCREEN
SCHERMO/SCREEN
SCHERMO/SCREEN
SCHERMO/SCREEN
SCHERMO/SCREEN
SCHERMO/SCREEN
SCHERMO/SCREEN

COMANDULLI
COSTRUZIONI MECCANICHE

DATA	23/01/2019
DISEGN.	MORO PAOLO
VISTO	MNM
APPR.	MNM

Comandulli Costruzioni Meccaniche S.r.l.
SEDE: Via Medaglie d'Argento, 20 Z.I.
26012 CASTELLEONE – (Cremona) ITALY

SOST. IL : | SOST. DA :

MATRICOLA:	02519
COMMESSA:	791J
FILE :	OMEGA10004-UL

LUCIDACOSTE A NASTRO Mod.: OMEGA 60 PENCIL
BELT EDGE POLISHING MACHINE Mod.: OMEGA 60 PENCIL

MORSETTIERE
TERMINAL BOARD

– 02519 –

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+

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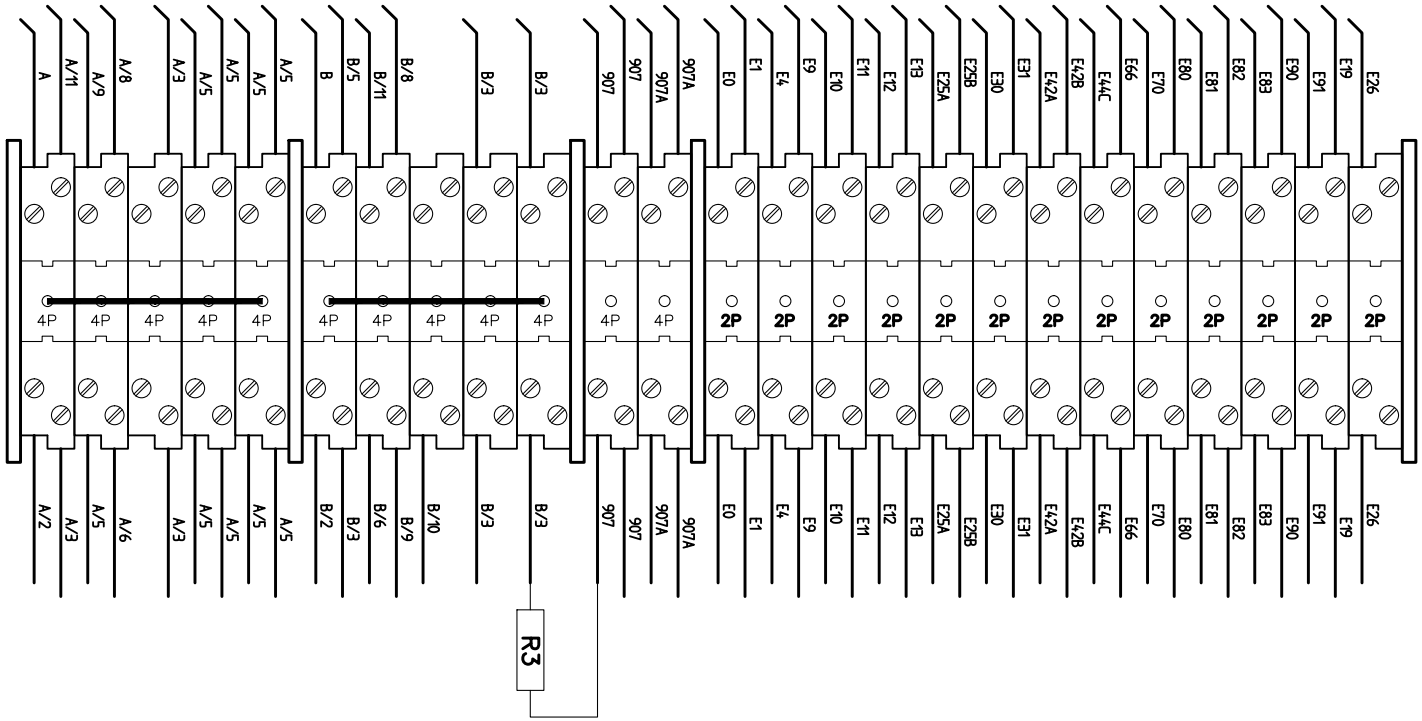
FG. 68
F.S. 69

QUADRO "QG"
MORSETTIERA "X3"
BOX "QG"
TERMINAL BOARD "X3"



COMANDULLI COSTRUZIONI MECCANICHE	DATA	23/01/2019	Comandulli Costruzioni Meccaniche S.r.l. SEDE: Via Medaglie d'Argento, 20 Z.I. 26012 CASTELLEONE – (Cremona) ITALY	MATRICOLA:	02519	LUCIDACOSTE A NASTRO Mod.: OMEGA 60 PENCIL BELT EDGE POLISHING MACHINE Mod.: OMEGA 60 PENCIL	– 02519 –
	DISEGN.	MORO PAOLO		COMMESSA:	791J	MORSETTIERE TERMINAL BOARD	
	VISTO	MNM					
	APPR.	MNM	SOST. IL :	SOST. DA :	FILE : OMEGA10004–UL		

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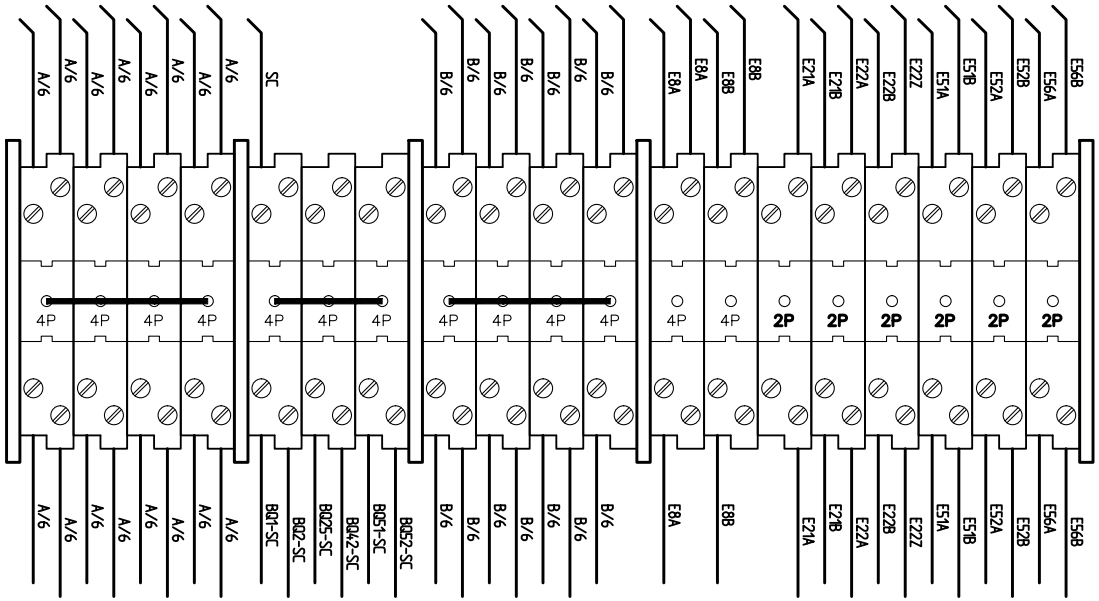
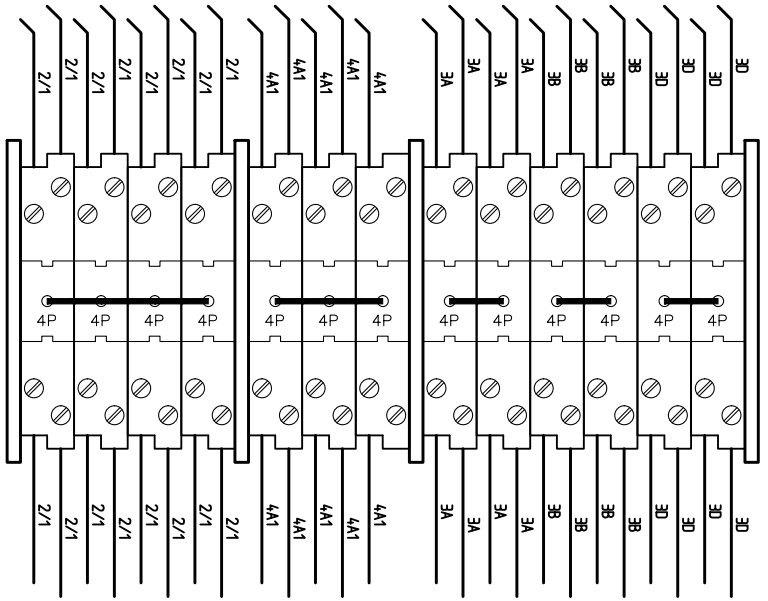
QUADRO "QG"
MORSETTIERA "X3A"

BOX "QG"
TERMINAL BOARD "X3A"



QUADRO "QG"
MORSETTIERA "X3B"

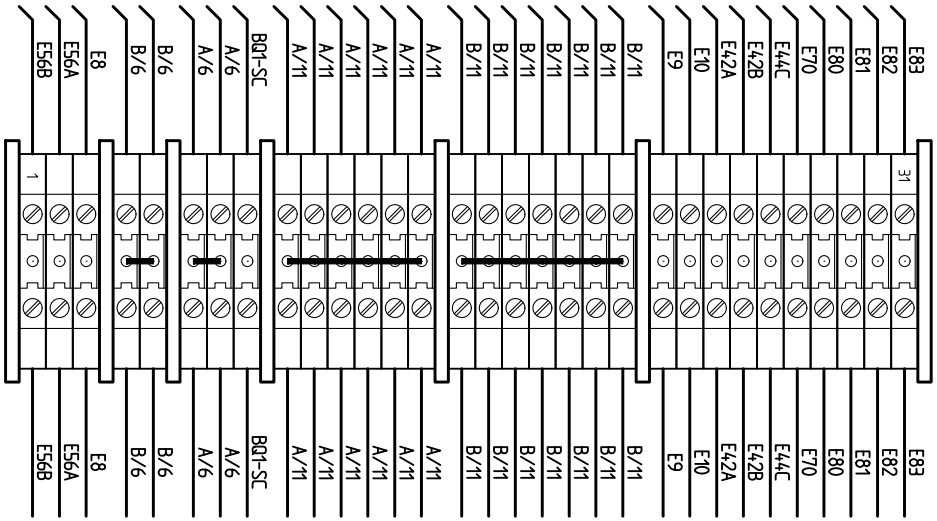
BOX "QG"
TERMINAL BOARD "X3B"



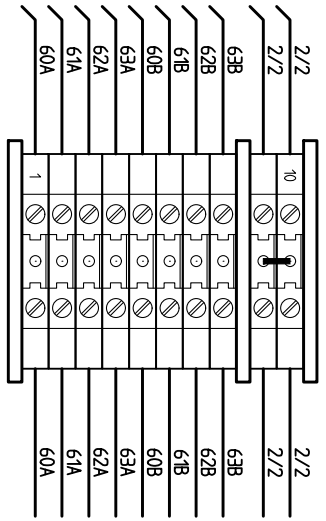
COMANDULLI COSTRUZIONI MECCANICHE	DATA	23/01/2019	Comandulli Costruzioni Meccaniche S.r.l. SEDE: Via Medaglie d'Argento, 20 Z.I. 26012 CASTELLEONE – (Cremona) ITALY	MATRICOLA:	02519	*LUCIDACOSTE A NASTRO Mod.: OMEGA 60 PENCIL* *BELT EDGE POLISHING MACHINE Mod.: OMEGA 60 PENCIL*	– 02519 –
	DISEGN.	MORO PAOLO		COMMESSA:	791J	MORSETTIERE *TERMINAL BOARD*	
	VISTO	MNM					
	APPR.	MNM	SOST. IL :	SOST. DA :	FILE : OMEGA10004–UL		

Il presente disegno è di proprietà della ditta Comandulli S.r.l. Ne è vietata la riproduzione e la diffusione non autorizzata

QUADRO "SC2"
MORSETTIERA "X4"
BOX "SC2"
TERMINAL BOARD "X4"



QUADRO "SC2"
MORSETTIERA "X5"
BOX "SC2"
TERMINAL BOARD "X5"



COMANDULLI COSTRUZIONI MECCANICHE	DATA	23/01/2019	Comandulli Costruzioni Meccaniche S.r.l. SEDE: Via Medaglie d'Argento, 20 Z.I. 26012 CASTELLEONE – (Cremona) ITALY	MATRICOLA:	02519	*LUCIDACOSTE A NASTRO Mod.: OMEGA 60 PENCIL* *BELT EDGE POLISHING MACHINE Mod.: OMEGA 60 PENCIL*	– 02519 –
	DISEGN.	MORO PAOLO		COMMESSA:	791J	MORSETTIERE *TERMINAL BOARD*	
	VISTO	MNM					
	APPR.	MNM	SOST. IL :	SOST. DA :	FILE : OMEGA10004–UL		

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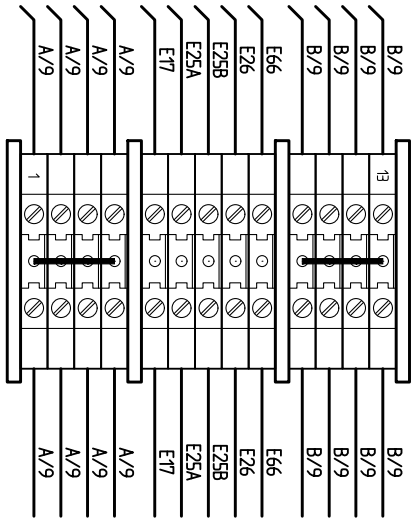
FG. 71
F.S. 72

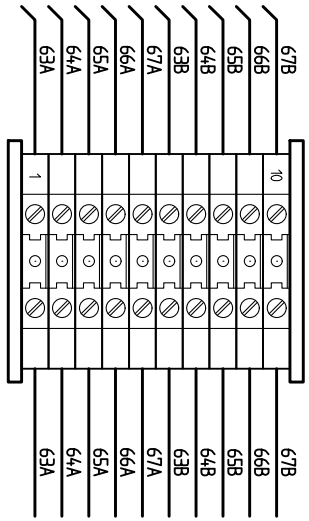
QUADRO "SC5"
MORSETTIERA "X6"

BOX "SC5"
TERMINAL BOARD "X6"



QUADRO "SC5"
MORSETTIERA "X7"

BOX "SC5"
TERMINAL BOARD "X7"



COMANDULLI COSTRUZIONI MECCANICHE	DATA	23/01/2019	Comandulli Costruzioni Meccaniche S.r.l. SEDE: Via Medaglie d'Argento, 20 Z.I. 26012 CASTELLEONE – (Cremona) ITALY	MATRICOLA:	02519	*LUCIDACOSTE A NASTRO Mod.: OMEGA 60 PENCIL* *BELT EDGE POLISHING MACHINE Mod.: OMEGA 60 PENCIL*	– 02519 –
	DISEGN.	MORO PAOLO		COMMESSA:	791J	MORSETTIERE *TERMINAL BOARD*	
	VISTO	MNM					
	APPR.	MNM	SOST. IL :	SOST. DA :	FILE : OMEGA10004–UL		

Il presente disegno è di proprietà della ditta Comandulli S.r.l. Ne è vietata la riproduzione e la diffusione non autorizzata

Nome/Item	Tipo/Type	Descrizione/Description	Costruttore/Marke	Quadro/Board	Fg/Sh	Q.ta/Q.ty
A1	CJ1W-TER01	Coperchio terminatore	Omron	QG		1
CPU	CJ1W-CPU23	CPU Memoria: programma 32 kword	Omron	QG		1
E2	E-ME-AL-05F/RR	Scheda valvola proporzionale	ATOS	QG		1
E6	569030	Barre di distribuzione	ERICO	QG		1
E7	569030	Barre di distribuzione	ERICO	QG		1
E8	569030	Barre di distribuzione	ERICO	QG		1
E9	3TK2823-1CB30	Modulo di sicurezza	SIEMENS	QG		1
E10	3TK2823-1CB30	Modulo di sicurezza	SIEMENS	QG		1
E80	RTA NDC 06.V	Azionamento per motore passo passo	RTA	QG		1
FR0	3RV1031-4HA10	Int. autom. magnet. tripol.	SIEMENS	QG		1
FS1	3RV1021-4DA10	Int. autom. magnet. tripol.	SIEMENS	QG		1
FS2	3RV1021-1BA10	Int. autom. magnet. tripol.	SIEMENS	QG		1
FS13	3RV1021-1GA10	Int. autom. magnet. tripol.	SIEMENS	QG		1
FS14	3RV1021-1GA10	Int. autom. magnet. tripol.	SIEMENS	QG		1
FS15	3RV1021-1DA10	Int. autom. magnet. tripol.	SIEMENS	QG		1
FS16	3RV1021-1DA10	Int. autom. magnet. tripol.	SIEMENS	QG		1
FS17	3RV1021-1DA10	Int. autom. magnet. tripol.	SIEMENS	QG		1
FS18	3RV1021-1DA10	Int. autom. magnet. tripol.	SIEMENS	QG		1
FS19	3RV1021-1CA10	Int. autom. magnet. tripol.	SIEMENS	QG		1
FS20	3RV1021-1JA10	Int. autom. magnet. tripol.	SIEMENS	QG		1
FS21	3RV1021-1JA10	Int. autom. magnet. tripol.	SIEMENS	QG		1
FS22	3RV1021-4AA10	Int. autom. magnet. tripol.	SIEMENS	QG		1
FS25	3RV1021-1AA10	Int. autom. magnet. tripol.	SIEMENS	QG		1
FS27	3RV1021-0HA10	Int. autom. magnet. tripol.	SIEMENS	QG		1
FS29	3RV1021-0AA10	Int. autom. magnet. tripol.	SIEMENS	QG		1
FS38	3RV1021-1EA10	Int. autom. magnet. tripol.	SIEMENS	QG		1
FS42	3RV1021-0HA10	Int. autom. magnet. tripol.	SIEMENS	QG		1
FS51	3RV1021-0GA10	Int. autom. magnet. tripol.	SIEMENS	QG		1
FS52	3RV1021-0GA10	Int. autom. magnet. tripol.	SIEMENS	QG		1
FS77	3RV1021-0HA10	Int. autom. magnet. tripol.	SIEMENS	QG		1
FS220	1489-A2D020	Interrut. autom. di potenza bipol.	ALLEN BRADLEY	QG		1
FS221	1489-A2D020	Interrut. autom. di potenza bipol.	ALLEN BRADLEY	QG		1
GS1	SI 6EP1436-3BA00	Alimentatore monofase	SIEMENS	QG		1
GS2	S8VS-06024	Alimentatore monofase	OMRON	QG		1
GS5	CQM1-PA216	Alimentatore 30W tensione di alimentazione 110-230Vac 50/60Hz, uscita di servizio 24Vdc 0.5A	Omron	QG		1
HL1	ZB4-BV03	Lampada verde	TELEMECANIQUE	QG		1
HL2	ZB4-BV04	Lampada rossa	TELEMECANIQUE	QG		1
HL5	ZB-BV01	Lampada bianca	TELEMECANIQUE	QG		1
HL.E	XB6-DW1B1B	Lampada bianca	TELEMECANIQUE	QG		1
HL.F	XB6-DW1B1B	Lampada bianca	TELEMECANIQUE	QG		1
IN1	CJ1W-CT021	Modulo contatore veloce 2 ingressi bidirezionali	Omron	QG		1
IN2	Cj1w-ID211	Modulo 16 Input digitali Vdc	Omron	QG		1
KA80	3RT1023-1AC20	Bobina rele'	SIEMENS	QG		1
KA100	3RT1024-1BB40	Bobina rele' Contattore	SIEMENS	QG		1
KA102	3RT1024-1BB40	Bobina rele' Contattore	SIEMENS	QG		1

COMANDULLI
COSTRUZIONI MECCANICHE

DATA	23/01/2019
DISEGN.	MORO PAOLO
VISTO	MNM
APPR.	MNM

Comandulli Costruzioni Meccaniche S.r.l.
SEDE: Via Medaglie d'Argento, 20 Z.I.
26012 CASTELLEONE – (Cremona) ITALY

SOST. IL : | SOST. DA :

MATRICOLA:	02519
COMMESSA:	791J
FILE :	OMEGA10004-UL

LUCIDACOSTE A NASTRO Mod.: OMEGA 60 PENCIL
BELT EDGE POLISHING MACHINE Mod.: OMEGA 60 PENCIL

DISTINTA MATERIALE ARMADIO ELETTRICO
ELECTRICAL BOX MATERIAL SUPPLY

– 02519 –

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FG. 73
F.S. 74

Nome/Item	Tipo/Type	Descrizione/Description	Costruttore/Marke	Quadro/Board	Fg/Sh	Q.ta/Q.ty
KM0	3RT1034-1AC20	Bobina rele' Contattore	SIEMENS	QG		1
KM1	3RT1034-1AC20	Bobina rele' Contattore	SIEMENS	QG		1
KM2	3RT1023-1AC20	Bobina rele' Contattore	SIEMENS	QG		1
KM0S	3RT1026-1AC20	Bobina rele' Contattore	SIEMENS	QG		1
KM0T	3RT1034-1AC20	Bobina rele' Contattore	SIEMENS	QG		1
KM13	3RT1023-1AC20	Bobina rele' Contattore	SIEMENS	QG		1
KM14	3RT1023-1AC20	Bobina rele' Contattore	SIEMENS	QG		1
KM15	3RT1023-1AC20	Bobina rele' Contattore	SIEMENS	QG		1
KM16	3RT1023-1AC20	Bobina rele' Contattore	SIEMENS	QG		1
KM17	3RT1023-1AC20	Bobina rele' Contattore	SIEMENS	QG		1
KM18	3RT1023-1AC20	Bobina rele' Contattore	SIEMENS	QG		1
KM19	3RT1023-1AC20	Bobina rele' Contattore	SIEMENS	QG		1
KM20	3RT1024-1AC20	Bobina rele' Contattore	SIEMENS	QG		1
KM21	3RT1024-1AC20	Bobina rele' Contattore	SIEMENS	QG		1
KM22	3RT1025-1AC20	Bobina rele' Contattore	SIEMENS	QG		1
KM25A	3RT1023-1AC20	Bobina rele' Contattore	SIEMENS	QG		1
KM25B	3RT1023-1AC20	Bobina rele' Contattore	SIEMENS	QG		1
KM29A	3RT1023-1AC20	Bobina rele' Contattore	SIEMENS	QG		1
KM29B	3RT1023-1AC20	Bobina rele' Contattore	SIEMENS	QG		1
KM51A	3RT1023-1AC20	Bobina rele' Contattore	SIEMENS	QG		1
KM51B	3RT1023-1AC20	Bobina rele' Contattore	SIEMENS	QG		1
KM52A	3RT1023-1AC20	Bobina rele' Contattore	SIEMENS	QG		1
KM52B	3RT1023-1AC20	Bobina rele' Contattore	SIEMENS	QG		1
KT0	3RP1574-1NP30	Bobina ad aggancio mecc.	SIEMENS	QG		1
M0	***	Motore trifase	ELECTRO ADDA	QG		1
M1	***	Motore trifase	ELECTRO ADDA	QG		1
M2	***	Motore trifase	ELECTRO ADDA	QG		1
M13	FC90L-2	Motore trifase	ELECTRO ADDA	QG		1
M14	FC90L-2	Motore trifase	ELECTRO ADDA	QG		1
M15	FC90L-4	Motore trifase	ELECTRO ADDA	QG		1
M16	FC90L-4	Motore trifase	ELECTRO ADDA	QG		1
M17	FC90L-4	Motore trifase	ELECTRO ADDA	QG		1
M18	FC90L-4	Motore trifase	ELECTRO ADDA	QG		1
M19	MS8024	Motore trifase	VARSPE	QG		1
M20	***	Motore trifase	ELECTRO ADDA	QG		1
M21	***	Motore trifase	ELECTRO ADDA	QG		1
M22	ME90/4B	Motore trifase	VEM	QG		1
M25	***	Motore trifase	ELECTRO ADDA	QG		1
M27	***	Motore trifase	ELECTRO ADDA	QG		1
M29	***	Motore trifase	VARSPE	QG		1
M38	FC90L-4	Motore trifase	ELECTRO ADDA	QG		1
M42	***	Motore trifase	ELECTRO ADDA	QG		1
M51	***	Motore trifase	ROSSI	QG		1
M52	***	Motore trifase	ROSSI	QG		1
M77	***	Motore trifase	ELECTRO ADDA	QG		1

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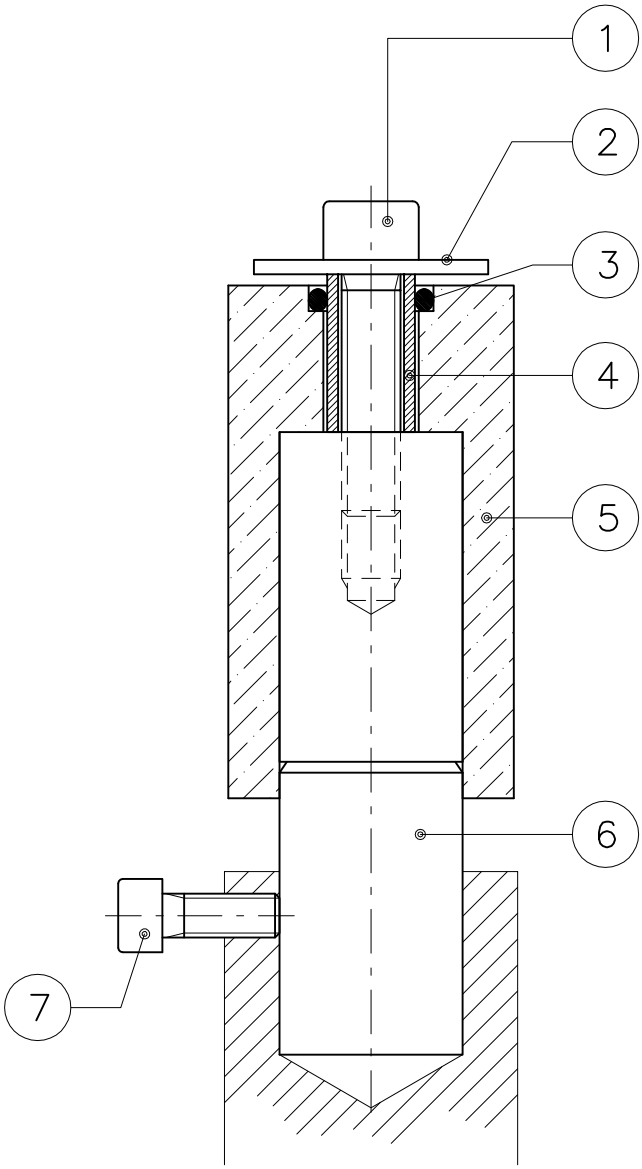
Nome/Item	Tipo/Type	Descrizione/Description	Costruttore/Marke	Quadro/Board	Fg/Sh	Q.ta/Q.ty
M80	RTA 103-H7126-1740	Motore passo passo	RTA	QG		1
OUT1	CJ1W-OD212	Modulo 16 Output a transistor PNP	Omron	QG		1
OUT2	CJ1W-OC201	Modulo 8 Output a rele'	Omron	QG		1
OUT3	CJ1W-OC211	Modulo 16 Output a rele'	Omron	QG		1
OUT4	CJ1W-OD212	Modulo 16 Output a transistor PNP	Omron	QG		1
OUT5	CJ1W-OD212	Modulo 16 Output a transistor PNP	Omron	QG		1
OUT6	CJ1W-DA021	Modulo 2 Output analogici	Omron	QG		1
QF1	3VL3115-1GB30-CAA0	Int. autom. magnet. tripol.	SIEMENS	QG		1
QF2	5SY6103-7	Interrut. autom. di potenza unip.	SIEMENS	QG		1
QF3	5SY6104-7	Interrut. autom. di potenza unip.	SIEMENS	QG		1
QF4	5SY6103-7	Interrut. autom. di potenza unip.	SIEMENS	QG		1
QF5	5SY6104-7	Interrut. autom. di potenza unip.	SIEMENS	QG		1
QF6	5SY6102-7	Interrut. autom. di potenza unip.	SIEMENS	QG		1
QF7	5SY6102-7	Interrut. autom. di potenza unip.	SIEMENS	QG		1
QF9	5SY6103-7	Interrut. autom. di potenza unip.	SIEMENS	QG		1
QF11	5SY6103-7	Interrut. autom. di potenza unip.	SIEMENS	QG		1
QF.GS1	1489-A3C060	Interrut. autom. di potenza tripol.	ALLEN BRADLEY	QG		1
QF.T1	1489-A2D020	Interrut. autom. di potenza bipol.	ALLEN BRADLEY	QG		1
QF.T2	1489-A2D020	Interrut. autom. di potenza bipol.	ALLEN BRADLEY	QG		1
SA1	ZB4-BG6 + ZB4-BZ101	Selettore 2 pos. con chiave + base + contatto NA	TELEMECANIQUE	QG		1
SA2	ZB4-BG6 + ZB4-BZ101	Selettore 2 pos. con chiave + base + contatto NA	TELEMECANIQUE	QG		1
SA3	ZB4-BD5 + ZB4-BZ101 + ZBE101	Selettore a 3 pos. + base + cont NA + cont NA	TELEMECANIQUE	QG		1
SA15	TE ZB2-BD5 cod.A02365	Selettore a 3 pos.	TELEMECANIQUE	QG		1
SB1	ZB4-BT4 + ZB4-BZ102	Pulsante di emergenza + base + contatto NC	TELEMECANIQUE	QG		1
SB3	Pulsante manuale TE ZB2-BA3 cod.A00240	Pulsante manuale + base + cantatto NA	TELEMECANIQUE	QG		1
SB4	Pulsante manuale TE ZB2 BA4 cod.A0238	Pulsante manuale + base + cantatto NC	TELEMECANIQUE	QG		1
SB1B	ZB4-BT4 + ZB4-BZ102	Pulsante di emergenza + base + contatto NC	TELEMECANIQUE	QG		1
SB.E	XB6-DW1B1B	Pulsante luminoso bianco	TELEMECANIQUE	QG		1
SB.F	XB6-DW1B1B	Pulsante luminoso bianco	TELEMECANIQUE	QG		1
T1	0CM050060H063	Trasf. monofase con schermo	C.E.	QG		1
T2	0CM040080H062	Trasf. monofase con schermo	C.E.	QG		1
X	8WA1-011-1DF11	Morsetto 2,5 mmQ	SIEMENS	QG		***
X	8WA1-011-1DG11	Morsetto 4 mmQ	SIEMENS	QG		***
X	8WA1-011-1DH11	Morsetto 6 mmQ	SIEMENS	QG		***
PE	AK4	Morsetto terra 6 mmQ	PHOENIX	QG		***
PE	AK16	Morsetto terra 16 mmQ	PHOENIX	QG		***
PE	AK35	Morsetto terra 35 mmQ	PHOENIX	QG		***

Il presente disegno è di proprietà della ditta Comandulli S.r.l. Ne è vietata la riproduzione e la diffusione non autorizzata



POS	CODICE	DENOMINAZIONE	Q.TA
7	A03738	VITE TCEI M6x16 UNI 5931 INOX	1
6	9087A	PERNO	1
5	9086B	RULLO DI CONTRASTO	1
4	9086A	DISTANZIALE	1
3	A01026	GUARNIZIONE OR 115	1
2	A04265	RONDELLA PIANA ø8 FASCIA LARGA INOX	1
1	A05104	VITE TCEI M8x35 UNI 5931 INOX	1

N°Pezzi: _____ Scala: _____ Disegnatore: _____

Data: _____ MACCHINA TIPO: LUCIDACOSTE A NASTRO

A termine di legge è vietato riprodurre o comunicare a terzi il contenuto del presente disegno

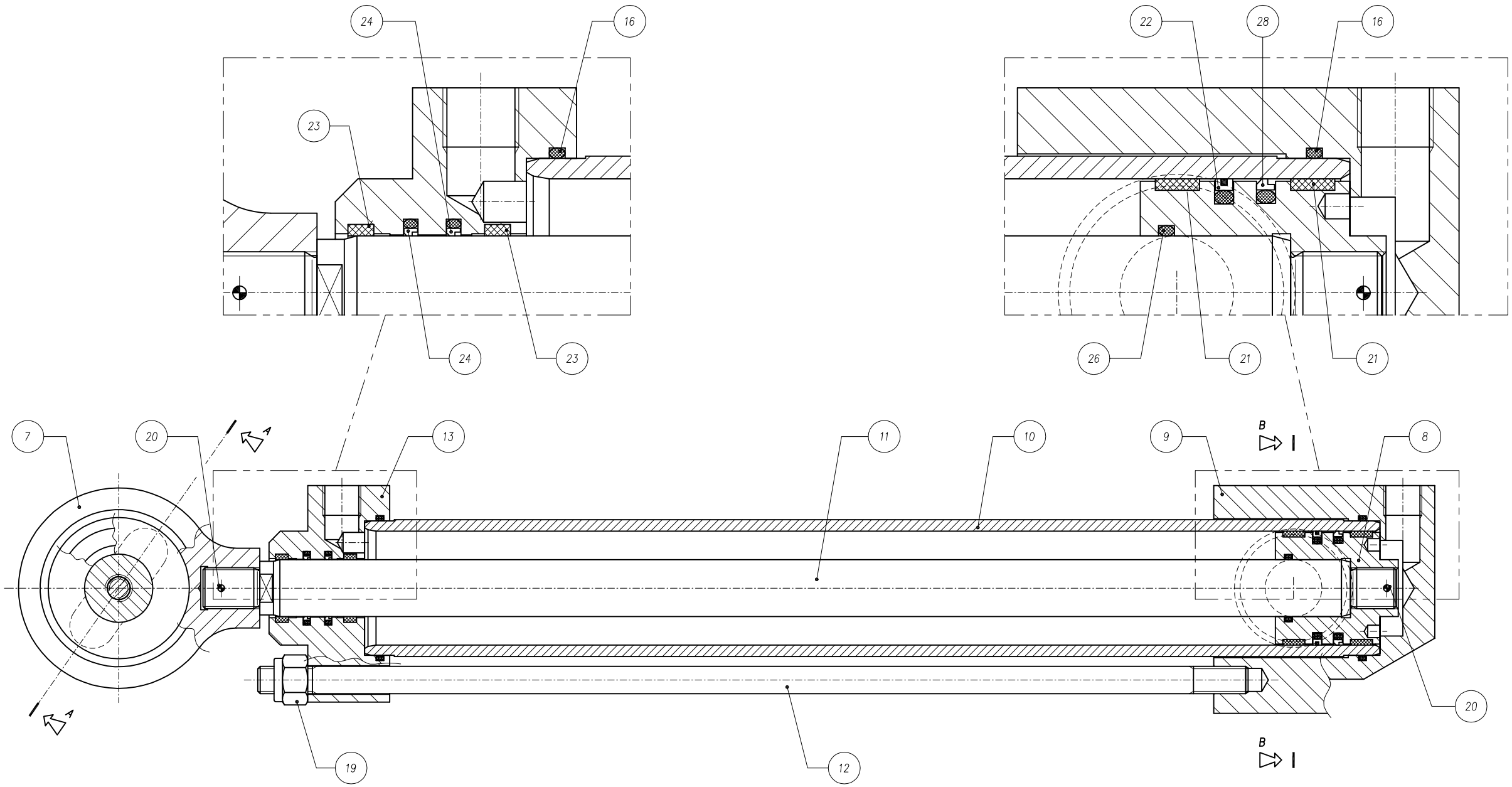
COMANDULLI
COSTRUZIONI MECCANICHE

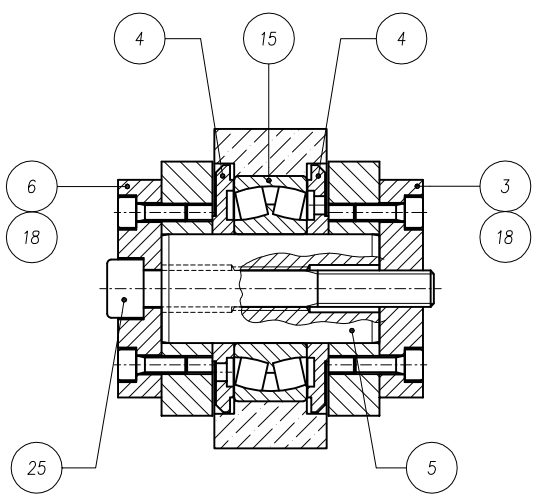
GRUPPO: RULLO DI CONTRASTO

Sostituisce il: _____ Sostituito da: _____

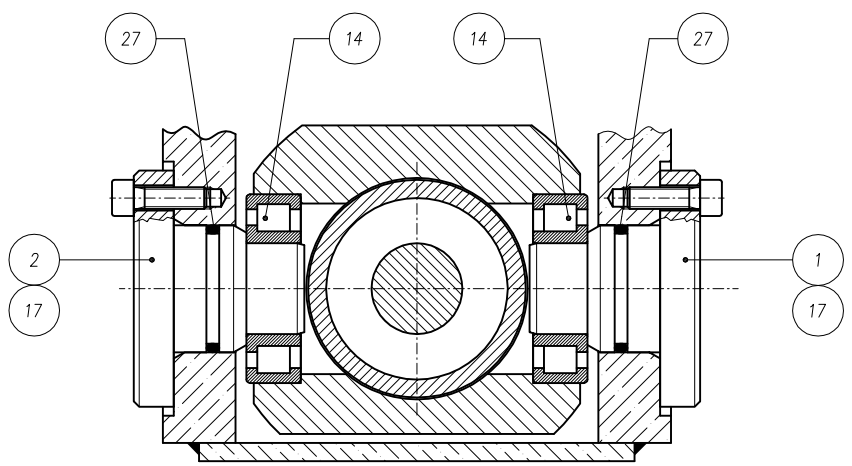
DIS.N° 267 IS

Tav. _____





SEZ. A–A



SEZ. B–B

POS	CODICE	DENOMINAZIONE	DIMENSIONE	Qtà
28	A03251	GUARNIZIONE S 55014-0500-A46KR		1
27	A03243	GUARNIZIONE OR 3118		2
26	A03037	GUARNIZIONE OR 3100		1
25	A02151	VITE TCEI M10x80 UNI 5931		1
24	A02150	GUARNIZIONE S 55015-0250-A-46KR		2
23	A02149	ANELLO BB 50703-0250-C-TLG/R		2
22	A02148	GUARNIZIONE S 55214-0500-A-46N		1
21	A02147	ANELLO TURCITE B 50704-0500-A-900		2
20	A02081	SPINA ELASTICA ø3x25 UNI 6874		2
19	A01965	DADO AUTOBLOCCANTE M12		4
18	A01910	VITE TCEI M5x15 UNI 5931		4
17	A01902	VITE TCEI M6x20 UNI 5931		6
16	A01044	GUARNIZIONE OR 3231		2
15	A00960	CUSCINETTO A RULLI 22206 CC Gioco C2		1
14	A00959	CUSCINETTO FAG NJ 205		2
13	11291 D	TESTATA ANTERIORE		1
12	11288 A	TIRANTE		4
11	11286 T	STELO		1
10	11285 S	CANNA		1
9	11284 R	TESTATA POSTERIORE		1
8	11154 D	PISTONE		1
7	11143 Q	TERMINALE PER STELO		1
6	11142 P	PIATTINO DI TESTA		1
5	11141 N	SPINOTTO PER TERMINALE		1
4	11140 M	DISTANZIALE		2
3	11139 L	PIATTINO DI TESTA FILETTATO		1
2	11136 F	SPINOTTO POSTERIORE		1
1	11135 E	SPINOTTO POSTERIORE ECCENTRICO		1

N°Pezzi: 1 | Scala: 1:1 | Disegnatore: Di Carlo

Data: 15/03/01 | MACCHINA TIPO: PNC/OMEGA

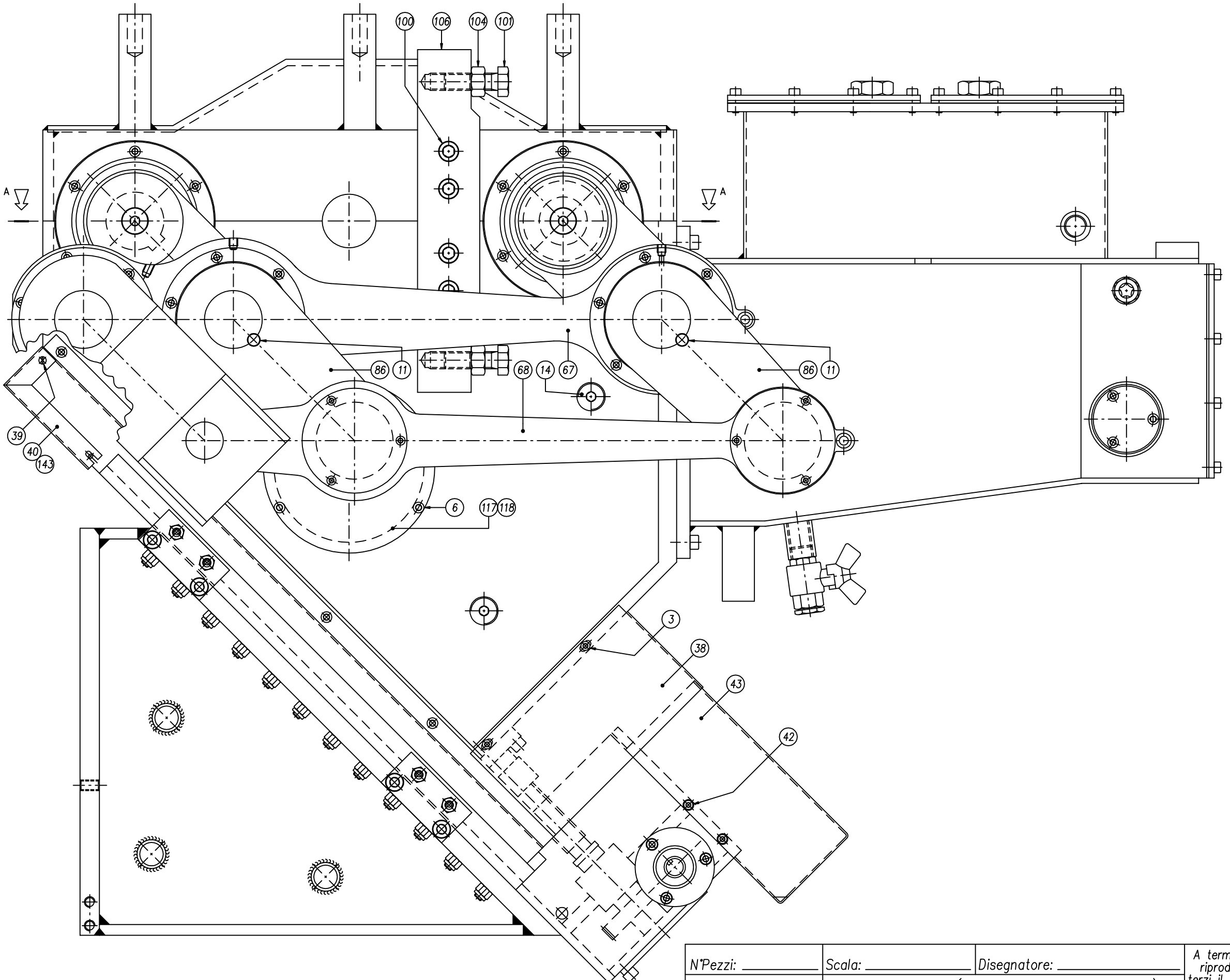
COMANDULLI

GRUPPO: CILINDRO COMANDO OSCILLAZIONE

A termini di legge è vietato riprodurre o comunicare a terzi il contenuto del presente disegno

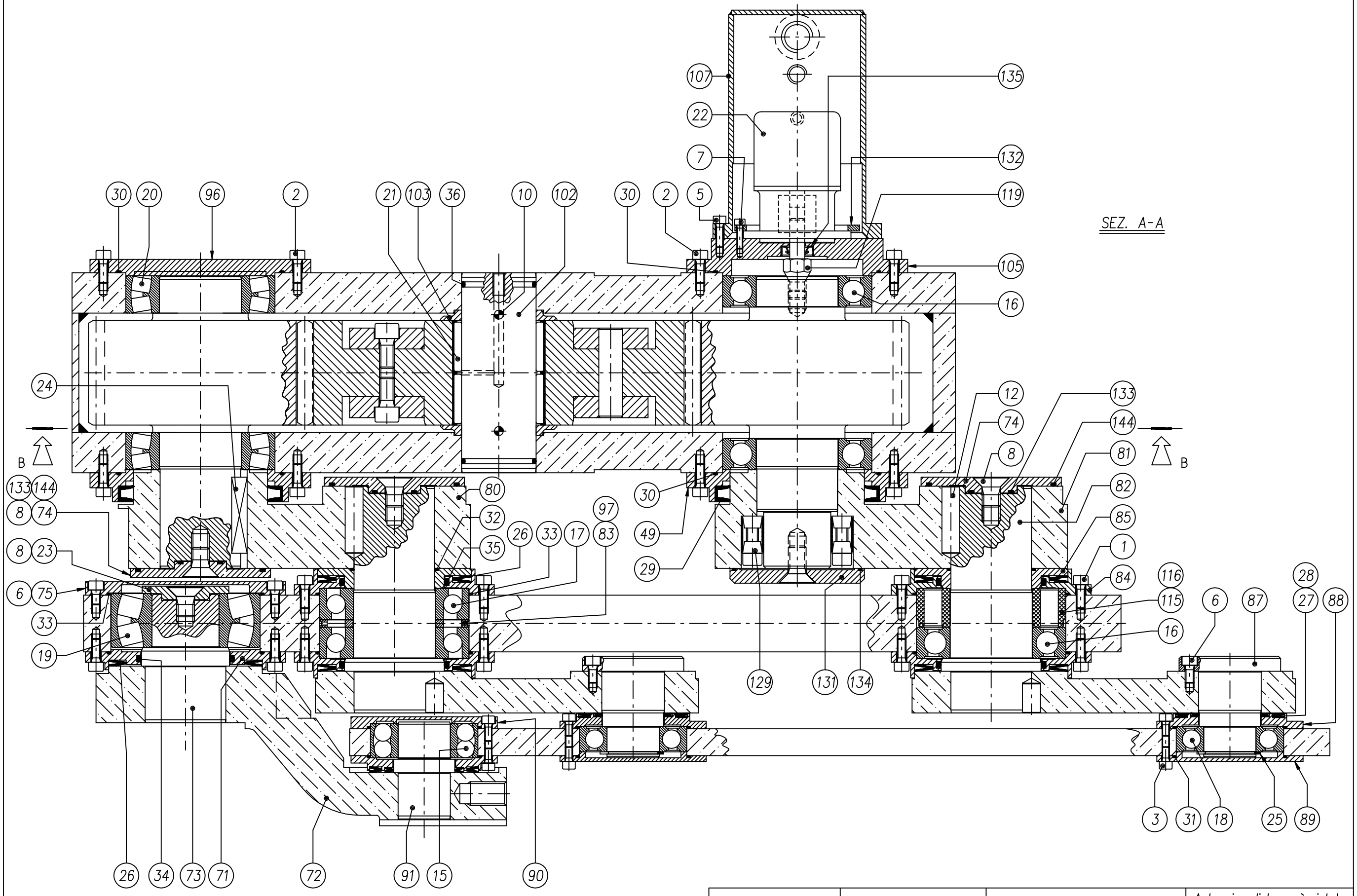
Sostituisce il: Part N° | Sostituito da:

DIS.N° 11690 C



N°Pezzi:	Scala:	Disegnatore:	A termine di legge è vietato riprodurre o comunicare a terzi il contenuto del presente disegno
Data:	MACCHINA TIPO: (MANDRINI LUCIDANTI)		
COMANDULLI COSTRUZIONI MECCANICHE	GRUPPO: RIDUTTORE E BIELLISMO DOPPIO	Sostituisce il:	Sostituito da:
		DIS.N° 11863 N	Tav. 1/4

SEZ. A-A



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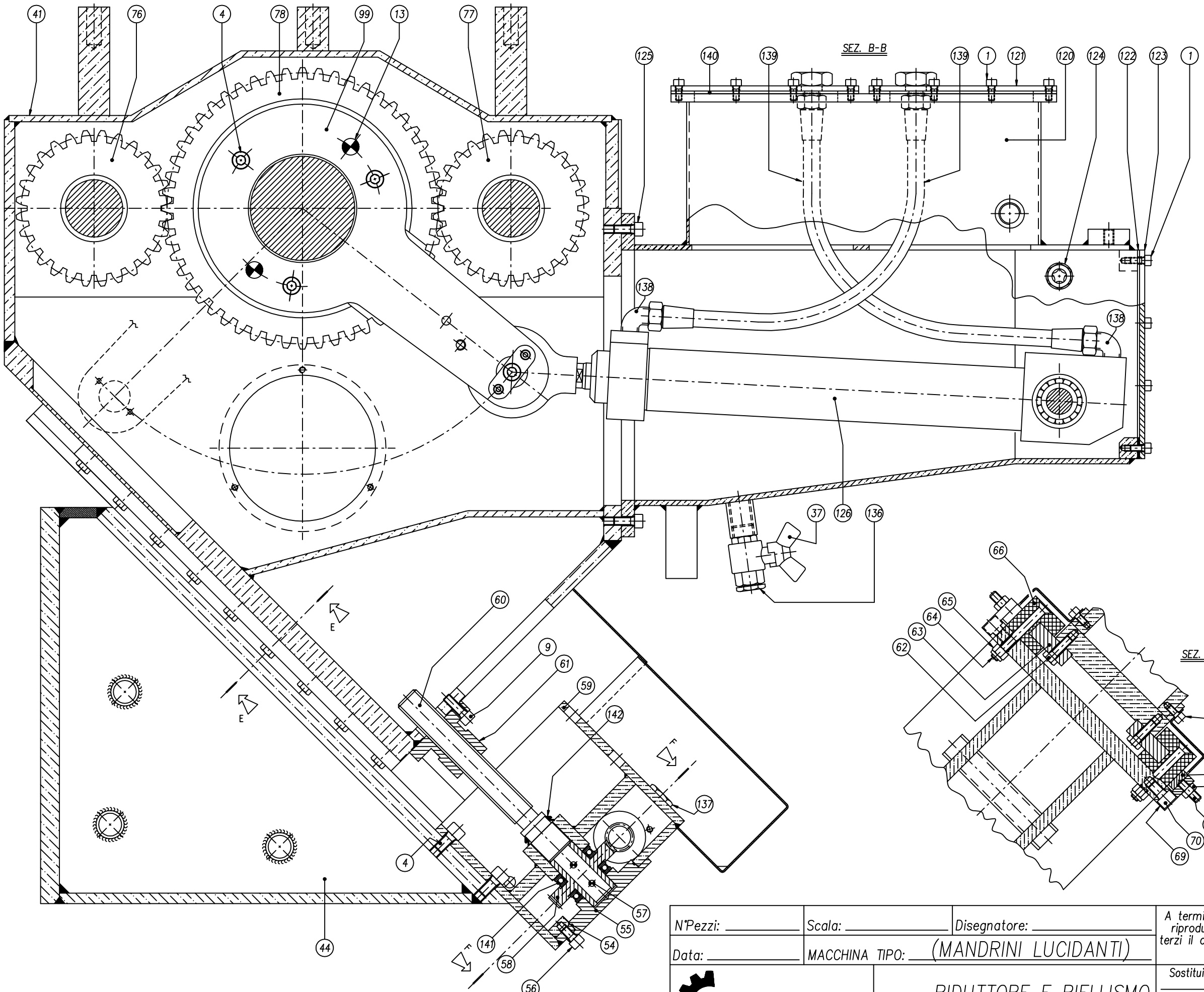
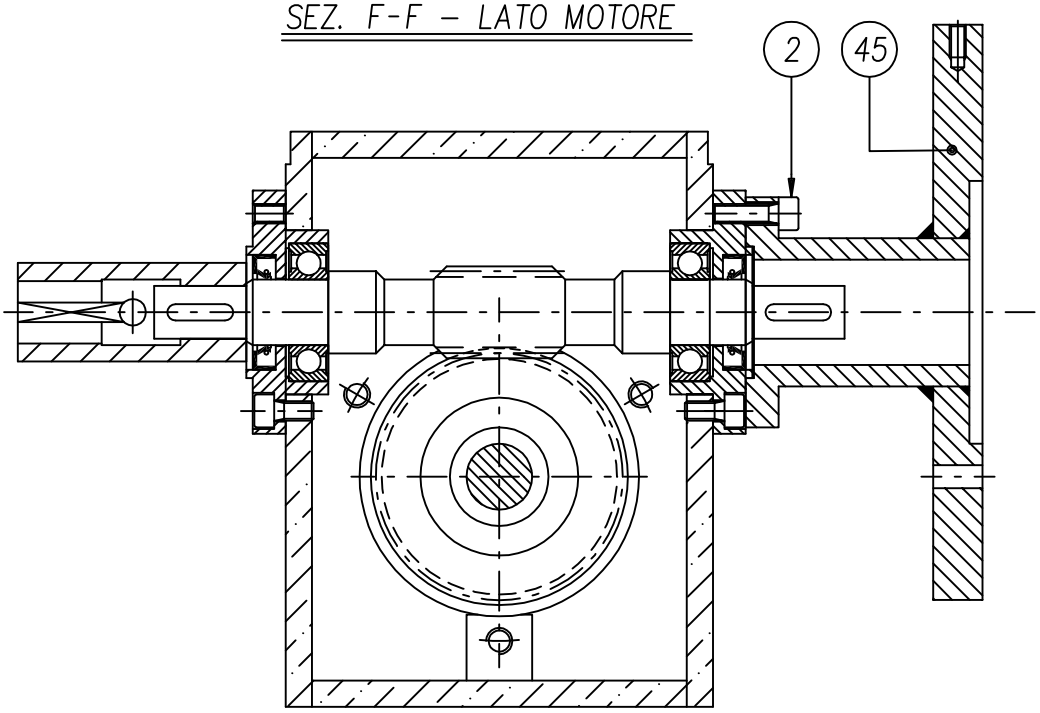
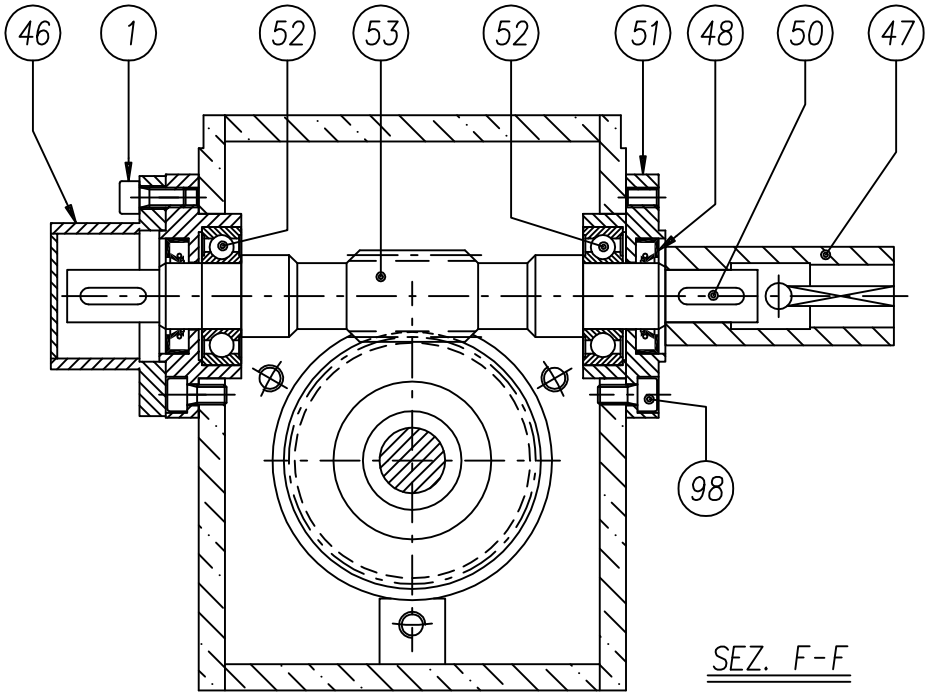
Data:	MACCHINA TIPO: (MANDRINI LUCIDANTI)		
COMANDULLI COSTRUZIONI MECCANICHE	GRUPPO: RIDUTTORE E BIELLISMO DOPPIO – Sez. A–A	Sostituisce il:	Sostituito da:
		DIS.N° 11863 N	Tav. 2/4



N°Pezzi:	Scala:	Disegnatore:	A termine di legge è vietato riprodurre o comunicare a terzi il contenuto del presente disegno
Data:	MACCHINA TIPO: (MANDRINI LUCIDANTI)		Sostituisce il: / Sostituito da:
COMANDULLI COSTRUZIONI MECCANICHE	GRUPPO: RIDUTTORE E BIELLISMO DOPPIO – Sez. B–B		DIS.N° 11863 N / Tav. 3/4

SEZ. F-F – LATO MOTORE





SEZ. F-F

N°Pezzi:	Scala:	Disegnatore:	A termine di legge è vietato riprodurre o comunicare a terzi il contenuto del presente disegno
Data:	MACCHINA TIPO: (MANDRINI LUCIDANTI)		
COMANDULLI COSTRUZIONI MECCANICHE	GRUPPO: RIDUTTORE E BIELLISMO DOPPIO – Sez. F–F	Sostituisce il:	Sostituito da:
		DIS.N° 11863 N	Tav. 4/4

COMANDULLI

Drawing	Description		Vers.
11863 N	REDUCTION GEAR AND DOUBLE CONNECTING ROD ASSEMBLY	Page 1 / 5	00

POS.	CODE	DENOMINATION	DIMENSION	Q.TY
1	A03453	SCREW TCEI M6x14 UNI 5931 INOX		99
2	A05335	SCREW TCEI M6x20 UNI 5931 INOX		63
3	A03736	SCREW TCEI M5x10 UNI 5931 INOX		44
4	A05930	SCREW TCEI M10x20 UNI 5931 INOX		20
5	A05450	SCREW TCEI M5x16 UNI 5931 INOX		3
6	A03737	SCREW TCEI M6x10 UNI 5931 INOX		30
7	A05349	SCREW TCEI M4x10 UNI5931 INOX		3
8	A02140	SCREW TSEI M12x20 UNI 5933		10
9	A01922	SCREW TCEI M8x25 UNI 5931		6
10	A05211	CYLINDRICAL PIN Ø6x20 UNI 6364 B		4
11	A02075	CYLINDRICAL PIN Ø12x20 UNI 1707		4
12	A02076	CYLINDRICAL PIN Ø12x45 UNI 1707		4
13	A02082	CYLINDRICAL PIN Ø16x60 UNI 1707		4
14	A02015	EXAG. CAP. INC. Ø3/4" DIN 906		12
15	A00955	BEARING 2207 2RS (35-72-23)		2
16	A01459	BEARING 6211 2RS (55-100-21)		6
17	A01455	BEARING 7211 8 TVP. UA (55-100-21)		4
18	A00916	BEARING 6207 2RS (35-72-17)		4
19	A02521	BEARING 22309 ES. TVPB		2
20	A00912	BEARING 22211E (55-100-25)		4
21	A01458	BEARING INA NK 50-35		4
22	A02473	ENCODER		1
23	11323A	FRONT-END WASHER		2
24	A02074	TAB 16x10x50 A UNI 6604		2
25	A01054	RING SEEGER E35 UNI 7435		4
26	A03219	RING V-RING 70		10
27	A03218	RING V-RING 35		6
28	A03217	RING V-RING 50		6
29	A05973	GASKET DOMSEL AC 90/110/10		4
30	A03207	GASKET OR 2425		8
31	A03206	GASKET OR 2287		12

COMANDULLI

Drawing	Description		Vers.
11863 N	REDUCTION GEAR AND DOUBLE CONNECTING ROD ASSEMBLY	Page 2 / 5	00

32	A03205	GASKET OR 2212		4
33	A02137	GASKET OR 2400		12
34	A01040	GASKET OR 162		2
35	A03204	GASKET OR 170		8
36	A03214	GASKET OR 3175		4
37	A03633	BALL VALVE MF Ø1/2"		2
38	11231L	COVER FOR JACK		2
39	A01950	SCREW TC M4x10 UNI 6107		4
40	11230H	COVER FOR GUIDES		2
41	11244A	REDUCTION GEAR CASING		2
42	A02145	SCREW TSEI M5x10 UNI 5933 INOX		8
43	11240V	COVER		2
44	11225C	45° BRACKET		2
45	11258H	DISTANCE RING FOR ELECTRICAL MOTOR		1
46	11257G	CAP		1
47	11259L	JOINT JACK-MOTOR		2
48	A01034	GASKET MIM 20 - 35 - 7		4
49	25004E	FLANGE SHAFT EXIT		4
50	A02030	TAB 5x5x20 A UNI 6604		3
51	11254D	HOLDING BEARING CAPS		4
52	A00903	BEARING 6004 2RS (20-42-12)		4
53	11252B	WORM SCREW		2
54	A03098	GASKET OR 2300		2
55	11255E	CAP		2
56	A03739	SCREW TCEI M8x14 UNI 5931 INOX		6
57	A02164	CYLINDRICAL PIN Ø6x32 UNI 1707		4
58	11253C	HELICAL WHEEL		2
59	11251A	BOX FOR JACK		2
60	11256F	SCREW FOR JACK		2
61	11260M	LEAD NUT		2
62	A02300	SCREW TE M8x25 UNI 5739		36
63	11224B	GUIDE FOR BRASS PLATE		4
64	A02099	SCREW TSEI M8x70 UNI 5933		48

COMANDULLI

Drawing	Description		Vers.
11863 N	REDUCTION GEAR AND DOUBLE CONNECTING ROD ASSEMBLY	Page 3 / 5	00

65	A01961	SELF-LOCKING NUT M8 HIGH		48
66	11226D	FEMALE GUIDE		4
67	11301A	CONNECTING ROD		2
68	11302B	ARTICULATED CONNECTING ROD		2
69	11233N	REGISTER FOR GUIDES OF REDUCT. GEAR		8
70	A01926	SCREW TCEI M10x16 UNI 5931		16
71	11329G	FLANGE FOR CONNECTING ROD		2
72	11303C	HEAD SUPPORT		2
73	11328F	COUPL. PIN FOR HEAD SUPPORT		2
74	11307G	FRONT-END WASHER		6
75	11306F	FRONT-END CAP FOR CONNECTING ROD		2
76	11245B	FRONT GEAR (m5-Z28-øp140)		2
77	11340W	BACK GEAR (m5-Z28-øp140)		2
78	11247D	CENTRAL GEAR (m5-Z52-øp260)		2
79	A02097	DOWEL M8x25 UNI 5923		16
80	25005F	FRONT PRIMARY ARM		2
81	25006G	BACK PRIMARY ARM		2
82	11308H	GUDGEON BETW. ARM AND CONNECT. ROD		4
83	11309L	DISTANCE RING		2
84	11310M	FLANGE FOR CONNECTING ROD		8
85	11311N	DISTANCE RING		4
86	11312P	ARM OF ARTICULATED CONNECTING ROD		4
87	11313Q	FLANGE PIN		4
88	11314R	FLANGE FOR ART. CONN. ROD		6
89	11315S	CAP OF ART. CONN. ROD		4
90	11316T	FRONT-END CAP OF CONNECTING ROD		2
91	11317U	PIN OF CONNECT. ROD ASS. REDUCT. GEAR		2
92	A01962	NUT M8 UNI 5588		16
93	11239U	PRESSURE LITTLE PLATE		8
94	11228F	COVER FOR LEFT GUIDE		2
95	11227E	COVER FOR RIGHT GUIDE		2
96	11211N	CAP ON REDUCTION GEAR		3
97	11318V	DISTANCE RING		2

COMANDULLI

Drawing	Description		Vers.
11863 N	REDUCTION GEAR AND DOUBLE CONNECTING ROD ASSEMBLY	Page 4 / 5	00

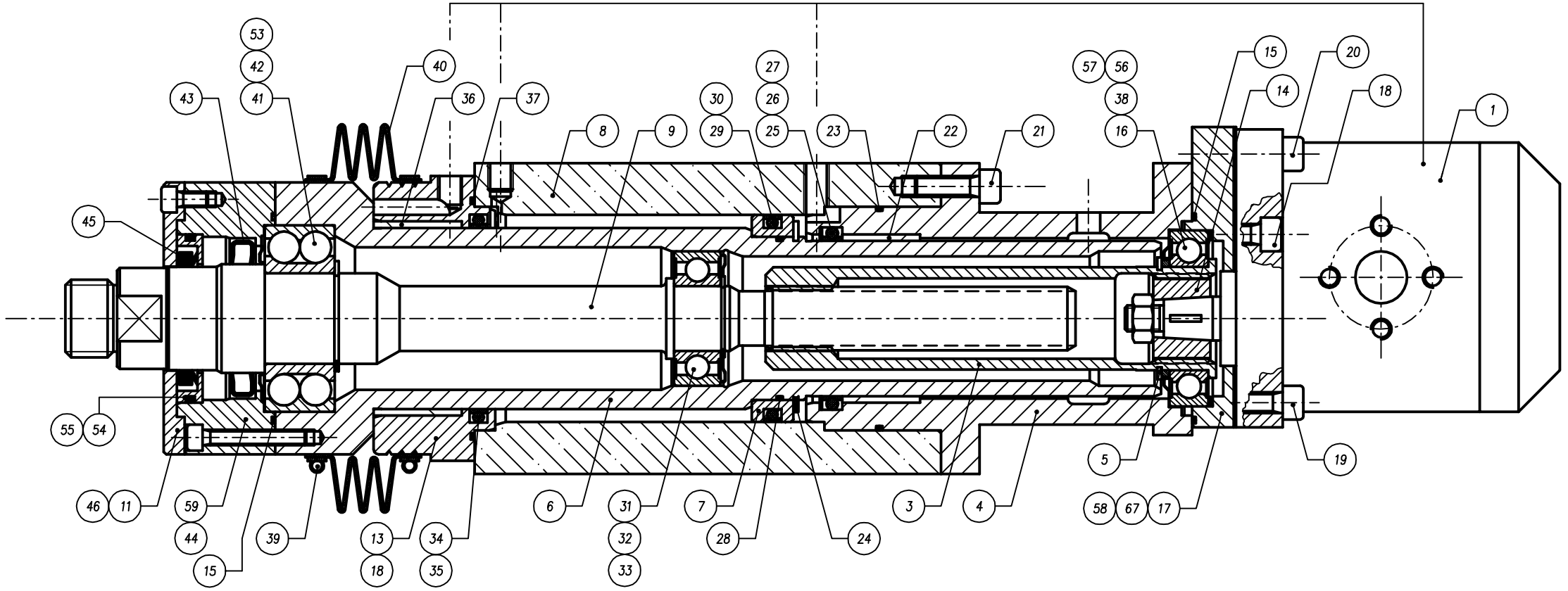
98	A04604	SCREW TCEI M6x12 UNI 5931 INOX		28
99	11273D	LUG OF CYLINDER COUPLING		4
100	A02188	SCREW TCEI M12x60 UNI 5931		8
101	A01946	SCREW TE M16x40 UNI 5739		4
102	11205E	CENTRAL PIN		2
103	11250G	GUIDE WASHER		4
104	A01967	NUT M16 UNI 5588		4
105	11212P	FLANGE OF ENCODER COUPLING		1
106	11236R	POSITIVE LOCK		2
107	11220Z	PROTECTION FOR ENCODER		1
108				
109				
110				
111				
112				
113				
114				
115	11319W	CONNECTING ROD DISTANCE RING		2
116	11320X	CONNECTING ROD DISTANCE RING		2
117	11261N	CAP		4
118	A03210	GASKET OR 3525		4
119	11862M	CONNECTION FOR ENCODER ROTATION		1
120	11274D	CONNECTION FOR CYLINDER		2
121	11274K	UPPER CAP		4
122	11289B	GASKET FOR CYLINDER CONNECTION		2
123	11274L	BACK CAP		2
124	A00812	HEXAGONAL LEVEL Ø112" HTFX15		2
125	A03789	SCREW TCEI M8x20 UNI 5931 INOX		24
126	AB0304	CYLINDER TO OSCILLATION CONTROL		2
127				
128				
129	A02136	KEY 45x75 CN210		2
130				

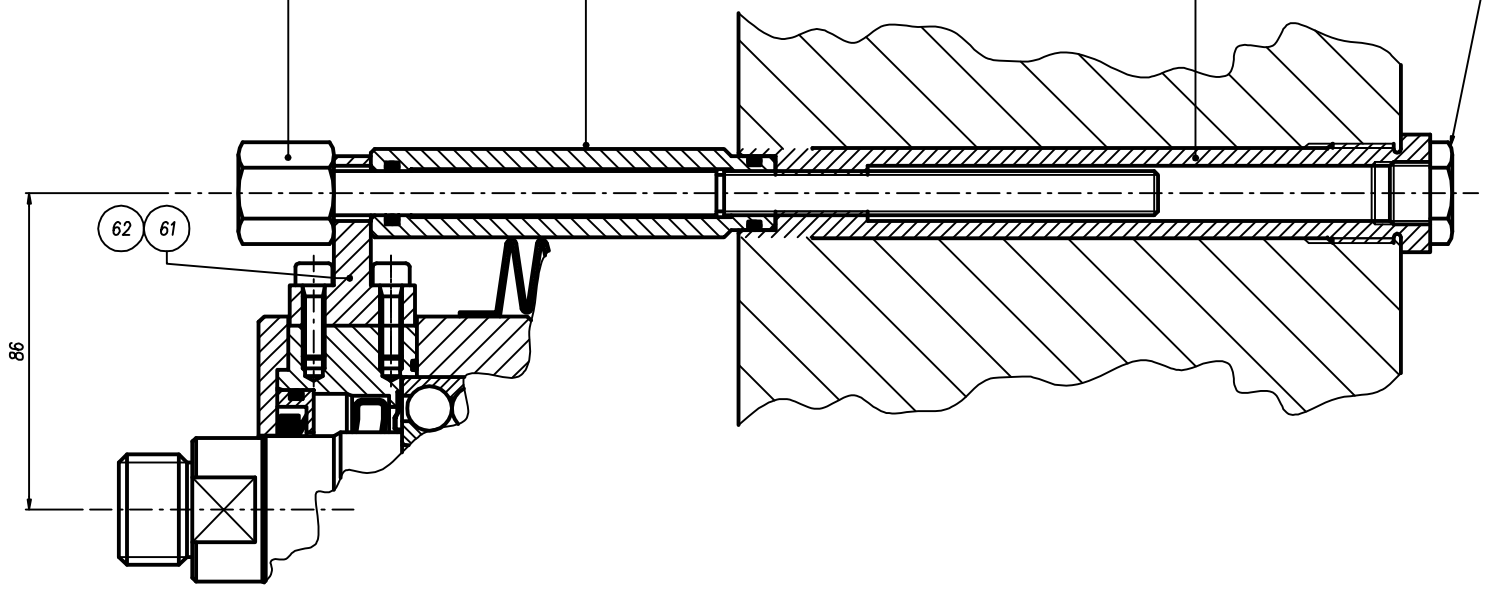
COMANDULLI

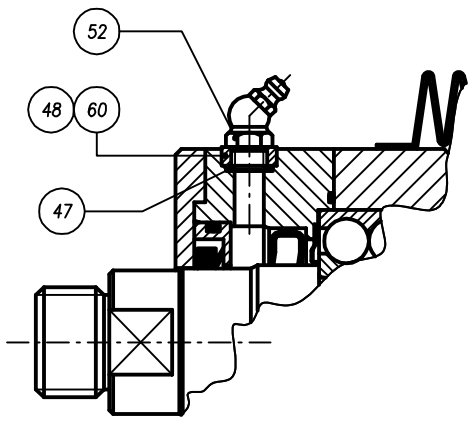
Drawing	Description		Vers.
11863 N	REDUCTION GEAR AND DOUBLE CONNECTING ROD ASSEMBLY	Page 5 / 5	00

131	11335Q	FRONT-END WASHER		2
132	11646R	FLANGE FOR ENCODER		1
133	A03037	GASKET OR 3100		6
134	A03209	GASKET OR 2325		2
135	A04949	GASKET MIM 10-22-7		1
136	A00358	BRASS CAP RTA86454 ø1/2"		2
137	A00611	BRASS CAP ø3/8" ART.452A		2
138	A00817	CRANK MIM ø3/8"		4
139	A02153	OLEODYNAMIC PIPE ø3/8" R9 0,45 FF		4
140	11274X	GASKET FOR CAPS		4
141	A01465	BEARING 51106		4
142	A03235	V-RING V 28-S		2
143	11229G	COVER FOR INOX GUIDES		2
144	A02830	GASKET OR 3325		6

ATTENZIONE!! TUTTO SULLO STESSO PIANO







POS	CODICE	DENOMINAZIONE	Q.TA
67	A04405	INGRAS. A SPILLO 45° M8X1,25	1
66	A02406	GUARNIZIONE OR 3056 ø13.95x2.62	1
65	A01026	GUARNIZIONE OR 115 ø11.91x2.62	1
64	11463 M	CONTRODADO	1
63	11466 Q	VITE DI REGISTRO	1
62	A01902	VTCEI M6x20 ZINC. UNI 5931	2
61	25032 P	STAFFA PER FERMO POSITIVO	1
60	26214 S	PIASTRINA DI CHIUSURA	1
59	11661 P	FLANGIA ANTERIORE 1° TESTA	1
58	13210 A	GUARNIZIONE	1
57	11718 T	DISTANZIALE	1
56	A03423	ANELLO NILOS 6008 ZJV	1
55	A01044	GUARNIZIONE OR 3231 ø158.42x1.78	1
54	11736 A	ANELLO	1
53	A03249	ANELLO NILOS 3207 JV	1
52	A02874	INGRASS. A 45° 1/8" GAS	1
50	25073 R	BOCCOLA PER FERMO POSITIVO	1
49	A00611	TAPPO ø3/8"	1
48	A01903	VTCEI M6x15 ZINC. UNI 5931	2
47	A02194	GUARNIZIONE OR 2037 ø19.25x1.78	1
46	A01905	VTCEI M6x10 ZINC. UNI 5931	3
45	A01777	GUARNIZIONE V-RING A 40	1
44	A02519	VTCEI M6x40 ZINC. UNI 5931	3
43	A04103	GUARNIZIONE DOMSEL BC 426210 NBR	1
42	A00964	CUSCINETTO 3207 B-2RS	1
41	A01054	SEEGER E 35 UNI 7435	1
40	A01304	SOFFIETTO GOMMA 155/105-55/160	1
39	A02256	FASCETTA STRINGITUBO	2
38	A03017	ANELLO COMPENSATORE LMK AS 68	1
37	A03220	GUARNIZIONE OR 2350 ø188.62x1.78	1
36	A01463	BOCCOLA C. SOVRAM. 70/30 DX	1
35	A03056	GUARNIZIONE RC 6275	1
34	A01052	GUARNIZIONE OR 6275	1
33	A01749	ANELLO NILOS 6205 ZAV	1
32	A01453	CUSCINETTO 62205 2RS	1
31	A01061	ANELLO SEEGER E25	1
30	A03024	GUARNIZIONE RP 6275	1
29	A01052	GUARNIZIONE OR 6275	1
28	A03216	GUARNIZIONE OR 2237 ø160.05x1.78	1
27	A03241	GUARNIZIONE BK 6237	1
26	A03060	GUARNIZIONE RC 6237	1
25	A03049	GUARNIZIONE OR 6237	1
24	A03134	ANELLO SEEGER E63 UNI 7435	1
23	A03209	GUARNIZIONE OR 2325 ø182.27x1.78	1
22	A01464	BOCCOLA C. SOVRAM. MB 60-30 DX	1
21	A01922	VTCEI M8x25 ZINC. UNI 5931	4
20	A02181	VTCEI M8x50 ZINC. UNI 5931	2
19	A01924	VTCEI M8x35 ZINC. UNI 5931	2
18	A01921	VTCEI M8x20 ZINC. UNI 5931	6
17	11149 Z	PIASTRA ATTACCO MOTORE	1
16	A03039	CUSCINETTO 6008 2RS	1
15	A03098	GUARNIZIONE OR 2300 ø175.92 x 1.78	2
14	11146 T	MOZZO PER MOTORE IDRAULICO	1
13	11152 B	MUSONE ANTERIORE	1
11	11193 C	FLANGIA	1
9	11719 Z	ALBERO	1
8	25070 N	TRAVERSA PORTA TESTE	1
7	11155 E	PISTONE	1
6	11191 A	CANNOTTO	1
5	A00794	SEEGER A40 X 1.75 V	1
4	11150 Y	BOCCOLA PORTA MOTORE	1
3	11577 U	ALLUNGA CON MANICOTTO DI TRASCIN.	1
1	A06525	MOTORE IDR. PLM 20.11.2	1

N°Pezzi: 1 | Scala: 1:1 | Disegnatore: Uggé

Data: 08/06/00 | MACCHINA TIPO: SYNTHESIS PNC

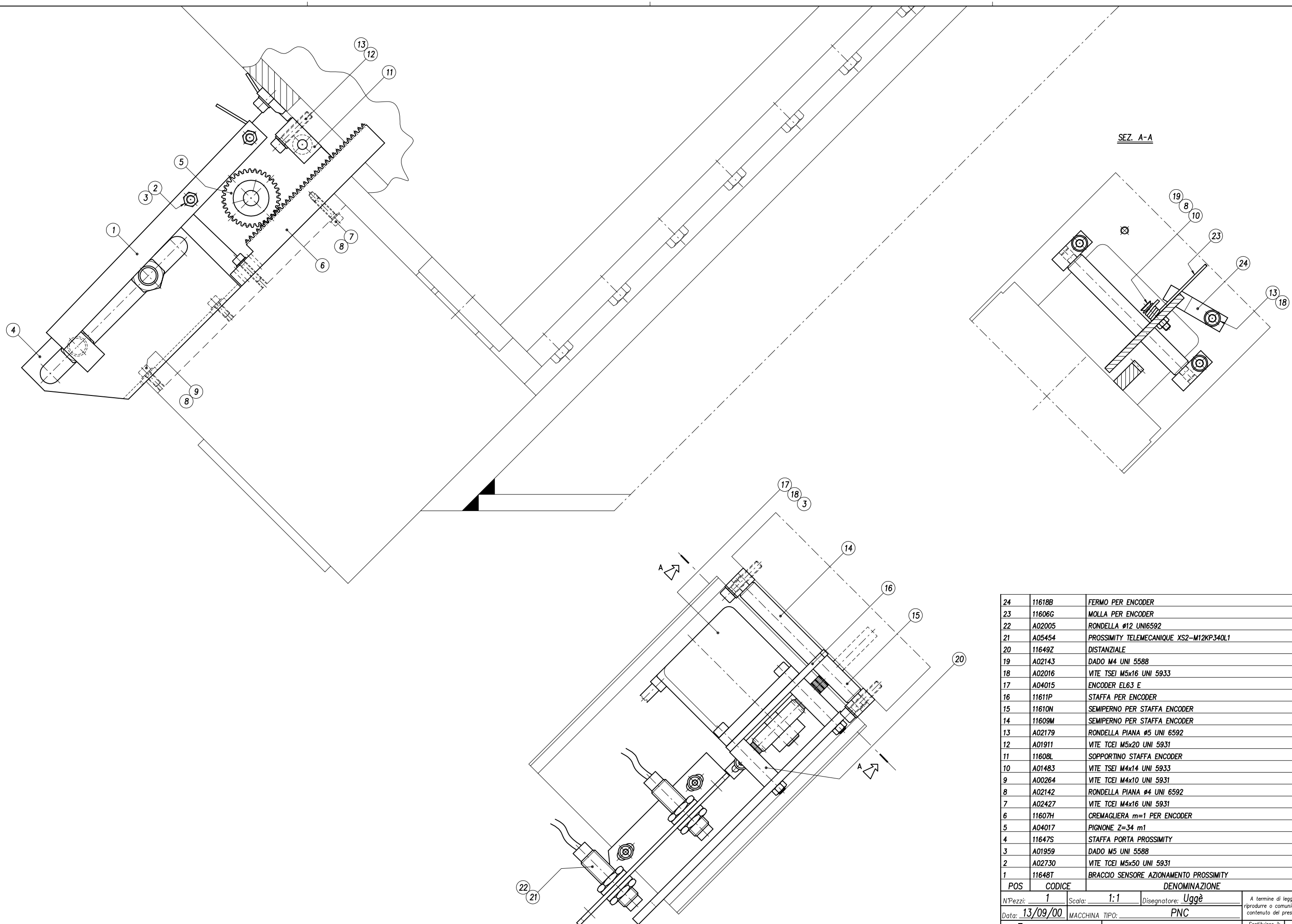
COMANDULLI

GRUPPO: ASSIEME 1° MANDRINO GENERANTE SU TRAVERSA

A termini di legge è vietato riprodurre o comunicare a terzi il contenuto del presente disegno

Controllato: | Versione ADDAX: 03

DIS.N° 25127G



POS	CODICE	DENOMINAZIONE	Q.TA
24	11618B	FERMO PER ENCODER	1
23	11606G	MOLLA PER ENCODER	1
22	A02005	RONDELLA ø12 UNI6592	4
21	A05454	PROSSIMITY TELEMECANIQUE XS2-M12KP340L1	2
20	11649Z	DISTANZIALE	2
19	A02143	DADO M4 UNI 5588	1
18	A02016	VITE TSEI M5x16 UNI 5933	3
17	A04015	ENCODER EL63 E	1
16	11611P	STAFFA PER ENCODER	1
15	11610N	SEMIPERNO PER STAFFA ENCODER	1
14	11609M	SEMIPERNO PER STAFFA ENCODER	1
13	A02179	RONDELLA PIANA ø5 UNI 6592	3
12	A01911	VITE TCEI M5x20 UNI 5931	2
11	11608L	SOPPORTINO STAFFA ENCODER	2
10	A01483	VITE TSEI M4x14 UNI 5933	1
9	A00264	VITE TCEI M4x10 UNI 5931	2
8	A02142	RONDELLA PIANA ø4 UNI 6592	5
7	A02427	VITE TCEI M4x16 UNI 5931	2
6	11607H	CREMAGLIERA m=1 PER ENCODER	1
5	A04017	PIGNONE Z=34 m1	1
4	11647S	STAFFA PORTA PROSSIMITY	1
3	A01959	DADO M5 UNI 5588	4
2	A02730	VITE TCEI M5x50 UNI 5931	2
1	11648T	BRACCIO SENSORE AZIONAMENTO PROSSIMITY	1

N°Pezzi: 1 | Scala: 1:1 | Disegnatore: Uggè

Data: 13/09/00 | MACCHINA TIPO: PNC

A termine di legge è vietato riprodurre o comunicare a terzi il contenuto del presente disegno

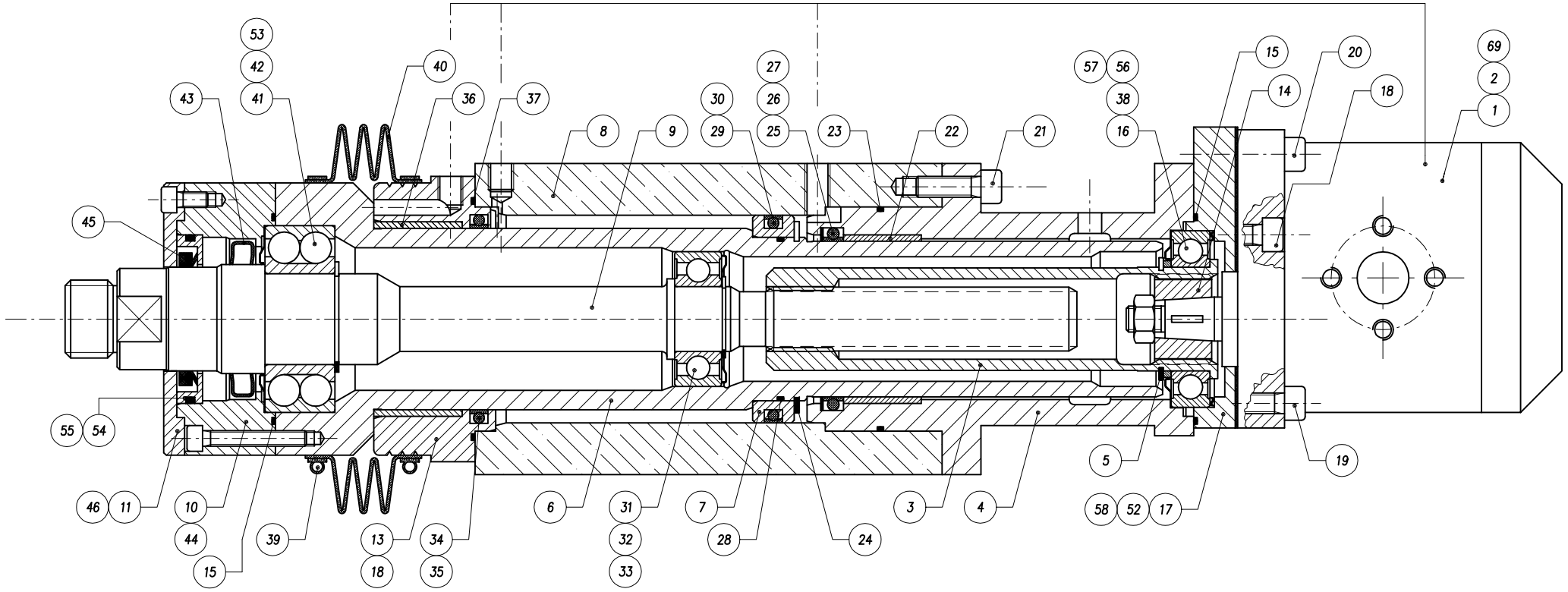
COMANDULLI
COSTRUZIONI MECCANICHE

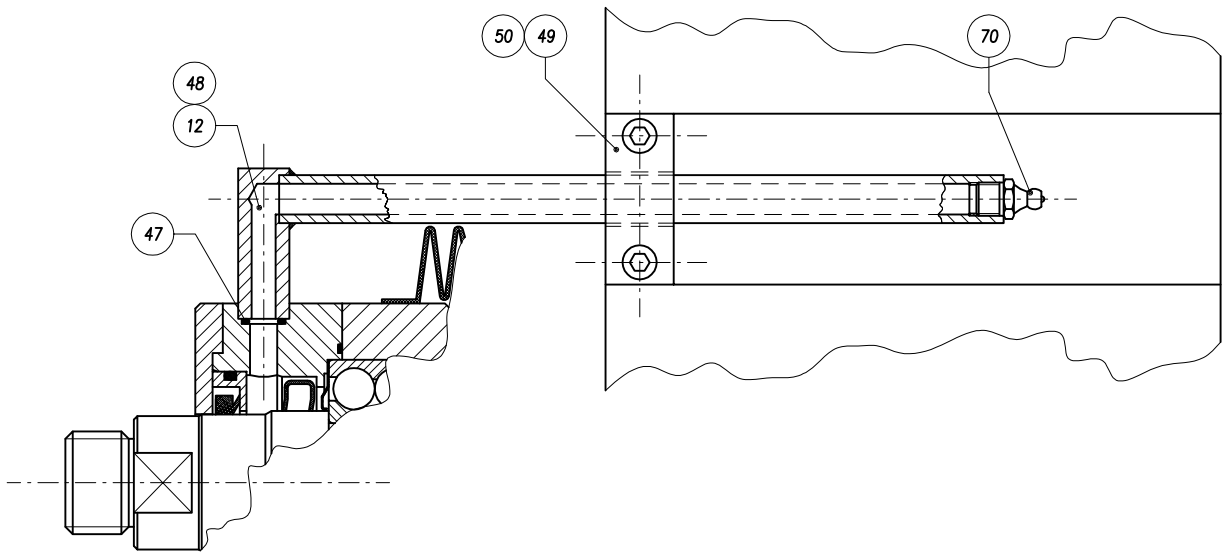
GRUPPO: ENCODER CONTROLLO ASSE 45°

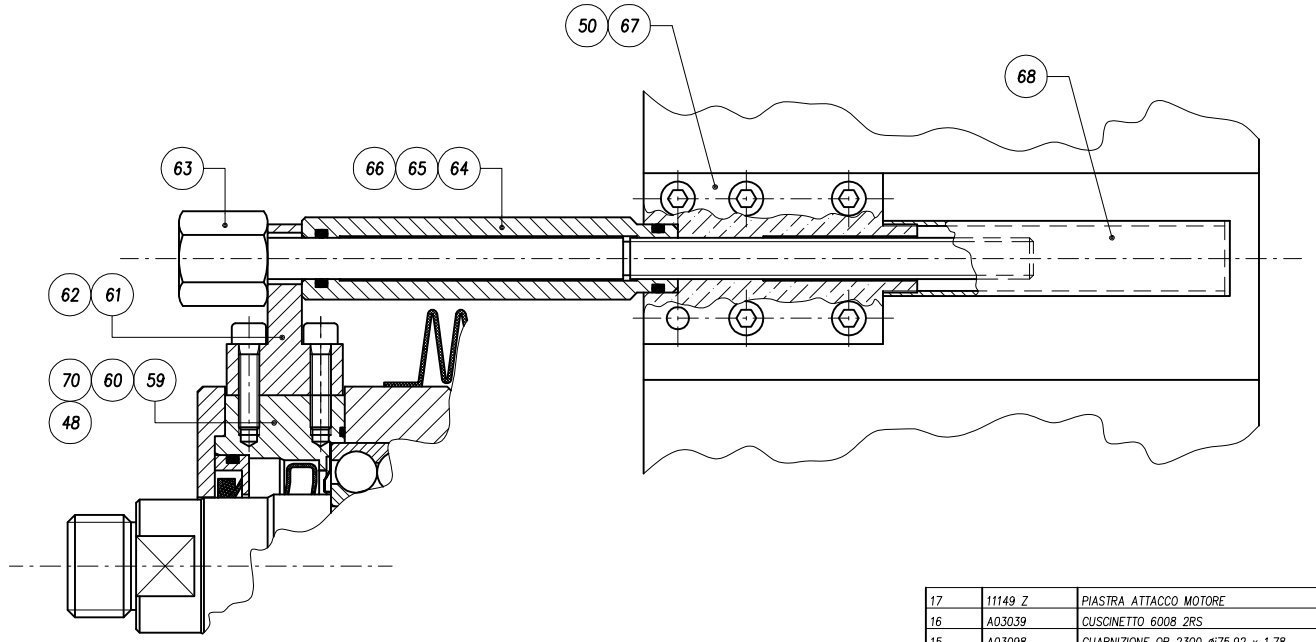
Sostituisce il: | Sostituito da:

DIS.N° 25135 S

ATTENZIONE!! TUTTO SULLO STESSO PIANO







POS	CODICE	DENOMINAZIONE	Q.TA
70	A02875	INGRASSATORE A PUNTA ø1/8" GAS	6
69	A07107	MOTORE IDRAULICO PLM 20.14 PER 3"-4"-5"-6" TESTA	4
68	11465 P	PROTEZIONE VITE DI REGISTRO	1
67	26252 C	BOCCOLA PER FERMO POSITIVO	1
66	A02406	GUARNIZIONE OR 3056 ø13.95x2.62	1
65	A01026	GUARNIZIONE OR 115 ø111.91x2.62	1
64	11463 M	CONTRODADO	1
63	11466 Q	VITE DI REGISTRO	1
62	A01906	VTCEI M6x25 ZINC. UNI 5931	2
61	11388 M	STAFFA PER FERMO POSITIVO	1
60	26214 S	PIASTRINA DI CHIUSURA	1
59	11661 P	FLANGIA ANTERIORE 1" TESTA	1
58	13210 A	GUARNIZIONE	6
57	11718 T	DISTANZIALE	6
56	A03423	ANELLO NILOS 6008 ZJV	6
55	A01044	GUARNIZIONE OR 3231 ø158.42x1.78	6
54	11736 A	ANELLO	6
53	A03249	ANELLO NILOS 3207 JV	6
52	A02637	INGRASS. T.E.S. 1/8" GAS UNI 7662	6
50	A01923	VITE TCEI M6x30 UNI 5931	15
49	26253 D	BLOCCHETTO ANTIROTAZIONE	5
48	A01903	VTCEI M6x15 ZINC. UNI 5931	12
47	A02194	GUARNIZIONE OR 2037 ø19.25x1.78	5
46	A01905	VTCEI M6x10 ZINC. UNI 5931	18
45	A01777	GUARNIZIONE V-RING A 40	6
44	A01948	VTCEI M6x35 ZINC. UNI 5931	18
43	A04103	GUARNIZIONE DOMSEL BC 426210 NBR	6
42	A00964	CUSCINETTO 3207 B-2RS	6
41	A01054	SEEGER E 35 UNI 7435	6
40	A01304	SOFFIETTO GOMMA 155/105-55/160	6
39	A02256	FASCETTA STRINGITUBO	12
38	A03017	ANELLO COMPENSATORE LMK AS 68	6
37	A03220	GUARNIZIONE OR 2350 ø188.62x1.78	6
36	A01463	BOCCOLA C. SOVRAM. 70/30 DX	6
35	A03056	GUARNIZIONE RC 6275	6
34	A01052	GUARNIZIONE OR 6275	6
33	A01749	ANELLO NILOS 6205 ZAV	6
32	A01453	CUSCINETTO 62205 2RS	6
31	A01061	ANELLO SEEGER E25	6
30	A03024	GUARNIZIONE RP 6275	6
29	A01052	GUARNIZIONE OR 6275	6
28	A03241	GUARNIZIONE BK 6237	6
27	A03060	GUARNIZIONE RC 6237	6
26	A03049	GUARNIZIONE OR 6237	6
25	A03134	ANELLO SEEGER E63 UNI 7435	6
24	A03209	GUARNIZIONE OR 2325 ø182.27x1.78	6
23	A01464	BOCCOLA C. SOVRAM. MB 60-30 DX	6
22	A01922	VTCEI M8x25 ZINC. UNI 5931	24
21	A02181	VTCEI M8x50 ZINC. UNI 5931	12
20	A01924	VTCEI M8x35 ZINC. UNI 5931	12
19	A01921	VTCEI M8x20 ZINC. UNI 5931	36

POS	CODICE	DENOMINAZIONE	Q.TA
17	11149 Z	PIASTRA ATTACCO MOTORE	6
16	A03039	CUSCINETTO 6008 2RS	6
15	A03098	GUARNIZIONE OR 2300 ø175.92 x 1.78	12
14	11146 T	MOZZO PER MOTORE IDRAULICO	6
13	11152 B	MUSONE ANTERIORE	6
12	11162 P	STAFFA ANTIROTAZIONE	5
11	11193 C	FLANGIA	6
10	11194 D	FLANGIA ANTERIORE PER 2"-3"-4"-5"-6" TESTA	5
9	11719 Z	ALBERO	6
8	26251 B	TRAVERSA PORTA TESTE	1
7	11155 E	PISTONE	6
6	11191 A	CANNOTTO	6
5	A00794	SEEGER A40 X 1.75 V	6
4	11150 Y	BOCCOLA PORTA MOTORE	6
3	11577 U	ALLUNGA CON MANICOTTO DI TRASCIN.	6
2	A06525	MOTORE IDRAULICO PLM 20.11.2 PER 2" TESTA	1
1	A06625	MOTORE IDR. PLM 20.08 PER 1" TESTA	1

N°Pezzi: _____ Scala: 1:1 Disegnatore: Tizzoni D.

Data: 09/07/98 MACCHINA TIPO: OMEGA 60

COMANDULLI COSTRUZIONI MECCANICHE

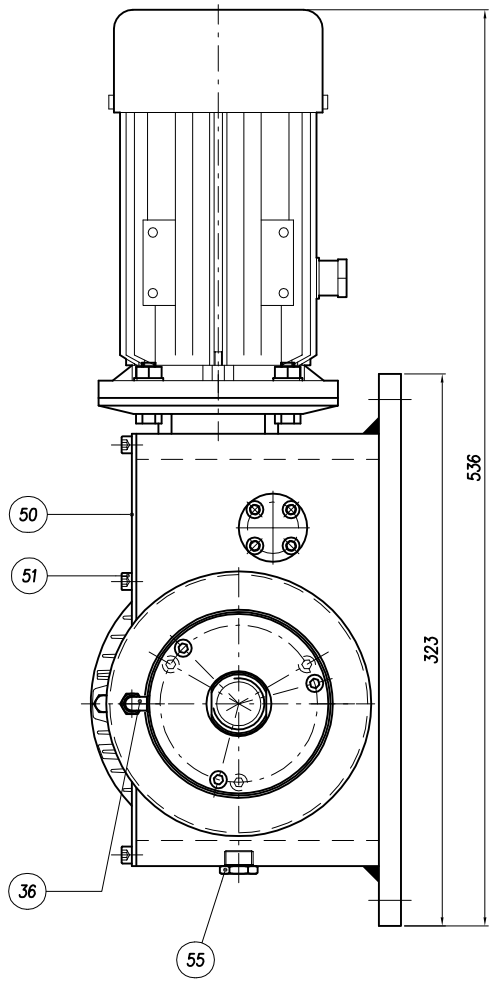
GRUPPO: ASSIEME

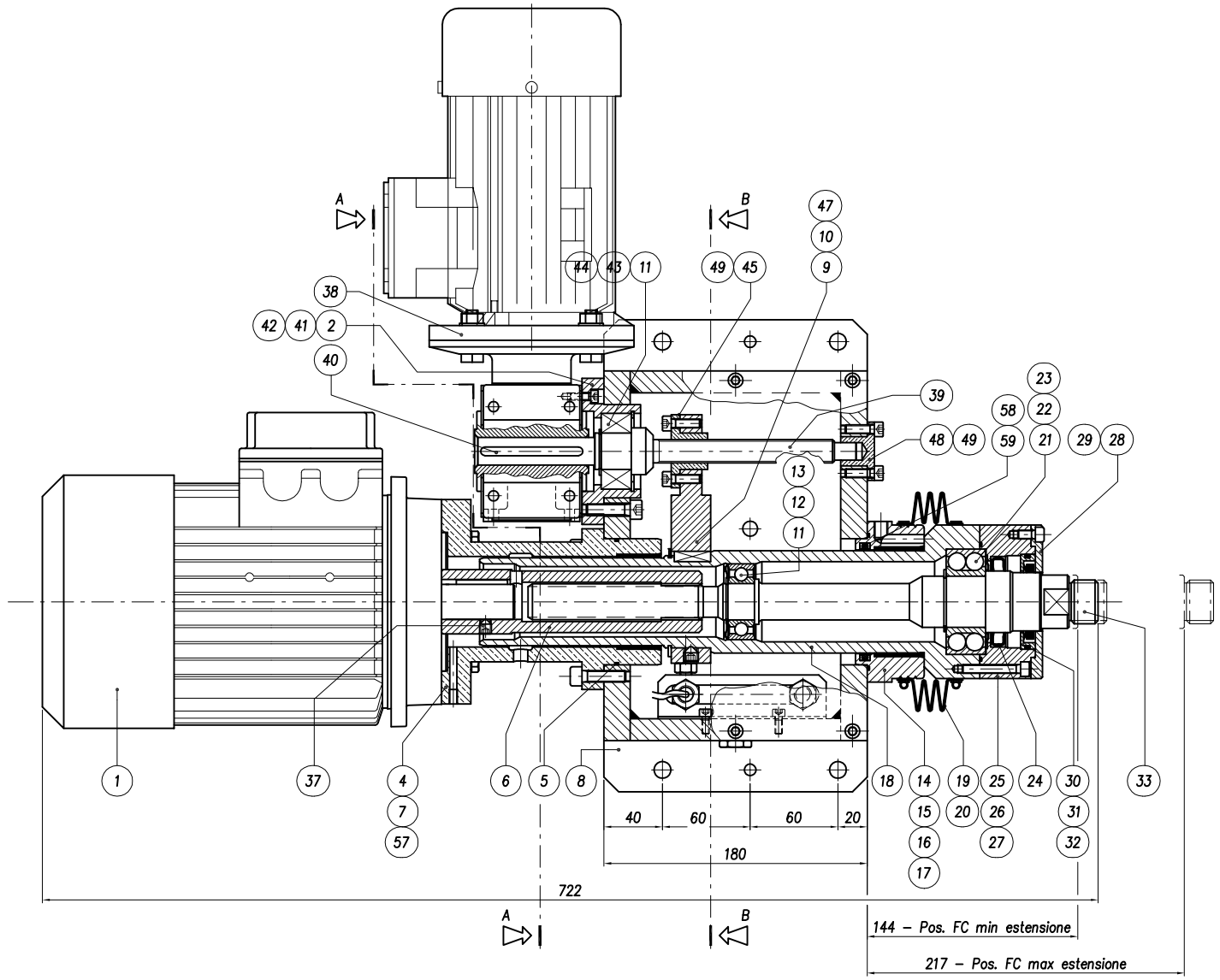
TESTE OSCILLANTI

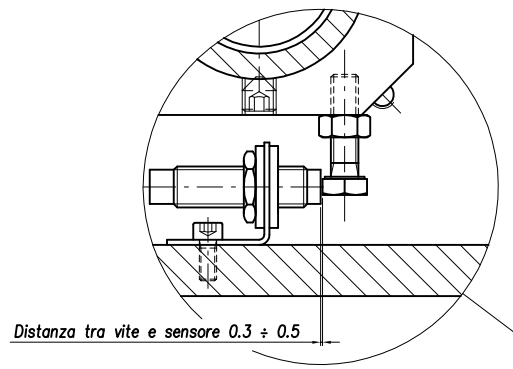
A termine di legge è vietato riprodurre o comunicare a terzi il contenuto del presente disegno

Sostituisce il: _____ Sostituito da: _____

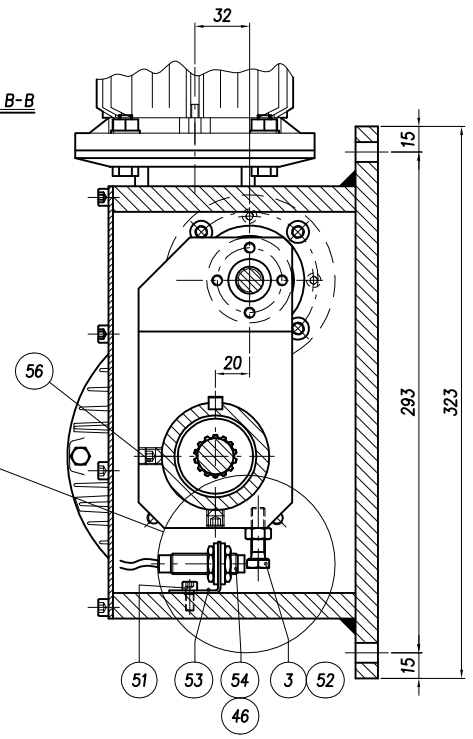
DIS.N° 26006 G



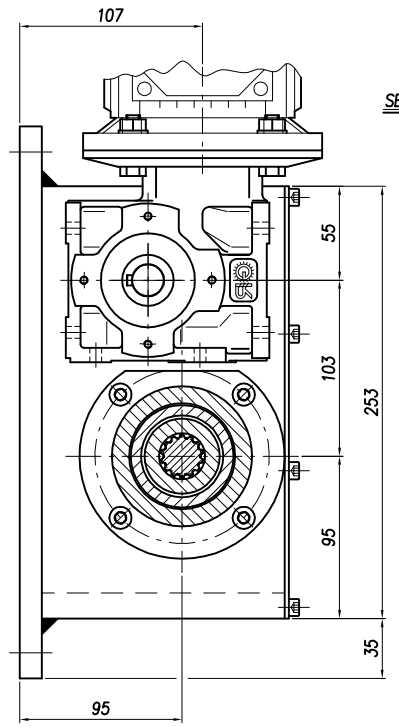




SEZ. B-B



SEZ. A-A



POS	CODICE	DENOMINAZIONE	DIMENSIONE	Qtà
59	A01052	GUARNIZIONE OR 6275		1
58	A03056	GUARNIZIONE RC 6275		1
57	A03437	VITE TE UNI 5739	M8x30	4
56	A08164	GRANO UNI 5927	M10x10	2
55	A00611	TAPPO G 3/8"		1
54	A05454	PROSSIMITY TE ø12		2
53	26559R	SQUADRETTA PER PROSSIMITY		1
52	A05339	DADO UNI 5588	M8 Inox	1
51	A02142	VITE TCEI UNI 5931	M6x12	12
50	26560S	COPERCHIO		1
49	A05335	VITE TCEI UNI 5931	M6x20 Inox	8
48	26552G	BRONZINA		1
47	A02020	LINGUETTA UNI 6604 A	8x7x25	1
46	A02005	RONDELLA PIANA UNI 6592	ø12	4
45	26550 E	CHIOCCIOLA PER VITE DI REGOLAZIONE		1
44	A01097	ANELLO SEEGER I52 UNI 7437		1
43	A06820	CUSCINETTO 3205 2RS		1
42	26553H	FLANGIA ATTACCO MOTORIDUTTORE		1
41	A01910	VITE TCEI UNI 5931	M5x14	4
40	A02031	LINGUETTA UNI 6604 A	6x6x70	1
39	26551 F	VITE DI REGOLAZIONE		1
38	A07299	MOTORIDUTTORE MRV32 CON MOTORE GRAND. 63		1
37	A05893	GRANO UNI 5927 INOX	M8x10	2
36	A06123	RACCORDO ø1/8" A 90° D.5 2600218000		1
33	11719Z	ALBERO		1
32	A01044	GUARNIZIONE OR 3231	ø 58.42x1.78	1
31	11736A	ANELLO		1
30	A01777	GUARNIZIONE V-RING A40		1
29	A03737	VITE TCEI UNI 5931	M6x10 Inox	3
28	11193C	FLANGIA		1
27	A03098	GUARNIZIONE OR 2300	ø 75.92x1.78	1
26	A01948	VITE TCEI UNI 5931	M6x35	4
25	26556 N	FLANGIA ANTERIORE		1
24	A04103	GUARNIZIONE DOMSEL BC 426210 NBR		1
23	A03249	ANELLO NILOS 3207 JV		1
22	A01054	ANELLO SEEGER E35 UNI 7435		1
21	A00964	CUSCINETTO 3207B 2RS		1
20	A02256	FASCETTA SERFLEX ø92/112x8		2
19	A01304	SOFFIETTO GOMMA 155/105-55/160		1
18	26555 M	CANNOTTO		1
17	A01463	BOCCOLA CON SOVRAMETALLO MB70-30 DX		1
16	A03220	GUARNIZIONE OR 2350	ø 88.62x1.78	1
15	A01921	VITE TCEI UNI 5931	M8x20	4
14	11152B	MUSONE ANTERIORE		1
13	A01749	ANELLO NILOS 6205 ZAV		1
12	A01453	CUSCINETTO 62205 2RS		1
11	A01061	ANELLO SEEGER E25 UNI 7435		2
10	A03034	ANELLO SEEGER E63 UNI 7435		1
9	26554 L	PIATTO DI TRASCINAMENTO		1
8	26558Q	CORPO MANDRINO SX		1
7	A01464	BOCCOLA CON SOVRAMETALLO MB60-30 DX		1
6	26210N	ALLUNGA CON MANICOTTO DI TRASCINAMENTO		1
5	A03209	GUARNIZIONE OR 2325	ø 82.27x1.78	1
4	26208L	BOCCOLA PORTAMOTORE		1
3	A07370	VITE TE UNI 5739	M8x30 Inox	1
2	A01923	VITE TCEI UNI 5931	M8x30	4
1	A06094	MOTORE ELETTRICO HP3-P2-B14 220/380/50		1

N°Pezzi: 1 | Scala: 1:2 | Disegnatore: Di Carlo

Data: 14/06/04 | MACCHINA TIPO: OMEGA 100 SX

COMANDULLI

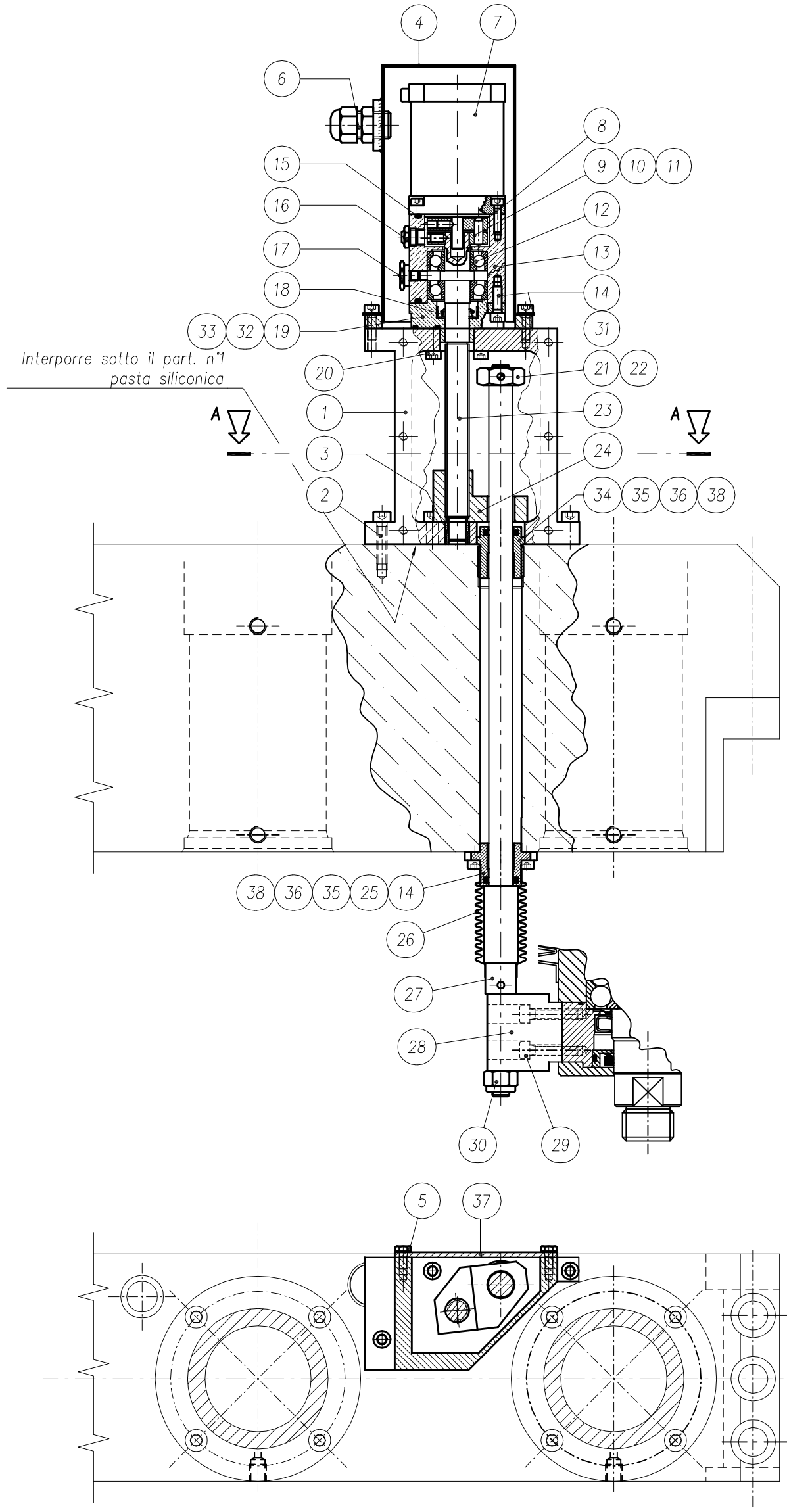
GRUPPO: ASSIEME

MANDRINO SMUSSATORE

A termini di legge è vietato riprodurre o comunicare a terzi il contenuto del presente disegno

Controllato: | Versione ADDAX: 01

DIS.N° 26501 Q



SEZ. A-A

POS	CODICE	DENOMINAZIONE	DIMENSIONE	Qtà
38	A02599	GUARNIZIONE OR 3062		2
37	26820 H	COPERCHIO		1
36	A08414	GUARNIZIONE LUBRORING LRC 18113062	ø14	2
35	A01333	BOCCOLA ANTIFRIZIONE MB 14-15 DU		2
34	26823 N	BUSSOLA DI GUIDA		1
33	A03226	GUARNIZIONE OR 2187		1
32	A01042	GUARNIZIONE OR 2087		1
31	A03859	RONDELLA UNI 6592 INOX	ø5	4
30	A05340	DADO M10 UNI 5588 INOX		1
29	A05895	VITE TCEI UNI 5931 INOX	M6x30	2
28	26739 C	BLOCCHETTO ATTACCO ANTIROTAZIONE		1
27	26826 R	ASTA ANTIROTAZIONE MANDRINO GENERANTE		1
26	A05601	SOFFIETTO	18/165/00	1
25	26824 P	FLANGETTA PER FERMO POSITIVO		1
24	26737 A	FERMO PER DIAMANTE		1
23	26743 G	VITE REGOLAZIONE FERMO POSITIVO		1
22	A07877	SPINA CILINDRICA 6364A	ø4x20 m6	1
21	26738 B	DADO SPECIALE		1
20	A05426	VITE TCEI UNI 5931 INOX	M5x20	3
19	26825Q	FLANGIA ATTACCO CAMPANA		1
18	A07878	GUARNIZIONE MIM	14/24/7	1
17	A02916	INGRASSATORE T.E.S. UNI 7662	M6x1	1
16	A07362	VALVOLA DI SPURGO ART. 304	M10x1	1
POS	CODICE	DENOMINAZIONE	DIMENSIONE	Qtà

POS	CODICE	DENOMINAZIONE	DIMENSIONE	Qtà
15	A03214	GUARNIZIONE OR 3175		2
14	A05450	VITE TCEI UNI 5931 INOX	M5x16	11
13	26744 H	CAMPANA PORTA MOTORE P. P.		1
12	A00919	CUSCINETTO 7202 B	15/35/11	2
11	A02649	GRANO UNI 5927 ZINCATO	M5x10	2
10	A02918	SPINA CILINDRICA 6364A	ø5x14 m6	1
9	11879 H	GIUNTO		1
8	A05350	VITE TCEI UNI 5931 INOX	M4x20	4
7	A07876	MOT. P.P SERIE 103 - H7126 - 66 PROT. IP43		1
6	A03363	PRESSACAVO M16x1.5		1
5	A06730	VITE TE UNI 5739 INOX	M5x10	6
4	26821 L	CUFFIA DI PROTEZIONE		1
3	26819 G	BRONZINA		1
2	A04570	VITE TCEI UNI 5931 INOX	M6x25	3
1	26817 E	SOSTEGNO MOTORE P.P.		1

N°Pezzi: 1 | Scala: 1:2 | Disegnatore: Uggè

Data: 24/10/2002 | MACCHINA TIPO: OMEGA 100 SX

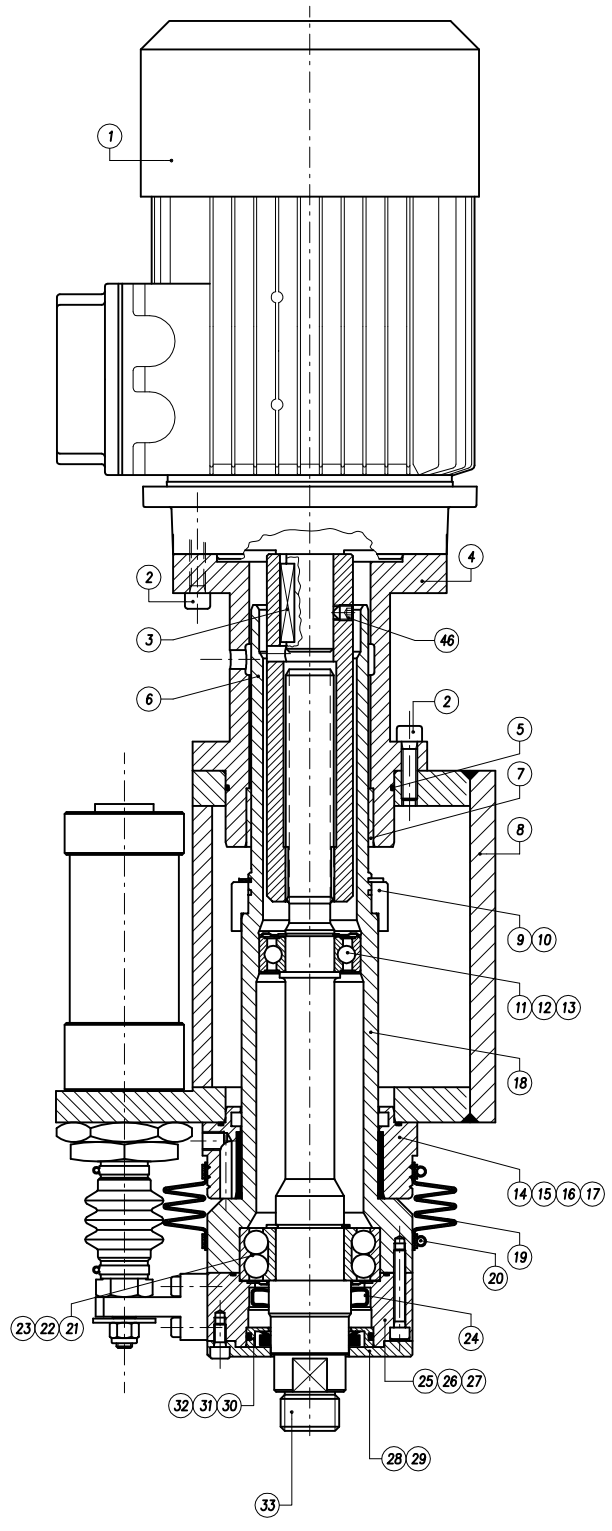
A termini di legge è vietato riprodurre o comunicare a terzi il contenuto del presente disegno

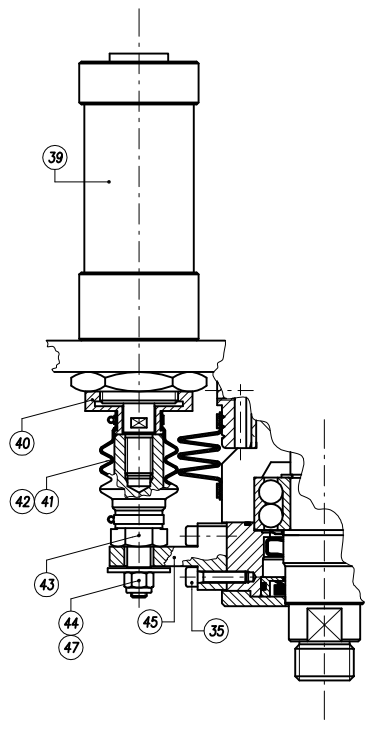
COMANDULLI
COSTRUZIONI MECCANICHE

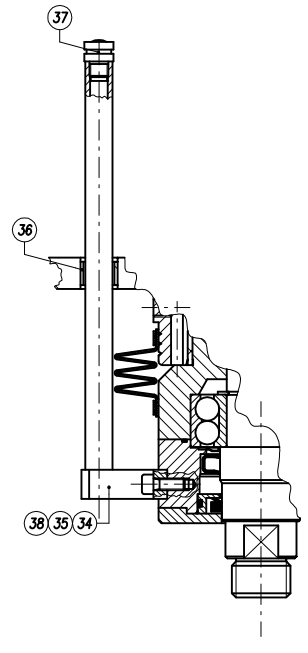
GRUPPO: COMPLESSIVO FERMO GENERANTE CON MOT. P. P.

Sostituisce il: | Sostituito da:

DIS.N° 26827 S







POS	CODICE	DENOMINAZIONE	Q.TA
47	A02006	RONDELLA ø8x32 FASCIA LARGA	1
46	A05893	GRANO M8x10 UNI 5927 INOX	2
45	26312 Q	STAFFA PER FERMO	1
44	A05339	DADO M8 INOX UNI 5588	1
43	26313 R	PORTA SOFFIETTO SU STAFFA	1
42	A02258	FASCETTA STRINGITUBO INOX	2
41	A06109	SOFFIETTO TECNOPRENE Cod. 25/145/00	1
40	26314 S	PORTA SOFFIETTO SU CILINDRO	1
39	A00565	CILINDRO FISSAGGIO VITE ANTERIORE VA ø50 CORSA 110mm	1
38	A02194	GUARNIZIONE OR 2037 øi9.52x1.78	1
37	A02637	INGRASSATORE T.S.E. 1/8" GAS UNI 7662	1
36	A01610	BOCCOLA ANTIFRIZIONE MB 16-12 DU	1
35	A01903	VTCEI M6x25 ZINC. UNI 5931	4
34	11162 P	STAFFA ANTIROTAZIONE	1
33	11719 Z	ALBERO	1
32	A01044	GUARNIZIONE OR 3231 øi58.42x1.78	1
31	11736 A	ANELLO	1
30	A01777	GUARNIZIONE V-RING A40	1
28	11193 C	FLANGIA	1
27	A03098	GUARNIZIONE OR 2300 øi75.92x1.78	1
26	A01948	VTCEI M6x35 ZINC. UNI 5931	4
25	26209 M	FLANGIA ANTERIORE	1
24	A04103	GUARNIZIONE DOMSEL BC 426210 NBR	1
23	A03249	ANELLO NILOS 3207 JV	1
22	A01054	SEEGER E35 UNI 7435	1
21	A00964	CUSCINETTO 3207 B-2RS	1
20	A02256	FASCETTA STRINGITUBO	2
19	A01304	SOFFIETTO GOMMA 155/105-55/160	1
18	11191 A	CANNOTTO	1
17	A01463	BOCCOLA CON SOVRAM. MB 70-30 DX	1
16	A03220	GUARNIZIONE OR 2350 øi88.62x1.78	1
15	A01921	VTCEI M8x20 ZINC. UNI 5931	4
14	11152 B	MUSONE ANTERIORE	1
13	A01749	ANELLO NILOS 6205 ZAV	1
12	A01453	CUSCINETTO 62205 2RS	1
11	A01061	ANELLO SEEGER E25 UNI 7435	1
10	A03034	ANELLO SEEGER E63 UNI 7435	1
9	26215 T	ANELLO FERMO CORSA	1
8	26566 B	SCATOLA PORTA TESTE	1
7	A01464	BOCCOLA CON SOVRAMETALLO MB 60-30 DX	1
6	26210 N	ALLUNGA CON MANICOTTO DI TRASCIN.	1
5	A03209	GUARNIZIONE OR 2325 øi82.27x1.78	1
4	26208 L	BOCCOLA PORTAMOTORE	1
3	A01990	LINGUETTA 8x7x40 A UNI 6604	1
2	A01923	VTCEI M8x30 ZINC. UNI 5931	8
1	A06095	MOTORE ELETTRICO HP2 P4 B14 220/380/50	1

N°Pezzi: _____ Scala: _____ Disegnatore: _____

Data: _____ MACCHINA TIPO: OMEGA 100

A termine di legge è vietato riprodurre o comunicare a terzi il contenuto del presente disegno

COMANDULLI
COSTRUZIONI MECCANICHE

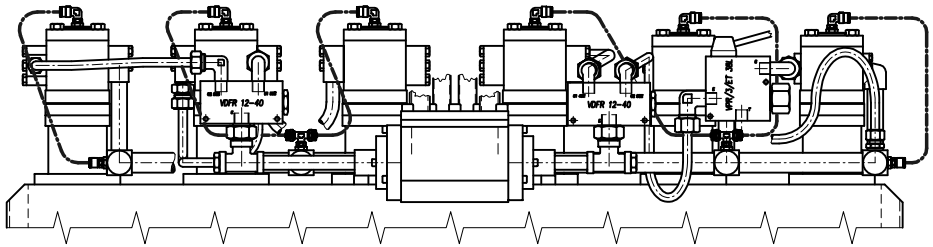
GRUPPO: MANDRINO

LUCIDANTE VERTICALE

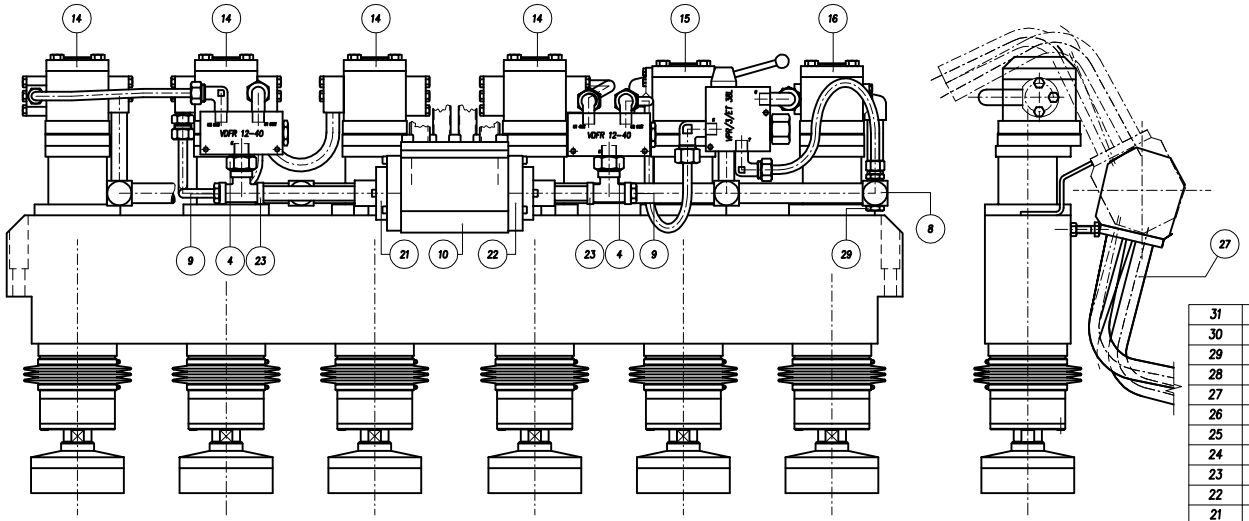
Sostituisce il: _____ Sostituito da: _____

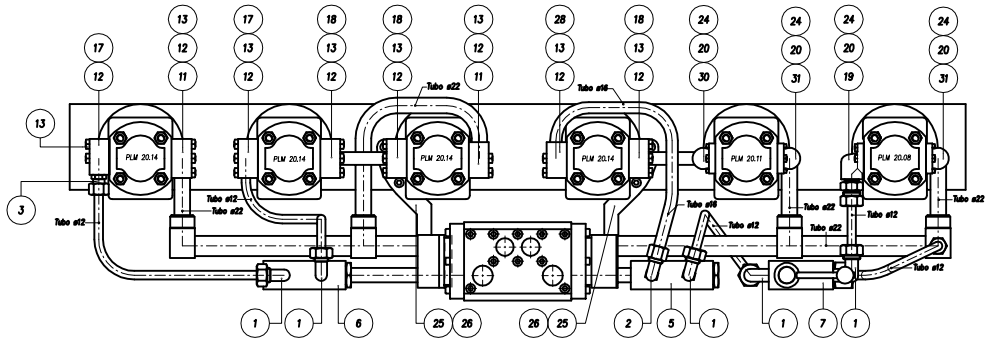
DIS.N° 26848 R

Tav. _____



Linea drenaggi





POS	CODICE	DENOMINAZIONE	DIMENSIONE	Qtà
31	A08949	RACC. POMPA RPS 1-22 GR1 90°		2
30	A08948	RACC. POMPA RPS 1-18 GR1 90°		1
29	A02687	Tappo esagono incassato	3/8"	1
28	11296 L	Flangia attacco motore		1
27	11435 Z	Tubi di collegamento distributore - flessibili		1
26	A01922	Vite TCEI UNI 5931	M8x25	4
25	11299 P	Sostegno distributore rotante		2
24	A05103	Vite TE INOX UNI 5739	M6x20	15
23	A02551	Raccordo a T F.F.F. ASA 2000		2
22	26350 A	Collettore dx mandata e ritorno olio		1
21	26352 C	Collettore sx mandata e ritorno olio		1
20	A02599	Guarnizione OR 3062		4
19	A00821	Raccordo RPG 1/2" x 30 nudo		1
18	11294 G	Flangia attacco motore		3
17	26355 F	Flangia attacco motore		2
16	A06625	Motore idraulico CASAPPA PLM 20.08 con drenaggio		1
15	A06525	Motore idraulico CASAPPA PLM 20.11 con drenaggio		1
14	A07107	Motore idraulico CASAPPA PLM 20.14		4
13	A06768	Vite TE INOX - UNI 5739	M8x40	24
12	A02185	Guarnizione OR 3093		8
11	11295 H	Flangia attacco motori		2
10	11430 Q	Distributore rotante olio		1
9	A00865	Tappo esagono incassato	1/2"	2
8	26787 Q	Manicotto di testa		1
7	A08255	Valvola "prioritaria" OLEOSTAR VPR/3/ET 38L		1
6	A08252	Divisore di flusso OLEOSTAR VDFR 12-40	50% - 50%	1
5	A08253	Divisore di flusso OLEOSTAR VDFR 12-40	60% - 40%	1
4	A00806	Nipplo di raccordo	1/2" conico - 1/2" conico	2
3	A00884	Raccordo BLAGO diritto	3/8" - ø12	1
2	A08256	Raccordo BLAGO 90°	3/8" - ø16	1
1	A04049	Raccordo BLAGO 90°	3/8" - ø12	6

N°Pezzi: | Scala: | Disegnatore: Di Carlo

Data: 19/07/05 | MACCHINA TIPO: OMEGA 60 SX

A termini di legge è vietato riprodurre o comunicare a terzi il contenuto del presente disegno

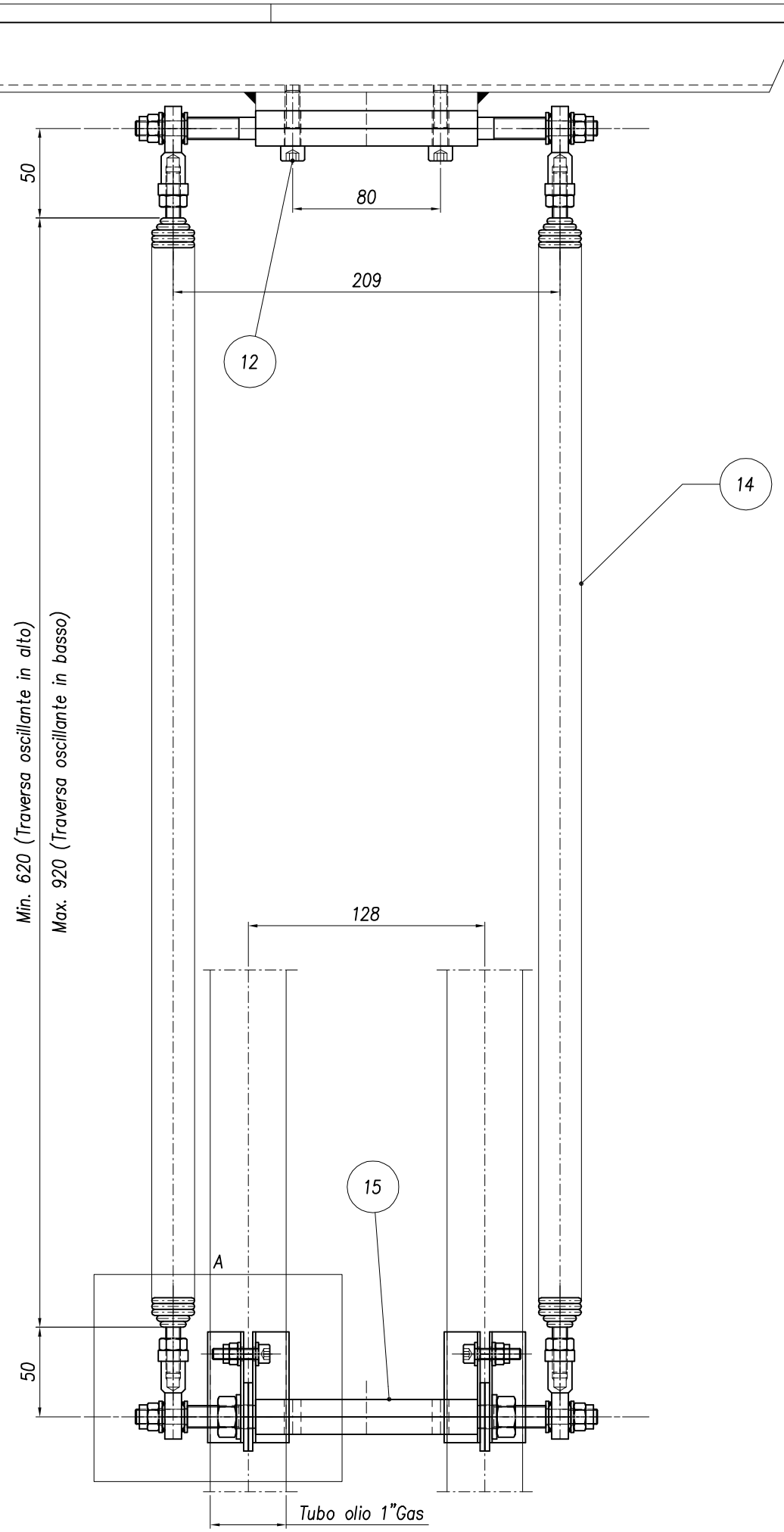
Controllato: | Versione ADDAX: 00

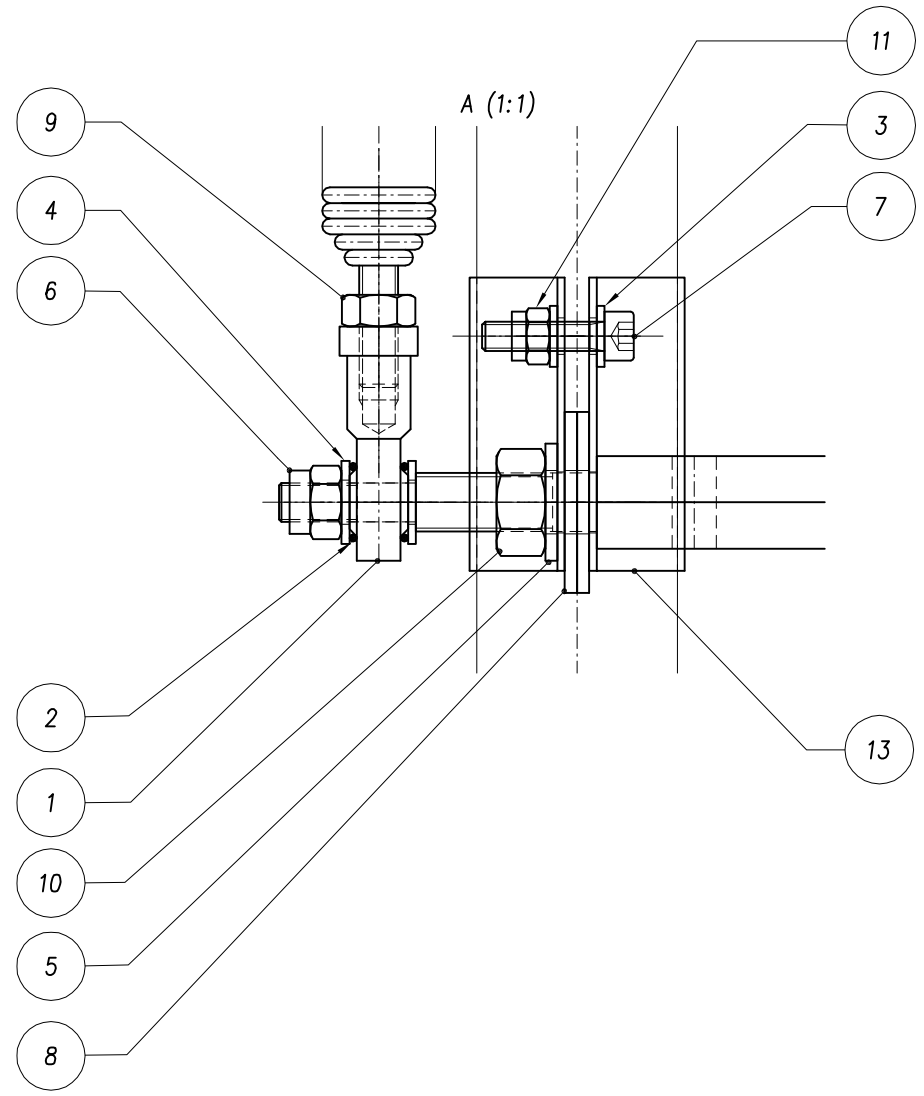
COMANDULLI

GRUPPO: IMPIANTO IDRAULICO

TRAVERSA TESTE

DIS.N° 26982S





POS	CODICE	DENOMINAZIONE	DIMENSIONE	Qtà
15	11616Z	STAFFA PER TUBI IDR. GR. OSCILLANTE		2
14	11615T	MOLLA A BOVOLO INOX	L=600	2
13	11613R	BRACCIALE PER TUBO		2
12	A05425	VITE TCEI UNI 5931	M8x30	2
11	A05899	DADO AUTOBLOC. M6 INOX		8
10	A05341	DADO M12 UNI 5588 INOX		2
9	A05339	DADO M8 UNI 5588 INOX		4
8	A05105	RONDELLA PIANA 12 13x37 INX FAS. LAR		4
7	A04570	VITE TCEI UNI 5931	M6x25	8
6	A04261	DADO AUTOBLOC. M8 INOX		4
5	A03863	RONDELLA PIANA 12 INOX UNI 6592		2
4	A03861	RONDELLA PIANA 8 INOX UNI 6592		8
3	A03860	RONDELLA PIANA 6 INOX UNI 6592		16
2	A01006	GUARNIZIONE OR 2050		8
1	A00968	TESTA SNODO F. M8 JAF8		4

N°Pezzi: 1 | Scala: 1:2 | Disegnatore: Bianchessi

Data: 28/02/2006 | MACCHINA TIPO: ALMA

A termini di legge è vietato riprodurre o comunicare a terzi il contenuto del presente disegno

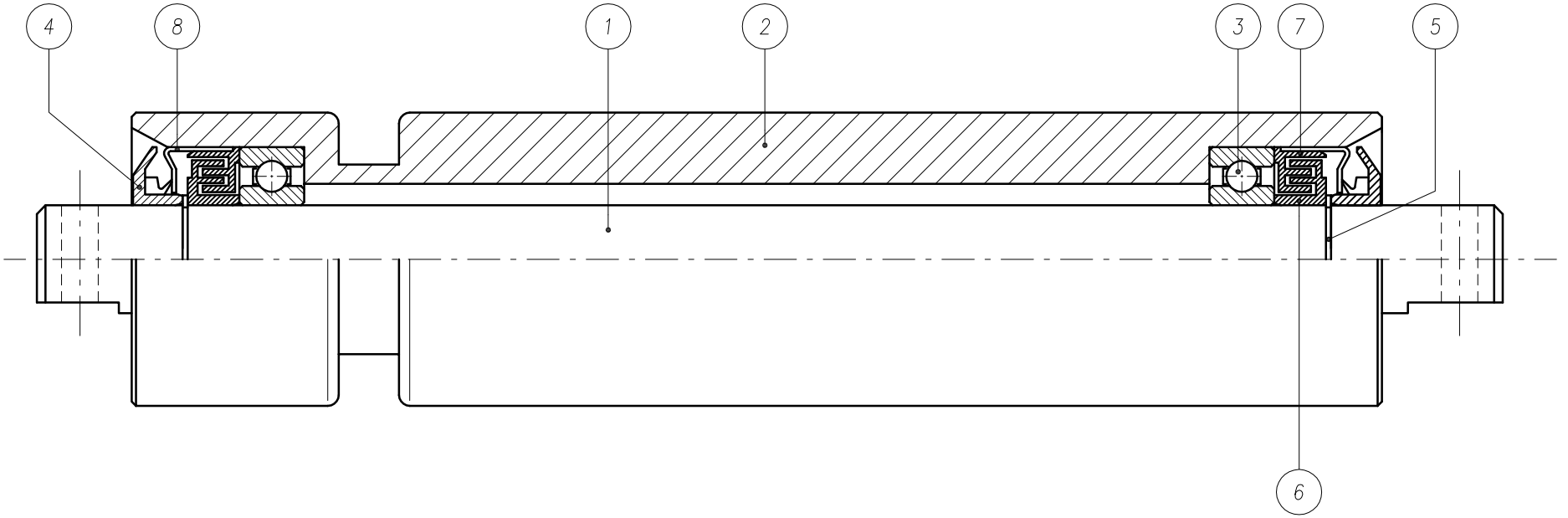
Controllato: | Versione ADDAX: 00

COMANDULLI
COSTRUZIONI MECCANICHE

GRUPPO: ASSIEME MOLLE

SOSTEGNO TUBI OSCILLANTI

DIS.N° 32344D



Pos.	Denominazione	Dimensioni	Materiali	N. Pezzi	Disegno	Codice
8	COPERCHIETTO PSV	25X52	.	2		P09090250
7	TENUTA LABIRINTO	FEMMINA	.	2		P28200254
6	TENUTA LABIRINTO	MASCHIO	.	2		P28200253
5	ANELLO SEEGER	ø 25E	INOX	2		02030251
4	BUSSOLA PSV	D.25	T.1343	2		S0125001
3	CUSCINETTO 6205 2RS	25X52X15	commercio	2		P11620504
2	MANTELLO tubo s.s.	ø70x17.5	ST 52	1	2.00.00.282.4	P61010701
1	ASSE ø 25	ø25.2 h11	INOX AISI 304	1	2.07.25.032.4	P58050253

N°Pezzi: _____ Scala: _____ Disegnatore: _____

Data: _____ MACCHINA TIPO: MACCHINA A NASTRO

COMANDULLI
COSTRUZIONI MECCANICHE

GRUPPO: RULLO BANCO

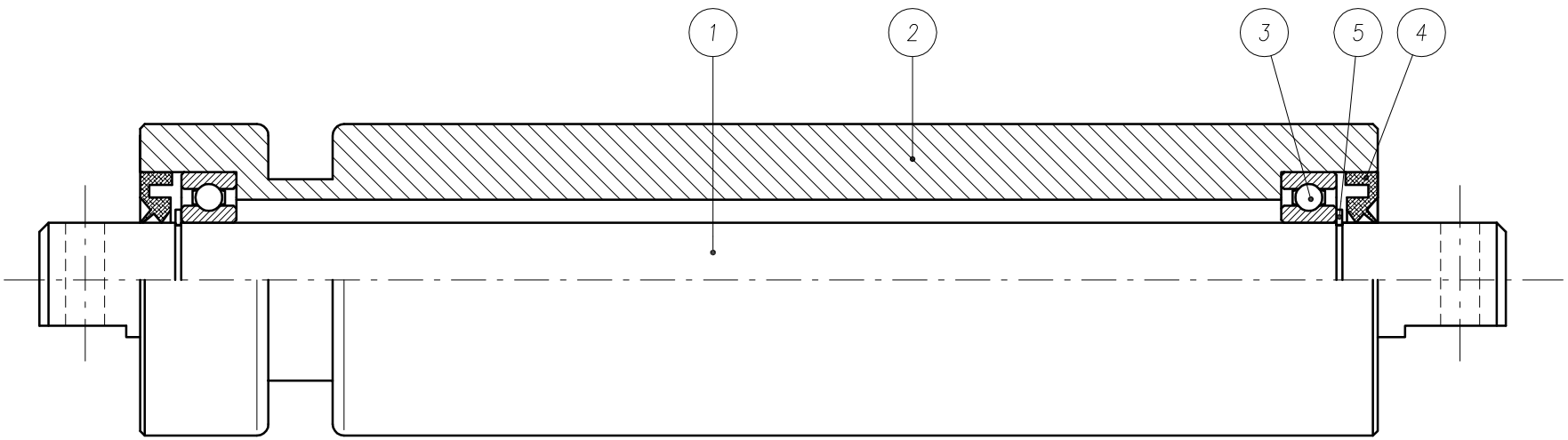
A termine di legge è vietato riprodurre o comunicare a terzi il contenuto del presente disegno

Controllato: Tizzoni

Versione ADDAX: 00

DIS.N° AB0094

Tav. _____



Pos.	Denominazione	Dimensioni	Materiali	N. Pezzi	Disegno	Codice
6	OLIO OMALA 150	.	commercio			P15100201
5	ANELLO SEEGER	ø 25E	INOX	2		02030251
4	ANELLO TENUTA	GP 25X47X7	NBR	2	FP MILANO	P28530250
3	CUSCINETTO 6005	25X47X12	commercio	2		P11600500
2	MANTELLO tubo s.s.	ø70x17.5	ST 52	1	2.00.00.281.4	P61010701
1	ASSE ø 25	ø25.2 h11	INOX AISI 304	1	2.07.25.031.4	P58050253

N°Pezzi: _____ Scala: _____ Disegnatore: _____

Data: _____ MACCHINA TIPO: MACCHINA A NASTRO

COMANDULLI
COSTRUZIONI MECCANICHE

GRUPPO: RULLO BANCO (CORTO)

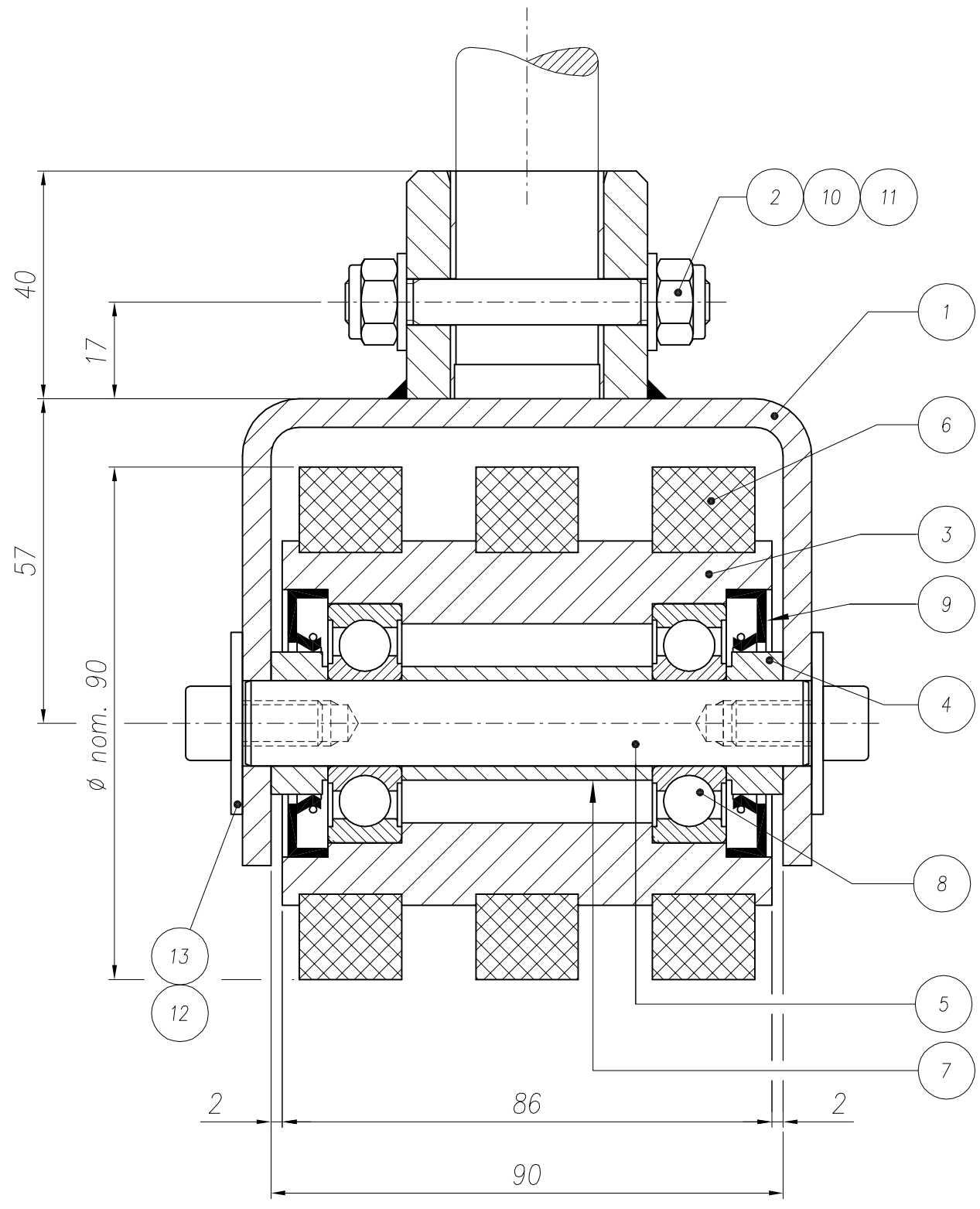
A termine di legge è vietato riprodurre o comunicare a terzi il contenuto del presente disegno

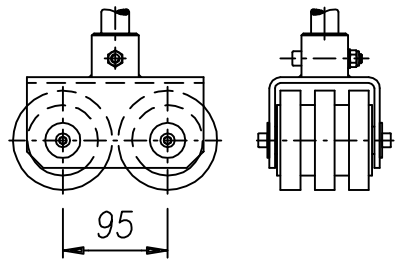
Controllato: Tizzoni

Versione ADDAX: 00

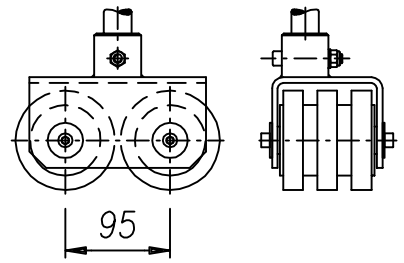
DIS.N° AB0110

Tav. _____

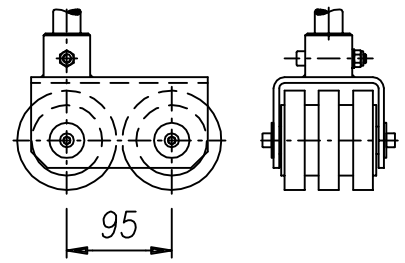




AB0209



AB0210



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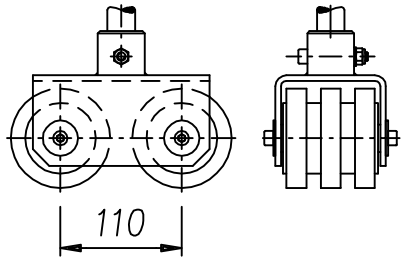
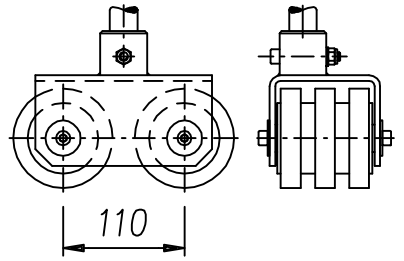
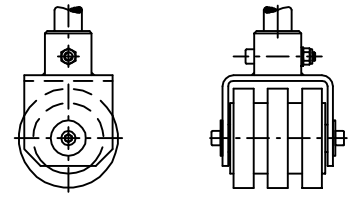


AB0208



AB0243



AB0207

TIPI DI SUPPORTO PER GRUPPI DI ASSIEME

POS	CODICE	DENOMINAZIONE	DIMENSIONE	Qtà
13	A04269	VITE TCEI UNI 5931 INOX	M8x16	4
12	A04265	RONDELLA PIANA FASCIA LARGA INOX	ø8	4
11	A04261	DADO AUTOBLOCCANTE	M8	2
10	A03861	RONDELLA PIANA UNI 6592	ø8	2
9	A01038	GUARNIZIONE MIM 25/47/7		2
8	A00965	CUSCINETTO 6302 2RS		2
7	9327 Z	DISTANZIALE CENTRALE		2
6	9227 H	ANELLO POLIURETANO PER PRESSORI		6
5	9226 G	PERNO PER RULLO		2
4	9223 F	DISTANZIALE ESTERNO RULLI		4
3	9222 E	BUSSOLA PER RULLI		2
2	12977 H	VITE STELO PRESSORE		1
1		CARTER RUOTE PRESSORI		1

N°Pezzi: S.Q.

Scala:

Disegnatore:

Data: 16/07/03

MACCHINA TIPO: OMEGA/PNC

COMANDULLI
COSTRUZIONI MECCANICHE

GRUPPO: GRUPPO RUOTE PRESSORI

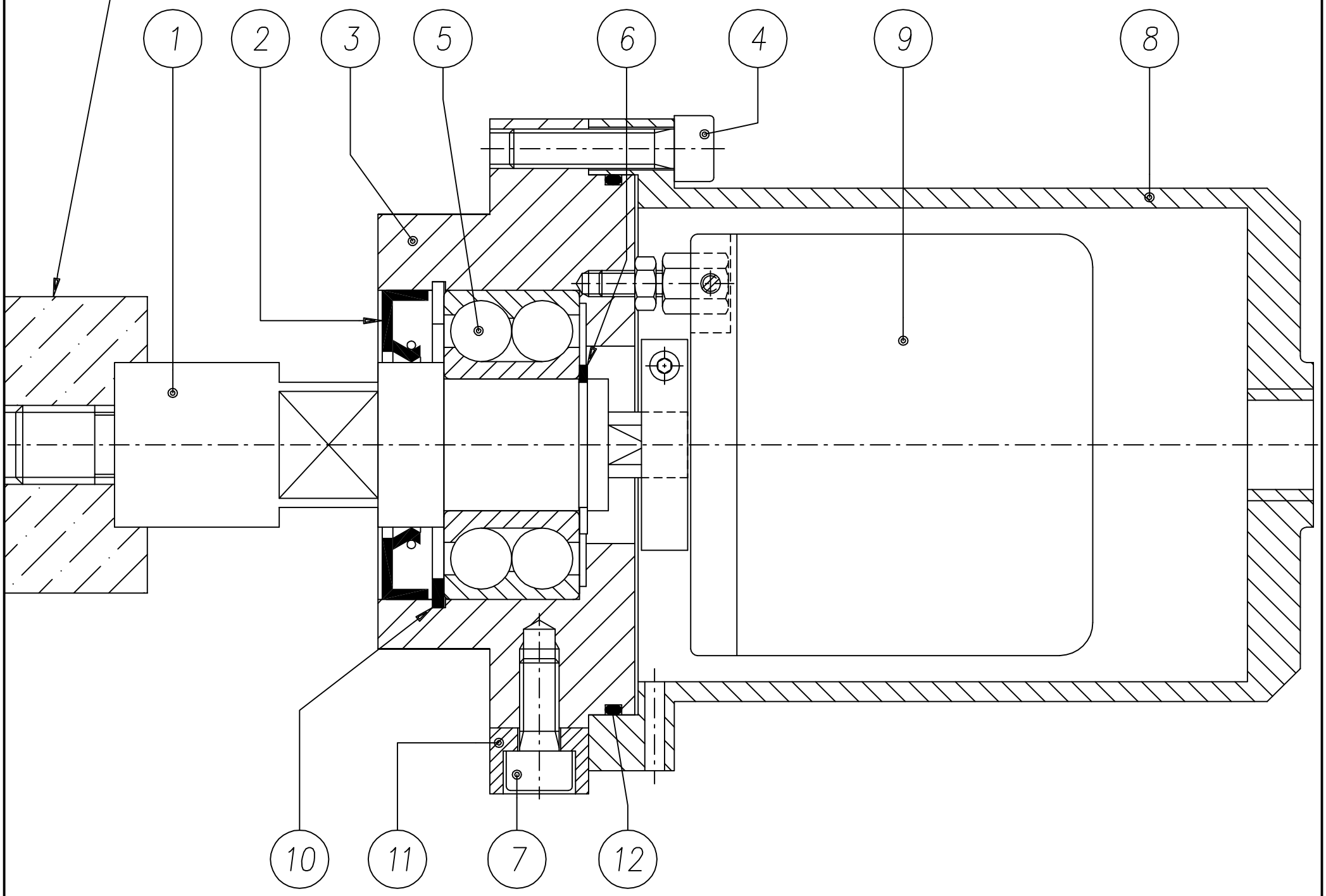
A termini di legge è vietato riprodurre o comunicare a terzi il contenuto del presente disegno

Controllato:

Versione ADDAX: 00

DIS.N° AB0206

ALBERO TAMBURO DIS.9084



POS	CODICE	DENOMINAZIONE	Q.TA
12	A03098	GUARNIZIONE OR 2300	1
11	10385H	PIATTO ANTITORSIONE	1
10	A01066	SEEGER ø47 I UNI 7437	1
9	A02582	ENCODER EH63G250	1
8	13158V	SCATOLA ENCODER	1
7	A01903	VITE TCEI M6x14 UNI 5931	2
6	A01058	SEEGER ø20 E UNI 7435	1
5	A01461	CUSCINETTO 3204 2RS	1
4	A01906	VITE TCEI M6x25 UNI 5931	3
3	11733S	FLANGIA PORTA CUSCINETTO	1
2	A01038	GUARNIZIONE MIM 25-47-7	1
1	10382E	ALBERO	1

N°Pezzi: _____ Scala: 1:1 Disegnatore: Uggè

Data: 21/07/00 MACCHINA TIPO: PNC

A termini di legge è vietato riprodurre o comunicare a terzi il contenuto del presente disegno

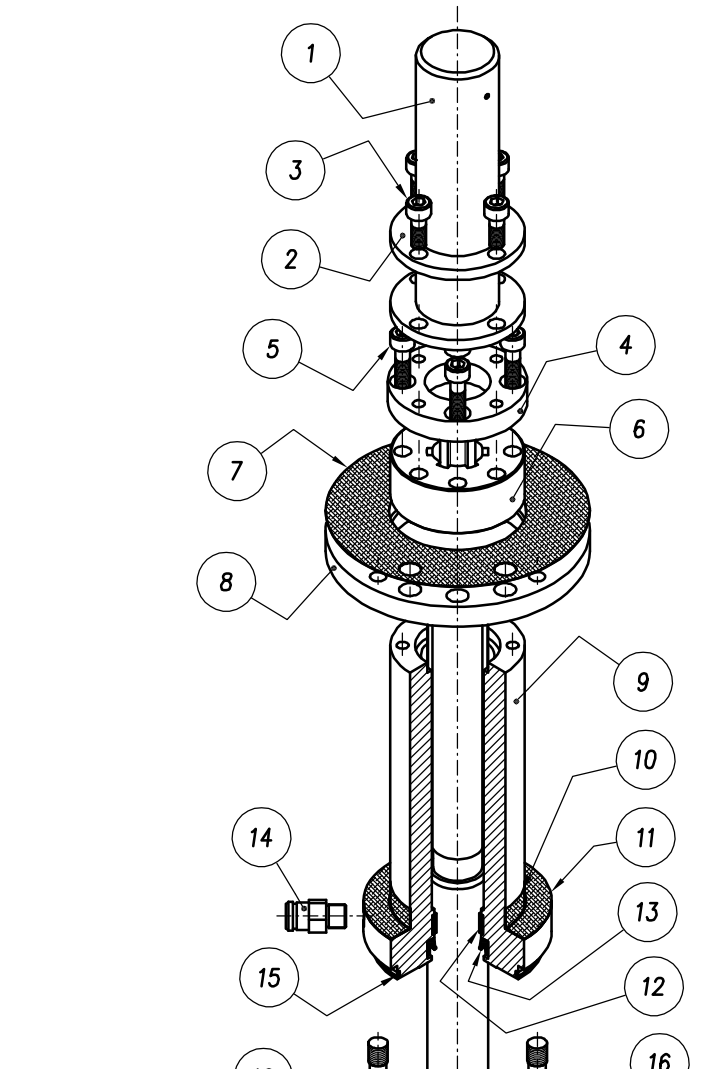
COMANDULLI
COSTRUZIONI MECCANICHE

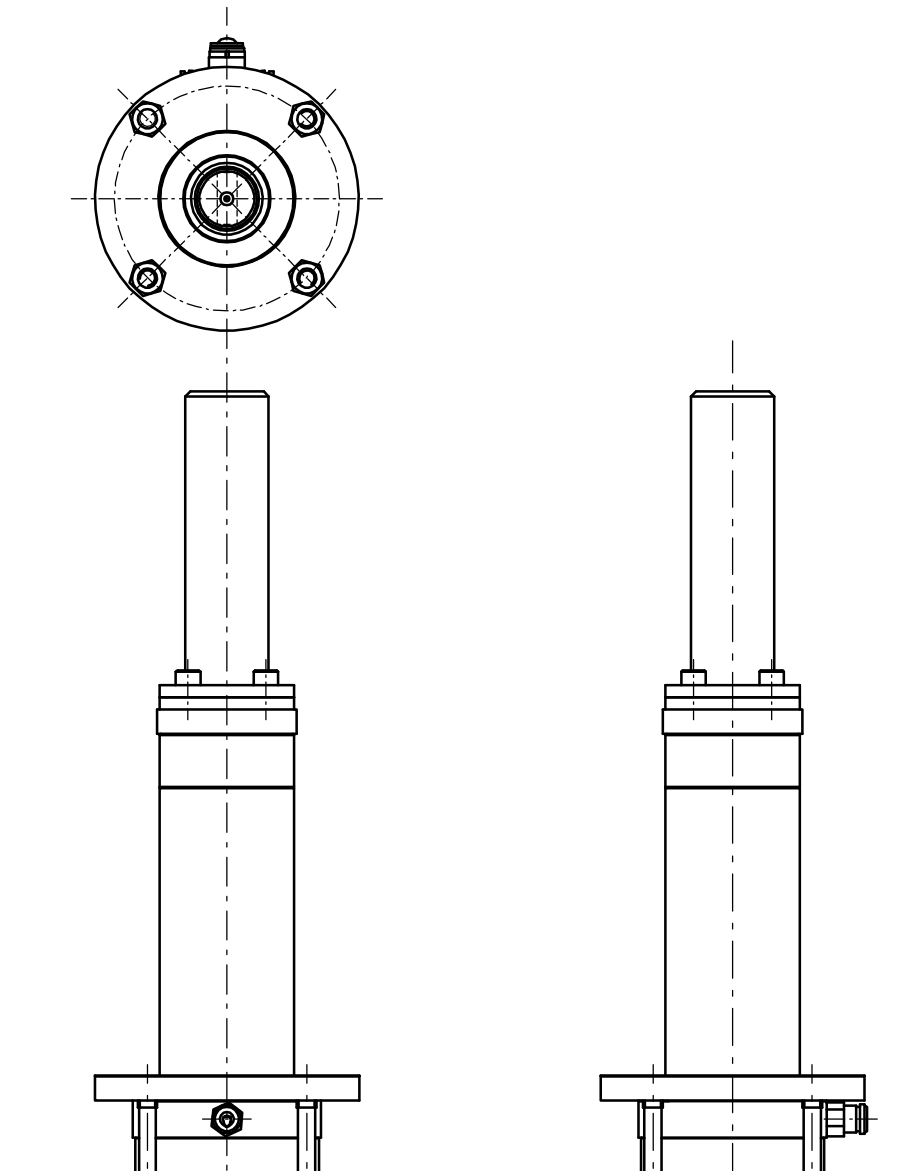
Controllato: _____ Versione ADDAX: 00

GRUPPO: ASSIEME

LETTORE CONTAIMPULSI

DIS.N° AB0440





POS	CODICE	DENOMINAZIONE	DIMENSIONE	Qtà
29	A04261	DADO AUTOBLOCCANTE INOX	M8	4
28	9076M	FLANGIA ANTERIORE DI ASSEMBLAGGIO		1
27	9074R	MUSONE ANTERIORE PRESSORE		1
26	A01005	RASCHIAPOLVERE AS	25 35 7/10	1
25	A02368	RACC. S.R. A 90° GIR. FOX	ø6 1/8"	1
24	A01002	GUARNIZIONE OR 4100 (EX OR 133)		1
23	9073Q	PISTONE		1
22	A01070	GUARNIZIONE DE 275 GACO		2
21	A13691	VALVOLA DI SCARICO RAPIDO	TUBO 6-6	1
20	A00364	FASCETTA RT BIANC. 11401	142x3.6	1
19	A00659	RACC. S.R. A "T" 3 VIE FOX	ø6	1
18	9080H	CAMICIA PRESSORI		1
17	9079R	TIRANTE INOX AISI 303	M8x210	4
16	9477R	STELO PRESSORE		1
15	A03094	GUARNIZIONE OR 2262		2
14	A13679	RACC. S.R. DIRITTO M. FOX	ø6 1/8"	1
13	A01001	GUARNIZIONE NI	150/25 35 7	2
12	A01004	ANELLO DI GUIDA IDWR – 25		2
11	27063D	RONDELLA ISOLAMENTO ELETTROZINC	ø77/ø56	2
10	A07910	NASTRO ELETTROZINC "E" H=10 mm.		0
9	9075G	MUSONE PØOSTERIORE PRESSORE		1
8	9077C	FLANGIA POSTERIORE DI FISSAGGIO		1
7	27064E	RONDELLA ISOLAMENTO ELETTROZINC	ø108/ø56	1
6	9078M	GHIERA DI GUIDA ALBERO PRESSORE		1
5	A05902	VITE TCEI UNI 5931 INOX	M6x40	4
4	27089H	FLANGIA BLOCCAGGIO GHIERA		1
3	A03738	VITE TCEI UNI 5931 INOX	M6x16	4
2	12657M	RONDELLA RINFORZO PROTEZ. STELO		1
1	12629A	PROTEZIONE STELO PRESSORE		1
POS	CODICE	DENOMINAZIONE	DIMENSIONE	Qtà

N°Pezzi: _____ Scala: 1:2 Disegnatore: Tizzoni

Data: 01/10/08 MACCHINA TIPO: NASTRO

COMANDULLI
COSTRUZIONI MECCANICHE

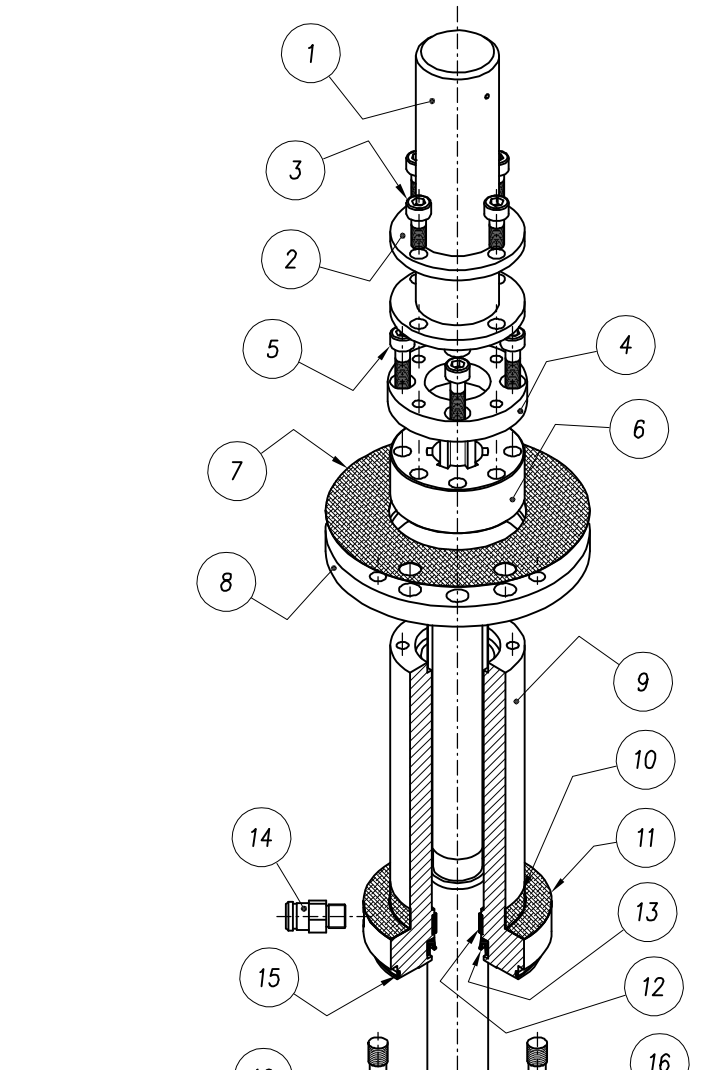
GRUPPO: _____

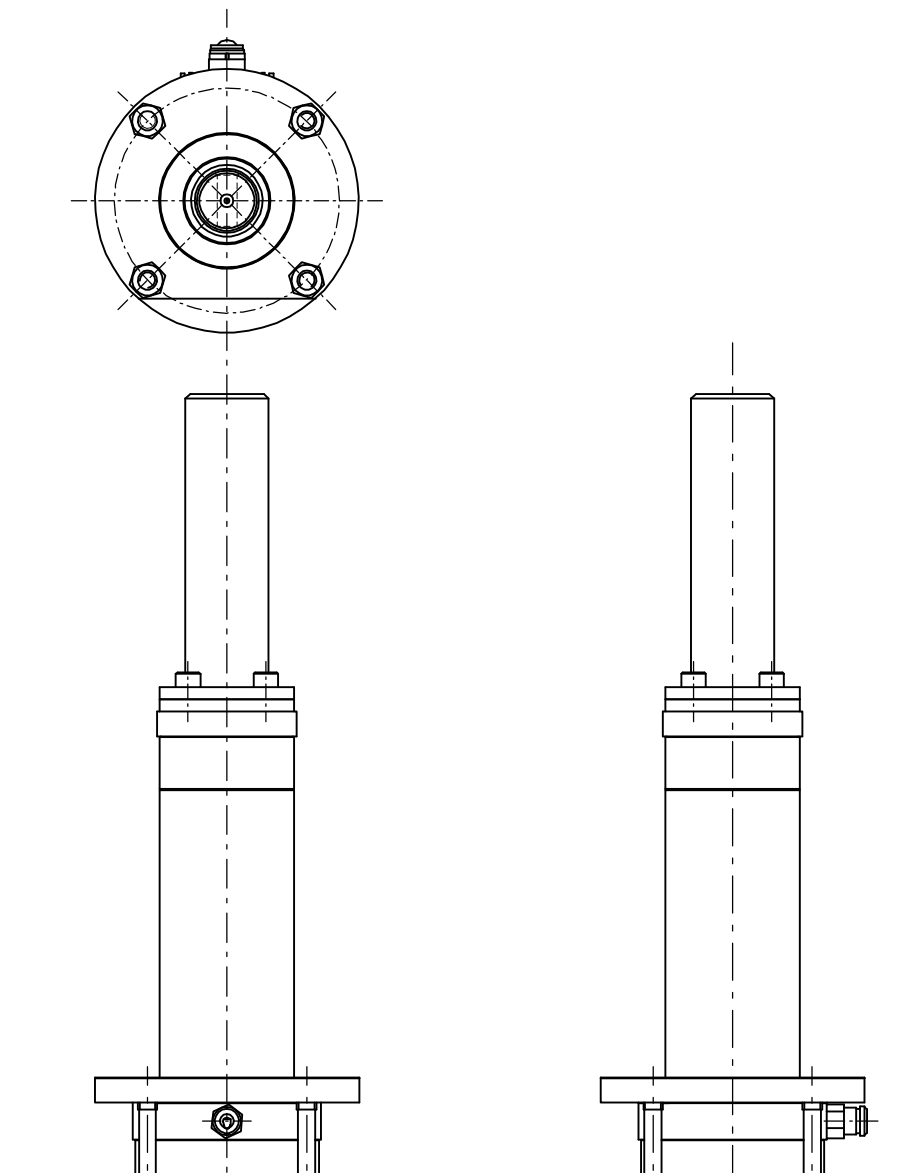
COMPLESSIVO PRESSORE 70/110

A termini di legge è vietato riprodurre o comunicare a terzi il contenuto del presente disegno

Controllato: _____ Versione ADDAX: 00

DIS.N° AB1451





POS	CODICE	DENOMINAZIONE	DIMENSIONE	Qtà
29	A04261	DADO AUTOBLOCCANTE INOX	M8	4
28	9462Z	FLANGIA ANTERIORE TAGLIATA		1
27	9074R	MUSONE ANTERIORE PRESSORE		1
26	A01005	RASCHIAPOLVERE AS	25 35 7/10	1
25	A02368	RACC. S.R. A 90° GIR. FOX	ø6 1/8"	1
24	A01002	GUARNIZIONE OR 4100 (EX OR 133)		1
23	9073Q	PISTONE		1
22	A01070	GUARNIZIONE DE 275 GACO		2
21	A13691	VALVOLA DI SCARICO RAPIDO	TUBO 6-6	1
20	A00364	FASCETTA RT BIANC. 11401	142x3.6	1
19	A00659	RACC. S.R. A "T" 3 VIE FOX	ø6	1
18	9080H	CAMICIA PRESSORI		1
17	9079R	TIRANTE INOX AISI 303	M8x210	4
16	9477R	STELO PRESSORE		1
15	A03094	GUARNIZIONE OR 2262		2
14	A13679	RACC. S.R. DIRITTO M. FOX	ø6 1/8"	1
13	A01001	GUARNIZIONE NI	150/25 35 7	2
12	A01004	ANELLO DI GUIDA IDWR – 25		2
11	27063D	RONDELLA ISOLAMENTO ELETTROZINC	ø77/ø56	2
10	A07910	NASTRO ELETTROZINC "E" H=10 mm.		0
9	9075G	MUSONE PëOSTERIORE PRESSORE		1
8	9077C	FLANGIA POSTERIORE DI FISSAGGIO		1
7	27064E	RONDELLA ISOLAMENTO ELETTROZINC	ø108/ø56	1
6	9078M	GHIERA DI GUIDA ALBERO PRESSORE		1
5	A05902	VITE TCEI UNI 5931 INOX	M6x40	4
4	27089H	FLANGIA BLOCCAGGIO GHIERA		1
3	A03738	VITE TCEI UNI 5931 INOX	M6x16	4
2	12657M	RONDELLA RINFORZO PROTEZ. STELO		1
1	12629A	PROTEZIONE STELO PRESSORE		1
POS	CODICE	DENOMINAZIONE	DIMENSIONE	Qtà

N°Pezzi: | Scala: 1:2 | Disegnatore: Tizzoni

Data: 01/10/08 | MACCHINA TIPO: NASTRO

A termini di legge è vietato riprodurre o comunicare a terzi il contenuto del presente disegno

Controllato: | Versione ADDAX: 00

COMANDULLI
COSTRUZIONI MECCANICHE

GRUPPO:

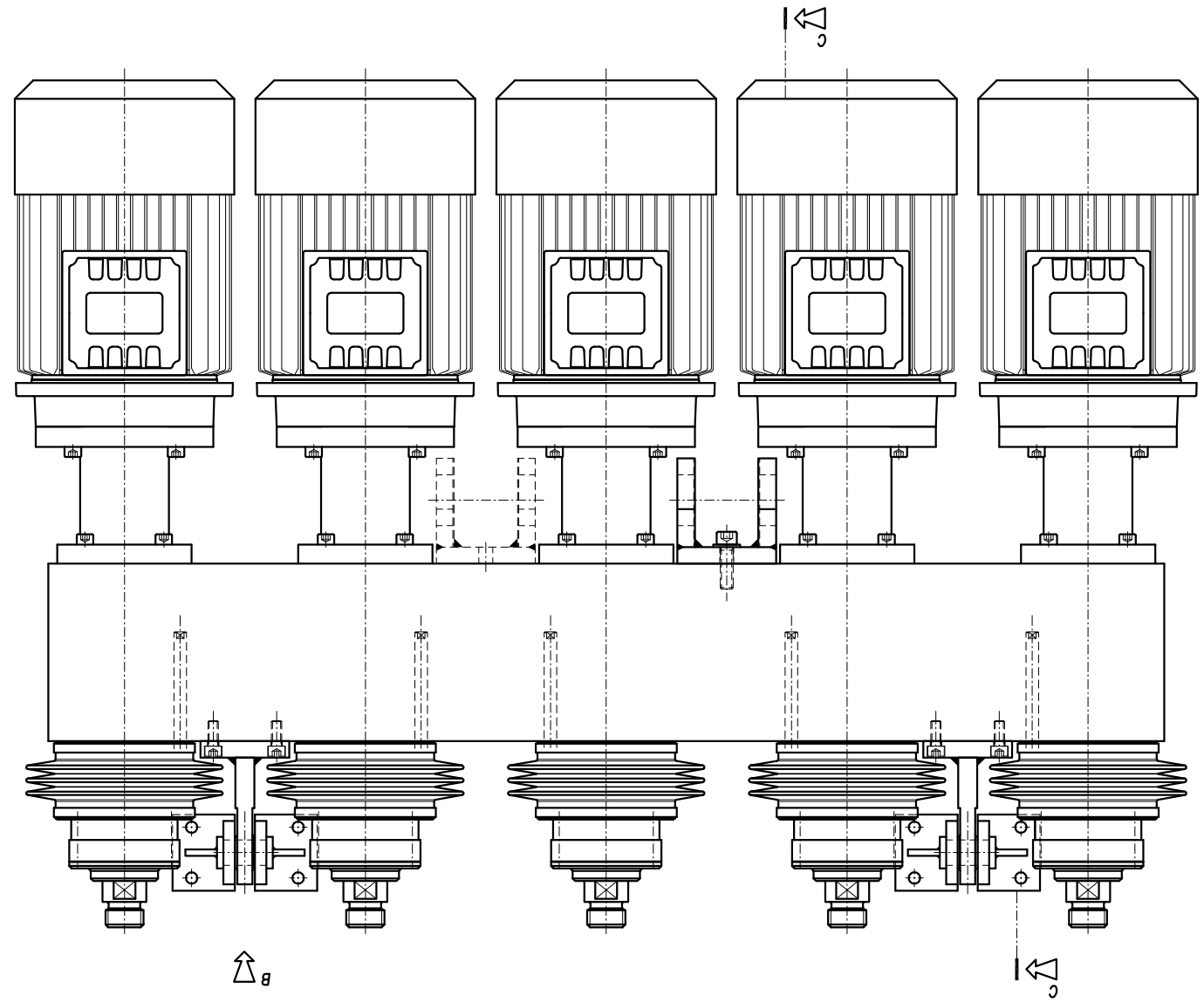
COMPLESSIVO PRESSORE 70/110

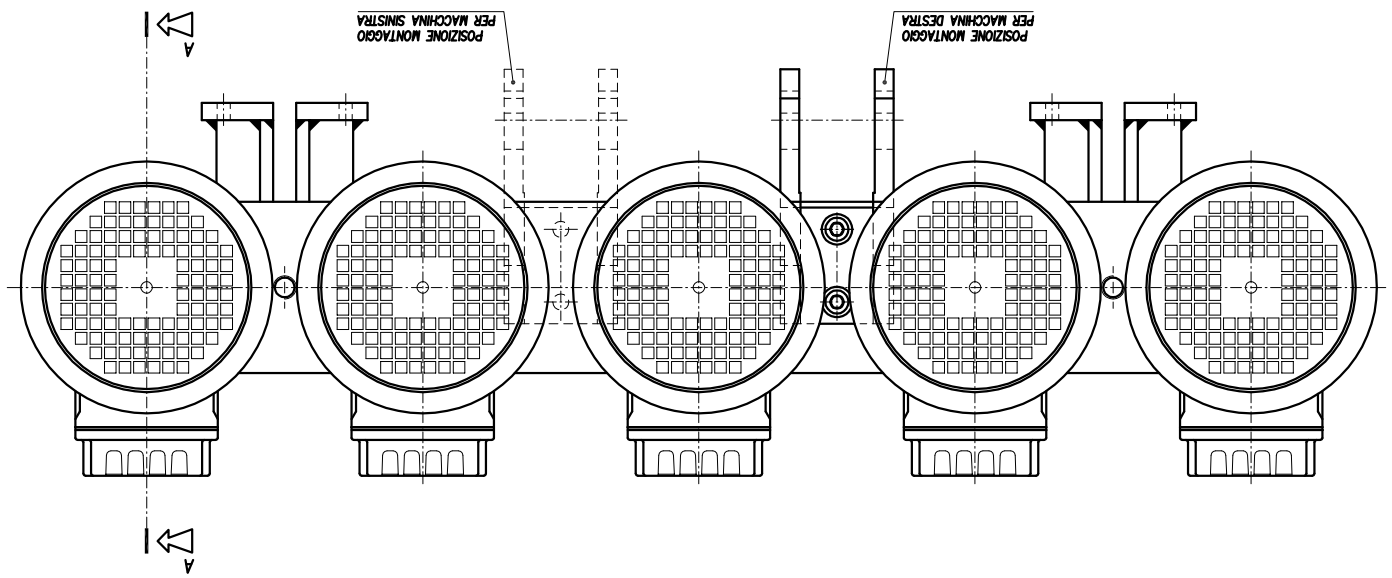
DIS.N° AB1452

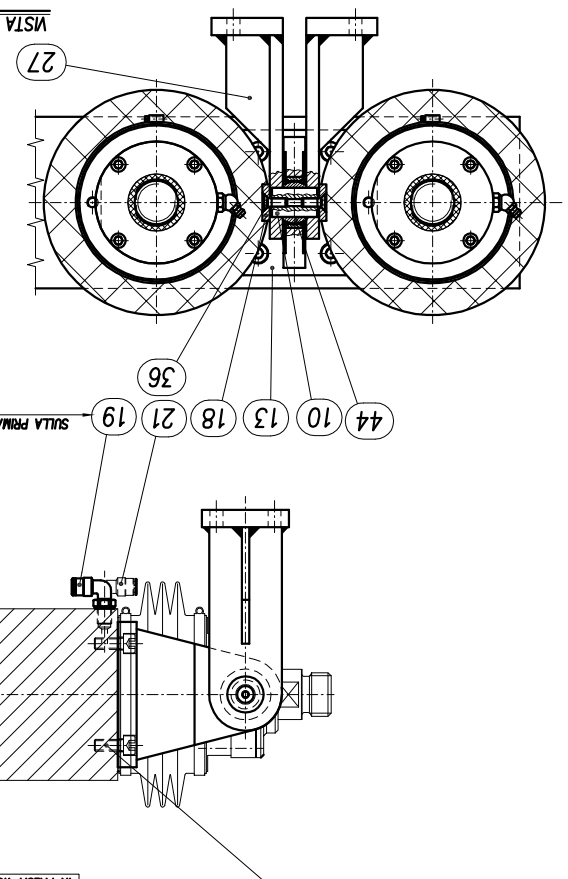
POS	CODICE	DENOMINAZIONE	DIMENSIONE	Q.tà
55	A01677	GRANO UNI 5923 INOX	M6X10	5
54	A03072	GUARNIZIONE OR 2137		5
53	32611U	FLANGIA PER COPERCHIO		5
52	29107G	PISTONE		5
51	A01058	SEEGER E 20 UNI 7435		5
50	A12787	CUSCINETTO 6304 2RS		5
48	A02770	GUARNIZIONE RP 6237		5
47	A01930	VITE TCEI UNI 5931	M10X35	2
46	29106F	ASTA ANTIROTAZIONE		5
45	A03049	GUARNIZIONE OR 6237		5
44	A12789	SNODO SFERICO GE 20 UK -2RS		2
43	A09234	GUARNIZIONE OR 6200		5
42	A05104	VITE TCEI UNI 5931 INOX	M8X35	20
41	A01006	GUARNIZIONE OR 2050		10
40	A12784	GUARNIZIONE BK 6200		5
39	A03226	GUARNIZIONE OR 2187		5
38	A12785	GUARNIZIONE RC 6200		5
37	A05315	GUARNIZIONE OR 3256		5
36	A04572	VITE TSEI UNI 5933 INOX	M6X16	4
35	A05425	VITE TCEI UNI 5931 INOX	M8X30	20
34	A02172	GRANO UNI 5927 INOX	M6X10	10

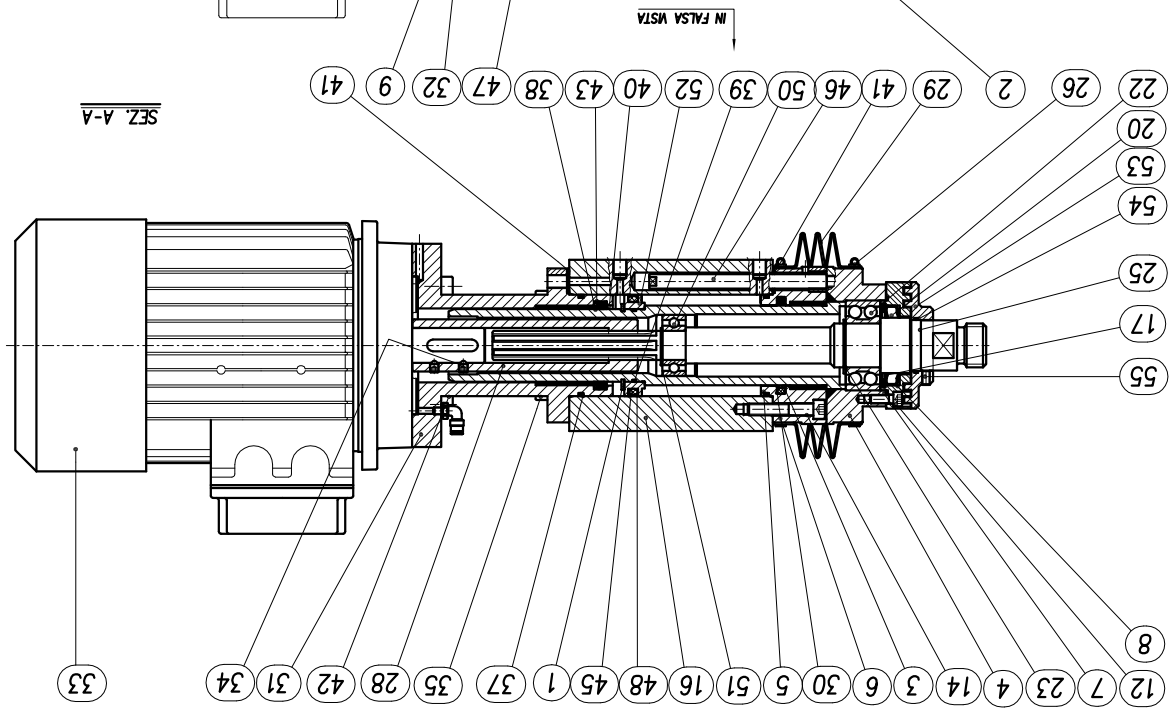
POS	CODICE	DENOMINAZIONE	DIMENSIONE	Q.tà
33	A06095	MOTORE ELETTRICO 1,5 KW P4 B14 220/380/50		5
32	A03862	RONDELLA UNI 6592 INOX	#10	2
31	29106L	BOCCOLA PORTAMOTORE		5
30	A09210	GUARNIZIONE OR 6225		5
29	A01304	SOFFIETTO MOLLERT		5
28	29108H	ALLUNGA SCANALATA		5
27	29110M	CERNIERA SU BASAMENTO		4
26	A02256	FASCETTA SERFLEX D. 92– 112 x 8		10
25	32609S	ALBERO MANDRINO		5
23	A01060	SEEGER E 30 UNI 7435		5
22	A01879	CUSCINETTO 3206 B 2RS		5
21	A00617	RACC. R. A "T" M. 6/4	1/8"	8
20	A02586	GUARNIZIONE DOWSEL	38/55/10	5
19	A05609	RACC. S.R. GIREVOLE A 90° M. #8	1/8"	4
18	11079L	RONDELLA		4
17	A01069	ANELLO SEEGER I 55 UNI 7437		5
16	29101A	TRAVERSA PORTA TESTE		1
15	A03112	RACC. S.R. GIREVOLE A 90° M. #6	1/8"	5
14	A06891	VITE TCEI UNI 5931 INOX	M8x45	20
13	29111N	CERNIERA SU TRAVERSA COSTE		2
12	A03738	VITE TCEI UNI 5931 INOX	M6x16	20
11	29113D	ATTACCO BIELLA		1
10	29112P	SPINOTTO		2
9	A03141	RACC. S.R. A 90° GR. D. 4 M5		5
8	32610T	COPERCHIO ANTERIORE		5
7	A12786	GUARNIZIONE OR 2250		5
6	29102B	FLANGIA ANTERIORE		5
5	A05315	GUARNIZIONE OR 3256		5
4	29103C	CANOTTO		5
3	A12790	GUARNIZIONE LABRC	#55	5
2	A04571	VITE TCEI UNI 5931 INOX	M8X25	8
1	A04524	SEEGER E 50 UNI 7435		5

N°pezzi:	Scala: 1:2,5	Disegnatore: Bianchessi	
Data: 30/06/2008	MACCHINA TIPO: PENTA		
A termini di legge è vietato riprodurre o comunicare a terzi il contenuto del presente disegno		GRUPPO: ASSIEME TRAVERSA COSTE CON LABIRINTO	
Controllato:	Versione ADDAX: 00	COMANDULLI CENTRO LAVORAZIONE	DIS.N°: AB2020









13 INFORMATION FOR TECHNICAL ASSISTANCE

For further information or for technical support, contact ***COMANDULLI S.r.l.*** .

COMPANY NAME	*COMANDULLI COSTRUZIONI MECCANICHE SRL*
ADDRESS	*Via medaglie d'argento N° 20* *26012 CASTELLEONE - CR (ITALY)*
	0374 56161 (2 lines) *0374 35721 (6 lines)*
	0374 57888
	info@comandulli.it
	www.comandulli.it
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	0374 357240
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14 DIAMOND TOOLS

The types of the diamond tools used on the machine are those shown in the drawings below.

To order them, refer to the drawing number indicated.

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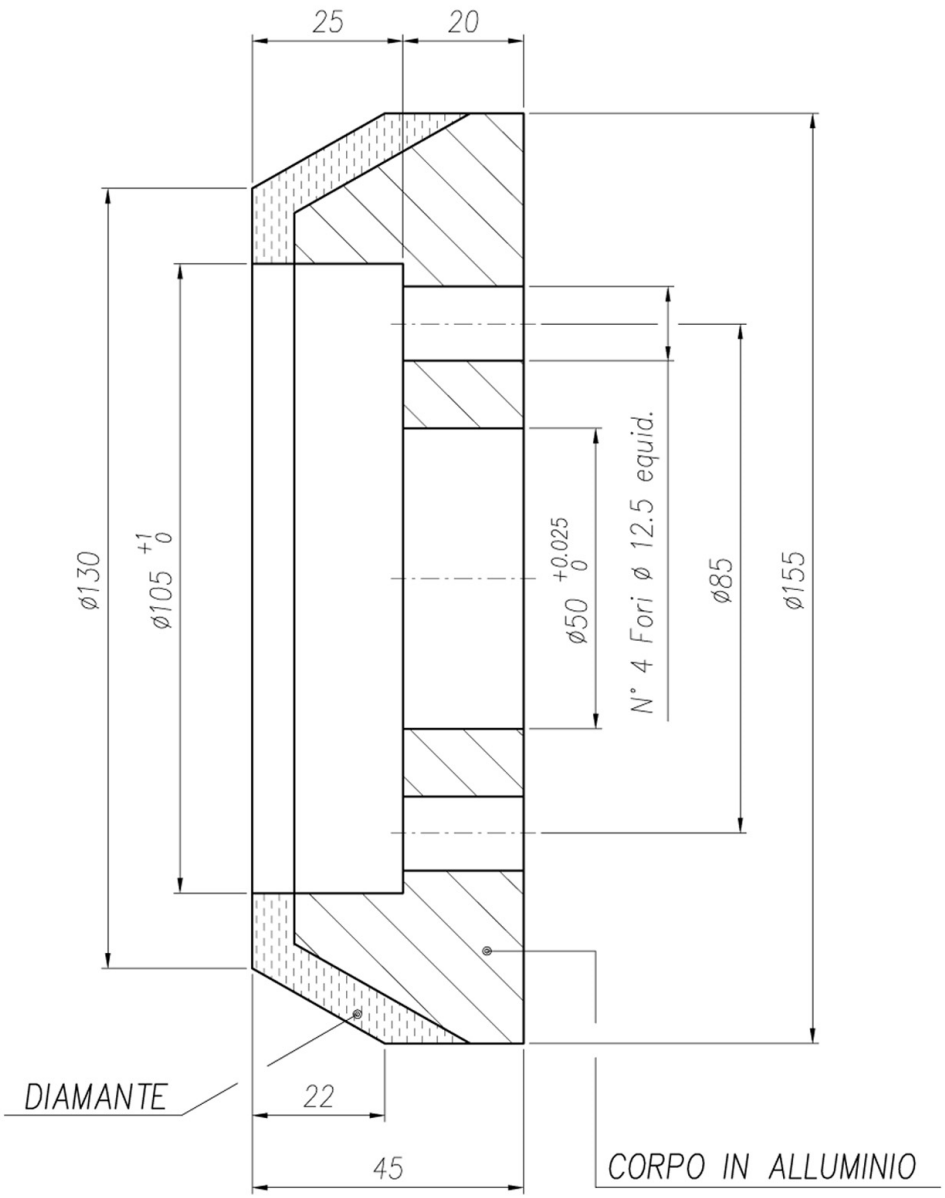

VERSIONE ADDAX 00	Nuovo Disegno		Tolleranze generali dove non indicato: js13 – lineari; 30' – angolari; 0.3x45° – smussi; H13 – Fori; h13 – Alberi
A termine di legge è vietato riprodurre o comunicare a terzi il contenuto del presente disegno			
Materiale: A cura del Costrut.	N°Pezzi: 2	Scala: 1:1	Disegnatore:
Trattamento:	MACCHINA TIPO: PNC / OMEGA		Data: 10/12/1997
COMANDULLI COSTRUZIONI MECCANICHE	GRUPPO: SMUSSATORE		Controllato:
	PARTICOLARE: MOLA SMUSSATRICE		DIS.N° 11663 R

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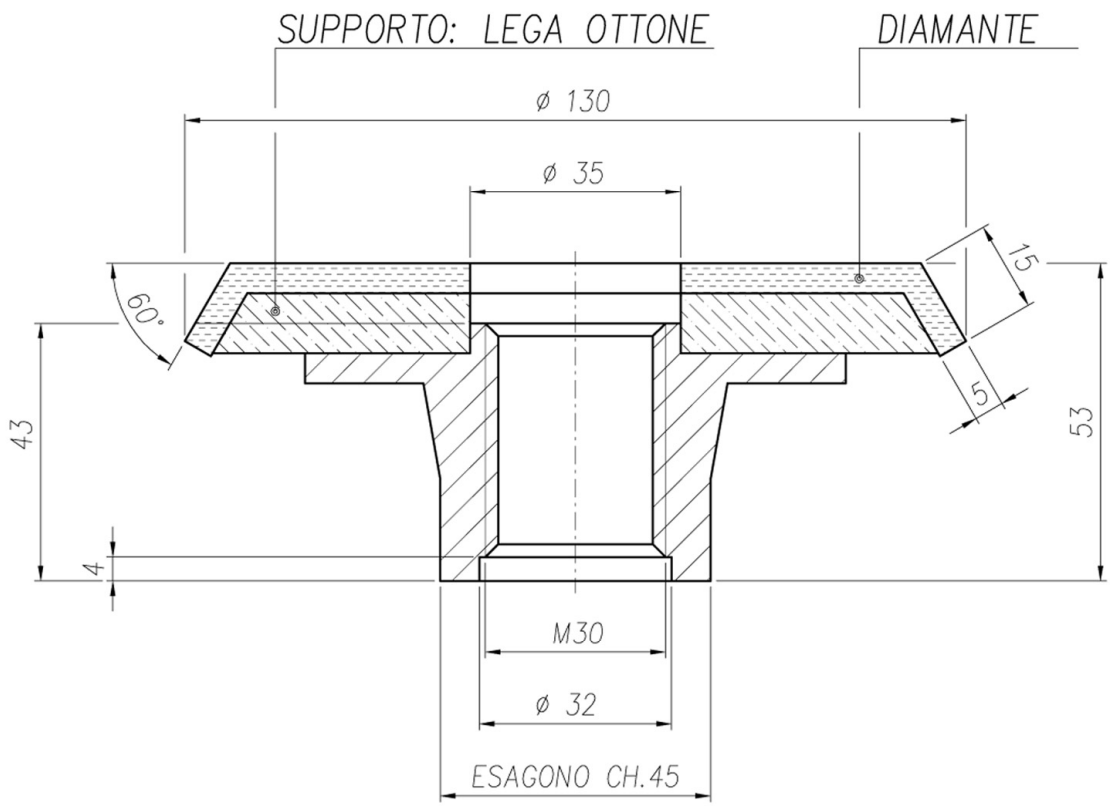

ALTRE QUOTE A CURA DEL COSTRUTTORE

VERSIONE ADDAX: 00	Nuovo Disegno		Tolleranze generali dove non indicato: js13 – lineari; 30' – angolari; 0.3x45° – smussi; H13 – Fori; h13 – Alberi
A termine di legge è vietato riprodurre o comunicare a terzi il contenuto del presente disegno			
Materiale: A cura del Costrut.	N°Pezzi: 1	Scala: 1:1	Disegnatore:
Trattamento:	MACCHINA TIPO: PNC / OMEGA		Data: 11/12/1997
COMANDULLI COSTRUZIONI MECCANICHE	GRUPPO: MANDRINI		Controllato:
	PARTICOLARE: MOLA DIAMANTATA Ø130		DIS.N° 11199 M

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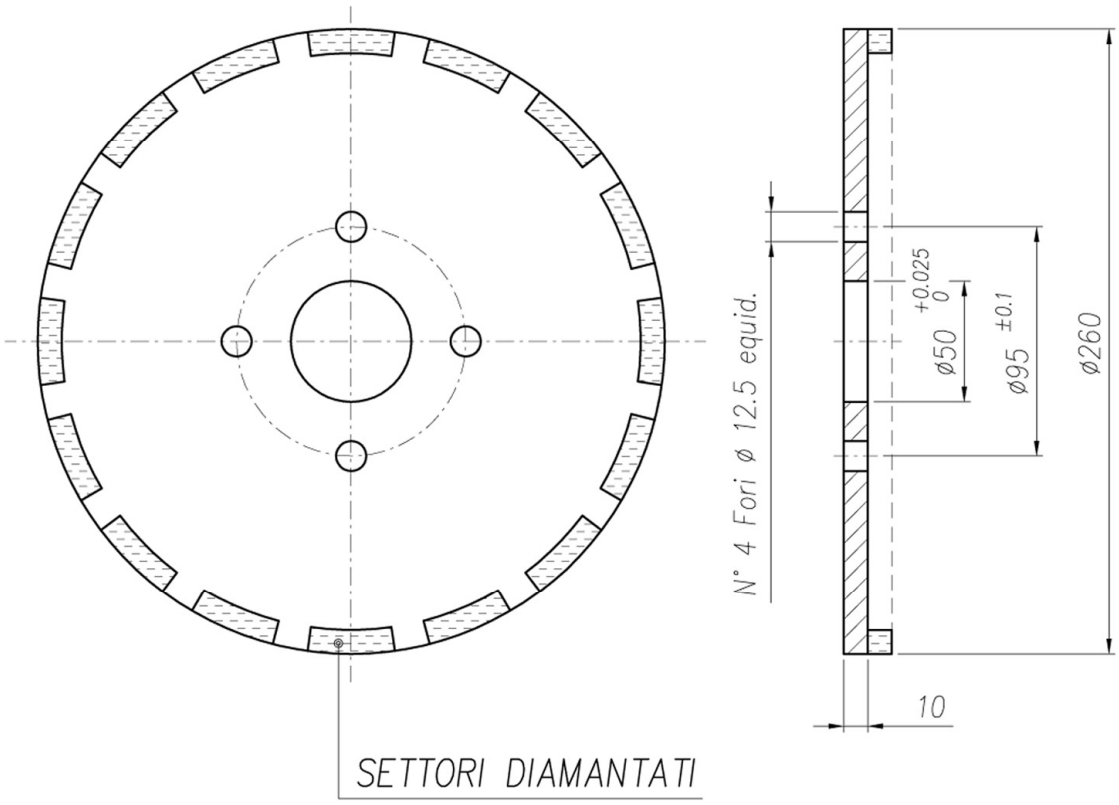

VERSIONE ADDAX 00	Nuovo Disegno		Tolleranze generali dove non indicato: js13 – lineari; 30' – angolari; 0.3x45° – smussi; H13 – Fori; h13 – Alberi
A termine di legge è vietato riprodurre o comunicare a terzi il contenuto del presente disegno			
Materiale: A cura del Costrut.	N°Pezzi: 1	Scala: 1:2.5	Disegnatore:
Trattamento:	MACCHINA TIPO: EDILUX/PNC/OMEGA		Data: 11/12/1997
COMANDULLI COSTRUZIONI MECCANICHE	GRUPPO: MANDRINI		Controllato:
	PARTICOLARE: MOLA DIAMANTATA CALIBRATURA		DIS.N° 9043 A

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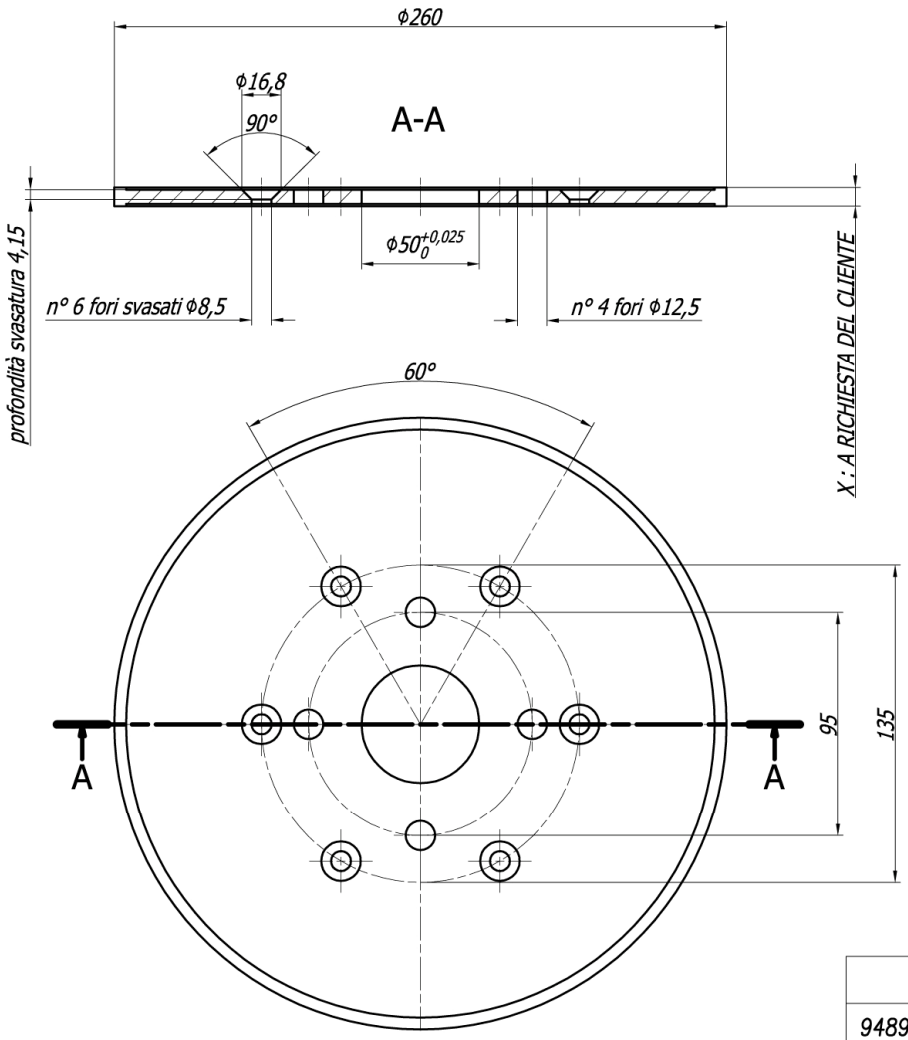

Codici	
9489A	x = 3 mm
9489B	x = 6 mm
9489C	x = 5 mm
9489D	x = 8 mm
9489E	x = 4 mm
9489F	x = 7 mm

VERSIONE ADDAX	Modificati n°6 fori d=8.5 mm, aggiunta svasatura 08-10-13 Vagni	Tolleranze generali dove non indicato:
02		js13 – lineari / H13 – Fori / 30' – angolari / h13 – Alberi / 0.3x45° – smussi

A termine di legge è vietato riprodurre o comunicare a terzi il contenuto del presente disegno

Materiale: A cura del costrutt.	N°Pezzi:	Scala: 1:2.5	Disegnatore: Vagni
Trattamento:	MACCHINA TIPO: EDILUX/PNC/OMEGA		Data: 08/10/2013
COMANDULLI COSTRUZIONI MECCANICHE	GRUPPO: MANDRINI		Controllato:
	PARTICOLARE: DISCO T.LAMA/QM/TRONCATRICE		DIS.N° 9489

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