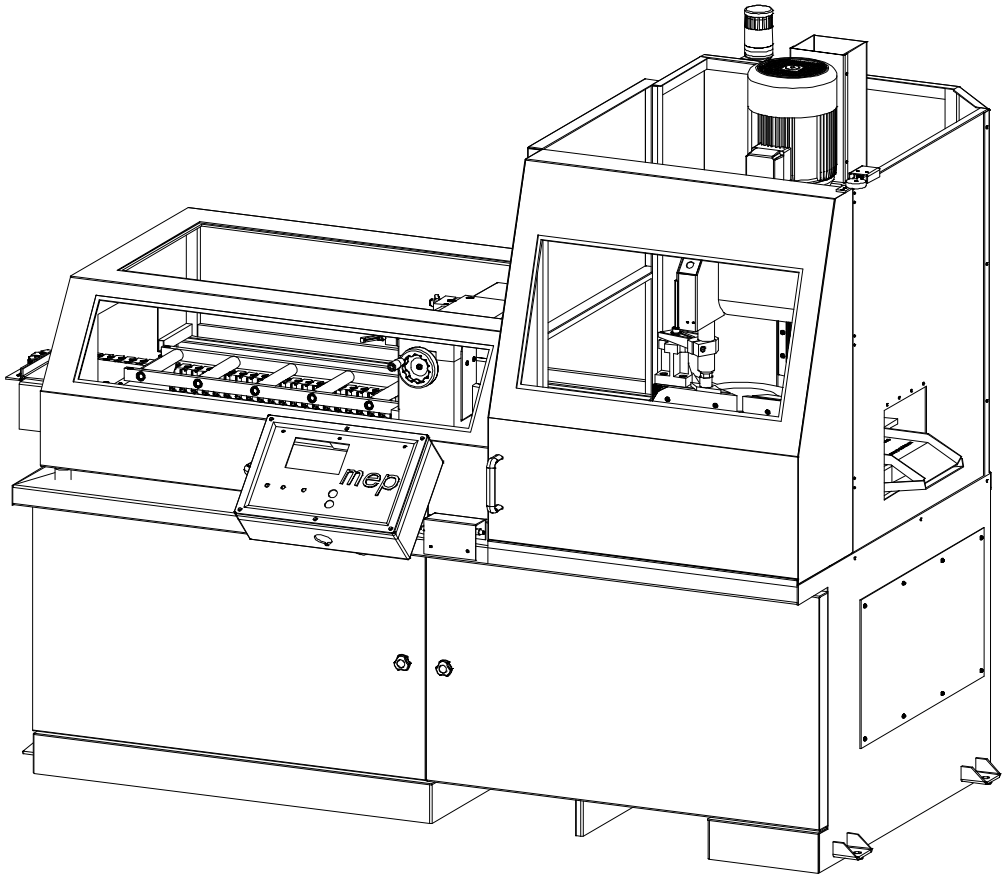


USE AND MAINTENANCE MANUAL

EN **TIGER372CNC−LR RC 4.0**

YEAR OF MANUFACTURE: _____

CE

EN

Translation of the original instructions

"CE" CONFORMITY DECLARATION
(according to EEC MACHINES DIRECTIVE 2006/42/CE annex II A)

The manufacturer:

MEP S.p.A.
Socio unico
Via Enzo Magnani, 1
61045 Pergola (PU) ITALIA
Tel. 072173721−Fax 0721734533

Hereby declares that the sawing machine:

Machine Type:	
Machine model:	
Serial number:	
Year of manufacture:	

FAC SIMILE

is in specification with the following directives:

- **EEC MACHINES DIRECTIVE 2006/42/CE**
  - **EN 16093:2017**
- **DIRECTIVE 2014/30/UE "EMC"**
  - **EN 50370−1:2005 Emission**
  - **EN 50370−2:2003 Immunity**

Responsible of a Technical File

c/o MEP SPA
Via Enzo Magnani, 1
61045 − Pergola − PU − ITALY

_____

Pergola, lì _____

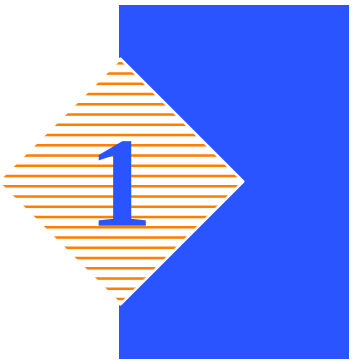
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Introduction and technical specifications



Foreword

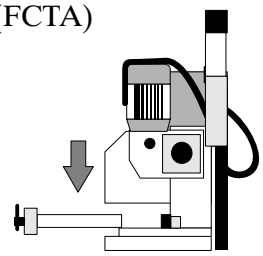
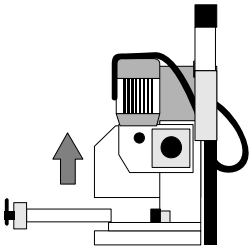
We have decades of experience in the construction of the best metal−cutting machines. Our experience, our knowledge of our customers and constant technological development of design and production equipment allow us to offer a specific solution for every type of cutting need. This work tool has been designed as a simple and reliable answer to the wide range of cutting needs of the modern workshop. The **TIGER 372 CNC LR RC 4.0** is an electro−pneumatic, automatic vertical sawing machine, which can execute left angled cuts at 60 degrees (+) and right angled cuts at 45 degrees (−). These features, together with optimal cutting capabilities, make the **TIGER 372 CNC LR RC 4.0** a highly versatile machine. Congratulations for having chosen this product which, by following the instructions contained in this user and maintenance handbook, will guarantee you years of dependable service.
Congratulations for having chosen this product which, by following the instructions contained in this user and maintenance handbook, will guarantee you years of dependable service.

Attention The programming of the head automatic rotation in the machining cycles is allowed only between −45 and +45 degrees. During the manual rotation through the joystick over +45 and up to +60 degrees it is necessary to adapt the position of the vertical vice so that it does not interfere with the cutting head.

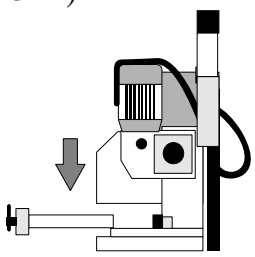
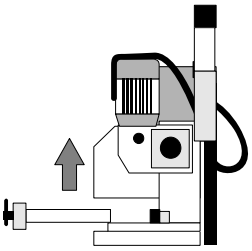
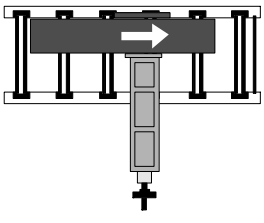
Warning This band saw has been exclusively designed to cut metals.

Machine presentation

TIGER 372 CNC LR RC 4.0 is an electromechanical pneumatic saw, which cuts metal profiles and solids. It can operate in SEMIAUTOMATIC or AUTOMATIC mode. In Semiautomatic mode, after setting the cutting head stroke and the head downstroke speed on the control panel, position the vice 2÷3 mm from the material being processed and press the start button on the control panel to activate the disk (or foot pedal if supplied);

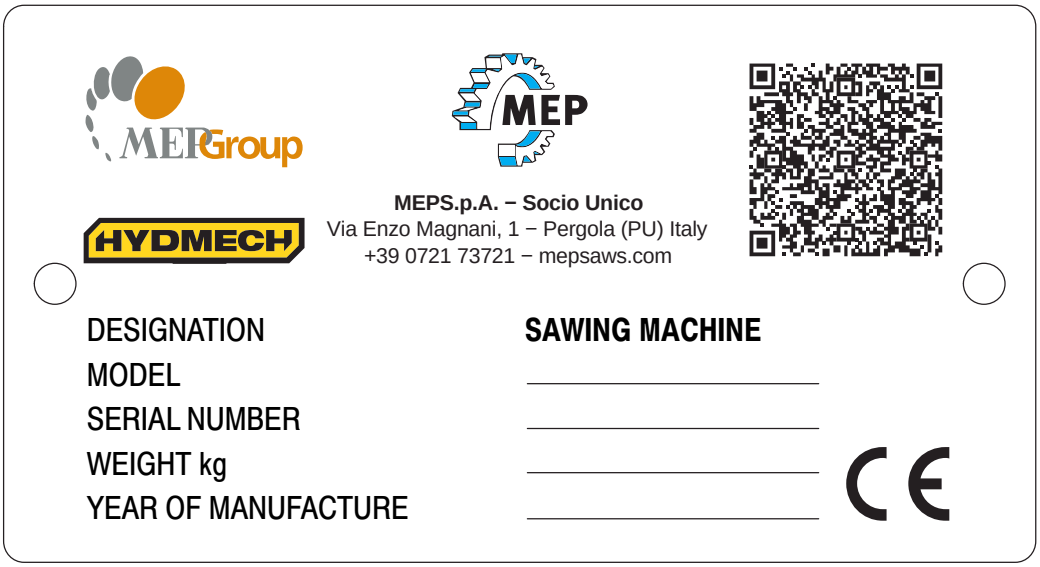
1. The cutter vice closes 	2. The head lowers until the cut is made (FCTA) 	3. The head returns to start position (FCTI) 	4. The cutter vice opens 

In Automatic mode, after setting the cutting head stroke and the head downstroke speed on the control panel, position the vice 2÷3 mm from the material being processed and press the start button on the control panel to activate the disk (or foot pedal if supplied):

1. The cutter vice closes 	2. The head lowers until the cut is made (FCTA) 	3. The head returns to start position (FCTI) 	4. The feed vice closes 
5. The cutter vice opens 	6. The cutting material is fed 	7. The cutting vice closes 	8. The feed vice opens and the cutting cycle starts up 

Machine specification

The anodised aluminium name plate is riveted on the side of the machine; the same data are reproduced on the declaration of conformity included with this use and maintenance manual.



N.B. When communicating with the Technical Service department, the model, serial number and year of manufacture of the machine must be quoted.

Technical Data

CUTTING SPEEDS		
Speed 1/2	rpm	15÷150

Disk blade (HSS type)		
External disc diameter	mm	370
Internal hole diameter	mm	32
Blade thickness	mm	3

Disk blade OPTIONAL to be requested when ordering (HSS type)		
External disc diameter	mm	350
Internal hole diameter	mm	32
Blade thickness	mm	2,5

RATED ELECTRICAL POWER		
Head spindle motor	kW	5,5
Electric coolant pump motor	kW	0,09 x 2
Feed step motor	kW	0,44
Step head motor	kW	0,048
Max installed power	kW	6,168

SPINDLE MOTOR				
No.of poles	**Current (Volts)**	**Absorption (Amps)**	**Power (kW)**	**rpm**
4	400	5	4	1730
Stator wound with enamelled copper wire, class H 200°C.				
Class F insulation (limit temperature TL 155°C).				
IP 55 protection rating (total against contact with live parts, water sprayed from all directions, with shaft oil seal).				
Conforming to CEI–EN 60034–1:2011				

WORKING PRESSURE		
Max. working pressure for opening/closing vice	Bar	6
Air consumption for a complete cycle	Nl/min	5,74

N.B. The “air consumption” value refers to standard conditions (temperature 0° and pressure 1.013 bar, i.e. density 1.3 x 10^{-3} Kg/l) where 1 Kg/min. = 772 Nl/min.

ELECTROPUMP MOTOR
Three–phase; Frequency 50 Hz.

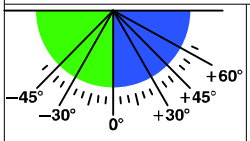
Voltage (Volts)	Absorption (Amps)	Power (kW)	rpm	Delivery rate lt/min	Head (mt.)
230	0,74	0,15	2800	60	4
400	0,43	0,15	2800	60	4
Protection rating IP 54.					
Conforming to CEI–EN 60034–1:2011					

LUBRICANT/COOLANT FLUID AND OIL		
Lubricant/coolant fluid (oil concentration 5–6%)	capacità Lt.	105
Oil for transmission box	capacità Lt.	10

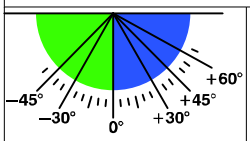
VICE		
Vice max. opening	mm	190

TOLERANCE POSITION IN CORNER CUTTING HEAD		
At any cutting angle between –45 and +60 degrees	Primi d’arco (’)	± 5

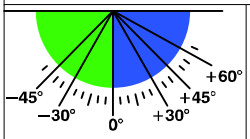
CUTTING CAPABILITY (dimensions obtained with optimized use of the supplied jaw set)

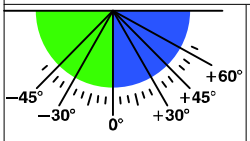
	Blade diameter				
0°	370	110	95	180 x 95	
– 45°	370	55	55		55 x 80
+ 45°	370	80	80		80 x 95
+ 60°	370	30	30		30 x 85

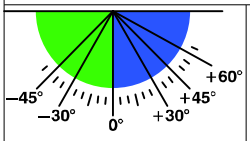
CUTTING CAPABILITY (with pair of long movable jaws)

	Blade diameter				 b x h
0°	370	Ø 110	95	180 x 95	70 x 100
– 45°	370	Ø 35	35	–	35 x 80

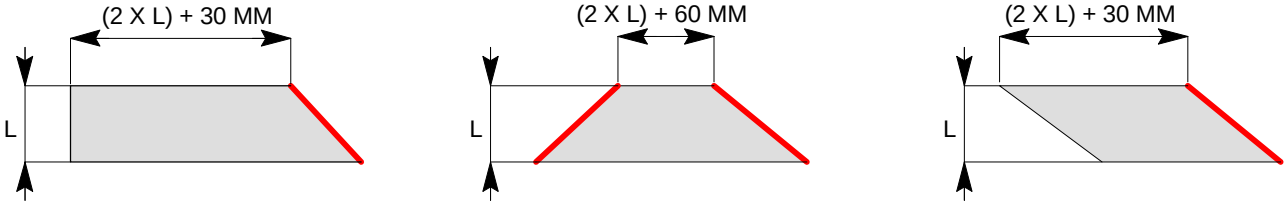
CUTTING CAPABILITY (with pair of long movable jaws)					
+ 45°	370	Ø 60	60	–	60 x 95
+ 60°	370	Ø 25	25	–	25 x 85

CUTTING CAPABILITY (with pair of medium moving jaws)					
	**Blade diameter**				 **b x h**
0°	370	Ø 110	95	180 x 95	70 x 100
– 45°	370	Ø 40	40	–	40 x 80
+ 45°	370	Ø 65	65	–	65 x 95
+ 60°	370	Ø 25	25	–	25 x 85

CUTTING CAPABILITY (with pair of short movable jaws)					
	**Blade diameter**				 **b x h**
0°	370	Ø 110	95	180 x 95	70 x 100
– 45°	370	Ø 50	50	–	50 x 80
+ 45°	370	Ø 75	75	–	75 x 95
+ 60°	370	Ø 30	30	–	30 x 85

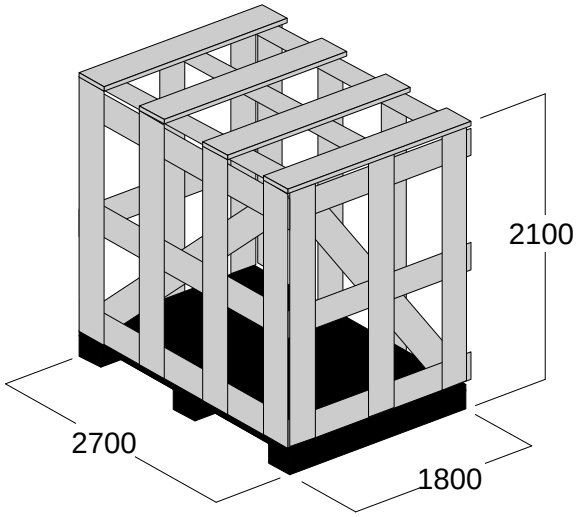
CUTTING CAPABILITY (with optional 350 mm diameter disc to be requested when ordering)				
	**Blade diameter**			
0°	350	90	90	
– 45°	350	64	64	64 x 90
+ 45°	350	64	64	64 x 90
+ 60°	350	45	45	45 x 90

N.B. In case of angled cuts in the automatic cycle, the min. cutting dimension depends on the width of the bar being machined (L) and on the number of angles in the obtained pieces. In consecutive cuts with the same angle one cut only must be calculated.



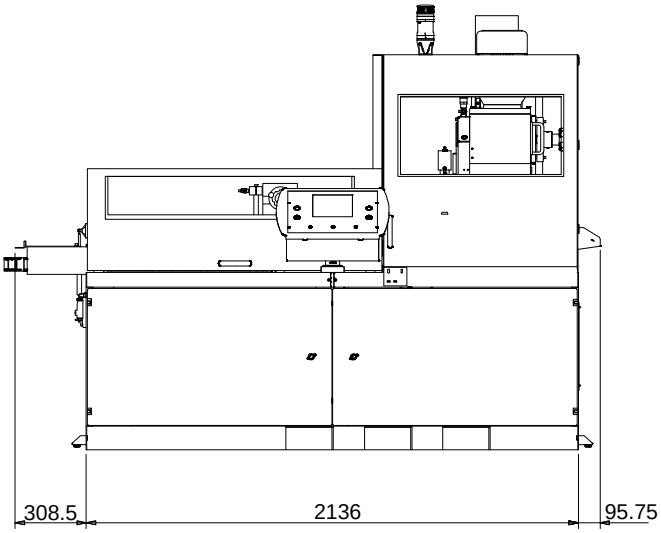
N.B. Contact technical support for special cutting capacity requests.

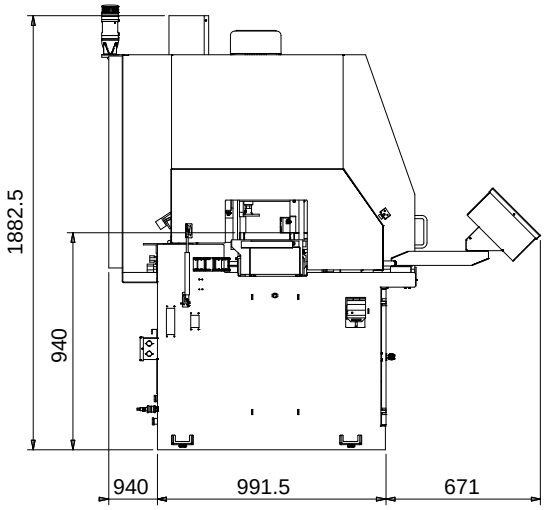
PACKED WEIGHT		
Wooden cage and pallet	Kg	250
Wooden pallet	Kg	100

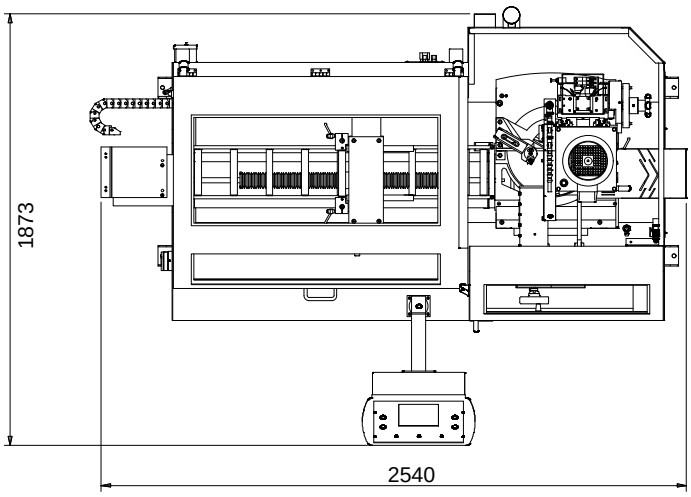


Dimensions

MACHINE INSTALLED		
Work table height	mm	940
Weight	Kg	1060





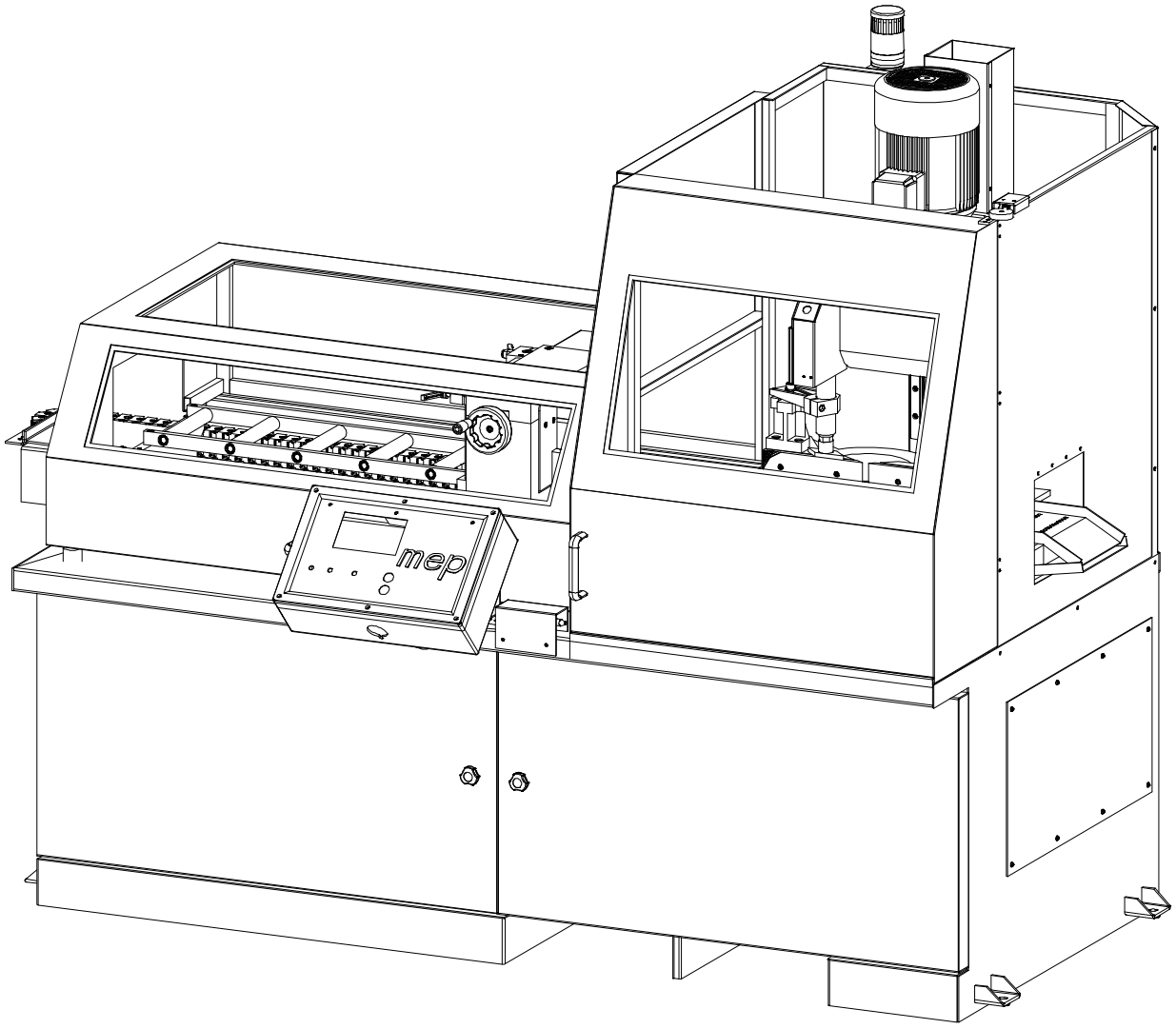


Functional parts

2

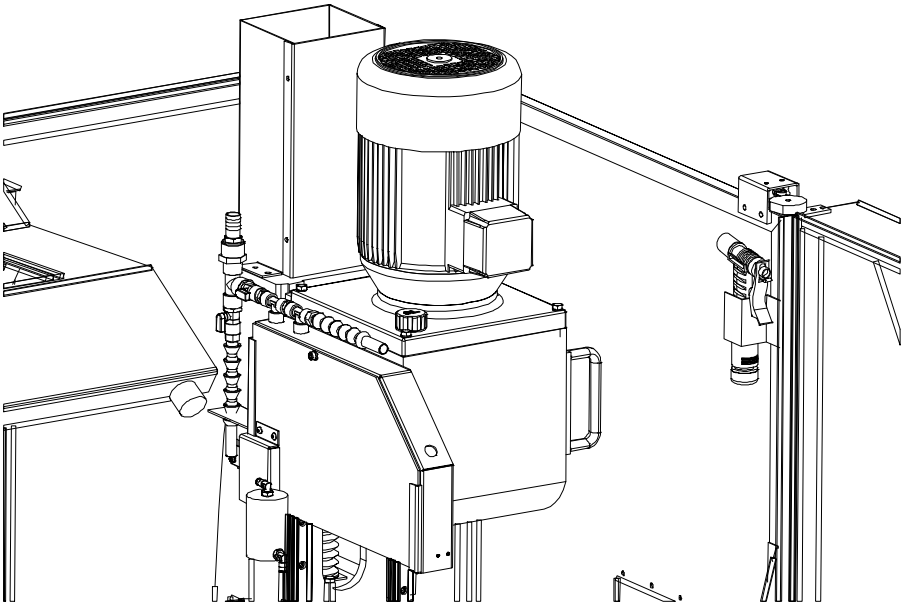
TIGER 372 CNC LR RC 4.0 model

In order for the user to move towards a full understanding of how the machine works, which is described in detail in the chapter 5, this chapter deals with the main units and their locations.



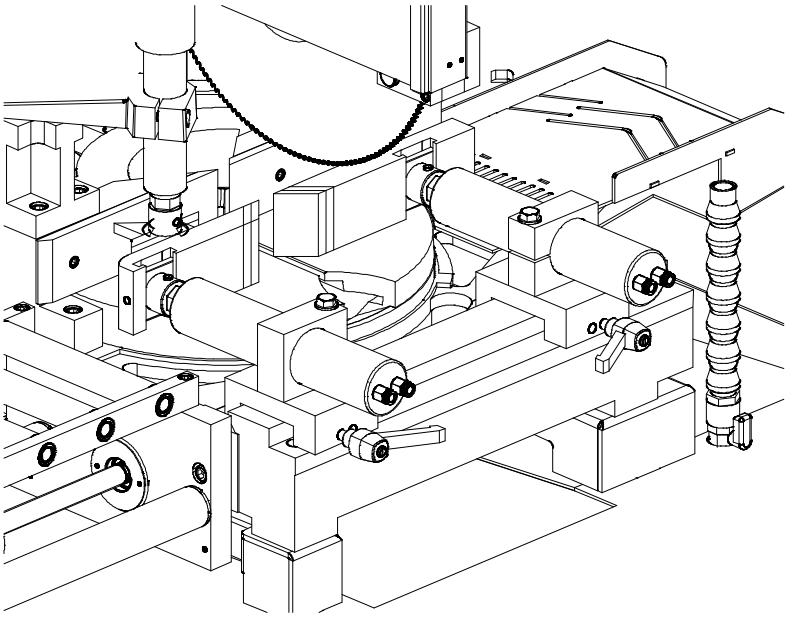
Cutting head

The cutter head makes the cut. It is contained inside guards preventing accidental contact with the tool and moving parts. It is moved by an electro−mechanical cylinder (step motor), and runs on a twin linear guide with ball−bushing sliding blocks. This system makes the structure highly rigid, providing a better cutting finish with less vibration and noise.



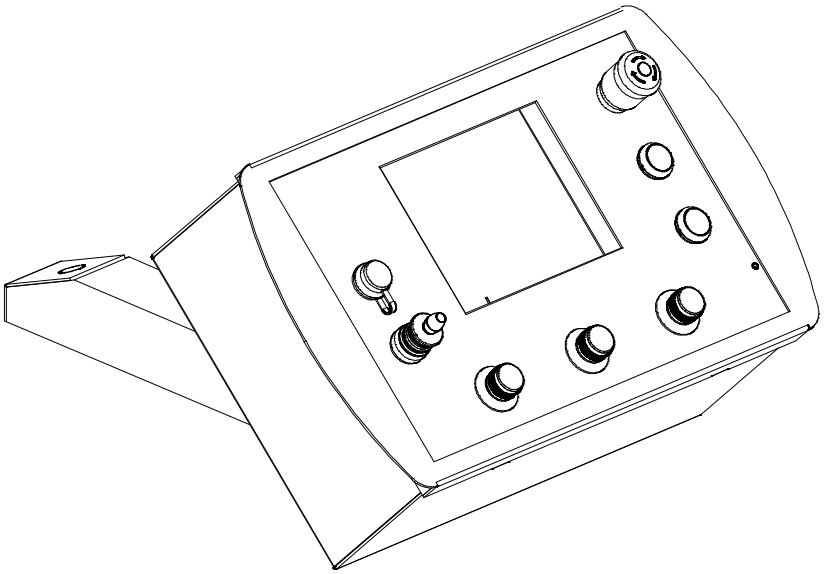
Cutting vice

Shearing vices are the components locking the material during the cut; they are made of fixed jaws, integral with the rotating platform and the sliding blocks with the movable jaws that can move on the dovetail guide. The vices are controlled by the vice opening and closing button on the control panel. The vice approaching movement is manual and the closing is operated by a pneumatic cylinder.



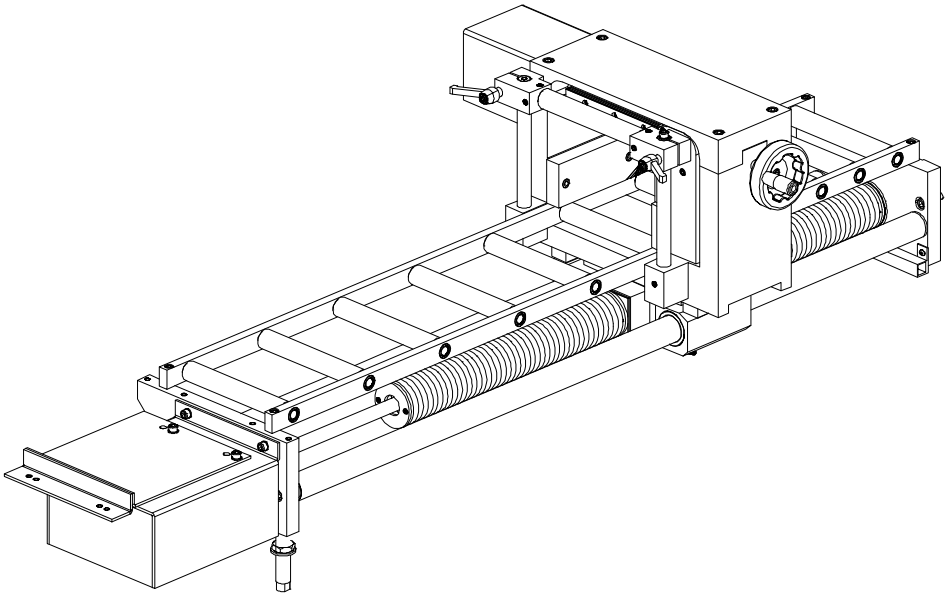
Control Panel

The control panel has a protection rating of IP 54 and contains the electronic equipment. Access to the control panel is protected by a safety panel mounted on hinges and fastened with screws, specially designed to prevent tampering. The control panel swivels on two articulated joints so that it can be positioned by the operator for greater ease−of−use and safety.



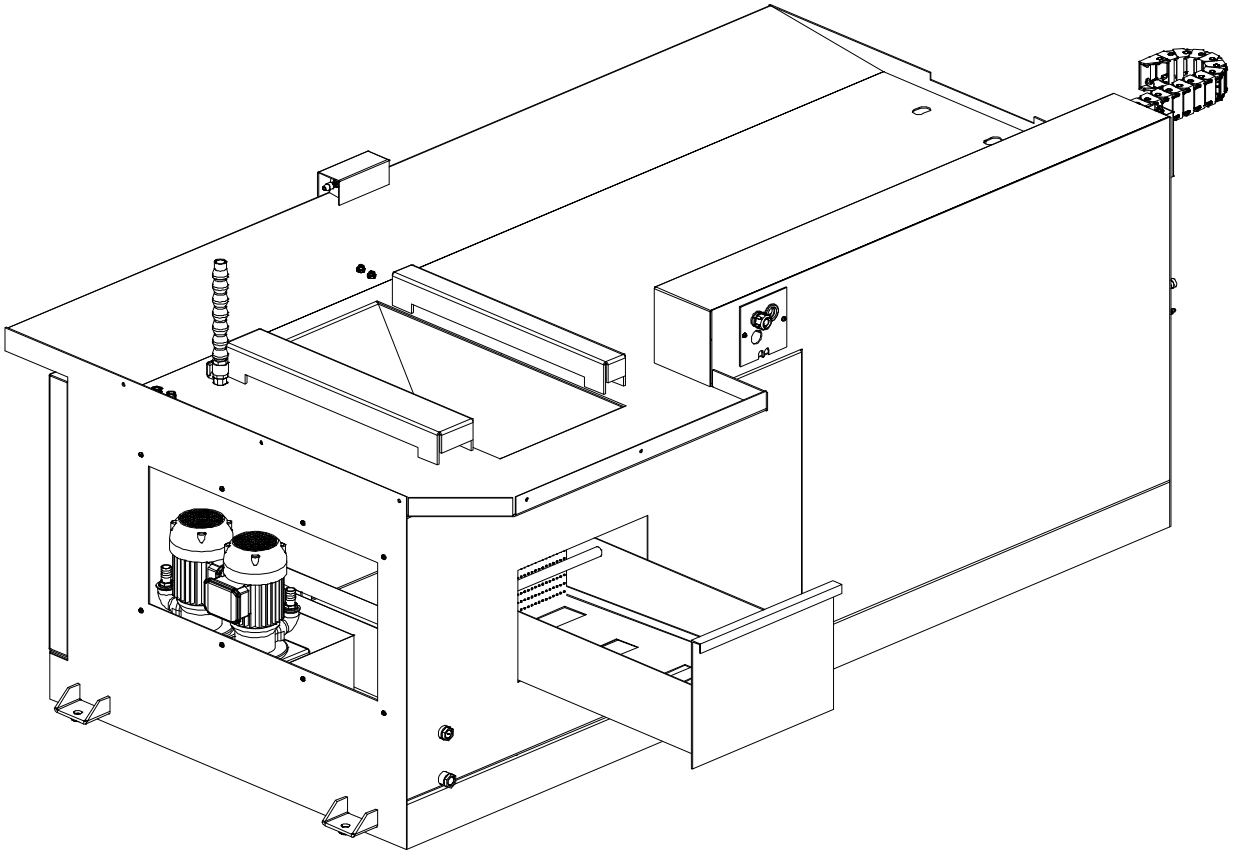
Feeder

The material, locked by means of the pneumatic vice, is delivered by a carriage which conveys it along ground guides. The numeric check controls, with great precision, the step motor of the infeed carriage, enabling the operator to set, on the same bar, 32 batches of pieces to be cut, each with different amounts and lengths.The material, locked by means of the pneumatic vice, is delivered by a carriage which conveys it along ground guides. The numeric check controls, with great precision, the step motor of the infeed carriage, enabling the operator to set, on the same bar, 32 batches of pieces to be cut, each with different amounts and lengths.

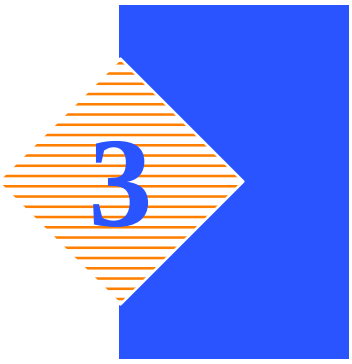


Base

This unit features a large coolant collection surface which conveys the coolant to the rear tank via the tank cover, and a swarf collection drawer. An electric pump is housed inside the tank which draws the clean fluid from the filter system.



Safety and accident prevention



The **TIGER 372 CNC LR RC 4.0** has been designed and produced in accordance with European standards. For the correct use of the machine we recommend that the instructions contained in this chapter are carefully followed.

Use of the machine

The disk vertical sawing machine **TIGER 372 CNC LR RC 4.0** is intended exclusively for cutting metallic materials, ferrous or non−ferrous, in section or solid.
Other types of material and machining are not compatible with the specific characteristics of the saw.
The employer is responsible for instructing the personnel who, in turn, are obliged to inform the operator of any accident risks, safety devices, noise emission and accident prevention regulations provided for by international standards and national laws regarding the use of the machine. The operator must be perfectly aware of the position and function of all the machine's controls.The instructions, warnings and accident prevention standards in this manual must be respected without question by all those concerned.The following definitions are those provided for by **MACHINES DIRECTIVE 2006/42/CE**

- "Danger zone": any zone in and/or around a machine in which the presence of a person constitutes a risk for the safety and health of that person.
- "Person exposed": any person finding himself either completely or partly in a danger zone.
- "Operator": the person or persons given the responsibility of installing, operating, adjusting, maintaining, cleaning, repairing or transporting the machine.

Attention

The manufacturer declines any responsibility whatsoever, either civil or criminal, should there be unauthorised interference or replacement of one or more parts or assemblies on the machine, or if accessories, tools and consumable materials are used that are different from those recommended by the manufacturer itself or if the machine is employed in a plant system and its proper function is thereby altered.

General recommendations

LIGHTING

Insufficient lighting for the types of operation envisaged could constitute a safety hazard for the persons concerned. For this reason, the machine user must provide lighting in the working area sufficient to eliminate all shadowy areas while also avoiding any blinding light concentrations. (Reference standard EN 12464−1:2011“Lighting in work environments”).

CONNECTIONS

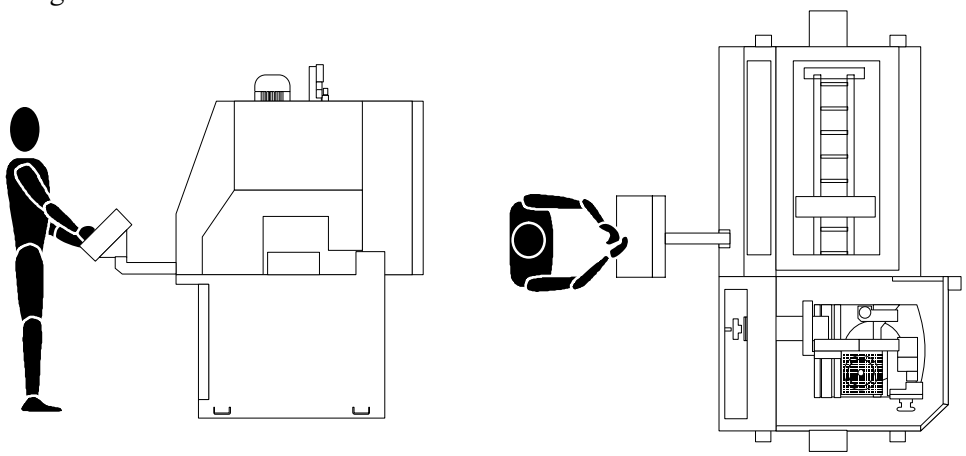
Check that the power supply cables and pneumatic feed systems comply with the maximum machine absorption values listed in the “Machine Specification” tables; replace if necessary.

EARTHING

The installation of the earthing system must comply with the requirements set out in EN 60204−1:2006/AC:2010.

OPERATOR POSITION

The position of the operator controlling machine operations must be as shown in the diagram below.



Recommendations to the operator



Read this instruction manual carefully before working on the system. In the event of loss or damage, the user can request a new manual from MEP, indicating the characteristics of the system on the identification plate.



Wear protective gloves when handling the material, whether cut or to be cut, or when setting up the machine.



Never wear protective gloves while the machine is cutting.



Always wear proper goggles or protective glasses.



Always wear suitable protective footwear



A safety helmet must be worn when handling suspended loads



Wear a high−visibility jacket



Keep hands as clean as possible.



The mains plug must be disconnected from electrical outlet for the purposes of maintenance of electrical equipment, in the case of malfunction or when left unattended.



Do not use the machine without the guards in position. Replace the polycarbonate windows , if subject to corrosion.



Do not allow hands or arms to encroach on the cutting zone while the machine is in operation.

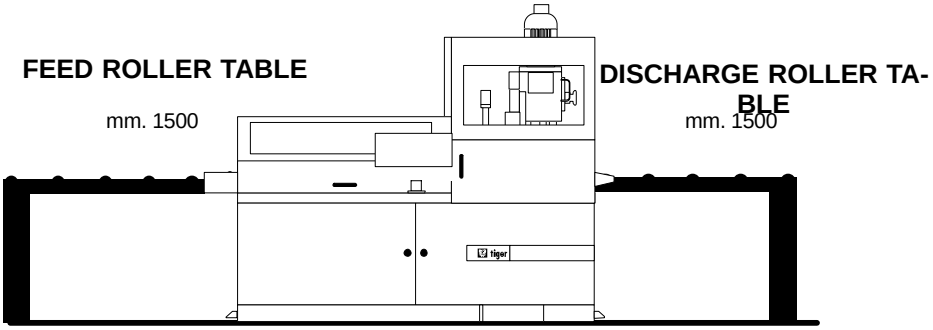


Do not wear oversize clothing with long sleeves, oversize gloves, bracelets, necklaces or any other object that may become entangled in the machine during working; long hair must be tied back and bunched.



Always disconnect the power supply to the machine before carrying out any maintenance work whatsoever, including in the case of abnormal operation of the machine.

Before starting cutting operations, support the material at both ends of the machine using the support arm – standard, or OPTIONAL accessories such as the feed and discharge roller tables shown in the diagram below.

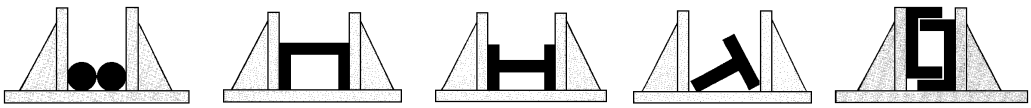


The operator MUST NOT perform any risky operations or those not required for the machining in course (e.g. remove swarf or metal shavings form the machine while cutting).

Remove equipment, tools or any other objects from the cutting zone; always keep the working area as clean as possible.

Do not use the machine for cutting pieces which exceed the cutting capacity described in the technical specifications or are less than 5 mm

Before starting any cutting operations, ensure that the workpiece is securely held in the vice and the machine has been set correctly. A number of examples of how to clamp the different profiles correctly in our machines are shown below.



Never move the machine while it is cutting.

Do not use blades of different sizes to those recommended in the machine's specifications.

When cutting very short pieces, make sure that they are not dragged behind the support shoulder, where they could jam in the blade.



When using the pneumatic vice (version MA) check that the jaws actually move right up to and effectively block the piece, as the maximum travel in only 6 mm, and check that the clamping pressure is correct.



When working on the bandsaw, only wear gloves when handling materials and tool change or adjustment operations. Only carry out one operation at a time and do not hold more than one item or operate more than one device simultaneously. Keep hands as clean as possible.



Warning: if the blade jams in the cut, press the emergency stop pushbutton immediately. If this does not free the blade, slowly release the vice, remove the piece and check that the blade or its teeth for damage, if need be replace the blade.



Before carrying out any repair works on the machine, consult the MEP Technical Service; this can also be done through an agency in the country in which the machine is being used.

Machine safety devices

This use and maintenance manual is not intended as purely a guide for the use of the machine in a strictly productive environment, it is instead an instrument providing information on how to use the machine correctly and safely. The following standards are those specified by the EEC Committee in the directives regarding safety of machinery, health and safety at work, personal protection and safeguarding of the environment. These standards have been applied to the **TIGER 372 CNC LR RC 4.0** band saw.

Reference standards

MACHINE SAFETY

- MACHINES DIRECTIVE 2006/42/CE;
- Directive 2014/30/UE "EMC − Electromagnetic Compatibility";
- Directive 2014/35/UE known as "Low voltage directive".
- EN 16093:2017 Machine tools - Safety - Sawing machines for cold metal
- EN ISO 12100:2010 "Safety of machinery - General principles for design - Risk assessment and risk reduction".

HEALTH AND SAFETY AT WORK

- D.lgs 81/08 and subsequent amendment D.lgs 106/09 ;Directive 91/382/CE;2003/10/CE for the protection of workers against risks caused by exposure to physical, chemical and biological agents during working;
- Directive89/391/CE and Special EEC Directives No. 89/654/CE 2009/104/CE for improvements in health and safety at work;
- Directive 2004/37/CE for the protection of workers against risks deriving from exposure at work to carcinogenic substances;
- Directive 92/58/CE and No. 79/640/CE on safety signs at work.

PERSONAL PROTECTION

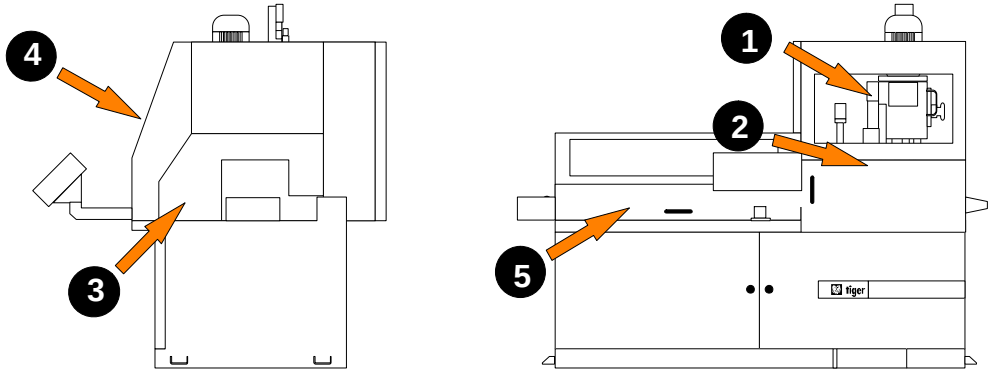
- Directive 89/654/CE and Regulation 2016/425/UE on the use of personal protection devices.

ENVIRONMENTAL PROTECTION

- Directive 2006/12/CE on waste disposal;
- Directive 2008/98/CE on the disposal of used oil.
- Directive 2015/863/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS III).

Protection against accidental contact with the blade

1. Metal disc cover fixed to the cutting head;
2. vice with double−blocking anti−burr device to securely grip the workpiece;
3. the cutting and infeed vice is controlled by pneumatic devices, with maximum 6 mm stroke; the jaw which clamps the piece must be aligned to the part to be processed at a distance of 2÷3 mm;
4. Access to the cutting zone is bounded by a door fitted with a timed lock, which allows it to be opened only 17/18 seconds after the processing cycle has stopped;
5. the cutting material supply is protected by a sheet−metal casing, which can be opened, that is fitted with a Perspex window to check the cutting operations.



Electrical equipment

In accordance with Italian standard EN 60204−1:2006/AC:2010.

- 24 Vac Control voltage for actuators, in accordance with chapter 6 of European Standard “Control and indication circuits” paragraph 2 “Control Circuits” sub−section 1 “Preferential voltage values for control circuits”;
- plant protected against short circuits by quick blowing fuses and earthing of all work and accidental contact parts;
- Protection from accidental start−up by a minimum voltage relay in the case of power failure.

Emergency devices

In accordance with Italian standard EN 60204−1:2006/AC:2010.

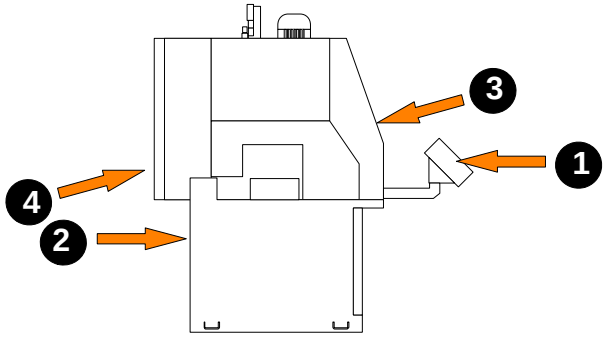
- **Chapter 5 Section 6 Sub−section 1 ”Emergency stop device”**: “the emergency stop device immediately stops all the dangerous and other functions of the machine”.

- **Chapter 6 Section 2 Subsection 4 point 7 “Safety guards”:** “the removal of safety guards protecting dangerous parts or zones of the machine causes the machine to shut down immediately. When the guards are returned to their original position the machine must be reset in order to resume work”.

1. **Emergency stop**: a non−return mushroom−head pushbutton, colour red on yellow background, is located on the control panel of the machine. To release the pushbutton, the actuator must be rotated 45°. After the emergency situation has been resolved, the machine must be reset.

Interlocked protective guards:

2. **Thermal−magnetic circuit breaker**: this device incorporates two power failure protection systems. In fact, in the event of a power failure, it disconnects all the electrical components, causing the machine to shut down immediately and prevents it from automatically starting up again when power is restored. The device also resets the thermal relay fitted to protect against current overloads.
3. **Head casing safety switch**: to access the cutting zone it is necessary to open the front door, pressing the relevant button on the control console. This device cannot be removed and has timed opening; therefore, it can only be opened 5 or 10 seconds after the processing cycle has stopped.
4. **Feeder casing safety switch**: to access the cutting material feeder, it is necessary to open the casing, with a safety limit switch that stops all machine operations that must be reset to continue processing.



Noise level of the machine

Noise can cause hearing damage and represents one the problems faced by many countries who adopt their own standards. In accordance with the**MACHINES DIRECTIVE 2006/42/CE** , we are listing the standards that specify noise levels for machine tools.
The following paragraph explains the modes and the detected sound power and pressure values released by the sawing machine.
These values comply with norm EN 16093:2017, EN ISO 12100:2010 and EN ISO 4871:2009,concerning the rules for drawing and presenting a procedure for noise tests and the declaration and check of sound emission values by machines and equipment.

Noise level measurement

Noise levels are measured using an instrument known as an Integrator noise−meter which registers the equivalent continuous acoustic pressure level at the work station. The damage caused by noise depends on three parameters: level, frequency and duration. The equivalent level concept Leq combines the three parameters and supplies just one indication. The Leq is based on the principle of equal energy, and represents the continuous stationary level containing the same amount of energy, expressed in dBA, as that actually fluctuating over the same

period of time. This calculation is made automatically by the integrator noise–meter. The measurements are taken every 60 seconds, in order to obtain a stabilised value. The reading stays on the display for a sufficient time to enable a reading to be taken by the operator.Measurements are taken by holding the instrument at approximately 1 metre from the machine at a height of 1.60 metres above the platform at the operator's work station. Two measurements are taken: the first while the machine operates without cutting anything, the second while cutting in manual mode.

Noise level values

Identification	
Machine type	Disc saw for metal
Model	**TIGER 372 CNC LR RC 4.0**
Reference standard	EN ISO 3746:2010

Results		
Test 1st	**Description**	C40 steel cut – Full round bar ø 80 mm Disc blade HSS 350 x 2,5 x 32 z=90 t=12
	Results	**Mean sound level (Leq) 67,7 dB (A)** Environmental correction (K) 0,6 dB(A) Peak sound power (Lw) 85,0 dB(A)
Test 2nd	**Descriprion**	Inox steel cut – Full round bar ø 65 mm Disc blade HSS 350 x 2,5 x 32 z=90 t=12
	Results	**Mean sound level (Leq) 65,2 dB(A)** Environmental correction (K) 0,6 dB(A) Peak sound power (Lw) 82,6 dB(A)
Test 3rd	**Description**	Inox steel cut – boxed 100 mm Disc blade HSS – 350 x 2,5 x 32 z=90 t=12
	Results	**Mean sound level (Leq) 68,8 dB(A)** Environmental correction (K) 0,6 dB(A) Peak sound power (Lw) 86,2 dB(A)

Vibration emission

This sawing machine complies with the norms EN 1299:1997 + A1:2008 and EN ISO 20643:2008/A1:2012, as the machine vibration emission on the devices controlled by the operator does not exceed the threshold of 2.5 m/s^2

Electromagnetic compatibility

As from 1 January 1996 all electrical and electronic appliances bearing the CE marking that are sold on the European market must conform to Directive 2014/30/UE e 2014/35/UE and **MACHINES DIRECTIVE 2006/42/CE**. The prescriptions regard two specific aspects in particular:

1. "EMISSIONS: during its operation, the appliance or system must not emit spurious electromagnetic signals of such magnitude as to contaminate the surrounding electromagnetic environment beyond clearly prescribed limits";
2. "IMMUNITY: the appliance or system must be able to operate correctly even when it is placed in an electromagnetic environment that is contaminated by disturbances of defined magnitude".

The following text contains a list of the applied standards and the results of the electromagnetic compatibility testing of machine model **TIGER 372 CNC LR RC 4.0**.

Emissions

- EN 61000−6−4:2007 + A1:2011 Electromagnetic Compatibility (EMC) − Generic standard regarding emissions. Part 6−4: Industrial Environment.
- EN 55011:2009 + A1:2010 Industrial, scientific, and medical radio frequency appliances (ISM). Characteristics of radio frequency disturbance − Limits and methods of measurement.
- EN 50370−1:2005 Electromagnetic compatibility (EMC) − Product family standard for machine tools − Part 1: Emission

CONDUCTED EMISSIONS				
Gate A	**Freq. (MHz)**	**Q−peak limit (dBuV)**	**Mean value limit (dBuV)**	**Result**
A.C. power supply input	0.15 – 0.5 0.5 – 5 5 – 30	79 – 73 (linear reduction with log of frequency) 73 73	66 – 60 (linear reduction with log of frequency) 60 60	Complies

CONDUCTED EMISSIONS – ANALYSIS OF INTERMITTENT DISTURBANCES	
Gate	**Result**
A.C. power supply input	Not applicable

IRRADIATED EMISSIONS			
Gate	**Freq. (MHz)**	**Q−peak limit (10 m) (dBuV/m)**	**Result**
Enclosure	30 – 230 230 – 1000	40 47	Complies

Immunity

- IEC 61000−6−2:2005 + AC:2005 Electromagnetic Compatibility (EMC) − Generic standard on immunity. Part 6−2: Industrial Environment.
- EN 61000−4−2 + A1 (1996−1999) Electromagnetic Compatibility (EMC) − Part 4: Test and measurement techniques − Section 2: Electrostatic discharge immunity tests − Basic publication.
- IEC 61000−4−3:2006 + AMD1:2007 + AMD2:2010 Electromagnetic Compatibility (EMC) − Part 4: Test and measurement techniques − Section 3: Radiated, radio−frequency, electromagnetic field immunity test.
- IEC 61000−4−4:2012 Electromagnetic Compatibility (EMC) − Part 4: Test and measurement techniques − Section 4: Fast transients/bursts immunity tests − Basic publication.
- IEC 61000−4−5:2014 + AMD:2017 Electromagnetic Compatibility (EMC) − Part 4: Test and measurement techniques − Section 5: Surge immunity test.
- IEC 61000−4−6:2013 Electromagnetic Compatibility (EMC) − Part 4: Test and measurement techniques − Section 6: Immunity to conducted interference, induced by radio frequency fields.
- IEC 61000−4−11:2006 Electromagnetic Compatibility (EMC) − Part 4: Test and measurement techniques − Section 11: Voltage dips, short interruptions and voltage variations immunity tests.
- EN 50370−2:2003 Electromagnetic compatibility (EMC) − Product family standard for machine tools − Part 2: Immunity

IMMUNITY TO ELECTROSTATIC DISCHARGES			
Gate	**Test levels**	**Evaluation criterion**	**Result**
Enclosure	contact 4 kV steel plate 4 kV in air 8 kV	B	Complies

IMMUNITY TO VOLTAGE (BURSTS)			
Gate	**Test levels**	**Evaluation criterion**	**Result**
A.C. power supply in-put	2 kV	B	Complies

IMMUNITY TO CONDUCTED ELECTROMAGNETIC FIELDS			
Gate	**Test levels**	**Evaluation criterion**	**Result**
A.C. power supply in-put	10V	A	Complies

IMMUNITY TO IRRADIATED ELECTROMAGNETIC FIELDS			
Gate	**Test levels**	**Evaluation criterion**	**Result**
Enclosure	10 V/m	A	Complies

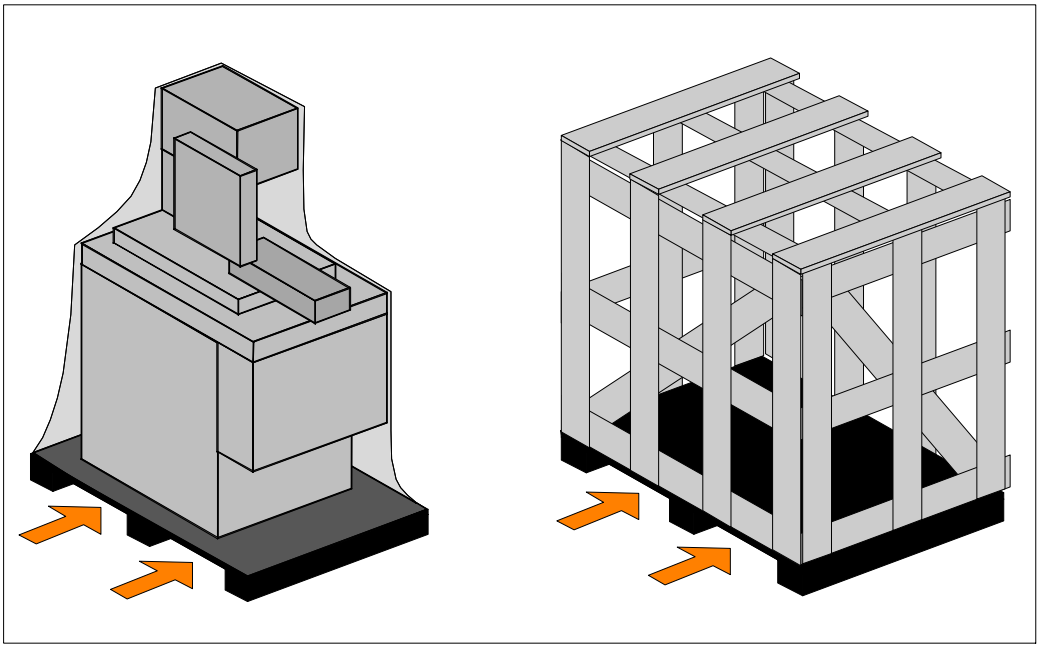
Machine installation

4

Packaging and storage

MEP S.p.A. use packing materials that guarantee the integrity and protection of the machine during its transport to the customer.

The type of packing differs according to the size, weight and destination. Therefore the customer will receive the machine in one of two following ways:

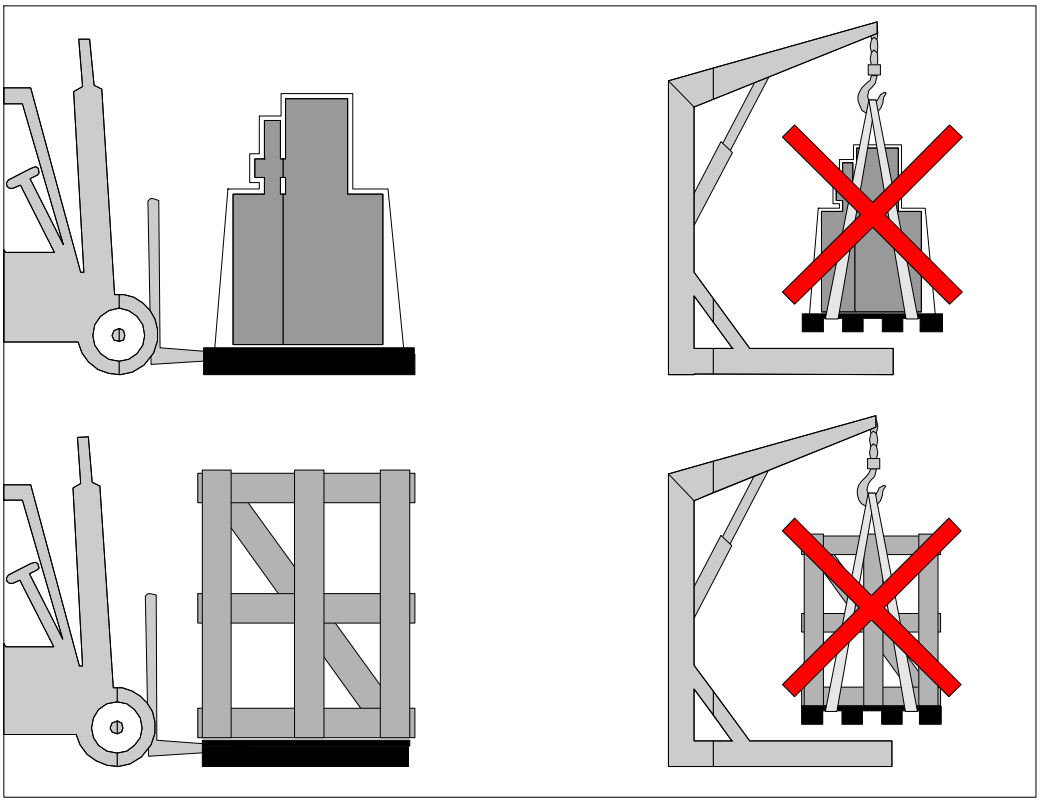


1. on a pallet with straps and heat−shrink plastic;
2. on a pallet with straps, heat−shrink plastic and a wooden crate.

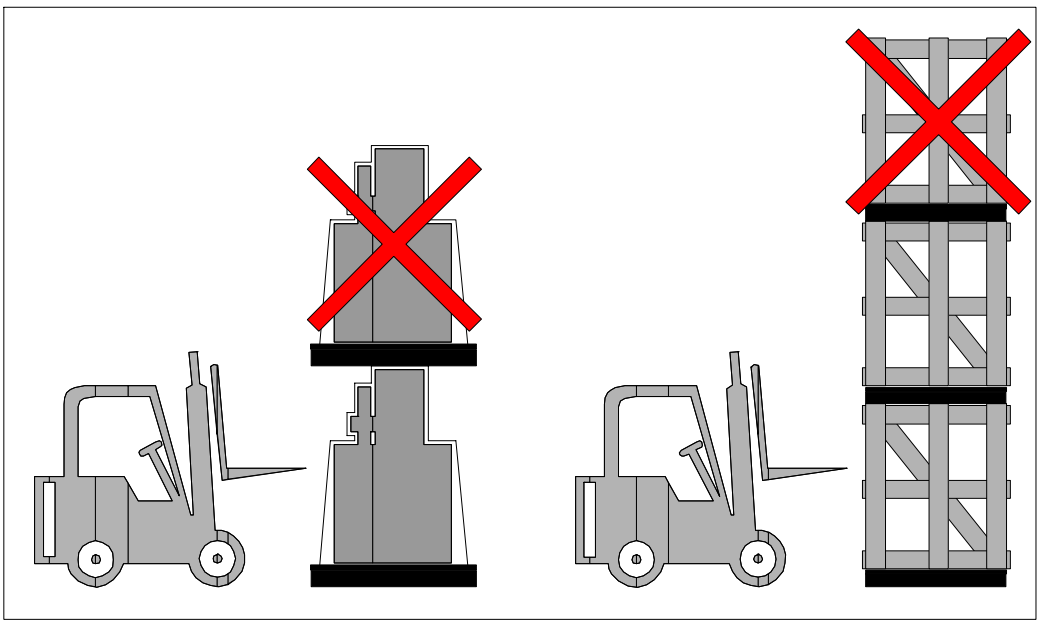
Warning In both cases, for correct balancing the machine must be handled using a fork−lift truck, inserting the tines at the points indicated by the arrows, using the reference marks on the crate itself.

Attention Before carrying out lifting operations, make sure that the weight of the machine, as indicated on the crating or other packaging, is within the forklift truck load limit.

Attention Do not handle the packed machine using slings.

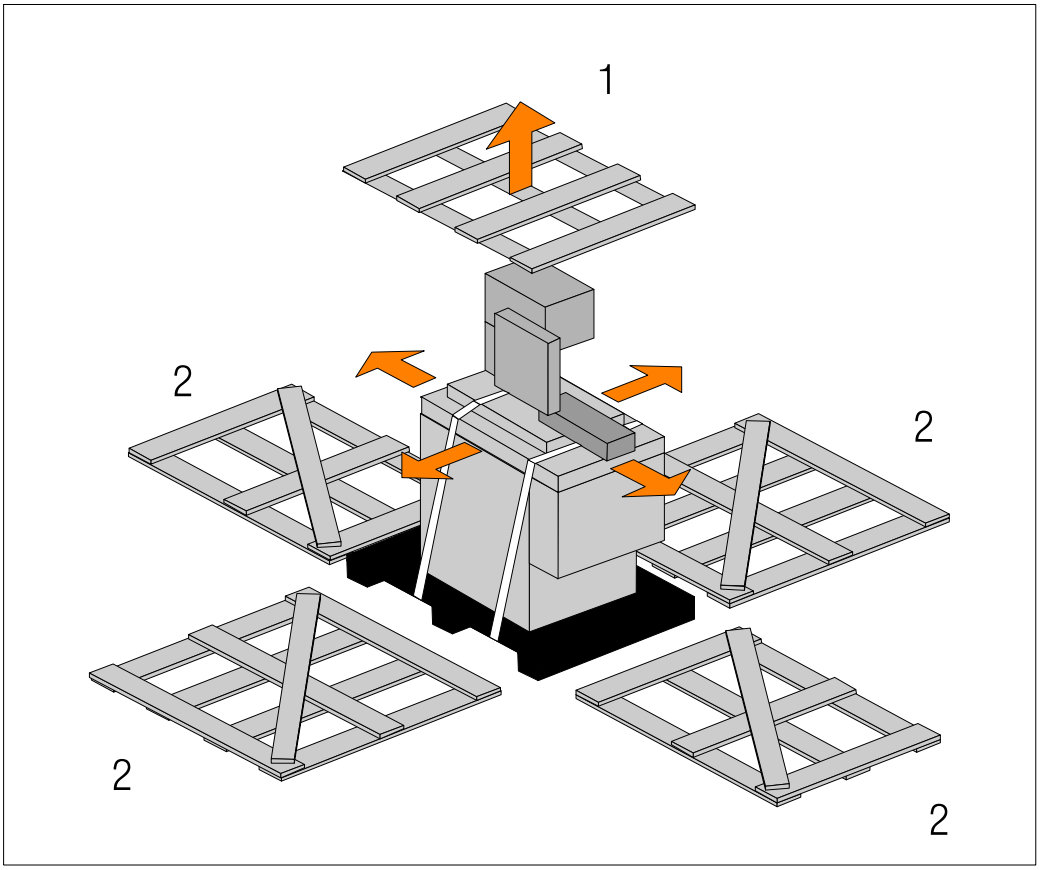


Attention When storing, machines palletized and shrink−wrapped must not be stacked two high, and machines pallettized and crated must not be stacked three high.

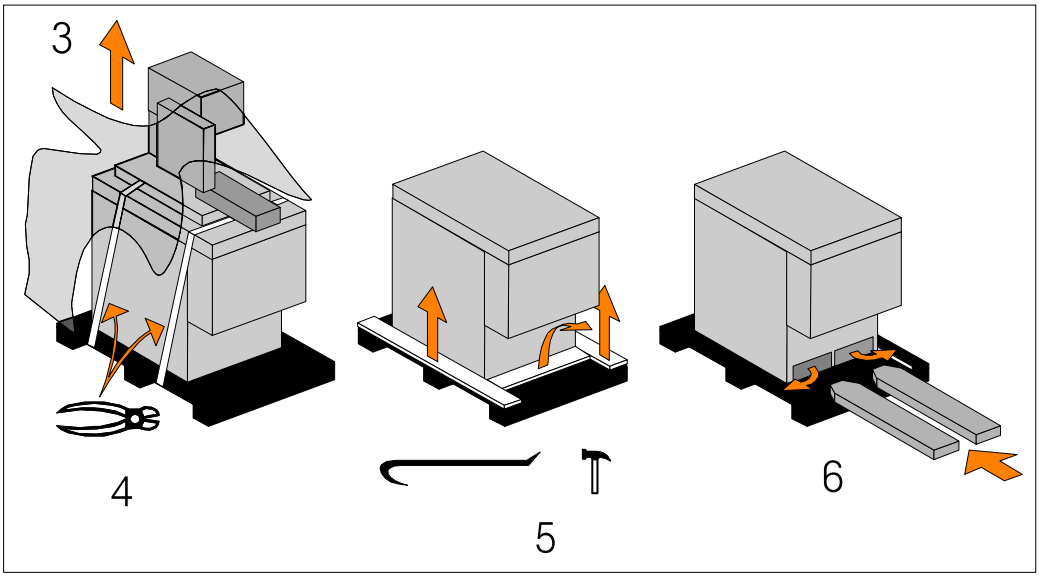


To install the machine, first remove the packing, paying particular attention not to cut any electric wires or hydraulic hoses; if necessary use pliers, a hammer and a cutter.
Open crate in the illustrated order:

1. remove nails and lift the top of the cage;
2. remove nails and lower walls;



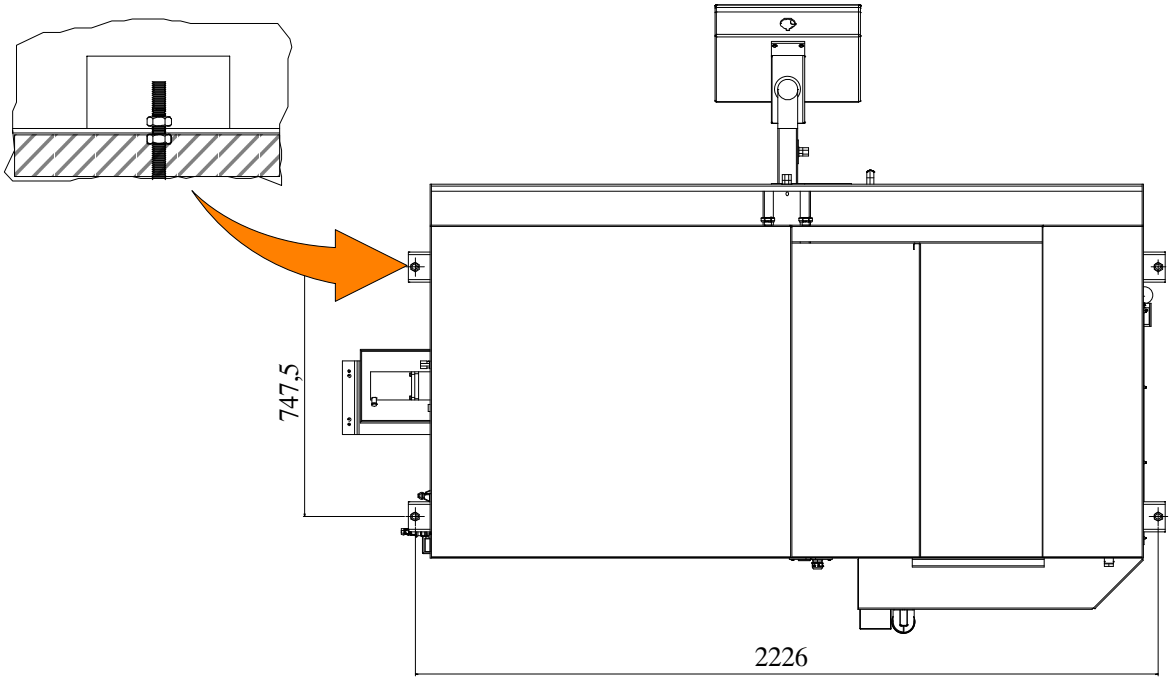
3. remove heat−shrink covering;
4. remove the straps;
5. remove nails from pallet securing planks and remove planks;
6. remove the front panel and insert fork tines.



To locate the machine in the workplace, **the machine dimensions** and necessary operator working space, including **the spaces laid** down in safety standards, **must be taken into account.**

Anchoring the machine

The base of the machine is anchored to the floor by two permanent studs located on the sides of the base. The studs are screwed into nuts previously sunk into the concrete, and tightened from above with lock nuts. The schematic specifications set out in Chapter 1 should be taken into account when positioning the machine.



Minimum requirements

For the machine to function correctly, the room in which it is to be installed must satisfy the following requirements:

- power supply voltage/frequency: refer to the values on the rating plate; check the compatibility of the differential value of the factory outlet with the absorption of the saw;
- working pressure not less than 6 Bar and not greater than 8 Bar;
- temperature of machine location: from −10 to +50° C;
- relative humidity: not more than 90%;
- lighting: not less than 500 Lux.

Warning The machine is already protected against voltage variations, but will only run trouble−free if the variations do not exceed ± 10%.

Check list

Before starting installation, check that all the accessories, whether standard or optional, supplied with the machine are present. The basic version of the **TIGER 372 CNC LR RC 4.0** is supplied complete with:

CHARACTERISTICS	STANDARD	OPTIONAL
Automatic vertical circular saw powered by brushless motor mitering from −45° to +45° and up to +60° in semiautomatic mode.	✓	
Numerical control machine with the new CNC MEP40, designed to automate the machines that it produces so as to program, on the bar itself or on the material placed in the CB6001 bar loader (optional), up to 300 cutting programs, each with different quantities and lengths	✓	
Three−stage drive system to ensure a high level of rigidity and precision, and to attain a great capacity for removal	✓	
Fully encased model to provide operator safety, sound insulation and the possibility of working with large quantities of liquid	✓	
Disc HM ø 370 x 32 x 3 for steels	✓	
HSS disk ø 350 x 32 x 2,5 for steel*		✓
User interface with 8” touchscreen and mechanical keys, for the operating functions of the sawing machine; it ensures reliable, simple and intuitive use, through a self−learning function, and the control of all cutting parameters in real time	✓	
Special scrap reduction vice	✓	
Stand with chip tray, that can be replaced by a motor−driven chip extractor (optional)	✓	
Four controls to program the cutting head stroke limits, according to the dimensions of the bars to be cut	✓	
Blade rotation with motor at a speed, together with an electronic variable speed drive, making cutting possible from 15 to 150 rpm to always accomplish the best efficiency	✓	
Infeed unit with step motor; screw/nut with ball bushing (length 1000 mm)	✓	
Swing feeder vice to deliver even deformed bars	✓	
Blade cleaning brush	✓	
Upright pneumatic vice for cutting more than one bar	✓	
Cutting head moving on twin linear guide with pre−loaded double ball−bushing sliding blocks	✓	
Head movement with electro−mechanical cylinder to provide the greatest cutting rigidity	✓	
Rotating pin with pre−loaded thrust bearing to ensure precision and reliability	✓	
Keys, user manual and manual for ordering spare parts in the language used	✓	
Motor chip discharger		✓
Additional pedal control with emergency device		✓
GSM module for SMS sending		✓
Comb jaws max. 70x70 mm to reduce scrap		✓
Large flange blade guide kit with 105 mm maximum cutting capacity (as standard on machine with automatic head rotation)		✓
Additional hydraulic vice		✓
Loading side roller table for comb jaws 1500 mm modules		✓
Min. lubrication system		✓
Unloading side adapter with support		✓
Guide download pieces for automatic rotation	✓	
1500 mm KK200 module		✓

CHARACTERISTICS	STANDARD	OPTIONAL
Emulsifiable oil 5 l		✓
MEP slide bar loader for high production (CB6001)*		✓

*ACCESSORIES AVAILABLE ON REQUEST

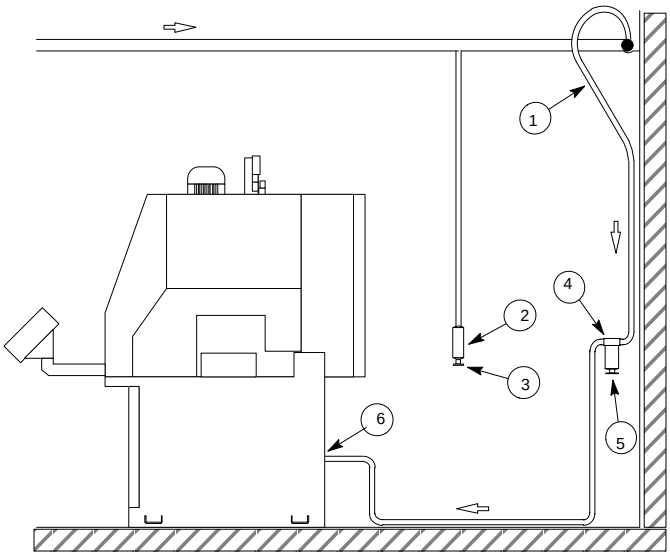
Accessory kit is placed before the packaging inside the machine; it contains the following items:

- 3, 4, 5, 6, 8 and 10 mm Allen keys;
- open 19 mm wrench;
- this Use and Maintenance Manual.

Connection to the compressed air supply

To ensure perfect operation and a long service life, it is recommended that the machine is connected to a compressed air system having the characteristics reported in the diagram below.

KEY
1 - DOWN PIPE
2 - CONDENSATE COLLECTOR
3 - DRAIN COCK
4 - AIR FILTER
5 - DRAIN COCK
6 - CONNECTING HOSE

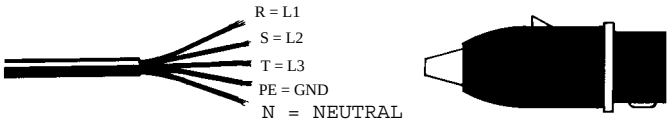


Connection to the power supply

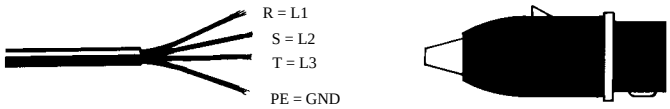
Before connecting the machine to the power supply, check that the socket is not connected in series with other machines. This requirement is fundamental for the good operation of the machine.To connect the machine to the power supply, proceed as follows:

▶ connect the power supply cable of the machine to a plug which matches the socket to be used. (EN 60204−1; par. 5.3.2).

CONNECTION FOR **"5-CORE"** WIRE SYSTEMS WITH NEUTRAL



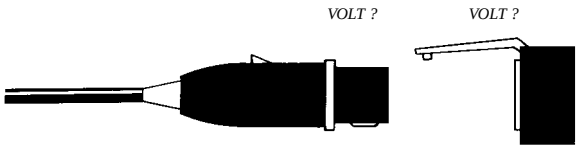
CONNECTION FOR **"4-CORE"** WIRE SYSTEMS WITH NEUTRAL



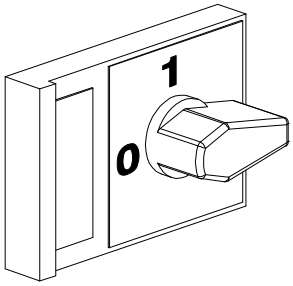
Attention

When using systems with a neutral wire, special care must be taken when connecting the **blue** neutral wire, in that if it is connected to a phase wire it will discharge the **phase voltage** to the equipment connected for **voltage: phase−neutral.**

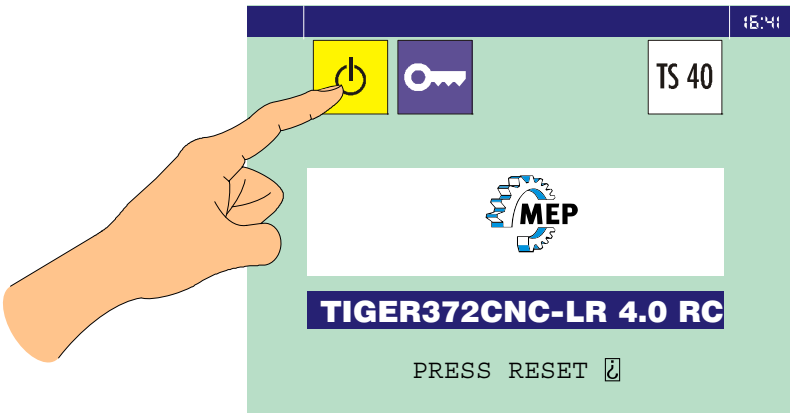
▶ Insert the plug in the socket, ensuring that the mains voltage is the same as that for which the machine has been setup.



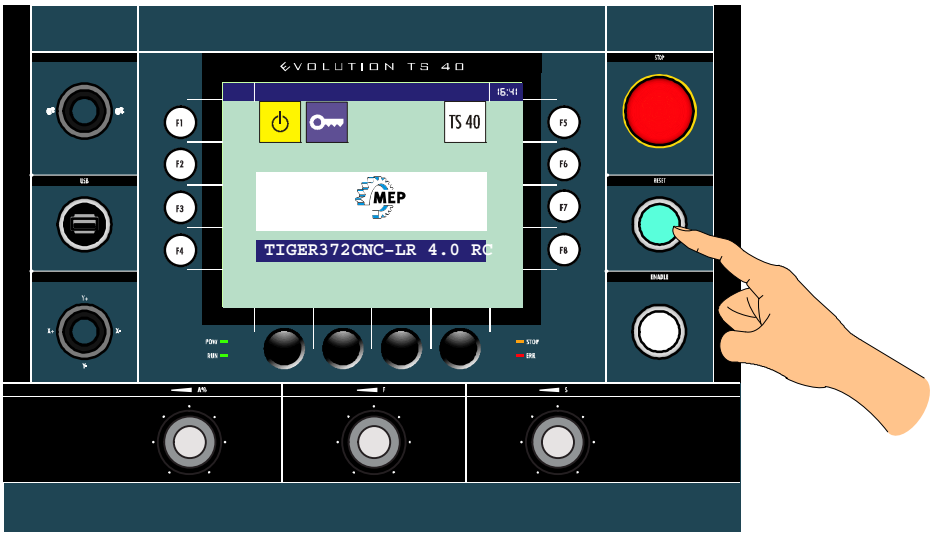
▶ To switch on the machine, turn the main switch located at the rear, on the right−hand side of the electric cabinet;



▶ press the power button displayed on the touch screen;



▶ press RESET twice.

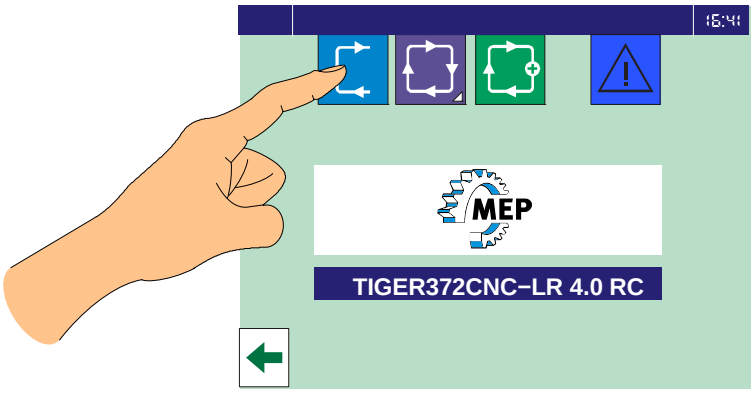


This procedure should be performed every time the machine.

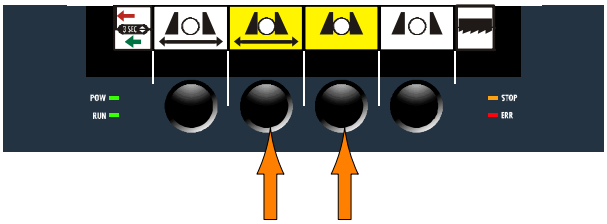
Make sure that the disk rotates properly. To do this, proceed as follows:

▶ make sure the machine is not in emergency status (red mushroom head button released); otherwise, release the emergency stop button and press RESET.

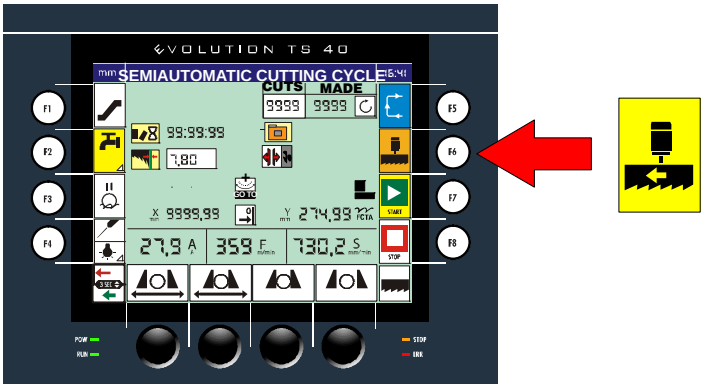
▶ Press the symbol of the semi-automatic cycle.



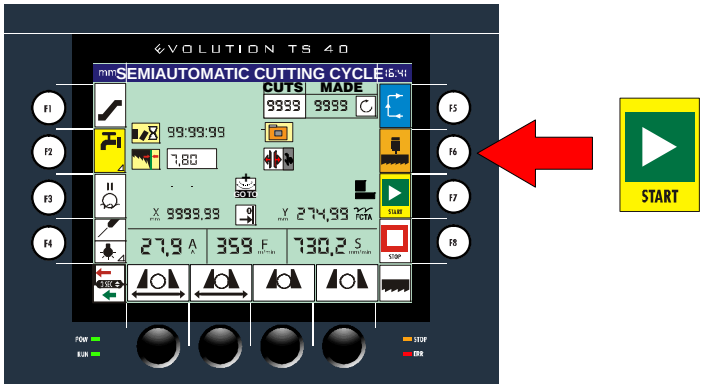
▶ Close both vices.



▶ Press the disc rotation start key F6 at the same time.

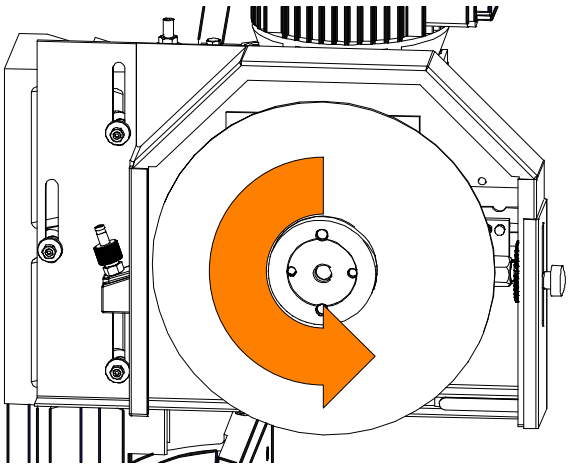


▶ Press the start cycle button. In this manner, the RHLS (reverse head limit switch) point, which determines the cycle start position, is automatically stored.



Now the disc starts turning and the head starts lowering.

Attention **Ensure that the blade moves in the correct direction as shown in the above figure.** If it does not, simply reverse two of the phase wires on the machine's power supply input.



The sawing machine is now ready to start the work for which it was designed. Chapter 5 provides a detailed description of the various functions of the machine and its operating cycles.

Description of machine operation

5

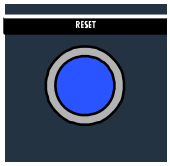
This chapter analyses all the machine functions. We begin with a description of the pushbuttons and other components on the control panel.

Description of the control panel

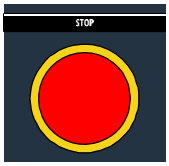
The control console is housed inside the control panel in an IP 54 rated housing which is tamperproof and resistant to dust and moisture. The control panel swivels on two articulated joints so that it can be positioned by the operator for greater ease of use and safety. The control console for the **TIGER 372 CNC LR RC 4.0** is illustrated below.



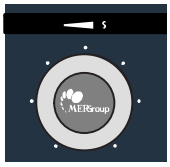
Key for control console keyboard



RESET:
Press to reactivate machine functions after an alarm.



EMERGENCY STOP:
This button will stop both the hydraulic and blade motors. The head motion will cease. The vises remain as they are, but if closed, they will lose gripping force. For this reason all long stock should be supported so that it will not fall.
To reset the button, simply rotate through 45°.



This adjusts the disc rotation speed-
KNOB S:



KNOB F:
This adjusts the head descent speed.



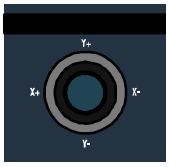
KNOB A%:
Adjusts the current absorption depending on the machine cutting force



USB PORT:
Communication port for the software update and the machine diagnostics



R Axis JOYSTICK (optional)
Head rotation is enabled to make inclined cuts from 45 degrees left to 45 degrees right
To operate the joystick, keep the ring lifted on the stem.



JOYSTICK X – Y Axis:
It is enabled to move the head upwards and downwards and to move the feeder forwards and backwards. To operate the joystick, keep the ring lifted on the stem.

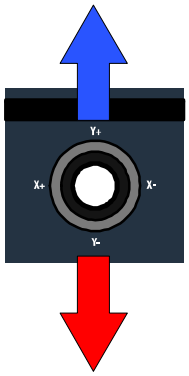
Thermal–magnetic circuit–breaker with undervoltage coil and door locking device

The main switch is mounted on the right hand side of the control panel. When set to ON (1), this switch powers up the machine.
The main switch is fitted with three power failure protection systems. In fact, in the event of a power failure, it disconnects all the electrical devices, causing the machine to shut down immediately, and prevents it from automatically starting up again when power is restored. The device also resets the thermal relay fitted to protect against current overloads.

Basic instructions for carrying out a cutting operation cycle

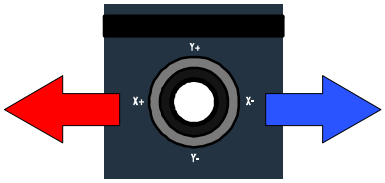
Manoeuvring the cutting head Y AXE

The cutting head can be moved upwards and downwards using the control enabling the joystick, as shown in the key of the control console keyboard in this chapter.



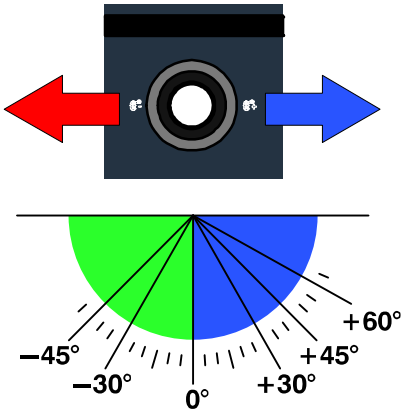
Manoeuvring the feeder X AXE

The feeder can be moved upwards and downwards using the control enabling the joystick, as shown in the key of the control console keyboard in this chapter.



R AXE head rotation

The cutting head can be rotated from – 45 to + 60 degrees using the R Axis rotation joystick, as shown in the key to the control console keyboard in this chapter.

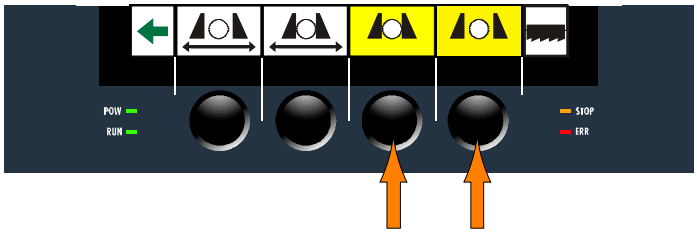


Attention

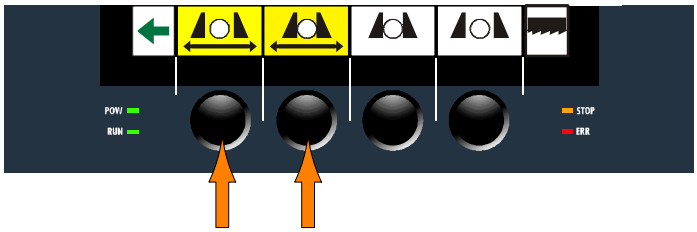
The programming of the head automatic rotation in the machining cycles is allowed only between −45 and +45 degrees. During the manual rotation through the joystick over +45 and up to +60 degrees it is necessary to adapt the position of the vertical vice so that it does not interfere with the cutting head.

Clamping the work piece in the vice

Vice opening and closure, for the cutting vice and the feeder vice, are controlled by the corresponding buttons on the control console.



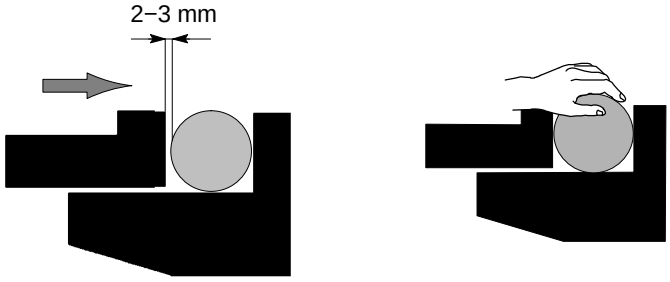
Cutting Vice close button **Cutting vice open button**



Feeder vice open button **Feeder vice close button**

However, to ensure that the workpiece is securely clamped in the vice, proceed as follows:

- make sure the workpiece dimensions do not exceed the machine's cutting capacity;
- make sure the piece is correctly supported on both sides of the machine;
- move the vice to within 2÷3 mm of the workpiece. Press the vice closure button on the console;
- make sure that the material is well blocked by trying to move it manually, as the vice cylinder has a stroke of 6 mm only.



Warning If the cutting vice is not closed, when the START key is pressed the machine automatically closes the vice.

Warning Access to the cutting zone is bounded by a door fitted with a timed lock, which allows it to be opened only 17/18 seconds after the processing cycle has stopped.

Preliminary check list for cutting operation

To guarantee complete safety during cutting cycles, the operator should work through a check list of the entire apparatus, checking:

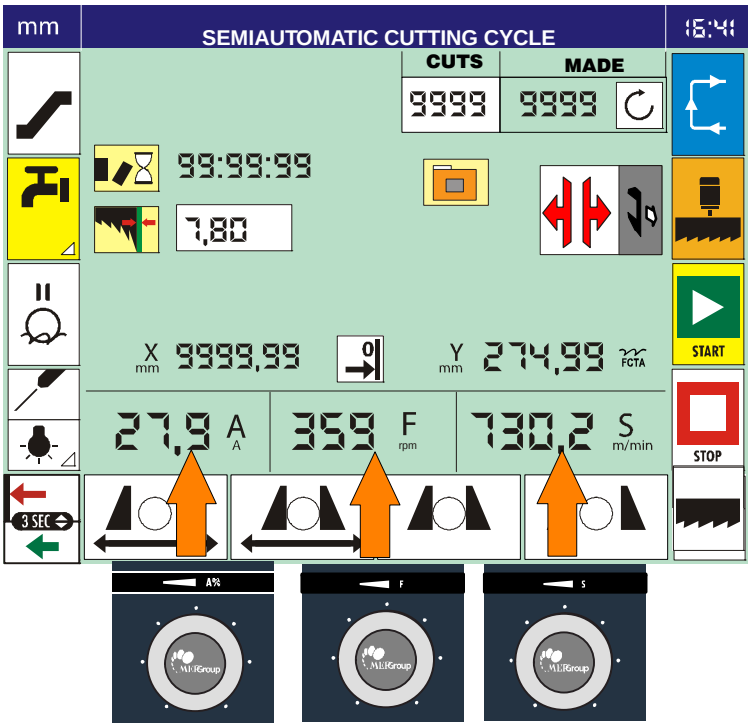
- ensure that the disk guard completely surrounds the tool when it is not in use;
- that the work piece is properly clamped in place;
- ensure that the blade teeth are appropriate for the material being cut;
- that the speed selected is right for the kind of piece to be cut;
- that all protections are in place and correctly locked;
- lubricant/coolant level and activation of the electropump;
- the blade downstroke speed must be correct.

Adjustment of technological cutting parameters

- Set the F and S parameters according to the material tables in chapter 9.

The cutting technological parameters (the head descent speed, the disk rotation speed and the absorption) must be adjusted according to the geometry, the section and the composition of the material being processed, to optimize the cutting.

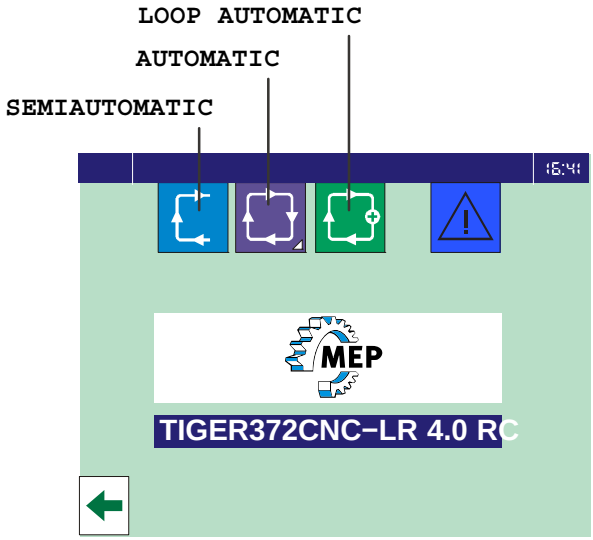
- Parameter A indicates the instantaneous absorption of the blade motor. In the event of an increase in absorption due to a worn disc or variations in material sections, it is possible to increase the displayed value by 10%, using the relative potentiometer, to compensate for the cutting effort.



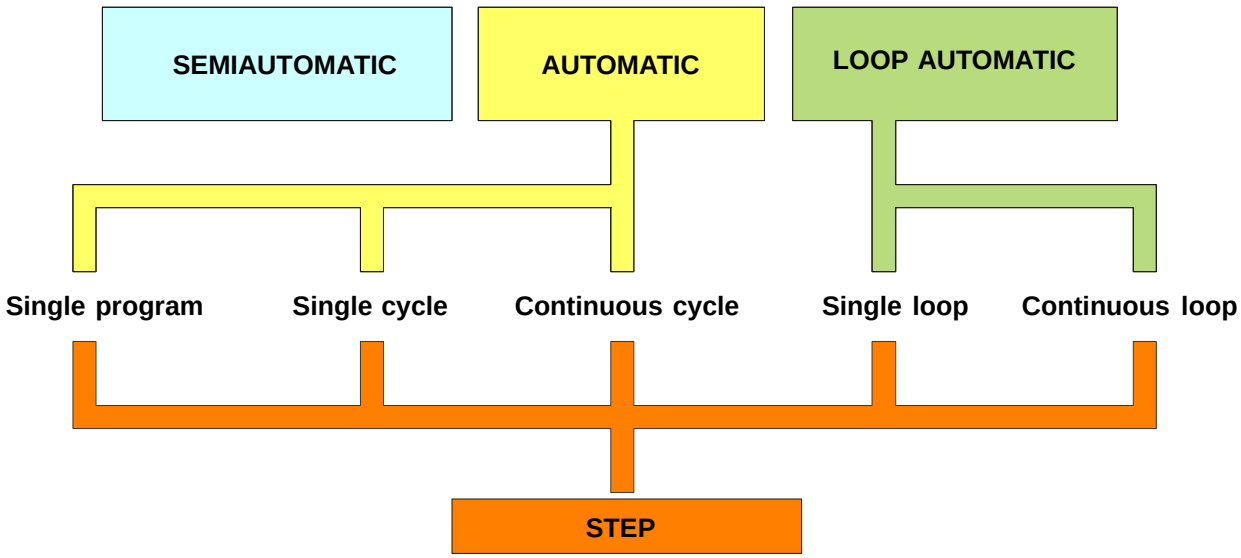
Cutting cycles

This sawing machine can carry out single or series cuts stored in max. 24 sequences of 50 programs each, chosen among max. 300 total cutting programs.

▶ after initializing the sawing machine, the display shows ”main menu”



The available working cycles (thoroughly explained in the following sections) are: semiautomatic, automatic and loop automatic. In the semiautomatic cycle the cutting only involves the setting of the rear head limit switches (RHLS) and forward head limit switches (FHLS); then, after having positioned the material at the wished cutting length, start by the START key. As for the Automatic and Loop automatic cycles, it is necessary to specify type of automatism required to the sawing machine.



AUTOMATIC CYCLE

- Single program: it runs exclusively the cycle programmed directly on the working video page. After setting the length and necessary piece number it runs the program stopping the cycle and giving a light and sound alarm.
- Single cycle: it can operate max. 24 sequences containing max. 50 programs each, chosen among the 300 ones that can be stored. It enables to run the programs contained in the selected sequence and at the end of each programs it goes to the next one BY PRESSING START ONLY to separate the cut pieces from the next program.

- Continuous cycle: like the single cycle but at the end of each program it AUTOMATICALLY goes to the next program.

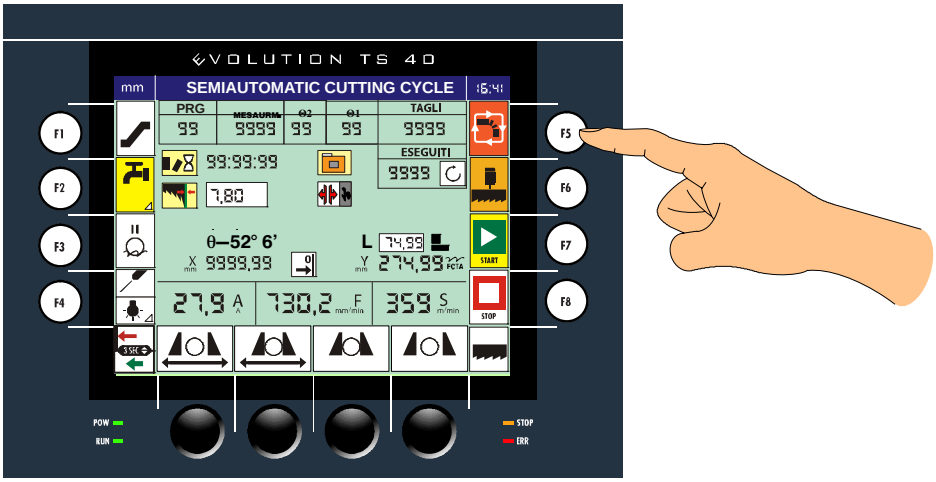
LOOP AUTOMATIC CYCLE

- Single loop: it enables to repeat the selected sequence 9999 times and at the end of each sequence it goes to repetition BY PRESSING START ONLY.
- Continuous loop: it enables to repeat the selected sequence 9999 times and at the end of each sequence it AUTOMATICALLY goes to repetition.

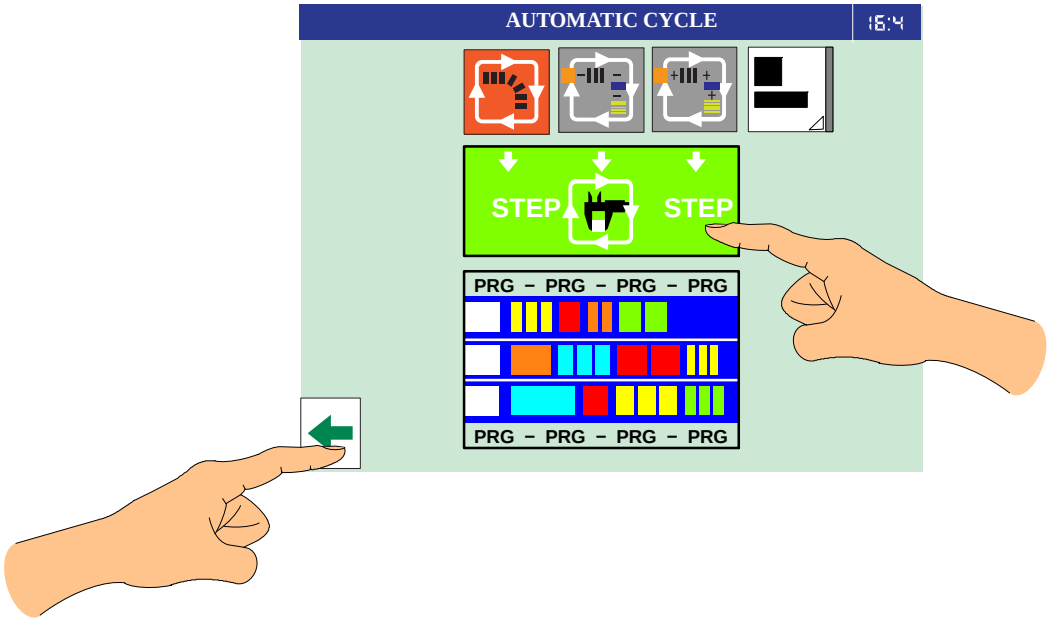
UTILITY STEP

- UTILITY STEP: accessible from every cycle, makes the bar facing cut, the first piece cut and then stops so that the piece can be measured.

▶ Press the F5 key to access the programming menu.



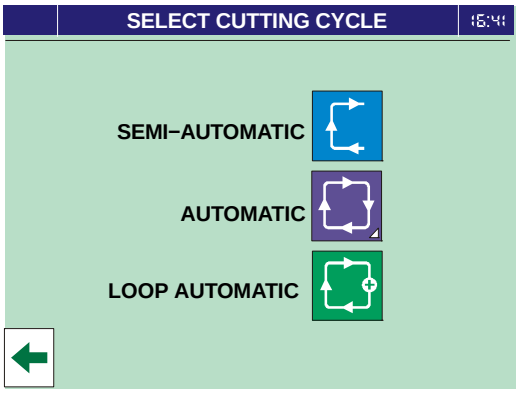
▶ Press the “Step” box to activate this function and return to the working page by pressing the left arrow key.



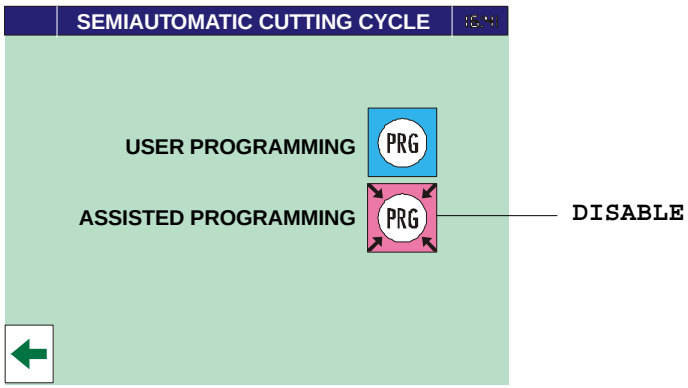
▶ Proceed like a standard automatic working cycle, restarting it at every cut made by the machine, pressing the key F7 (Start).

Programming the cutting cycles with self−learning

This programming mode for the working cycles is set in the Set−up page, as explained in chapter 7. If the ”Self−learning” mode has been activated, the selection video page for the working cycles is the following:

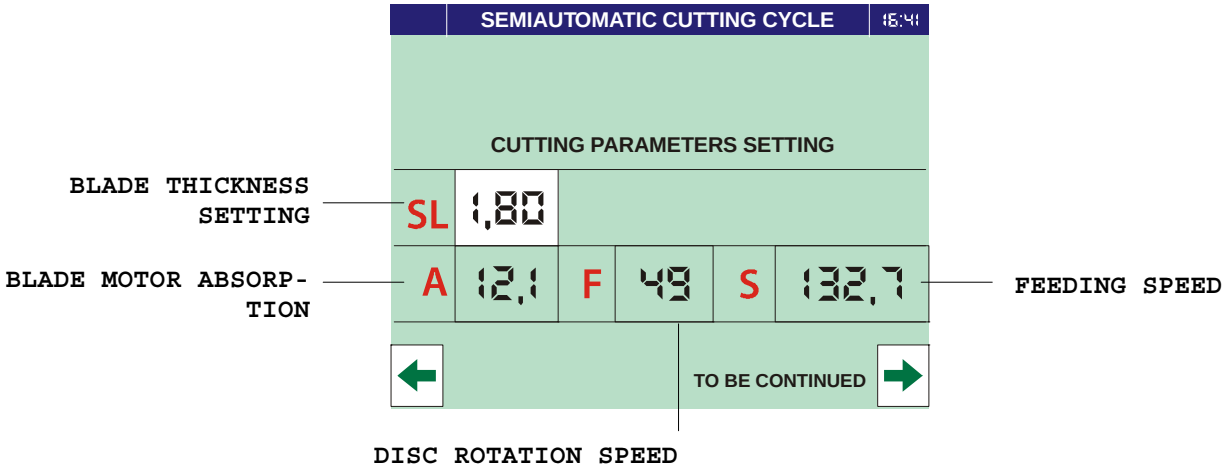


▶ After selecting the cutting cycle, select the programming type;

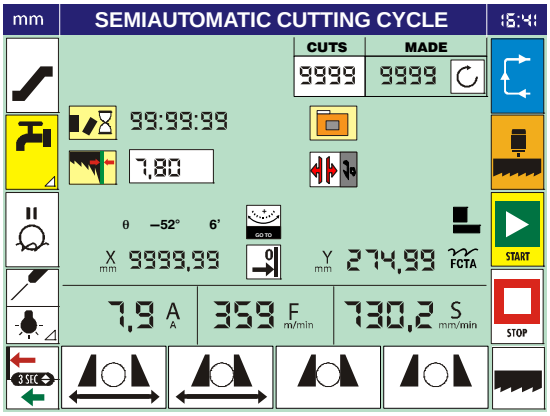


User programming

Selecting “User programming” the following video page is displayed:



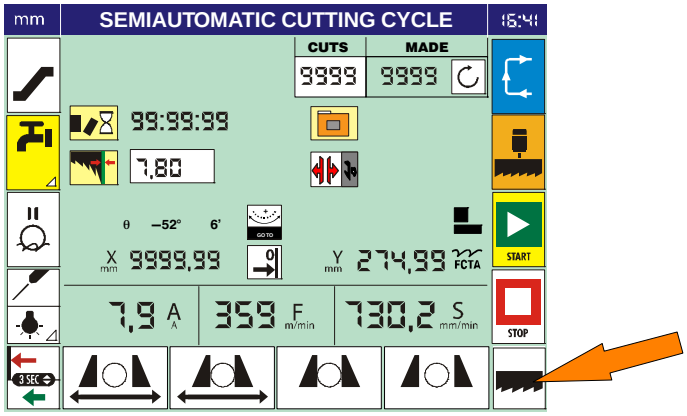
▶ Pressing the box to access the next page, the video page of the working cycle is displayed.



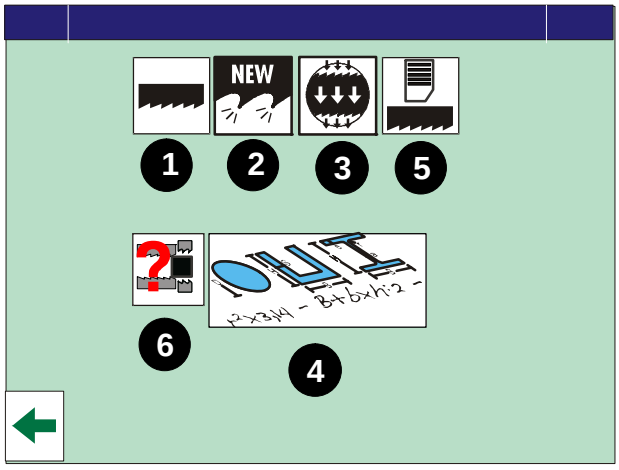
Blade setting

From the video pages of the sawing machine working cycles it is possible to access the setting of the blade characteristics.
This setting is important not only because changing the disc could involve a change in the tool rated dimensions, but also because the ”Blade thickness” set value is added to the scrap value to be obtained in the cutting cycle, therefore correcting the dimension of the cut piece.

▶ From the screen of a work cycle any press box ”BLADE”.



▶ This screen can be used to access disc parameter setting.

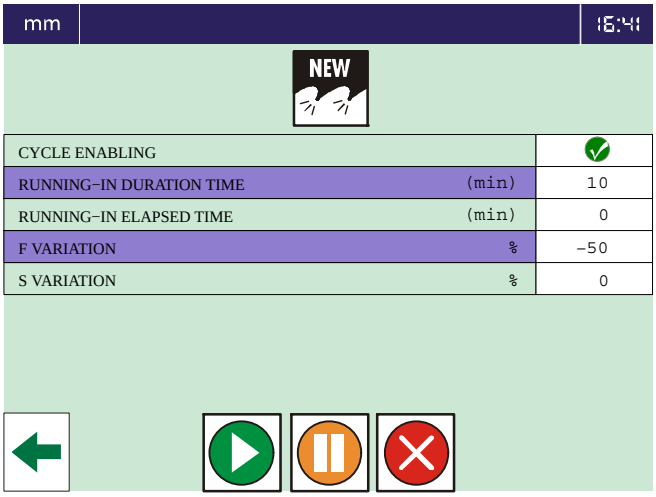


1 - BLADE PARAMETERS
2 - BLADE RUNNING-IN PARAMETERS
3 - CUT START-END SETTING
4 - CALCULATION OF THE REMOVAL CAPACITY
5 - CUTTING PARAMETERS
6 - BAR HEAD MANAGEMENT PARAMETERS

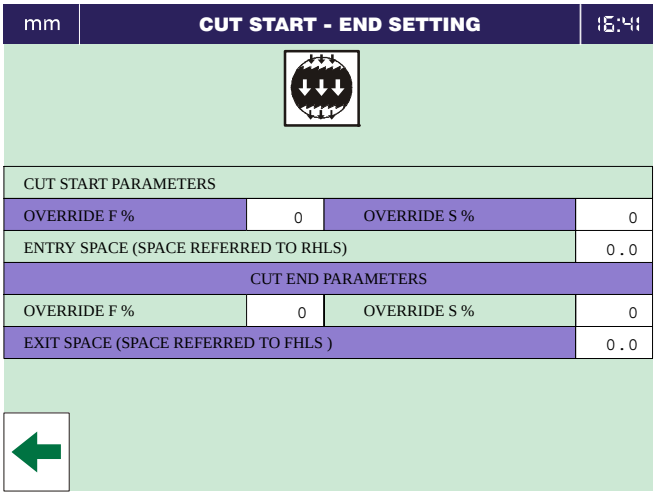
▶ Press box 1 – BLADE PARAMETERS to access the screen for setting the blade thickness, the reference tensioning value, the programmed and the residual life of the disc.



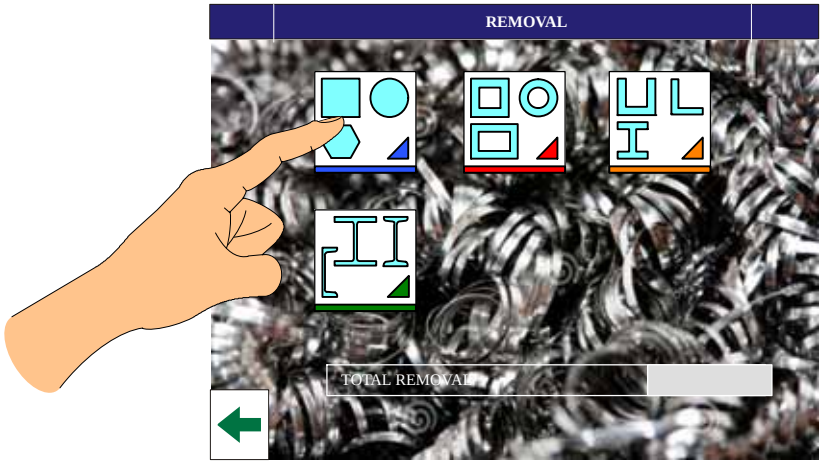
▶ Press the box 2 – BLADE RUNNING–IN PARAMETERS to set the parameters limiting the initial use of the new tool.



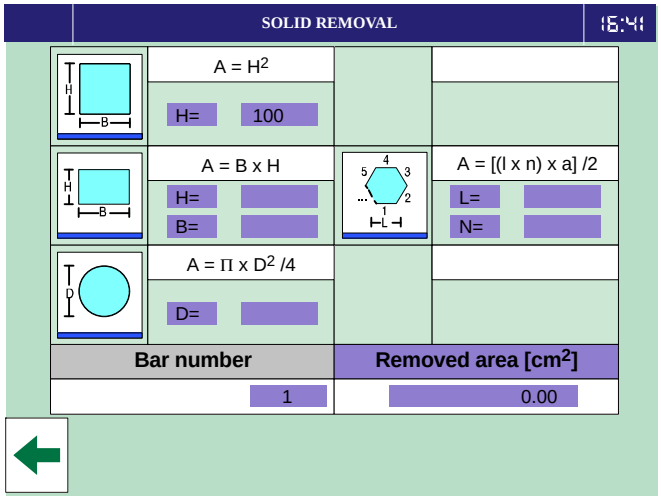
▶ Press box 3 – CUT START – END SETTING to modulate the cutting (S) and head lowering (F) speeds, both at the cut start, when the disc approaches the material, and at cut end, when the piece is sheared.



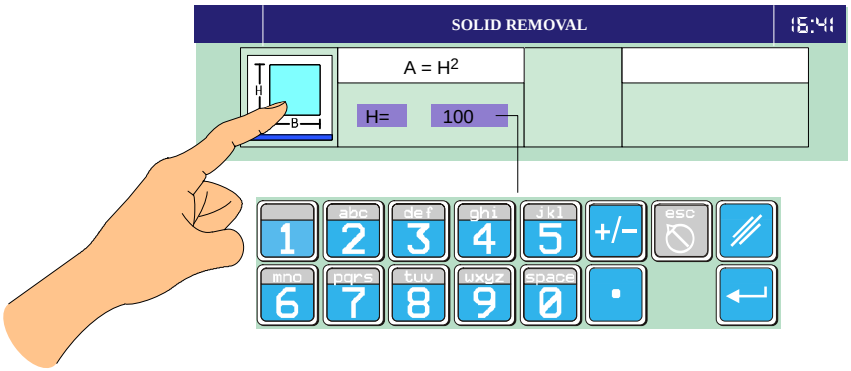
▶ Press box 4 to access the utility for the chip removal calculation.



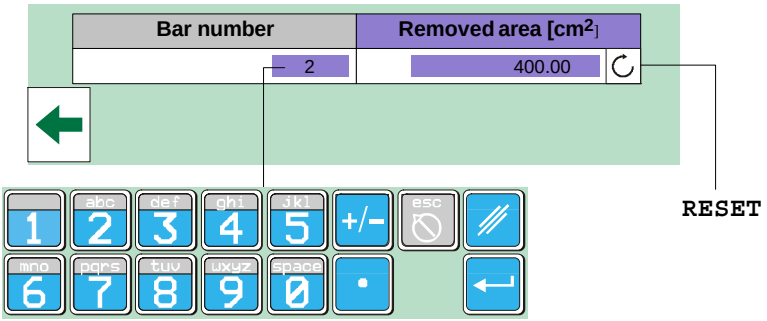
▶ Press the box of the corresponding profile being machined, for example Solid removal” and choose the geometry of the section for the material being machined in the next page.



▶ Continuing with the example, press the box of the solid square profile to activate the data entry fields: press the data entry box and type the required dimensions on the keyboard.

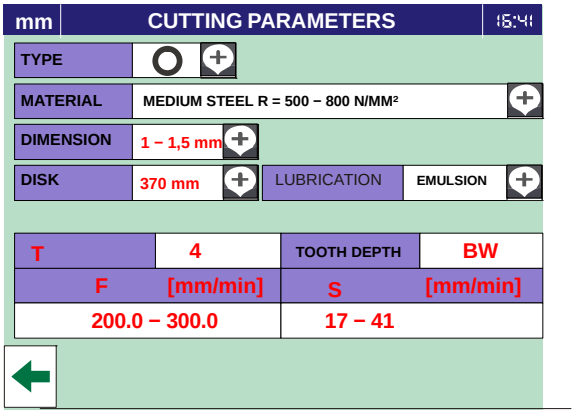


▶ In the lower part of the display, in case of bundle cutting, press the box for the number of simultaneously engaged profiles and type the corresponding number on the keyboard.

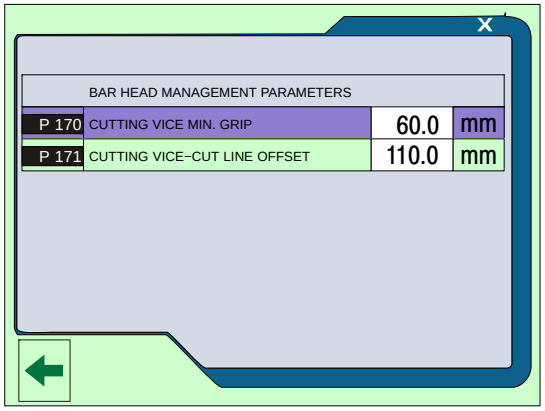


▶ After having calculated the section surface the control multiplies it for the set number of bars, displaying a result expressed in cm2 in the box ¿Removed area". Press the Reset button before a new calculation.

▶ Press box 5 to access the cutting parameters screen.

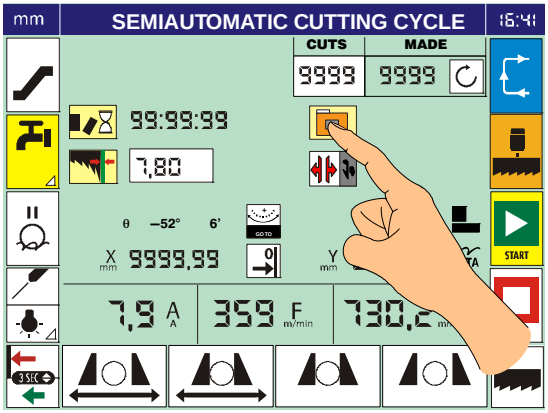


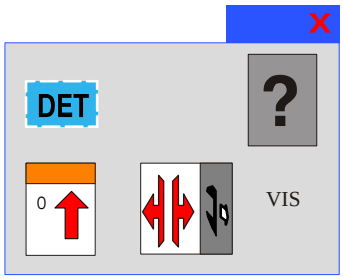
▶ Press box 6 to access the bar head management parameters screen.



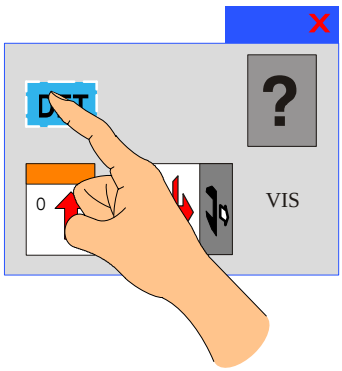
Detail displaying

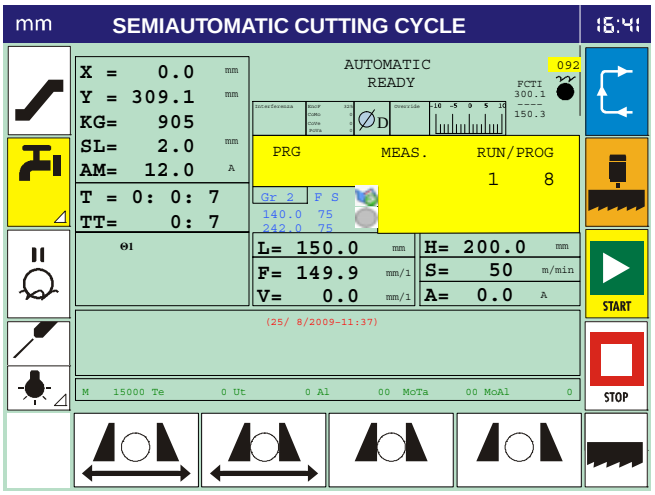
▶ From the video page of any cycle press the box shown in the figure:



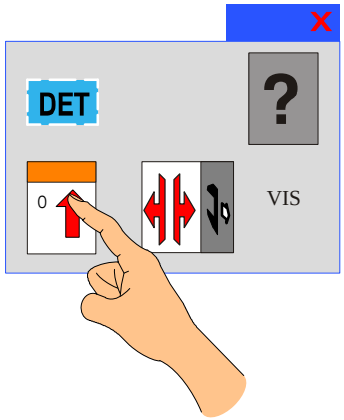


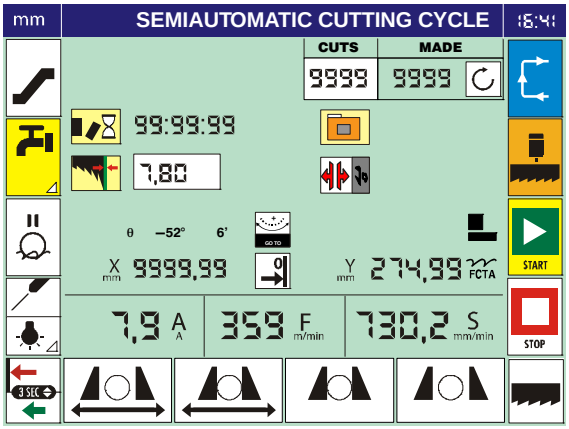
▶ From the video page of any cycle press the box shown in the figure:



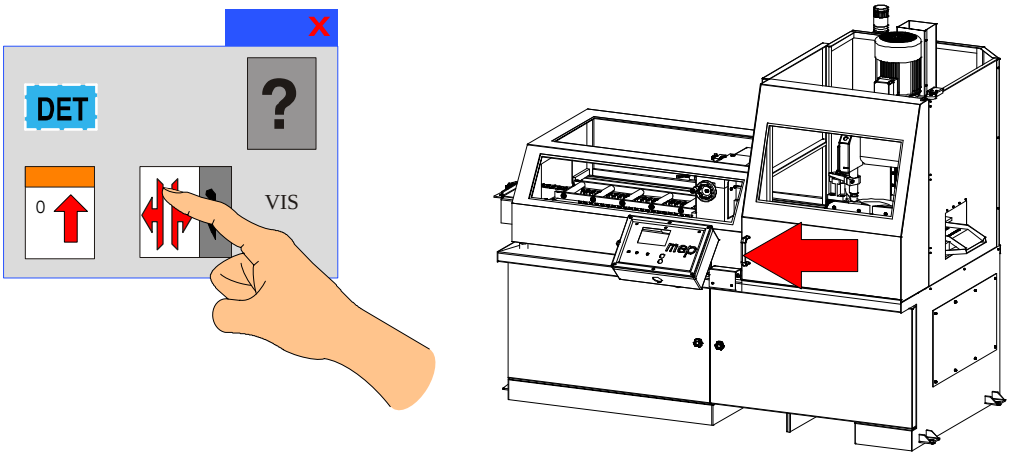


▶ or reset the head potentiometer;





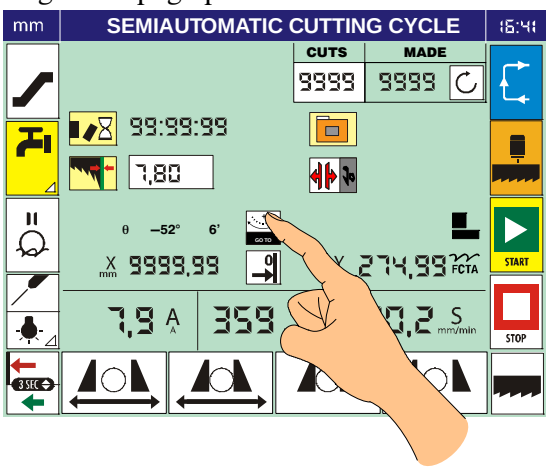
▶ or you can enable the opening of the access gate to the alarmed perimeter.



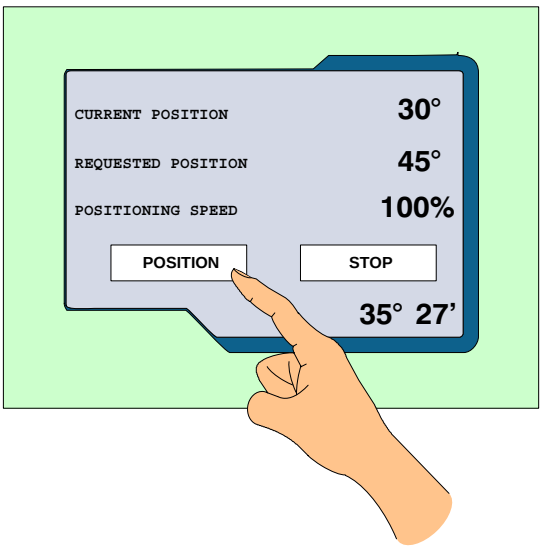
Setting of the cutting angle in semiautomatic cycle

The head rotation can be made manually using the joystick, otherwise it can be set from the machining video page.

▶ In the machining video page press the box indicated in the figure.



▶ Set the degrees using the keypad and press the box ¿Position” to start the head rotation.

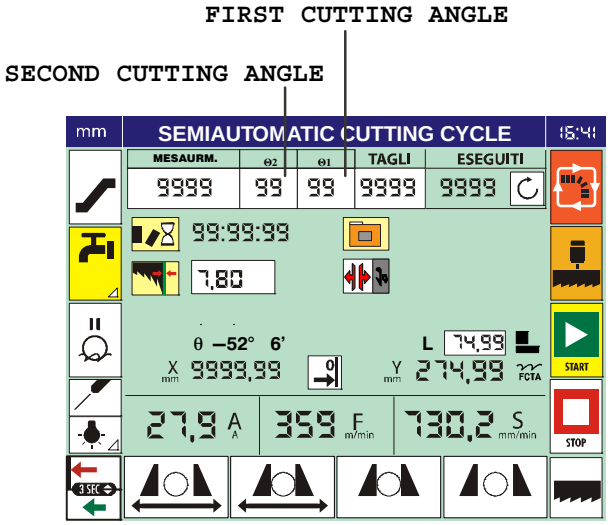


▶ Then proceed and run with the semiautomatic cycle.

Setting of the cutting angle in automatic operation – single program

The head rotation can be made setting the angles from the machining video page.

▶ From the machining video page of the automatic operation – single program, after having set the dimension and the number of cuts to be made enter the value of the first and of the second cutting angle.

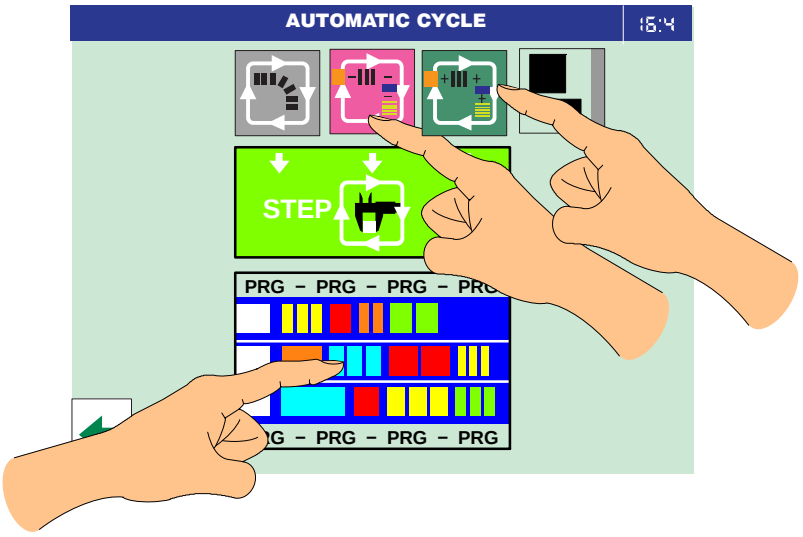


After having pressed the cycle start, the head positions at the first angle set and cuts. Then, the head rotates up to the second cutting angle and cuts. This sequence is repeated for the number of times previously set.

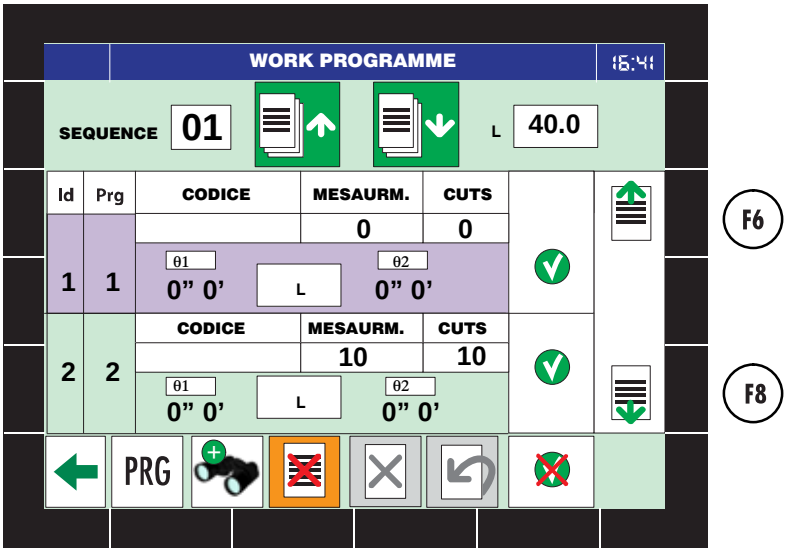
Setting of the cutting angle in automatic operation – single cycle and continuous cycle

The head rotation can be made setting the angles from the cut programming video page.

▶ In the following video page select the single cycle or the continuous cycle and press the cut programming box.



Choose the sequence of programs from the list or compile the sequence with the programs according to the machining specifications including angle cuts. The compiling of programs and sequences is explained in the following paragraphs.

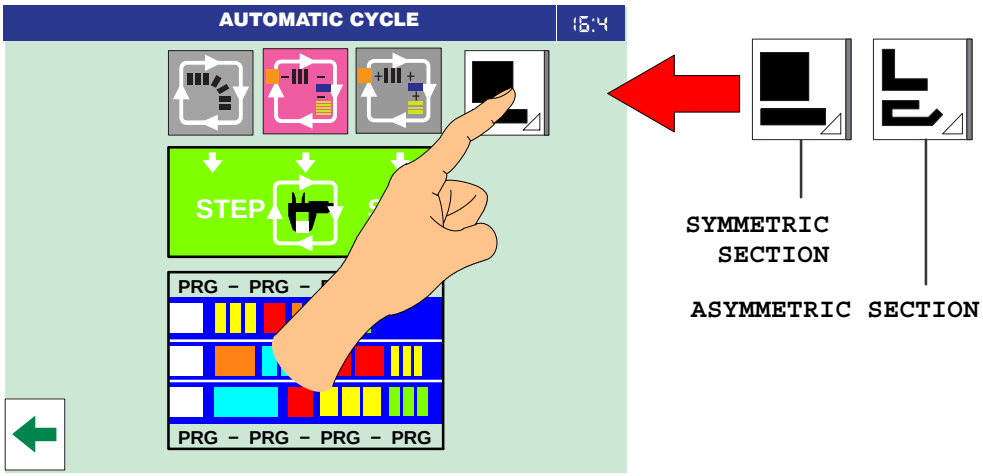


After returning to the machining video page and having pressed the cycle start, the sawing machine performs all the instructions assigned in the cutting sequence.

Setting of the cut section angled at 45 degrees: symmetric or asymmetric

When 45° angled cuts are made it is useful to set the cut section to optimise the cuts made, in case of symmetric section.

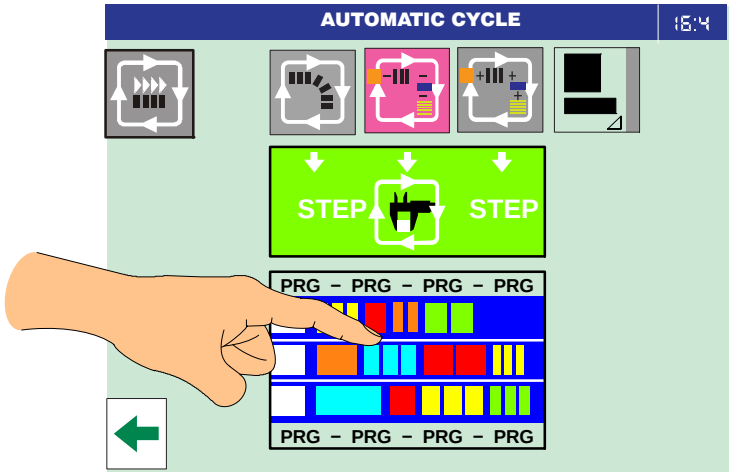
▶ Press the key shown in the figure.



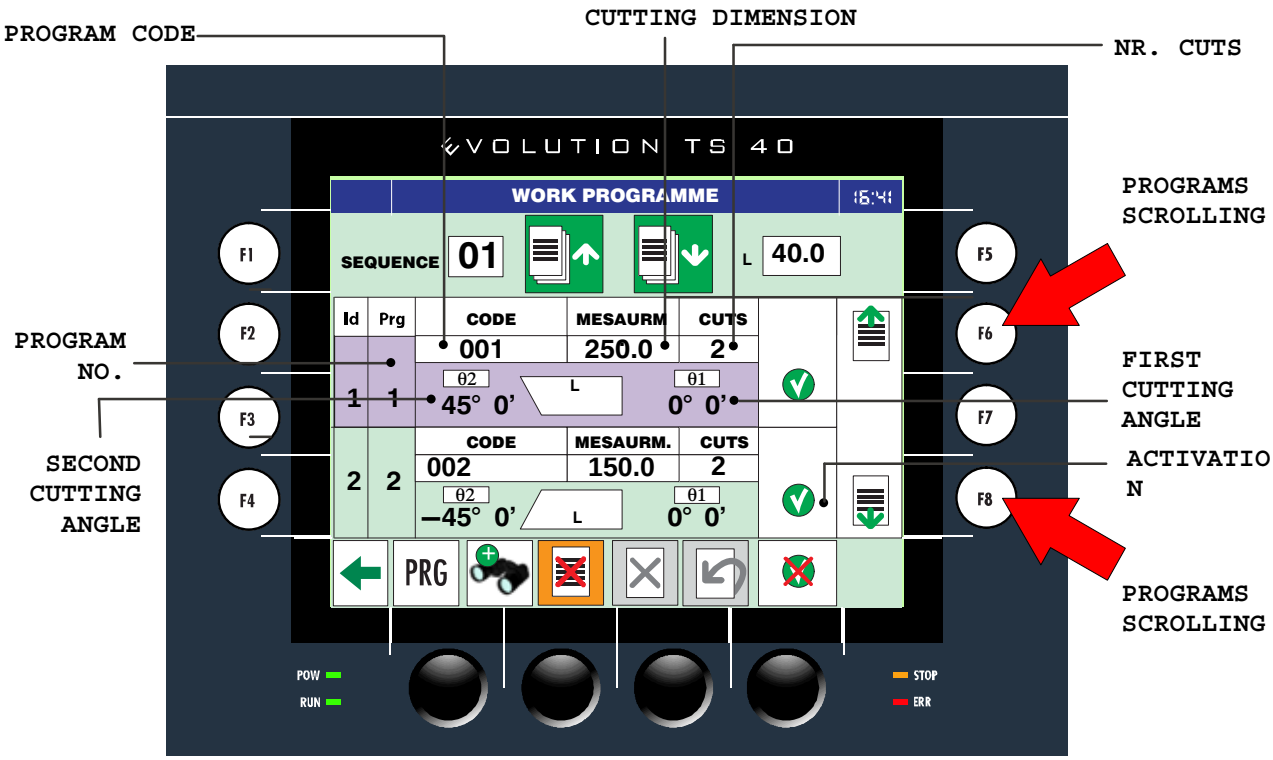
N.B. The profile is chosen according to the production to be obtained. For example, in case of symmetric sections with 45 degree cuts, an useful piece is obtained at every cut; in case of asymmetric sections, instead, a piece must be necessarily scrapped for obtaining a useful piece. The programming of angled cuts is explained in the paragraph of the automatic cycle.

Cutting programs storage

You can store 300 cutting programs, each with its own identity, having different lengths, angles and number of cuts. The programs can be run individually or consecutively, composing up to a maximum of 24 cutting sequences of 50 programs each
From ”Automatic Program” with ”Single Cycle” or ”Continuous Cycle” you can access the programming screen:

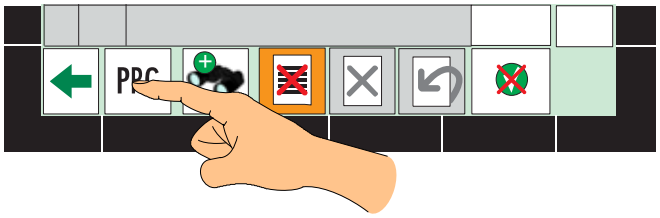


▶ The following screen opens, from which you can compose the cutting sequences; a numeric keypad for data entry is displayed pressing at the values:

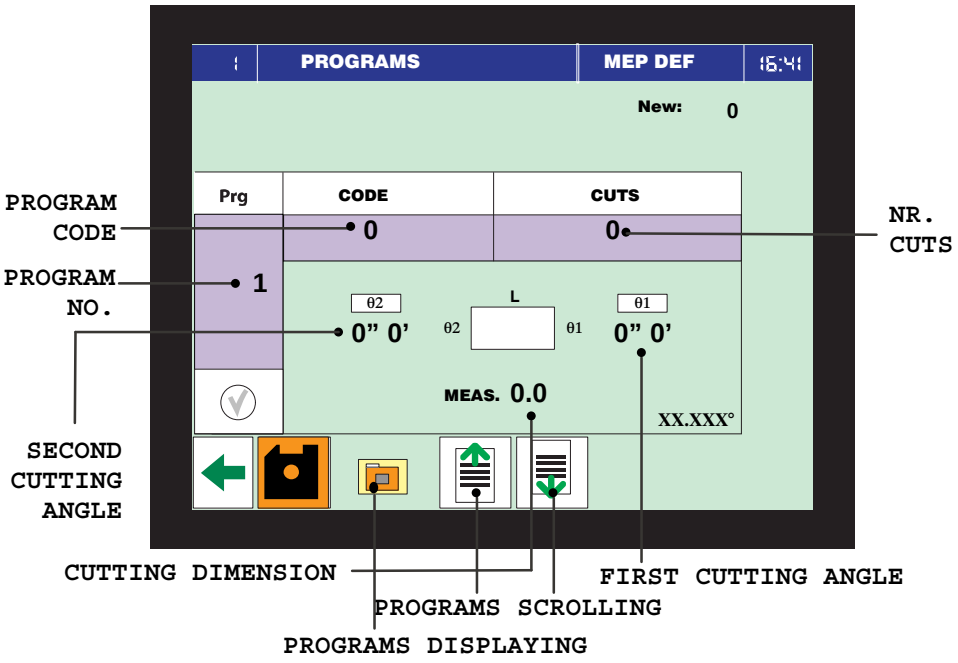


N.B. With “PROGRAM NO.” you can recall the relevant stored program and then use it in the sequence you are composing.

▶ Press the indicated box to enter the cutting programs storage screen.



▶ From this screen you can enter the individual programs to be used in the cutting sequences, a numeric keypad to enter data is displayed pressing at the values.

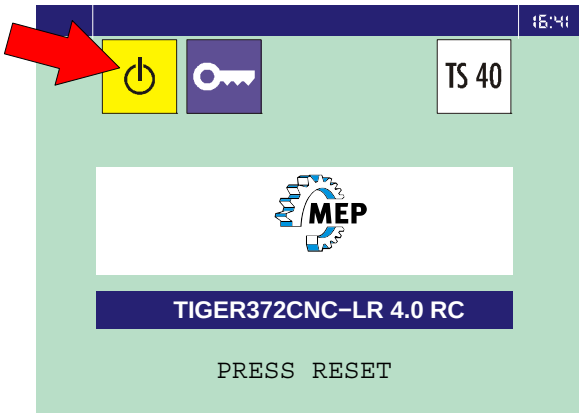


N.B. The machine controller automatically saves the set data when the ”Enter” key is pressed on the keypad. If all programs in the controller memory must be backed up, press the ”floppy disk” key and follow the displayed instructions.

Starting up the machine

When switching on the machine, proceed as follows:

▶ press the box with the switching−on symbol on the touch screen;



▶ Press RESET to enable the safety relay.

N.B. If there are several alarms, press reset for each of them, after having restored the reason for such alarm.

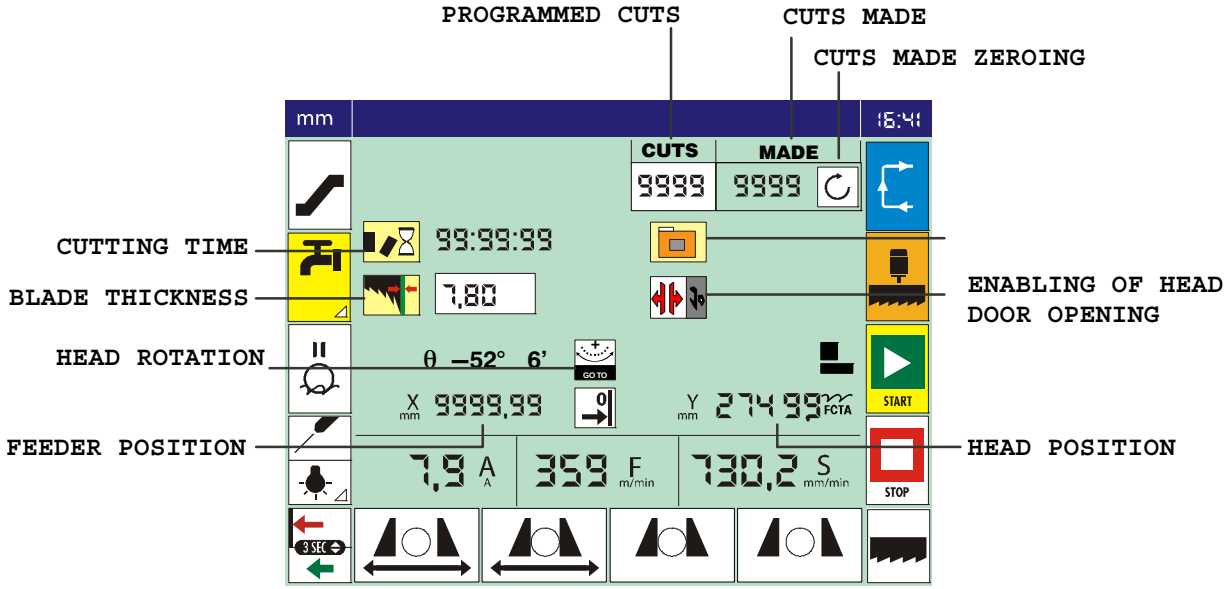
Now, choose one of the machining cycles, shown in the next pages, pressing the corresponding box.



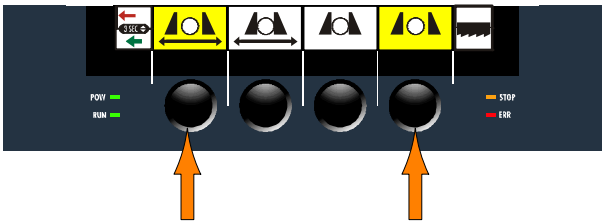
Semi−automatic operating cycle

▶ In the main menu, press the corresponding box to access the working mode: SEMIAUTOMATIC.

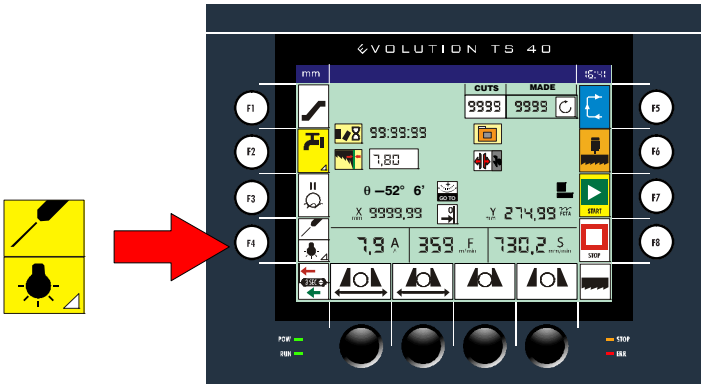
▶ The display will show the screen for the SEMI−AUTOMATIC cycle.



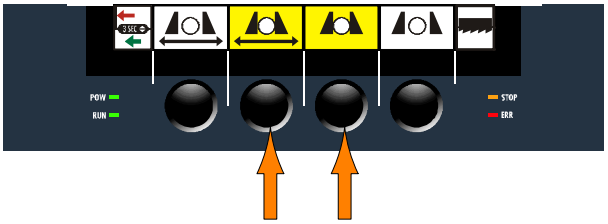
▶ Open both vices, then feed the material to be machined.



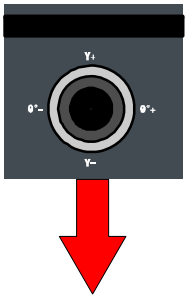
▶ Activate the laser projector and the working lamp pressing the key of the box shown in the figure, which lights up to show the performed selection, and position the bar at the preset cutting level, using the feeder shuttle if needed.



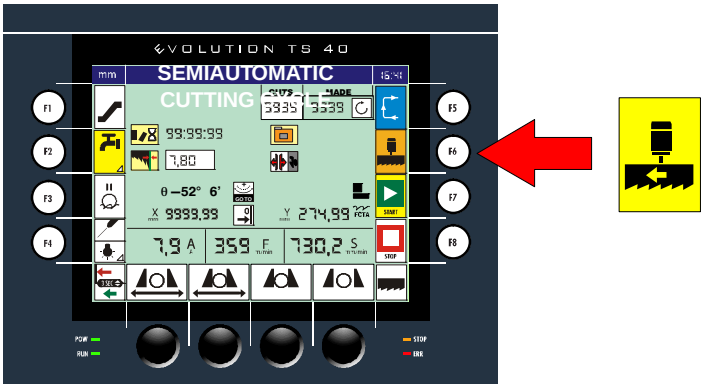
▶ Close both vices.



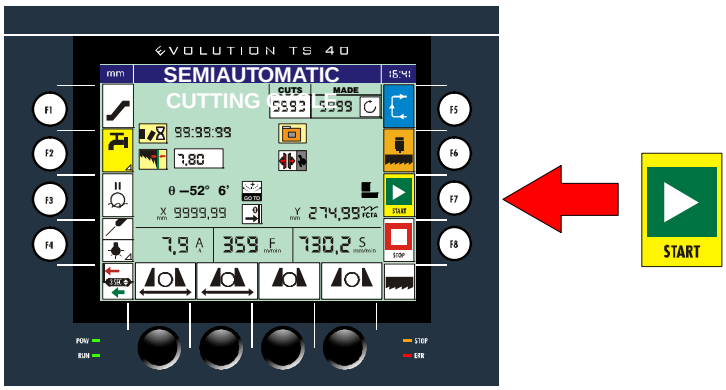
▶ Once the workpiece is locked in position, the cutting stroke must be adjusted. Position the head at about 10 mm from the material being machined, moving it with the joystick.



▶ Press the disc rotation start key F6 at the same time.



▶ Press the F7 button. In this manner, the RHLS (reverse head limit switch) point, which determines the cycle start position, is automatically stored.



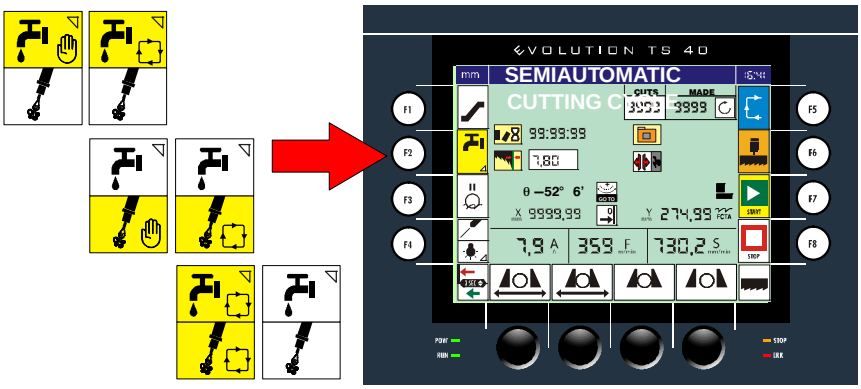
Now the disc starts turning and the head starts lowering.

▶ The forward head limit switch (FHLS) point is set at the cut end.

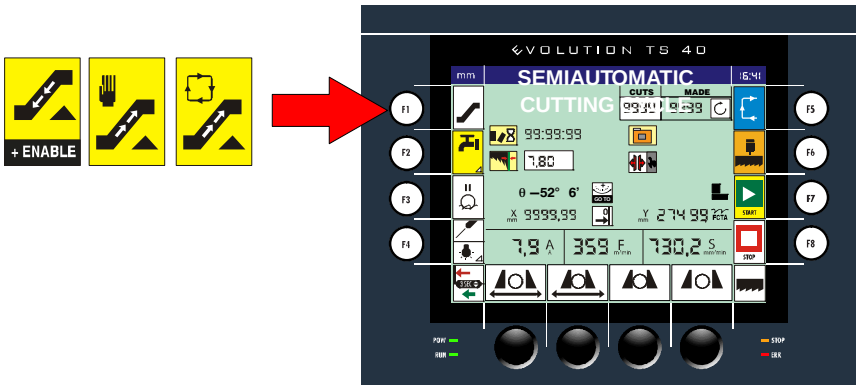
▶ Then, select a speed range for the disc rotation, depending on the characteristics of the material to be cut.



▶ Select the type of lube−coolant in the cutting area, pressing the key of the box shown in the figure, which lights up to show the performed selection.



▶ Select the operation type of the chip ejector (optional), pressing the key of the box shown in the figure, which lights up to show the performed selection.



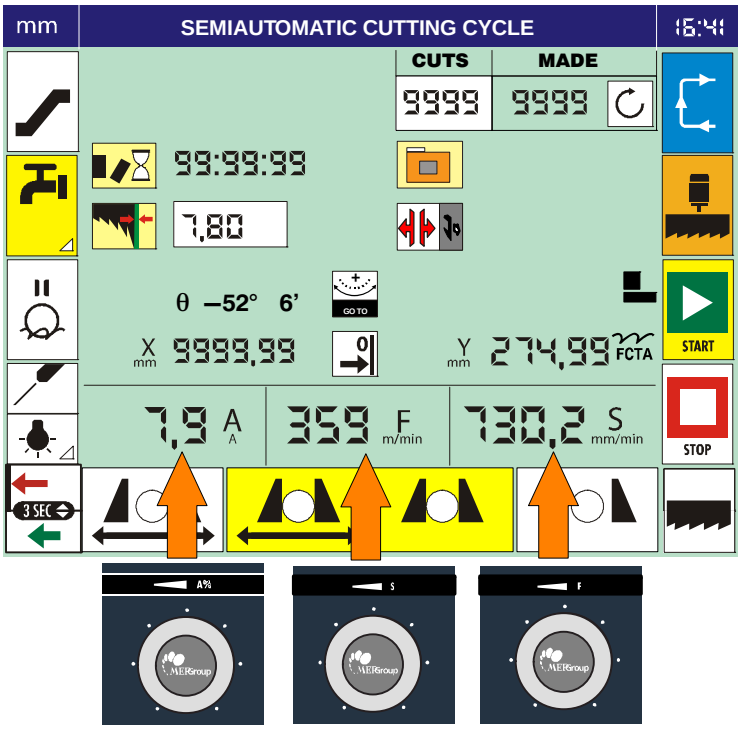
N.B. Press and hold down the F1 key to activate the reverse operation of the chip ejector.

▶ Adjust the head descent speed to the minimum;

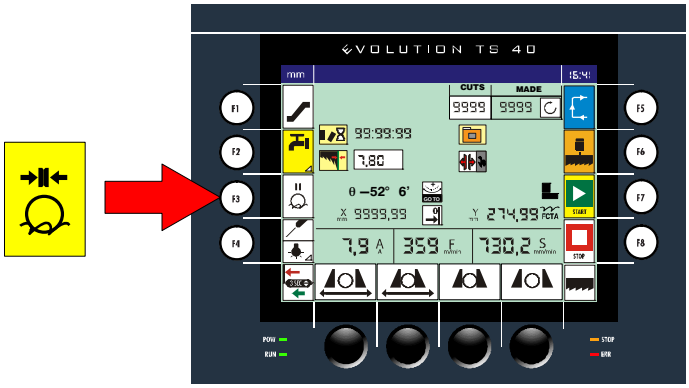


N.B. Now it is possible to adjust, depending on the material type, the three parameters with the greatest influence on the cut: the head lowering speed (F), the disc rotation speed (S) and the absorption (AM).

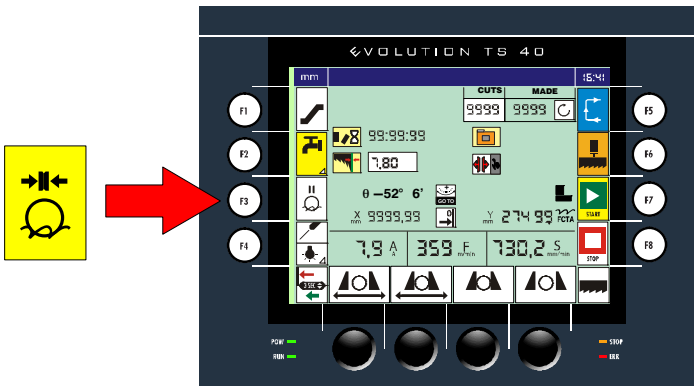
▶ On the basis of the absorption displayed within the technological cutting parameters (A) set the AM value between 0 and 100.



▶ While the head is lowering it is possible to delete the previously set FHLS value.

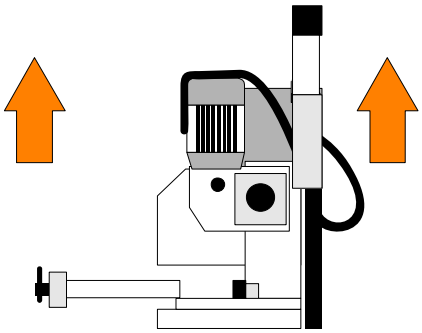


N.B. At this point, move the head down using the joystick to delete the existing FHLS point: the FHLS setup box will start blinking to indicate that the FHLS point was deleted. When the head reaches the required end of cutting point, press the FHLS setup button shown in the figure. The corresponding box will light up to indicate that it was selected.



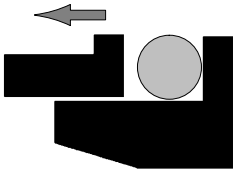
▶ When the head reaches the cut end the disc stops and the head returns to the set RHLS point.

N.B. It is possible to customize the machine automatism when the cut is ended by configuring it in the setup under the item ”Blade motor stop” of the ”R axis setting”.



▶ The next operation performed by the machine is automatically opening again the cutting vice.

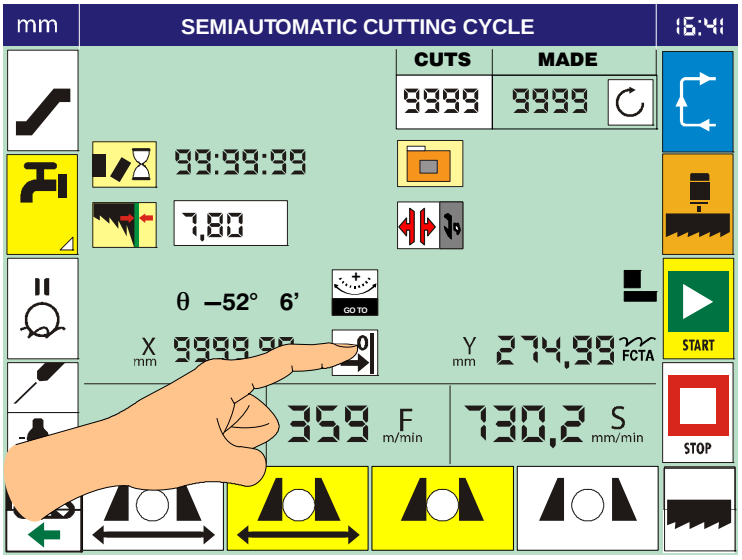
N.B. It is possible to customize the machine automatism when the cut is ended by configuring it in the ”Software settings” under the item ”Open semiautomatic cycle cutting vice”.



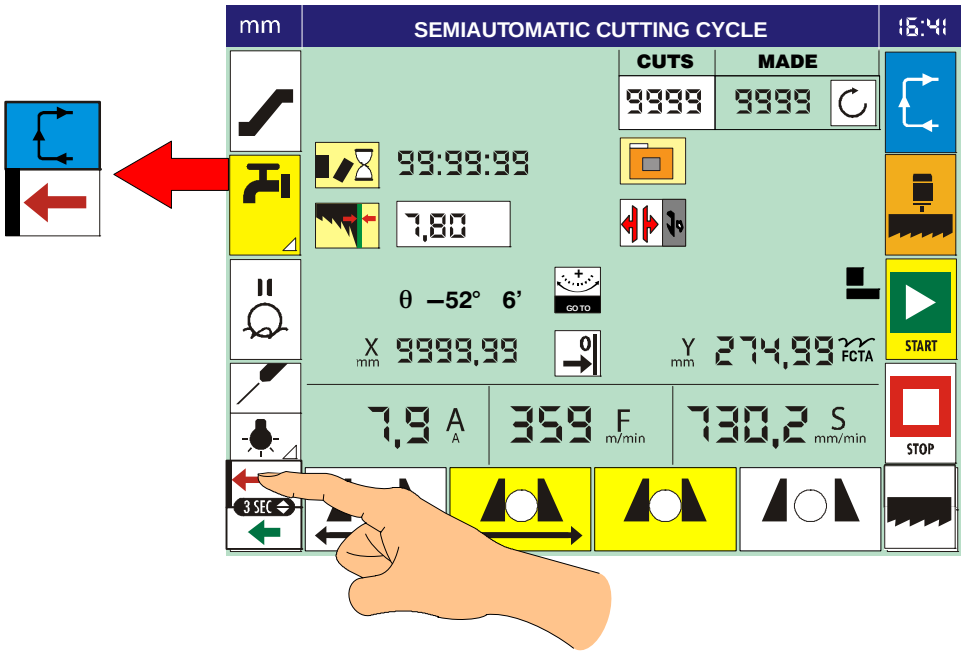
The machine is ready to carry out a new cutting cycle.

Warning The sawing machine has a special ”cutting tail recovery” function to aid the operator while cutting in semiautomatic cycle. This function consists in using the feeder shuttle as a measure stop, feeding the material from the front part of the sawing machine.

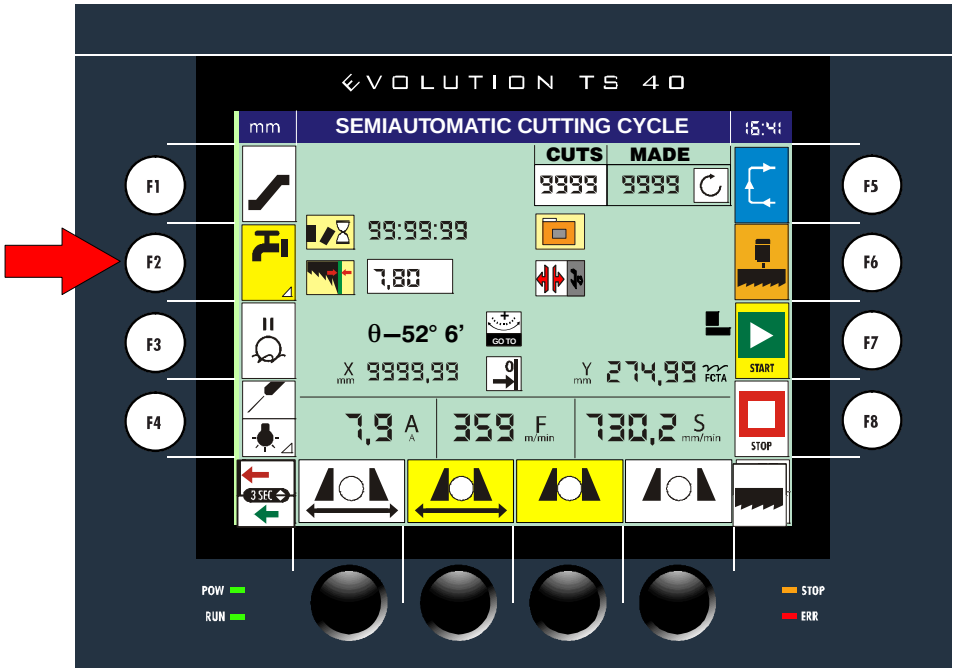
▶ Zero the feeder shuttle by pressing the box shown in the figure.



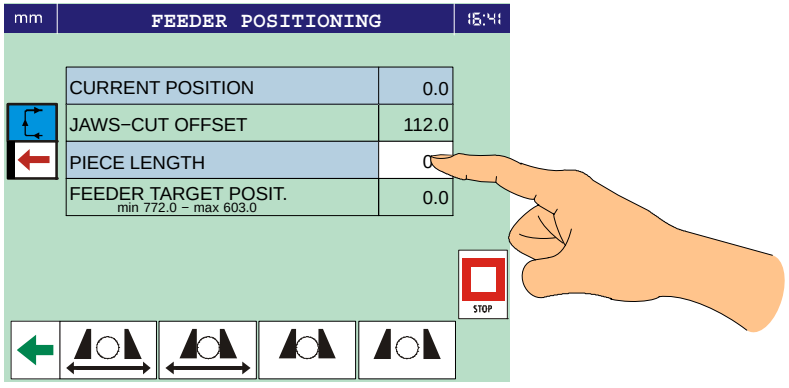
▶ Hold the box shown in the figure pressed for 3 seconds; when you release it, the icon for the ”Cutting tail recovery” function will be displayed.



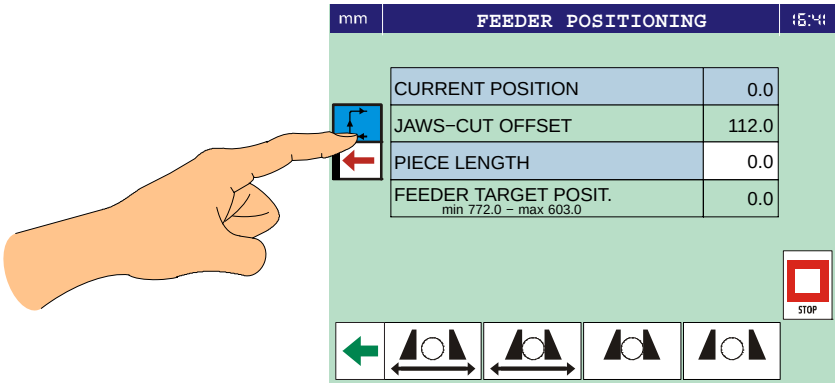
▶ Press the box shown in the figure to access the cutting measure setting page.



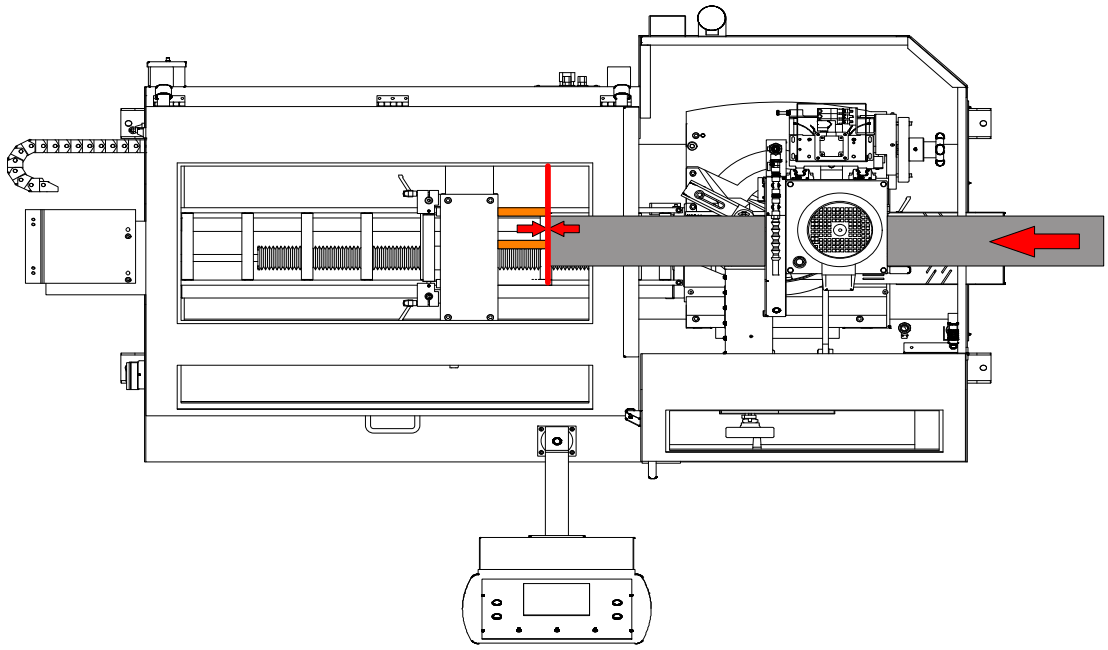
▶ Insert the cutting length by pressing the box shown in the figure.



▶ Press the lower half of the box shown in the figure to position the feeder at the set value: after positioning the shuttle, the feeder vice closes.



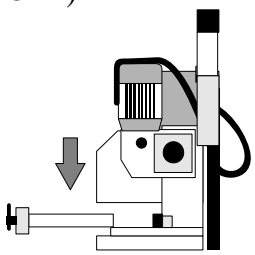
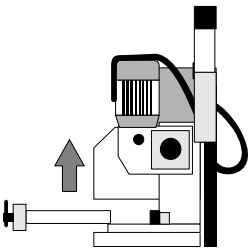
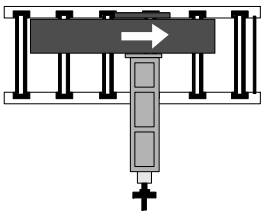
▶ Load the material to be cut inside the cutting vice, from the machine front side, pushing it inside until it touches the feeder vice jaws.



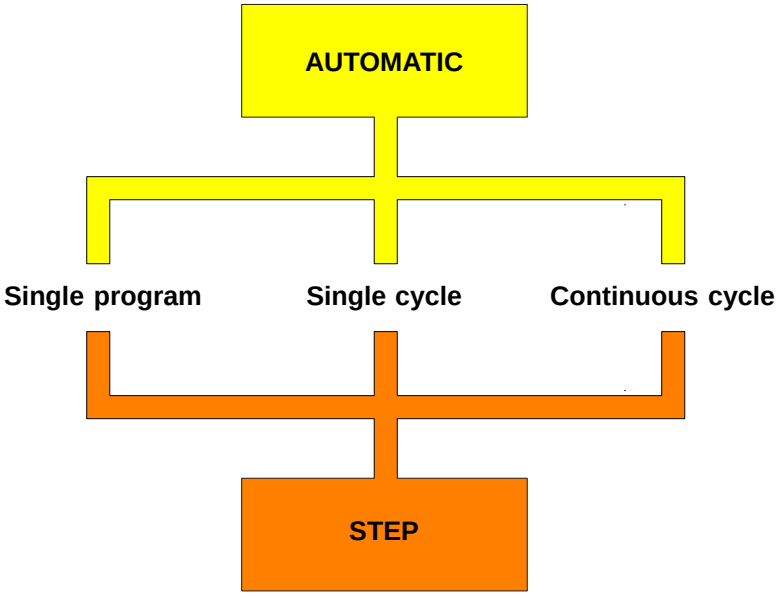
▶ Then cut in semiautomatic cycle as usual.

N.B. The controller automatically calculates the feeder shuttle positioning value so that the feeder vice jaws becomes the stop of the piece to be cut.

Automatic operating cycle

7. The cutter vice closes 	8. The head lowers until the cut is made (FCTA) 	9. The head returns to start position (FCTI) 	10. The feed vice closes 
11. The cutter vice opens 	12. The cutting material is fed 	13. The cutting vice closes 	14. The feed vice opens and the cutting cycle starts up 

The machine control enables three cut programming modes in automatic cycle:



For cutting programme involves entry of the following parameters:

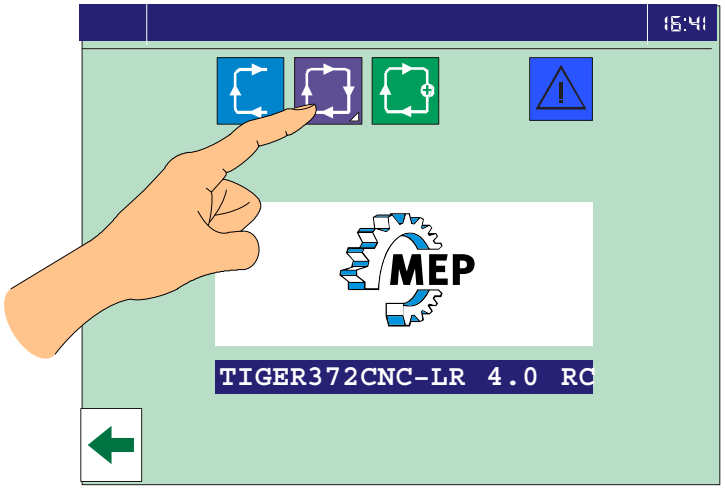
- MEASUREMENT = MEASUREMENT OF PIECES: This value is keyed in, using the numeric keys, in mm and tenths of a mm, or in inches and thousandths of an inch, relates to the selected programme.
- NUMBER CUTS = PIECES FOR EACH MEASUREMENT: This quantity is keyed in using the numeric keys and relates to the PGR. NO. and the MEASUREMENT selected.

N.B. UTILITY STEP: accessible from every cycle, makes the bar facing cut, the first piece cut and then stops so that the piece can be measured.

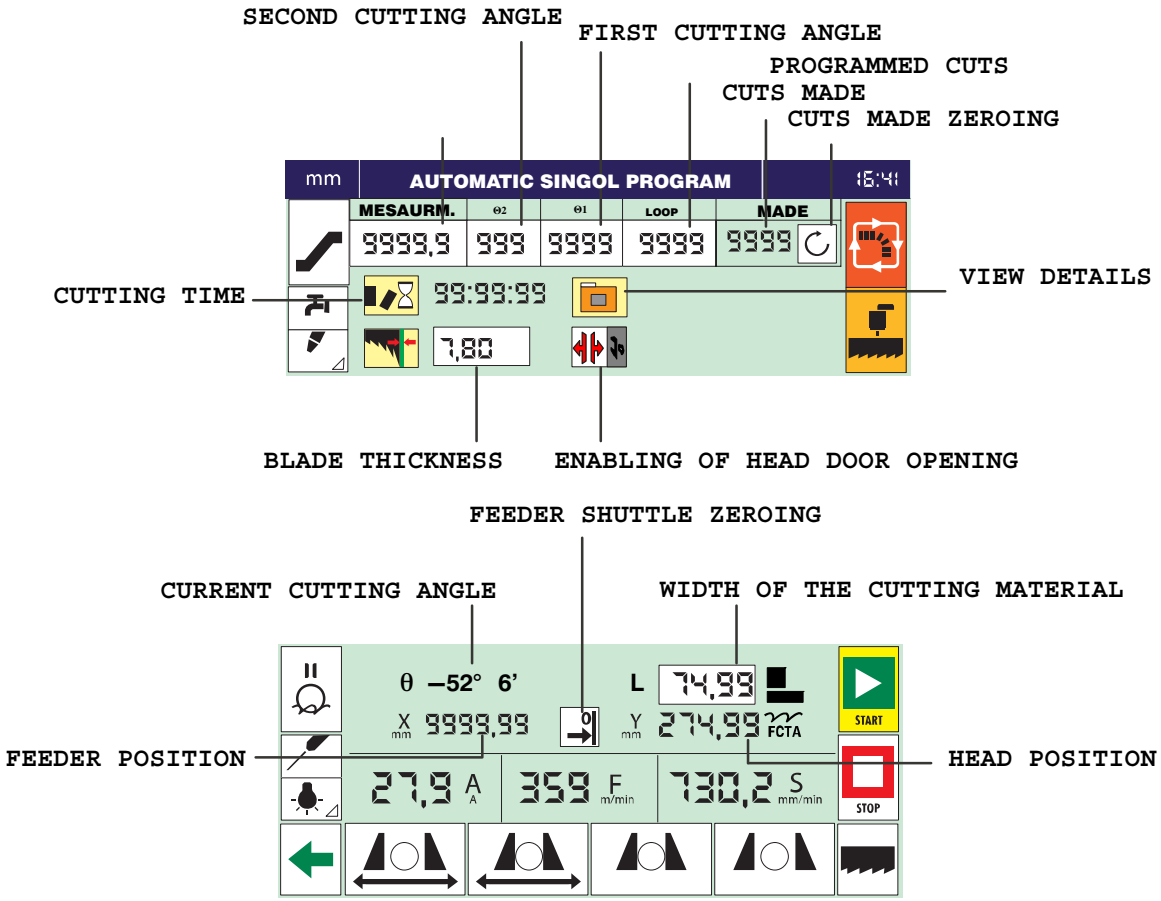
Single programme

The procedure for a single program is described below:

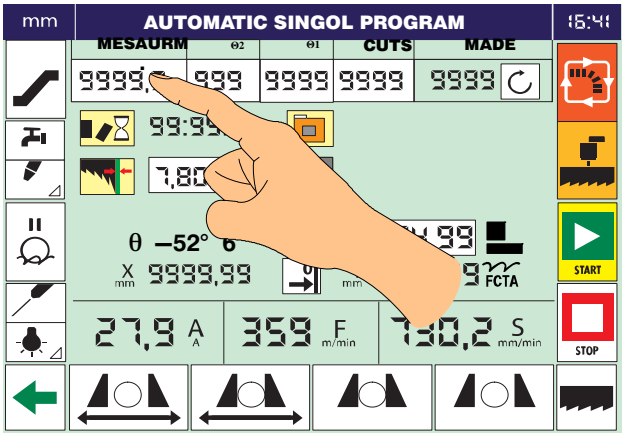
▶ In the main menu, press the box corresponding to the automatic cycle to access the working video page.



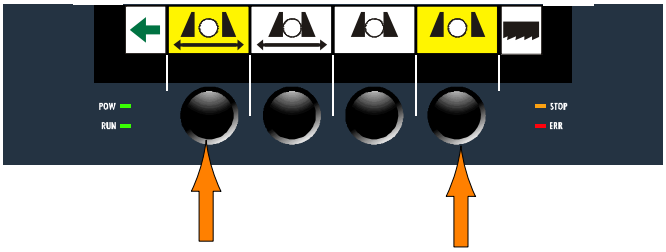
▶ In the following video page, set the ”Programmed measure” and the number of ”Programmed cuts”.



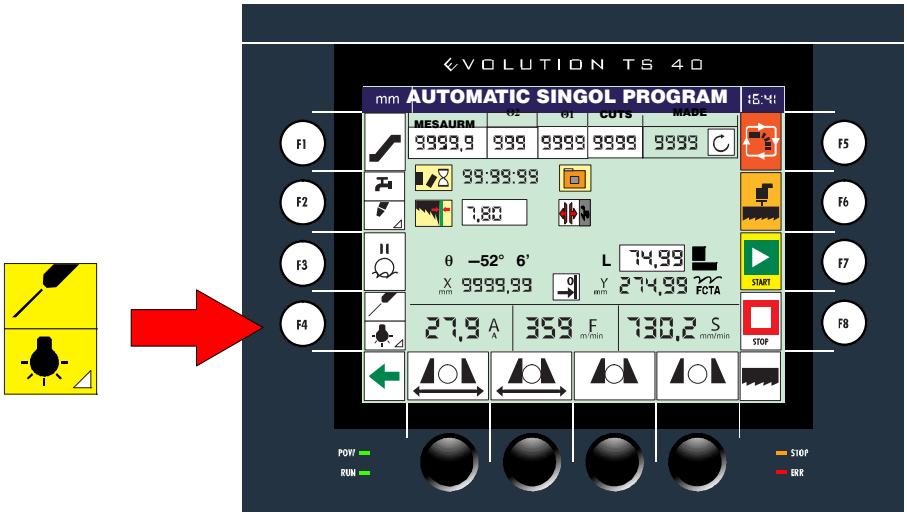
▶ Press the corresponding box and enter the wished value in the keypad.



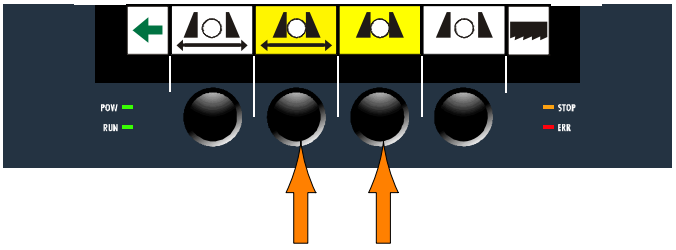
▶ Open both vices, then feed the material to be machined.



▶ Activate the laser projector and the working lamp pressing the key of the box shown in the figure, which lights up to show the performed selection, and position the bar at the preset cutting level.

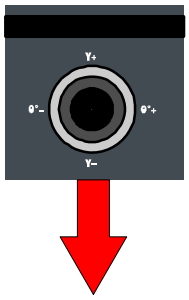


▶ Close both vices.

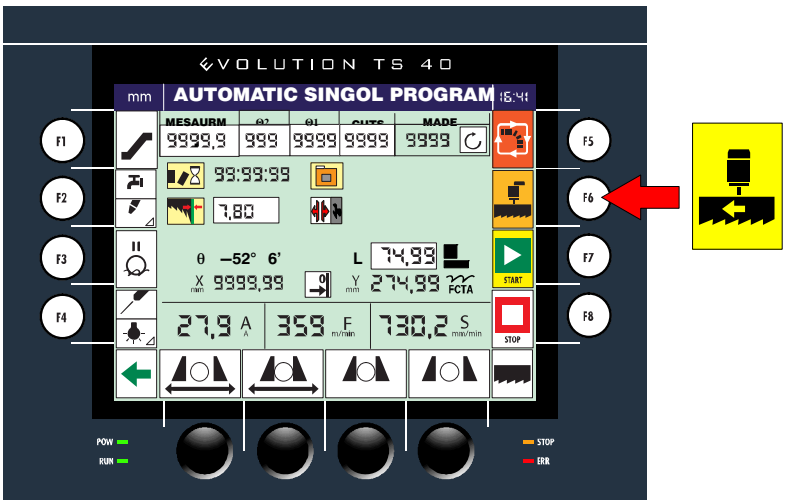


▶ Once the workpiece is locked in position, the cutting stroke must be adjusted. Position the head at about 10 mm from the material being machined, moving

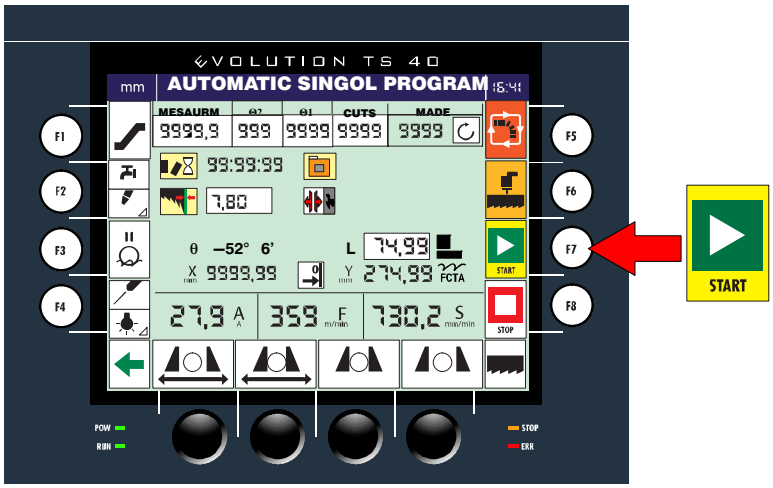
it with the joystick.



▶ Press the disc rotation start key F6 at the same time.



▶ Press the F7 button. In this manner, the RHLS (reverse head limit switch) point, which determines the cycle start position, is automatically stored.



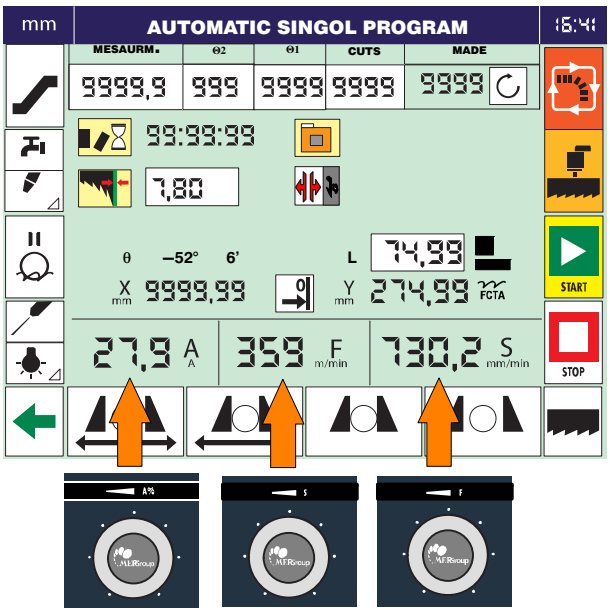
Now the disc starts turning and the head starts lowering.

▶ The forward head limit switch (FHLS) point is set at the cut end.

▶ Adjust the head descent speed to the minimum;

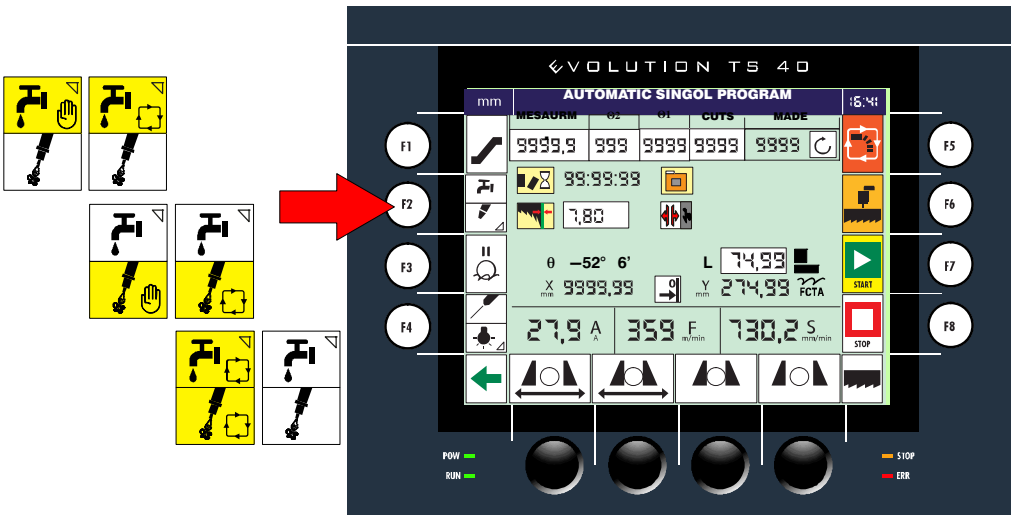


N.B. Now it is possible to adjust, depending on the material type, the three parameters with the greatest influence on the cut: the head lowering speed (F), the disc rotation speed (S) and the absorption (AM).

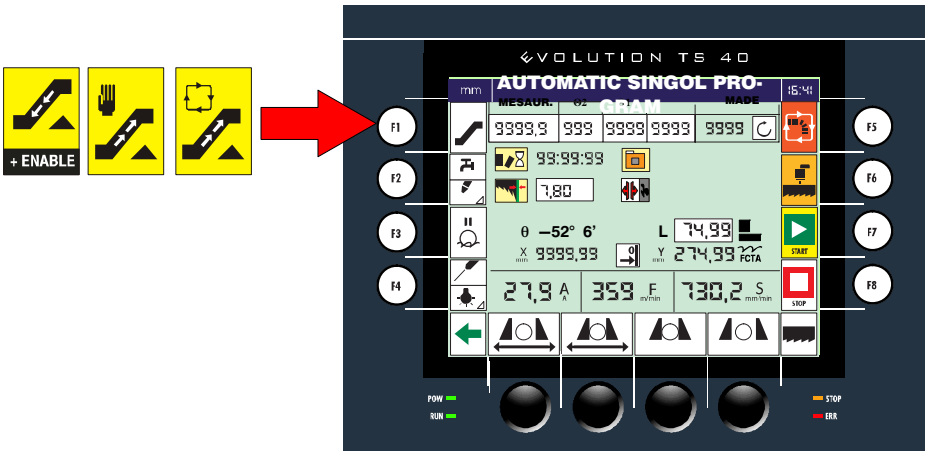


N.B. In all automatic working cycles, the STEP mode is available to make the sawing machine perform a facing cut and then single cuts at a time, so that the machining can be checked with the machine stopped (as explained in the previous paragraph ”Instructions” of this chapter).

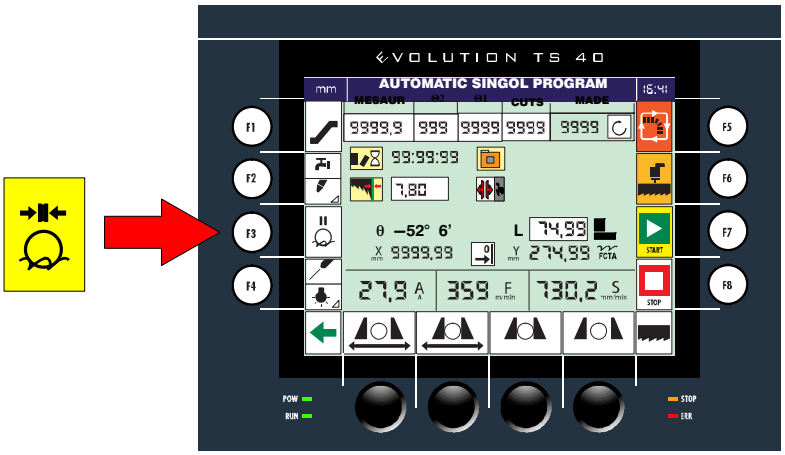
▶ Select the type of lube−coolant in the cutting area, pressing the key of the box shown in the figure, which lights up to show the performed selection.



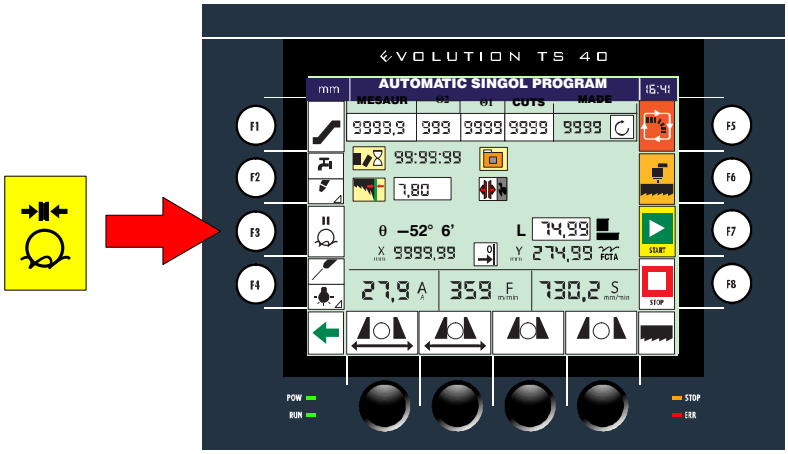
▶ Select the operation type of the chip ejector (optional), pressing the key of the box shown in the figure, which lights up to show the performed selection.



▶ While the head is lowering it is possible to delete the previously set FHLS value.

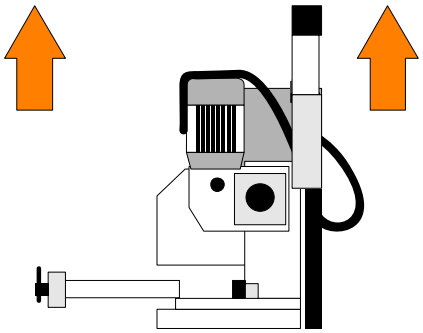


N.B. If you want to delete the existing FHLS point, move the head downwards using the joystick: the FHLS setting box starts flashing to indicate that the FHLS point has been deleted. When the head reaches the wished cutting end point, press the FHLS setting key shown in the figure; the corresponding box lights up to indicate its selection.



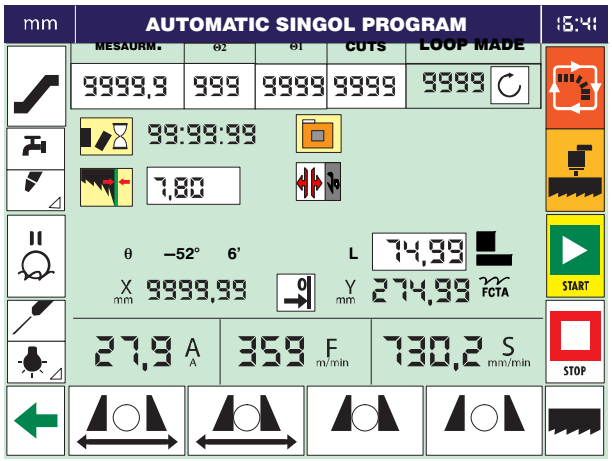
▶ When the head reaches the cut end the disc stops and the head returns to the set RHLS point.

N.B. It is possible to customize the machine automatism when the cut is ended by configuring it in the setup under the item ”Blade motor stop” of the ”R axis setting”.



▶ Later on, the machine will return the head to the RHLS and feed the material, to perform cuts, according to the expected procedures: step or single cycle.

N.B. Each time the machine completes a cut, the number of “cuts exec.” is increased by one. The datum cut, and cuts carried out after intervention in an emergency, are not counted.
The machine has two automatic stop modes of the program: bar end and CUT END. In both cases, the sawing machine displays the message ”MACHINE READY” to re−initialize the cuts with a new program of with a new bar.



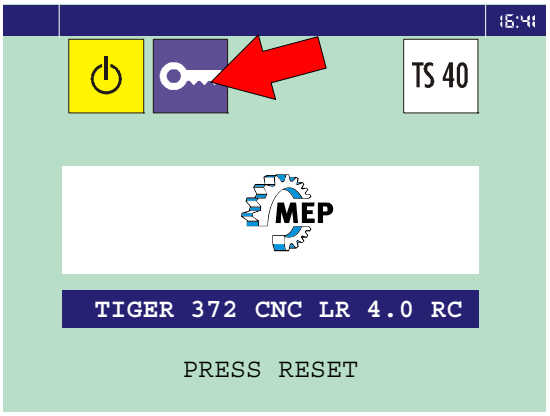
N.B. It is possible to customize the machine automatism when the cut is ended by configuring it in the ”Software settings” under the item ”Open semiautomatic cycle cutting vice”.

”Progressive feeding” optional cycle

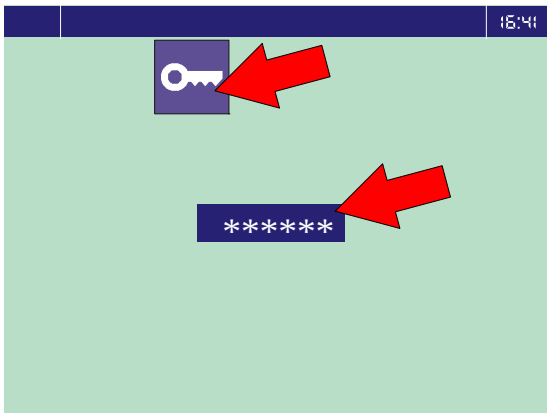
The progressive feeding cycle feeds the material for the whole available stroke, keeping the material being machined always clamped inside the feeding jaw: this application type is useful for specific jobs such as cutting bundles unstable inside the vices or “comb-type” cutting (without bar shearing).

N.B. The ”progressive feeding” function is limited to the single stroke of the feeder even if it respects the set sequence and cut programming and available only during the ”single program”.

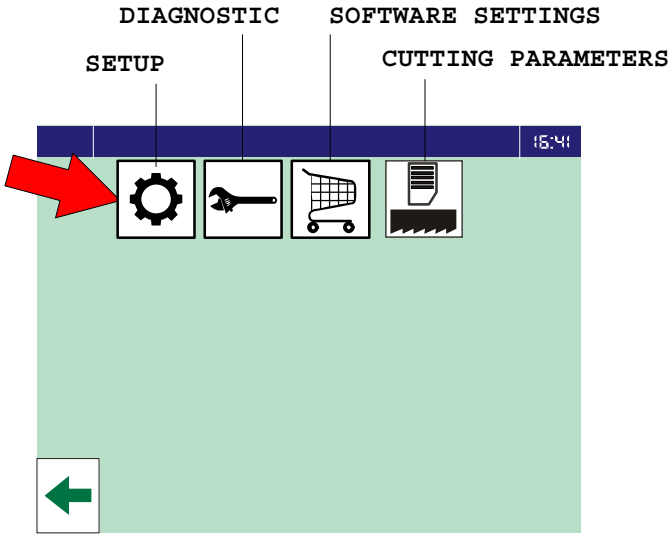
▶ To activate this function, enter the setup and activate it. In the main menu, press the box indicated in the figure to enter the SETUP.



▶ Enter the password using the keypad (734533) and press again the box shown in the figure.



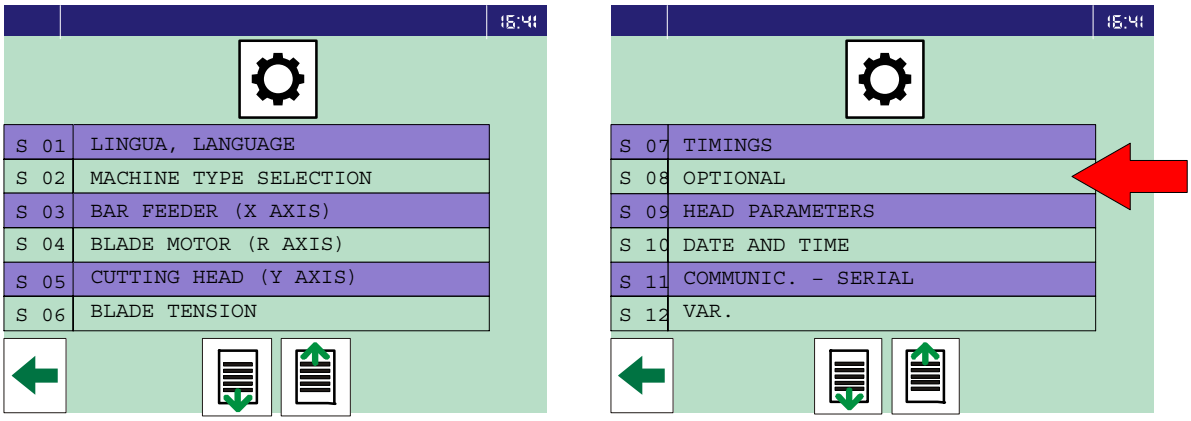
▶ Press the box featured by a toothed wheel.



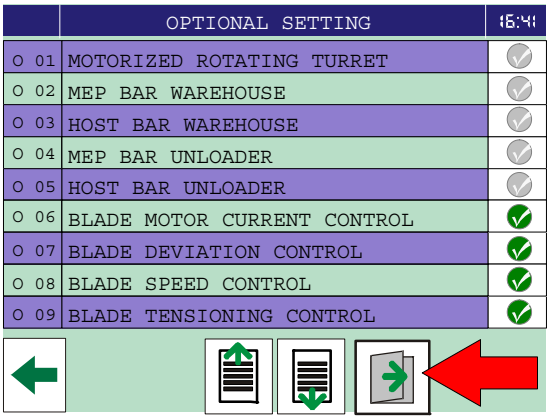
Attention The values shown in this section are extremely important for the correct machine operation. Each change of the parameters must be carried out under the supervision of MEP technical service.

N.B. The Setup parameters are listed on several pages: to display the complete list, press the page scrolling keys at the bottom of the video page. To return to the previous menu, press the “EXIT” key (green arrow on the left).

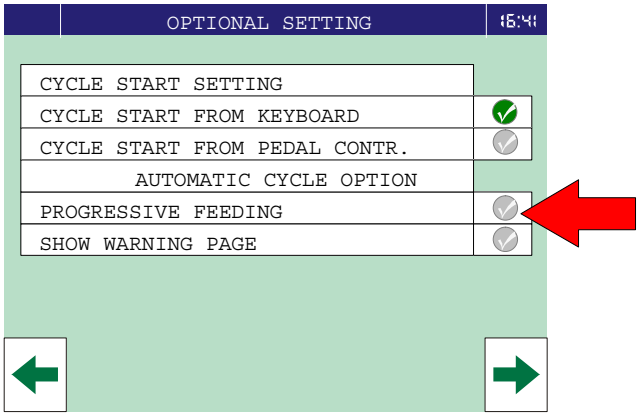
▶ Scroll the parameter list until the parameter S08 (Options) is displayed, then press the corresponding box.



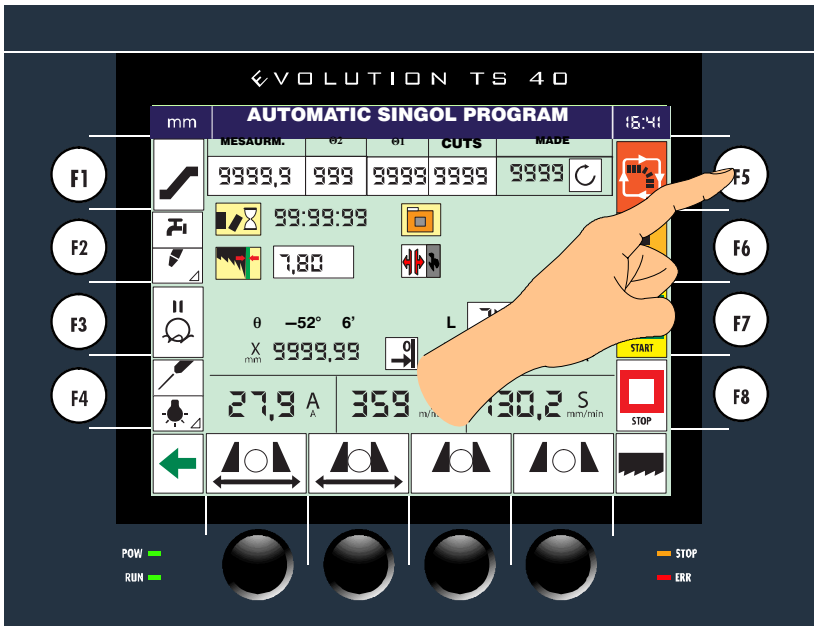
▶ Press the box with arrow to the right.



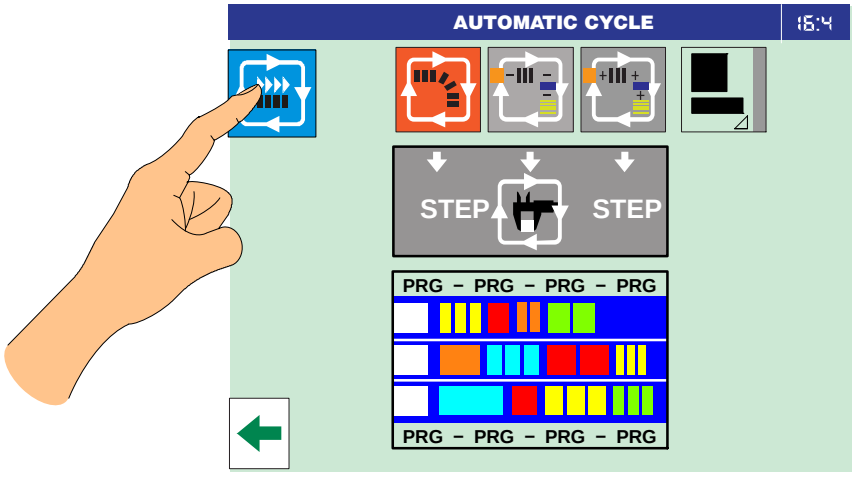
▶ Find the item “Progressive feeding” in the option list and press the activation box.



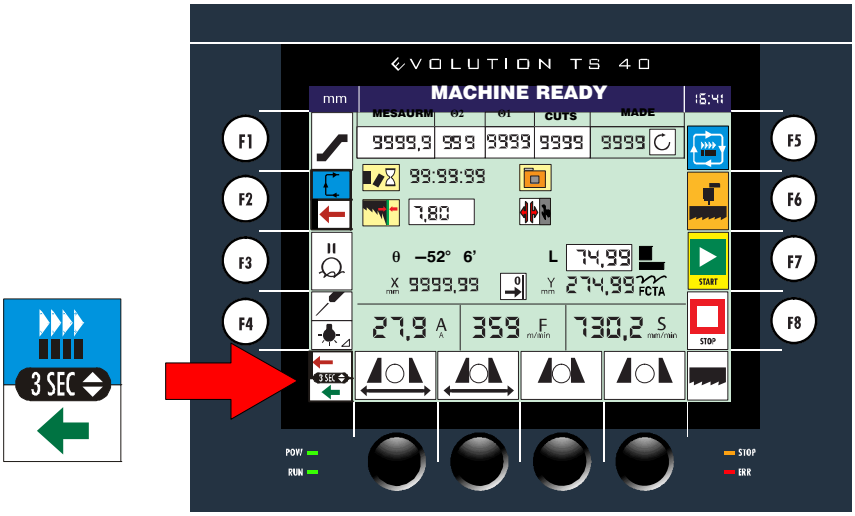
▶ After having activated the option, exit the setup and return to the working menu selecting the automatic cycle mode with the F5 key.



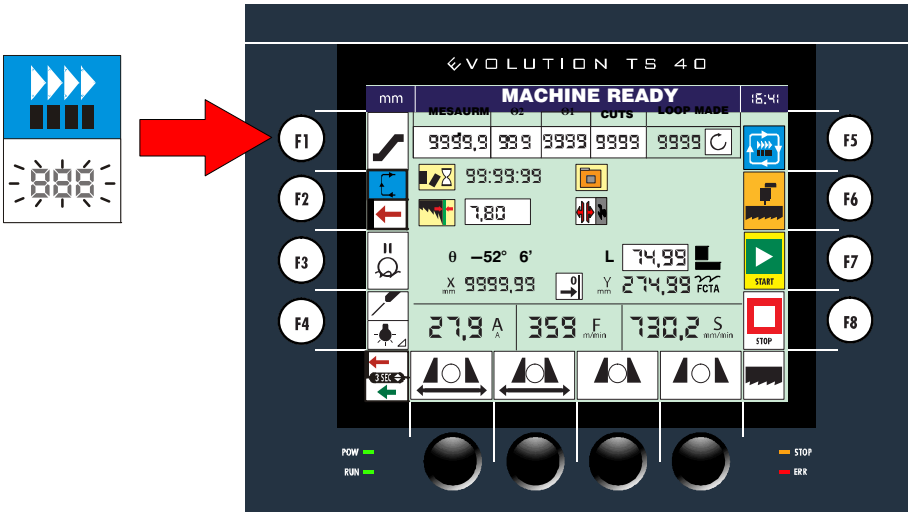
▶ Press the progressive feeding activation box and return to the working page by pressing the left arrow key.



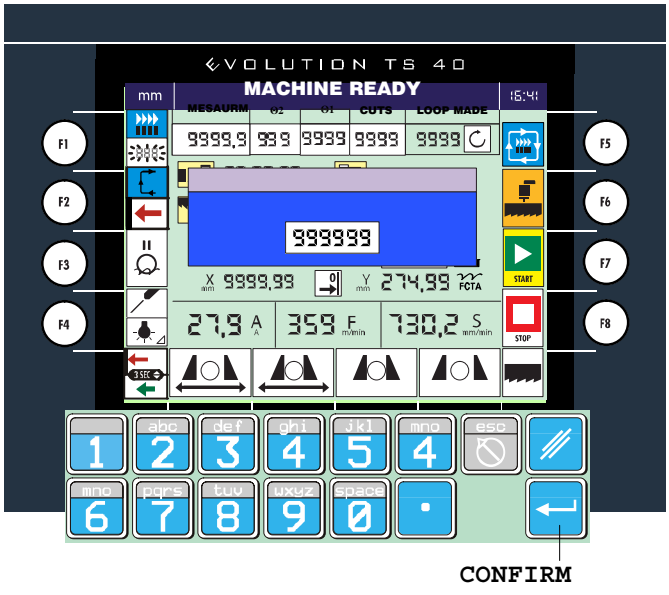
▶ Hold the box indicated in the figure pressed for at least 3 seconds.



▶ Press the function key F1 to set the length of the total bar feeding stroke.



▶ Enter the digits using the numeric keyboard and confirm by ENTER.



▶ Press the F2 button to position the feeder at the wished value.

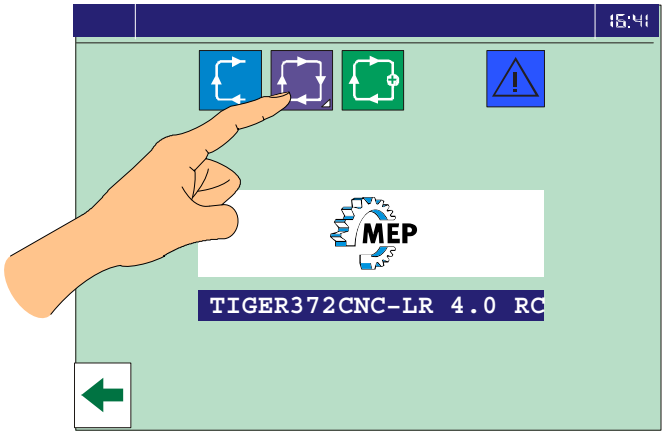


▶ Press EXIT to return to PREVIOUS MENU.

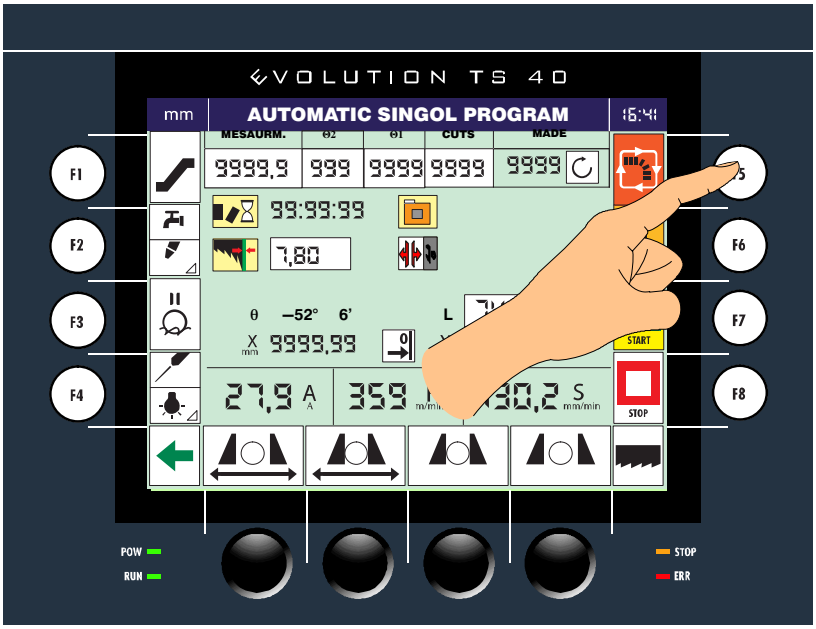
Single cycle

This mode allows the memorisation of different work typologies according to type of material, piece measurement and number of pieces to be cut.
The Single cycle can operate with max. 24 sequences containing max. 50 programs each, chosen among the 300 ones that can be stored. It enables to run the programs contained in the selected sequence and at the end of each program it goes to the next one BY PRESSING START ONLY to separate the cut pieces.

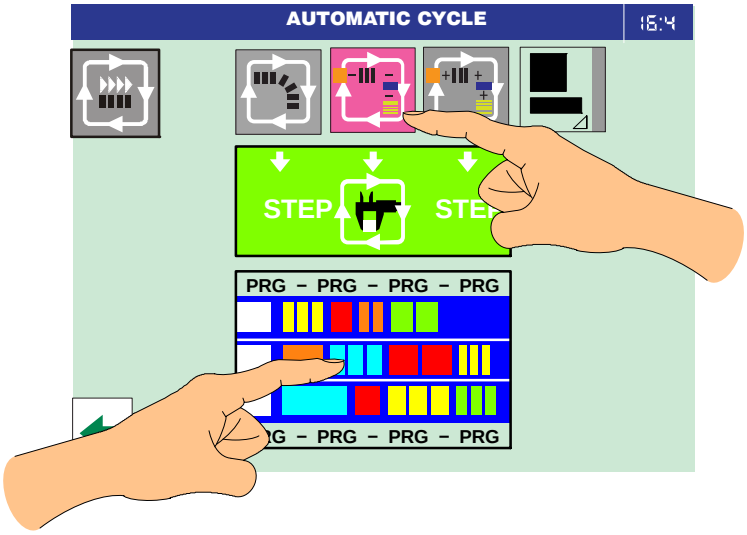
▶ In the main menu, press the box corresponding to the automatic cycle;



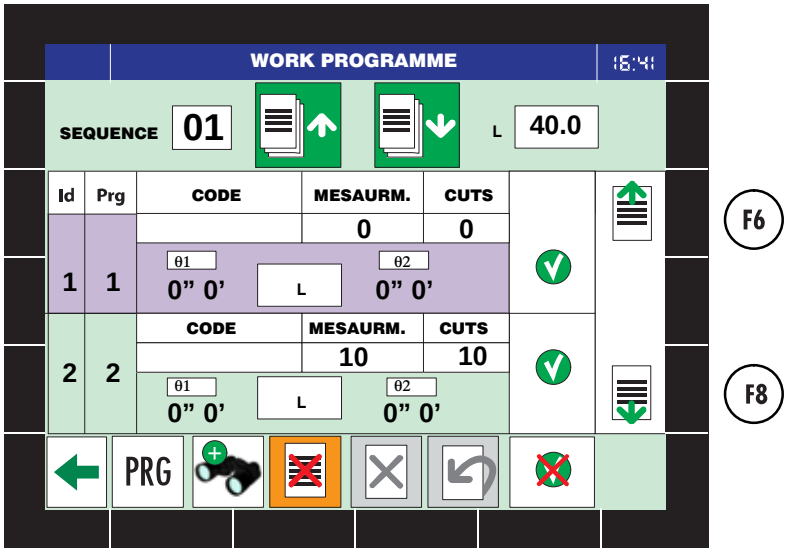
▶ Press the F5 key to select the automatic cycle mode;



▶ Press the box indicated in the figure for choosing the Single Cycle and to enter the ”Programming” by pressing the box at the bottom;



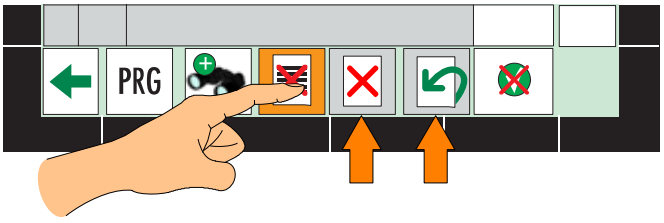
▶ Fill in the cutting programs, of the displayed sequence (from 1 to 24), according to the machining needs, pressing every time next to the box to be edited: PRG – Code – Measure – Cuts – Cutting angles, entering the value in the keypad and pressing enter. To scroll the list of the programs (max. 50) press F6/F8



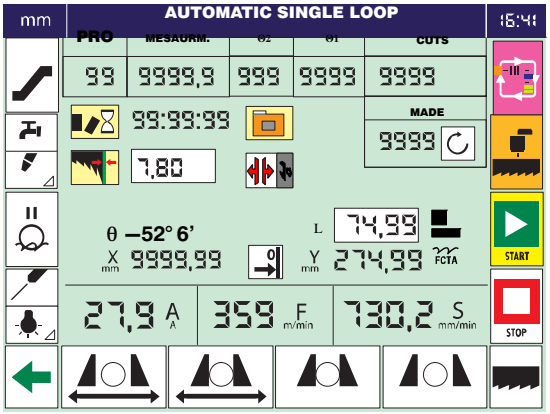
▶ After filling–in, each single program can be run or not pressing the n control box on the right side.

Attention

It is possible to zero all 50 programs of the selected sequence by pressing the key indicated in the figure and then confirming the choice pressing ”X”, or cancelling the operation with the green arrow.



N.B. The machine controller automatically saves the set data when the ”Enter” key is pressed on the keypad. If all programs in the controller memory must be backed up, press the ”floppy disk” key and follow the displayed instructions. Run the set program sequence with the same procedures described in the previous chapter on running the “Single program”. The sawing machine will run all sequence programs.
The machine has two automatic stop modes of the program: bar end and CUT END. In both cases, the sawing machine displays the message ”MACHINE READY” to re−initialize the cuts with a new program of with a new bar.

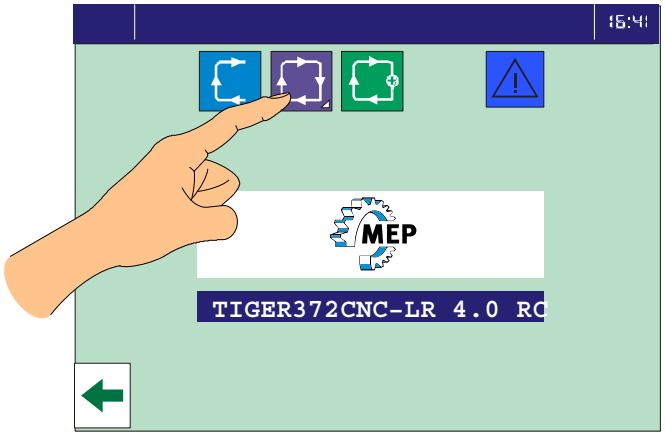


N.B. It is possible to customize the machine automatism when the cut is ended by configuring it in the ”Software settings” under the item ”Open semiautomatic cycle cutting vice”.

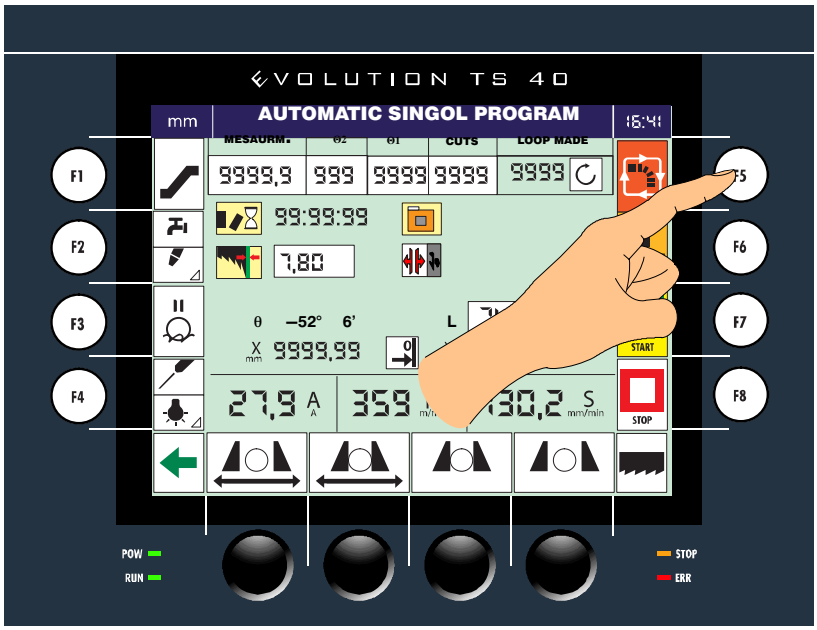
Continuous cycle

This mode allows the memorisation of different work typologies according to type of material, piece measurement and number of pieces to be cut.
Continuous cycle: like the single cycle but at the end of each program it AUTOMATICALLY goes to the next program.

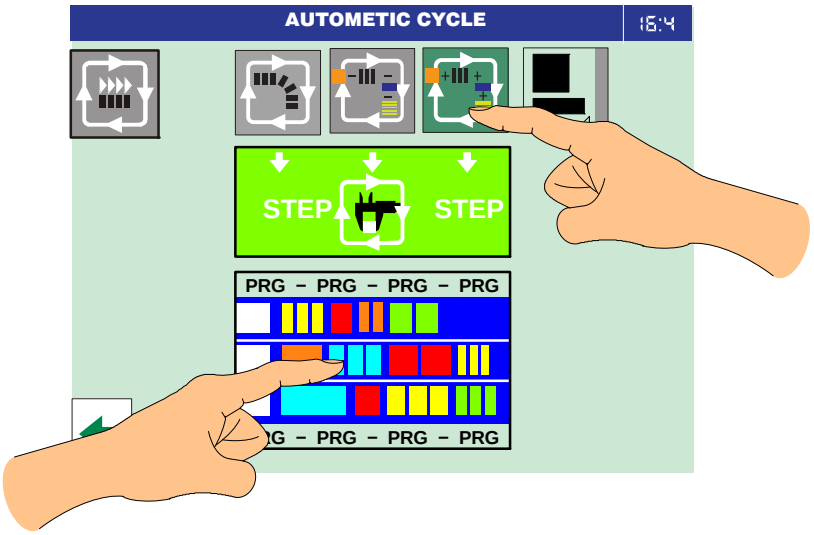
▶ In the main menu, press the box corresponding to the automatic cycle;



▶ Press the F5 key to select the mode of the automatic cycle;



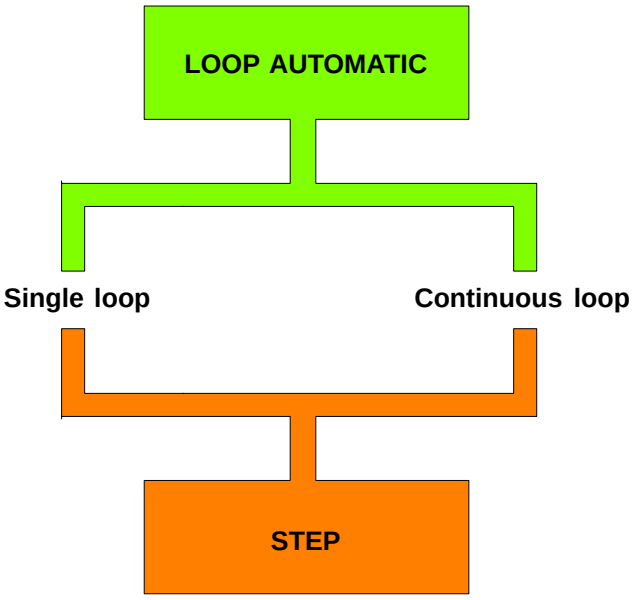
▶ Press the box shown in the figure for the choice of Single Cycle and then enter the ”Programming” by pressing the bottom box;



Now set the sequence/s of the programs to be run as already described in the previous paragraph “Single Cycle” for running the machining cycle, always considering that after the sawing machine is started up it will run the entire set program sequence.

Loop automatic cycle

This operating mode can be: “Single Loop” and “Continuous Loop”. It enables to repeat the selected sequence/s up to 9999 times. In “Single Loop” mode you can set the number of repetitions of the selected sequence up to 9999 times, but you need to press key “Start” at each repetition. In “Continuous Loop” mode you can set the number of repetitions of the selected sequence up to 9999 times and they will all be automatically run without pressing key “Start” at each repetition.

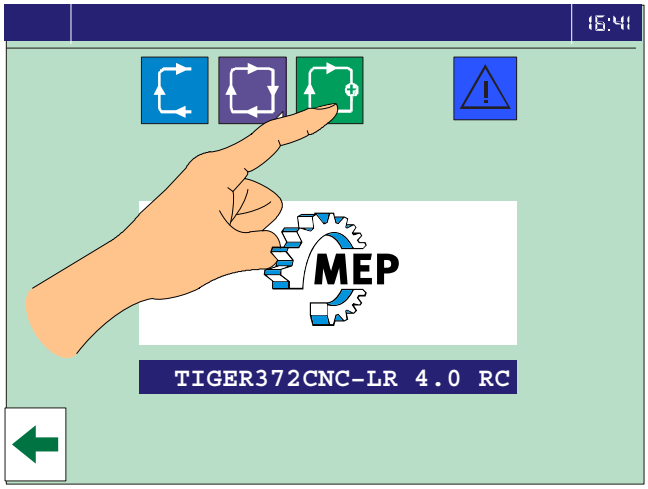


N.B. STEP: in this working cycle, too, the step function is available, to stop the machining after each program is run: the machine makes the bar facing cut, makes all program cuts and then stops so that the work results can be checked.

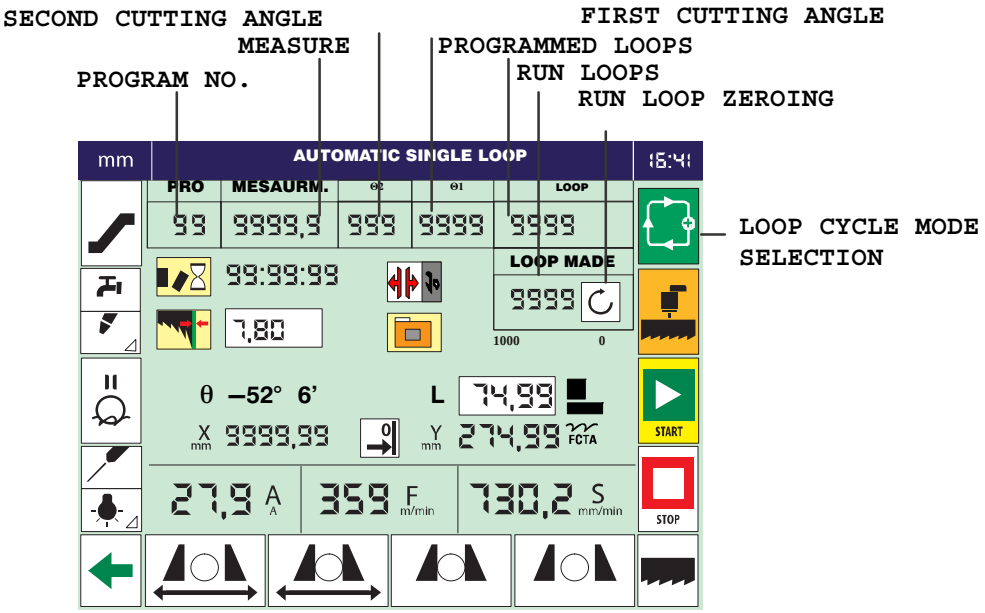
Single loop

The procedure for a single loop is described below:

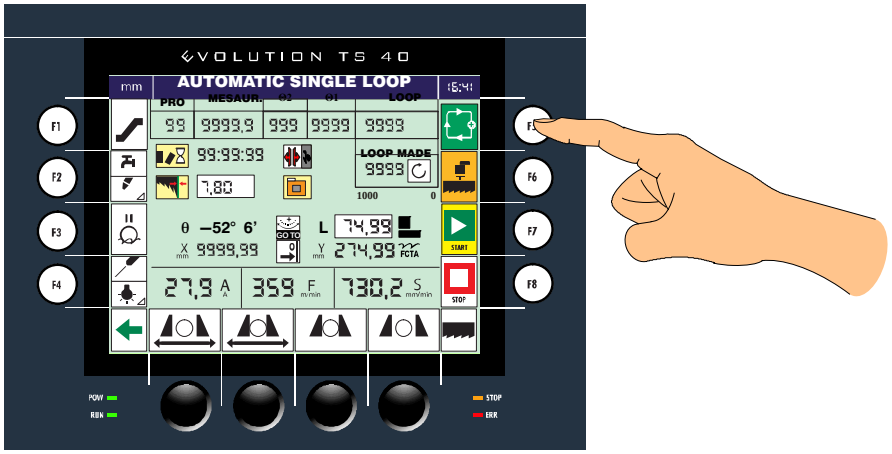
▶ In the main menu, press the box corresponding loop to the automatic cycle to access the working video page.



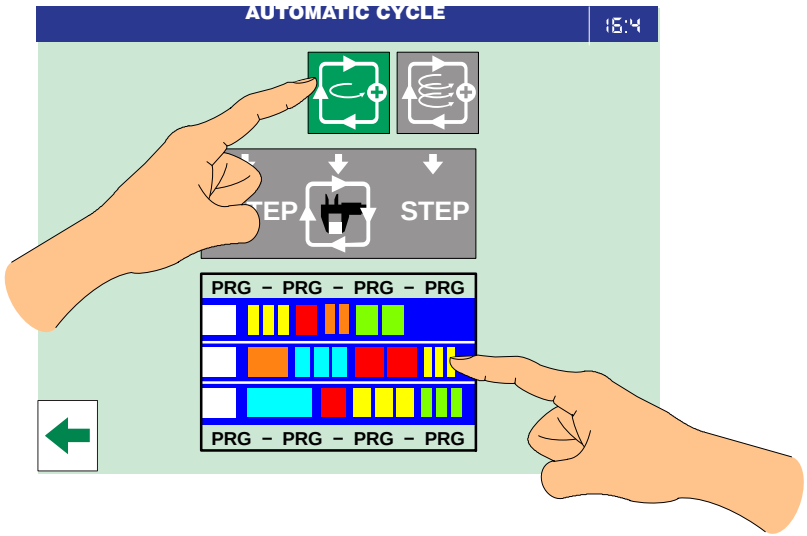
▶ In the following video page you can check the data of the loop cycle



▶ Press F5 to access the loop mode selection video page:

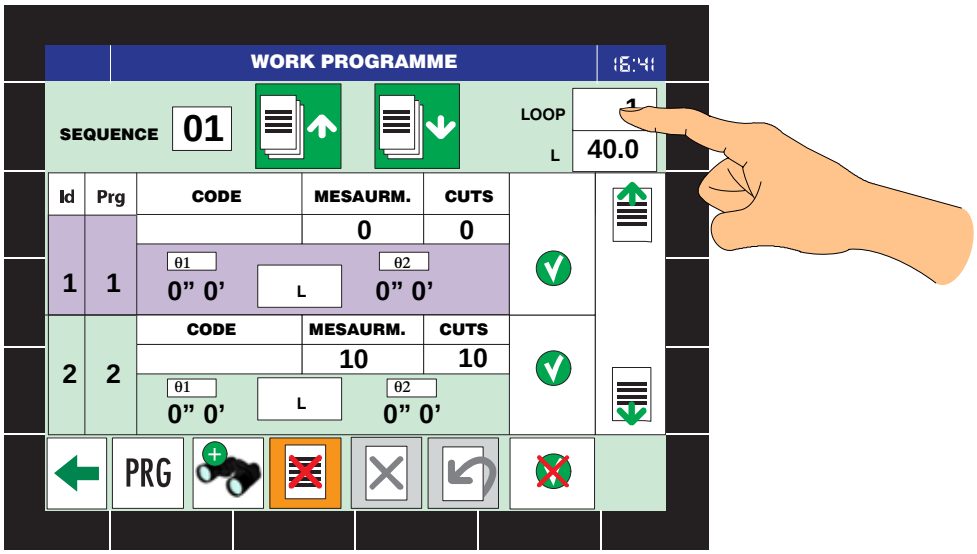


▶ Press the Single loop box and enter the programming pressing the box at the bottom

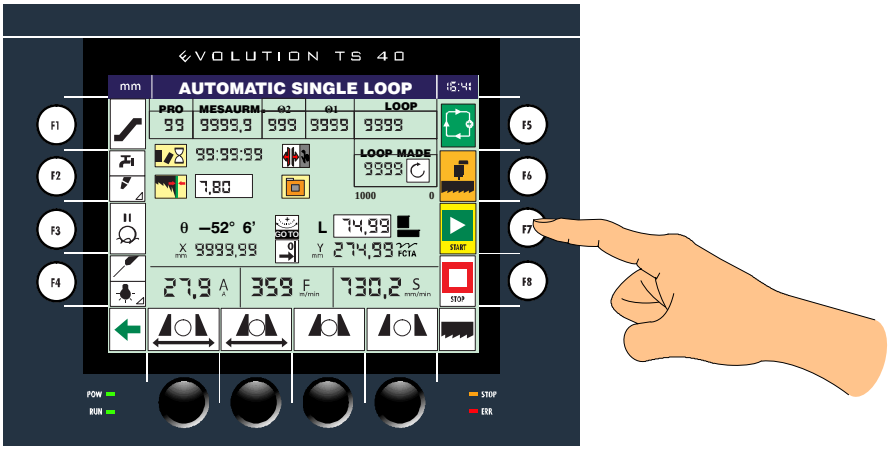


▶ Fill in the cutting programs of the sequence as described in the paragraph for the programming of the ”Automatic cycle” and enter the number of

repetitions to be made with the sawing machine in the ”Loop” box:



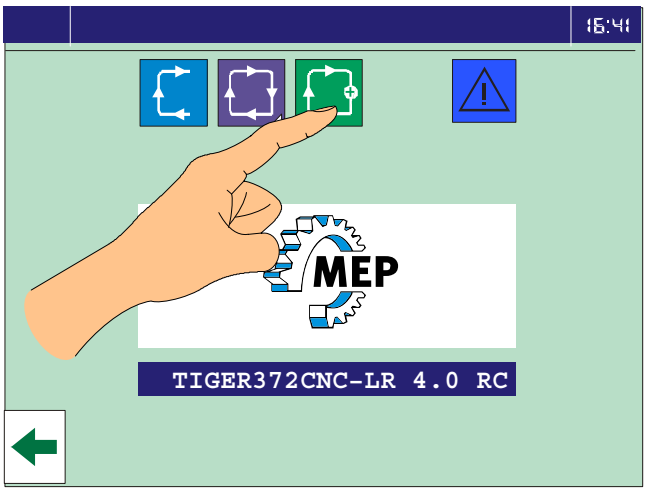
▶ At the end of the programming, return to the working video page to check the entered parameters and start the working cycle.



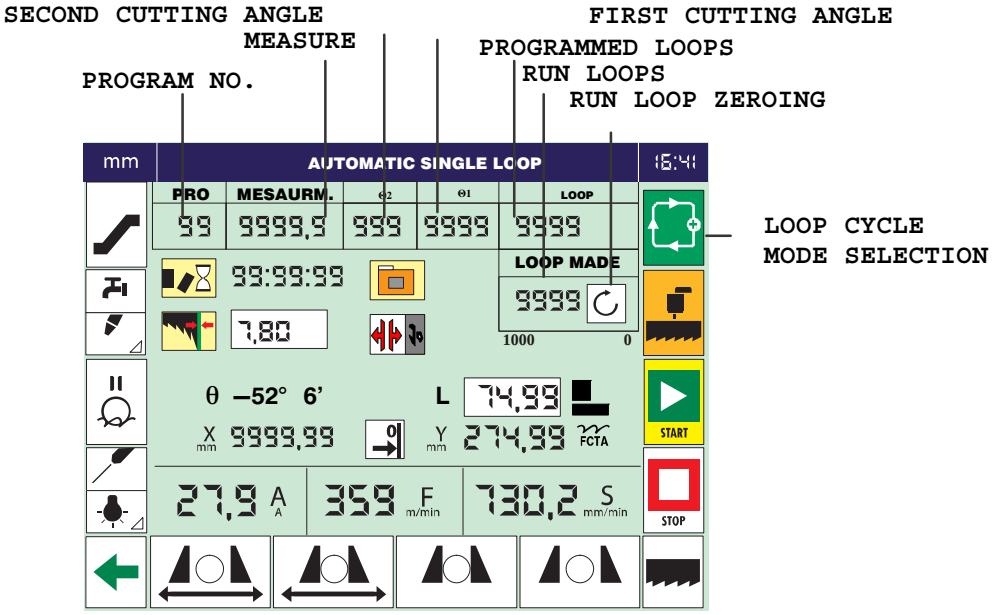
Continuous loop

The procedure for a continuous loop is described below:

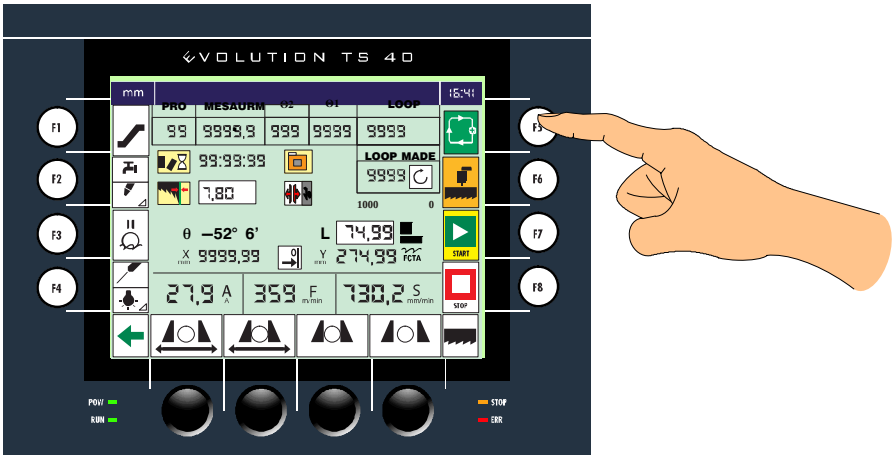
▶ In the main menu, press the box corresponding loop to the automatic cycle to access the working video page.



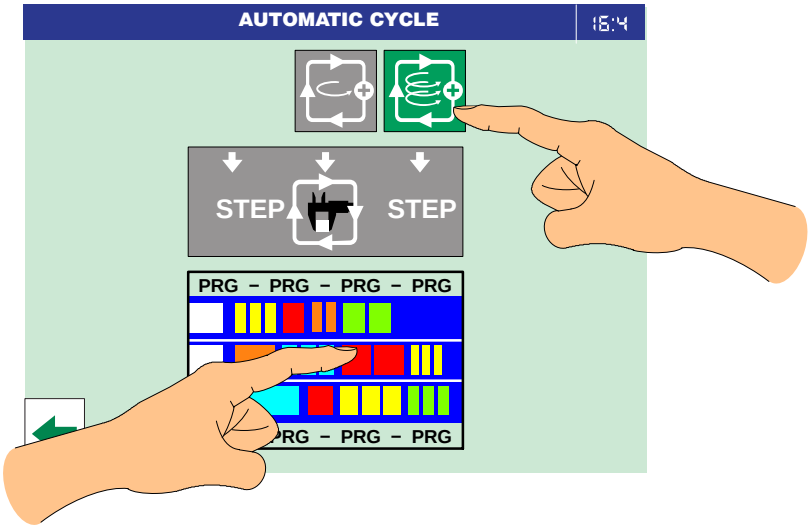
▶ In the following video page you can check the data of the loop cycle.



▶ Press F5 to access the loop mode selection video page:

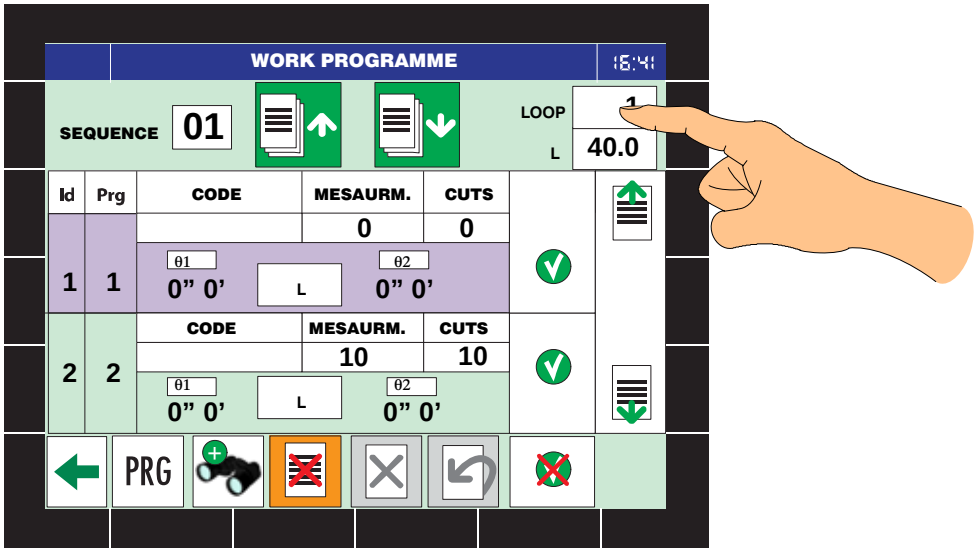


▶ Press the Single loop box and enter the programming pressing the box at the bottom.

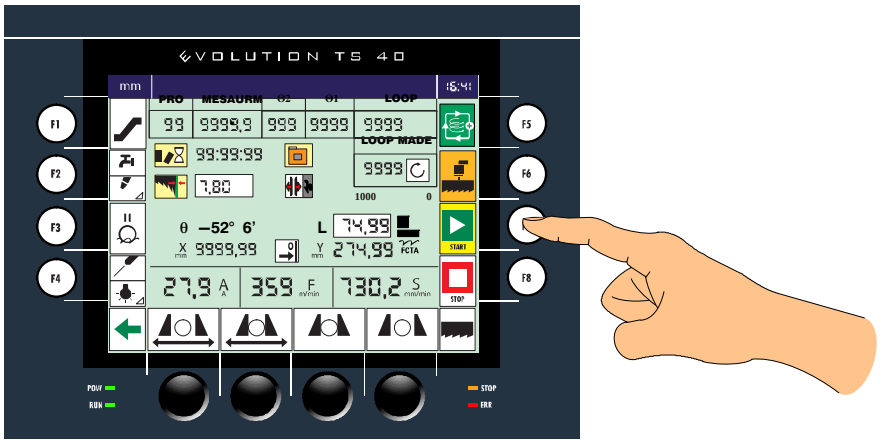


▶ Fill in the cutting programs of the sequence as described in the paragraph for the programming of the ”Automatic cycle” and enter the number of

repetitions to be made with the sawing machine in the ”Loop” box:

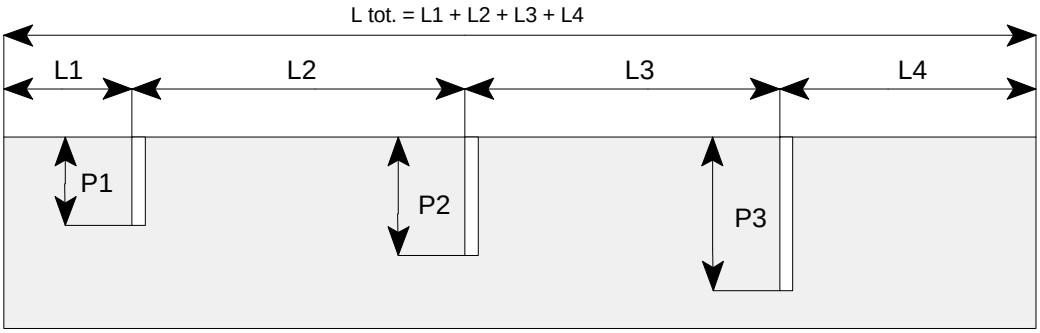


▶ At the end of the programming, return to the working video page to check the entered parameters and start the working cycle.



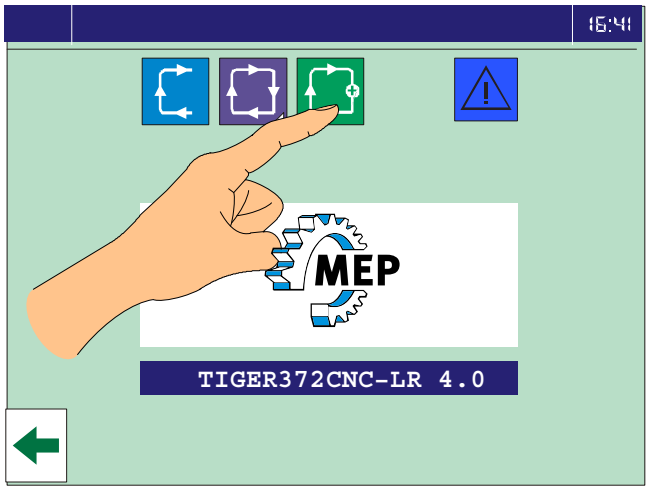
“Comb cutting” function

The LOOP work cycle allows a particular machining, called ”Comb cutting”, which enables to obtain cuts of different sizes at different depths on the same bar.

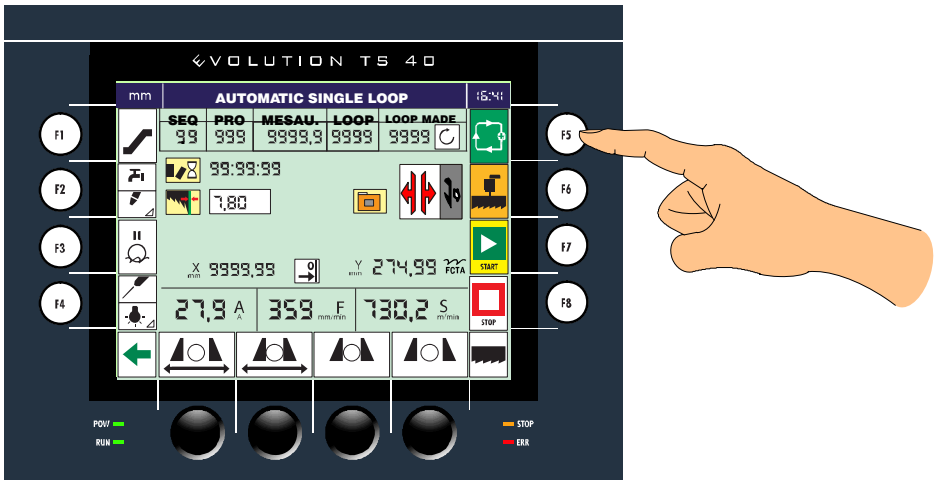


In programming, the depths P1, P2, P3... etc. correspond to the FHLS value, while the different lengths define the MEASURE value.

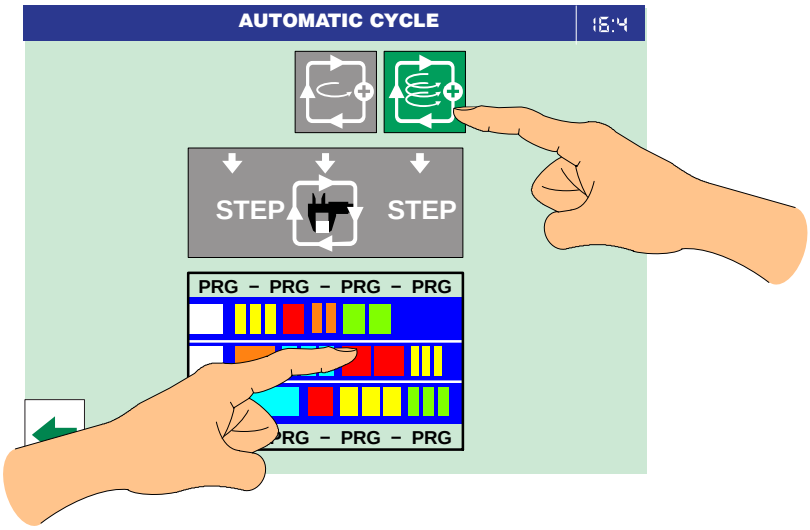
▶ In the main menu, press the box corresponding loop to the automatic cycle to access the working video page.



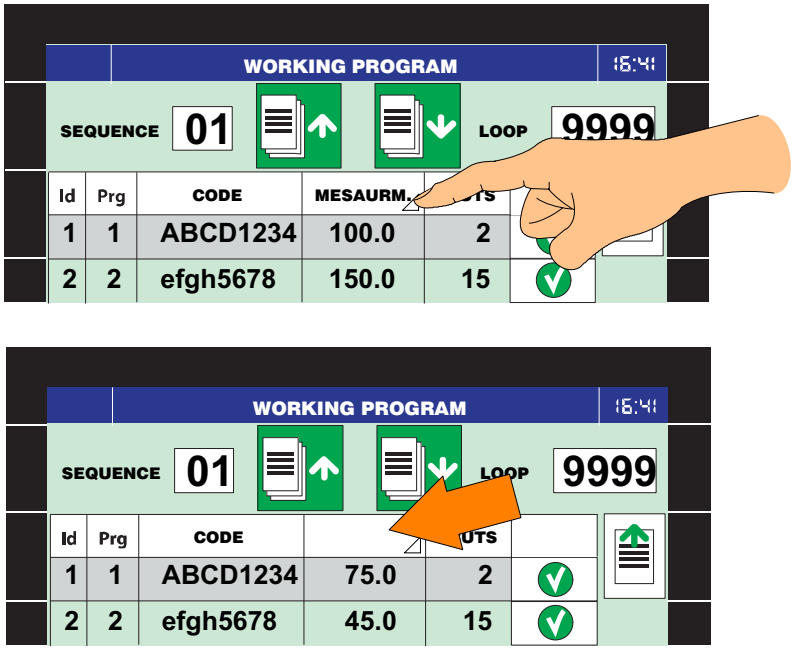
▶ Press F5 to access the loop mode selection video page:



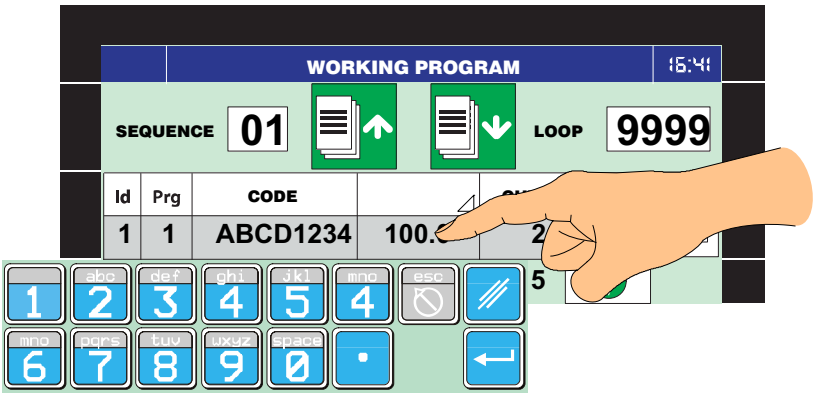
▶ Press the Single loop box and enter the programming pressing the box at the bottom.



▶ Fill in the complete program sequence of the ”Measure” value, then press the arrow in the ”Measure” box, to display the ”FHLS” item;



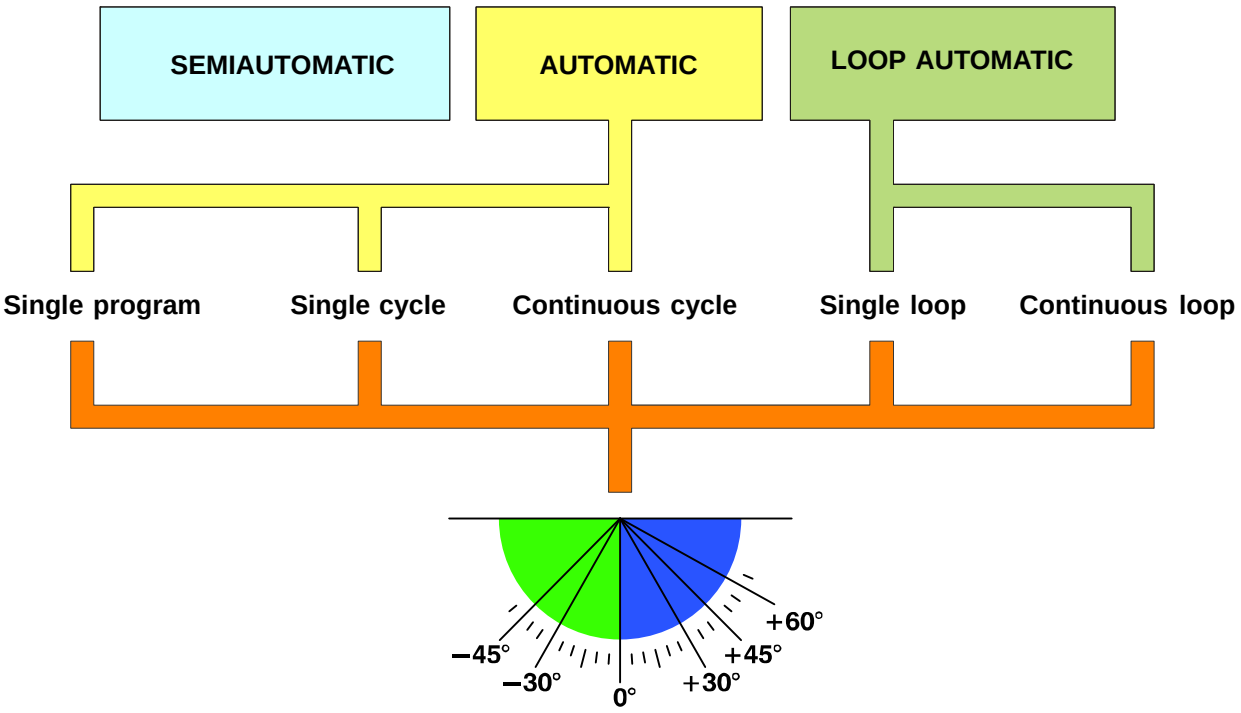
▶ Select the value shown in the figure, the keypad opens for entering the desired FHLS value. Press enter to confirm and return to the work page, start the cutting cycle.



N.B. The sawing machine always performs the facing cut by default. In case it is not necessary to perform the facing cut, you can disable this setting through the software settings (Chapt. 7).

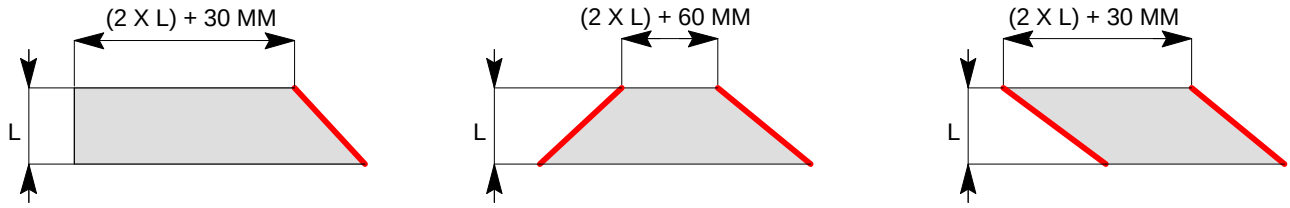
Performing inclined cuts

The sawing machine can perform cuts inclined from −45 to +60 degrees, rotating the head manually using the joystick, or with automatic movements programmed using the console. Inclined cuts can be performed in all machining cycles:



Attention The programming of the head automatic rotation in the machining cycles is allowed only between −45 and +45 degrees. During the manual rotation through the joystick over +45 and up to +60 degrees it is necessary to adapt the position of the vertical vice so that it does not interfere with the cutting head.

N.B. In case of angled cuts in the automatic cycle, the min. cutting dimension depends on the width of the bar being machined (L) and on the number of angles in the obtained pieces. In consecutive cuts with the same angle one cut only must be calculated.



Cuts with positive or negative inclination

While programming the cuts it is necessary to specify if the cut is inclined to the left (negative cut) or to the right (positive cut). Only in case of negative cuts enter "−" before entering the value of the angle.

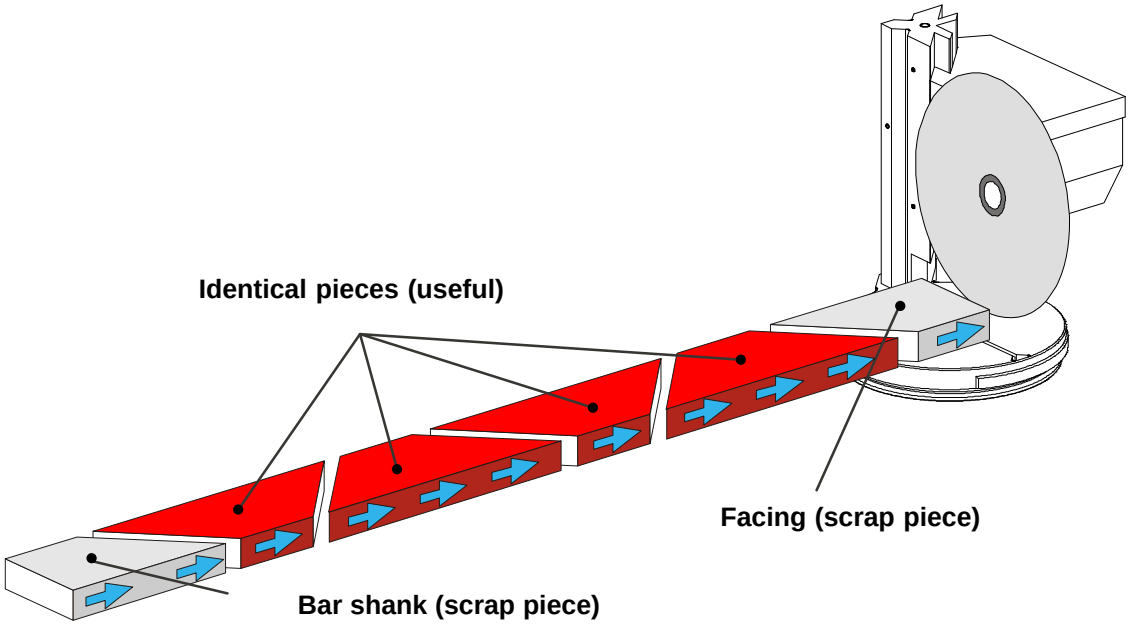


Programming of cuts inclined by 45 degrees with symmetric section material

In case of cuts angled at 45 degrees, with symmetric section material, the programming must consider the optimisation of the cuts, to prevent wasting material and time with useless cuts. A few examples of optimisation follow.

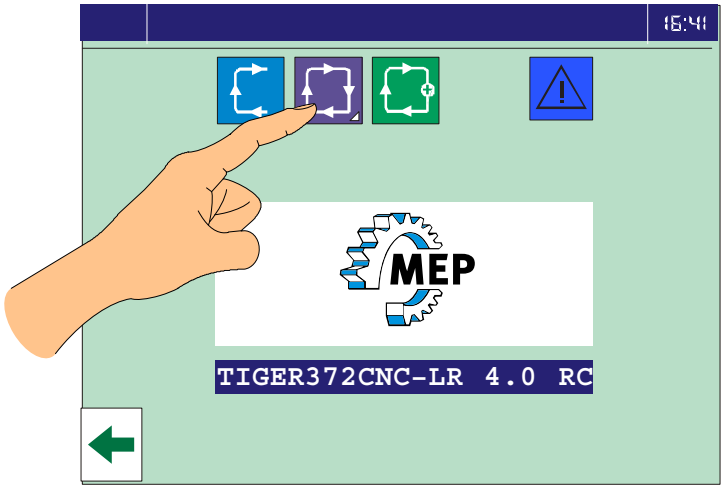
Programming example 1

If pieces with the same dimensions must be obtained from the bar being machined:



In this case just use the Automatic – single program machining cycle.

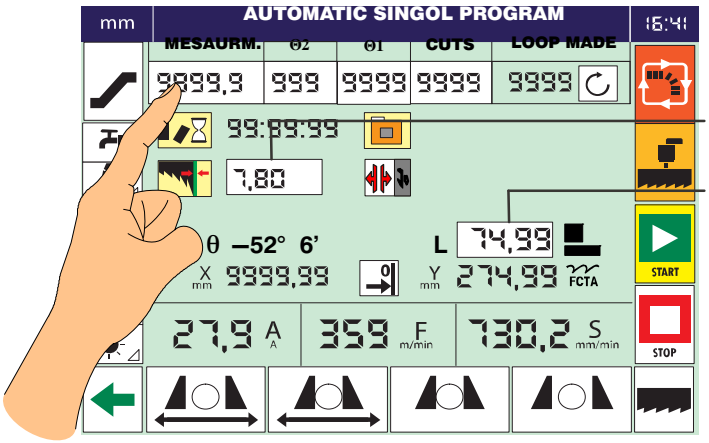
▶ In the main menu, press the box corresponding to the automatic cycle to access the working video page.



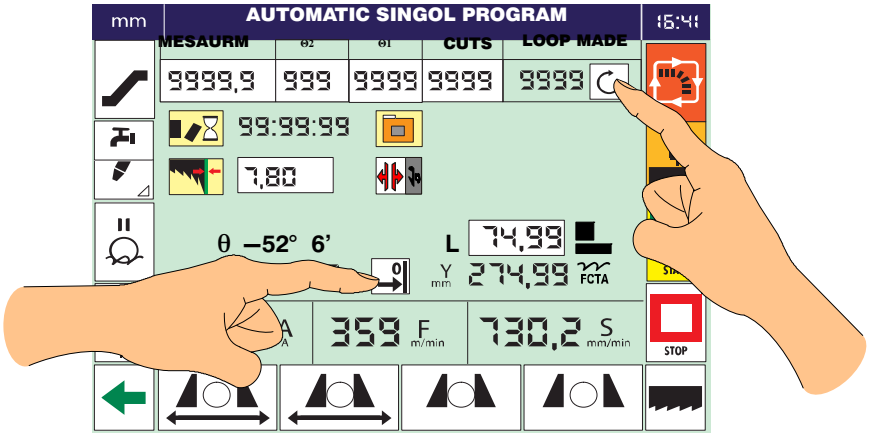
▶ In the following video page set the values “Dimension”, first cutting angle “Θ1”, second cutting angle “Θ2”, the number of “Cuts” to be made, the disc thickness and the bar width.

N.B. Make sure to have entered the thickness of the cutting disc correctly as explained in the previous pages. According to this parameter and to the piece width the sawing machine calculates automatically the exact dimension to be obtained.

▶ Press the corresponding box and enter the wished value in the keypad.



▶ Press the button for zeroing the cuts made and for zeroing the feeder shuttle position.

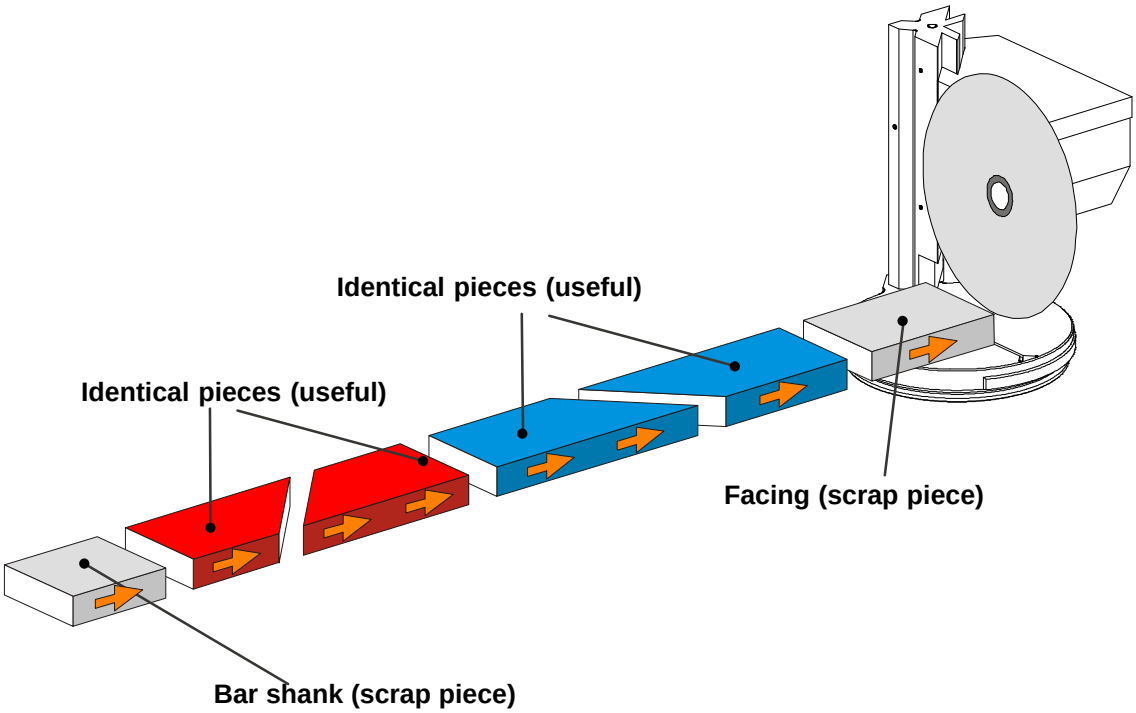


▶ Start a standard Automatic – Single program machining cycle.

The sawing machine shall perform these operations:
– material feeding;
– facing cut (scrap), with the inclination of the first cutting angle Θ1;
– feeding of the material with the specified dimension;
– cutting the first piece (good) with the inclination of the second cutting angle Θ2;
– feeding of the material and repetition of the previous operations for the number of cuts set.

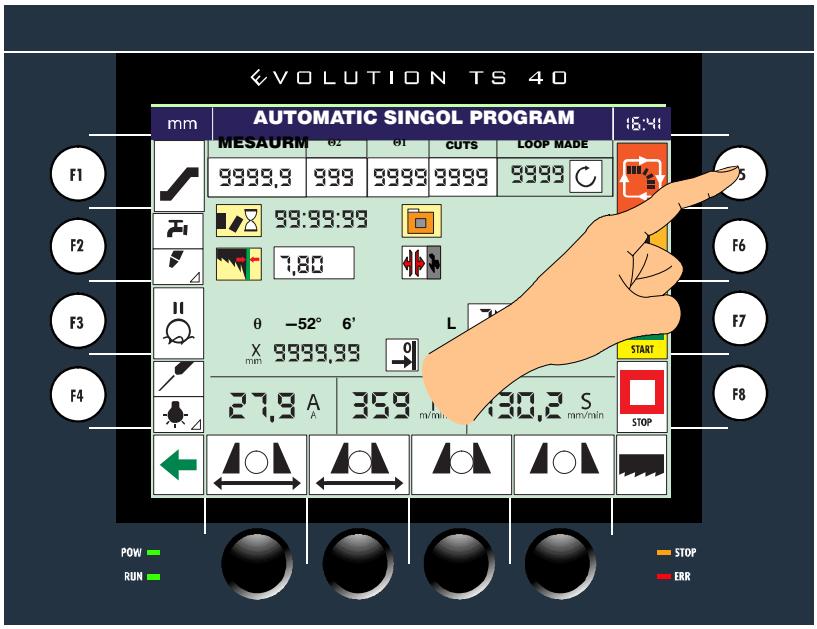
Programming example 2

If pair of pieces with the same dimensions must be obtained from the bar being machined:

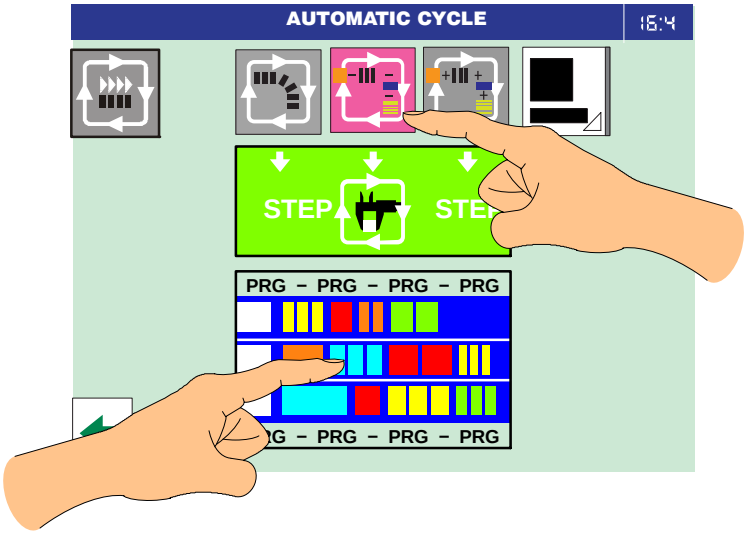


In this case you must use the Automatic – Single cycle machining cycle.

▶ Press the F5 key to select the automatic cycle mode;

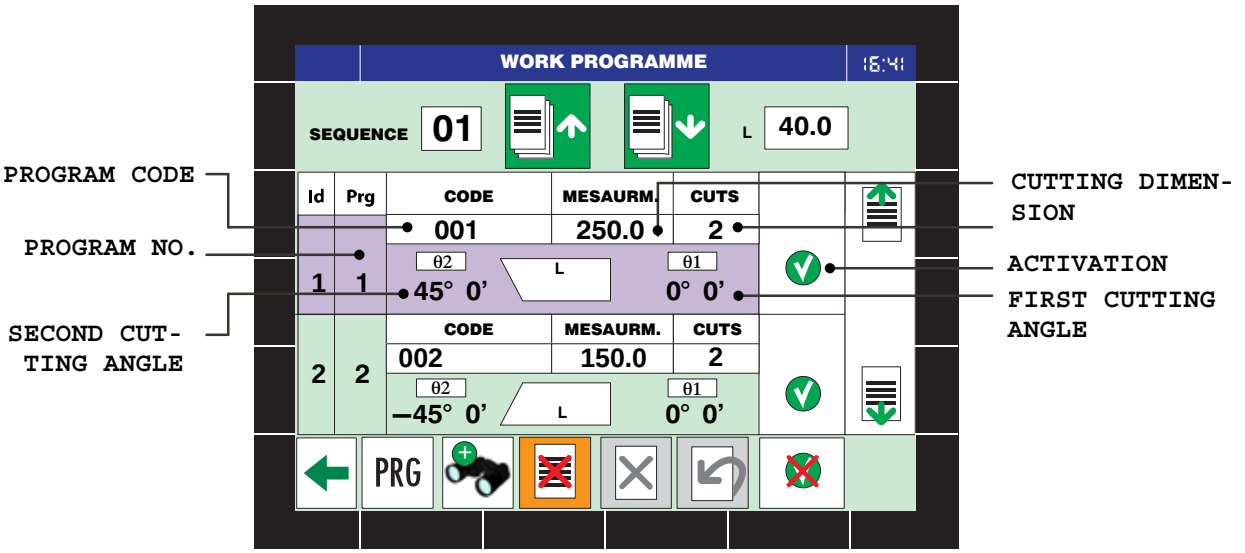


▶ Press the box indicated in the figure for choosing the Single Cycle and to enter the ”Programming” by pressing the box at the bottom;



▶ In this specific case, compile the first two cutting programs of the displayed sequence, according to the machining needs, pressing every time the box to be edited: PRG – Code – Dimension – Cuts – Cutting angles, entering the value on the keypad and pressing enter.

N.B. The management of cutting programs is described in the previous paragraph ”Automatic cycle − Single cycle”.



▶ At the end of the compiling, run the two cutting programs pressing the control box n.

▶ Press the left arrow key twice to return to the Single Cycle video page.

▶ Start a standard Automatic – Single Cycle machining cycle.

The sawing machine proceeds with the first program:
– material feeding;
– facing cut (scrap), with the inclination of the first cutting angle Θ1;
– feeding of the material to make the first useful piece;
– cutting with the inclination of the second angle Θ2;
– material feeding for the second useful piece
– cut with inclination of the first angle Θ1.
The sawing machine proceeds with the second program:

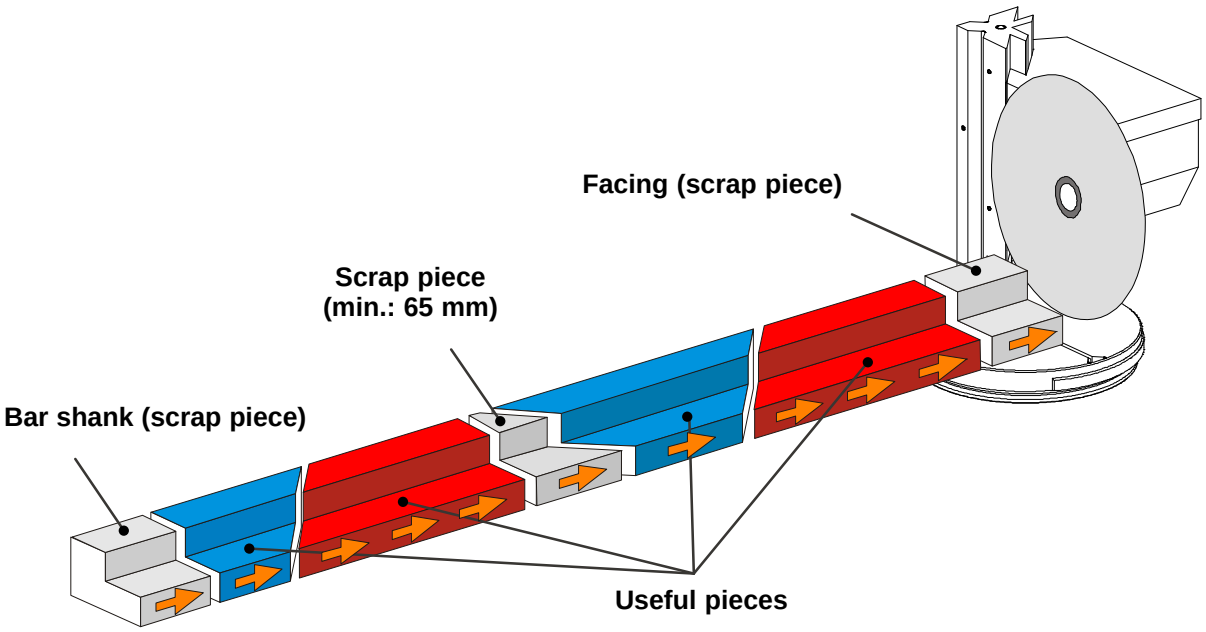
– material feeding;
– the facing cut is not made, as the bar is already faced with the same angle Θ1 included in the second program;
– cut, to obtain the first useful piece, with inclination to the second angle Θ2;
– material feeding;
– cut, to obtain the second useful piece, with inclination to the first angle Θ1.
– End of cuts.

Programming of cuts angled at 45 degrees with asymmetric section material

To optimise 45 degree cuts with asymmetric section it is necessary to associate several cutting programs, so as to reduce scrap pieces and machining times as much as possible.

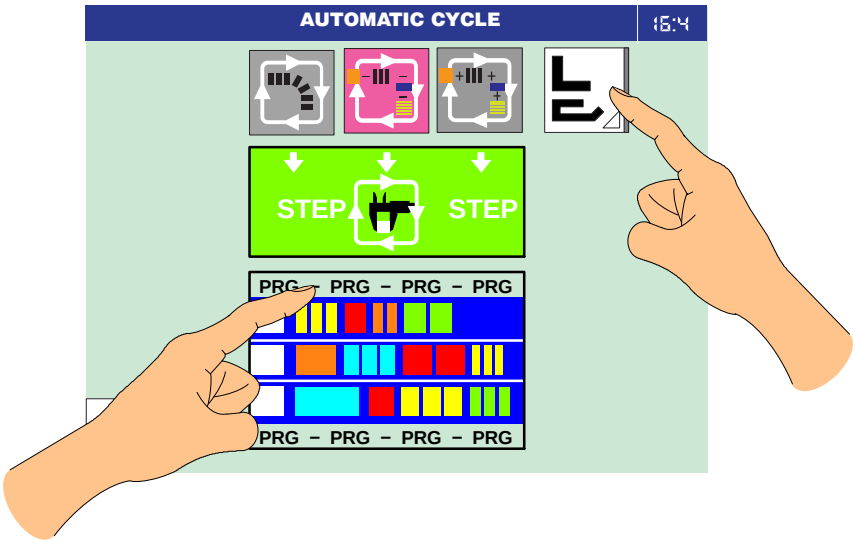
Programming example

In this case, the sequence of the programs must be set so as to reduce the unavoidable material scraps, due to the angle change, as much as possible.



In this case just use the Automatic – single program machining cycle.

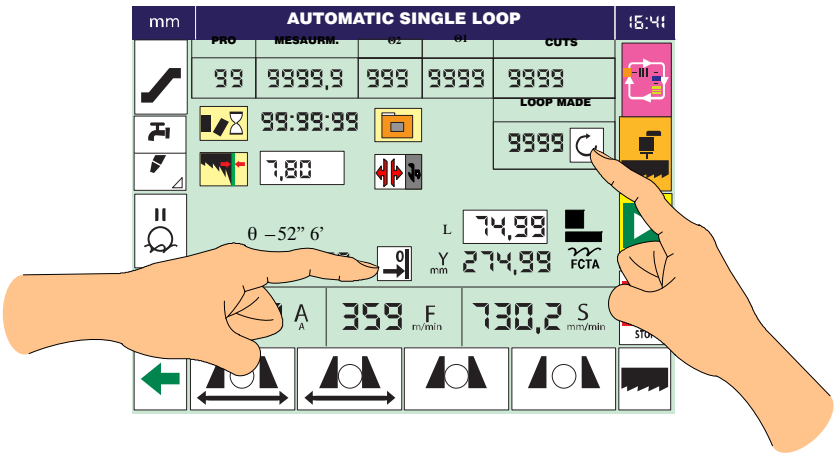
▶ In the main menu press the box for the selection of the asymmetric profile and press the programming box.



▶ In the following video page compile the programs according to the machining specifications as explained in the paragraph “Single cycle”.

▶ At the programming end, press the left arrow key to return to the machining video page.

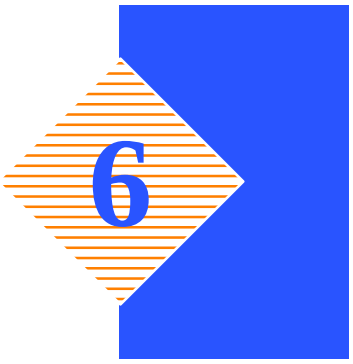
▶ Press the button for zeroing the cuts made and for zeroing the feeder shuttle position.



▶ Start a standard Automatic – Single Cycle machining cycle.

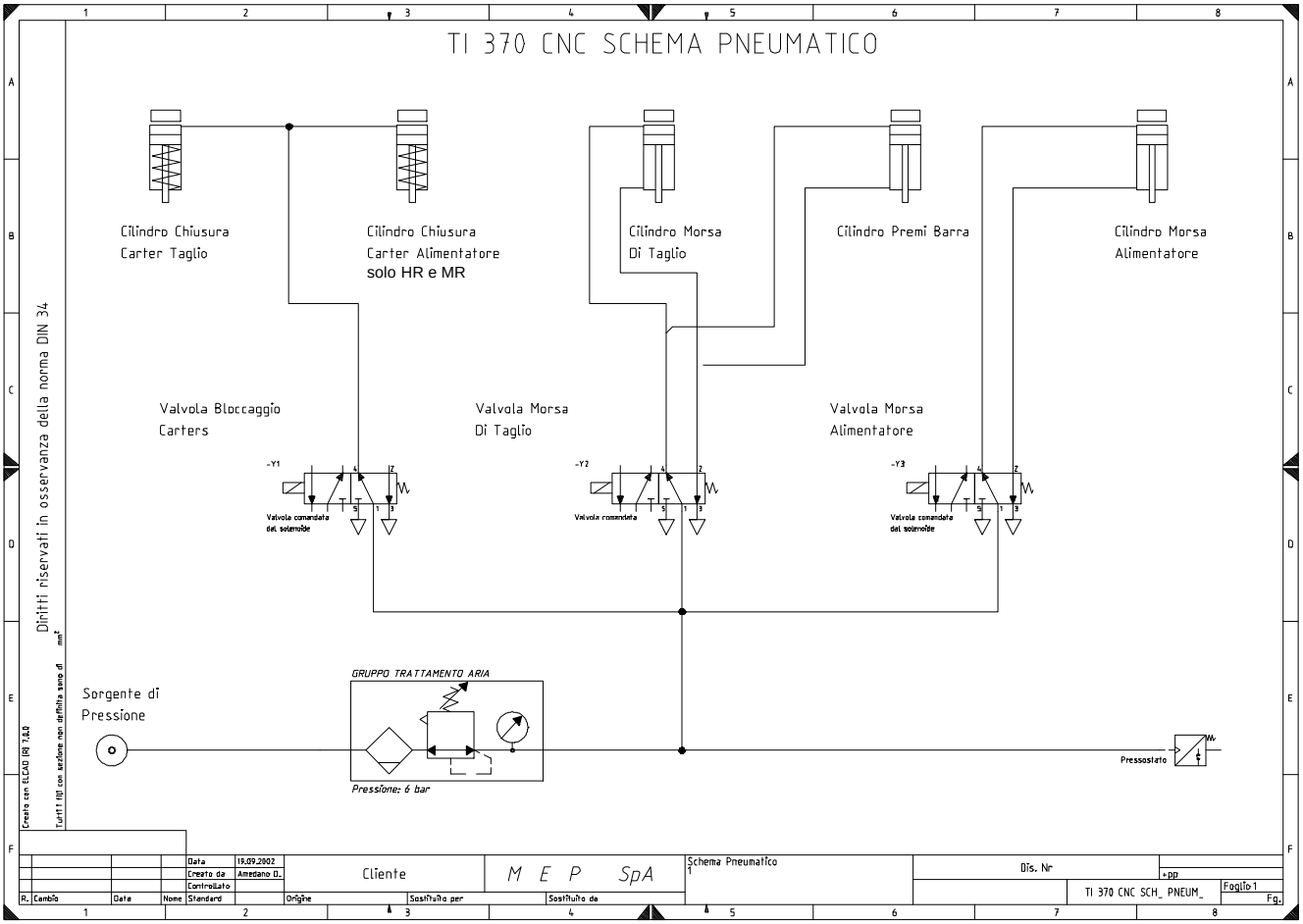
The sawing machine shall perform these operations:
– running of the first cutting program including the facing cut (scrap);
– running of the second cutting program; the inclination of the first programmed cut does not correspond to the inclination of the last cut made in the first program, therefore the sawing machine performs a scrap cut;
– cutting the useful piece;
– running the subsequent programs.

Diagrams, exploded views and replace–ment parts



This chapter contains functional diagrams and exploded views of the **TIGER 372 CNC LR RC 4.0**. This document is intended to help in identifying the location of the various components making up the machine, giving information useful in carrying out repair and maintenance operations; This chapter will also enable the user to order replacement parts with no risk of misunderstanding, as all parts are given codes.

Pneumatic diagram TIGER 372 CNC LR RC 4.0

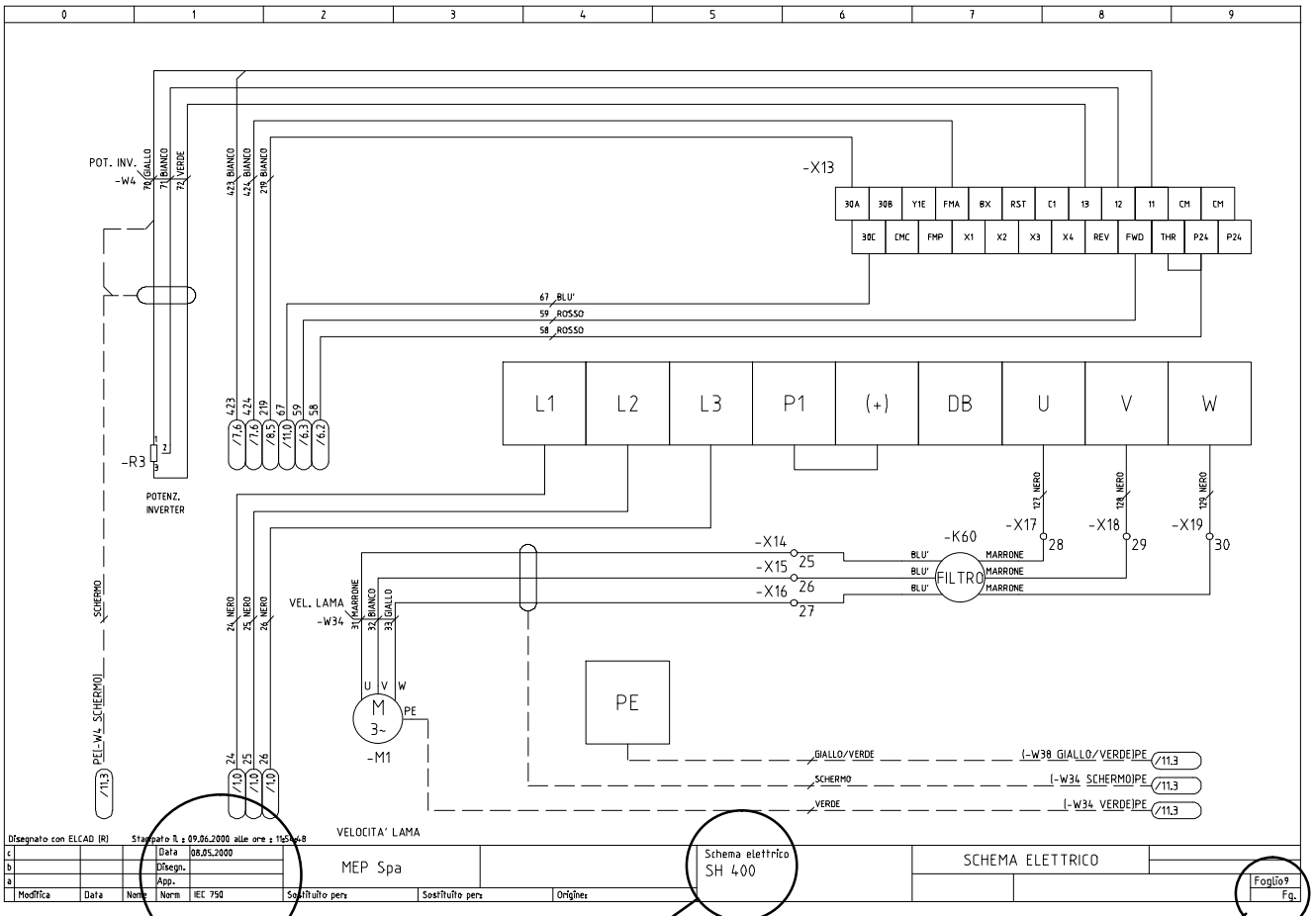


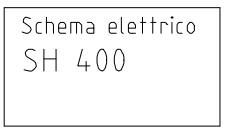
How to read the wiring diagrams

With the introduction of the new standardised wiring diagrams, the following gives an illustration of the way in which they have been drawn up.

Each sheet of the project contains a box which gives the following information:

The numbers indicate the columns into which the entire drawing is divided





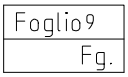
Indications of the model of machine

Data	08.05.2000
Disegn.	MARIO ROSSI
App.	
Norm	IEC 750

Indications of the date production started

Identification of the designer

Identification of the Reference Standard

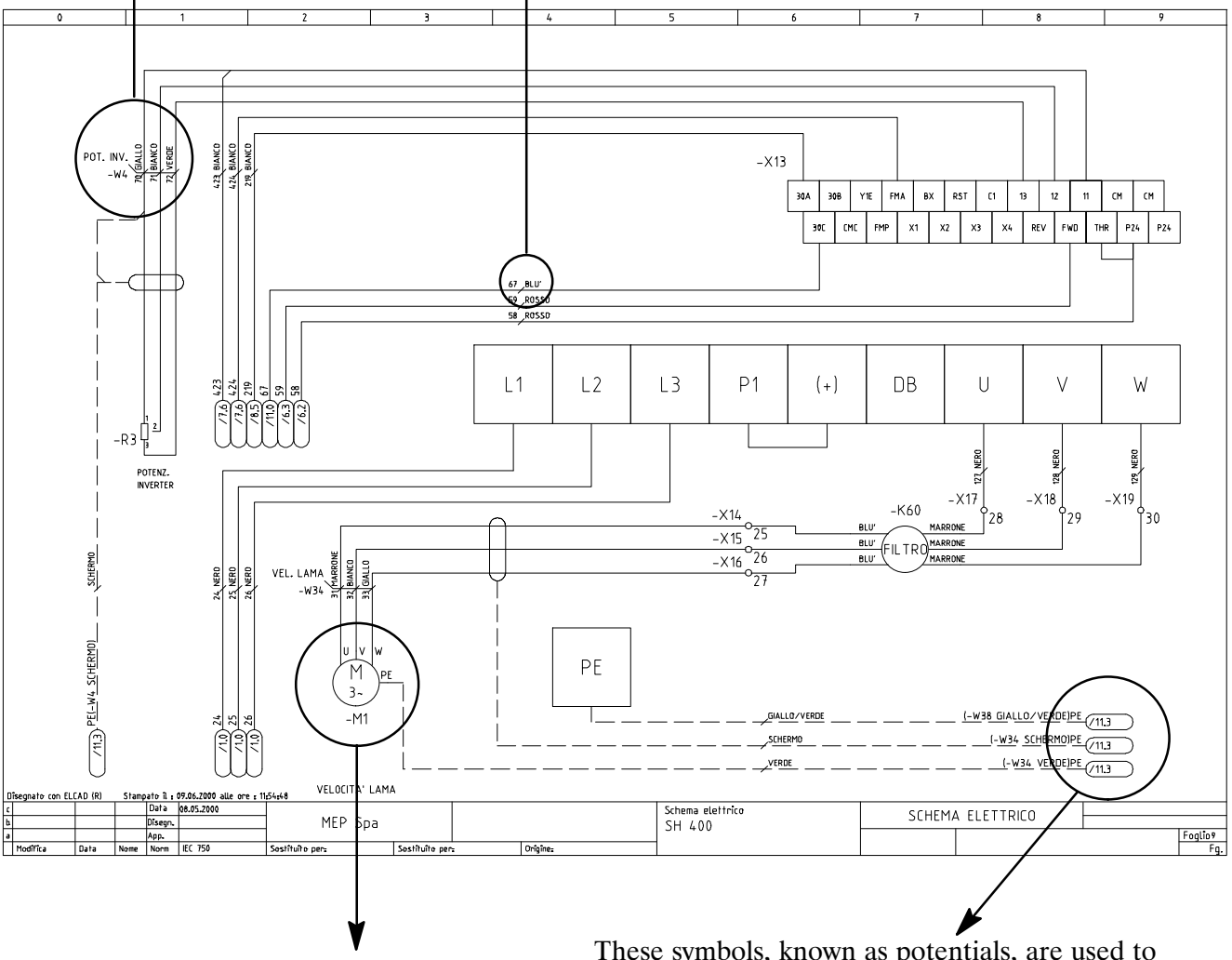


Indication of the page number

Each component in the wiring diagram is identified by a unique alphanumeric identification code, in compliance with regulations:

The wire is identified by the code −W4

This symbol identifies the wire with its relative number and colour



The motor is identified by the code −M1

These symbols, known as potentials, are used to provide page references: the first number indicates the page to be referred to, the second number, after the dot, identifies the column on that page; example /11.8 indicates that the wire continues on page no. 11 in column 8

The pages following the wiring diagrams contain the following lists:

1. components list (list of all components) and terminals list (list of all the terminals) with the following information:
   - in−house article code;
   - identification code;
   - reference, no. of the page and column on which it can be found;
   - description;
   - manufacturer.

ART. COD.	ID	PRES. REF	DESCRIPTION	MANUFACTURER
022.2151	−B1	/5.2	STRAIN GAUGE	DELTATEC

2. wires list (list of all wires) with the following information:
   - in−house article code;
   - identification code;
   - description;
   - section of wire (mm2);
   - colour of wire;
   - start: indicates the component (identification code and contact number) at which the wire starts;
   - end: indicates the component (identification code and contact number) at which the wire ends; e.g.

CODE	CABLE	DESCRIPTION	SECTION	NO.	COLOUR	START		END	
022.0141	−W7	RESET+EMER-GENZA	0.50	317	BIANCO	−S3	4	−K10	14

In this example, wire no. 317 white, identified as −W7, starts from contact no. 4 on component −S3, and ends at contact no. 14 on component −K10.
Enclosed below is Appendix D2 to European Standard EN 60204−1

D2−Letter codes used to designate the type of component

LETTER	TYPE OF COMPONENT	EXAMPLES	IDENTIFICATION OF THE APPLIANCE
A	Complex units	Laser Maser Regulator	A
B	Transducers converting a non electrical signal to an electrical signal and vice versa	Transistor amplifier IC amplifier Magnetic amplifier Valve amplifier Printed circuit board Drawer Rack	AD AJ AM AV AP AT AR
C	Capacitors		C
D	Binary operators, timing devices, storage devices	Digital integrated circuits and devices: Delay line Bistable element Monostable element Recorder Magnetic memory Tape or disk recorder	D
E	Various materials	Devices not specified in this table	E
F	Protective Devices	Lightning protectors Arrestors	F
		Instant action current threshold protector Delayed action current threshold protector Instant and delayed action current threshold protector Fuse Voltage threshold protector	FA FR FS FU FV
G	Generators, feeders	Rotating generators Crystal oscillators	G
		Accumulator battery Rotating or static frequency converter Power feeder	GB GF GS
H	Signaling Devices	Buzzer Optical signal, indicator light device	HA HL
J			
K	Relays, Contactors	Instant all or nothing relays or instant contactors Bistable relays or interdependent contactors (All or nothing contactors with mechanical contact or permanent magnet etc.) Contactors Polarised relays Reed relays All or nothing timed relays (timers)	KA KL KM KP KR KT

LETTER	TYPE OF COMPONENT	EXAMPLES	IDENTIFICATION OF THE APPLIANCE
L	Inductors, reactors	Inductor Stop coil Reactor	L
M	Motors		M
N	Analogue intgrated circuits	Operational amplifiers Hybrid analog/digital appliances	N
P	Measurement equipment, test devices	Indicator, recorder and integrator measurement devices Signal generators	P
Q	Power circuit switching appliances	Automatic switch Engine saver switch Knife switch	QF QM QS
R	Resistors	Fixed or variable resistor (rheostat)	R
S	Command or control devices	Selector or switch Button (including electronic proximity switch) Numerical all or nothing sensors (single step) of mechanical and electronic type: – Liquid level sensor –Pressure sensor Position sensor (including proximity) –Rotation sensor –Temperature probe	SA SB SL SP SQ SR ST
T	Transformers	Current transformer Control circuit supply transformer Power transformer Magnetic stabiliser Voltage transformer	TA TC TM TS TV
U	Modulators, converters	Discriminator Demodulator Frequency converter Coder Converter Inverter Telegraphic repeater	U
V	Electronic pipes, semiconductors	Electronic pipe Gas discharge pipe Diode Transistor Thyristor	V
W	Transmission lines, wave guides, antennas	Conductor Cable Bar Wave guide Wave guide directional coupler Dipole Parabolic antenna	W
X	Terminals, sockets, plugs	Connector bar Test plug Plug Socket Terminal connector band	XB XJ XP XS XT

LETTER	TYPE OF COMPONENT	EXAMPLES	IDENTIFICATION OF THE APPLIANCE
Y	Electrically operated mechanical appliances	Electromagnet Electromagnetic brake Electromagnetic clutch Magnetic table spindle Electromagnetic valve	YA YB YC YH YV
Z	Transformers, impedence adapters, equalizers, band limiters	Line equalizer Compresser Crystal filter	Z

LISTA FOGLI \ INDEX

Foglio Sheet	Descrizione Description	Revisione \ Revision 0 1 2 3 4 5 6 7 8 9	Foglio Sheet	Descrizione Description	Revisione \ Revision 0 1 2 3 4 5 6 7 8 9
1	INDICE CONTENUTI / CONTENT INDEX		27	MEP40 Espansione ALIM+CANOPEN / Mep40 Expansion supply+CanOpen	
2	LISTA SIMBOLI / Symbol key		28	INGRESSI DIGITALI MEP40 Espansione1 / Mep40 Expansion1 digital input	
3	LISTA SIMBOLI / Symbol key		29	INGRESSI DIGITALI MEP40 Espansione1 / Mep40 Expansion1 digital input	
4	ALIMENTAZIONE / Power supply		30	INGRESSI DIGITALI MEP40 Espansione2 / Mep40 Expansion2 digital input	
5	DISTRIBUZIONE POTENZA 400V / 400 V Power distribution		31	INGRESSI VELOCI MEP40 ESPANSIONE / Mep40 esxpansion input	
6	ALIMENTAZIONE MOTORI 400V / Motor power supply 400V		32	USCITE DIGITALI MEP40 ESPANSIONE / Mep40 esxpansion digital output	
7	ALIMENTAZIONE MOTORI 400V / Motor power supply 400V		33	USCITE DIGITALI MEP40 ESPANSIONE1 / Mep40 expansion1 digital output	
8	ALIMENTAZIONE MOTORE BRUSHLESS ASSE Y / Brushless motor Y axis power supply		34	USCITE DIGITALI MEP40 ESPANSIONE1 / Mep40 expansion1 digital output	
9	ALIMENTAZIONE MOTORE STEPPER ASSE X / Stepper motor X Axis power supply		35	USCITE DIGITALI MEP40 ESPANSIONE2 / Mep40 expansion2 digital output	
10	ALIMENTAZIONE MOTORE BRUSHLESS ROTAZIONE / Brushless motor Rotation power supply		36	INGRESSI ANALOGICI MEP40 ESPANSIONE / Mep40 esxpansion analogic input	
11	ALIMENTAZIONE AUSILIARI / Auxiliary circuit power supply		37	INGRESSI ANALOGICI MEP40 ESPANSIONE / Mep40 expansion analogic input	
12	MODULO DI SICUREZZA, CONNESSIONI 1 / Safety programmable module, connections1		38	INGRESSI LETTURA ENCODER SSI MEP40 / Encoder SSI Input MEP 40	
13	MODULO DI SICUREZZA, CONNESSIONI 2 / Safety programmable module, connections2		39	OPTIONAL INDUSTRY 4.0 / OPTIONAL INDUSTRY 4.0	
14	MODULO DI SICUREZZA, CONNESSIONI 3 / Safety programmable module, connections3		40	OPTIONAL + INTERFACCIA CB6001 / Optional + CB6001 Plug Intereface	
15	MODULO DI SICUREZZA, CONNESSIONI 4 / Safety programmable module, connections4		41	MORSETTIERA QUADRO / PANEL TERMINAL BOARD	
16	AUSILIARI INVERTER / Inverter auxiliary circuits		42	CAVO AUSILIARI ELETTROVALVOLE PNEUMATICHE / Auxiliary cable Pneumatic Valve	
17	AUSILIARI BRUSHLESS Asse Y / Brushless Y axis auxiliary circuits		43	GUAINE E ACCESSORI / SHEATHS AND ACCESSORIES	
18	AUSILIARI STEPPER / Stepper auxiliary circuits		44	LAYOUT_QUADRO_1 / Layout Board 1	
19	AUSILIARI BRUSHLESS ROTAZIONE / Head Rotation brushless Auxiliary		45	DISPOSIZIONE COMPONENTI	
20	COLLEGAMENTO SER. MODBUS / MODBUS CONNECTION		46	RIASSUNTIVO CAVI / CABLE SUMMARY	
21	MEP40 Unità Centrale / Mep40 Central Unit		47	RIASSUNTIVO CAVI / CABLE SUMMARY	
22	MEP40 ESPANSIONE 1 / Mep40 Expansion Unit 1		48	RIASSUNTIVO CAVI / CABLE SUMMARY	
23	MEP40 ESPANSIONE 2 / Mep40 Expansion Unit 2		49	RIASSUNTIVO CAVI / CABLE SUMMARY	
24	INGRESSI DIGITALI MEP40 / Mep40 digital input		50	RIASSUNTIVO CAVI / CABLE SUMMARY	
25	MEP40 COMANDI STEPPER TESTA / Mep40 HEAD SIGNALS STEPPER		51	RIASSUNTIVO CAVI / CABLE SUMMARY	
26	MEP40 ALIM+CANOPEN+485 / Mep40 supply+CanOpen+485		52	RIASSUNTIVO CAVI / CABLE SUMMARY	

Note :

REV.	MODIFICA	DATA	FIRME
R.0.3.	Added wire W9BR for shuttle X axis brake	12/02/2019	Solfanelli
R.0.2.	Upgrade wiring with HDT NTT drive (-U4), sheet..	22/11/2018	Solfanelli
0.1	upgrade I/O Gverturning CB6001 (Sheet. 21, 28, 29, 33, 49)	0517	Bartoli

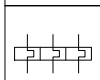
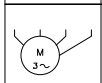
Dis. N.TI372CNC40050CE/4719
CAD SPAC
File TI372CNC/1.dwg
Data 20/11/2019

Impianto/Plant: TIGER 372 CNC LR R.C. 4.0, 400V/50Hz PLe, ISO14119

Denominazione/Title: INDICE CONTENUTI / CONTENT INDEX

Ordine/Requisition:
Commessa/Order: TI372CNCLR.RC
Esecutore/Executor: Mep S.p.A.

Foglio/Page: 1
Segue/Follow: 2
Ultimo/Last: 228

Sim.\Sym.	File	Descrizione\Description
	E7	Riscaldatore *RESISTANCE HEATER*
	F2	Termica tripolare *THREE-PHASE AUTOMATIC SWITCH*
	G1	Alimentatore Ac / Dc *Power Supply Ac/Dc*
	H5	Lampada zona taglio *CUTTING ZONE LIGTH*
	H8	Lampeggiante *FLASHING*
	H11	Led *LED*
	M2	Motore asincrono trifase *THREE-PHASE INDUCTOR MOTOR*
	M9	Motore asincrono monofase *TWO-PHASE INDUCTOR MOTOR*
	step13	Motore passo-passo *STEPPING MOTOR*
	P37	Orologio *CLOCK*
	Q1360	Int. automatico magnetotermico sezionatore tripolare *THREE-PHASE AUTOMATIC SWITCH*

Sim.\Sym.	File	Descrizione\Description
	R6	Potenziometro *POTENTIOMETER*
	S2	Comando a Pulsante NO *PUSH BOTTON NO*
	S4C	Pulsante di emergenza NC *EMERGENCY PUSH BOTTON NC*
	S7	Comando a pedale NO *PEDAL CONTROL BOTTON NO*
	S13	Fine corsa comandato a camma libero NO *LIMIT SWITCH NO*
	S14C	Fine corsa comandato a camma azionato NC *LIMIT SWITCH NC*
	S15C	Comandato dal livello di un fluido (livellostato) NC *WATER GAUGE NC*
	S18C	Comandato dalla temperatura (termostato) NC
	SPX08E	Finecorsa induttivo PNP (NO) *PROXIMITY PNP (NO)*
	Y1	Elettrovalvola aperta (in chiusura) *SOLENOID VALVE*
	Y1A	Elettrovalvola aperta (in chiusura) secondo solenoide *SOLENOID VALVE*

Sim.\Sym.	File	Descrizione\Description
	KA1	Bobina contattore *CONTACTOR COIL*
	BLK10	Trasformatore di potenza a due avvolgimenti *AUXILIARY TRANSFORMER WITH SHIELD*
	BLK11	Trasformatore di potenza a due avvolgimenti *AUXILIARY TRANSFORMER WITH SHIELD*
	T2	Trasformatore ausiliario *AUXILIARY TRANSFORMER*
	BLK12	Inverter (potenza) *INVERTER (POWER)*
	BLK13	Azionamento (potenza) *DRIVER (POWER)*
	SEL-ECO	Azionamento (potenza) *DRIVER (POWER)*
	BLK14	Inverter (comando) *INVERTER (COMMAND)*
	BLK15	Azionamento (comando) *DRIVER (COMMAND)*
	BLK42	Raccordo tubo corrugato *CONNECTOR FOR CORRUGATED PIPE*
	BLK43	Tubo corrugato *CORRUGATED PIPE*

REV.	MODIFICA	DATA	FIRME
R.0.3.	Added wire W9BR for shuttle X axis brake	12/02/2019	Solfanelli
R.0.2.	Upgrade wiring with HDT NTT drive (-U4), sheet..	22/11/2018	Solfanelli
0.1	upgrade I/O Overturning CB6001 (Sheet. 21, 28, 29, 33, 49)	0517	Bartoli

Dis. N. TI372CNC40050CE/4719
CAD SPAC
File TI372CNC/1.dwg
Data 20/11/2019

Impianto/Plant
TIGER 372 CNC LR R.C. 4.0, 400V/50Hz PLe, ISO14119

Denominazione/Title
LISTA SIMBOLI
Symbol key

Ordine/Requisition
Commessa/Order TI372CNCLR.RC
Esecutore/Executor Mep S.p.A.

Foglio/Page 2
Segue/Follow 3
Ultimo/Last 228

Sim.\Sym.	File	Descrizione\Description
	BLK45	Riduzione PG *PG REDUCTION*
	BLK56	Terminale a puntale *TERMINAL*
	BLK57	Filo unipolare *WIRE*
	BLK58	Fascette plastiche di fissaggio *PLASTIC CLAMP*
	BLK60	Terminale a occhiello *TERMINAL*
	BLK66	Sacchetto portafusibili *BAG FUSE*
	BLK26	Connettore Ev in AC *SOLENOID VALVE CONNECTOR AC*
	CONN-EV	Connettore Ev in DC *SOLENOID VALVE CONNECTOR DC*
	CON-M17	Connettore encoder circolare *CIRCULAR ENCODER CONNECTOR*
	CON_CIR8	Connettore seriale circolare *CIRCULAR SERIAL CONNECTOR*
	ser-sel	Connettore seriale *CIRCULAR CONNECTOR*

Sim.\Sym.	File	Descrizione\Description
	CONN_D26	Connettore seriale tipo D *TIPE D SERIAL CONNECTOR*
	BLK4	Connettore seriale tipo RJ45 *TIPE RJ45 SERIAL CONNECTOR*
	ENC_SEL	Encoder motore *MOTOR ENCODER*
	ILME-F	Custodia connettore *CONNECTOR CASE*

Sim.\Sym.	File	Descrizione\Description

REV.	MODIFICA	DATA	FIRME
R.0.3.	Added wire W9BR for shuttle X axis brake	12/02/2019	Solfanelli
R.0.2.	Upgrade wiring with HDT NTT drive (-U4), sheet..	22/11/2018	Solfanelli
0.1	upgrade I/O Overturning CB6001 (Sheet. 21, 28, 29, 33, 49)	0517	Bartoli

Dis. N. TI372CNC40050CE/4719
CAD SPAC
File TI372CNC/1.dwg
Data 20/11/2019

Impianto/Plant
TIGER 372 CNC LR R.C. 4.0, 400V/50Hz PLe, ISO14119

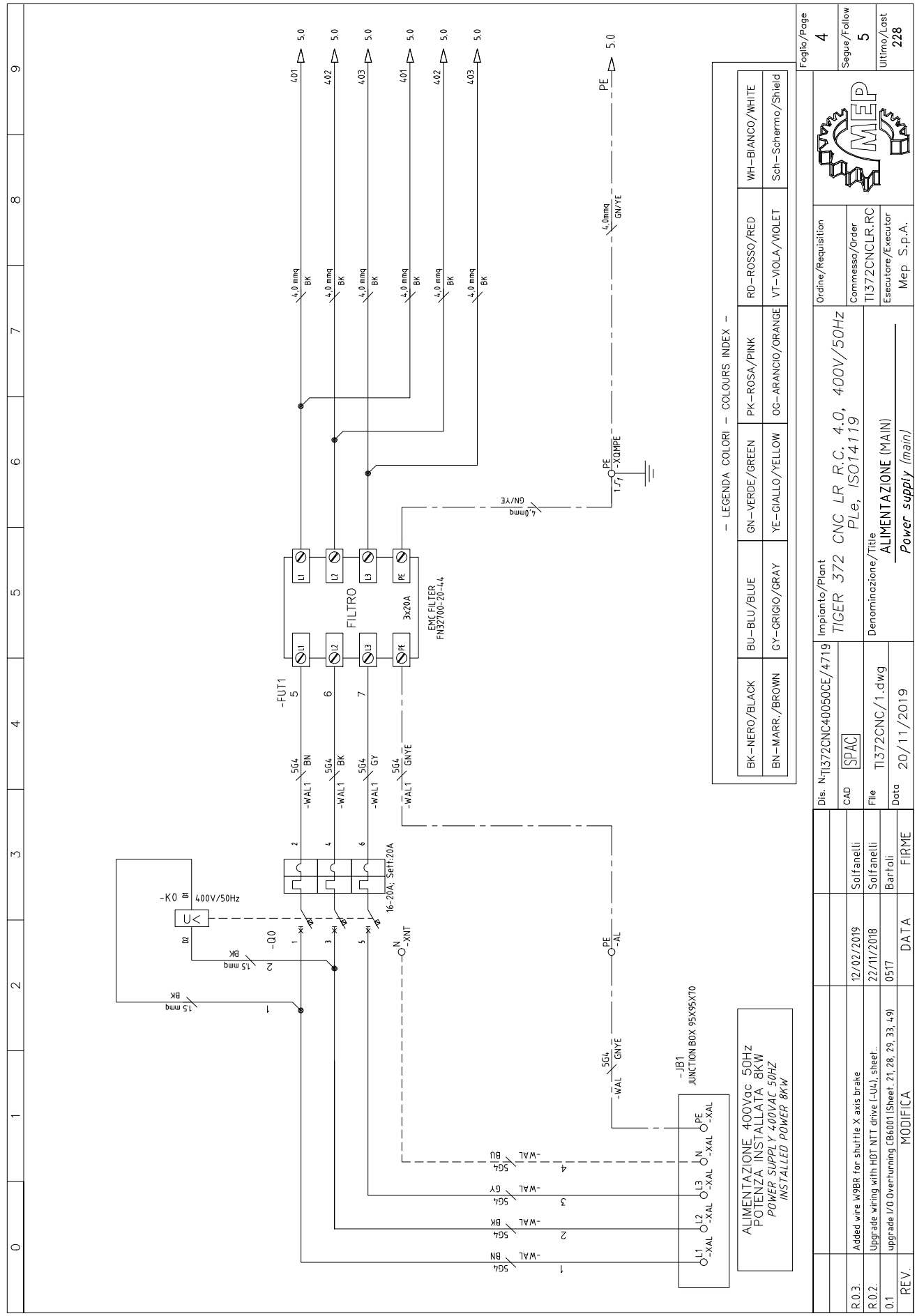
Denominazione/Title
LISTA SIMBOLI
Symbol key

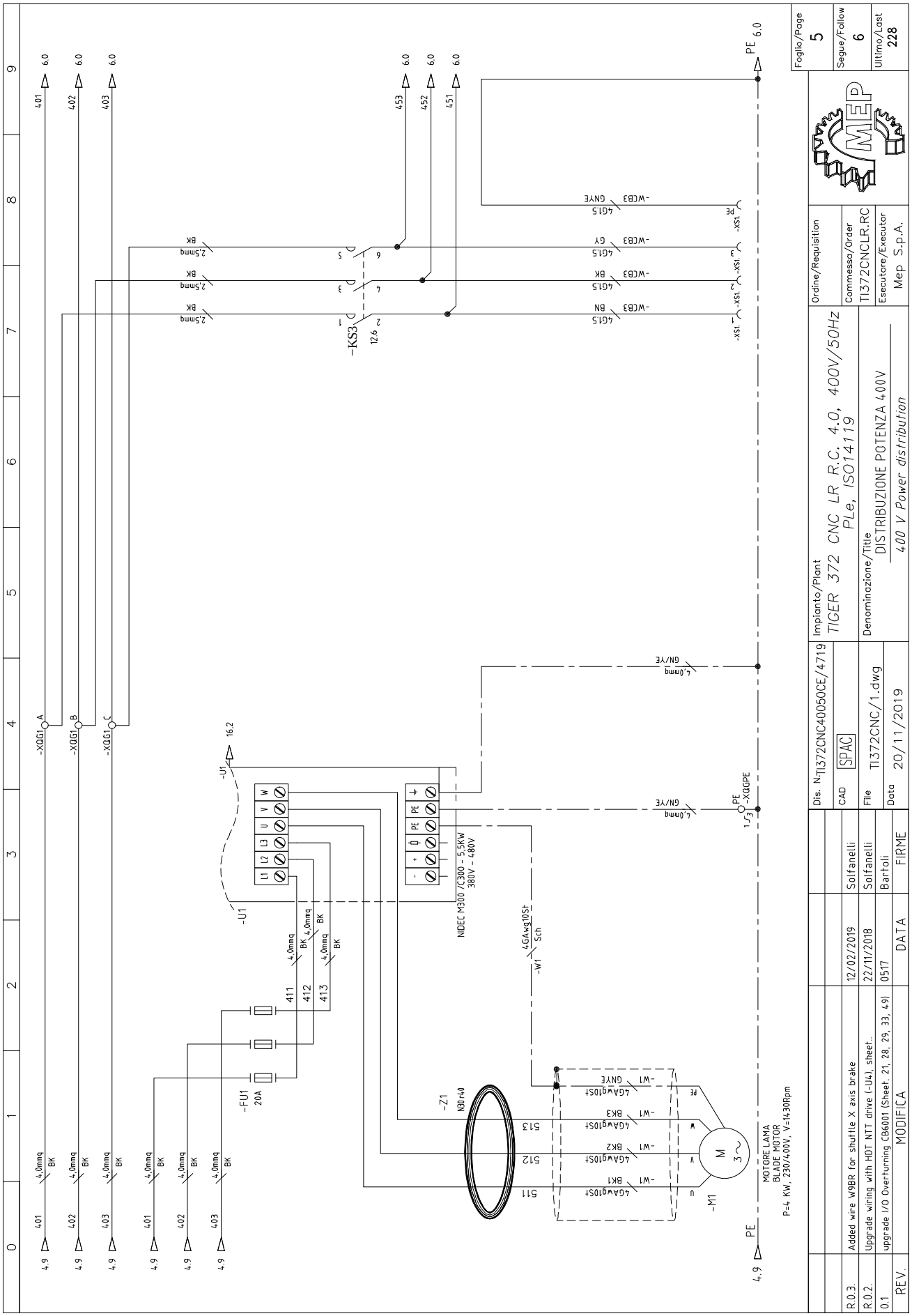
Ordine/Requisition

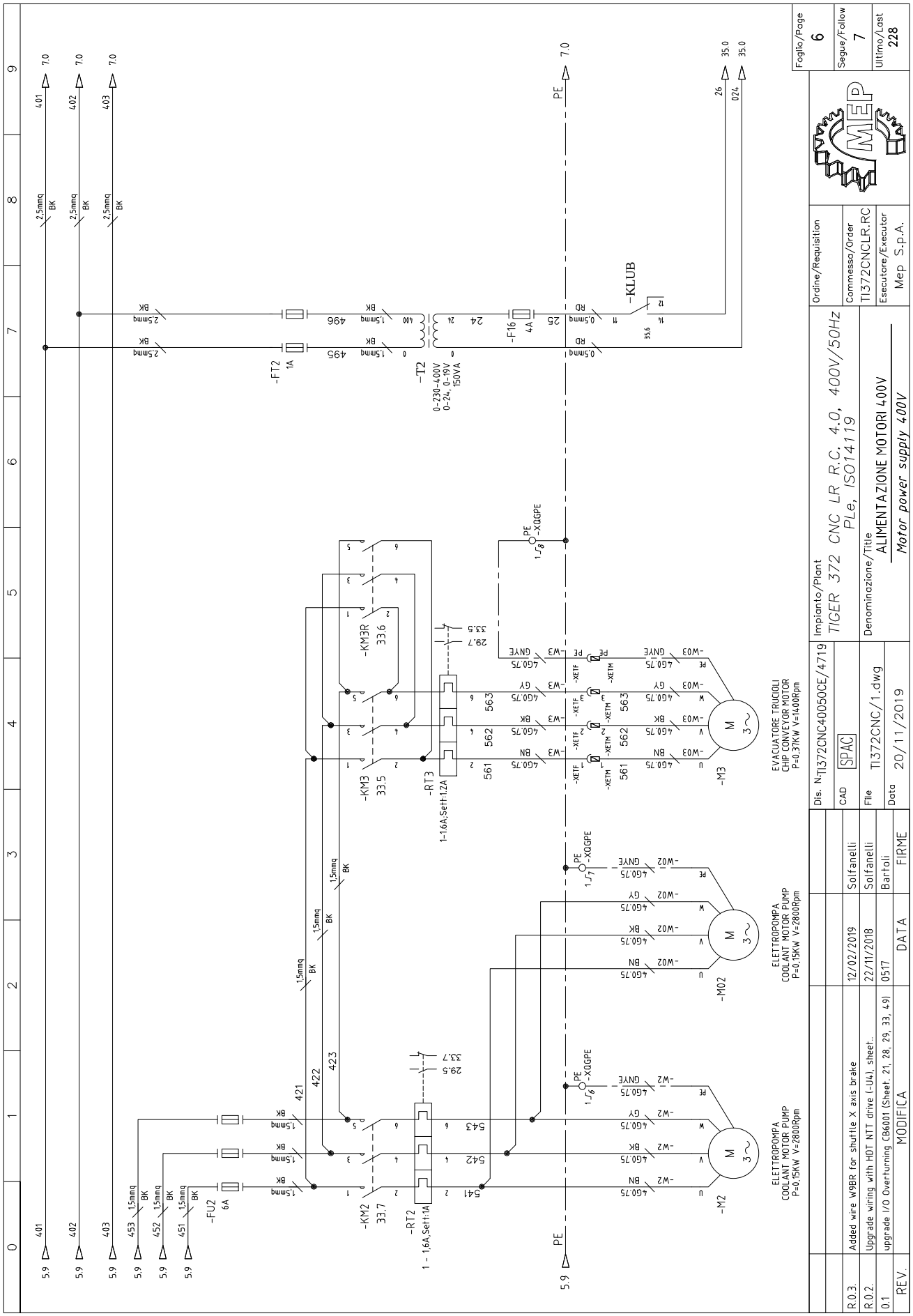
Commessa/Order
TI372CNCLR.RC

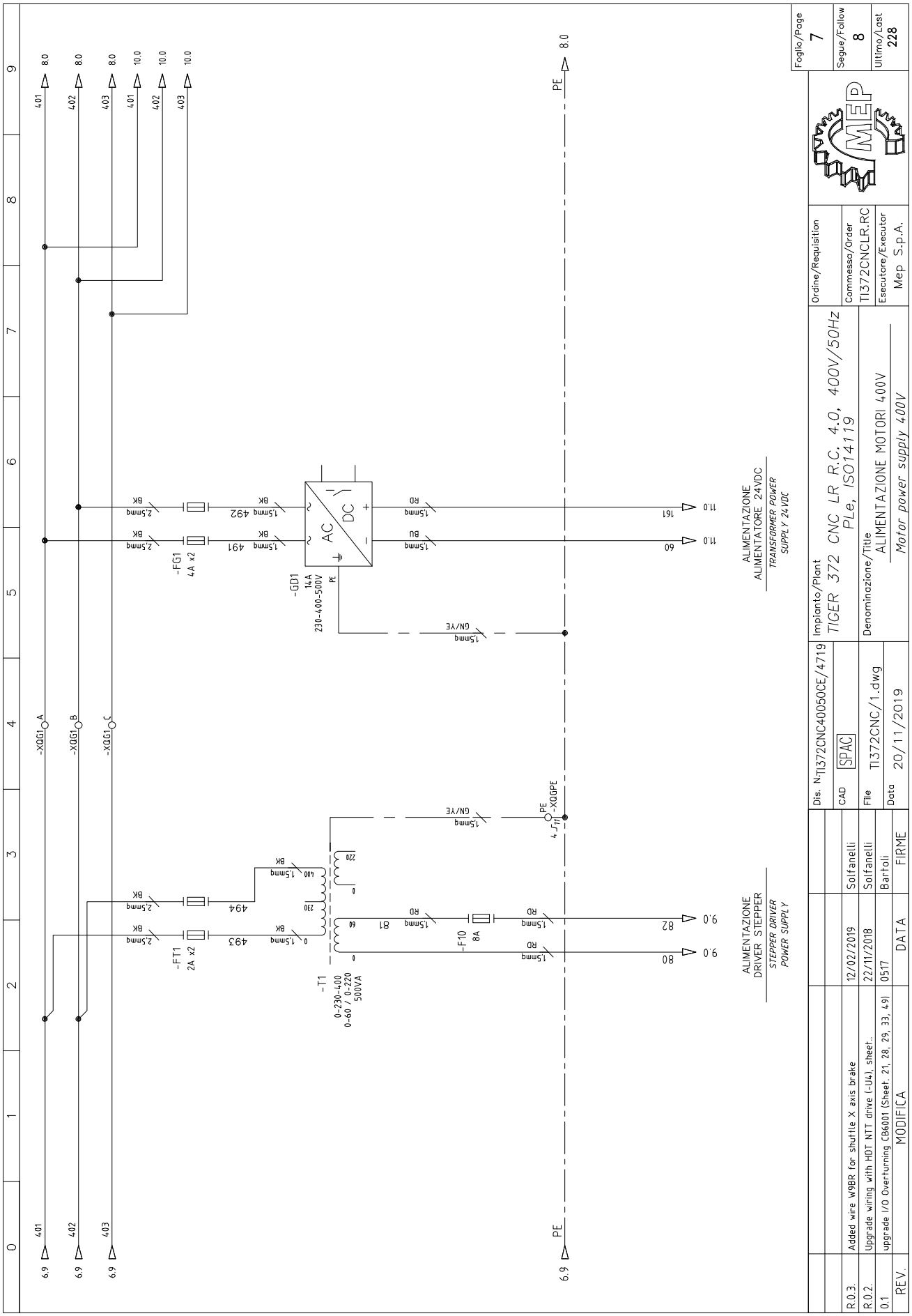
Esecutore/Executor
Mep S.p.A.

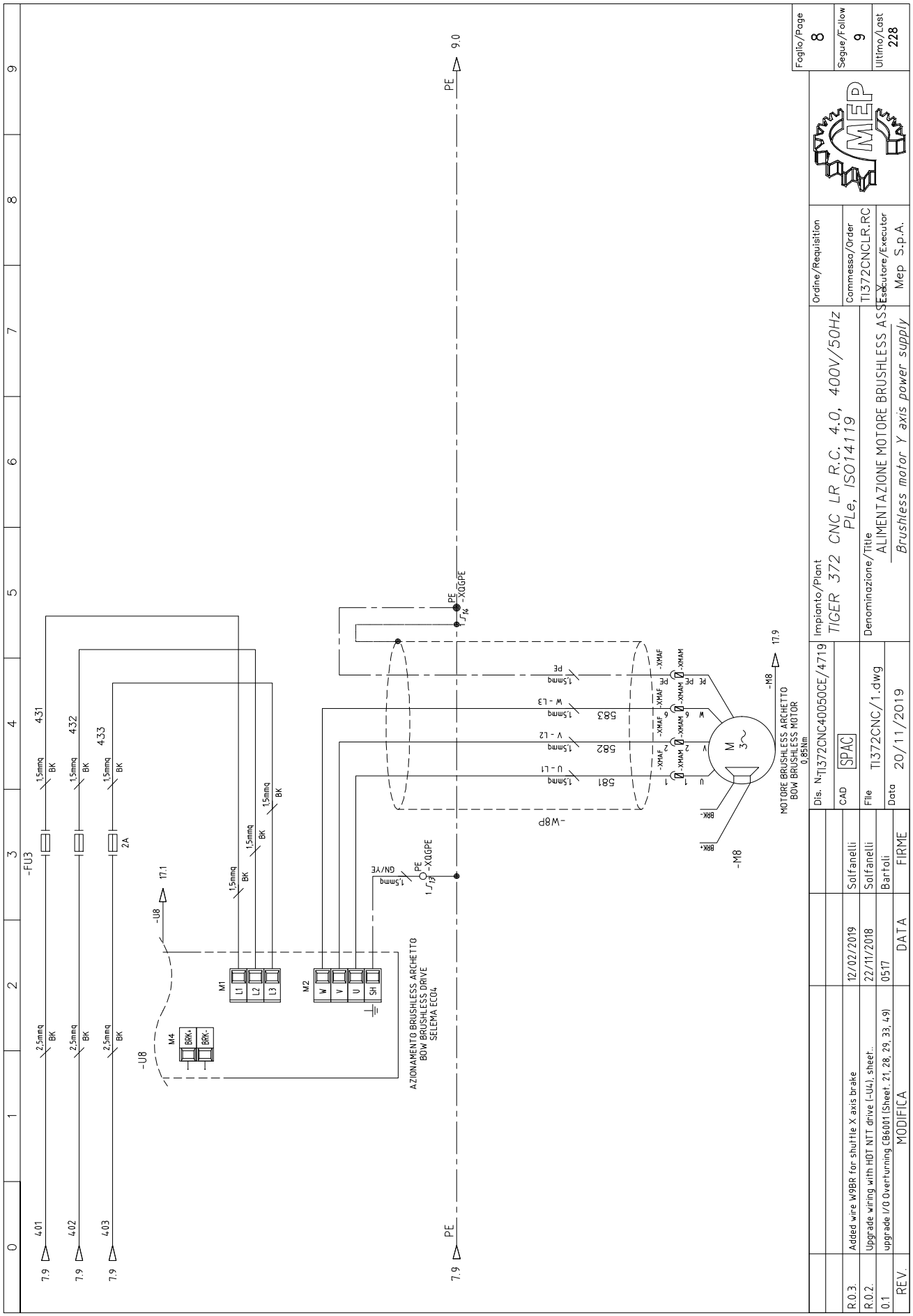
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Segue/Follow 4
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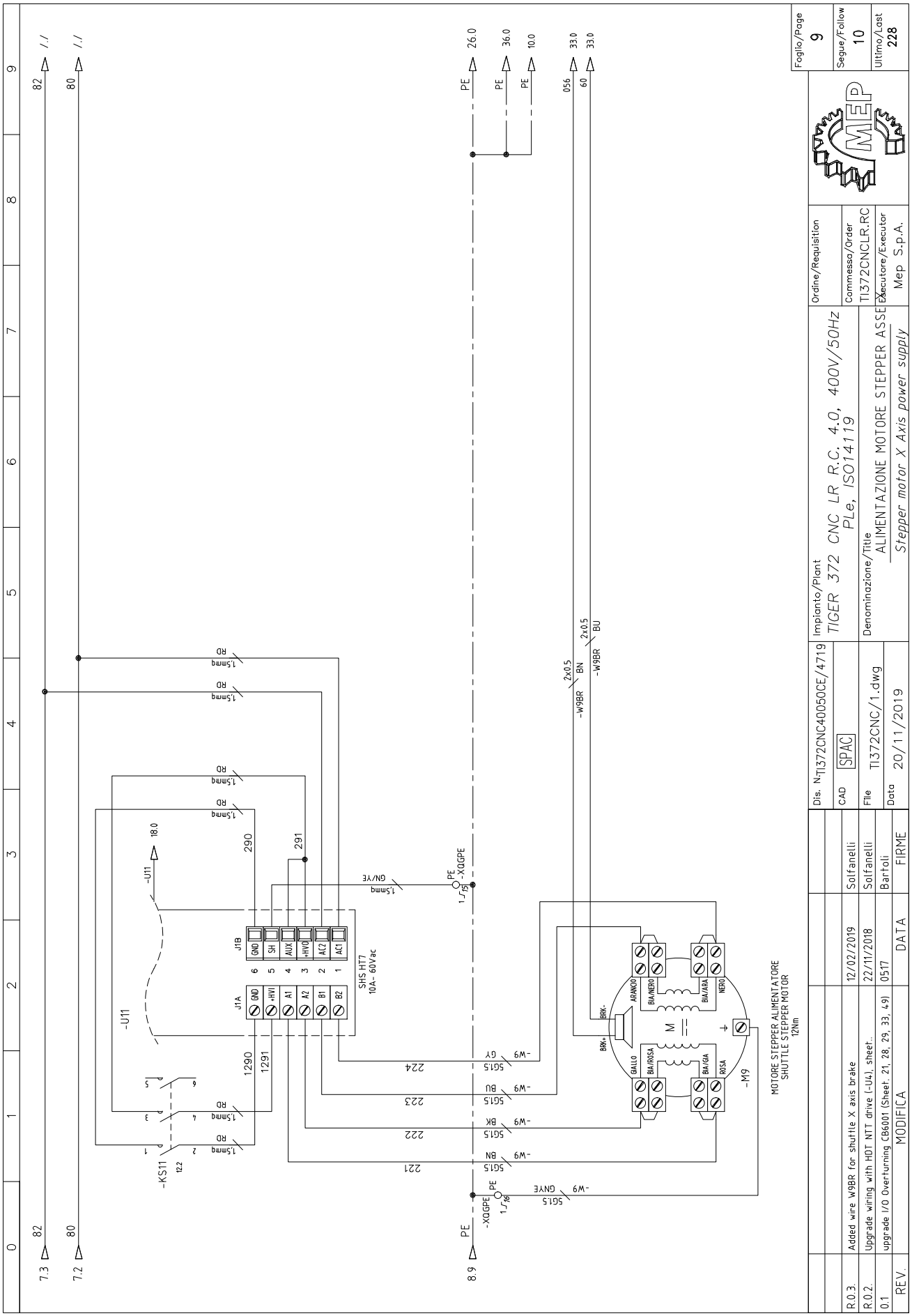

- LEGENDA COLORI - COLOURS INDEX -
BK-NERO/BLACK
BU-BLU/BLUE
GN-VERDE/GREEN
PK-ROSA/PINK
RD-ROSSO/RED
WH-BIANCO/WHITE
BN-MARR./BROWN
GY-GRIGIO/GRAY
YE-GIALLO/YELLOW
OG-ARANCIO/ORANGE
VT-VIOLA/VIOLET
Sch-Schermo/Shield
Dis. N-TI372CNC400S0CE/4719
Impianto/Plant
TIGER 372 CNC LR R.C. 4.0, PLe, 400V/50Hz
Denominazione/Title
ALIMENTAZIONE (MAIN)
Power supply (main)
Ordine/Requisition
Commessa/Order
TI372CNCLR.RC
Esecutore/Executor
Mep S.p.A.
Foglio/Page 4
Segue/Follow 5
Ultimo/Last 228
CAD SPAC
File TI372CNC/1.dwg
Data 20/11/2019
ALIMENTAZIONE 400Vac 50Hz
POTENZA INSTALLATA 8KW
POWER SUPPLY 400VAC 50HZ
INSTALLED POWER 8KW
-FUT1
FILTRO
EMC FILTER
FN32700-20-44
3x20A
-Q0
16-20A; Sett:20A
-K0
400V/50Hz
-JB1
JUNCTION BOX 95X95X70
-XNT
-XQMPE
-XAL
-WAL
REV.
MODIFICA
DATA
FIRME
R.0.3. Added wire W9BR for shuttle X axis brake 12/02/2019 Solfanelli
R.0.2. Upgrade wiring with HDT NTT drive (-U4), sheet... 22/11/2018 Solfanelli
0.1 upgrade I/O Overturning CB6001 (Sheet. 21, 28, 29, 33, 49) 0517 Barfoli

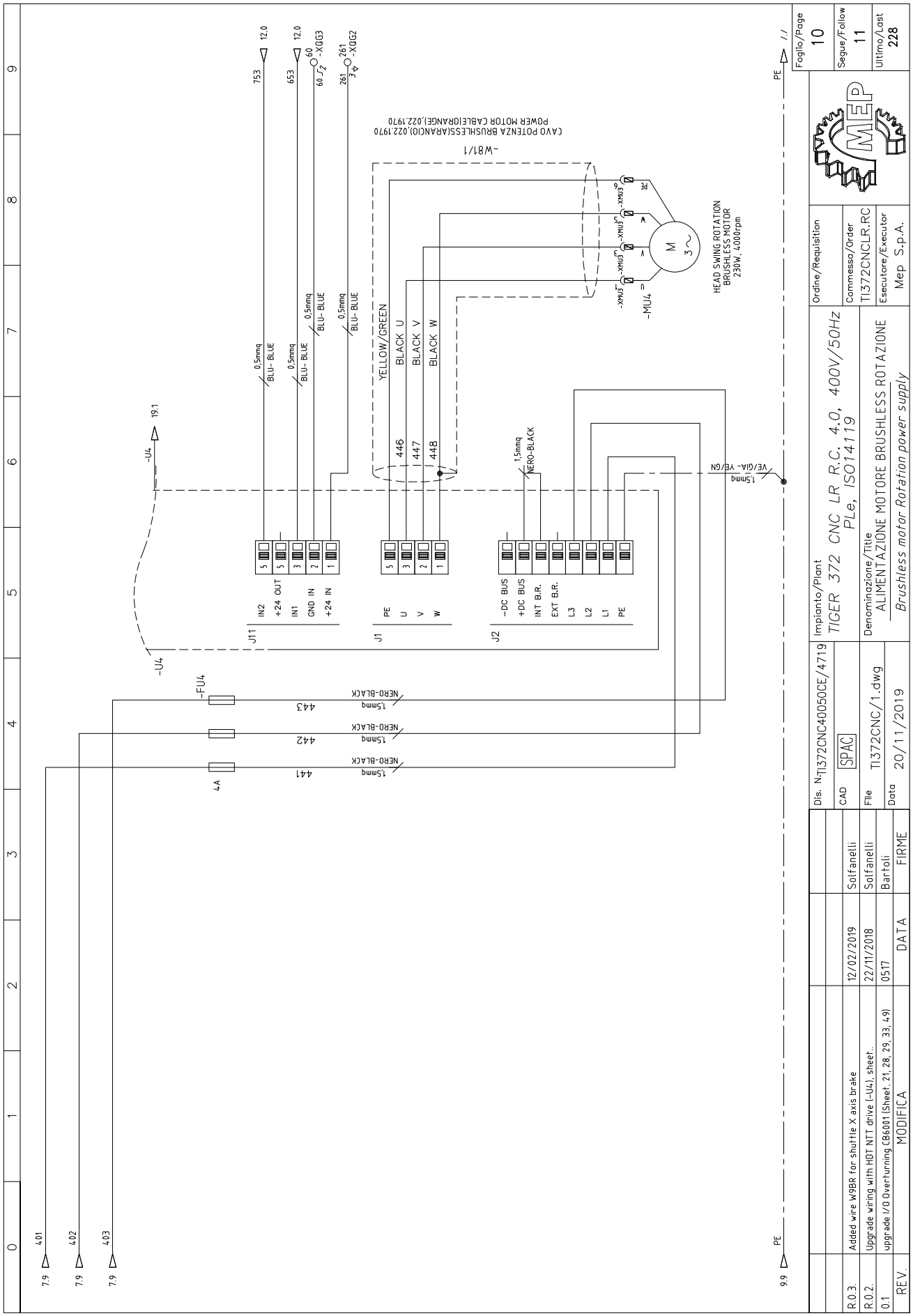

Foglio/Page 5
Segue/Follow 6
Ultimo/Last 228
Ordine/Requisition
Commessa/Order TI372CNCLR.RC
Esecutore/Executor Mep S.p.A.
Impianto/Plant TIGER 372 CNC LR R.C. 4.0, 400V/50Hz PLe, ISO14119
Denominazione/Title DISTRIBUZIONE POTENZA 400V
400 V Power distribution
Dis. N°TI372CNC400S0CE/4719
CAD SPAC
File TI372CNC/1.dwg
Data 20/11/2019
R.0.3. Added wire W9BR for shuttle X axis brake 12/02/2019 Solfanelli
R.0.2. Upgrade wiring with HDT NTT drive (-U4), sheet.. 22/11/2018 Solfanelli
0.1 upgrade I/O Overturning CB6001 (Sheet: 21, 28, 29, 33, 49) 0517 Bartoli
REV. MODIFICA DATA FIRME
-XGG1
-KS3
-U1
-FU1 20A
-Z1 N30r40
-M1
-W1
NIDEC M300 /C300 - 5,5KW 380V - 480V
MOTORE LAMA BLADE MOTOR P=4 KW, 230/400V, V=14.30Rpm
-XGGPE
-WCB3
PE

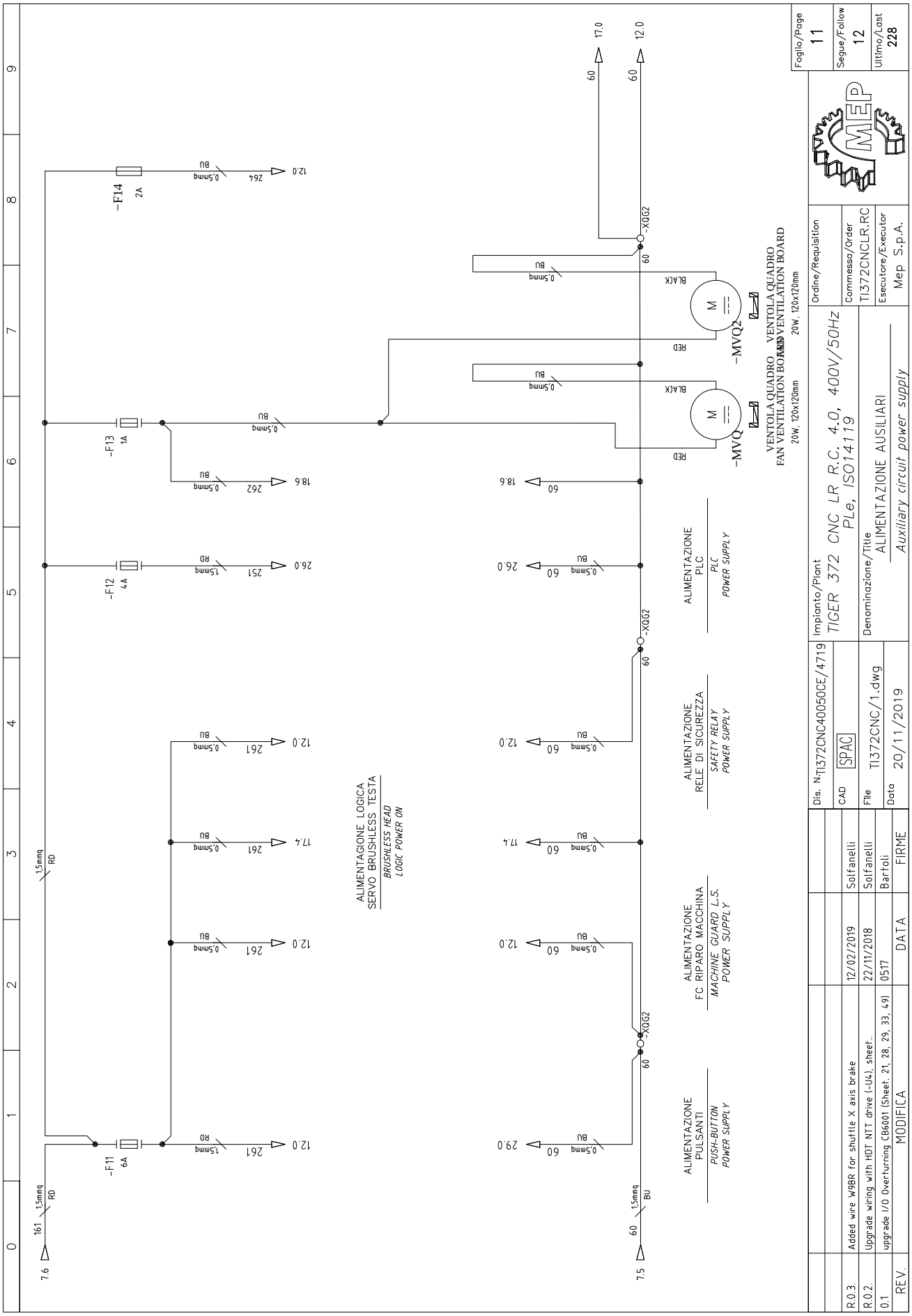

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Ultimo/Last 228
Ordine/Requisition
Commessa/Order TI372CNCLR.RC
Esecutore/Executor Mep S.p.A.
Impianto/Plant TIGER 372 CNC LR R.C. 4.0, 400V/50Hz PLe, ISO14119
Denominazione/Title ALIMENTAZIONE MOTORI 400V
Motor power supply 400V
Dis. N-TI372CNC400SOCE/4719
CAD SPAC
File TI372CNC/1.dwg
Data 20/11/2019
-KLUB
-F16 4A
-T2 0-230-400V 0-24, 0-19V 150VA
-FT2 1A
-FU2 6A
-KM2 33.7
-KM3 33.5
-KM3R 33.6
-RT2 1 - 1,6A,Set:1A
-RT3 1-1,6A,Set:1,2A
-M2
-M3
-M02
ELETTROPOMPA COOLANT MOTOR PUMP P=0,15KW V=2800Rpm
EVACUATORE TRUCIOLI CHIP CONVEYOR MOTOR P=0,37KW V=1400Rpm
PE 7.0
5.9
REV. MODIFICA DATA FIRME
0.1 upgrade I/O Overturning CB6001 (Sheet: 21, 28, 29, 33, 49) 0517 Barfoli
R.0.2. Upgrade wiring with HDT NTT drive (-U4).. sheet.. 22/11/2018 Solfanelli
R.0.3. Added wire W9BR for shuttle X axis brake 12/02/2019 Solfanelli

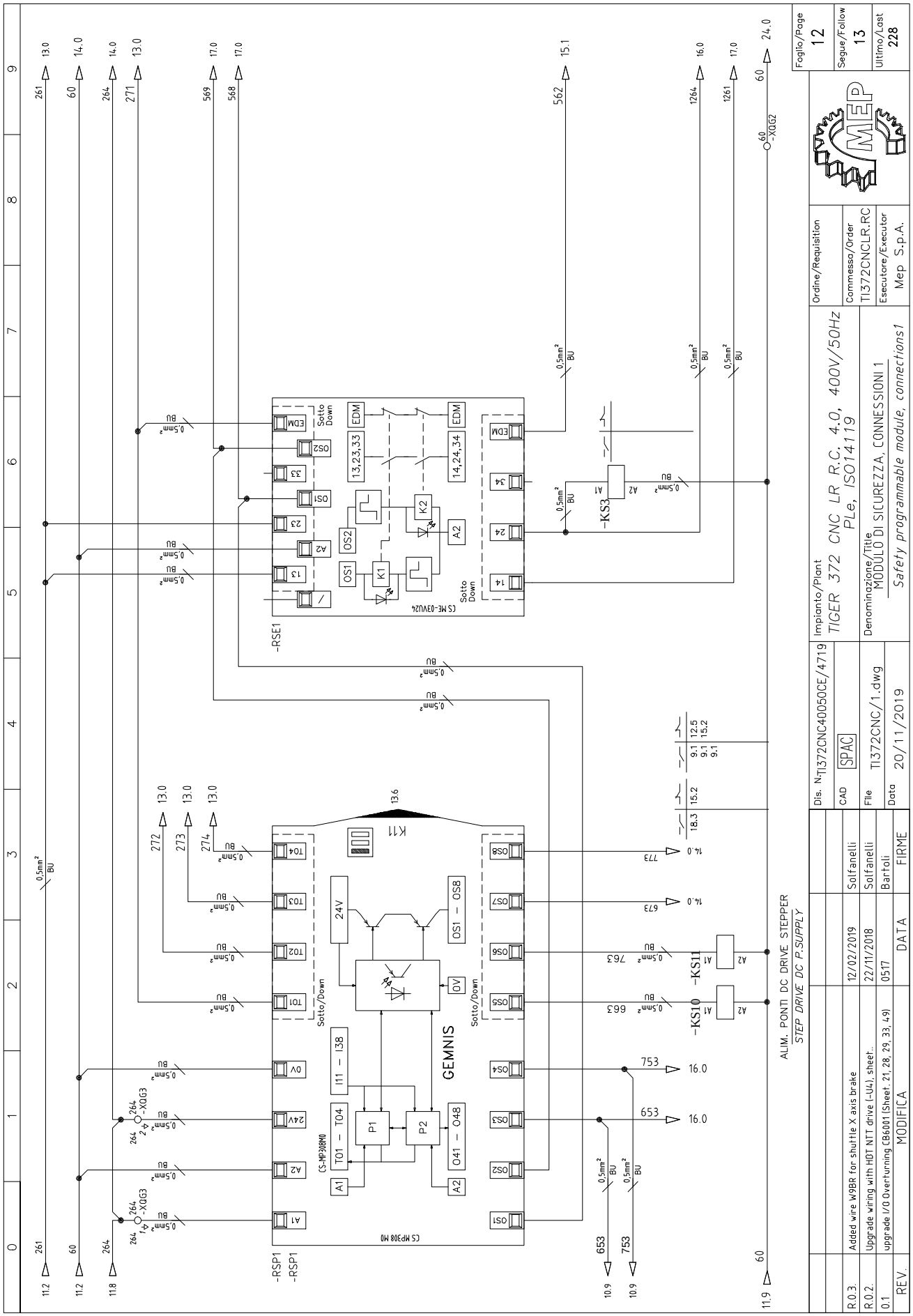

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Ultimo/Last 228
Ordine/Requisition
Commessa/Order TI372CNCLR.RC
Esecutore/Executor Mep S.p.A.
Impianto/Plant TIGER 372 CNC LR R.C. 4.0, 400V/50Hz PLe, ISO14119
Denominazione/Title ALIMENTAZIONE MOTORI 400V
Motor power supply 400V
Dis. N° TI372CNC400500CE/4719
CAD SPAC
File TI372CNC/1.dwg
Data 20/11/2019
R.0.3. Added wire W98R for shuttle X axis brake 12/02/2019 Solfanelli
R.0.2. Upgrade wiring with HDT NTT drive (-U4), sheet.. 22/11/2018 Solfanelli
0.1 upgrade I/O Overturning CB6001 (Sheet: 21, 28, 29, 33, 49) 0517 Bartoli
REV. MODIFICA DATA FIRME
ALIMENTAZIONE ALIMENTATORE 24VDC
TRANSFORMER POWER SUPPLY 24 VDC
ALIMENTAZIONE DRIVER STEPPER
STEPPER DRIVER POWER SUPPLY
-GD1 14A 230-400-500V
-FG1 4A x2
-FT1 2A x2
-T1 0-230-400 0-60 / 0-220 500VA
-F10 8A
-XQG1
-XQGPE
PE

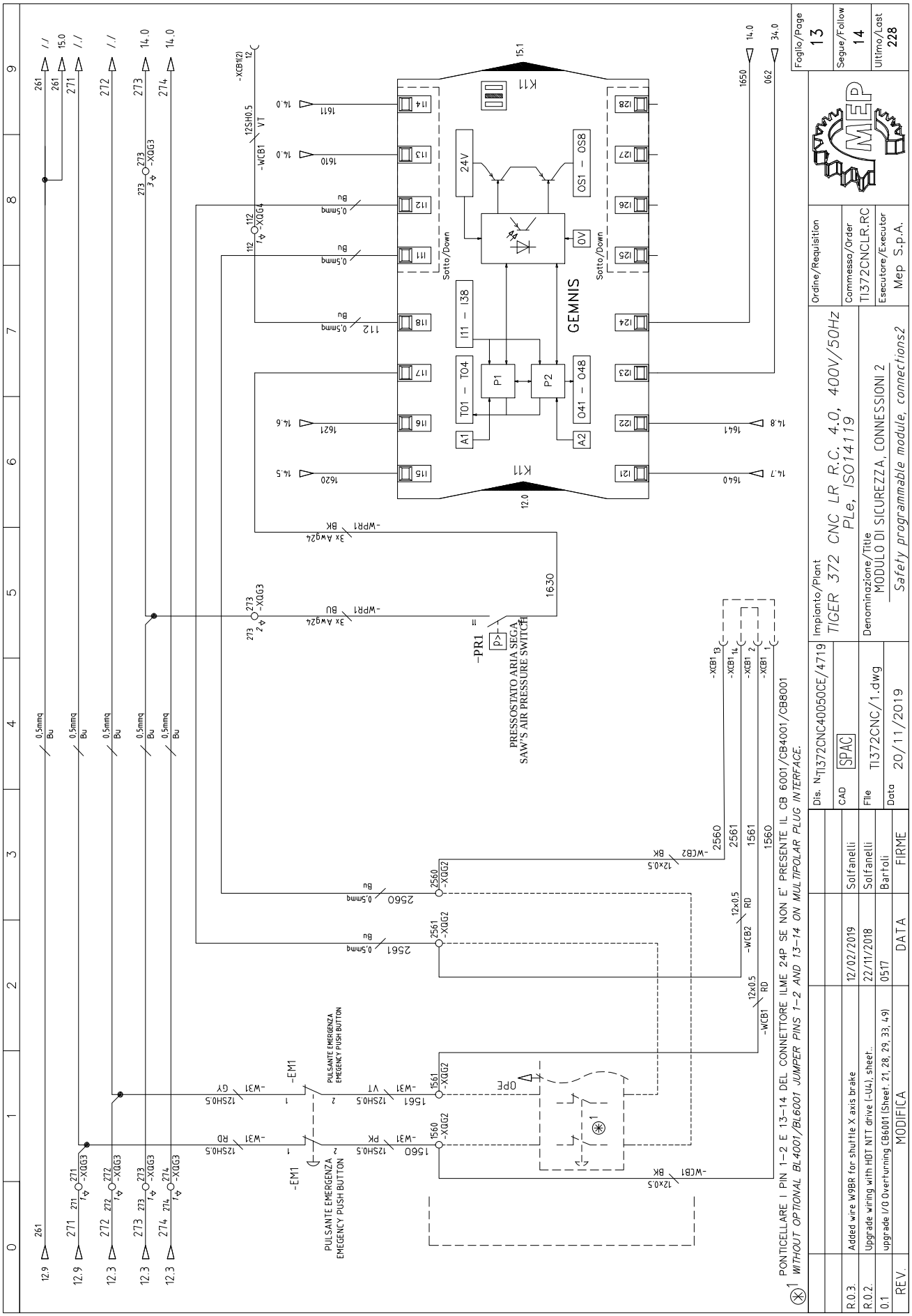

-FU3
2A
401
402
403
431
432
433
2,5mmq
1,5mmq
BK
-U8
17.1
M1
M2
M4
L1
L2
L3
W
V
U
SH
BRK+
BRK-
AZIONAMENTO BRUSHLESS ARCHETTO
BOW BRUSHLESS DRIVE
SELEMA EC04
GN/YE
PE
-XQGPE
-W8P
581
582
583
-XMAF
-XMAM
-M8
17.9
MOTORE BRUSHLESS ARCHETTO
BOW BRUSHLESS MOTOR
0,95Nm
PE
9.0
7.9
Foglio/Page 8
Segue/Follow 9
Ultimo/Last 228
Impianto/Plant
TIGER 372 CNC LR R.C. 4.0, 400V/50Hz
PLe, ISO14119
Ordine/Requisition
Commessa/Order
TI372CNCLR.RC
Esecutore/Executor
Mep S.p.A.
Denominazione/Title
ALIMENTAZIONE MOTORE BRUSHLESS ASSE Y
Brushless motor Y axis power supply
Dis. N-TI372CNC40050CE/4719
CAD SPAC
File TI372CNC/1.dwg
Data 20/11/2019
R.0.3. Added wire W9BR for shuttle X axis brake 12/02/2019 Solfanelli
R.0.2. Upgrade wiring with HDT NTT drive (-U4), sheet... 22/11/2018 Solfanelli
0.1 upgrade I/O Overturning CB6001 (Sheet. 21, 28, 29, 33, 49) 0517 Barfoli
REV. MODIFICA DATA FIRME

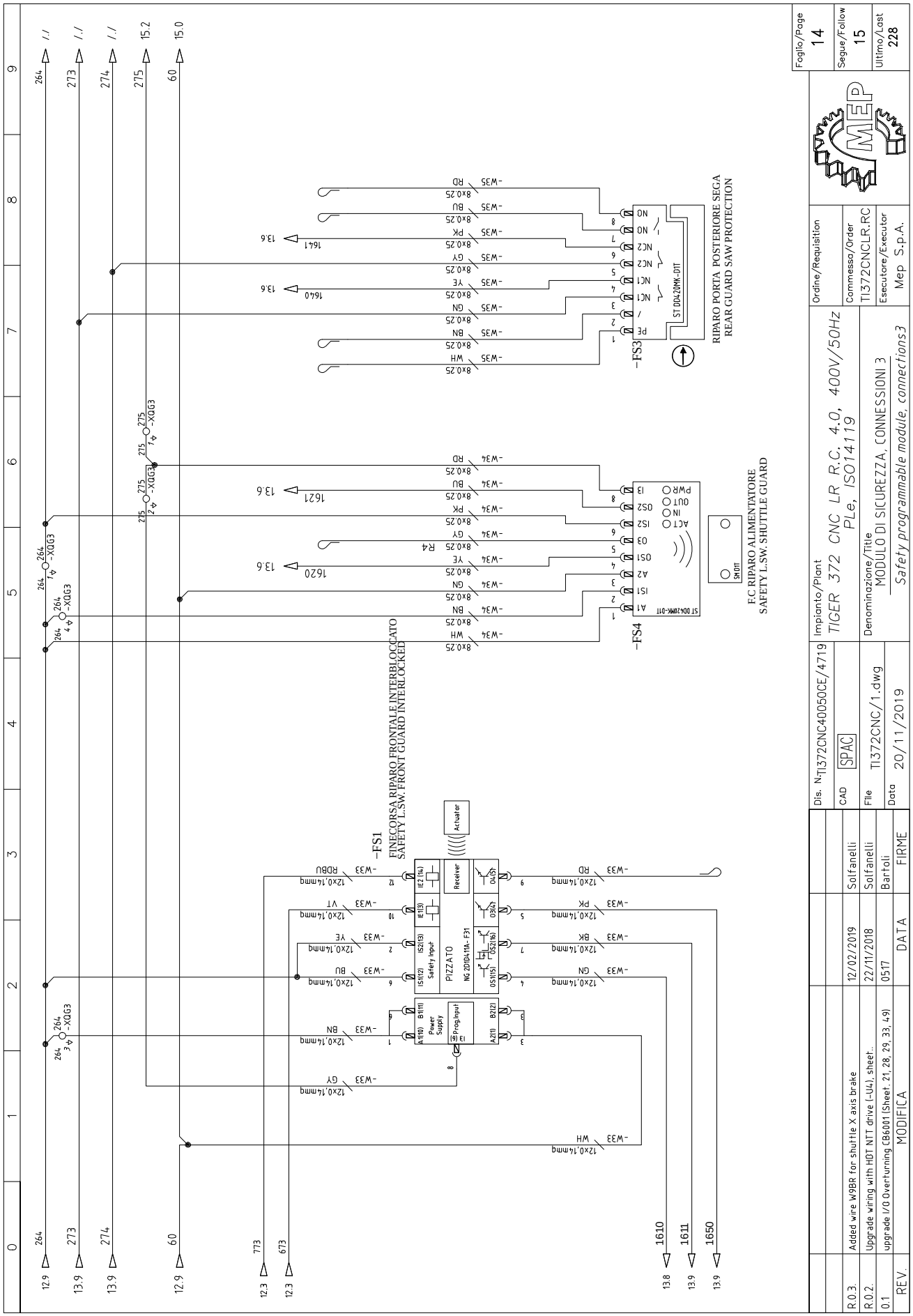

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Segue/Follow 10
Ultimo/Last 228
Ordine/Requisition
Commessa/Order TI372CNCLR.RC
Esecutore/Executor Mep S.p.A.
Impianto/Plant TIGER 372 CNC LR R.C. 4.0, 400V/50Hz PLe, ISO14119
Denominazione/Title ALIMENTAZIONE MOTORE STEPPER ASSE
Stepper motor X Axis power supply
Dis. N° TI372CNC400S0CE/4719
CAD SPAC
File TI372CNC/1.dwg
Data 20/11/2019
MOTORE STEPPER ALIMENTATORE SHUTTLE STEPPER MOTOR 12Nm
SHS HT7 10A- 60Vac
R.0.3. Added wire W9BR for shuttle X axis brake 12/02/2019 Solfanelli
R.0.2. Upgrade wiring with HDT NTT drive (-U4), sheet.. 22/11/2018 Solfanelli
0.1 upgrade I/O Overturning CB6001 (Sheet: 21, 28, 29, 33, 49) 0517 Bartoli
REV. MODIFICA DATA FIRME

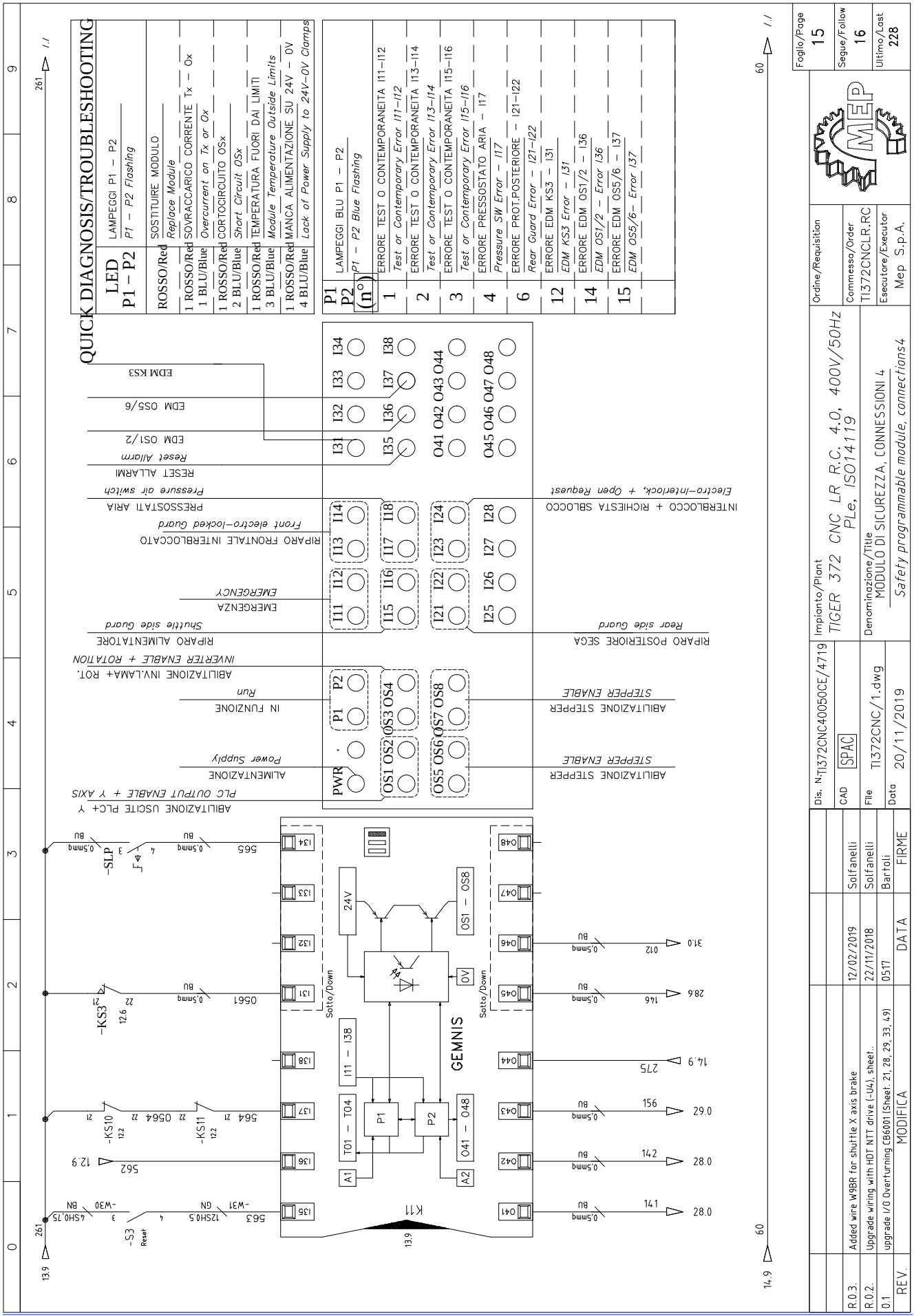

Foglio/Page 10
Segue/Follow 11
Ultimo/Last 228
Ordine/Requisition
Commessa/Order TI372CNCLR.RC
Esecutore/Executor Mep S.p.A.
Impianto/Plant TIGER 372 CNC LR R.C. 4.0, 400V/50Hz PLe, ISO14119
Denominazione/Title ALIMENTAZIONE MOTORE BRUSHLESS ROTAZIONE
Brushless motor Rotation power supply
Dis. N-TI372CNC40050CE/4719
CAD SPAC
File TI372CNC/1.dwg
Data 20/11/2019
R.0.3. Added wire W9BR for shuttle X axis brake 12/02/2019 Solfanelli
R.0.2. Upgrade wiring with HDT NTT drive (-U4), sheet... 22/11/2018 Solfanelli
0.1 upgrade I/O Overturning CB6001 (Sheet. 21, 28, 29, 33, 49) 0517 Barfoli
REV. MODIFICA DATA FIRME
-U4
-FU4
-MU4
-W81/1
CAVO POTENZA BRUSHLESS(ARANCIO).022.1970
POWER MOTOR CABLE(ORANGE).022.1970
HEAD SWING ROTATION
BRUSHLESS MOTOR
230W, 4000rpm
YELLOW/GREEN
BLACK U
BLACK V
BLACK W
BLU- BLUE
NERO-BLACK
J11
J1
J2
IN2
+24 OUT
IN1
GND IN
+24 IN
PE
U
V
W
-DC BUS
+DC BUS
INT B.R.
EXT B.R.
L3
L2
L1
PE
401
402
403
441
442
443
446
447
448
753
653
60
261
PE

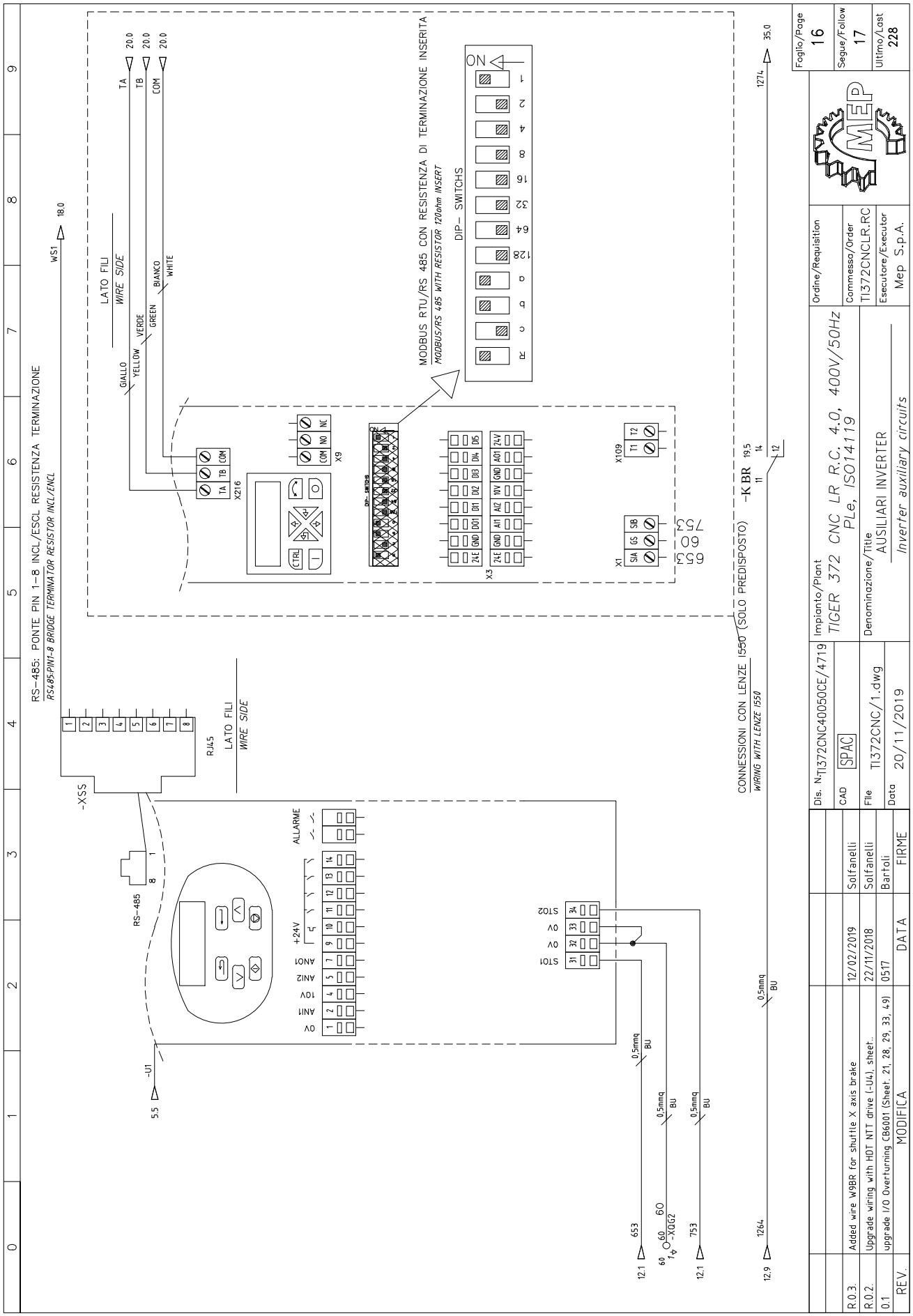

-F14 2A
-F13 1A
-F12 4A
-F11 6A
-MVQ2
-MVQ
VENTOLA QUADRO
FAN VENTILATION BOARD
20W, 120x120mm
-XQG2
ALIMENTAGIONE LOGICA
SERVO BRUSHLESS TESTA
BRUSHLESS HEAD
LOGIC POWER ON
ALIMENTAZIONE
PULSANTI
PUSH-BUTTON
POWER SUPPLY
ALIMENTAZIONE
FC RIPARO MACCHINA
MACHINE GUARD L.S.
POWER SUPPLY
ALIMENTAZIONE
RELE DI SICUREZZA
SAFETY RELAY
POWER SUPPLY
ALIMENTAZIONE
PLC
PLC
POWER SUPPLY
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Segue/Follow 12
Ultimo/Last 228
Dis. N° TI372CNC400500E/4719
CAD SPAC
File TI372CNC/1.dwg
Data 20/11/2019
Impianto/Plant
TIGER 372 CNC LR R.C. 4.0, 400V/50Hz
PLe, ISO14119
Denominazione/Title
ALIMENTAZIONE AUSILIARI
Auxiliary circuit power supply
Ordine/Requisition
Commessa/Order TI372CNCLR.RC
Esecutore/Executor Mep S.p.A.
R.0.3. Added wire W9BR for shuttle X axis brake 12/02/2019 Solfanelli
R.0.2. Upgrade wiring with HDT NTT drive (-U4), sheet.. 22/11/2018 Solfanelli
0.1 upgrade I/O Overturning CB6001 (Sheet: 21, 28, 29, 33, 49) 0517 Bartoli
REV. MODIFICA DATA FIRME

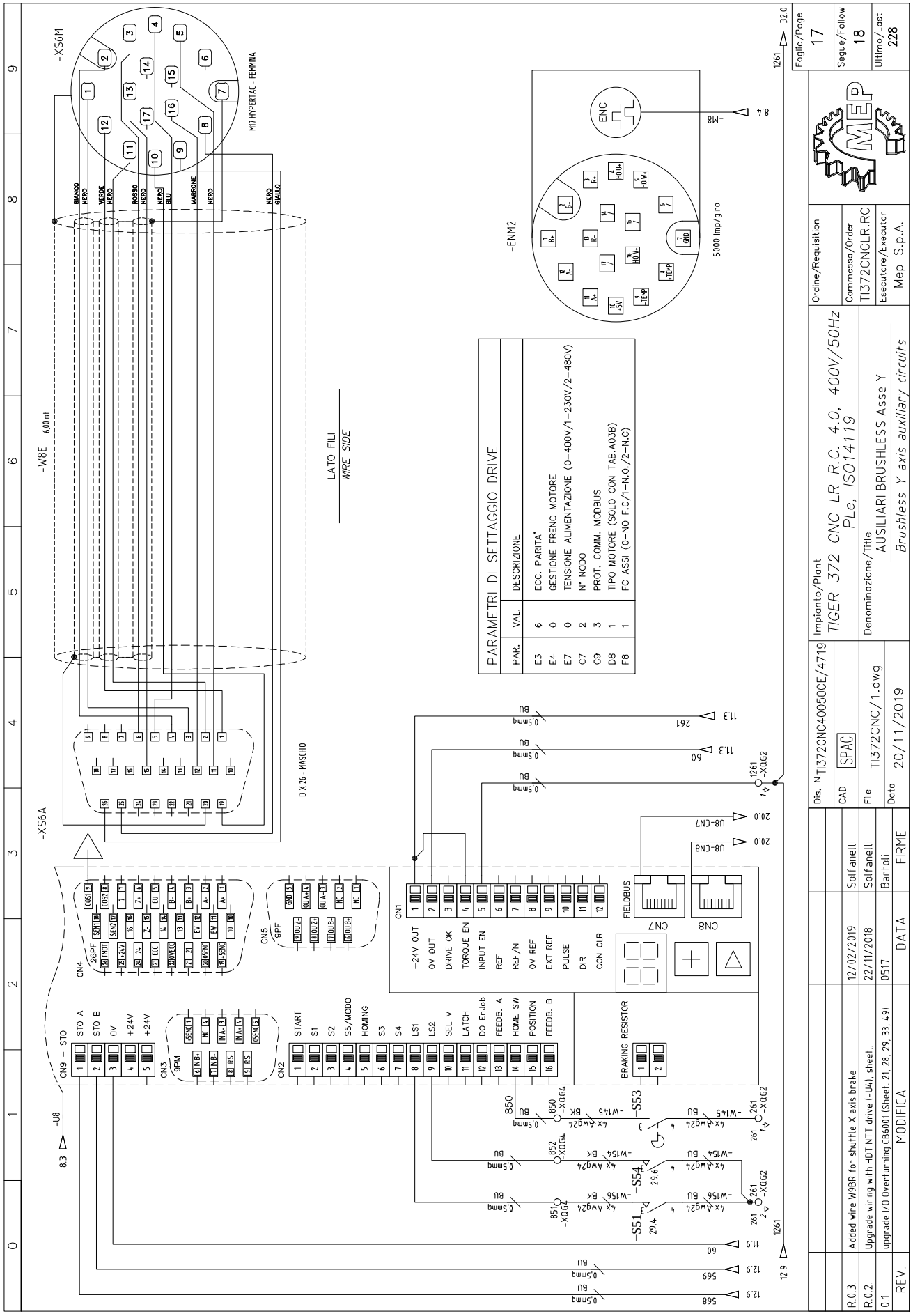

GEMNIS
CS MP308 M0
CS ME-03VU24
-RSP1
-RSE1
-KS10
-KS11
-KS3
-XQG2
-XQG3
ALIM. PONTI DC DRIVE STEPPER
STEP DRIVE DC P.SUPPLY
Impianto/Plant
TIGER 372 CNC LR R.C. 4.0, 400V/50Hz
PLe, ISO14119
Denominazione/Title
MODULO DI SICUREZZA, CONNESSIONI 1
Safety programmable module, connections1
Commessa/Order
TI372CNCLR.RC
Esecutore/Executor
Mep S.p.A.
Foglio/Page
12
Segue/Follow
13
Ultimo/Last
228
Dis. N-TI372CNC400S0CE/4719
CAD
SPAC
File
TI372CNC/1.dwg
Data
20/11/2019
R.0.3. Added wire W9BR for shuttle X axis brake 12/02/2019 Solfanelli
R.0.2. Upgrade wiring with HDT NTT drive (-U4), sheet... 22/11/2018 Solfanelli
0.1 upgrade I/O Overturning CB6001 (Sheet. 21, 28, 29, 33, 49) 0517 Barfoli
REV. MODIFICA DATA FIRME

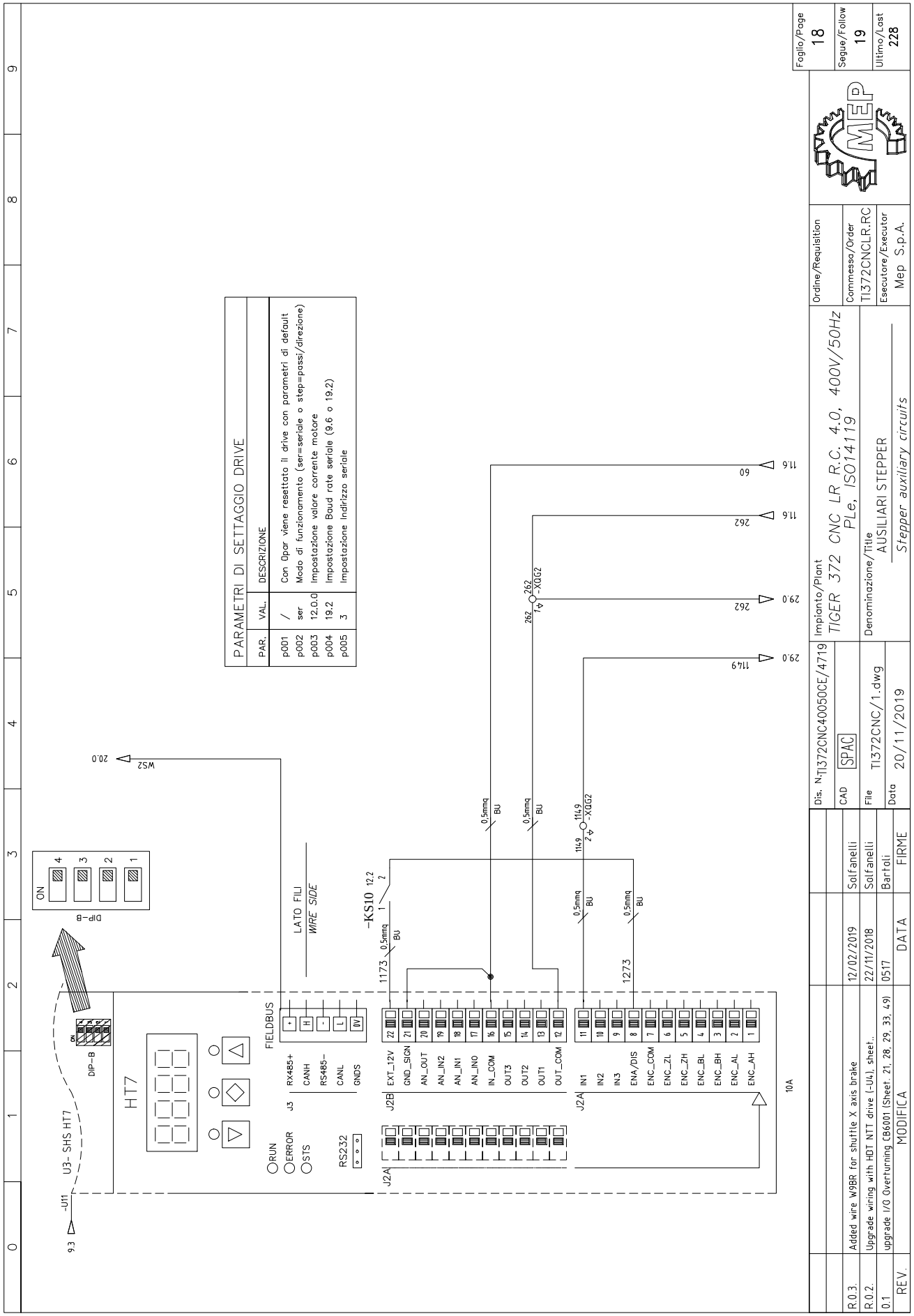

GEMNIS
K11
PRESSOSTATO ARIA SEGA
SAW'S AIR PRESSURE SWITCH
-PR1
PULSANTE EMERGENZA
EMEGENCY PUSH BUTTON
-EM1
Sotto/Down
PONTICELLARE I PIN 1-2 E 13-14 DEL CONNETTORE ILME 24P SE NON E' PRESENTE IL CB 6001/CB4001/CB8001
WITHOUT OPTIONAL BL4001/BL6001 JUMPER PINS 1-2 AND 13-14 ON MULTIPOLAR PLUG INTERFACE.
Impianto/Plant
TIGER 372 CNC LR R.C. 4.0, 400V/50Hz PLe, ISO14119
Denominazione/Title
MODULO DI SICUREZZA, CONNESSIONI 2
Safety programmable module, connections2
Dis. N°TI372CNC400500CE/4719
CAD SPAC
File TI372CNC/1.dwg
Data 20/11/2019
Ordine/Requisition
Commessa/Order TI372CNCLR.RC
Esecutore/Executor Mep S.p.A.
Foglio/Page 13
Segue/Follow 14
Ultimo/Last 228
R.0.3. Added wire W9BR for shuttle X axis brake 12/02/2019 Solfanelli
R.0.2. Upgrade wiring with HDT NTT drive (-U4), sheet.. 22/11/2018 Solfanelli
0.1 upgrade I/O Overturning CB6001 (Sheet. 21, 28, 29, 33, 49) 0517 Bartoli
REV. MODIFICA DATA FIRME

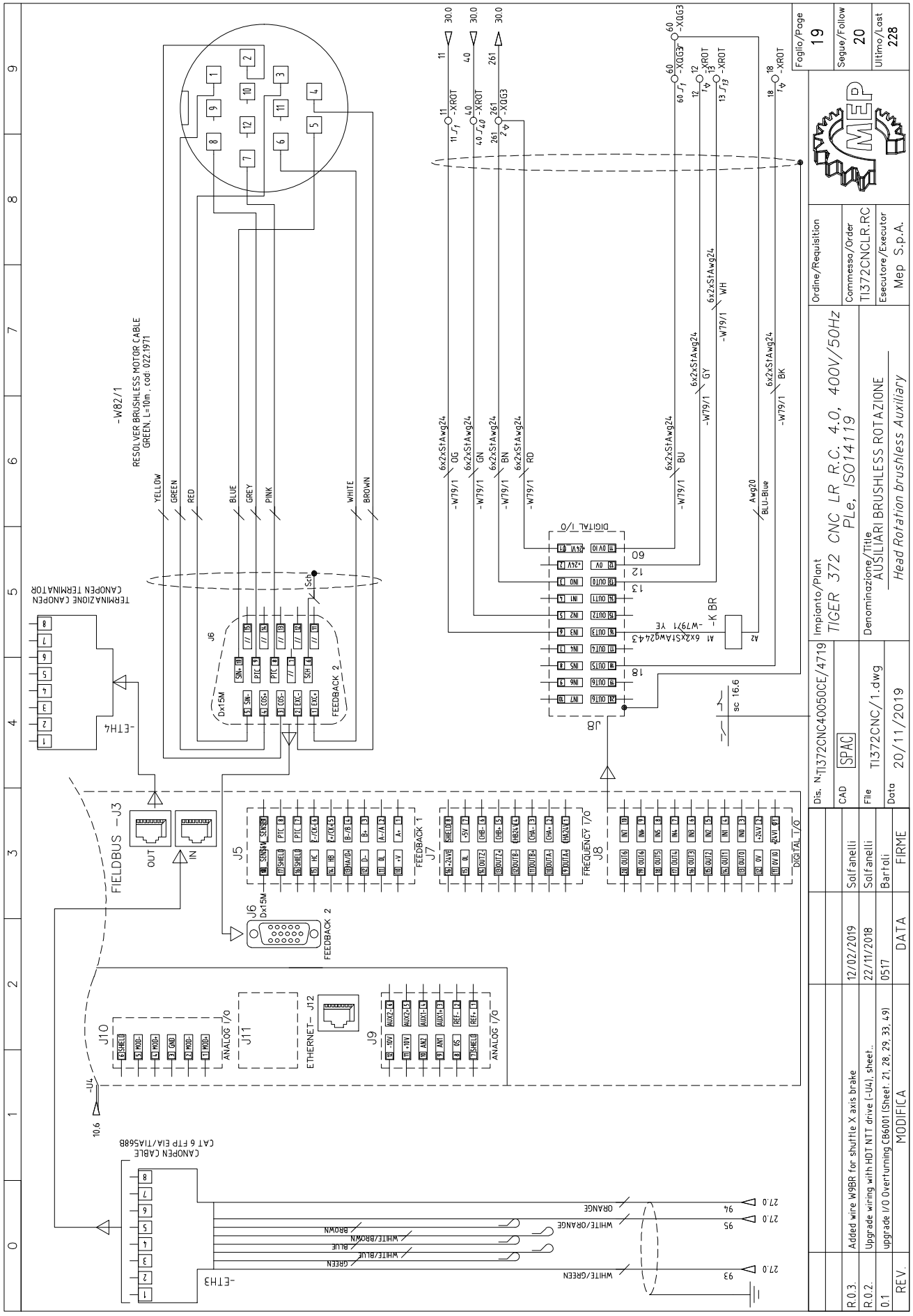

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Segue/Follow 15
Ultimo/Last 228
Impianto/Plant TIGER 372 CNC LR R.C. 4.0, 400V/50Hz PLe, ISO14119
Ordine/Requisition
Commessa/Order TI372CNCLR.RC
Esecutore/Executor Mep S.p.A.
Denominazione/Title MODULO DI SICUREZZA, CONNESSIONI 3
Safety programmable module, connections3
Dis. N-TI372CNC40050CE/4719
CAD SPAC
File TI372CNC/1.dwg
Data 20/11/2019
FIRME
DATA
MODIFICA
R.0.3. Added wire W9BR for shuttle X axis brake 12/02/2019 Solfanelli
R.0.2. Upgrade wiring with HDT NTT drive (-U4), sheet... 22/11/2018 Solfanelli
0.1 upgrade I/O Overturning CB6001 (Sheet. 21, 28, 29, 33, 49) 0517 Barfoli
REV.
-FS1 FINECORSA RIPARO FRONTALE INTERBLOCCATO
SAFETY L.SW. FRONT GUARD INTERLOCKED
-FS3 RIPARO PORTA POSTERIORE SEGA
REAR GUARD SAW PROTECTION
-FS4 F.C RIPARO ALIMENTATORE
SAFETY L.SW. SHUTTLE GUARD
Actuator
Receiver
Power Supply
Safety Input
Prog.Input

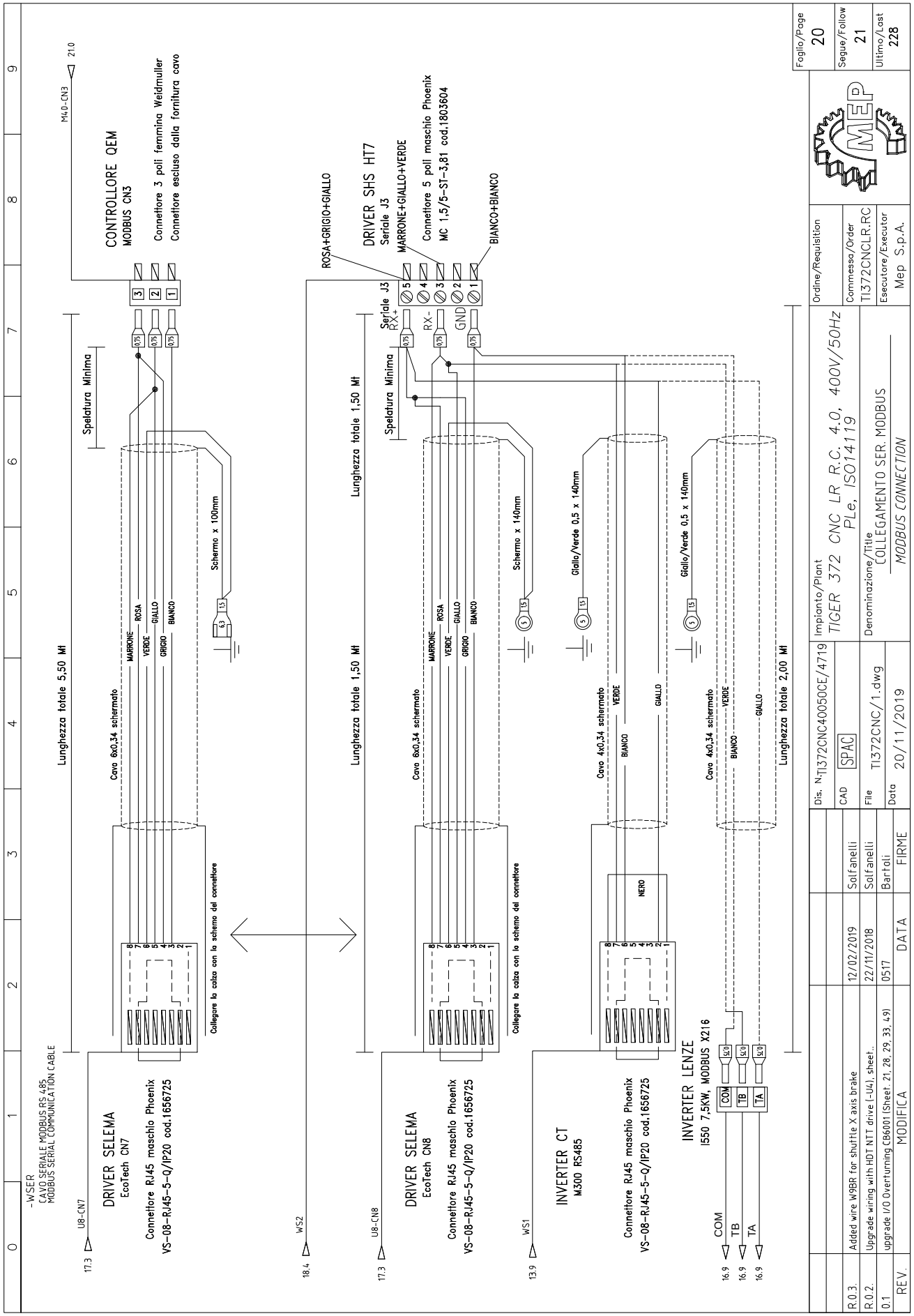

QUICK DIAGNOSIS/TROUBLESHOOTING
LED P1 – P2
LAMPEGGI P1 – P2
P1 – P2 Flashing
ROSSO/Red
SOSTITUIRE MODULO
Replace Module
1 ROSSO/Red
1 BLU/Blue
SOVRACCARICO CORRENTE Tx – Ox
Overcurrent on Tx or Ox
1 ROSSO/Red
2 BLU/Blue
CORTOCIRCUITO OSx
Short Circuit OSx
1 ROSSO/Red
3 BLU/Blue
TEMPERATURA FUORI DAI LIMITI
Module Temperature Outside Limits
1 ROSSO/Red
4 BLU/Blue
MANCA ALIMENTAZIONE SU 24V – 0V
Lack of Power Supply to 24V–0V Clamps
P1
P2
(n°)
LAMPEGGI BLU P1 – P2
P1 – P2 Blue Flashing
1
ERRORE TEST O CONTEMPORANEITA I11–I12
Test or Contemporary Error I11–I12
2
ERRORE TEST O CONTEMPORANEITA I13–I14
Test or Contemporary Error I13–I14
3
ERRORE TEST O CONTEMPORANEITA I15–I16
Test or Contemporary Error I15–I16
4
ERRORE PRESSOSTATO ARIA – I17
Pressure SW Error – I17
6
ERRORE PROT.POSTERIORE – I21–I22
Rear Guard Error – I21–I22
12
ERRORE EDM KS3 – I31
EDM KS3 Error – I31
14
ERRORE EDM OS1/2 – I36
EDM OS1/2 – Error I36
15
ERRORE EDM OS5/6 – I37
EDM OS5/6– Error I37
EDM KS3
EDM OS5/6
EDM OS1/2
Reset Allarm
RESET ALLARMI
Pressure air switch
PRESSOSTATI ARIA
Front electro–locked Guard
RIPARO FRONTALE INTERBLOCCATO
EMERGENCY
EMERGENZA
Shuttle side Guard
RIPARO ALIMENTATORE
INVERTER ENABLE + ROTATION
ABILITAZIONE INV.LAMA+ ROT.
Run
IN FUNZIONE
Power Supply
ALIMENTAZIONE
PLC OUTPUT ENABLE + Y AXIS
ABILITAZIONE USCITE PLC+ Y
Electro–Interlock, + Open Request
INTERBLOCCO + RICHIESTA SBLOCCO
Rear side Guard
RIPARO POSTERIORE SEGA
STEPPER ENABLE
ABILITAZIONE STEPPER
STEPPER ENABLE
ABILITAZIONE STEPPER
PWR
P1 P2
OS1 OS2 OS3 OS4
OS5 OS6 OS7 OS8
I31 I32 I33 I34
I35 I36 I37 I38
O41 O42 O43 O44
O45 O46 O47 O48
I11 I12 I13 I14
I15 I16 I17 I18
I21 I22 I23 I24
I25 I26 I27 I28
GEMNIS
24V
0V
OS1 – OS8
I11 – I38
T01 – T04
O41 – O48
P1
P2
A1
A2
K11
Sotto/Down
Sotto/Down
-SLP
-KS3
-KS10
-KS11
-S3
Reset
-W30
-W31
4SH0.75
12SH0.5
BN
GN
BU
0,5mmq
562
563
564
565
0561
0564
12.9
13.9
14.9
31.0
28.6
27.5
29.0
28.0
28.0
Impianto/Plant
TIGER 372 CNC LR R.C. 4.0, 400V/50Hz PLe, ISO14119
Denominazione/Title
MODULO DI SICUREZZA, CONNESSIONI 4
Safety programmable module, connections4
Dis. N°TI372CNC400500CE/4719
CAD SPAC
File TI372CNC/1.dwg
Data 20/11/2019
Ordine/Requisition
Commessa/Order TI372CNCLR.RC
Esecutore/Executor Mep S.p.A.
Foglio/Page 15
Segue/Follow 16
Ultimo/Last 228
R.0.3. Added wire W9BR for shuttle X axis brake 12/02/2019 Solfanelli
R.0.2. Upgrade wiring with HDT NTT drive (–U4), sheet.. 22/11/2018 Solfanelli
0.1 upgrade I/O Overturning CB6001 (Sheet. 21, 28, 29, 33, 49) 0517 Bartoli
REV. MODIFICA DATA FIRME

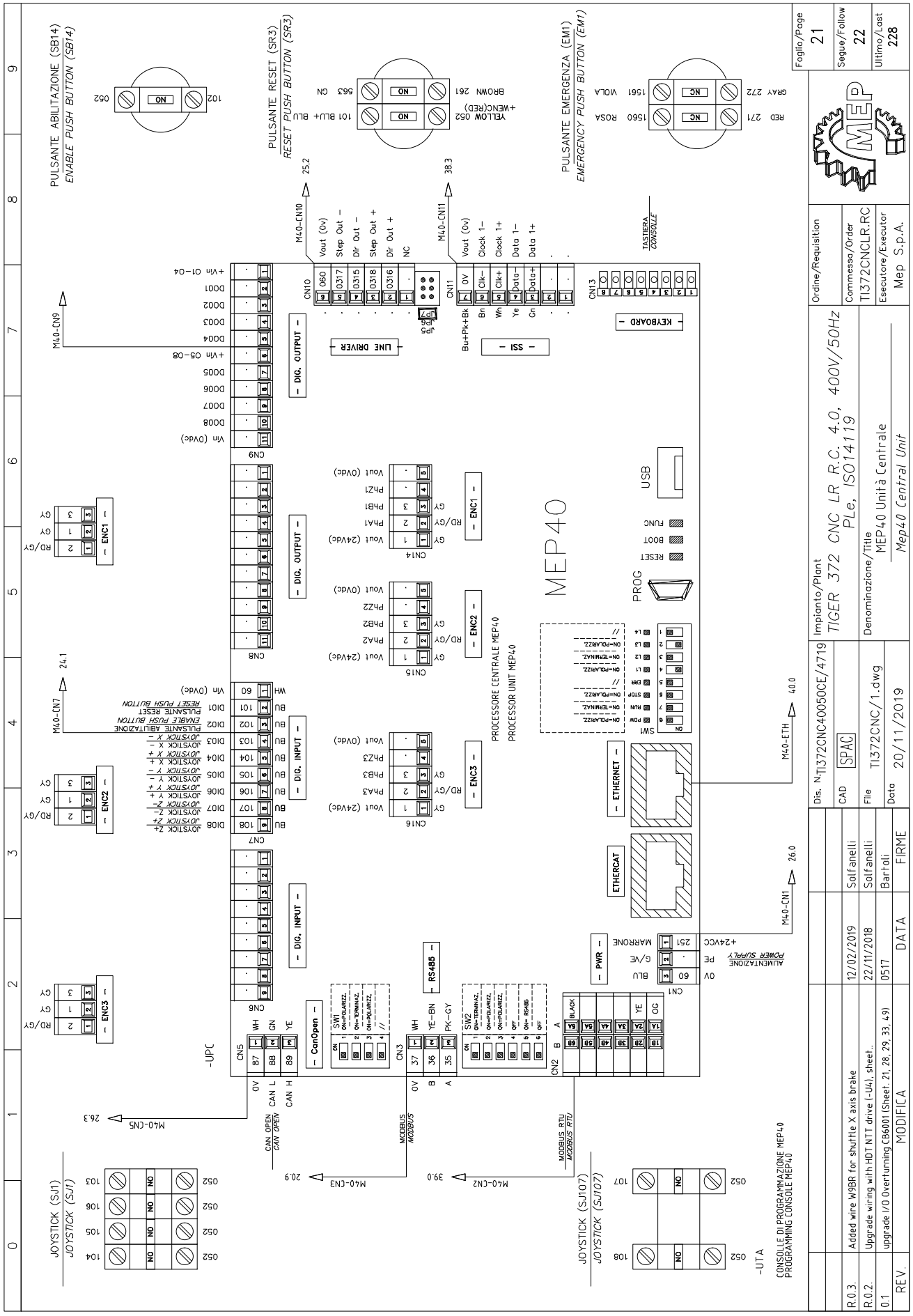

RS-485: PONTE PIN 1-8 INCL/ESCL RESISTENZA TERMINAZIONE
RS485:PIN1-8 BRIDGE TERMINATOR RESISTOR INCL/ENCL
MODBUS RTU/RS 485 CON RESISTENZA DI TERMINAZIONE INSERITA
MODBUS/RS 485 WITH RESISTOR 120ohm INSERT
DIP- SWITCHES
LATO FILI
WIRE SIDE
GIALLO
YELLOW
VERDE
GREEN
BIANCO
WHITE
TA
TB
COM
RJ45
-XSS
RS-485
ALLARME
+24V
-K BR
CONNESSIONI CON LENZE 1550 (SOLO PREDISPOSTO)
WIRING WITH LENZE 1550
-U1
-XQG2
Dis. N-TI372CNC40050CE/4719
Impianto/Plant
TIGER 372 CNC LR R.C. 4.0, 400V/50Hz PLe, ISO14119
Denominazione/Title
AUSILIARI INVERTER
Inverter auxiliary circuits
File TI372CNC/1.dwg
Data 20/11/2019
Ordine/Requisition
Commessa/Order TI372CNCLR.RC
Esecutore/Executor Mep S.p.A.
Foglio/Page 16
Segue/Follow 17
Ultimo/Last 228
CAD SPAC
R.0.3. Added wire W9BR for shuttle X axis brake 12/02/2019 Solfanelli
R.0.2. Upgrade wiring with HDT NTT drive (-U4).. sheet.. 22/11/2018 Solfanelli
0.1 upgrade I/O Overturning CB6001 (Sheet. 21, 28, 29, 33, 49) 0517 Barfoli
REV. MODIFICA DATA FIRME

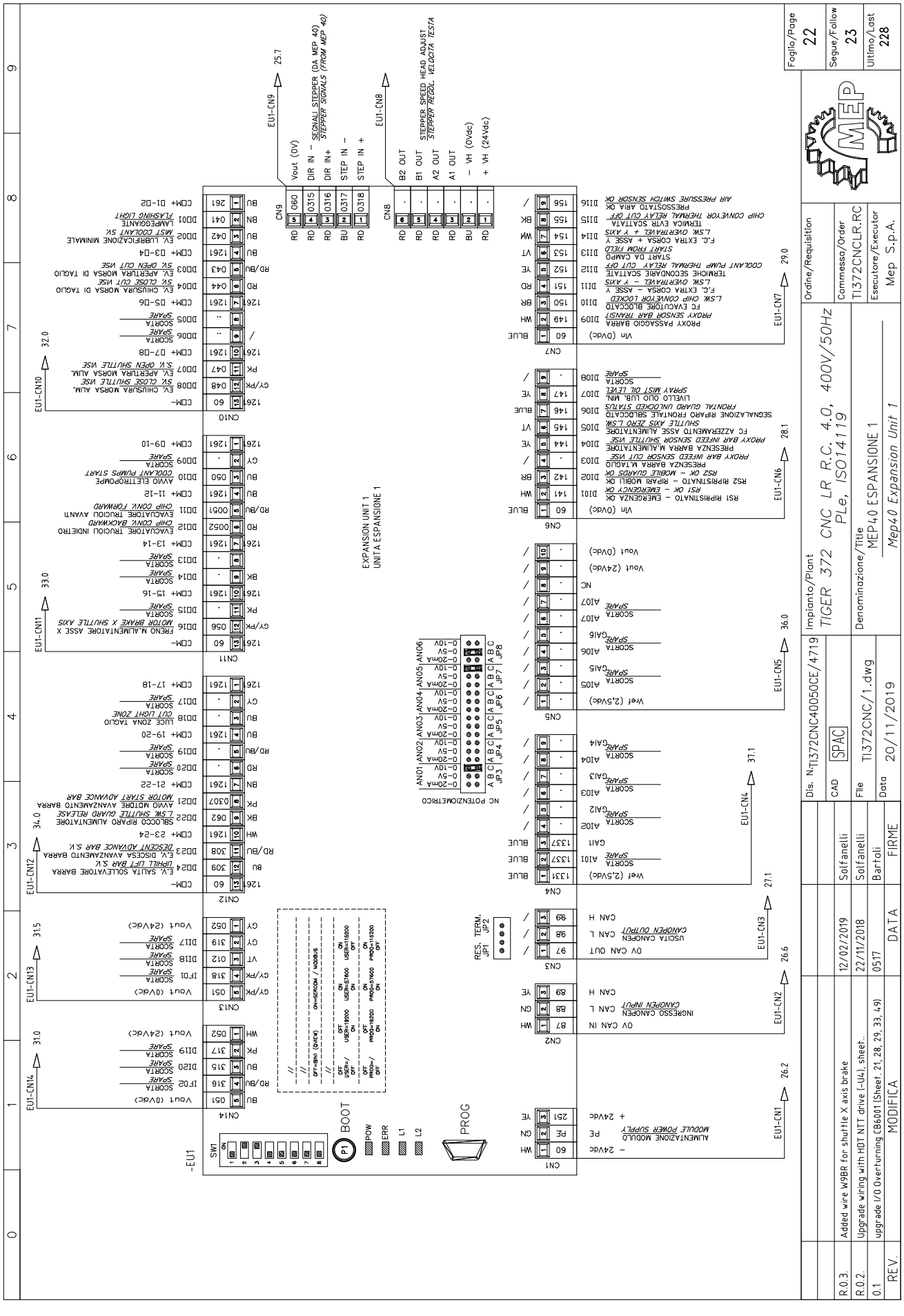

-XS6M
MITI HYPERTAC - FEMMINA
-W8E 6,00 mt
-XS6A
LATO FILI
WIRE SIDE
D X 26 - MASCHIO
-ENM2
5000 Imp/giro
ENC
-M8
PARAMETRI DI SETTAGGIO DRIVE
PAR. VAL. DESCRIZIONE
E3 6 ECC. PARITA'
E4 0 GESTIONE FRENO MOTORE
E7 0 TENSIONE ALIMENTAZIONE (0-400V/1-230V/2-480V)
C7 2 N° NODO
C9 3 PROT. COMM. MODBUS
D8 1 TIPO MOTORE (SOLO CON TAB.A03B)
F8 1 FC ASSI (0-NO F.C/1-N.O./2-N.C)
CN9 - STO
CN4
CN3
CN2
CN1
CN5
CN7
CN8
FIELDBUS
BRAKING RESISTOR
-S51
-S54
-S53
-U8
Foglio/Page 17
Segue/Follow 18
Ultimo/Last 228
Ordine/Requisition
Commessa/Order TI372CNCLR.RC
Esecutore/Executor Mep S.p.A.
Dis. N° TI372CNC400500CE/4719
Impianto/Plant TIGER 372 CNC LR R.C. 4.0, 400V/50Hz PLe, ISO14119
CAD SPAC
File TI372CNC/1.dwg
Data 20/11/2019
Denominazione/Title AUSILIARI BRUSHLESS Asse Y
Brushless Y axis auxiliary circuits
R.0.3. Added wire W9BR for shuttle X axis brake 12/02/2019 Solfanelli
R.0.2. Upgrade wiring with HDT NTT drive (-U4), sheet.. 22/11/2018 Solfanelli
0.1 upgrade I/O Overturning CB6001 (Sheet. 21, 28, 29, 33, 49) 0517 Bartoli
REV. MODIFICA DATA FIRME

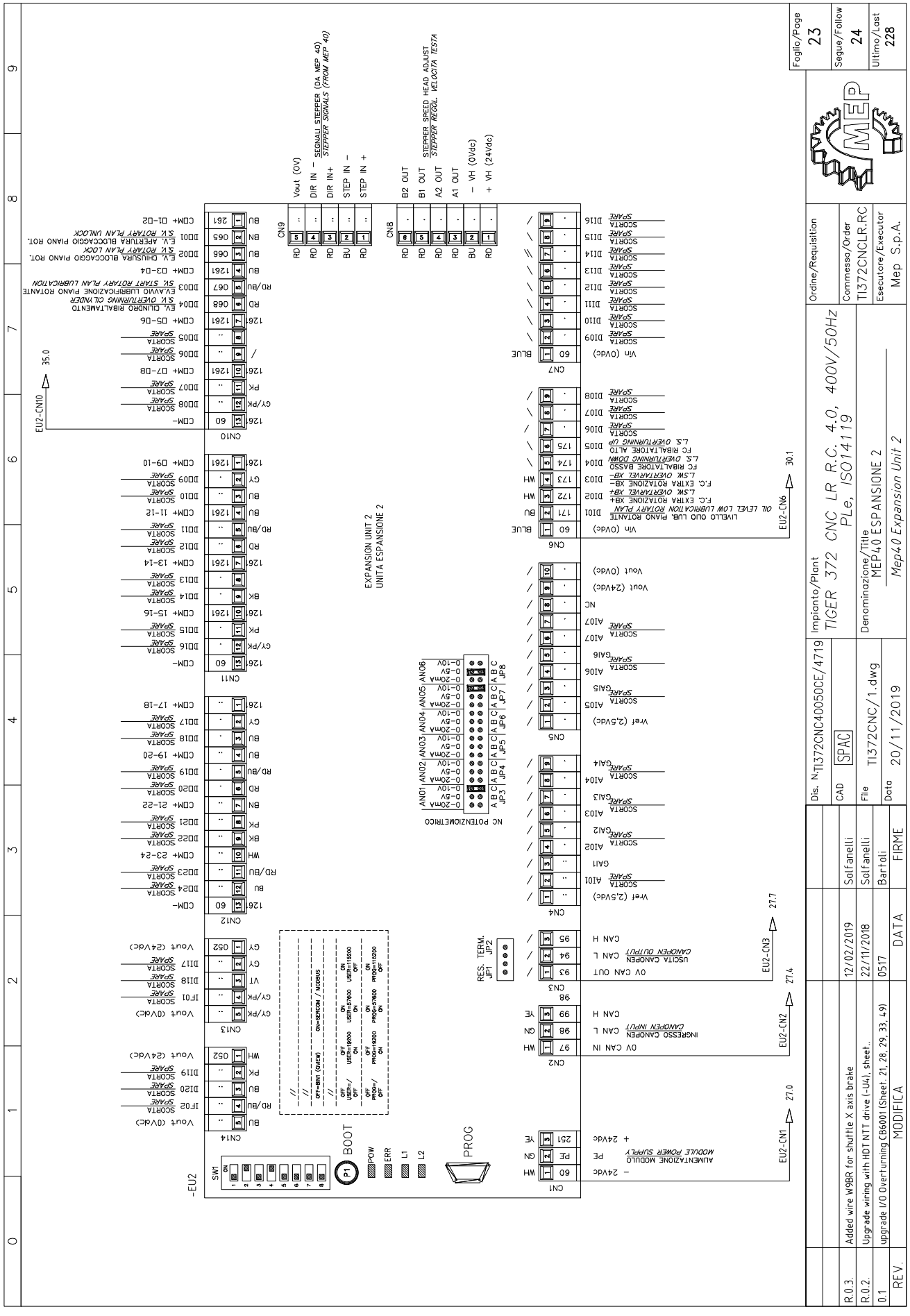

PARAMETRI DI SETTAGGIO DRIVE
PAR. VAL. DESCRIZIONE
p001 / Con Opar viene resettato il drive con parametri di default
p002 ser Modo di funzionamento (ser=seriale o step=passi/direzione)
p003 12.0.0 Impostazione valore corrente motore
p004 19.2 Impostazione Baud rate seriale (9.6 o 19.2)
p005 3 Impostazione Indirizzo seriale
HT7
DIP-B
ON
LATO FILI
WIRE SIDE
FIELDBUS
RUN
ERROR
STS
RS232
J3
RX485+
CANH
RS485-
CANL
GNDS
J2B
EXT_12V
GND_SIGN
AN_OUT
AN_IN2
AN_IN1
AN_IN0
IN_COM
OUT3
OUT2
OUT1
OUT_COM
J2A
IN1
IN2
IN3
ENA/DIS
ENC_COM
ENC_ZL
ENC_ZH
ENC_BL
ENC_BH
ENC_AL
ENC_AH
-KS10 12.2
-XQG2
-U11
U3- SHS HT7
10A
Foglio/Page 18
Segue/Follow 19
Ultimo/Last 228
Dis. N. TI372CNC400500CE/4719
CAD SPAC
File TI372CNC/1.dwg
Data 20/11/2019
Impianto/Plant
TIGER 372 CNC LR R.C. 4.0, 400V/50Hz
PLe, ISO14119
Denominazione/Title
AUSILIARI STEPPER
Stepper auxiliary circuits
Ordine/Requisition
Commessa/Order TI372CNCLR.RC
Esecutore/Executor Mep S.p.A.
R.0.3. Added wire W9BR for shuttle X axis brake 12/02/2019 Solfanelli
R.0.2. Upgrade wiring with HDT NTT drive (-U41), sheet.. 22/11/2018 Solfanelli
0.1 upgrade I/O Overturning CB6001 (Sheet. 21, 28, 29, 33, 49) 0517 Barboli
REV. MODIFICA DATA FIRME

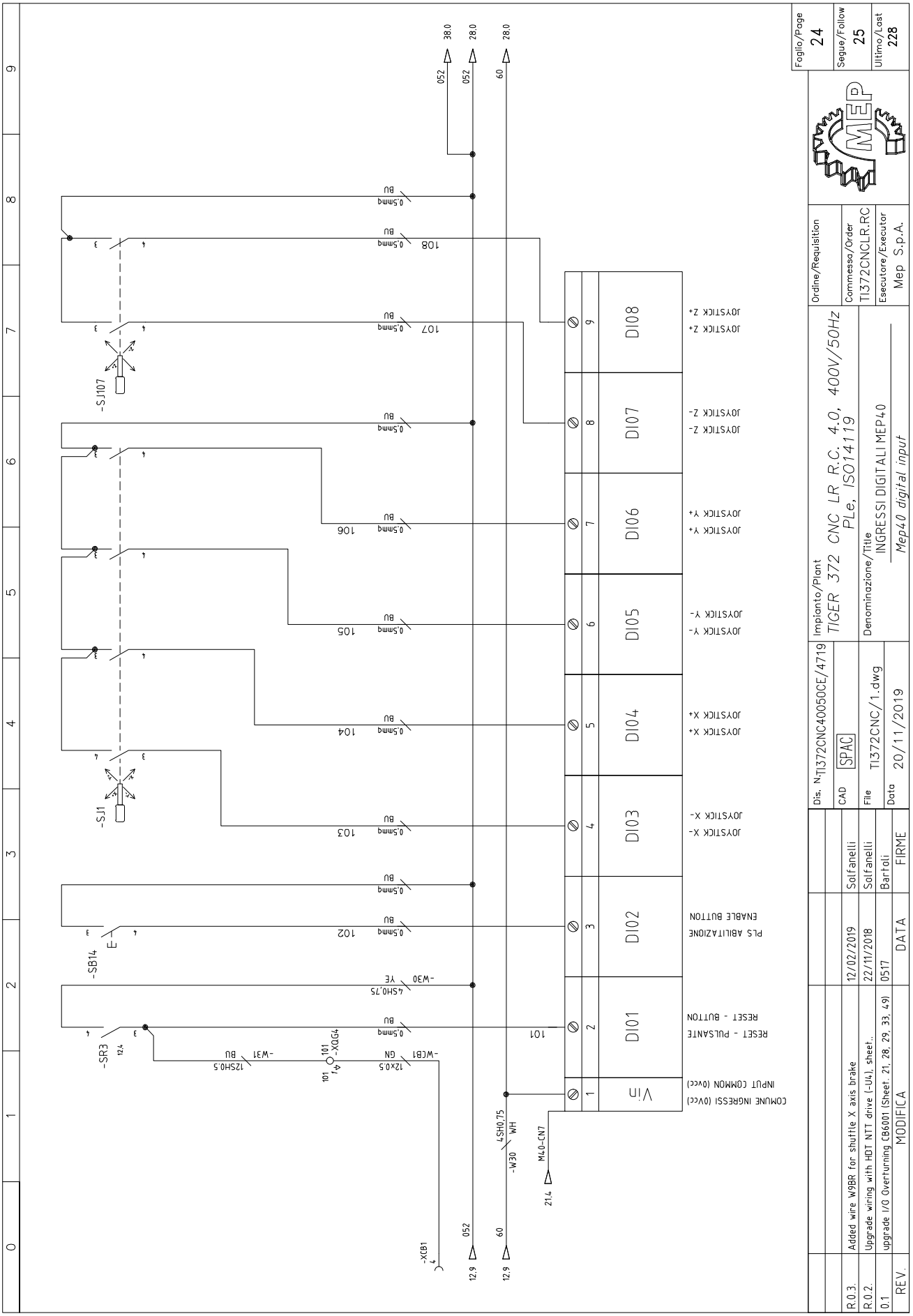

-W82/1
RESOLVER BRUSHLESS MOTOR CABLE
GREEN, L=10m. cod: 022.1971
YELLOW
GREEN
RED
BLUE
GREY
PINK
WHITE
BROWN
TERMINAZIONE CANOPEN
CANOPEN TERMINATOR
-ETH4
FIELDBUS -J3
OUT
IN
J5
J6
FEEDBACK 2
J7
FEEDBACK 1
J8
FREQUENCY I/O
DIGITAL I/O
J9
ANALOG I/O
J10
J11
ETHERNET- J12
-U4
CANOPEN CABLE
CAT 6 FTP EIA/TIA568B
-ETH3
-K BR
-W79/1 YE
6x2xStAwg24
-W79/1
Awg20
BLU-Blue
WHITE/GREEN
WHITE/BLUE
GREEN
WHITE/BROWN
BROWN
WHITE/ORANGE
ORANGE
Foglio/Page 19
Segue/Follow 20
Ultimo/Last 228
Ordine/Requisition
Commessa/Order TI372CNCLR.RC
Esecutore/Executor Mep S.p.A.
Impianto/Plant TIGER 372 CNC LR R.C. 4.0, 400V/50Hz PLe, ISO14119
Denominazione/Title AUSILIARI BRUSHLESS ROTAZIONE
Head Rotation brushless Auxiliary
Dis. N. TI372CNC400S0CE/4719
CAD SPAC
File TI372CNC/1.dwg
Data 20/11/2019
R.0.3 Added wire W9BR for shuttle X axis brake 12/02/2019 Solfanelli
R.0.2 Upgrade wiring with HDT NTT drive (-U4), sheet.. 22/11/2018 Solfanelli
0.1 upgrade I/O Overturning CB6001 (Sheet. 21, 28, 29, 33, 49) 0517 Bartoli
REV. MODIFICA DATA FIRME

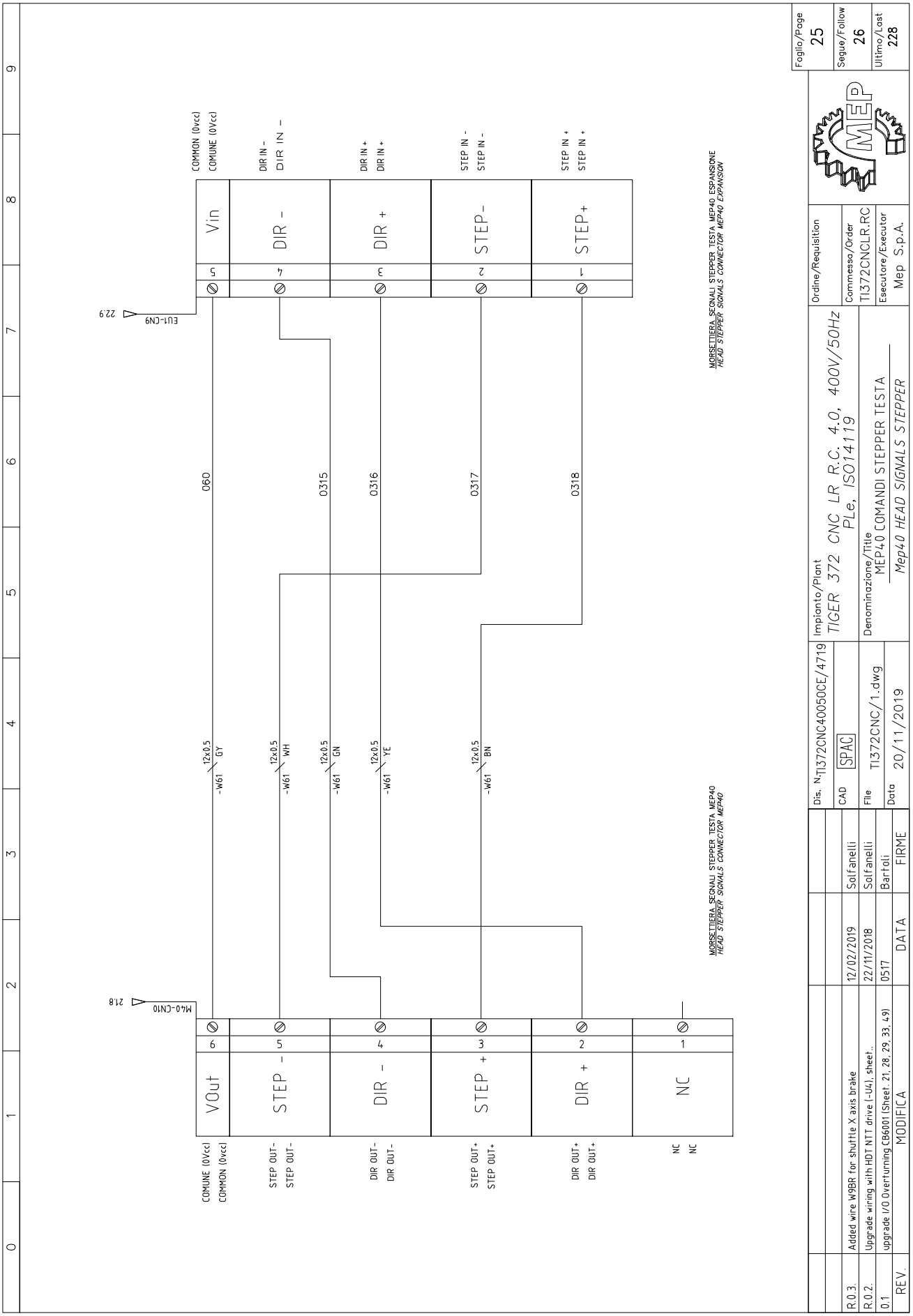

-WSER
CAVO SERIALE MODBUS RS 485
MODBUS SERIAL COMMUNICATION CABLE
U8-CN7
17.3
DRIVER SELEMA
EcoTech CN7
Connettore RJ45 maschio Phoenix
VS-08-RJ45-5-Q/IP20 cod.1656725
Cavo 6x0.34 schermato
MARRONE
ROSA
VERDE
GIALLO
GRIGIO
BIANCO
Lunghezza totale 5,50 Mt
Spelatura Minima
Schermo x 100mm
Collegare la calza con lo schermo del connettore
M40-CN3
21.0
CONTROLLORE QEM
MODBUS CN3
Connettore 3 poli femmina Weidmuller
Connettore escluso dalla fornitura cavo
WS2
18.4
U8-CN8
17.3
DRIVER SELEMA
EcoTech CN8
Connettore RJ45 maschio Phoenix
VS-08-RJ45-5-Q/IP20 cod.1656725
Cavo 6x0.34 schermato
Lunghezza totale 1,50 Mt
Spelatura Minima
Schermo x 140mm
ROSA+GRIGIO+GIALLO
DRIVER SHS HT7
Seriale J3
MARRONE+GIALLO+VERDE
Connettore 5 poli maschio Phoenix
MC 1,5/5-ST-3,81 cod.1803604
BIANCO+BIANCO
Seriale J3
RX+
RX-
GND
WS1
13.9
INVERTER CT
M300 RS485
Connettore RJ45 maschio Phoenix
VS-08-RJ45-5-Q/IP20 cod.1656725
Cavo 4x0.34 schermato
BIANCO
VERDE
NERO
GIALLO
Giallo/Verde 0,5 x 140mm
Lunghezza totale 1,50 Mt
Lunghezza totale 2,00 Mt
INVERTER LENZE
I550 7.5KW, MODBUS X216
COM
TB
TA
16.9
16.9
16.9
Cavo 4x0.34 schermato
BIANCO
VERDE
GIALLO
Giallo/Verde 0,5 x 140mm
Dis. N° TI372CNC400500CE/4719
CAD SPAC
File TI372CNC/1.dwg
Data 20/11/2019
Impianto/Plant
TIGER 372 CNC LR R.C. 4.0, 400V/50Hz
PLe, ISO14119
Denominazione/Title
COLLEGAMENTO SER. MODBUS
MODBUS CONNECTION
Ordine/Requisition
Commessa/Order
TI372CNCLR.RC
Esecutore/Executor
Mep S.p.A.
Foglio/Page 20
Segue/Follow 21
Ultimo/Last 228
R.0.3. Added wire W9BR for shuffle X axis brake 12/02/2019 Salfanelli
R.0.2. Upgrade wiring with HDT NTT drive (-U4), sheet.. 22/11/2018 Salfanelli
0.1 upgrade I/O Overturning CB6001 (Sheet. 21, 28, 29, 33, 49) 0517 Barboli
REV. MODIFICA DATA FIRME

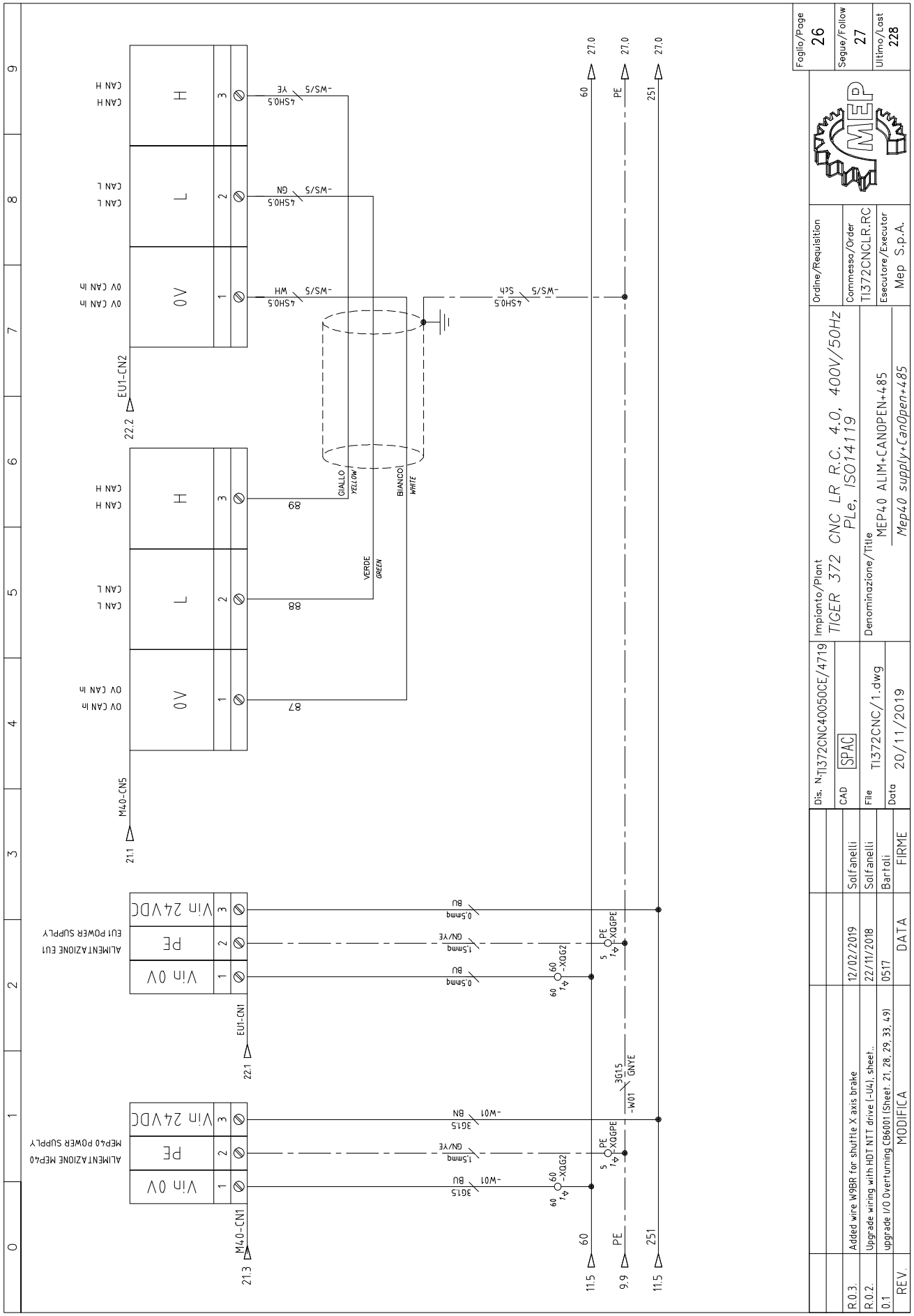

PULSANTE ABILITAZIONE (SB14)
ENABLE PUSH BUTTON (SB14)
PULSANTE RESET (SR3)
RESET PUSH BUTTON (SR3)
PULSANTE EMERGENZA (EM1)
EMERGENCY PUSH BUTTON (EM1)
MEP40
PROCESSORE CENTRALE MEP4.0
PROCESSOR UNIT MEP4.0
JOYSTICK (SJ1)
JOYSTICK (SJ107)
CONSOLLE DI PROGRAMMAZIONE MEP4.0
PROGRAMMING CONSOLE MEP4.0
TASTIERA
CONSOLLE
Impianto/Plant
TIGER 372 CNC LR R.C. 4.0, 400V/50Hz
PLe, ISO14119
Denominazione/Title
MEP40 Unità Centrale
Mep40 Central Unit
Ordine/Requisition
Commessa/Order
TI372CNCLR.RC
Esecutore/Executor
Mep S.p.A.
Foglio/Page 21
Segue/Follow 22
Ultimo/Last 228
Dis. N°TI372CN400500E/4719
CAD SPAC
File TI372CNC/1.dwg
Data 20/11/2019
R.0.3 Added wire W9BR for shuttle X axis brake 12/02/2019 Solfanelli
R.0.2 Upgrade wiring with HDT NTT drive (-U4), sheet.. 22/11/2018 Solfanelli
0.1 upgrade I/O Overturning CB6001 (Sheet. 21, 28, 29, 33, 49) 0517 Bartoli
REV. MODIFICA DATA FIRME

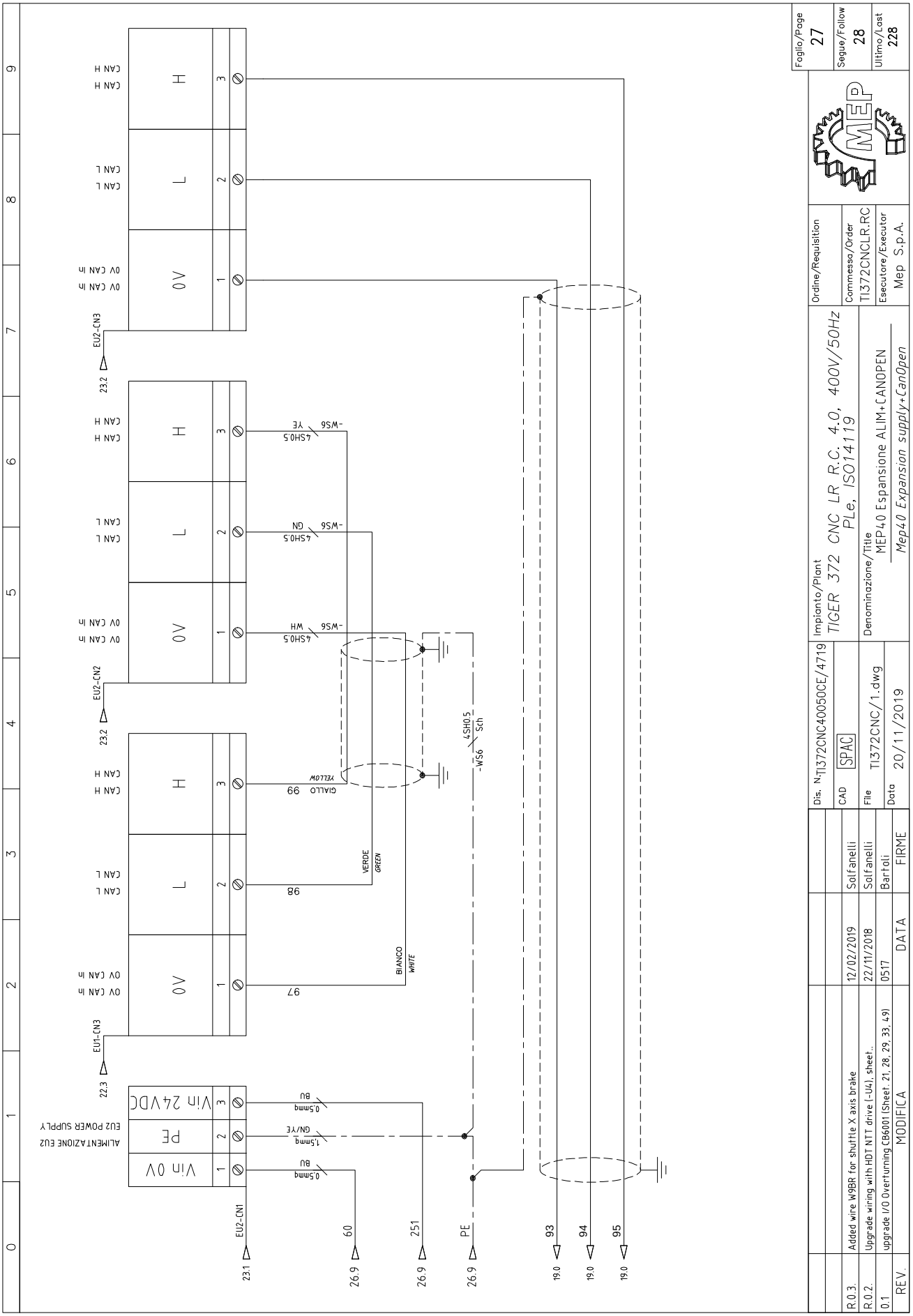

Foglio/Page 22
Segue/Follow 23
Ultimo/Last 228
Ordine/Requisition
Commessa/Order TI372CNCLR.RC
Esecutore/Executor Mep S.p.A.
Impianto/Plant TIGER 372 CNC LR R.C. 4.0, 400V/50Hz PLe, ISO14119
Denominazione/Title MEP40 ESPANSIONE 1
Mep40 Expansion Unit 1
Dis. N-TI372CNC40050CE/4719
CAD SPAC
File TI372CNC/1.dwg
Data 20/11/2019
EXPANSION UNIT 1
UNITA ESPANSIONE 1
-EU1
CN1 ALIMENTAZIONE MODULO MODULE POWER SUPPLY + 24Vdc
CN2 0V CAN IN CAN H CAN L
CN3 0V CAN OUT USCITA CANOPEN CANOPEN OUTPUT CAN H CAN L
CN4 Vref (2,5Vdc) GAI1 GAI2 GAI3 GAI4
CN5 Vref (2,5Vdc) GAI5 GAI6 GAI7 Vout (24Vdc)
CN6 Vin (0Vdc) RSI RIPRISTINATO - EMERGENCY OK RS1 OK - EMERGENCY OK RS2 RIPRISTINATO - RIPARI MOBILI OK RS2 OK - MOBILE GUARDS OK PRESENZA BARRA M.TAGLIO PROXY BAR INFEED SENSOR CUT USE PRESENZA BARRA M.ALIMENTATORE PROXY BAR INFEED SENSOR SHUTTLE USE FC AZZERAMENTO ASSE ALIMENTATORE SEGNALAZIONE RIPARO FRONTALE SBLOCCATO SHUTTLE AXIS ZERO LSW FRONTAL GUARD UNLOCKED STATUS LIVELLO OLIO LUB. MIN. SPRAY MIST OIL LEVEL
CN7 Vin (0Vdc) PROXY SENSORE BARRA TRANSIT PROXY PASSAGGIO BARRA FC EVACUATORE BLOCCATO L.SW. CHIP CONVEYOR LOCKED F.C. EXTRA CORSA – ASSE Y L.SW. OVERTRAVEL – Y AXIS TERMICA SECONDARIE SCATTATE COOLANT PUMP THERMAL RELAY CUT OFF START DA CAMPO START FROM FIELD F.C. EXTRA CORSA + ASSE Y L.SW. OVERTRAVEL + Y AXIS TERMICA EVTR SCATTATA CHIP CONVEYOR THERMAL RELAY CUT OFF PRESSOSTATO ARIA OK AIR PRESSURE SWITCH SENSOR OK
CN8 B2 OUT B1 OUT A2 OUT A1 OUT – VH (0Vdc) + VH (24Vdc) STEPPER SPEED HEAD ADJUST STEPPER REGOL. VELOCITA TESTA
CN9 Vout (0V) DIR IN – SEGNALI STEPPER (DA MEP 40) STEPPER SIGNALS (FROM MEP 40) DIR IN+ STEP IN – STEP IN +
CN10 CDM– EV. CHIUSURA MORSA ALM. SV. CLOSE SHUTTLE VISE EV. APERTURA MORSA ALM. SV. OPEN SHUTTLE VISE CDM+ D7–D8 SPARE SPARE CDM+ D5–D6 EV. CHIUSURA MORSA DI TAGLIO SV. CLOSE CUT VISE EV. APERTURA MORSA DI TAGLIO SV. OPEN CUT VISE CDM+ D3–D4 EV. LUBRIFICAZIONE MINIMALE MIST COOLANT SV FLASHING LIGHT LAMPEGGIANTE CDM+ D1–D2
CN11 CDM– FRENO N.ALIMENTATORE ASSE X MOTOR BRAKE X SHUTTLE AXIS CDM+ 15–16 SPARE SPARE CDM+ 13–14 CHIP CONV. BACKWARD EVACUATORE TRUCIOLI INDIETRO CHIP CONV. FORWARD EVACUATORE TRUCIOLI AVANTI AVVIO ELETTROPOMPE COOLANT PUMPS START CDM+ 11–12 SPARE CDM+ D9–10
CN12 CDM– E.V. SALITA SOLLEVATORE BARRA UPHILL LIFT BAR S.V. E.V. DISCESA AVANZAMENTO BARRA DESCENT ADVANCE BAR S.V. CDM+ 23–24 SBLOCCO RIPARO ALIMENTATORE L.SW. SHUTTLE GUARD RELEASE AVVIO MOTORE AVANZAMENTO BARRA MOTOR START ADVANCE BAR CDM+ 21–22 SPARE SPARE SPARE LUCE ZONA TAGLIO CUT LIGHT ZONE CDM+ 19–20 SPARE SPARE CDM+ 17–18
CN13 Vout (0Vdc) SPARE SPARE SPARE Vout (24Vdc)
CN14 Vout (0Vdc) IF01 SPARE SPARE SPARE Vout (24Vdc)
RES. TERM. JP1 JP2
NC POTENZIOMETRICO AN01 AN02 AN03 AN04 AN05 AN06 JP3 JP4 JP5 JP6 JP7 JP8 0–10V 0–5V 0–20mA
SW1 ON
P1 BOOT
POW ERR L1 L2 PROG
OFF–BIN1 (QWIEW) ON=SERCOM / MODBUS
USER=19200 USER=57600 USER=115200
PROG=19200 PROG=57600 PROG=115200
R.0.3. Added wire W9BR for shuttle X axis brake 12/02/2019 Solfanelli
R.0.2. Upgrade wiring with HDT NTT drive (-U4-), sheet... 22/11/2018 Solfanelli
0.1 upgrade I/O Overturning CB6001 (Sheet. 21, 28, 29, 33, 49) 0517 Barfoli
REV. MODIFICA DATA FIRME

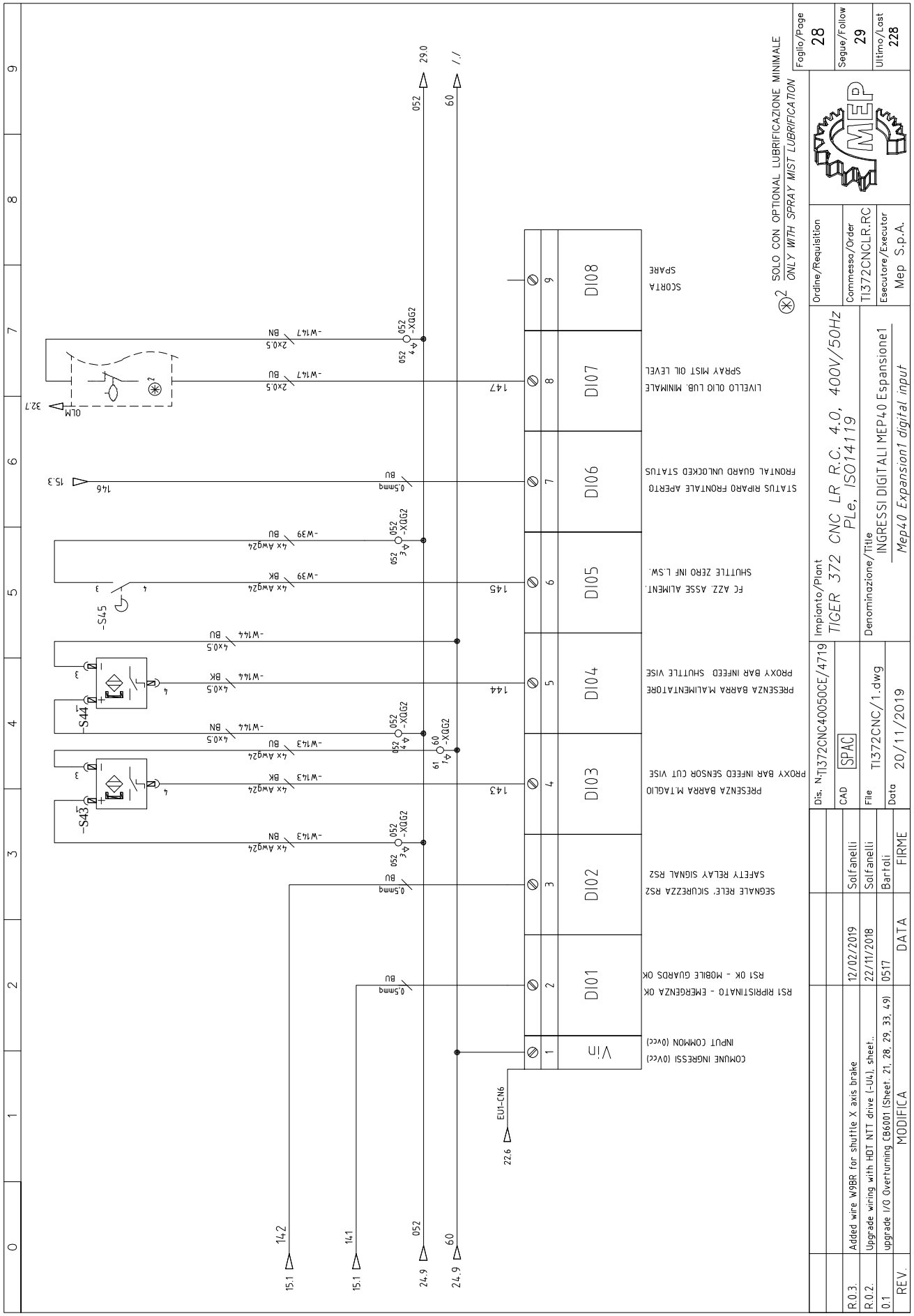

Foglio/Page 23
Segue/Follow 24
Ultimo/Last 228
Ordine/Requisition
Commessa/Order TI372CNCLR.RC
Esecutore/Executor Mep S.p.A.
Impianto/Plant TIGER 372 CNC LR R.C. 4.0, 400V/50Hz PLe, ISO14119
Denominazione/Title MEP40 ESPANSIONE 2
Mep40 Expansion Unit 2
Dis. N° TI372CNC40050CE/4719
CAD SPAC
File TI372CNC/1.dwg
Data 20/11/2019
R.0.3 Added wire W9BR for shuttle X axis brake 12/02/2019 Solfanelli
R.0.2 Upgrade wiring with HDT NTT drive [-U4], sheet.. 22/11/2018 Solfanelli
0.1 upgrade I/O Overturning CB6001 (Sheet. 21, 28, 29, 33, 49) 0517 Bartoli
REV. MODIFICA DATA FIRME
EXPANSION UNIT 2
UNITA ESPANSIONE 2
-EU2
CN1
CN2
CN3
CN4
CN5
CN6
CN7
CN8
CN9
CN10
CN11
CN12
CN13
CN14
SW1
BOOT
POW
ERR
L1
L2
PROG
RES. TERM. JP1 JP2
NC POTENZIOMETRO
EU2-CN0
EU2-CN1
EU2-CN2
EU2-CN3
EU2-CN6
ALIMENTAZIONE MODULO
MODULE POWER SUPPLY
CANOPEN OUTPUT
CANOPEN INPUT
OIL LEVEL LOW LUBRICATION ROTARY PLAN
STEPPER SIGNALS (FROM MEP 40)
STEPPER REGOL. VELOCITA' TESTA

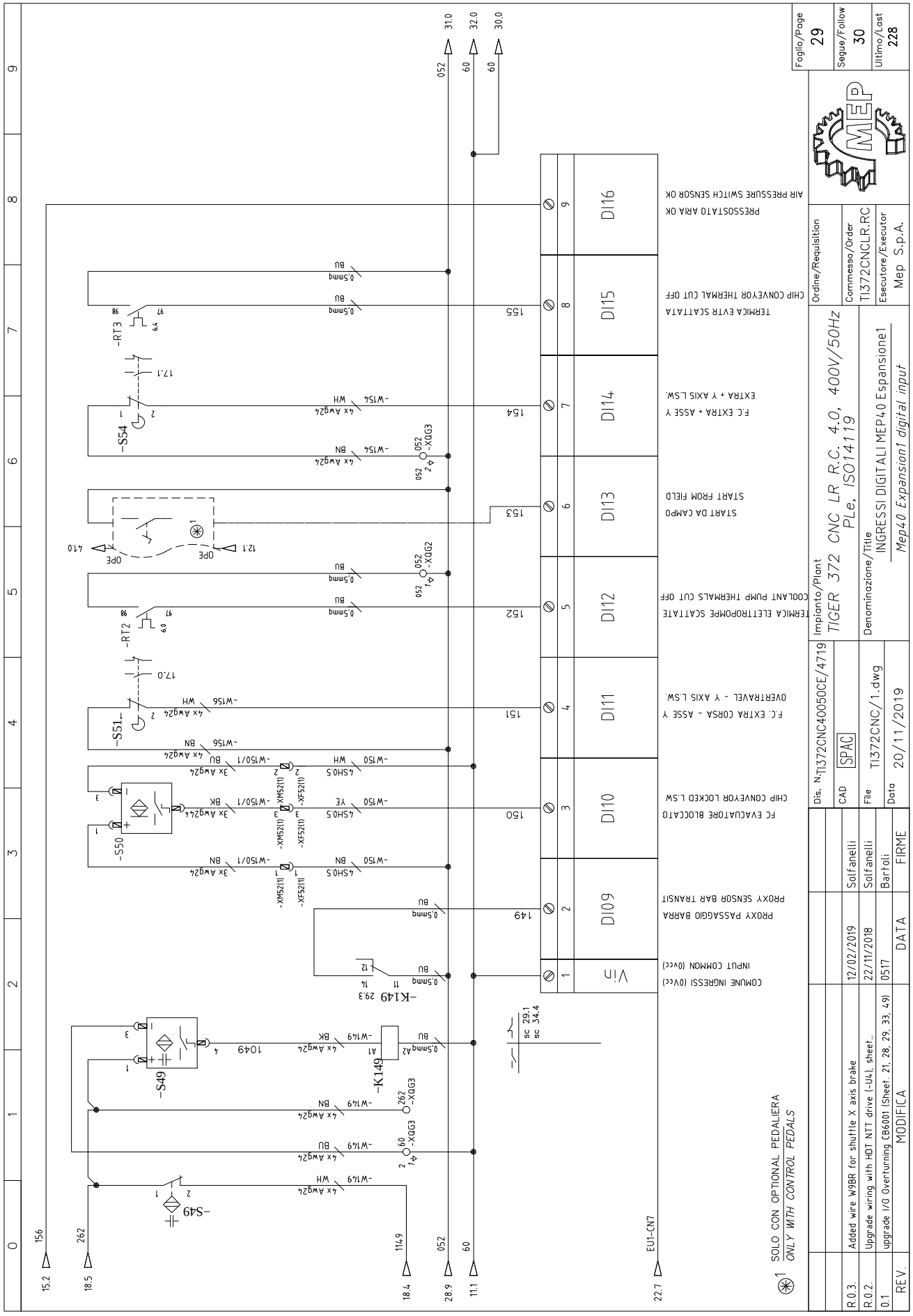

Foglio/Page 24
Segue/Follow 25
Ultimo/Last 228
Ordine/Requisition
Commessa/Order TI372CNCLR.RC
Esecutore/Executor Mep S.p.A.
Impianto/Plant TIGER 372 CNC LR R.C. 4.0, 400V/50Hz PLe, ISO14119
Denominazione/Title INGRESSI DIGITALI MEP40
Mep40 digital input
Dis. N. TI372CNC400S0CE/4719
CAD SPAC
File TI372CNC/1.dwg
Data 20/11/2019
REV. MODIFICA DATA FIRME
R.0.3. Added wire W9BR for shuttle X axis brake 12/02/2019 Solfanelli
R.0.2. Upgrade wiring with HDT NTT drive (-U4), sheet.. 22/11/2018 Solfanelli
0.1 upgrade I/O Overturning CB6001 (Sheet. 21, 28, 29, 33, 49) 0517 Barfoli
DI01 DI02 DI03 DI04 DI05 DI06 DI07 DI08
RESET - PULSANTE
RESET - BUTTON
PLS ABILITAZIONE
ENABLE BUTTON
JOYSTICK X-
JOYSTICK X+
JOYSTICK Y-
JOYSTICK Y+
JOYSTICK Z-
JOYSTICK Z+
COMUNE INGRESSI (0vcc)
INPUT COMMON (0vcc)
-SJ107
-SJ1
-SB14
-SR3
-XQG4
-XCB1
M40-CN7
-W30
-W31
-WCB1

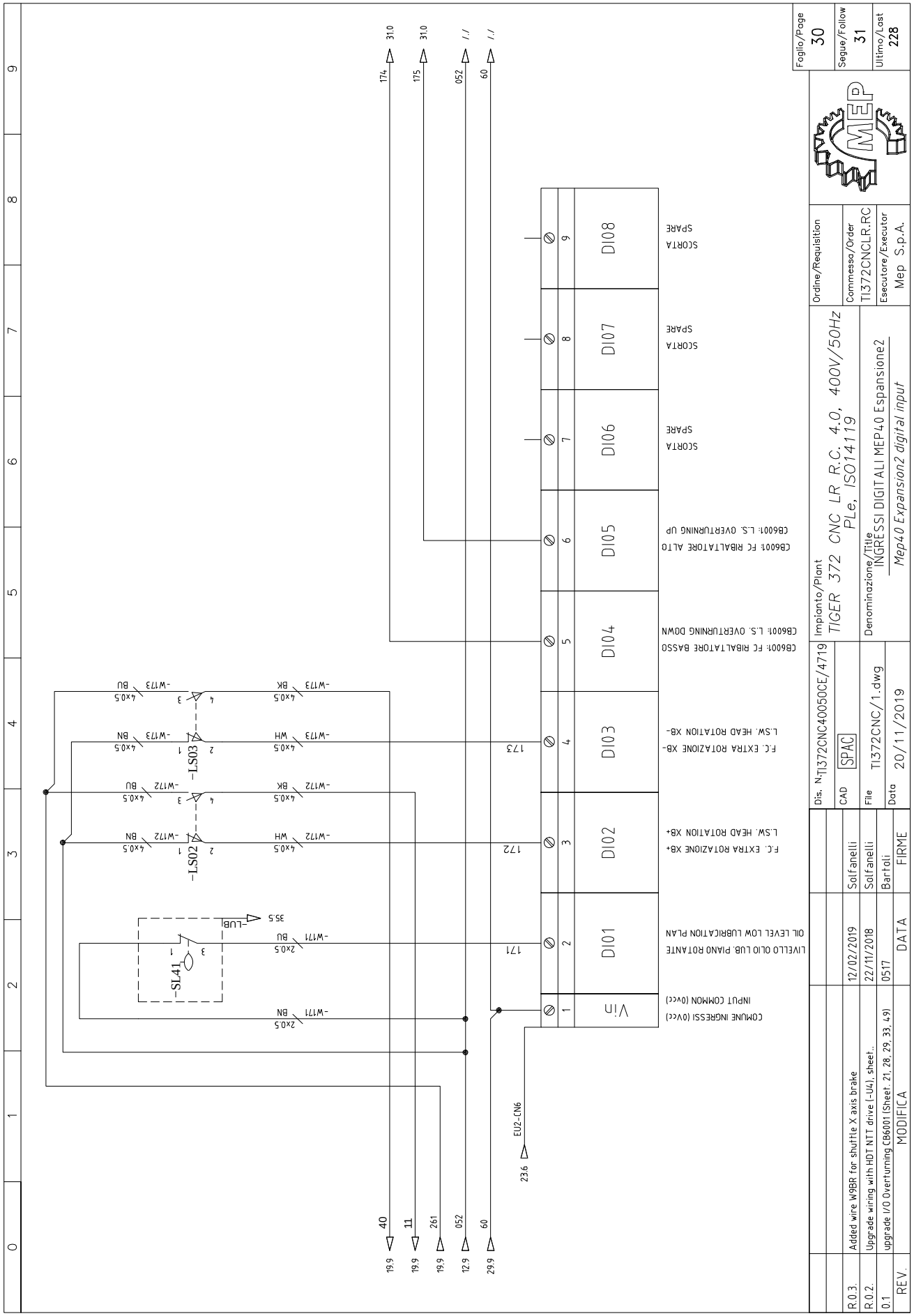

MORSETTIERA SEGNALI STEPPER TESTA MEP40
HEAD STEPPER SIGNALS CONNECTOR MEP40
MORSETTIERA SEGNALI STEPPER TESTA MEP40 ESPANSIONE
HEAD STEPPER SIGNALS CONNECTOR MEP40 EXPANSION
M40-CN10 21.8
EU1-CN9 22.9
VOut
STEP -
DIR -
STEP +
DIR +
NC
Vin
DIR -
DIR +
STEP-
STEP+
COMUNE (0Vcc)
COMMON (0Vcc)
DIR IN -
DIR IN +
STEP IN -
STEP IN +
060
0315
0316
0317
0318
12x0.5
-W61
GY
WH
GN
YE
BN
STEP OUT-
DIR OUT-
STEP OUT+
DIR OUT+
Dis. N° TI372CNC400500CE/4719
CAD SPAC
File TI372CNC/1.dwg
Data 20/11/2019
Impianto/Plant
TIGER 372 CNC LR R.C. 4.0, 400V/50Hz
PLe, ISO14119
Denominazione/Title
MEP40 COMANDI STEPPER TESTA
Mep40 HEAD SIGNALS STEPPER
Ordine/Requisition
Commessa/Order
TI372CNCLR.RC
Esecutore/Executor
Mep S.p.A.
Foglio/Page 25
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Ultimo/Last 228
R.0.3 Added wire W9BR for shuttle X axis brake 12/02/2019 Solfanelli
R.0.2 Upgrade wiring with HDT NTT drive (-U4), sheet... 22/11/2018 Solfanelli
0.1 upgrade I/O Overturning CB6001 (Sheet. 21, 28, 29, 33, 49) 0517 Bartoli
REV. MODIFICA DATA FIRME

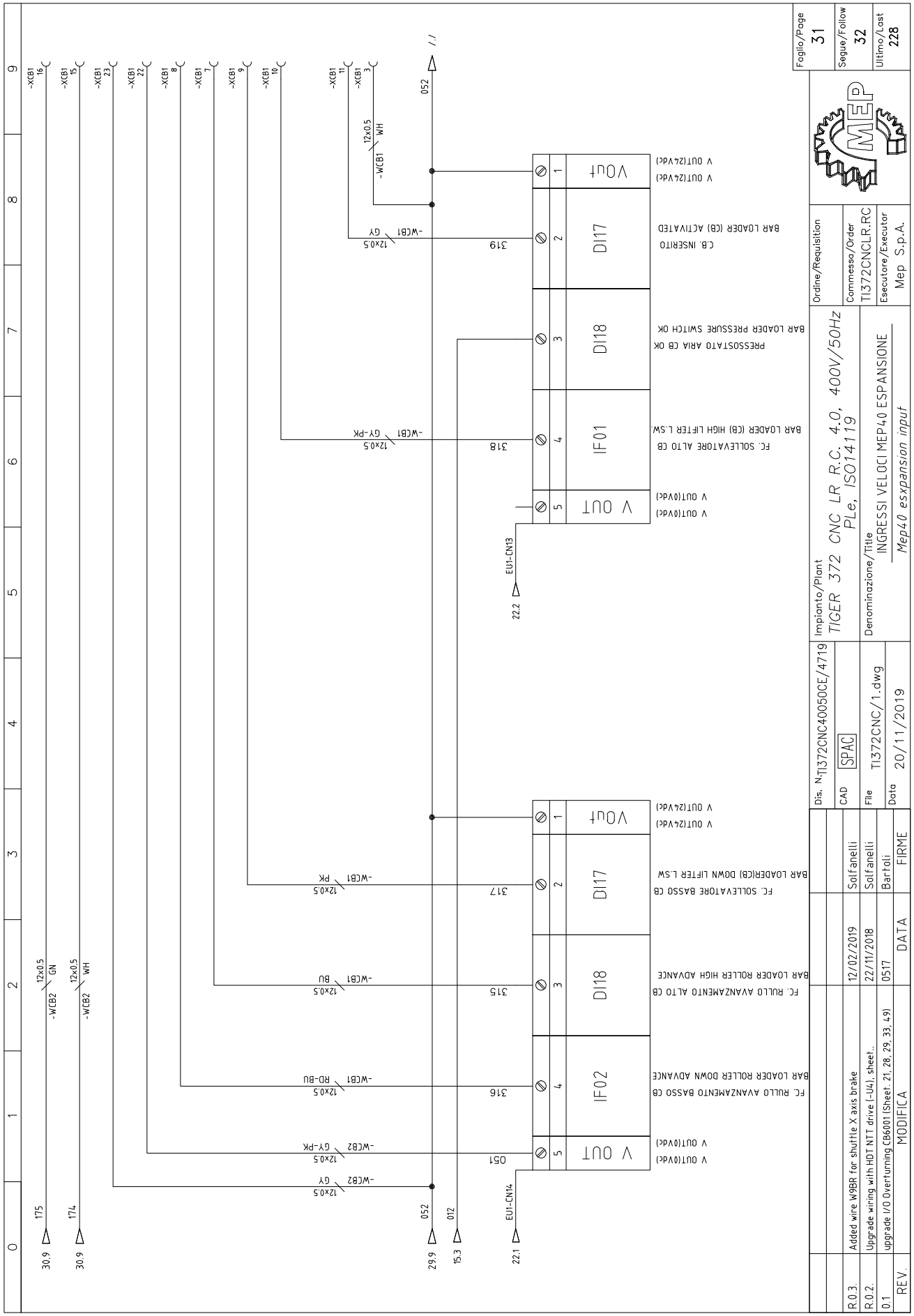

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Ultimo/Last 228
Ordine/Requisition
Commessa/Order TI372CNCLR.RC
Esecutore/Executor Mep S.p.A.
Impianto/Plant TIGER 372 CNC LR R.C. 4.0, 400V/50Hz PLe, ISO14119
Denominazione/Title MEP40 ALIM+CANOPEN+485
Mep40 supply+CanOpen+485
Dis. N° TI372CNC400500CE/4719
CAD SPAC
File TI372CNC/1.dwg
Data 20/11/2019
R.0.3. Added wire W9BR for shuttle X axis brake 12/02/2019 Solfanelli
R.0.2. Upgrade wiring with HDT NTT drive (-U4), sheet.. 22/11/2018 Solfanelli
0.1 upgrade I/O Overturning CB6001 (Sheet. 21, 28, 29, 33, 49) 0517 Barfoli
REV. MODIFICA DATA FIRME
ALIMENTAZIONE MEP40 POWER SUPPLY
ALIMENTAZIONE EU1 POWER SUPPLY
Vin 0V
PE
Vin 24VDC
M40-CN1
EU1-CN1
M40-CN5
EU1-CN2
CAN H
CAN L
0V CAN In
0V
H
L
-WS/5 4SH0.5 YE
-WS/5 4SH0.5 GN
-WS/5 4SH0.5 WH
-WS/5 4SH0.5 Sch
GIALLO YELLOW
BIANCO WHITE
VERDE GREEN
-W01 3G1.5 BU
-W01 3G1.5 BN
-W01 3G1.5 GN/YE
-XQG2
-XQGPE
-W01 3G1.5 GN/YE
0.5mm BU
1.5mm GN/YE
87
88
89
60
PE
251

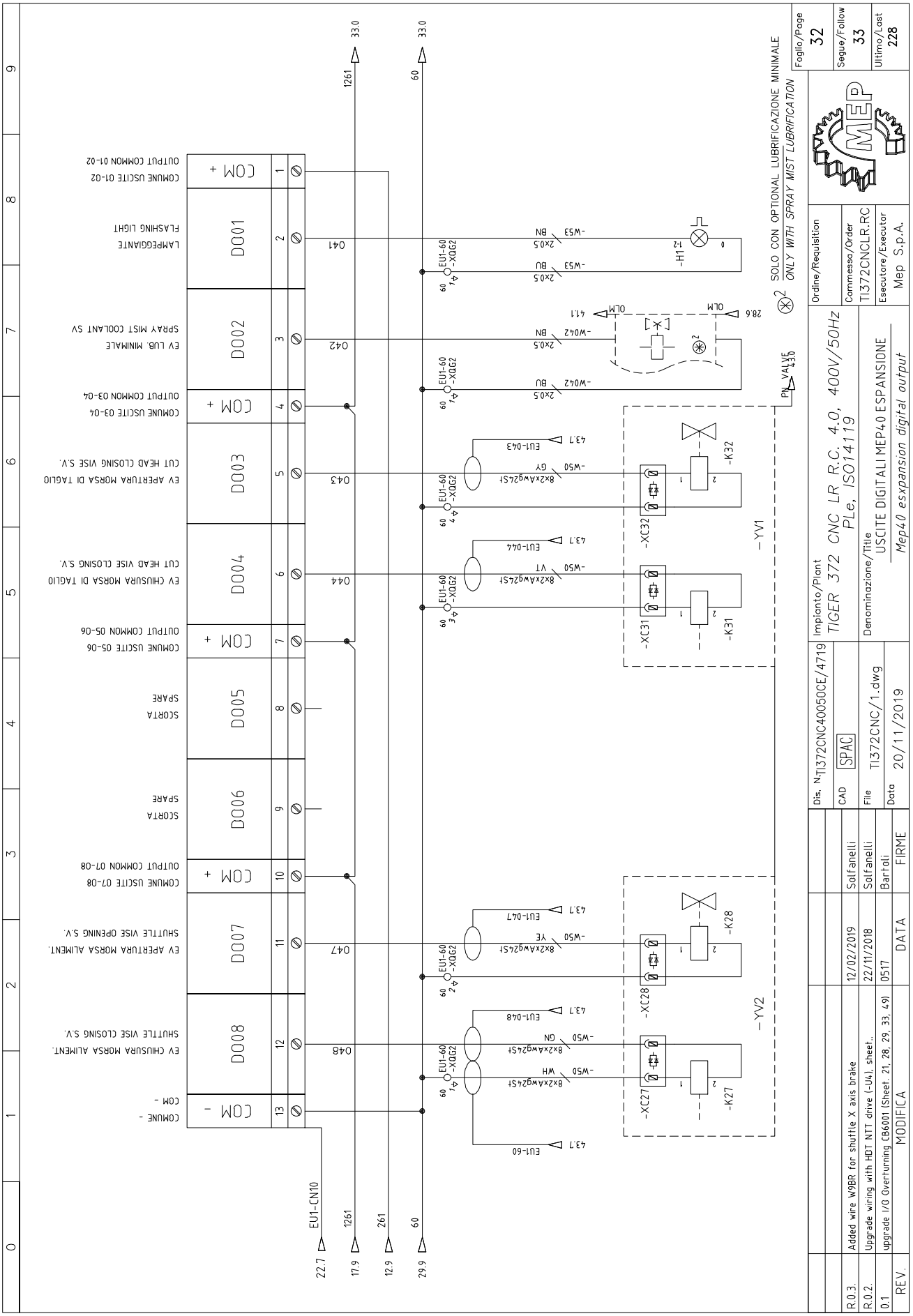

Foglio/Page 27
Segue/Follow 28
Ultimo/Last 228
Ordine/Requisition
Commessa/Order TI372CNCLR.RC
Esecutore/Executor Mep S.p.A.
Impianto/Plant TIGER 372 CNC LR R.C. 4.0, 400V/50Hz PLe, ISO14119
Denominazione/Title MEP40 Espansione ALIM+CANOPEN
Mep40 Expansion supply+CanOpen
Dis. N. TI372CNC400500CE/4719
CAD SPAC
File TI372CNC/1.dwg
Data 20/11/2019
R.0.3. Added wire W9BR for shuttle X axis brake 12/02/2019 Solfanelli
R.0.2. Upgrade wiring with HDT NTT drive [-U4], sheet... 22/11/2018 Solfanelli
0.1 upgrade I/O Overturning CB6001 (Sheet. 21, 28, 29, 33, 49) 0517 Bartoli
REV. MODIFICA DATA FIRME
EU2-CN3
EU2-CN2
EU1-CN3
EU2-CN1
0V
L
H
Vin 0V
PE
Vin 24VDC
ALIMENTAZIONE EU2
EU2 POWER SUPPLY
CAN H
CAN L
0V CAN
VERDE GREEN
BIANCO WHITE
GIALLO YELLOW
4SH0.5
-WS6
0,5mq
1,5mq
PE

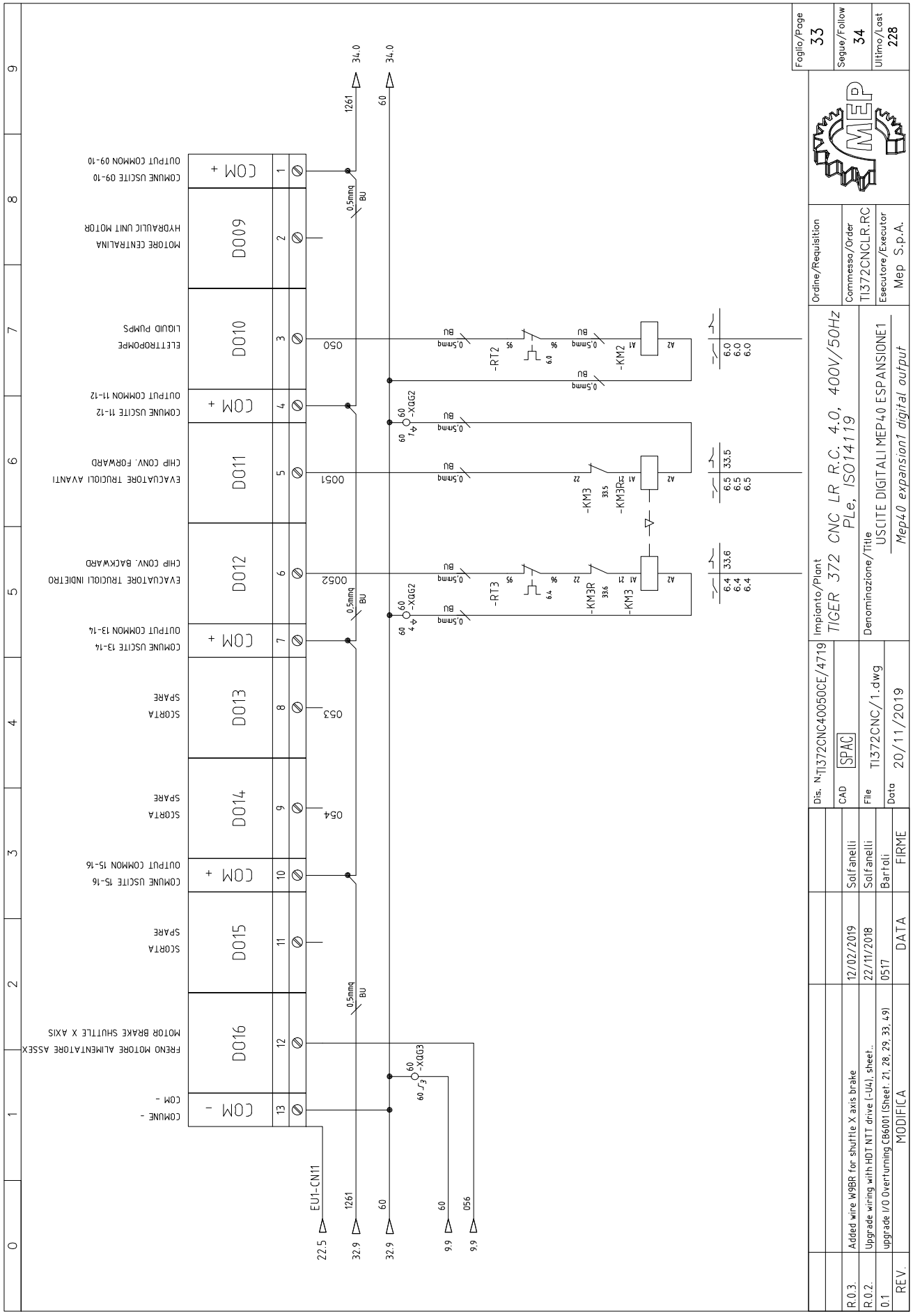

SOLO CON OPTIONAL LUBRIFICAZIONE MINIMALE
ONLY WITH SPRAY MIST LUBRIFICATION
Foglio/Page 28
Segue/Follow 29
Ultimo/Last 228
Ordine/Requisition
Commessa/Order TI372CNCLR.RC
Esecutore/Executor Mep S.p.A.
Impianto/Plant TIGER 372 CNC LR R.C. 4.0, 400V/50Hz PLe, ISO14119
Denominazione/Title INGRESSI DIGITALI MEP40 Espansione1
Mep40 Expansion1 digital input
Dis. N° TI372CNC400500CE/4719
CAD SPAC
File TI372CNC/1.dwg
Data 20/11/2019
R0.3. Added wire W98R for shuttle X axis brake 12/02/2019 Solfanelli
R0.2. Upgrade wiring with HDT NTT drive (-U4), sheet.. 22/11/2018 Solfanelli
0.1 upgrade I/O Overturning CB6001 (Sheet. 21, 28, 29, 33, 49) 0517 Bartoli
REV. MODIFICA DATA FIRME
DI01 DI02 DI03 DI04 DI05 DI06 DI07 DI08
Vin
INPUT COMMON (0Vcc)
COMUNE INGRESSI (0Vcc)
RS1 RIPRISTINATO - EMERGENZA OK
RS1 OK - MOBILE GUARDS OK
SEGNALE RELE' SICUREZZA RS2
SAFETY RELAY SIGNAL RS2
PRESENZA BARRA M.TAGLIO
PROXY BAR INFEED SENSOR CUT VISE
PRESENZA BARRA ALLINEATORE
PROXY BAR INFEED SHUTTLE VISE
FC AZZ. ASSE ALIMENT.
SHUTTLE ZERO INF L.SW.
STATUS RIPARO FRONTALE APERTO
FRONTAL GUARD UNLOCKED STATUS
LIVELLO OLIO LUB. MINIMALE
SPRAY MIST OIL LEVEL
SCORTA
SPARE
-S43
-S44
-S45
-XQG2
-W147
-W143
-W144
-W139
-W145
EU1-CN6
OLM

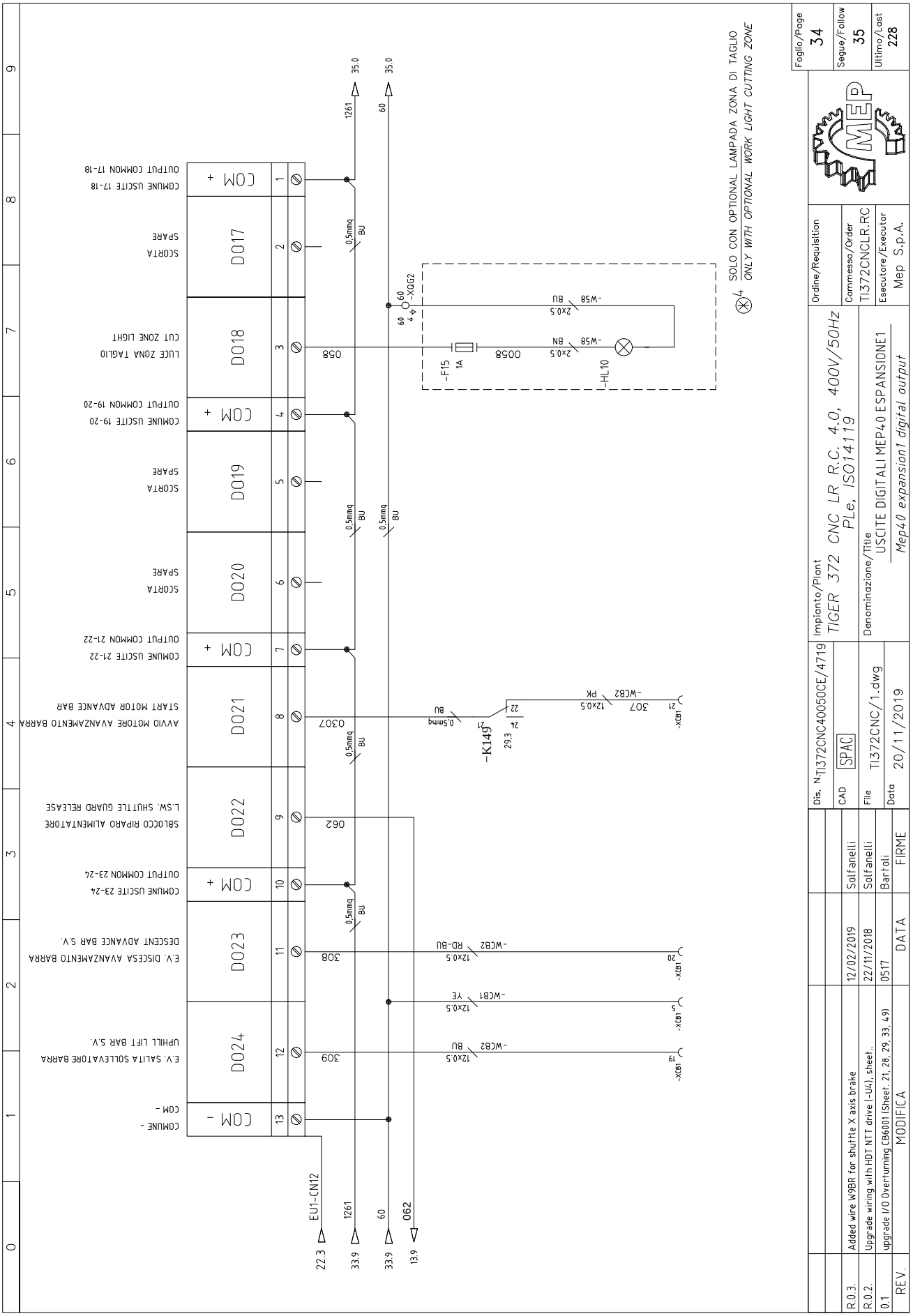

Foglio/Page 29
Segue/Follow 30
Ultimo/Last 228
Ordine/Requisition
Commessa/Order TI372CNCLR.RC
Esecutore/Executor Mep S.p.A.
Impianto/Plant TIGER 372 CNC LR R.C. 4.0, 400V/50Hz PLe, ISO14119
Denominazione/Title INGRESSI DIGITALI MEP40 Espansione1
Mep40 Expansion1 digital input
Dis. N. TI372CNC400500CE/4719
CAD SPAC
File TI372CNC/1.dwg
Data 20/11/2019
R.0.3. Added wire W9BR for shuttle X axis brake 12/02/2019 Solfanelli
R.0.2. Upgrade wiring with HDT NTT drive (-U4), sheet.. 22/11/2018 Solfanelli
0.1 upgrade I/O Overturning CB6001 (Sheet. 21, 28, 29, 33, 49) 0517 Bartoli
REV. MODIFICA DATA FIRME
SOLO CON OPTIONAL PEDALIERA
ONLY WITH CONTROL PEDALS
DI16 DI15 DI14 DI13 DI12 DI11 DI10 DI09 Vin
PRESSOSTATO ARIA OK
AIR PRESSURE SWITCH SENSOR OK
CHIP CONVEYOR THERMAL CUT OFF
TERMICA EVTR SCATTATA
F.C. EXTRA + ASSE Y
EXTRA + Y AXIS L.SW.
START FROM FIELD
START DA CAMPO
COOLANT PUMP THERMALS CUT OFF
TERMICA ELETTROPOMPE SCATTATE
F.C. EXTRA CORSA - ASSE Y
OVERTRAVEL - Y AXIS L.SW.
FC EVACUATORE BLOCCATO
CHIP CONVEYOR LOCKED L.SW
PROXY PASSAGGIO BARRA
PROXY SENSOR BAR TRANSIT
COMUNE INGRESSI (0Vcc)
INPUT COMMON (0Vcc)
-S49 -S50 -S51 -S54 -K149 -RT2 -RT3
-XQG2 -XQG3 -XF52(1) -XM52(1)
-W149 -W150 -W150/1 -W154 -W156
EU1-CN7

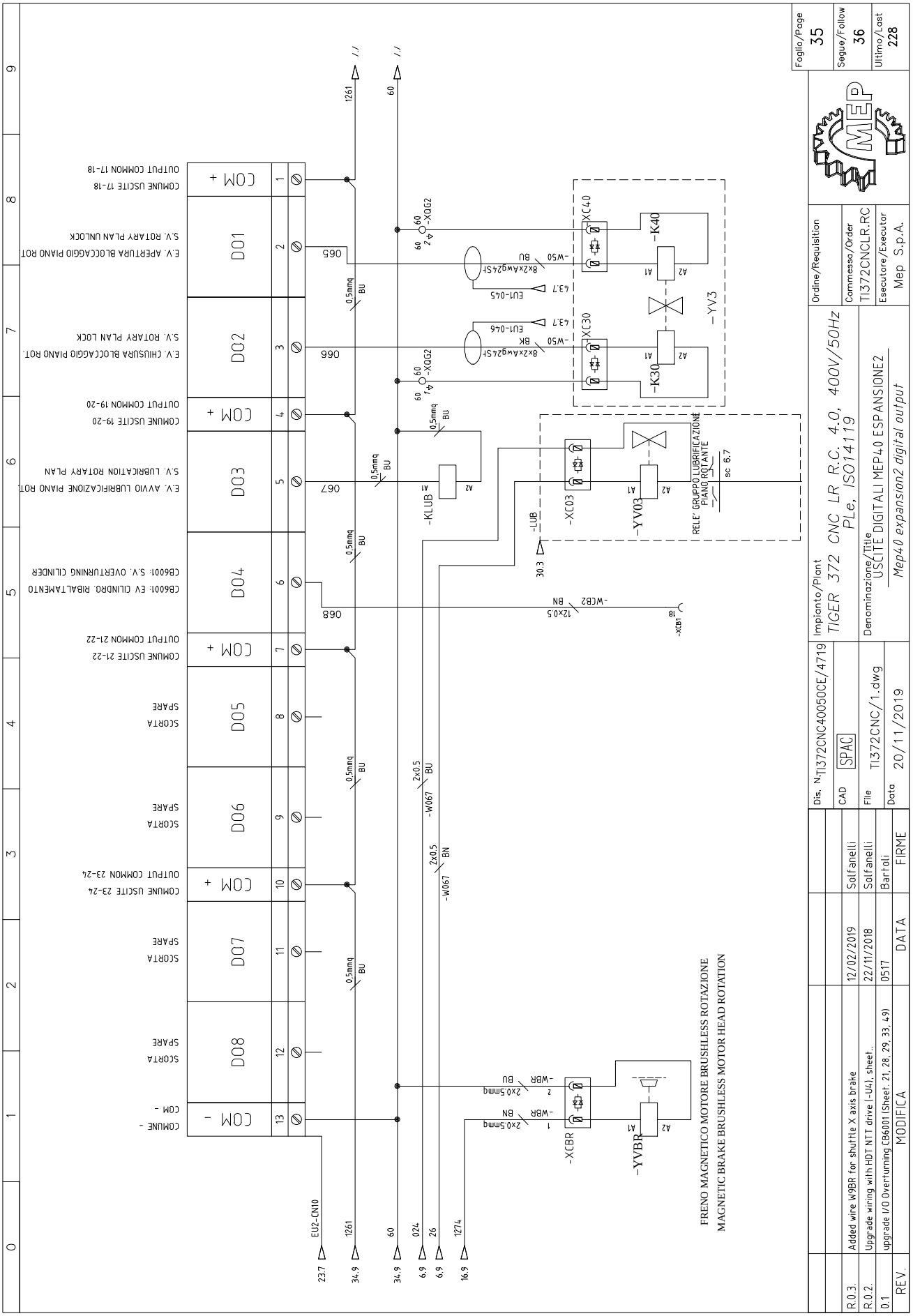

Foglio/Page 30
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Ultimo/Last 228
Ordine/Requisition
Commessa/Order TI372CNCLR.RC
Esecutore/Executor Mep S.p.A.
Impianto/Plant TIGER 372 CNC LR R.C. 4.0, 400V/50Hz PLe, ISO14119
Denominazione/Title INGRESSI DIGITALI MEP40 Espansione2
Mep40 Expansion2 digital input
Dis. N° TI372CNC400500CE/4719
CAD SPAC
File TI372CNC/1.dwg
Data 20/11/2019
R.0.3. Added wire W9BR for shuttle X axis brake 12/02/2019 Solfanelli
R.0.2. Upgrade wiring with HDT NTT drive (-U4), sheet.. 22/11/2018 Solfanelli
0.1 upgrade I/O Overturning CB6001 (Sheet. 21, 28, 29, 33, 49) 0517 Barboli
REV. MODIFICA DATA FIRME
V in
D101
D102
D103
D104
D105
D106
D107
D108
SPARE
SCORTA
-LS41
-LS02
-LS03
-LUB
-W171
-W172
-W173
-W9BR
-EU2-CN6
-CB6001: L.S. OVERTURNING UP
-CB6001: L.S. OVERTURNING DOWN
-CB6001: FC RIBALTATORE ALTO
-CB6001: FC RIBALTATORE BASSO
F.C. EXTRA ROTAZIONE XB-
F.C. EXTRA ROTAZIONE XB+
L.SW. HEAD ROTATION XB-
L.SW. HEAD ROTATION XB+
LIVELLO OLIO LUB. PIANO ROTANTE
OIL LEVEL LOW LUBRICATION PLAN
COMUNE INGRESSI (0Vcc)
INPUT COMMON (0Vcc)

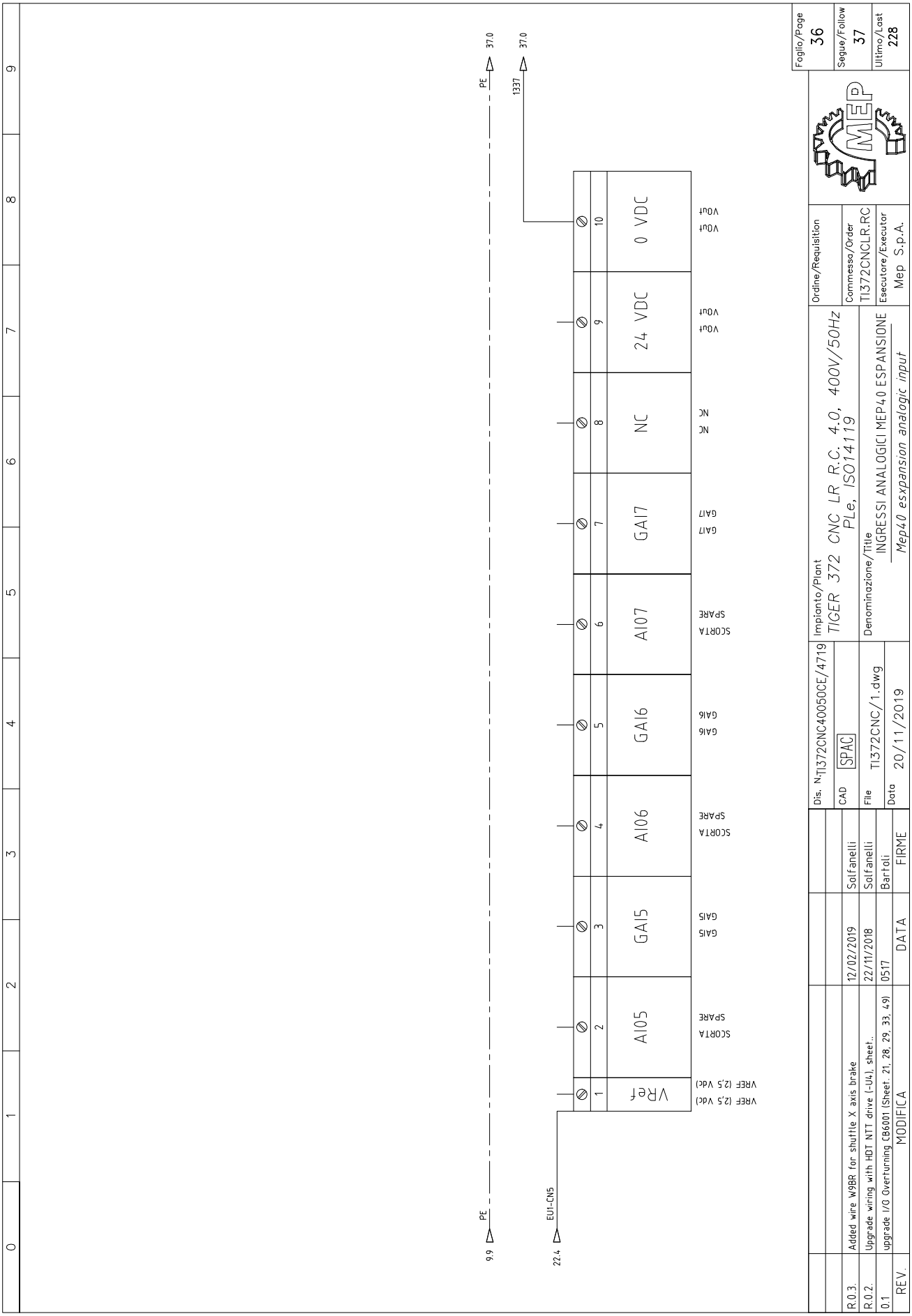

Foglio/Page 31
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Ultimo/Last 228
Ordine/Requisition
Commessa/Order TI372CNCLR.RC
Esecutore/Executor Mep S.p.A.
Impianto/Plant TIGER 372 CNC LR R.C. 4.0, 400V/50Hz PLe, ISO14119
Denominazione/Title INGRESSI VELOCI MEP40 ESPANSIONE
Mep40 espansion input
Dis. N. TI372CNC400500CE/4719
CAD SPAC
File TI372CNC/1.dwg
Data 20/11/2019
R.0.3 Added wire W9BR for shuttle X axis brake 12/02/2019 Solfanelli
R.0.2. Upgrade wiring with HDT NTT drive (-U4), sheet... 22/11/2018 Solfanelli
0.1 upgrade I/O Overturning CB6001 (Sheet. 21, 28, 29, 33, 49) 0517 Bartoli
REV. MODIFICA DATA FIRME
-XCB1 16
-XCB1 15
-XCB1 23
-XCB1 22
-XCB1 8
-XCB1 7
-XCB1 9
-XCB1 10
-XCB1 11
-XCB1 3
-WCB2 GN 12x0.5
-WCB2 WH 12x0.5
-WCB2 GY 12x0.5
-WCB2 GY-PK 12x0.5
-WCB1 RD-BU 12x0.5
-WCB1 BU 12x0.5
-WCB1 PK 12x0.5
-WCB1 GY-PK 12x0.5
-WCB1 GY 12x0.5
-WCB1 WH 12x0.5
175
174
30.9
30.9
052
012
29.9
15.3
EU1-CN14
22.1
051
316
315
317
318
319
EU1-CN13
22.2
IF02
DI18
DI17
IF01
DI18
DI17
V OUT
V OUT
V OUT(0VdC)
V OUT(24VdC)
FC. RULLO AVANZAMENTO BASSO CB
BAR LOADER ROLLER DOWN ADVANCE
FC. RULLO AVANZAMENTO ALTO CB
BAR LOADER ROLLER HIGH ADVANCE
FC. SOLLEVATORE BASSO CB
BAR LOADER(CB) DOWN LIFTER L.SW
FC. SOLLEVATORE ALTO CB
BAR LOADER (CB) HIGH LIFTER L.SW.
PRESSOSTATO ARIA CB OK
BAR LOADER PRESSURE SWITCH OK
C.B. INSERITO
BAR LOADER (CB) ACTIVATED

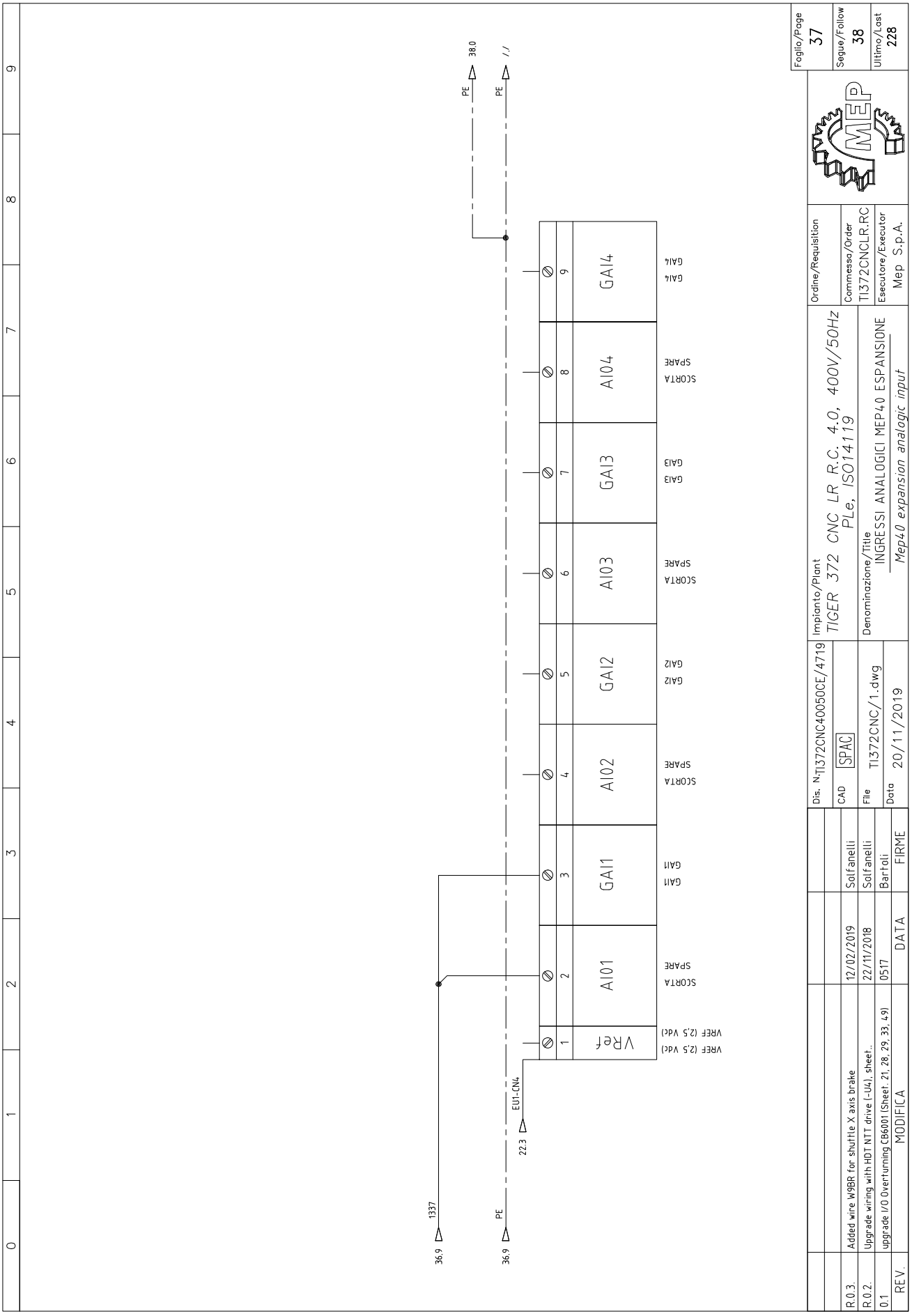

Dis. N. TI372CNC400500CE/4719
CAD SPAC
File TI372CNC/1.dwg
Data 20/11/2019
Impianto/Plant
TIGER 372 CNC LR R.C. 4.0, 400V/50Hz
PLe, ISO14119
Denominazione/Title
USCITE DIGITALI MEP40 ESPANSIONE
Mep40 esxpansion digital output
Ordine/Requisition
Commessa/Order
TI372CNCLR.RC
Esecutore/Executor
Mep S.p.A.
Foglio/Page 32
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Ultimo/Last 228
SOLO CON OPTIONAL LUBRIFICAZIONE MINIMALE
ONLY WITH SPRAY MIST LUBRIFICATION
REV. MODIFICA DATA FIRME
R.0.3. Added wire W9BR for shuttle X axis brake 12/02/2019 Solfanelli
R.0.2. Upgrade wiring with HDT NTT drive (-U4), sheet.. 22/11/2018 Solfanelli
0.1 upgrade I/O Overturning CB6001 (Sheet. 21, 28, 29, 33, 49) 0517 Barboli
COM -
COMUNE -
COM +
COMUNE USCITE 01-02
OUTPUT COMMON 01-02
DO01
LAMPEGGIANTE
FLASHING LIGHT
DO02
EV LUB. MINIMALE
SPRAY MIST COOLANT SV
COM +
COMUNE USCITE 03-04
OUTPUT COMMON 03-04
DO03
EV APERTURA MORSA DI TAGLIO
CUT HEAD CLOSING VISE S.V.
DO04
EV CHIUSURA MORSA DI TAGLIO
CUT HEAD VISE CLOSING S.V.
COM +
COMUNE USCITE 05-06
OUTPUT COMMON 05-06
DO05
SCORTA
SPARE
DO06
SCORTA
SPARE
COM +
COMUNE USCITE 07-08
OUTPUT COMMON 07-08
DO07
EV APERTURA MORSA ALIMENT.
SHUTTLE VISE OPENING S.V.
DO08
EV CHIUSURA MORSA ALIMENT.
SHUTTLE VISE CLOSING S.V.
EU1-CN10
22.7
17.9
12.9
29.9
1261
261
60
33.0
041
042
043
044
047
048
-YV1
-YV2
-K32
-K31
-K28
-K27
-XC32
-XC31
-XC28
-XC27
-H1
-W53
-W042
-W50
EU1-60
-XQG2
8x2xAwg24St
2x0.5
BN
BU
GY
VT
YE
GN
WH
OLM
VALVE
PN

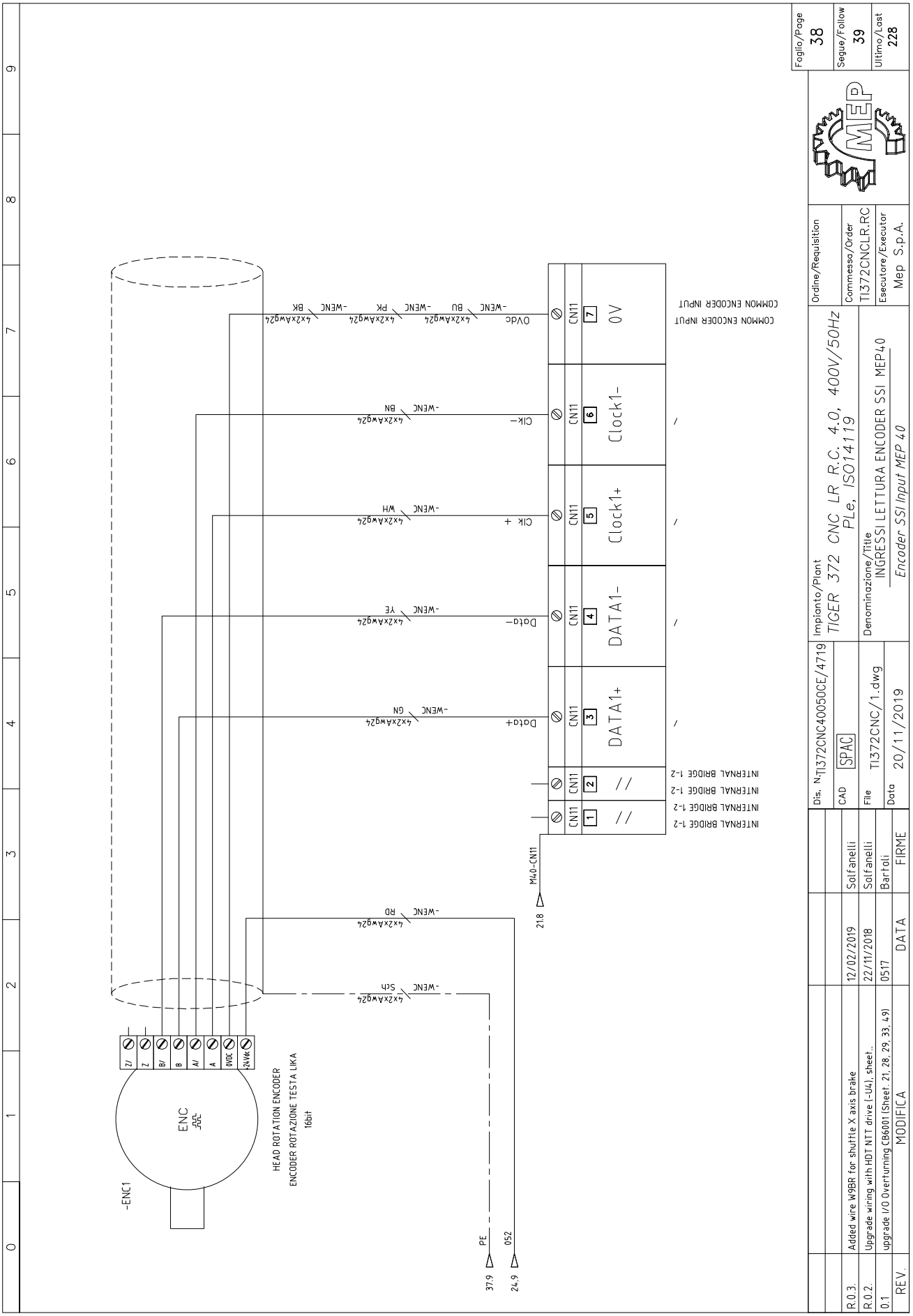

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Ultimo/Last 228
Ordine/Requisition
Commessa/Order TI372CNCLR.RC
Esecutore/Executor Mep S.p.A.
Impianto/Plant TIGER 372 CNC LR R.C. 4.0, 400V/50Hz PLe, ISO14119
Denominazione/Title USCITE DIGITALI MEP4.0 ESPANSIONE1
Mep4.0 expansion1 digital output
Dis. N. TI372CNC400500CE/4719
CAD SPAC
File TI372CNC/1.dwg
Data 20/11/2019
R.0.3 Added wire W9BR for shuttle X axis brake 12/02/2019 Solfanelli
R.0.2. Upgrade wiring with HDT NTT drive (-U4), sheet... 22/11/2018 Solfanelli
0.1 upgrade I/O Overturning CB6001 (Sheet. 21, 28, 29, 33, 49) 0517 Bartoli
REV. MODIFICA DATA FIRME
D016 MOTOR BRAKE SHUTTLE X AXIS
D015 SPARE
D014 SPARE
D013 SPARE
D012 CHIP CONV. BACKWARD
D011 CHIP CONV. FORWARD
D010 LIQUID PUMPS
D009 HYDRAULIC UNIT MOTOR
COM - COMUNE - COM -
COM + OUTPUT COMMON 15-16
COM + OUTPUT COMMON 13-14
COM + OUTPUT COMMON 11-12
COM + OUTPUT COMMON 09-10
-KM2
-KM3
-KM3R
-RT2
-RT3
-XAG2
-XAG3
EU1-CN11

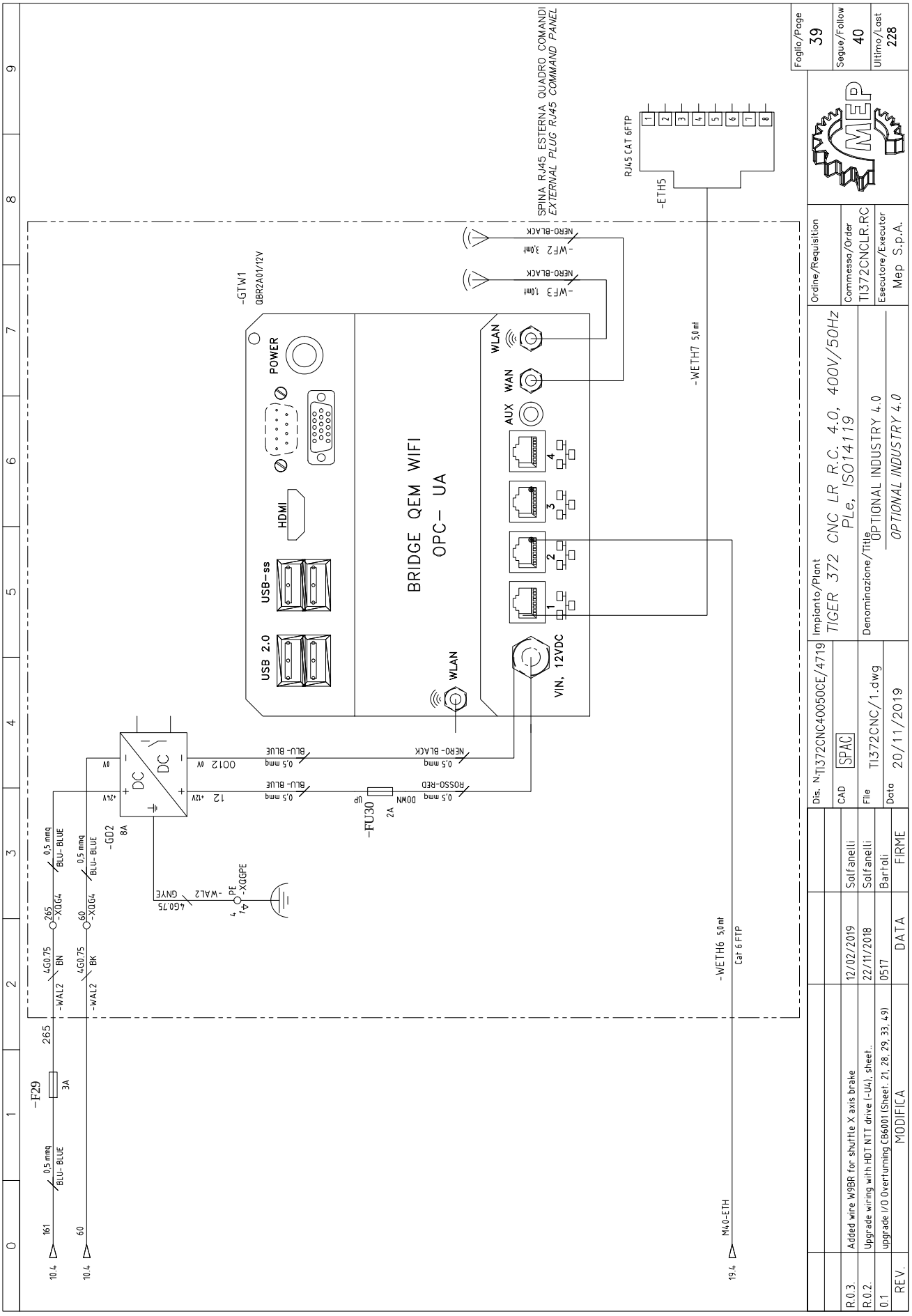

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Segue/Follow 35
Ultimo/Last 228
Ordine/Requisition
Commessa/Order TI372CNCLR.RC
Esecutore/Executor Mep S.p.A.
Impianto/Plant TIGER 372 CNC LR R.C. 4.0, 400V/50Hz PLe, ISO14119
Denominazione/Title USCITE DIGITALI MEP40 ESPANSIONE1
Mep40 expansion1 digital output
Dis. N° TI372CNC400500CE/4719
CAD SPAC
File TI372CNC/1.dwg
Data 20/11/2019
SOLO CON OPTIONAL LAMPADA ZONA DI TAGLIO
ONLY WITH OPTIONAL WORK LIGHT CUTTING ZONE
COMUNE USCITE 17-18
OUTPUT COMMON 17-18
SCORTA SPARE
LUCE ZONA TAGLIO
CUT ZONE LIGHT
COMUNE USCITE 19-20
OUTPUT COMMON 19-20
SCORTA SPARE
COMUNE USCITE 21-22
OUTPUT COMMON 21-22
SCORTA SPARE
AVVIO MOTORE AVANZAMENTO BARRA
START MOTOR ADVANCE BAR
SBLOCCO RIPARO ALIMENTATORE
L.SW. SHUTTLE GUARD RELEASE
COMUNE USCITE 23-24
OUTPUT COMMON 23-24
E.V. DISCESA AVANZAMENTO BARRA
DESCENT ADVANCE BAR S.V.
E.V. SALITA SOLLEVATORE BARRA
UPHILL LIFT BAR S.V.
COM -
COMUNE -
DO17
DO18
DO19
DO20
DO21
DO22
DO23
DO24
EU1-CN12
-XQG2
-F15
-HL10
-K149
-WCB2
-WCB1
-XCB1
R.0.3. Added wire W9BR for shuttle X axis brake 12/02/2019 Solfanelli
R.0.2. Upgrade wiring with HDT NTT drive (-U4), sheet.. 22/11/2018 Solfanelli
0.1 upgrade I/O Overturning CB6001 (Sheet. 21, 28, 29, 33, 49) 0517 Barfoli
REV. MODIFICA DATA FIRME

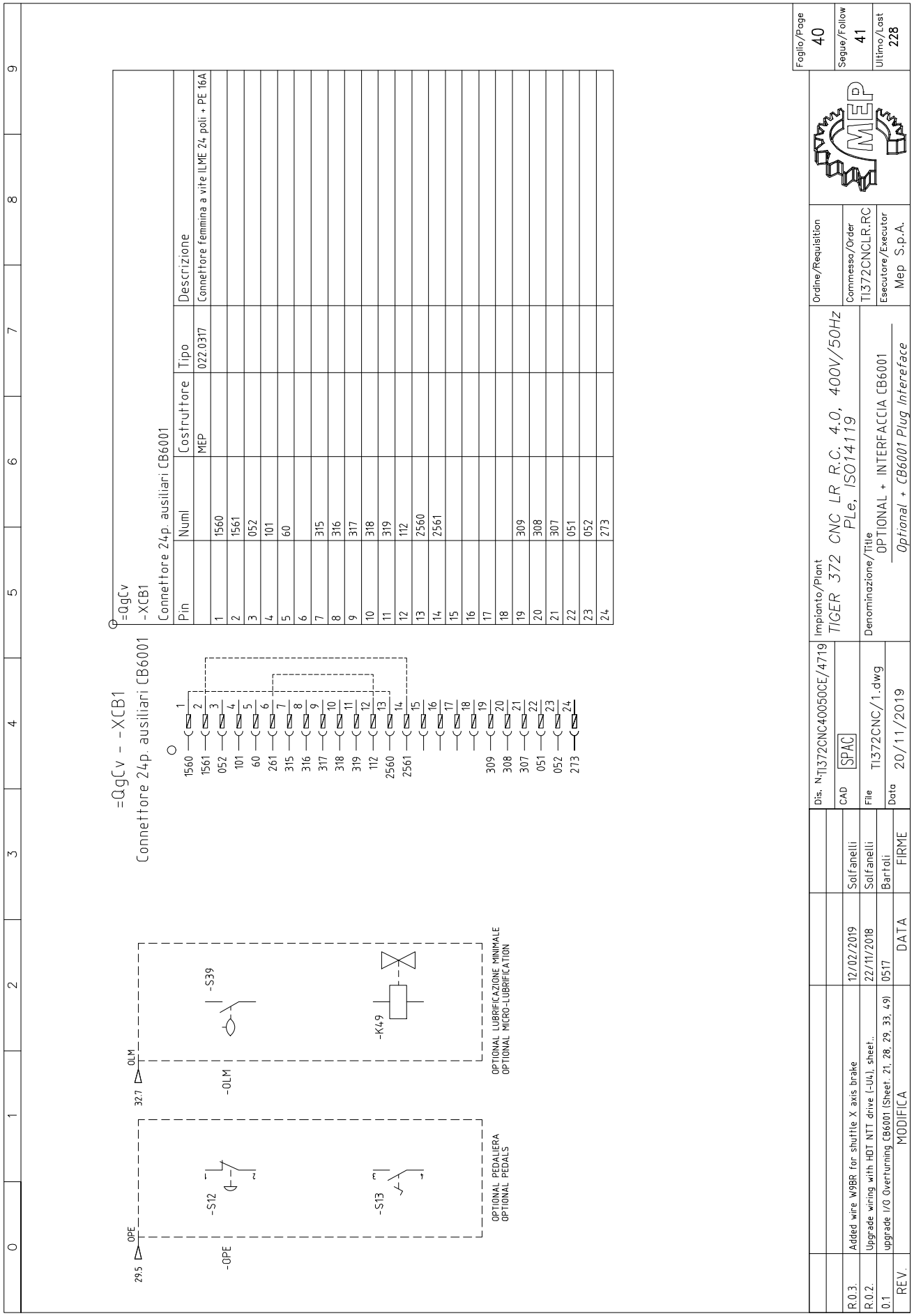

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Ultimo/Last 228
Ordine/Requisition
Commessa/Order TI372CNCLR.RC
Esecutore/Executor Mep S.p.A.
Impianto/Plant TIGER 372 CNC LR R.C. 4.0, 400V/50Hz PLe, ISO14119
Denominazione/Title USCITE DIGITALI MEP40 ESPANSIONE2
Mep40 expansion2 digital output
Dis. N. TI372CNC400500E/4719
CAD SPAC
File TI372CNC/1.dwg
Data 20/11/2019
R.0.3 Added wire W9BR for shuttle X axis brake 12/02/2019 Solfanelli
R.0.2 Upgrade wiring with HDT NTT drive (-U4), sheet... 22/11/2018 Solfanelli
0.1 upgrade I/O Overturning CB6001 (Sheet. 21, 28, 29, 33, 49) 0517 Bartoli
REV. MODIFICA DATA FIRME
FRENO MAGNETICO MOTORE BRUSHLESS ROTAZIONE
MAGNETIC BRAKE BRUSHLESS MOTOR HEAD ROTATION
RELE' GRUPPO LUBRIFICAZIONE PIANO ROTANTE
-KLUB
-XC03
-YV03
-LUB
-XCBR
-YVBR
-W067
-WBR
-WCB2
-XC40
-K40
-XC30
-K30
-YV3
-XQG2
-W50
-XCB1
COM -
COM +
DO1
DO2
DO3
DO4
DO5
DO6
DO7
DO8
COMUNE USCITE 17-18
OUTPUT COMMON 17-18
COMUNE USCITE 19-20
OUTPUT COMMON 19-20
COMUNE USCITE 21-22
OUTPUT COMMON 21-22
COMUNE USCITE 23-24
OUTPUT COMMON 23-24
E.V. APERTURA BLOCCAGGIO PIANO ROT.
S.V. ROTARY PLAN UNLOCK
E.V. CHIUSURA BLOCCAGGIO PIANO ROT.
S.V. ROTARY PLAN LOCK
E.V. AVVIO LUBRIFICAZIONE PIANO ROT.
S.V. LUBRICATION ROTARY PLAN
CB6001: EV CILINDRO. RIBALTAMENTO
CB6001: S.V. OVERTURNING CILINDER
SCORTA
SPARE
EU2-CN10


0 1 2 3 4 5 6 7 8 9
PE
37.0
1337
PE
9.9
EUI-CN5
22.4
VRef
A105
GAI5
A106
GAI6
A107
GAI7
NC
24 VDC
0 VDC
VREF (2,5 Vdc)
SCORTA SPARE
GAI5
GAI6
GAI7
NC
VOut
1
2
3
4
5
6
7
8
9
10
Foglio/Page 36
Segue/Follow 37
Ultimo/Last 228
Ordine/Requisition
Commessa/Order TI372CNCLR.RC
Esecutore/Executor Mep S.p.A.
Impianto/Plant TIGER 372 CNC LR R.C. 4.0, 400V/50Hz PLe, ISO14119
Denominazione/Title INGRESSI ANALOGICI MEP40 ESPANSIONE
Mep40 esxpansion analogic input
Dis. N. TI372CNC400S0CE/4719
CAD SPAC
File TI372CNC/1.dwg
Data 20/11/2019
R.0.3. Added wire W9BR for shuttle X axis brake 12/02/2019 Solfanelli
R.0.2. Upgrade wiring with HDT NTT drive (-U4), sheet.. 22/11/2018 Solfanelli
0.1 upgrade I/O Overturning CB6001 (Sheet. 21, 28, 29, 33, 49) 0517 Barloli
REV. MODIFICA DATA FIRME

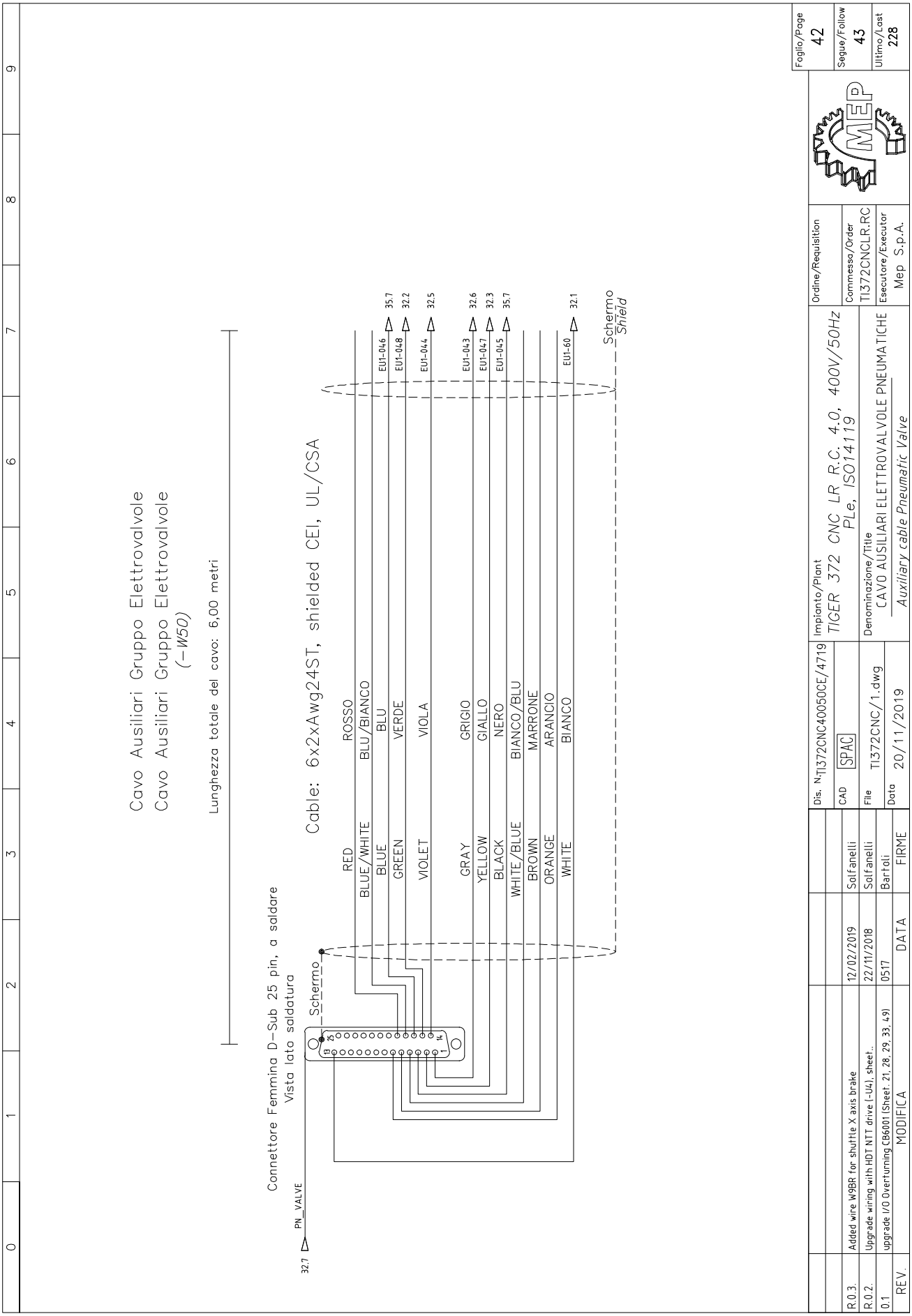

PE
38.0
PE
1.1
1337
36.9
PE
36.9
EU1-CN4
22.3
VRef
AI01
GAI1
AI02
GAI2
AI03
GAI3
AI04
GAI4
VREF (2,5 Vdc)
SCORTA
SPARE
GAI1
GAI2
GAI3
GAI4
Foglio/Page 37
Segue/Follow 38
Ultimo/Last 228
Ordine/Requisition
Commessa/Order TI372CNCLR.RC
Esecutore/Executor Mep S.p.A.
Impianto/Plant TIGER 372 CNC LR R.C. 4.0, 400V/50Hz PLe, ISO14119
Denominazione/Title INGRESSI ANALOGICI MEP40 ESPANSIONE
Mep40 expansion analogic input
Dis. N° TI372CNC400SOCE/4719
CAD SPAC
File TI372CNC/1.dwg
Data 20/11/2019
R.0.3 Added wire W9BR for shuttle X axis brake 12/02/2019 Solfanelli
R.0.2 Upgrade wiring with HDT NTT drive (-U4), sheet.. 22/11/2018 Solfanelli
0.1 upgrade I/O Overturning CB6001 (Sheet. 21, 28, 29, 33, 49) 0517 Bartoli
REV. MODIFICA DATA FIRME

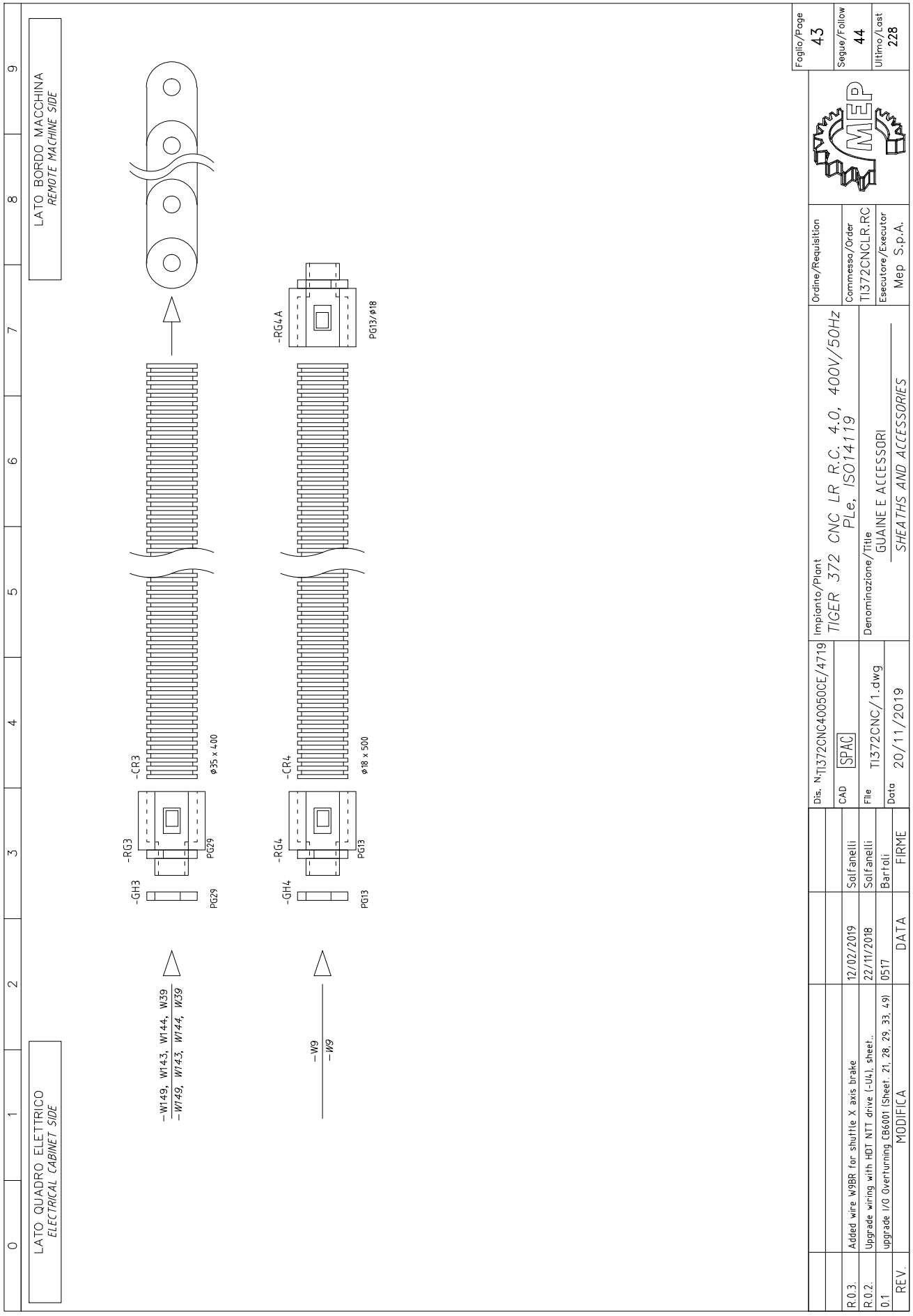

Foglio/Page 38
Segue/Follow 39
Ultimo/Last 228
Ordine/Requisition
Commessa/Order TI372CNCLR.RC
Esecutore/Executor Mep S.p.A.
Impianto/Plant TIGER 372 CNC LR R.C. 4.0, 400V/50Hz PLe, ISO14119
Denominazione/Title INGRESSI LETTURA ENCODER SSI MEP40
Encoder SSI Input MEP 40
Dis. N. TI372CNC400500CE/4719
CAD SPAC
File TI372CNC/1.dwg
Data 20/11/2019
R.0.3. Added wire W9BR for shuttle X axis brake 12/02/2019 Salfanelli
R.0.2. Upgrade wiring with HDT NTT drive (-U4), sheet.. 22/11/2018 Salfanelli
0.1 upgrade I/O Overturning CB6001 (Sheet. 21, 28, 29, 33, 49) 0517 Barloli
REV. MODIFICA DATA FIRME
-ENC1
HEAD ROTATION ENCODER
ENCODER ROTAZIONE TESTA LIKA 16bit
ENC
Z/
Z
B/
B
A/
A
0VDC
+24Vdc
-WENC Sch 4x2xAwg24
-WENC RD 4x2xAwg24
PE
37.9
052
24.9
M40-CN11
21.8
INTERNAL BRIDGE 1-2
CN11 1
CN11 2
//
DATA1+
CN11 3
Data+
-WENC GN 4x2xAwg24
DATA1-
CN11 4
Data-
-WENC YE 4x2xAwg24
Clock1+
CN11 5
CLK +
-WENC WH 4x2xAwg24
Clock1-
CN11 6
CLK-
-WENC BN 4x2xAwg24
0V
CN11 7
0Vdc
-WENC BU 4x2xAwg24
-WENC PK 4x2xAwg24
-WENC BK 4x2xAwg24
COMMON ENCODER INPUT

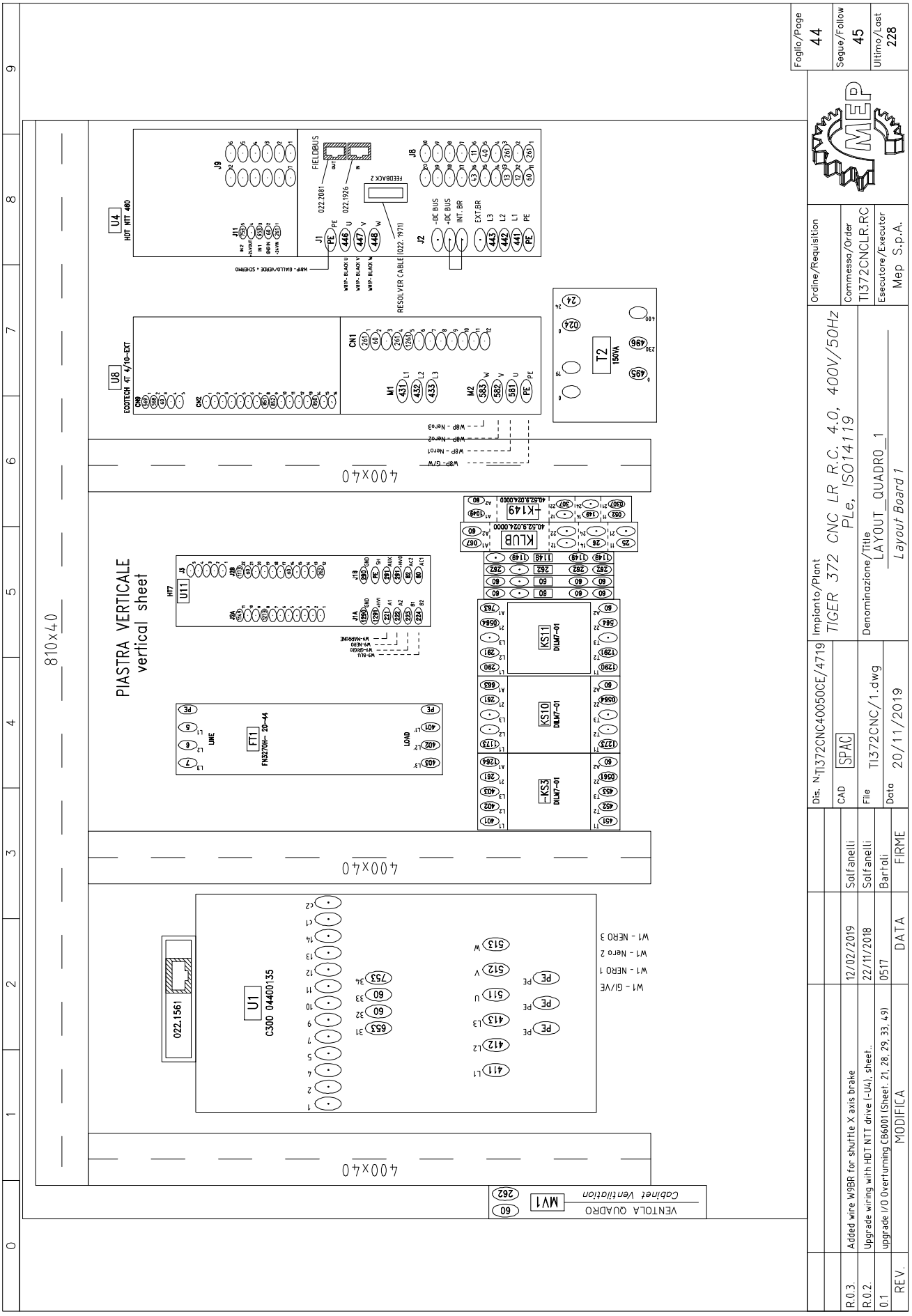

SPINA RJ45 ESTERNA QUADRO COMANDI
EXTERNAL PLUG RJ45 COMMAND PANEL
RJ45 CAT 6FTP
-ETH5
-GTW1
QBR2A01/12V
POWER
HDMI
USB-ss
USB 2.0
WLAN
WAN
AUX
BRIDGE QEM WIFI
OPC- UA
VIN, 12VDC
-WF2 3,0mt
-WF3 1,0mt
NERO-BLACK
-WETH7 5,0mt
-WETH6 5,0mt
Cat 6 FTP
M40-ETH
-F29
3A
-FU30
2A
-GD2
8A
-XQG4
-XQGPE
-WAL2
0,5 mmq
BLU- BLUE
NERO- BLACK
ROSSO-RED
BLU- BLUE
Impianto/Plant
TIGER 372 CNC LR R.C. 4.0, 400V/50Hz
PLe, ISO14119
Denominazione/Title
OPTIONAL INDUSTRY 4.0
OPTIONAL INDUSTRY 4.0
Commessa/Order
TI372CNCLR.RC
Esecutore/Executor
Mep S.p.A.
Ordine/Requisition
Foglio/Page
39
Segue/Follow
40
Ultimo/Last
228
Dis. N.
TI372CNC400S0CE/4719
CAD
SPAC
File
TI372CNC/1.dwg
Data
20/11/2019
R.0.3
Added wire W9BR for shuttle X axis brake
12/02/2019
Solfanelli
R.0.2.
Upgrade wiring with HDT NTT drive (-U4), sheet...
22/11/2018
Solfanelli
0.1
upgrade I/O Overturning CB6001 (Sheet. 21, 28, 29, 33, 49)
0517
Bartoli
REV.
MODIFICA
DATA
FIRME

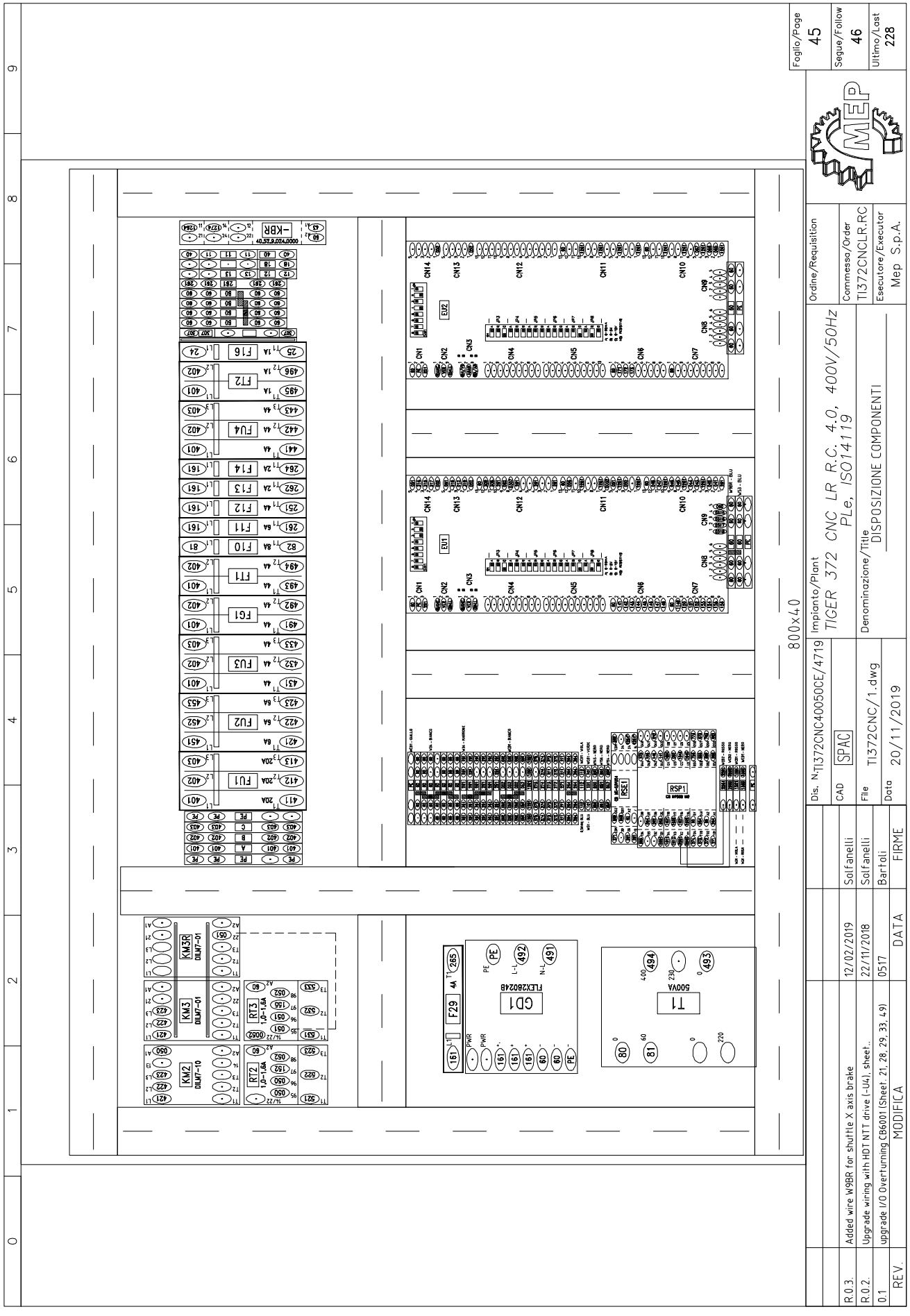

=QgCv - -XCB1
Connettore 24p ausiliari CB6001
=QgCv
-XCB1
Connettore 24p ausiliari CB6001
Pin | Numl | Costruttore | Tipo | Descrizione
MEP | 022.0317 | Connettore femmina a vite ILME 24 poli + PE 16A
-OPE
-OLM
-S12
-S13
-S39
-K49
OPTIONAL PEDALIERA
OPTIONAL PEDALS
OPTIONAL LUBRIFICAZIONE MINIMALE
OPTIONAL MICRO-LUBRIFICATION
Impianto/Plant
TIGER 372 CNC LR R.C. 4.0, 400V/50Hz PLe, ISO14119
Denominazione/Title
OPTIONAL + INTERFACCIA CB6001
Optional + CB6001 Plug Interface
Ordine/Requisition
Commessa/Order
TI372CNCLR.RC
Esecutore/Executor
Mep S.p.A.
Dis. N°TI372CNC400500CE/4719
CAD SPAC
File TI372CNC/1.dwg
Data 20/11/2019
Foglio/Page 40
Segue/Follow 41
Ultimo/Last 228
REV. | MODIFICA | DATA | FIRME
R.0.3. | Added wire W9BR for shuttle X axis brake | 12/02/2019 | Solfanelli
R.0.2. | Upgrade wiring with HDT NTT drive (-U41, sheet.. | 22/11/2018 | Solfanelli
0.1 | upgrade I/O Overturning CB6001 (Sheet. 21, 28, 29, 33, 49) | 0517 | Barloli


-QC1 QUADRO COMANDI CONTROL BOARD
-ASM ASTA MOBILE MOBILE CONTROL ARM
-TF2 GUARNIZIONE AERSTOP SEAL AERSTOP
-TF1 TARGA SOSTITUZIONE FUSIBILI PLATE SUBSTITUTION FUSES
-FL3 FILO 2,5mmq WIRE 2,5mmq
-PT3 PUNTALINO 2,5mmq TERMINAL 2,5mmq
-NM1 NUMERAZIONE FILI WIRE NUMERATION
-SF1 SACCHETTO PORTAFUSIBILI BAG FUSE
-FL2 FILO 1,5mmq WIRE 1,5mmq
-PT2 PUNTALINO 1,5mmq TERMINAL 1,5mmQ
-CC2 CAPICORDA 2,5mmq TERMINAL 2,5mmQ
-FS1 FASCETTA 13Sx2,5 CLAMP 13Sx2,5
-FL1 FILO 0,5mmq WIRE 0,5mmq
-PT1 PUNTALINO 0,5mmq TERMINAL 0,5mmq
-CC1 CAPICORDA 1,5mmq TERMINAL 1,5mmQ
-NM2 NUMERAZIONE MORSETTI TERMINAL NUMERATION
Auxiliary Terminal Block
=QGCV - -XQG2
=QGCV - -XQG4
=QGCV - -XQG3
Auxiliary Terminal Block
Foglio/Page 41
Segue/Follow 42
Ultimo/Last 228
Ordine/Requisition
Commessa/Order TI372CNCLR.RC
Esecutore/Executor Mep S.p.A.
Impianto/Plant TIGER 372 CNC LR R.C. 4.0, 400V/50Hz PLe, ISO14119
Denominazione/Title MORSETTIERA QUADRO PANEL TERMINAL BOARD
Dis. N. TI372CNC400500CE/4719
CAD SPAC
File TI372CNC/1.dwg
Data 20/11/2019
R.0.3. Added wire W9BR for shuttle X axis brake 12/02/2019 Solfanelli
R.0.2. Upgrade wiring with HDT NTT drive (-U4), sheet.. 22/11/2018 Solfanelli
0.1 upgrade I/O Overturning CB6001 (Sheet. 21, 28, 29, 33, 49) 0517 Bartoli
REV. MODIFICA DATA FIRME


Cavo Ausiliari Gruppo Elettrovalvole
Cavo Ausiliari Gruppo Elettrovalvole
(-W50)
Lunghezza totale del cavo: 6,00 metri
Connettore Femmina D-Sub 25 pin, a saldare
Vista lato saldatura
Schermo
PN_VALVE
32.7
Cable: 6x2xAwg24ST, shielded CEI, UL/CSA
RED
ROSSO
BLUE/WHITE
BLU/BIANCO
BLUE
BLU
GREEN
VERDE
VIOLET
VIOLA
GRAY
GRIGIO
YELLOW
GIALLO
BLACK
NERO
WHITE/BLUE
BIANCO/BLU
BROWN
MARRONE
ORANGE
ARANCIO
WHITE
BIANCO
EU1-046
EU1-048
EU1-044
EU1-043
EU1-047
EU1-045
EU1-60
35.7
32.2
32.5
32.6
32.3
35.7
32.1
Schermo
Shield
Dis. N° TI372CNC400500CE/4719
CAD SPAC
File TI372CNC/1.dwg
Data 20/11/2019
Impianto/Plant
TIGER 372 CNC LR R.C. 4.0, 400V/50Hz
PLe, ISO14119
Denominazione/Title
CAVO AUSILIARI ELETTROVALVOLE PNEUMATICHE
Auxiliary cable Pneumatic Valve
Ordine/Requisition
Commessa/Order
TI372CNCLR.RC
Esecutore/Executor
Mep S.p.A.
Foglio/Page 42
Segue/Follow 43
Ultimo/Last 228
REV.
MODIFICA
DATA
FIRME
0.1 upgrade I/O Overturning CB6001 (Sheet. 21, 28, 29, 33, 49) 0517 Barloti
R.0.2. Upgrade wiring with HDT NTT drive (-U4), sheet.. 22/11/2018 Salfanelli
R.0.3. Added wire W9BR for shuttle X axis brake 12/02/2019 Salfanelli


LATO QUADRO ELETTRICO
ELECTRICAL CABINET SIDE
LATO BORDO MACCHINA
REMOTE MACHINE SIDE
-W149, W143, W144, W39
-W149, W143, W144, W39
-W9
-W9
-GH3
-RG3
-CR3
PG29
PG29
ø35 x 400
-GH4
-RG4
-CR4
PG13
PG13
ø18 x 500
-RG4A
PG13/ø18
Dis. N°T1372CNC400500CE/4719
CAD SPAC
File T1372CNC/1.dwg
Data 20/11/2019
Impianto/Plant
TIGER 372 CNC LR R.C. 4.0, 400V/50Hz
PLe, ISO14119
Denominazione/Title
GUAINE E ACCESSORI
SHEATHS AND ACCESSORIES
Ordine/Requisition
Commessa/Order
T1372CNCLR.RC
Esecutore/Executor
Mep S.p.A.
Foglio/Page 43
Segue/Follow 44
Ultimo/Last 228
R.0.3. Added wire W9BR for shuttle X axis brake 12/02/2019 Solfanelli
R.0.2. Upgrade wiring with HDT NTT drive (-U4), sheet.. 22/11/2018 Solfanelli
0.1 upgrade I/O Overturning CB6001 (Sheet. 21, 28, 29, 33, 49) 0517 Bartoli
REV. MODIFICA DATA FIRME


PIASTRA VERTICALE
vertical sheet
810x40
400x40
U4
HDT NTT 480
U8
ECOTECH 4T 4/10-EXT
U11
U1
C300 04400135
022.1561
T2
150VA
KS11
KS10
KS3
DILM7-01
KLUB
+K149
FT1
FN3270H- 20-44
LINE
LOAD
FIELDBUS
RESOLVER CABLE (022.1971)
VENTOLA QUADRO
Cabinet Ventilation
MV1
Foglio/Page 44
Segue/Follow 45
Ultimo/Last 228
Ordine/Requisition
Commessa/Order TI372CNCLR.RC
Esecutore/Executor Mep S.p.A.
Impianto/Plant TIGER 372 CNC LR R.C. 4.0, 400V/50Hz PLe, ISO14119
Denominazione/Title LAYOUT QUADRO_1
Layout Board 1
Dis. N° TI372CNC400S0CE/4719
CAD SPAC
File TI372CNC/1.dwg
Data 20/11/2019
R.0.3. Added wire W9BR for shuttle X axis brake 12/02/2019 Solfanelli
R.0.2. Upgrade wiring with HDT NTT drive (-U4), sheet.. 22/11/2018 Solfanelli
0.1 upgrade I/O Overturning CB6001 (Sheet. 21, 28, 29, 33, 49) 0517 Barboli
REV. MODIFICA DATA FIRME


Foglio/Page 45
Segue/Follow 46
Ultimo/Last 228
Ordine/Requisition
Commessa/Order TI372CNCLR.RC
Esecutore/Executor Mep S.p.A.
Impianto/Plant TIGER 372 CNC LR R.C. 4.0, 400V/50Hz PLe, ISO14119
Denominazione/Title DISPOSIZIONE COMPONENTI
Dis. N° TI372CNC400S0CE/4719
CAD SPAC
File TI372CNC/1.dwg
Data 20/11/2019
800x40
R.0.3 Added wire W9BR for shuttle X axis brake 12/02/2019 Solfanelli
R.0.2. Upgrade wiring with HDT NTT drive (-U4), sheet.. 22/11/2018 Solfanelli
0.1 upgrade I/O Overturning CB6001 (Sheet. 21, 28, 29, 33, 49) 0517 Bartoli
REV. MODIFICA DATA FIRME
-KBR
F16
F12
F14
F13
F11
F10
FG1
FU1
FU2
FU3
FU4
KM3R
KM3
KM2
RT3
RT2
CN1
CN2
CN3
CN4
CN5
CN6
CN7
CN8
CN9
CN10
CN11
CN12
CN13
CN14
EU1
EU2
RSE1
RSP1
F29
GD1
T1
500VA

CAVI ESTERNI \ EXTERNAL CABLES

QUADRO \ BOARD								DESTINAZIONE \ LOCATION			
QUADRO BOARD	FOGLIO SHEET	NR. MORSETTO TERMINAL NO.	NR. FILO CONDUCTOR NO.	ID SUL CAVO ID IN CABLE	CAVO CABLE	LUNGHEZZA LENGHT [mt]	DISTURBO NOISE LEVEL	ID SUL CAVO ID IN CABLE	NR. FILO CONDUCTOR NO.	NR. MORSETTO TERMINAL NO.	FOGLIO SHEET	QUADRO BOARD
			251	BN				BN	251			
=QgCv -F12	11/5		251	BU	-W01 022.0151	5.20Mt		BU	251	3	26/1	Vin 24VDC
=QgCv -XQG2	26/0	60_1 ○	PE	GNYE	Cavo alimentazione PLC			GNYE	PE	1	26/0	Vin 0V
=QgCv -FUT1	4/5	PE								2	27/1	PE
			541	BN				BN	541			
=QgCv -RT2	6/0	2	542	BK				BK	542	U	6/2	=BmMep -M02
=QgCv -RT2	6/1	4	543	GY	-W02 022.0162			GY	543	V	6/2	=BmMep -M02
=QgCv -RT2	6/1	6	PE	GNYE				GNYE	PE	W	6/3	=BmMep -M02
=QgCv -XQGPE	6/3	1_7 ○								PE	6/3	=BmMep -M02
			561	BN				BN	561			
=BmEtMep -M3	6/4	U	562	BK				BK	562	⊂— 1	6/4	=QgEtMep -XETM
=BmEtMep -M3	6/4	V	563	GY	-W03 022.0162			GY	563	⊂— 2	6/4	=QgEtMep -XETM
=BmEtMep -M3	6/4	W	PE	GNYE				GNYE	PE	⊂— 3	6/4	=QgEtMep -XETM
=BmEtMep -M3	6/4	PE								⊂— PE	6/4	=QgEtMep -XETM
			042	BN				BN	042			
DO02	32/7	3	EU1-60	BU	-W042 022.0160			BU	EU1-60			
=QgCv -XQG2	32/7	60_1 ○										
			26	BN				BN	26			
=QgCv -KLUB	6/7	14	024	BU	-W067 022.0160			BU	024		35/6	=QgCv -XC3
=QgCv -T2	6/7	0									35/6	=QgCv -XC3
			511	BK1				BK1	511			
=QgCv -U1	5/4	X105	512	BK2				BK2	512	U	5/2	=BmMep -M1
=QgCv -U1	5/4	V	513	BK3	-W1 022.1977			BK3	513	V	5/2	=BmMep -M1
=QgCv -U1	5/4	W	7	GNYE	Blade motor power supply cable			GNYE	7	W	5/2	=BmMep -M1
=QgCv -U1	5/4	PE	7	Sch				Sch	7	PE	5/2	=BmMep -M1
=QgCv -U1	5/4	PE										
			143	BK				BK	143	4	28/4	DI03
=BmMep -S43	28/4	4	7	BU				BU	7	3	28/4	=BmMep -S43
=QgCv -XQG2	28/4	61_1 ○	052	BN	-W143 022.0397	5.00 mt		BN	052	1	28/3	=BmMep -S43
=QgCv -XQG2	28/3	052_3 ○		WH	Cavo Prossimity presenza Barra Taglio			WH				

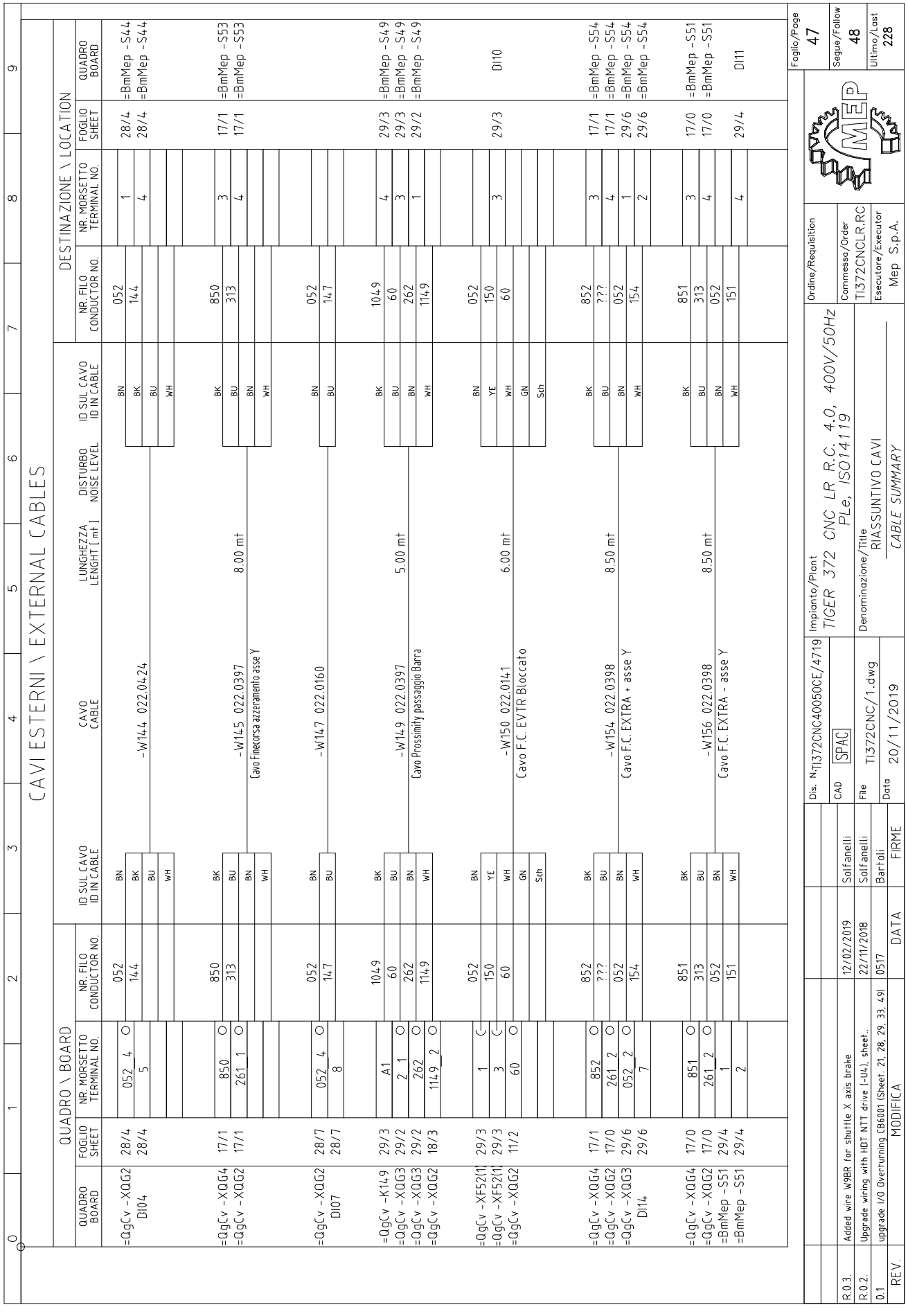
REV.	MODIFICA	DATA	FIRME
R.0.3.	Added wire W9BR for shuttle X axis brake	12/02/2019	Solfanelli
R.0.2.	Upgrade wiring with HDT NTT drive (-U4), sheet..	22/11/2018	Solfanelli
0.1	upgrade I/O Overturning CB6001 (Sheet. 21, 28, 29, 33, 49)	0517	Bartoli

Dis. N. TI372CNC40050CE/4719
CAD SPAC
File TI372CNC/1.dwg
Data 20/11/2019

Impianto/Plant: TIGER 372 CNC LR R.C. 4.0, 400V/50Hz PLe, ISO14119
Denominazione/Title: RIASSUNTIVO CAVI / CABLE SUMMARY

Ordine/Requisition:
Commessa/Order: TI372CNCLR.RC
Esecutore/Executor: Mep S.p.A.

Foglio/Page 46
Segue/Follow 47
Ultimo/Last 228

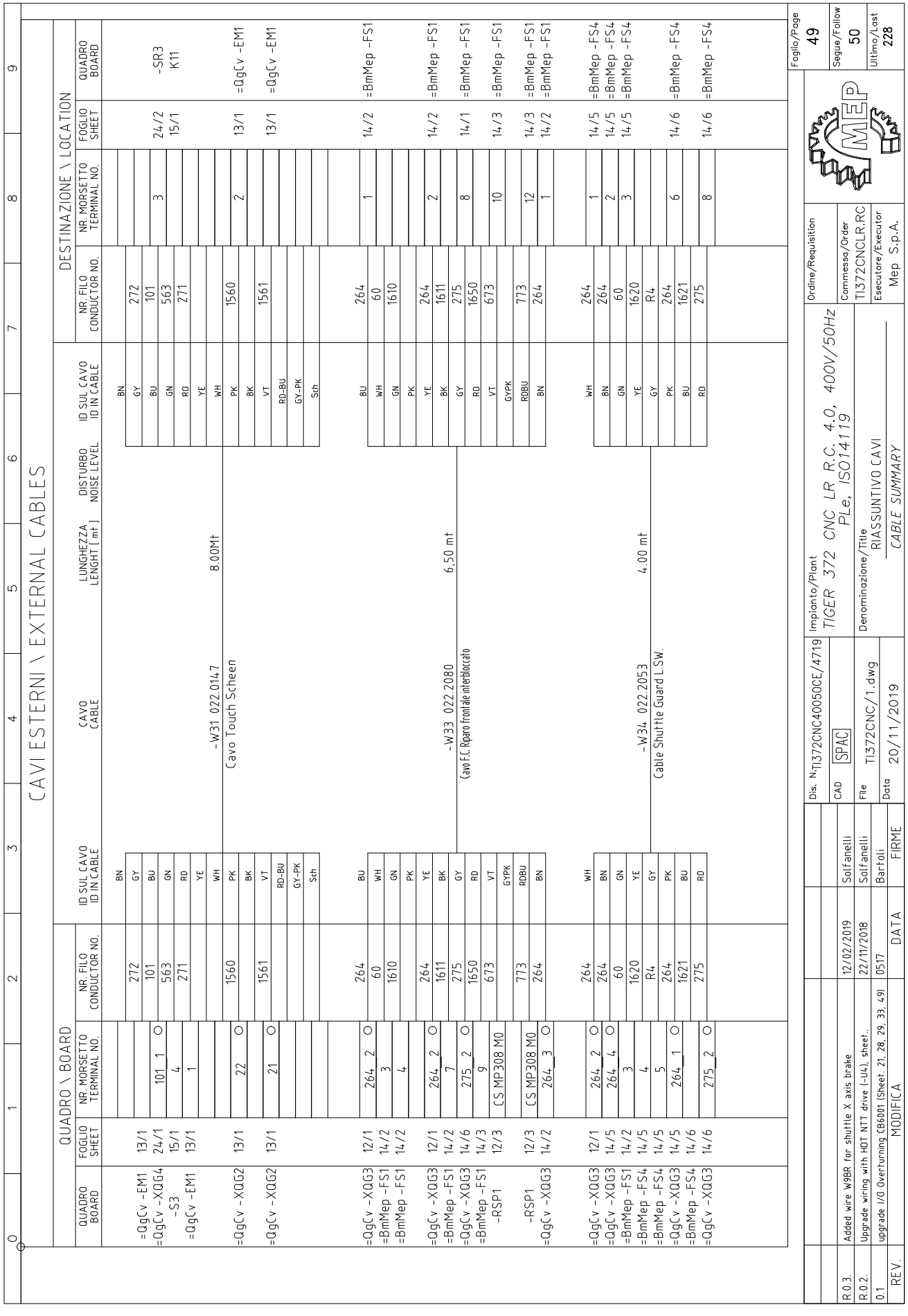

CAVI ESTERNI \ EXTERNAL CABLES
QUADRO \ BOARD
DESTINAZIONE \ LOCATION
QUADRO BOARD
FOGLIO SHEET
NR. MORSETTO TERMINAL NO.
NR. FILO CONDUCTOR NO.
ID SUL CAVO ID IN CABLE
CAVO CABLE
LUNGHEZZA LENGHT [mt]
DISTURBO NOISE LEVEL
ID SUL CAVO ID IN CABLE
NR. FILO CONDUCTOR NO.
NR. MORSETTO TERMINAL NO.
FOGLIO SHEET
QUADRO BOARD
=QgCv -XQG2 DI04
=QgCv -XQG4
=QgCv -XQG2
=QgCv -XQG2 DI07
=QgCv -K149
=QgCv -XQG3
=QgCv -XQG3
=QgCv -XQG2
=QgCv -XF52(1)
=QgCv -XF52(1)
=QgCv -XQG2
=QgCv -XQG4 DI14
=QgCv -XQG2
=QgCv -XQG3
=QgCv -XQG4 DI11
=QgCv -XQG2
=BmMep -S51
=BmMep -S51
-W144 022.0424
-W145 022.0397
Cavo Finecorsa azzeramento asse Y
-W147 022.0160
-W149 022.0397
Cavo Prossimity passaggio Barra
-W150 022.0141
Cavo F.C. EVTR Bloccato
-W154 022.0398
Cavo F.C. EXTRA + asse Y
-W156 022.0398
Cavo F.C. EXTRA - asse Y
5.00 mt
6.00 mt
8.50 mt
DI10
DI11
Dis. N° TI372CNC400500E/4719
CAD SPAC
File TI372CNC/1.dwg
Data 20/11/2019
Impianto/Plant
TIGER 372 CNC LR R.C. 4.0, 400V/50Hz
PLe, ISO14119
Denominazione/Title
RIASSUNTIVO CAVI
CABLE SUMMARY
Ordine/Requisition
Commessa/Order
TI372CNCLR.RC
Esecutore/Executor
Mep S.p.A.
Foglio/Page 47
Segue/Follow 48
Ultimo/Last 228
R.0.3. Added wire W9BR for shuttle X axis brake 12/02/2019 Solfanelli
R.0.2. Upgrade wiring with HDT NTT drive (-U4), sheet.. 22/11/2018 Solfanelli
0.1 upgrade I/O Overturning CB6001 (Sheet. 21, 28, 29, 33, 49) 0517 Bartoli
REV. MODIFICA DATA FIRME

CAVI ESTERNI \ EXTERNAL CABLES

QUADRO \ BOARD								DESTINAZIONE \ LOCATION			
QUADRO BOARD	FOGLIO SHEET	NR. MORSETTO TERMINAL NO.	NR. FILO CONDUCTOR NO.	ID SUL CAVO ID IN CABLE	CAVO CABLE	LUNGHEZZA LENGHT [mt]	DISTURBO NOISE LEVEL	ID SUL CAVO ID IN CABLE	NR. FILO CONDUCTOR NO.	NR. MORSETTO TERMINAL NO.	FOGLIO SHEET	QUADRO BOARD
			052	BN				BN	052			
=BmMep -SL41	30/2	1	171	BU	-W171 022.0160			BU	171			
=BmMep -SL41	30/2	3								2	30/2	DI01
			052	BN				BN	052			
=BmMep -LS02	30/3	1	11	BK				BK	11			
=QgCv -XROT	19/9	11_1 ○	261	BU	-W172 022.0422			BU	261	4	30/3	=BmMep -LS02
=QgCv -XQG3	19/9	261_2 ○	172	WH				WH	172	3	30/3	=BmMep -LS02
DI02	30/3	3								2	30/3	=BmMep -LS02
			052	BN				BN	052			
=BmMep -LS03	30/4	1	40	BK				BK	40			
=QgCv -XROT	19/9	40 ○	261	BU	-W173 022.0422			BU	261	4	30/4	=BmMep -LS03
=QgCv -XQG3	19/9	261_2 ○	173	WH				WH	173	3	30/4	=BmMep -LS03
DI03	30/4	4								2	30/4	=BmMep -LS03
			541	BN				BN	541			
=QgCv -RT2	6/0	2	542	BK				BK	542	U	6/0	=BmMep -M2
=QgCv -RT2	6/1	4	543	GY	-W2 022.0162			GY	543	V	6/1	=BmMep -M2
=QgCv -RT2	6/1	6	PE	GNYE				GNYE	PE	W	6/1	=BmMep -M2
=QgCv -XQGPE	6/1	1_6 ○								PE	6/1	=BmMep -M2
			561	BN				BN	561			
=QgCv -RT3	6/4	2	562	BK				BK	562	⟵ 1	6/4	=QgEtMep -XETF
=QgCv -RT3	6/4	4	563	GY	-W3 022.0162			GY	563	⟵ 2	6/4	=QgEtMep -XETF
=QgCv -RT3	6/4	6	PE	GNYE				GNYE	PE	⟵ 3	6/4	=QgEtMep -XETF
=QgCv -XQGPE	6/5	1_8 ○								⟵ PE	6/4	=QgEtMep -XETF
			60	WH				WH	60			
=QgCv -XQG2	12/8	60 ○	052	YE				YE	052			
-SR3	24/2	4		GN	-W30 022.0137	5,50 mt		GN				
			261	BN	Cavo di giunzione ausiliari Mep40			BN	261	3	15/1	-S3
=QgCv -F11	11/1			Sch				Sch				

REV.	MODIFICA	DATA	FIRME
R.0.3.	Added wire W9BR for shuttle X axis brake	12/02/2019	Solfanelli
R.0.2.	Upgrade wiring with HDT NTT drive (-U4), sheet..	22/11/2018	Solfanelli
0.1	upgrade I/O Overturning CB6001 (Sheet. 21, 28, 29, 33, 49)	0517	Bartoli

Dis. N.	TI372CNC40050CE/4719
CAD	SPAC
File	TI372CNC/1.dwg
Data	20/11/2019
Impianto/Plant	TIGER 372 CNC LR R.C. 4.0, 400V/50Hz PLe, ISO14119
Denominazione/Title	RIASSUNTIVO CAVI / CABLE SUMMARY
Ordine/Requisition	
Commessa/Order	TI372CNCLR.RC
Esecutore/Executor	Mep S.p.A.
Foglio/Page	48
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CAVI ESTERNI \ EXTERNAL CABLES
QUADRO \ BOARD
DESTINAZIONE \ LOCATION
QUADRO BOARD
FOGLIO SHEET
NR. MORSETTO TERMINAL NO.
NR. FILO CONDUCTOR NO.
ID SUL CAVO ID IN CABLE
CAVO CABLE
LUNGHEZZA LENGHT [mt]
DISTURBO NOISE LEVEL
-W31 022.0147 8.00Mt Cavo Touch Scheen
-W33 022.2080 6,50 mt Cavo F.C. Ripario frontale interbloccato
-W34 022.2053 4.00 mt Cable Shuttle Guard L.SW.
Impianto/Plant TIGER 372 CNC LR R.C. 4.0, 400V/50Hz PLe, ISO14119
Denominazione/Title RIASSUNTIVO CAVI CABLE SUMMARY
Commessa/Order TI372CNCLR.RC
Esecutore/Executor Mep S.p.A.
Dis. N. TI372CNC400500E/4719
CAD SPAC
File TI372CNC/1.dwg
Data 20/11/2019
Ordine/Requisition
Foglio/Page 49
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Ultimo/Last 228
R.0.3. Added wire W9BR for shuttle X axis brake 12/02/2019 Solfanelli
R.0.2. Upgrade wiring with HDT NTT drive [-U4], sheet.. 22/11/2018 Solfanelli
0.1 upgrade I/O Overturning CB6001 (Sheet. 21, 28, 29, 33, 49) 0517 Bartoli
REV. MODIFICA DATA FIRME

CAVI ESTERNI \ EXTERNAL CABLES

QUADRO \ BOARD								DESTINAZIONE \ LOCATION			
QUADRO BOARD	FOGLIO SHEET	NR. MORSETTO TERMINAL NO.	NR. FILO CONDUCTOR NO.	ID SUL CAVO ID IN CABLE	CAVO CABLE	LUNGHEZZA LENGHT [mt]	DISTURBO NOISE LEVEL	ID SUL CAVO ID IN CABLE	NR. FILO CONDUCTOR NO.	NR. MORSETTO TERMINAL NO.	FOGLIO SHEET	QUADRO BOARD
=QgCv -FS3	14/7	1	262	WH				WH	262			
=QgCv -FS3	14/7	2	262	BN				BN	262			
=QgCv -XQG3	13/8	273_3 ○	273	GN				GN	273	3	14/7	=QgCv -FS3
=QgCv -FS3	14/7	4	1640	YE				YE	1640			
=QgCv -XQG3	13/0	274_1 ○	274	GY	-W35 022.2053	5,00 mt		GY	274	5	14/8	=QgCv -FS3
=QgCv -FS3	14/8	6	1641	PK	Rear safety guard protection			PK	1641			
=QgCv -FS3	14/8	7	1611	BU				BU	1611			
=QgCv -FS3	14/8	8	275	RD				RD	275			
			145	BK				BK	145			
=BmMep -S45	28/5	4	052	BU				BU	052	6	28/5	DI05
=BmMep -S45	28/5	3		BN	-W39 022.0397	5.00 mt		BN				
				WH	Cavo FC Azzeramento asse X			WH				
			066	BK				BK	066			
=QgCv -XC2	35/7		EU1-60	WH				WH	EU1-60	3	35/7	DO2
=QgCv -XQG2	32/1	60_1 ○		BN				BN			32/1	=QgCv -XC27
			065	BU				BU	065	2	35/8	DO1
=QgCv -XC1	35/8		048	GN				GN	048	12	32/2	DO08
=QgCv -XC27	32/2			RD				RD				
			047	YE				YE	047			
=QgCv -XC28	32/2			OG	-W50 022.1932	6,00 mt		OG		11	32/2	DO07
				BU-WH	Cavo gruppo elettrovalvole SMC			BU-WH				
				WH-BU				WH-BU				
				WH/gn				WH/gn				
				BU(OG				BU(OG				
			043	GY				GY	043	5	32/6	DO03
=QgCv -XC32	32/6		044	VT				VT	044	6	32/5	DO04
=QgCv -XC31	32/5			WH(OG				WH(OG				
			041	BN				BN	041			
DO01	32/8	2	EU1-60	BU	-W53 022.0160			BU	EU1-60	1	32/8	=BmMep -H1
=QgCv -XQG2	32/7	60_1 ○								2	32/8	=BmMep -H1
			058	BN				BN	058			
=QgCv -F15	34/7		60	BU	-W58 022.0160			BU	60		34/7	=BmMep -HL10
=QgCv -XQG2	34/7	60_4 ○									34/7	=BmMep -HL10

REV.	MODIFICA	DATA	FIRME
R.0.3.	Added wire W9BR for shuttle X axis brake	12/02/2019	Solfanelli
R.0.2.	Upgrade wiring with HDT NTT drive (-U4), sheet..	22/11/2018	Solfanelli
0.1	upgrade I/O Overturning CB6001 (Sheet. 21, 28, 29, 33, 49)	0517	Bartoli

Dis. N. TI372CNC40050CE/4719
CAD SPAC
File TI372CNC/1.dwg
Data 20/11/2019

Impianto/Plant: TIGER 372 CNC LR R.C. 4.0, 400V/50Hz PLe, ISO14119
Denominazione/Title: RIASSUNTIVO CAVI / CABLE SUMMARY

Ordine/Requisition:
Commessa/Order: TI372CNCLR.RC
Esecutore/Executor: Mep S.p.A.

Foglio/Page: 50
Segue/Follow: 51
Ultimo/Last: 228

CAVI ESTERNI \ EXTERNAL CABLES

QUADRO \ BOARD								DESTINAZIONE \ LOCATION			
QUADRO BOARD	FOGLIO SHEET	NR. MORSETTO TERMINAL NO.	NR. FILO CONDUCTOR NO.	ID SUL CAVO ID IN CABLE	CAVO CABLE	LUNGHEZZA LENGHT [mt]	DISTURBO NOISE LEVEL	ID SUL CAVO ID IN CABLE	NR. FILO CONDUCTOR NO.	NR. MORSETTO TERMINAL NO.	FOGLIO SHEET	QUADRO BOARD
			0318	BN				BN	0318			
STEP +	25/2	3	060	GY				GY	060	1	25/7	STEP+
VOut	25/2	6		BU				BU		5	25/7	Vin
			0315	GN				GN	0315			
DIR -	25/2	4		RD				RD		4	25/7	DIR -
			0316	YE				YE	0316			
DIR +	25/2	2	0317	WH	-W61 022.0161			WH	0317	3	25/7	DIR +
STEP -	25/2	5		PK				PK		2	25/7	STEP-
				BK				BK				
				OG				OG				
				LBU				LBU				
				LGN				LGN				
			18	BK				BK	18			
=QgCv -XROT	19/9	18_1 ○	261	BN				BN	261			
=QgCv -XQG3	19/9	261_2 ○	12	GY				GY	12			
=QgCv -XROT	19/9	12_1 ○	60	BU				BU	60			
=QgCv -XQG3	19/9	60_1 ○	40	GN				GN	40			
=QgCv -XROT	19/9	40 ○	43	YE				YE	43			
=QgCv -K BR	19/5	A1	13	WH	-W79/1 022.1906	1,5 mt		WH	13			
=QgCv -XROT	19/9	13 ○		VT	Cavo Aux HDT NTT 460			VT				
			3667	RD				RD	3667			
=QgCv -XQG3	19/9	261_2 ○	11	OG				OG	11			
=QgCv -XROT	19/9	11_1 ○		BU-WH				BU-WH				
				WH-BU				WH-BU				
				Sch				Sch				
			221	BN				BN	221			
=QgCv -U11	9/2	A1	222	BK				BK	222	BIA/GIA	9/1	=BmMep -M9
=QgCv -U11	9/2	A2	223	BU	-W9 022.0158	5.00Mt		BU	223	GIALLO	9/1	=BmMep -M9
=QgCv -U11	9/2	B1	224	GY	Cavo Motore Alimentatore Asse X			GY	224	ARANCIO	9/2	=BmMep -M9
=QgCv -U11	9/2	B2	PE	GNYE				GNYE	PE	BIA/ARA	9/2	=BmMep -M9
=QgCv -XQGPE	9/0	1_16 ○									9/2	=BmMep -M9

REV.	MODIFICA	DATA	FIRME
R.0.3.	Added wire W9BR for shuttle X axis brake	12/02/2019	Solfanelli
R.0.2.	Upgrade wiring with HDT NTT drive (-U4), sheet..	22/11/2018	Solfanelli
0.1	upgrade I/O Overturning CB6001 (Sheet. 21, 28, 29, 33, 49)	0517	Bartoli

Dis. N. TI372CNC40050CE/4719
CAD SPAC
File TI372CNC/1.dwg
Data 20/11/2019

Impianto/Plant: *TIGER 372 CNC LR R.C. 4.0, 400V/50Hz PLe, ISO14119*

Denominazione/Title: RIASSUNTIVO CAVI / *CABLE SUMMARY*

Ordine/Requisition:
Commessa/Order: TI372CNCLR.RC
Esecutore/Executor: Mep S.p.A.

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CAVI ESTERNI \ EXTERNAL CABLES

QUADRO \ BOARD								DESTINAZIONE \ LOCATION			
QUADRO BOARD	FOGLIO SHEET	NR. MORSETTO TERMINAL NO.	NR. FILO CONDUCTOR NO.	ID SUL CAVO ID IN CABLE	CAVO CABLE	LUNGHEZZA LENGHT [mt]	DISTURBO NOISE LEVEL	ID SUL CAVO ID IN CABLE	NR. FILO CONDUCTOR NO.	NR. MORSETTO TERMINAL NO.	FOGLIO SHEET	QUADRO BOARD
			???	BN				BN	???			
=QgCv -K0	4/3	D1	2	BK				BK	2	○ L1	4/0	=QgCv -XAL
=QgCv -K0	4/2	D2	3	GY	-WAL 022.0163			GY	3	○ L2	4/0	=QgCv -XAL
=QgCv -Q0	4/2	5	4	BU				BU	4	○ L3	4/0	=QgCv -XAL
=QgCv -XNT	4/2	N ○	PE	GNYE				GNYE	PE	○ N	4/1	=QgCv -XAL
=QgCv -AL	4/2	1 ○								○ PE	4/1	=QgCv -XAL
			5	BN				BN	5			
=QgCv -Q0	4/3	2	6	BK				BK	6	L1	4/4	=QgCv -FUT1
=QgCv -Q0	4/3	4	7	GY	-WAL1 022.0163			GY	7	L2	4/4	=QgCv -FUT1
=QgCv -Q0	4/3	6		BU				BU		L3	4/4	=QgCv -FUT1
			PE	GNYE				GNYE	PE			
=QgCv -AL	4/2	1 ○								PE	4/4	=QgCv -FUT1
				BN				BN				
=QgCv -XCB1	31/9	11	319	GY				GY	319	2	31/8	DI17
=QgCv -XCB1	31/9	7	315	BU				BU	315	3	31/2	DI18
=QgCv -XCB1	24/0	4	101	GN				GN	101	○ 101 1	24/1	=QgCv -XQG4
=QgCv -XCB1	13/4	2	3565	RD				RD	3565	○ 21	13/1	=QgCv -XQG2
=QgCv -XCB1	34/2	5	60	YE				YE	60	○ 60	11/2	=QgCv -XQG2
=QgCv -XCB1	31/9	3	052	WH	-WCB1 022.0161			WH	052			
=QgCv -XCB1	31/9	9	317	PK				PK	317	2	31/3	DI17
=QgCv -XCB1	13/4	1	3564	BK				BK	3564	○ 22	13/1	=QgCv -XQG2
				OG				OG				
				LBU				LBU				
				LGN				LGN				

REV.	MODIFICA	DATA	FIRME
R.0.3.	Added wire W9BR for shuttle X axis brake	12/02/2019	Solfanelli
R.0.2.	Upgrade wiring with HDT NTT drive (-U4), sheet..	22/11/2018	Solfanelli
0.1	upgrade I/O Overturning CB6001 (Sheet. 21, 28, 29, 33, 49)	0517	Bartoli

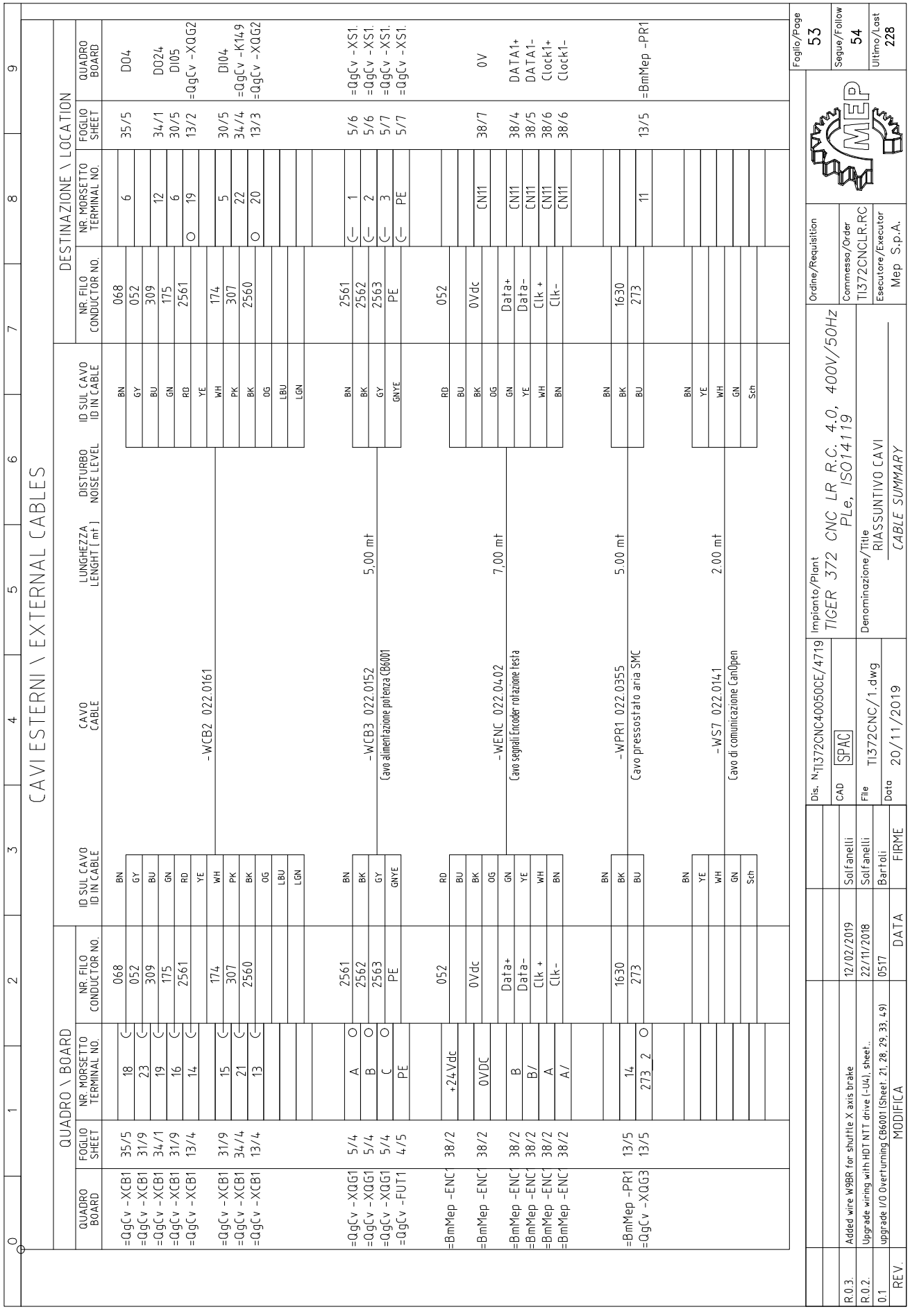
Dis. N. TI372CNC40050CE/4719
CAD SPAC
File TI372CNC/1.dwg
Data 20/11/2019

Impianto/Plant
TIGER 372 CNC LR R.C. 4.0, 400V/50Hz PLe, ISO14119

Denominazione/Title
RIASSUNTIVO CAVI
CABLE SUMMARY

Ordine/Requisition
Commessa/Order TI372CNCLR.RC
Esecutore/Executor Mep S.p.A.

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CAVI ESTERNI \ EXTERNAL CABLES
QUADRO \ BOARD
DESTINAZIONE \ LOCATION
QUADRO BOARD
FOGLIO SHEET
NR. MORSETTO TERMINAL NO.
ID SUL CAVO ID IN CABLE
CAVO CABLE
LUNGHEZZA LENGHT [mt]
DISTURBO NOISE LEVEL
NR. FILO CONDUCTOR NO.
=QgCv -XCB1 35/5 18 BN 068 6 35/5 DO4
=QgCv -XCB1 31/9 23 GY 052
=QgCv -XCB1 34/1 19 BU 309 12 34/1 DO24
=QgCv -XCB1 31/9 16 GN 175 6 30/5 DI05
=QgCv -XCB1 13/4 14 RD 2561 O 19 13/2 =QgCv -XQG2
YE
-WCB2 022.0161
=QgCv -XCB1 31/9 15 WH 174 5 30/5 DI04
=QgCv -XCB1 34/4 21 PK 307 22 34/4 =QgCv -K149
=QgCv -XCB1 13/4 13 BK 2560 O 20 13/3 =QgCv -XQG2
OG
LBU
LGN
=QgCv -XQG1 5/4 A O 2561 BN 2561 (— 1 5/6 =QgCv -XS1.
=QgCv -XQG1 5/4 B O 2562 BK 2562 (— 2 5/6 =QgCv -XS1.
-WCB3 022.0152
5,00 mt
=QgCv -XQG1 5/4 C O 2563 GY 2563 (— 3 5/7 =QgCv -XS1.
Cavo alimentazione potenza CB6001
=QgCv -FUT1 4/5 PE PE GNYE PE (— PE 5/7 =QgCv -XS1.
=BmMep -ENC 38/2 +24Vdc 052 RD 052
BU
=BmMep -ENC 38/2 0VDC 0Vdc BK 0Vdc CN11 38/7 0V
OG
-WENC 022.0402
7,00 mt
=BmMep -ENC 38/2 B Data+ GN Data+ CN11 38/4 DATA1+
=BmMep -ENC 38/2 B/ Data- YE Data- CN11 38/5 DATA1-
Cavo segnali Encoder rotazione testa
=BmMep -ENC 38/2 A Clk + WH Clk + CN11 38/6 Clock1+
=BmMep -ENC 38/2 A/ Clk- BN Clk- CN11 38/6 Clock1-
BN
=BmMep -PR1 13/5 14 BK 1630 BK 1630 11 13/5 =BmMep -PR1
=QgCv -XQG3 13/5 273_2 O 273 BU 273
-WPR1 022.0355
5,00 mt
Cavo pressostato aria SMC
BN
YE
WH
-WS7 022.0141
2,00 mt
GN
Cavo di comunicazione CanOpen
Sch
REV.
MODIFICA
DATA
FIRME
0.1 upgrade I/O Overturning CB6001 (Sheet. 21, 28, 29, 33, 49) 0517 Bartoli
R.0.2. Upgrade wiring with HDT NTT drive (-U4), sheet.. 22/11/2018 Solfanelli
R.0.3. Added wire W9BR for shuttle X axis brake 12/02/2019 Solfanelli
Dis. N°TI372CNC400500CE/4719
CAD SPAC
File TI372CNC/1.dwg
Data 20/11/2019
Impianto/Plant
TIGER 372 CNC LR R.C. 4.0, 400V/50Hz PLe, ISO14119
Denominazione/Title
RIASSUNTIVO CAVI
CABLE SUMMARY
Ordine/Requisition
Commessa/Order TI372CNCLR.RC
Esecutore/Executor Mep S.p.A.
Foglio/Page 53
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CAVI ESTERNI \ EXTERNAL CABLES

QUADRO \ BOARD								DESTINAZIONE \ LOCATION			
QUADRO BOARD	FOGLIO SHEET	NR. MORSETTO TERMINAL NO.	NR. FILO CONDUCTOR NO.	ID SUL CAVO ID IN CABLE	CAVO CABLE	LUNGHEZZA LENGHT [mt]	DISTURBO NOISE LEVEL	ID SUL CAVO ID IN CABLE	NR. FILO CONDUCTOR NO.	NR. MORSETTO TERMINAL NO.	FOGLIO SHEET	QUADRO BOARD
				BN				BN				
H	26/6	3	89	YE				YE	89	3	26/9	H
0V	26/4	1	0V	WH	-WS/5 022.0141	5.50 mt		WH	0V	1	26/7	0V
L	26/5	2	88	GN	Cavo comunicazione CanOpen			GN	88	2	26/8	L
				Sch				Sch				
				BN				BN				
H	27/6	3	99	YE				YE	99	3	27/4	H
0V	27/5	1	97	WH	-WS6 022.0141	1.20 mt		WH	97	1	27/2	0V
L	27/5	2	98	GN	Cavo di comunicazione CanOpen			GN	98	2	27/3	L
PE	27/1	2	PE	Sch				Sch	PE			
			056	BN				BN	056			
=BmMep -M9	9/2	BRK+	60	BU	-W9BR 022.0160	5.50 mt		BU	60	12	33/2	D016
=QgCv -XQG3	33/1	60_3 ○			Shuttle X axis motor Brake					BRK-	9/2	=BmMep -M9
				BN	-WBR 022.0160	8.00 mt		BN				
				BU	Cavo Freno magnetico Motore rotazione			BU				
				BN				BN				
				YE				YE				
				WH	-W79/2 022.0141	2,00mt		WH				
				GN	Multipolar I/O Auxiliary DGM cable			GN				
				Sch				Sch				

REV.	MODIFICA	DATA	FIRME
R.0.3.	Added wire W9BR for shuttle X axis brake	12/02/2019	Solfanelli
R.0.2.	Upgrade wiring with HDT NTT drive (-U4), sheet..	22/11/2018	Solfanelli
0.1	upgrade I/O Overturning CB6001 (Sheet. 21, 28, 29, 33, 49)	0517	Bartoli

Dis. N. TI372CNC40050CE/4719
CAD SPAC
File TI372CNC/1.dwg
Data 20/11/2019

Impianto/Plant
TIGER 372 CNC LR R.C. 4.0, 400V/50Hz PLe, ISO14119

Denominazione/Title
DISTINTA MATERIALI
MATERIAL LIST

Ordine/Requisition
Commessa/Order TI372CNCLR.RC
Esecutore/Executor Mep S.p.A.

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Nome/NAme	Mep__code	Descrizione/Description	Description EN	Codice Interno	Q.ta/Q.ty	Quadro/Board	Fg/Sh
-K27		Elettrovalvola aperta (in chiusura) secondo solenoide			1		32
-K31		Elettrovalvola aperta (in chiusura) secondo solenoide			1		32
-K49		Elettrovalvola aperta (in chiusura)			1		40
-S12					1		40
-S13		Comando a pedale NO			1		40
-XS6A		1/2 Kit connettore volante azionamento (Encoder) per MiniEco Selema			1		17
-FU30	022.2253	Portafusibile 1 x (10,3x38) - 690V 32A	Fuse holding terminal 1 x (10,3x38) 690V 32A	2031038 BCH 32A ItalWeber	1	=BmCv	39
-S39		Comandato dal livello di un fluido (livellostato) NO			1	=BmCv	40
-XMAF	022.0405	1/2 Kit connettore volante motore (Potenza) M17 Hypertac Selema		022.0405	1	=BmCv	
-XS6M	022.2060	Kit connettori per motore SELEMA S80 con freno	Kit connectors for SELEMA S80 motor with brake	SELEMA	1	=BmCv	17
-M3	019.4054	Motore EVTR 0.37KW, 230-280/400-480V, 2/1.15A,50/60Hz	Motor EVTR 0.37KW, 230-280/400-480V, 2/1.15A,50/60Hz	019.4054	1	=BmEtMep	6
-CPC1	000.0P78	Catena portacavi metallica sez.130 x 65mm		Codice provvisorio	1	=BmMep	43
-CR4	022.2602	Guaina POLIFLEX Ø18	Poliflex Covering Ø18	NW 14-1200143	1	=BmMep	43
-ENC1	022.1327	Encoder assoluto 16 bit monogiro IP66	Absolute encoder 16 Bit single-turn IP66	AST616/GA-6-QCPR - LIKA	1	=BmMep	38
-FS1	022.3945	Finecorsa di sicurezza RFID con interblocco 24V e CONNETTORE M12	Safety Limit Switch RFID 2NC and interlook 24vcc	NG2D1D411A- F31K110 PIZZATO	1	=BmMep	14
-FS4	022.4008	sensore RFID ST DD420MK-D1T	D ST DD420MK-D1T	ST DD420MK-D1TPIZZATO	1	=BmMep	14
-GH4	022.0244	DADO 3217B GRIGIO PG 13,5	Nut Pg 13,5	PG13.5	1	=BmMep	43
-H1	022.3254	Lampeggiante LED 24 VAC/Vdc	Flashing LED 24 VAC/Vdc	SL7-CB-IMH + SL7-BL24 + SL7-AP24	1	=BmMep	32
-HL10	022.3253	Faro LED 9W 12/24Vcc 4000°K 750lm 70° IP66 con cavo	Led Lamp	5941662 - SICE	1	=BmMep	34
-JB1	016.1271	Scatola derivazione metallica	Metal junction box?	95x95 P.70	1	=BmMep	4
-K28	V.d.ld.	Vedi distinta idraulica	See hydraulic BOM	V.d.ld.	1	=BmMep	32
	043.1103	Elettrovalvola bistabile 5 VIE	Electric Valve 5 ways	SY5330-5U1-01F SMC	1		
-K32	V.d.ld.	Vedi distinta idraulica	See hydraulic BOM	V.d.ld.	1	=BmMep	32
	043.1103	Elettrovalvola bistabile 5 VIE	Electric Valve 5 ways	SY5330-5U1-01F SMC	1		
-LS02	022.0543	Finecorsa a rotella 1NO+1NC conn. M12 laterale	Limit Switch with roll 1NO+1NC	NB B110BB-DMK PIZZATO	1	=BmMep	30
-LS03	022.0543	Finecorsa a rotella 1NO+1NC conn. M12 laterale	Limit Switch with roll 1NO+1NC	NB B110BB-DMK PIZZATO	1	=BmMep	30
-M02	028.0260	Elettropompa V.220-240/380-415.50-60 HZ 150W	Electropump V.220-240/380-415.50-60 HZ 150W	SPV33 o 4COA6-12HP1	1	=BmMep	6
-M1	019.2002	Motore KW 4 T112 MA4 V.230/400.50 275/480.60 1440/1730giri	Motor KW 4 T112 MA4 V.230/400.50 275/480.60 1440/1730giri	019.2002	1	=BmMep	5
-M2	028.0260	Elettropompa V.220-240/380-415.50-60 HZ 150W	Electropump V.220-240/380-415.50-60 HZ 150W	SPV33 o 4COA6-12HP1	1	=BmMep	6
-M8	019.3561	Motore brushless 0.85Nm 4000rpm 230V e Enc 5000 Imp/giro	Brushless motor 315W 4000rpm 0.85Nm e Enc 5000 Imp/rev	S0601B302 - SELEMA	1	=BmMep	8
-M9	019.3410	Motore stepper 12Nmt 6A 1,8° con Freno	Stepper motor 12Nmt 6A 1,8° with Brake	FL886TH156-5708AL-BK FULLING	1	=BmMep	9
-MU4	019.3560	Motore brushless 230W 4000rpm 266Nm con connettori ad angolo e freno	Brushless motor 230W 6000rpm 266Nm with brake	B05M1S3C5G1G40N - HDT	1	=BmMep	10
-PR1	043.0670	Manometro 1/8 con Pressostato completo di cavo 0,5mt e connettore M12.	Manometer 1/8 with Pressure switch, cable 0,5mt and M12 connector.	GP46-10-01-X207-Q	1	=BmMep	13
-RG4	022.0211	Raccordo rapido dritto SEM PG13,5/Ø19	Rapid straight joint SEM PG13,5/Ø19	SEM PG13,5/Ø19	1	=BmMep	43
-RG4A	022.0211	Raccordo rapido dritto SEM PG13,5/Ø19	Rapid straight joint SEM PG13,5/Ø19	SEM PG13,5/Ø19	1	=BmMep	43
-S43	022.0527	Sensore di prossimita PNP corto conn. M12	Proximity sensor PNP short with M12 connector.	B02122POC5 - SELET	1	=BmMep	28
-S44	022.0522	Sensore di prossimita PNP lungo conn. M12	Proximity sensor PNP long with M12 connector.	B00122-DIS388 - SELET	1	=BmMep	28
-S45	022.0543	Finecorsa a rotella 1NO+1NC conn. M12 laterale	Limit Switch with roll 1NO+1NC	NB B110BB-DMK PIZZATO	1	=BmMep	28
-S46	022.0543	Finecorsa a rotella 1NO+1NC conn. M12 laterale	Limit Switch with roll 1NO+1NC	NB B110BB-DMK PIZZATO	1	=BmMep	28
-S49	022.0519	Sensore CAPACITIVO PNP 30X75 distanza 7mm con connettore M12	Sensor capacitor PNP 7mm with connector M12		1	=BmMep	29
-S50	022.0527	Sensore di prossimita PNP corto conn. M12	Proximity sensor PNP short with M12 connector.	B02122POC5 - SELET	1	=BmMep	29
-S51	022.0543	Finecorsa a rotella 1NO+1NC conn. M12 laterale	Limit Switch with roll 1NO+1NC	NB B110BB-DMK PIZZATO	1	=BmMep	29
-S53	022.0543	Finecorsa a rotella 1NO+1NC conn. M12 laterale	Limit Switch with roll 1NO+1NC	NB B110BB-DMK PIZZATO	1	=BmMep	17
-S54	022.0543	Finecorsa a rotella 1NO+1NC conn. M12 laterale	Limit Switch with roll 1NO+1NC	NB B110BB-DMK PIZZATO	1	=BmMep	29
-SJB2	000.0P54	Scatola derivazione metallica 150x150x100		Codice provvisorio	1	=BmMep	43

REV.	MODIFICA	DATA	FIRME
R.0.3.	Added wire W9BR for shuttle X axis brake	12/02/2019	Solfanelli
R.0.2.	Upgrade wiring with HDT NTT drive (-U4), sheet..	22/11/2018	Solfanelli
0.1	upgrade I/O Overturning CB6001 (Sheet. 21, 28, 29, 33, 49)	0517	Bartoli

Dis. N. TI372CNC40050CE/4719
CAD SPAC
File TI372CNC/1.dwg
Data 20/11/2019

Impianto/Plant: *TIGER 372 CNC LR R.C. 4.0, 400V/50Hz PLe, ISO14119*

Denominazione/Title: DISTINTA MATERIALI / *MATERIAL LIST*

Ordine/Requisition:
Commessa/Order: TI372CNCLR.RC
Esecutore/Executor: Mep S.p.A.

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Nome/NAme	Mep__code	Descrizione/Description	Description EN	Codice Interno	Q.ta/Q.ty	Quadro/Board	Fg/Sh
-SL41	028.0904	UNITA'DI LUBRIFICAZIONE ELETTROMAG. 3600, 24Vac	Electromagnetic Lubrication Unit 24Vac	300+3085113+33VIP4+3235125+9304	1	=BmMep	30
-XMAM	022.0282 + 022.0261	Connettore volante ILME (CK03VS pioli + CKM03)	Mobile connector ILME (CK03VS + CKM03) 4 poles	CK03VS + CKM03	1	=BmMep	
-YV1		Elettrovalvola aperta (in chiusura) secondo solenoide			1	=BmMep	35
-YV2		Elettrovalvola aperta (in chiusura)			1	=BmMep	35
-YV3		Elettrovalvola aperta (in chiusura)			1	=BmMep	35
-YVBR		Freno in chiusura, comandato da elettromagnete			1	=BmMep	35
-AL	022.0377	Morsetto 2 fili a vite 4(6)mmq_PE_PHOENIX	Terminal 4(6)mmq for 2 wires_PE_PHOENIX	USLKG5	1	=QgCv	
-ASM	016.0761	Asta mobile SH 420 Cnc HS		016.0761	1	=QgCv	41
-CC1	022.0308	Terminale a occhiello Ø5 da 1,5mmq (Rosso)			1	=QgCv	41
-CC2	022.0296	Terminale a occhiello Ø5 da 2,5mmq (Blu)	Wire Terminal Connection Blue	Ø5 da 2,5mmq	1	=QgCv	41
-CR3	022.0197	Guaina POLIFLEX NW 29-3800296 (corrugato diam. 35)	Poliflex Covering Ø35	NW 29-3800296	1	=QgCv	43
-EM1	022.1245	Fungo emergenza	Emergency push button	M22-PVT cod.263467	1	=QgCv	13
	022.0936	Contatto pulsantiera NC	Normally close contact	M22-K01 cod. 216678 - Moeller	2		
	022.0911	Portacontatti per pulsantiera	Carrier for pushbutton	M22-A cod. 216374	2		
-ETH3	022.1923	Cavo Ethernet Cat6 1mt e RJ45 Schermati	Patch Cord Cat6 with RJ45 Shield	2005071 - CCS	1	=QgCv	19
-ETH4	022.2081	CONNETTORE RJ45 CON RES. DI TERMINAZIONE PER NTT	RJ45 Connector with CanOpen terminator resistor for NTT	HDT-CNTETH00	1	=QgCv	19
-EU1	022.0910	Scheda espansione Remota tipo A Mep40Ts 20DI, 16DO, 7AI, 1Step	Exspansion Remote Board A tipe Mep40Ts 20DI, 16DO, 7AI, 1Step	RMC-3SC01-E1/GZ3/VN453/24 - QEM	1	=QgCv	22
-EU2	022.0910	Scheda espansione Remota tipo A Mep40Ts 20DI, 16DO, 7AI, 1Step	Exspansion Remote Board A tipe Mep40Ts 20DI, 16DO, 7AI, 1Step	RMC-3SC01-E1/GZ3/VN453/24 - QEM	1	=QgCv	23
-F10	022.2253	Portafusibile 1 x (10,3x38) - 690V 32A	Fuse holding terminal 1 x (10,3x38) 690V 32A	2031038 BCH 32A ItalWeber	1	=QgCv	7
	022.1160	Fusibile 10,3x38 AM (ritardato) 8A	Fuse 10,3x38 AM	500V 8AMP	1		
-F11	022.2253	Portafusibile 1 x (10,3x38) - 690V 32A	Fuse holding terminal 1 x (10,3x38) 690V 32A	2031038 BCH 32A ItalWeber	1	=QgCv	11
	022.1161	Fusibile 10,3x38 AM (ritardato) 6A	Fuse 10,3x38 AM	500V 6AMP	1		
-F12	022.2253	Portafusibile 1 x (10,3x38) - 690V 32A	Fuse holding terminal 1 x (10,3x38) 690V 32A	2031038 BCH 32A ItalWeber	1	=QgCv	11
	022.1162	Fusibile 10,3x38 AM (ritardato) 4A	Fuse 10,3x38 AM	500V 4AMP	1		
-F13	022.2253	Portafusibile 1 x (10,3x38) - 690V 32A	Fuse holding terminal 1 x (10,3x38) 690V 32A	2031038 BCH 32A ItalWeber	1	=QgCv	11
	022.1165	Fusibile 10,3x38 AM (ritardato)1A	Fuse 10,3x38 AM	500V 1AMP	1		
-F14	022.2253	Portafusibile 1 x (10,3x38) - 690V 32A	Fuse holding terminal 1 x (10,3x38) 690V 32A	2031038 BCH 32A ItalWeber	1	=QgCv	11
-F15	022.2253	Portafusibile 1 x (10,3x38) - 690V 32A	Fuse holding terminal 1 x (10,3x38) 690V 32A	2031038 BCH 32A ItalWeber	1	=QgCv	34
	022.1165	Fusibile 10,3x38 AM (ritardato)1A	Fuse 10,3x38 AM	500V 1AMP	1		
-F16	022.2253	Portafusibile 1 x (10,3x38) - 690V 32A	Fuse holding terminal 1 x (10,3x38) 690V 32A	2031038 BCH 32A ItalWeber	1	=QgCv	6
	022.1162	Fusibile 10,3x38 AM (ritardato) 4A	Fuse 10,3x38 AM	500V 4AMP	1		
-FG1	022.2240	Portafusibile 2 x (10,3x38) - 690V 32A	Fuse holding terminal 2 x (10,3x38) 690V 32A	2032038 BCH 32A ItalWeber	1	=QgCv	7
	022.1162	Fusibile 10,3x38 AM (ritardato) 4A	Fuse 10,3x38 AM	500V 4AMP	2		
-FL1	022.0171	Cordicella unipolare 1 X 0,5	Single wire 0.5mmq		1	=QgCv	41
-FL2	022.0172	Cordicella unipolare 1x1,50	Single wire 1,50mmq		1	=QgCv	41
-FL3	022.0132	Cordicella unipolare 1x2,50 AWG14	Single wire AWG14 CSA (2.5mmq)		1	=QgCv	41
-FS1	019.5353	Fascetta in plastica 135x2,5	Plastic clamp 140x3,5	32031 Legrand	1	=QgCv	41
-FS3	010.1897	Finecorsa a cerniera aletta stretta 2NC + 1NO+ cavo 0.70Mt +M12	Hinge limit switch 2NC + 1NO	HP AA052F-0,7PMS1 PIZZATO	1	=QgCv	14
-FT1	022.2240	Portafusibile 2 x (10,3x38) - 690V 32A	Fuse holding terminal 2 x (10,3x38) 690V 32A	2032038 BCH 32A ItalWeber	1	=QgCv	7
	022.1163	Fusibile 10,3x38 AM (ritardato) 2A	Fuse 10,3x38 AM	500V 2AMP	2		
-FT2	022.2240	Portafusibile 2 x (10,3x38) - 690V 32A	Fuse holding terminal 2 x (10,3x38) 690V 32A	2032038 BCH 32A ItalWeber	1	=QgCv	6
	022.1165	Fusibile 10,3x38 AM (ritardato)1A	Fuse 10,3x38 AM	500V 1AMP	2		
-FU1	022.2239	Portafusibile 3 x (10,3x38) - 690V 32A	Fuse holding terminal 3 x (10,3x38) 690V 32A	2033038 BCH 32A ItalWeber	1	=QgCv	5
	022.1169	Fusibile 10,3x38 AM (ritardato) 20A	Fuse 10,3x38 AM 20A	500V 20AMP	3		
-FU2	022.2239	Portafusibile 3 x (10,3x38) - 690V 32A	Fuse holding terminal 3 x (10,3x38) 690V 32A	2033038 BCH 32A ItalWeber	1	=QgCv	6

REV.	MODIFICA	DATA	FIRME
R.0.3.	Added wire W9BR for shuttle X axis brake	12/02/2019	Solfanelli
R.0.2.	Upgrade wiring with HDT NTT drive (-U4), sheet..	22/11/2018	Solfanelli
0.1	upgrade I/O Overturning CB6001 (Sheet. 21, 28, 29, 33, 49)	0517	Bartoli

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File TI372CNC/1.dwg
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Impianto/Plant: TIGER 372 CNC LR R.C. 4.0, 400V/50Hz PLe, ISO14119
Denominazione/Title: DISTINTA MATERIALI / MATERIAL LIST
Ordine/Requisition:
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Esecutore/Executor: Mep S.p.A.

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Nome/NAme	Mep__code	Descrizione/Description	Description EN	Codice Interno	Q.ta/Q.ty	Quadro/Board	Fg/Sh
-FU2	022.1161	Fusibile 10,3x38 AM (ritardato) 6A	Fuse 10,3x38 AM	500V 6AMP	3	=QgCv	6
-FU3	022.2239	Portafusibile 3 x (10,3x38) - 690V 32A	Fuse holding terminal 3 x (10,3x38) 690V 32A	2033038 BCH 32A ItalWeber	1	=QgCv	8
	022.1163	Fusibile 10,3x38 AM (ritardato) 2A	Fuse 10,3x38 AM	500V 2AMP	3		
-FU4	022.2239	Portafusibile 3 x (10,3x38) - 690V 32A	Fuse holding terminal 3 x (10,3x38) 690V 32A	2033038 BCH 32A ItalWeber	1	=QgCv	10
	022.1162	Fusibile 10,3x38 AM (ritardato) 4A	Fuse 10,3x38 AM	500V 4AMP	3		
-FUT1	022.2948	FILTRO EMC TRIFASE 520VAC 20A	Filter EMC Three-phases SHAFFNER 20A	FN3270H-20-44	1	=QgCv	4
-GD1	022.0908	Alimentatore Switching Vi 230-400-500VAC Vu 24Vdc 14A	Switching power supply Vi 240-400-500VAC Vu 24Vcc 14A	FLEX28024B AdelSystem	1	=QgCv	7
-GH3	022.0247	Dado poliammide PG29	Nut Poliammide PG29	PG29	1	=QgCv	43
-GTW1	022.3715	GATEWAY QBR2A01/12V OPC-UA CON ANTENNE	GGATEWAY QBR2A01/12V OPC-UA WIFI-LAN	QEM QBR2A01/12V	1	=QgCv	39
-K BR	022.0993 + 022.2391	Rele 24VCC - 2 contatti scambio + zoccolo	Relay 24 VCC - 2 exchange contacts + base	40.52.9.024.0000 + 95.05.SPA - FINDER	1	=QgCv	19
	022.1593	Soppressore con Varistore 24 Vac/24Vdc	Varistor suppressor with 24 Vac / 24Vdc	99.02.0.024.98 - FINDER	1		
-K0	022.0555	Bobina di minima 400/50	Releaser 400/50	U-PKZ0 V.400.50 cod. 073138 - Moeller	1	=QgCv	4
-K149	022.0993 + 022.2391	Rele 24VCC - 2 contatti scambio + zoccolo	Relay 24 VCC - 2 exchange contacts + base	40.52.9.024.0000 + 95.05.SPA - FINDER	1	=QgCv	29
-KLUB	022.0993 + 022.2391	Rele 24VCC - 2 contatti scambio + zoccolo	Relay 24 VCC - 2 exchange contacts + base	40.52.9.024.0000 + 95.05.SPA - FINDER	1	=QgCv	35
	022.1593	Soppressore con Varistore 24 Vac/24Vdc	Varistor suppressor with 24 Vac / 24Vdc	99.02.0.024.98 - FINDER	1		
-KM2	022.3012	Contattore 3KW NO (24 V Dc)	Contactor 3KW NO (24 V Dc)	DILM7-10 cod.276565 Moeller	1	=QgCv	33
-KM3	022.3011	Contattore 3KW - NC (24 V Dc)	Contactor 3KW NC (24 V Dc)	DILM7-01 cod.276600 Moeller	1	=QgCv	33
	022.3924	Kit ponti potenza per teleinvertitore	Kit for contactor reversing	DILM12-XLR	1		
-KM3R	022.3011	Contattore 3KW - NC (24 V Dc)	Contactor 3KW NC (24 V Dc)	DILM7-01 cod.276600 Moeller	1	=QgCv	33
-KS10	022.3011	Contattore 3KW - NC (24 V Dc)	Contactor 3KW NC (24 V Dc)	DILM7-01 cod.276600 Moeller	1	=QgCv	12
-KS11	022.3011	Contattore 3KW - NC (24 V Dc)	Contactor 3KW NC (24 V Dc)	DILM7-01 cod.276600 Moeller	1	=QgCv	12
-KS3	022.3011	Contattore 3KW - NC (24 V Dc)	Contactor 3KW NC (24 V Dc)	DILM7-01 cod.276600 Moeller	1	=QgCv	12
-MVQ	019.5220	Ventola raffreddamento 120x120 24Vdc	Fan cooling 120x120 24Vdc	V108MBW24DC AlfaPlastic	1	=QgCv	11
	019.5117	Griglia per ventola 120x120	Cover for fan cooler 120x120	ALFA GM120	1		
	034.0431	Base per ventola 120x120 230V	Base for fan cooling 120x120	A12-7032	1		
	034.0414	Coperchio alettatore per ventola 120x120	Fan filter 120x120	M12C-7032	1		
	028.0174	Filtro per ventola 120x120	Fan filter 120x120	M12R	1		
-MVQ2	019.5220	Ventola raffreddamento 120x120 24Vdc	Fan cooling 120x120 24Vdc	V108MBW24DC AlfaPlastic	1	=QgCv	11
	019.5117	Griglia per ventola 120x120	Cover for fan cooler 120x120	ALFA GM120	1		
	034.0431	Base per ventola 120x120 230V	Base for fan cooling 120x120	A12-7032	1		
	034.0414	Coperchio alettatore per ventola 120x120	Fan filter 120x120	M12C-7032	1		
	028.0174	Filtro per ventola 120x120	Fan filter 120x120	M12R	1		
-NM1	022.0290	Etichetta segnafilo	Cable maker and wire		1	=QgCv	41
-NM2	022.0290	Etichetta per morsettiera	Cable maker and wire		1	=QgCv	41
-PT1	022.0311	Terminale a puntale da 0,5mmq (Bianco)	Wire Terminal Connection White	0,5mmq DZ5CE005	1	=QgCv	41
-PT2	022.0312	Terminale a puntale da 1,5mmq (Nero)	Wire Terminal Connection Black	1,5mmq DZ5CE015	1	=QgCv	41
-PT3	022.0313	Terminale a puntale da 2,5mmq (Blu)	Wire Terminal Connection Bleu	2,5mmq	1	=QgCv	41
-Q0	022.0124	Custodia isolante con manopola rossa	Housing with red handle	E-PKZ0-GR - Moeller	1	=QgCv	4
	022.0125	Blocco porta luchettabile	Lockable block	SVB-PKZ0-E cod.35127 - Moeller	1		
	022.0126	Barretta per neutro	Lockable device	N-PKZ0 cod. 82160 - Moeller	1		
	022.1289	Magnetotermico 16-20A	Magneto-termal overload 16-20A	PKZM0-20 cod. 46988 Moeller	1		
-QC1	016.2913	QUADRO COMANDI COMPLETO TI 372-402 4.0		016.2913	1	=QgCv	41
-RG3	022.0209	Raccordo rapido dritto PG29/Ø35	Rapid straight Joint PG29/Ø35	SEM PG29/Ø35	1	=QgCv	43
-RSE1	022.3290	Modulo espansione 3NO+1NC Ple	Expansion module 3NO +1NC	CS ME03VU24 - PIZZATO	1	=QgCv	12
-RSP1	022.3289	Controllore programmabile di sicurezza Ple 24DI, 8SO, 8DO	'Programmable safety controller Ple 24DI, 8SO, 8DO	GEMNIS CSMP308 - PIZZATO	1	=QgCv	12

REV.	MODIFICA	DATA	FIRME
R.0.3.	Added wire W9BR for shuttle X axis brake	12/02/2019	Solfanelli
R.0.2.	Upgrade wiring with HDT NTT drive (-U4), sheet..	22/11/2018	Solfanelli
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Nome/NAme	Mep__code	Descrizione/Description	Description EN	Codice Interno	Q.ta/Q.ty	Quadro/Board	Fg/Sh
-RT2	022.3820	Rele termico 1-1,6A	Termal overload 1-1,6A	ZB12-1,6A cod. 278436Moeller	1	=QgCv	6
-RT3	022.3820	Rele termico 1-1,6A	Termal overload 1-1,6A	ZB12-1,6A cod. 278436Moeller	1	=QgCv	6
-S49		Dispositivo di prossimità capacitivo con contatto NC			1	=QgCv	18
-SB14	022.0937	Contatto pulsantiera NA M22-K10 cod. 216376	Normally open contact	M22-K10 cod. 216376 Moeller	1	=QgCv	24
	022.1405	Pulsante nero	Black push button	M22-D-S cod. 216590	1		
-SF1	047.0182	Sacchetto portafusibili	Printed envelopes		1	=QgCv	41
	022.1133	Microfusibile T 1AMP. 250V	Microfuse	1AMP. 250V	1		
-SJ1	022.3927	JOYSTICK E2AC-DXBX2600 4 POS. CON BLOCCO	JOYSTICK E2AC-DXBX2600 4 POS.	E2AC-DXBX2600- PIZZATO	1	=QgCv	24
	022.3928	BLOCCHETTO N.A. PER JOYSTICK CP10G2V1	N.O. BLOCK FOR JOYSTICK CP10G2V1	CP10G2V1 - PIZZATO	4		
-SJ107	022.3927	JOYSTICK E2AC-DXBX2600 4 POS. CON BLOCCO	JOYSTICK E2AC-DXBX2600 4 POS.	E2AC-DXBX2600- PIZZATO	1	=QgCv	24
	022.3928	BLOCCHETTO N.A. PER JOYSTICK CP10G2V1	N.O. BLOCK FOR JOYSTICK CP10G2V1	CP10G2V1 - PIZZATO	2		
-SLP	022.1405	Pulsante nero	Black push button	M22-D-S cod. 216590	1	=QgCv	15
	022.0937	Contatto pulsantiera NA	Normally open contact	M22-K10 cod. 216376 Moeller	1		
	022.0911	Portacontatti per pulsantiera	Carrier for pushbutton	M22-A cod. 216374	1		
-T1	022.1601	Trasformatore	Transformer	500 0-230-400 V.0-60/0-220	1	=QgCv	7
-T2	022.1639	Trasformatore 150VA UL/CSA	Transformer 150VA UL/CSA	150VA (1-5) 0 (+5)-24-400-480 5A-19 (40VA)/0-24 (110VA) 50/60Hz UL/Csa	1	=QgCv	6
-TF1	031.2622	Targa sostituzione fusibili			1	=QgCv	41
-TF2	025.0604	Guarnizione aerstop	Control panel gasket		1	=QgCv	41
-U1	022.0707	Inverter V380-480.50.60, 5.5KW	Inverter V380-480.50.60, 5.5KW ; 13.5A	C300 - 04400135- ControlTechniques	1	=QgCv	5
-U11	022.1340	Azionamento per motori passo-passo (30-100Vac) + modbus	Driver for step motor (30-100Vac) + modbus	HT7 60VCS	1	=QgCv	9
-U4	022.1344	Azionamento Brushless NTT 230-480VAC 50.60Hz 3A CANOPEN+MODBUS+FILTRO	Drive for brushless motor NTT 230-480VAC 50.60Hz 3A CANOPEN+MODBUS+FILTRO	HDT NTT 460, 230-480VAC	1	=QgCv	10
-U8	022.1338	Azionamento per brushless 400-480V/50-60Hz	Drive for brushless motor 230-480V 2,5A	ECOTECH 4T 4/10-EXT/VS86	1	=QgCv	8
-UPC	022.1481	Display MEP40 TS	Display MEP40 TS	TFT 8" 256 colori Touch Screen	1	=QgCv	21
	022.2840	Controllore Mep40TS - 8"Hmi, 8DI/O, 3AI, 1step, Ethernet, Ethercat		PMQ4CF20E1/TP02/Q13/VN453/24Vdc - Qem	1		
-UTA	031.2075	Consolle di programmazione MEP40TS Europa	Programming consolled MEP40 Europe		1	=QgCv	21
	022.4091	Cavo 60cm con connettore USB per pannello di comando	Cable 60 cm for command panel with USB connector	M222-USB-SA ;107412 EATON	1		
-W81/1	022.1970	Cavo potenza brushless cablato MIL, L=10mt	Wired brushless power supply cable MIL10, L=10mt	022.1970	1	=QgCv	10
-W82/1	022.1971	Cavo resolver brushless cablato L=10mt posa mobile	Wired brushless Resolver cable MIL10, L=10mt	022.1971	1	=QgCv	19
-W8E	022.1931	Cavo ENCODER cablato ECO/DSM-HS M17 17P lung 6mt	Wired incremental encoder cable M17 lengh 6mt	.- SELEMA	1	=QgCv	17
-W8P	022.1930	Cavo POTENZA cablato ECO/HS M17 4P 4X1 lung 6mt	Wired poerw supply cable M17 lengh 6mt	. - SELEMA	1	=QgCv	8
-WSER	022.1908	Cavo seriale modbus per SH 420 CNC HS	Cable modbus serial comunication for SH 420 CNC HS		1	=QgCv	20
-XAL	2.5 mm	Morsetto da 2.5 mm non abbinato a costruttore			5	=QgCv	
-XC1					1	=QgCv	35
-XC2					1	=QgCv	35
-XC27					1	=QgCv	32
-XC28					1	=QgCv	32
-XC3					1	=QgCv	35
-XC31					1	=QgCv	32
-XC32					1	=QgCv	32
-XCB1	022.0317	Connettore femmina a vite ILME 24 poli + PE 16A	Connector Female ILME 24 poles + PE 16A	CNEF24TX - ILME	1	=QgCv	
-XCB1(2)	022.0317	Connettore femmina a vite ILME 24 poli + PE 16A	Connector Female ILME 24 poles + PE 16A	CNEF24TX - ILME	1	=QgCv	
-XCBR					1	=QgCv	35
-XF52(1)	022.0268	Connettore femmina a vite 4 poli + PE 16A	Connector Female 4 poles + PE 16A	CKF 04 - ILME	1	=QgCv	
-XM52(1)	022.0267	Connettore maschio a vite 4 poli + PE 16A	Connector Male 4 poles + PE 16A	CKM 04 - ILME	1	=QgCv	
-XMU3	6 Poli	Connettore 6 poli non abbinato a costruttore			1	=QgCv	

REV.	MODIFICA	DATA	FIRME
R.0.3.	Added wire W9BR for shuttle X axis brake	12/02/2019	Solfanelli
R.0.2.	Upgrade wiring with HDT NTT drive (-U4), sheet..	22/11/2018	Solfanelli
0.1	upgrade I/O Overturning CB6001 (Sheet. 21, 28, 29, 33, 49)	0517	Bartoli

Dis. N. TI372CNC40050CE/4719
CAD SPAC
File TI372CNC/1.dwg
Data 20/11/2019

Impianto/Plant: TIGER 372 CNC LR R.C. 4.0, 400V/50Hz PLe, ISO14119
Denominazione/Title: DISTINTA MATERIALI

Ordine/Requisition:
Commessa/Order: TI372CNCLR.RC
Esecutore/Executor: Mep S.p.A.

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Nome/NAme	Mep__code	Descrizione/Description	Description EN	Codice Interno	Q.ta/Q.ty	Quadro/Board	Fg/Sh
-XNT	2.5 mm	Morsetto da 2.5 mm non abbinato a costruttore			1	=QgCv	
-XQG1	022.2256	Morsetto da 2.5 mm singolo per 2 fili a molla	Single pole spring terminal 2,5mmq	56.703.0055.0	6	=QgCv	
	022.2223	Morsetto 4(6)mmq per 4 fili a molla - PHOENIX	Terminal spring 4(6)mmq for 4 wires - PHOENIX	ST4-quattro- 3031445	3		
-XQG2	022.2243	Morsetto 2,5(4)mmq per 2 fili a molla - PHOENIX	Terminal 2,5(4)mmq for 2 wires - PHOENIX	ST2,5- 3031212	5	=QgCv	
	022.2245	Morsetto 2,5(4)mmq per 4 fili a molla - PHOENIX	Terminal 2,5(4)mmq for 4 wires - PHOENIX	ST2,5- QUATTRO_3031306	8		
	022.2256	Morsetto da 2.5 mm singolo per 2 fili a molla	Single pole spring terminal 2,5mmq	56.703.0055.0	19		
	022.2219	Morsetto 2.5(4)mmq per 4 fili a molla - PHOENIX	Terminal 2.5(4)mmq for 4 wires - PHOENIX	D-STTB-2.5_3031270	1		
-XQG3	022.2245	Morsetto 2,5(4)mmq per 4 fili a molla - PHOENIX	Terminal 2,5(4)mmq for 4 wires - PHOENIX	ST2,5- QUATTRO_3031306	13	=QgCv	
	022.2256	Morsetto da 2.5 mm singolo per 2 fili a molla	Single pole spring terminal 2,5mmq	56.703.0055.0	1		
	022.2258	Morsetto da 2.5 mm singolo per 4 fili a molla	Quadruple pole spring terminal 2,5mmq	56.703.5155.0	2		
-XQG4	022.2243	Morsetto 2,5(4)mmq per 2 fili a molla - PHOENIX	Terminal 2,5(4)mmq for 2 wires - PHOENIX	ST2,5- 3031212	4	=QgCv	
	022.2245	Morsetto 2,5(4)mmq per 4 fili a molla - PHOENIX	Terminal 2,5(4)mmq for 4 wires - PHOENIX	ST2,5- QUATTRO_3031306	2		
-XQGPE	022.2321	Barra da 15x15mm con 10 fori 6mm			3	=QgCv	
-XROT	022.2219	Morsetto 2.5(4)mmq per 4 fili a molla - PHOENIX	Terminal 2.5(4)mmq for 4 wires - PHOENIX	D-STTB-2.5_3031270	3	=QgCv	
	022.2245	Morsetto 2,5(4)mmq per 4 fili a molla - PHOENIX	Terminal 2,5(4)mmq for 4 wires - PHOENIX	ST2,5- QUATTRO_3031306	2		
-XS1.	022.0268	Connettore femmina a vite 4 poli + PE 16A	Connector Female 4 poles + PE 16A	CKF 04 - ILME	1	=QgCv	
-XSS	022.0391	Connettore RJ45 completo di cavo per seriale inverter		022.0391	1	=QgCv	16
-Z1	022.2903	Toroide ferrite N30 r40	Ferrites Toroids N30 r40	212-0976 - RS	1	=QgCv	5
-ETH5	022.2064	Connettore femmina RJ45 GR21.21	Female Plug RJ45	CJK 8FT - ILME	1	=QgMep	39
	022.1210	Custodia metallica da incasso 1 leva Gr 21.21	Metallic Case Embedding One Lever Gr 21.21	CKAX 03 I- ILME	1		
	022.1212	CHIUSURA MET. VOLANTE CON PIOLINI PER FRUTTI PRESA Gr 21.21	Metal Cap Embedding Gr 21.21	CKA 03 C- ILME	1		
-F29	022.2253	Portafusibile 1 x (10,3x38) - 690V 32A	Fuse holding terminal 1 x (10,3x38) 690V 32A	2031038 BCH 32A ItalWeber	1	=QgMep	39
	054.4661	Fusibile Ritardato 10,3x38 - 3A UL/CSA	Fuse Time delay 10.3x38 - 3A UL/CSA	3A 600V ATDR3	1		
-GD2	022.1546	CONVERTITORE 24VDC/12VDC 8A	Converter 24VDC/12VDC 8A	PHO2320115 - PHOENIX	1	=QgMep	39
-WETH6	022.3307	CAVO di rete ethernet 5 metri Cat6 schermato	Ethernet cable Lenght 5 meters Cat6 schielded		1	=QgMep	39
-WETH7	022.3307	CAVO di rete ethernet 5 metri Cat6 schermato	Ethernet cable Lenght 5 meters Cat6 schielded		1	=QgMep	39
-WF2	022.3300	CAVO ANTENNA WIFI L.3M M-F SMA	WIFI cable L.3M M-F SMA		1	=QgMep	39
-WF3	022.3306	CAVO WIFI L=1mt M-F	WIFI cable L=1mt M-F		1	=QgMep	39

REV.	MODIFICA	DATA	FIRME
R.0.3.	Added wire W9BR for shuttle X axis brake	12/02/2019	Solfanelli
R.0.2.	Upgrade wiring with HDT NTT drive (-U4), sheet..	22/11/2018	Solfanelli
0.1	upgrade I/O Overturning CB6001 (Sheet. 21, 28, 29, 33, 49)	0517	Bartoli

Dis. N. TI372CNC40050CE/4719
CAD SPAC
File TI372CNC/1.dwg
Data 20/11/2019

Impianto/Plant: *TIGER 372 CNC LR R.C. 4.0, 400V/50Hz PLe, ISO14119*

Denominazione/Title: DISTINTA MATERIALI / *MATERIAL LIST*

Ordine/Requisition:
Commessa/Order: TI372CNCLR.RC
Esecutore/Executor: Mep S.p.A.

Foglio/Page: 59
Segue/Follow: 60
Ultimo/Last: 228

Nome/NAme	Mep__code	Descrizione/Description	Description EN	Codice Interno	Q.ta/Q.ty	Quadro/Board	Fg/Sh
-W31	022.0147	Cavo schermato 12x0.5	Cable with shield 12 x 0.5mmq		8		
-W61	022.0161	Cavo 12x0.5mmq	Cable 12 x 0.5mmq	022.0161			
-W79/2	022.0141	Cavo schermato 4x0.5 per tensionatore e potenziometro	Cable with shield 4 x 0.5mmq		2		
-WAUX10	022.0137	Cavo multipolare schermato 4x0,75	Cable with shield 4 x 0.75mmq	022.0137			
-W03	022.0162	Cavo 4G0.75mmq	Cable 4 x 0.75mmq	022.0162		=BmEtMep	
-W171	022.0160	Cavo 2x0.5mmq	Cable 2 x 0.5mmq	022.0160		=BmMep	
-W01	022.0151	Cavo 3G1.5mmq	Cable 3 x 1.5mmq		5.2	=QgCv	
-W02	022.0162	Cavo 4G0.75mmq	Cable 4 x 0.75mmq	022.0162		=QgCv	
-W042	022.0160	Cavo 2x0.5mmq	Cable 2 x 0.5mmq	022.0160		=QgCv	
-W067	022.0160	Cavo 2x0.5mmq	Cable 2 x 0.5mmq	022.0160		=QgCv	
-W1	022.1977	Cavo 4G Awg10 St CSA	Cable 4G X AWG10 SCHERMATO			=QgCv	
-W143	022.0397	Cavo 4xAwg24 per prossimity con connettore M12 dritto L=5Mt	Straight connector M12 with 5MTcable 4x0.34mmq	022.0397	5	=QgCv	
-W144	022.0424	Cavo pressofuso con connettore M12 90° lungo 5Mt	SAC-4P- 5,0-PUR/M12FR, M12 90° connector: lenght 5Mt	022.0424		=QgCv	
-W145	022.0397	Cavo 4xAwg24 per prossimity con connettore M12 dritto L=5Mt	Straight connector M12 with 5MTcable 4x0.34mmq	022.0397	8	=QgCv	
-W147	022.0160	Cavo 2x0.5mmq	Cable 2 x 0.5mmq	022.0160		=QgCv	
-W149	022.0397	Cavo 4xAwg24 per prossimity con connettore M12 dritto L=5Mt	Straight connector M12 with 5MTcable 4x0.34mmq	022.0397	5	=QgCv	
-W150	022.0141	Cavo schermato 4x0.5 per tensionatore e potenziometro	Cable with shield 4 x 0.5mmq		6	=QgCv	
-W154	022.0398	Cavo 4xAwg24 per prossimity con connettore M12 dritto L.=10Mt.	Straight connector M12 10MT cable 4x0.5mmq	022.0398	8.5	=QgCv	
-W156	022.0398	Cavo 4xAwg24 per prossimity con connettore M12 dritto L.=10Mt.	Straight connector M12 10MT cable 4x0.5mmq	022.0398	8.5	=QgCv	
-W172	022.0422	Cavo pressofuso con connettore M12 90° lungo 10Mt	Cable with M12 90° connector; Lenght: 10Mt	022.0422		=QgCv	
-W173	022.0422	Cavo pressofuso con connettore M12 90° lungo 10Mt	Cable with M12 90° connector; Lenght: 10Mt	022.0422		=QgCv	
-W2	022.0162	Cavo 4G0.75mmq	Cable 4 x 0.75mmq	022.0162		=QgCv	
-W3	022.0162	Cavo 4G0.75mmq	Cable 4 x 0.75mmq	022.0162		=QgCv	
-W30	022.0137	Cavo multipolare schermato 4x0,75	Cable with shield 4 x 0.75mmq	022.0137	5	=QgCv	
-W31	022.0147	Cavo schermato 12x0.5	Cable with shield 12 x 0.5mmq		8	=QgCv	
-W33	022.2080	Cavo schermato 12x0,14		s1	6	=QgCv	
-W34	022.2053	Cavo 8x0.25 lung. 5Mt con connettore M12 dritto	Straight connector M12 with 5Mt cable UL/CSA 8x0.25mmq		4	=QgCv	
-W35	022.2053	Cavo 8x0.25 lung. 5Mt con connettore M12 dritto	Straight connector M12 with 5Mt cable UL/CSA 8x0.25mmq		5	=QgCv	
-W39	022.0397	Cavo 4xAwg24 per prossimity con connettore M12 dritto L=5Mt	Straight connector M12 with 5MTcable 4x0.34mmq	022.0397	5	=QgCv	
-W50	022.1932	Cavo schermato 8x2xAwg24St(0.24mmq) UL 2464 CSA		022.1932	6	=QgCv	
-W53	022.0160	Cavo 2x0.5mmq	Cable 2 x 0.5mmq	022.0160		=QgCv	
-W58	022.0160	Cavo 2x0.5mmq	Cable 2 x 0.5mmq	022.0160		=QgCv	
-W79/1	022.1906	Cavo schermato 6x2StAwg24(0.20mmq) UL 2587 CSA	Cable shielded 6x2 Awg24 CSA	022.1906	1	=QgCv	
-W9	022.0158	Cavo 5x1.5mmq	Cable 5 x 1.5mmq	022.0158	5	=QgCv	
-W9BR	022.0160	Cavo 2x0.5mmq	Cable 2 x 0.5mmq	022.0160	5.5	=QgCv	
-WAL	022.0163	Cavo 5G4.00mmq	Cable 5 x 4mmq	022.0163		=QgCv	
-WAL1	022.0163	Cavo 5G4.00mmq	Cable 5 x 4mmq	022.0163		=QgCv	
-WCB1	022.0161	Cavo 12x0.5mmq	Cable 12 x 0.5mmq	022.0161		=QgCv	
-WCB2	022.0161	Cavo 12x0.5mmq	Cable 12 x 0.5mmq	022.0161		=QgCv	
-WCB3	022.0152	Cavo 4G1.5mmq	Cable 4x 1.5mmq	022.0152	5	=QgCv	
-WENC	022.0402	Cavo 4x2xAwg24 CSA	Cable encoder Lika EC-M10F-LK-A8-10	022.0402	7	=QgCv	
-WPR1	022.0355	Cavo 3xAwg24 per proxy con connettore M8 dritto. L=5Mt	Cable with straight connector M8. L=5Mt		5	=QgCv	
-WS/5	022.0141	Cavo schermato 4x0.5 per tensionatore e potenziometro	Cable with shield 4 x 0.5mmq		5.5	=QgCv	
-WBR	022.0160	Cavo 2x0.5mmq	Cable 2 x 0.5mmq	022.0160	8	=QgCv	
-WS6	022.0141	Cavo schermato 4x0.5 per tensionatore e potenziometro	Cable with shield 4 x 0.5mmq		1.2	=QgCv	

REV.	MODIFICA	DATA	FIRME
R.0.3.	Added wire W9BR for shuttle X axis brake	12/02/2019	Solfanelli
R.0.2.	Upgrade wiring with HDT NTT drive (-U4), sheet..	22/11/2018	Solfanelli
0.1	upgrade I/O Overturning CB6001 (Sheet. 21, 28, 29, 33, 49)	0517	Bartoli

Dis. N. TI372CNC40050CE/4719
CAD SPAC
File TI372CNC/1.dwg
Data 20/11/2019

Impianto/Plant
TIGER 372 CNC LR R.C. 4.0, 400V/50Hz PLe, ISO14119

Denominazione/Title
DISTINTA CAVI
CABLES LIST

Ordine/Requisition
Commessa/Order TI372CNCLR.RC
Esecutore/Executor Mep S.p.A.

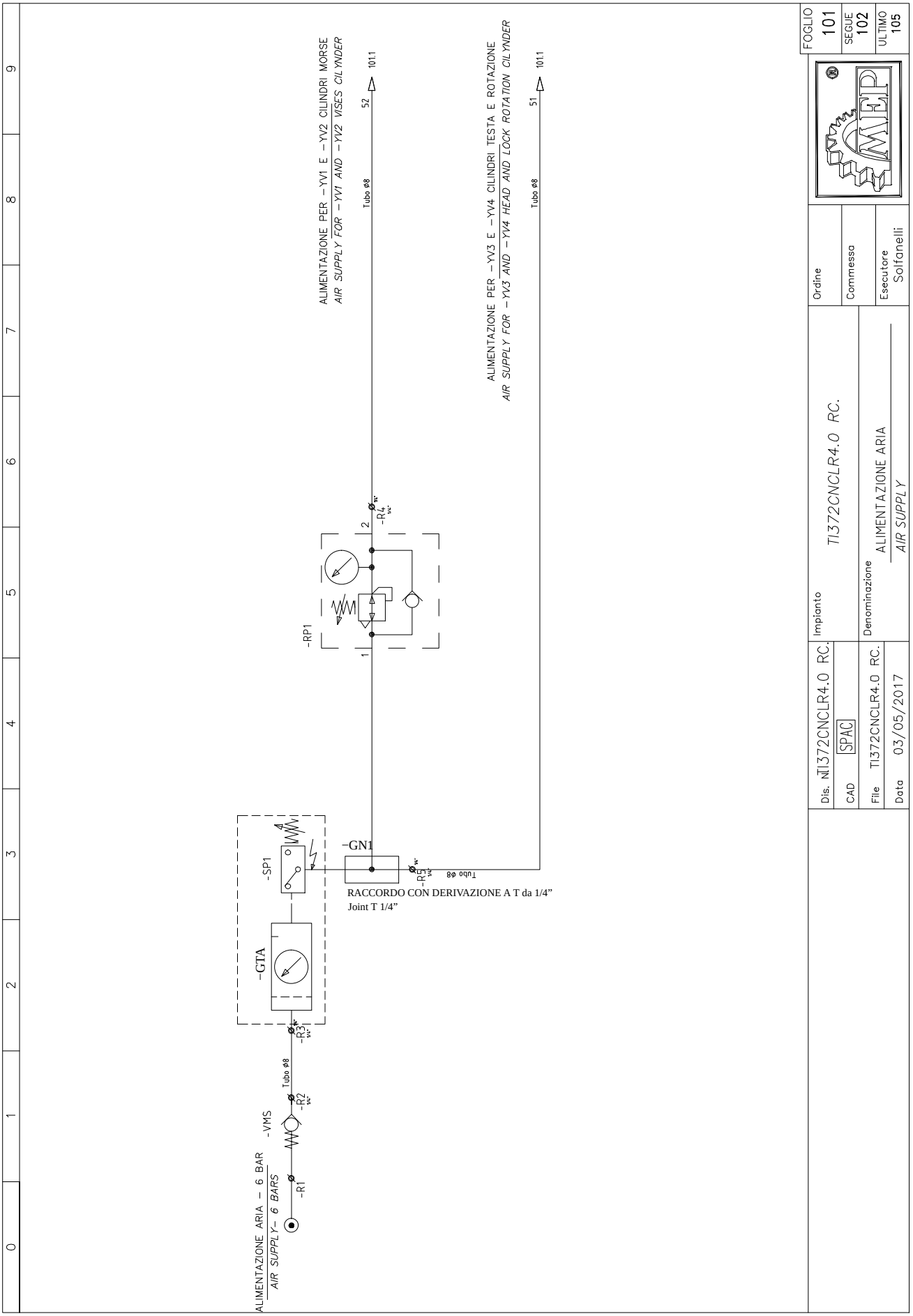
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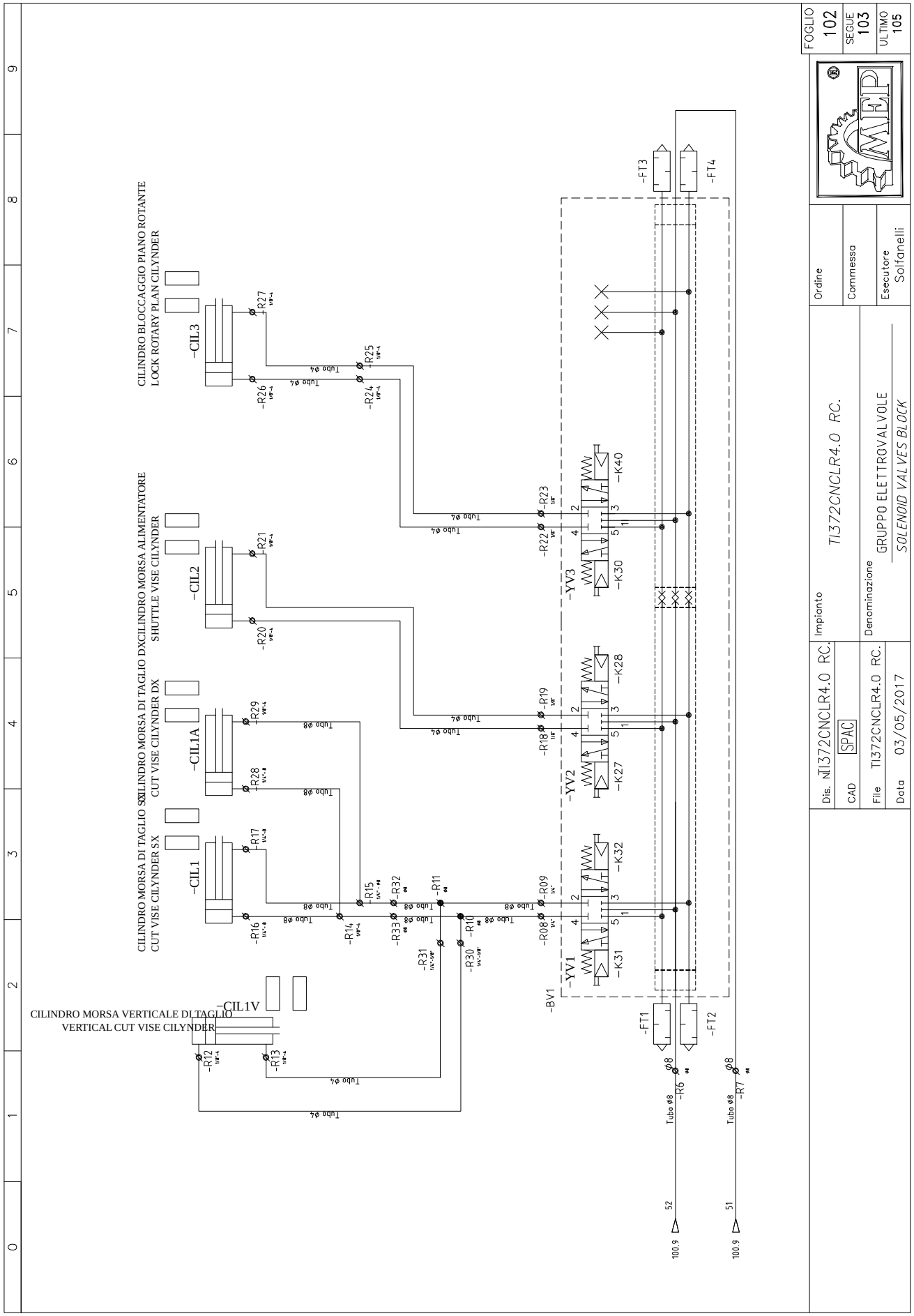
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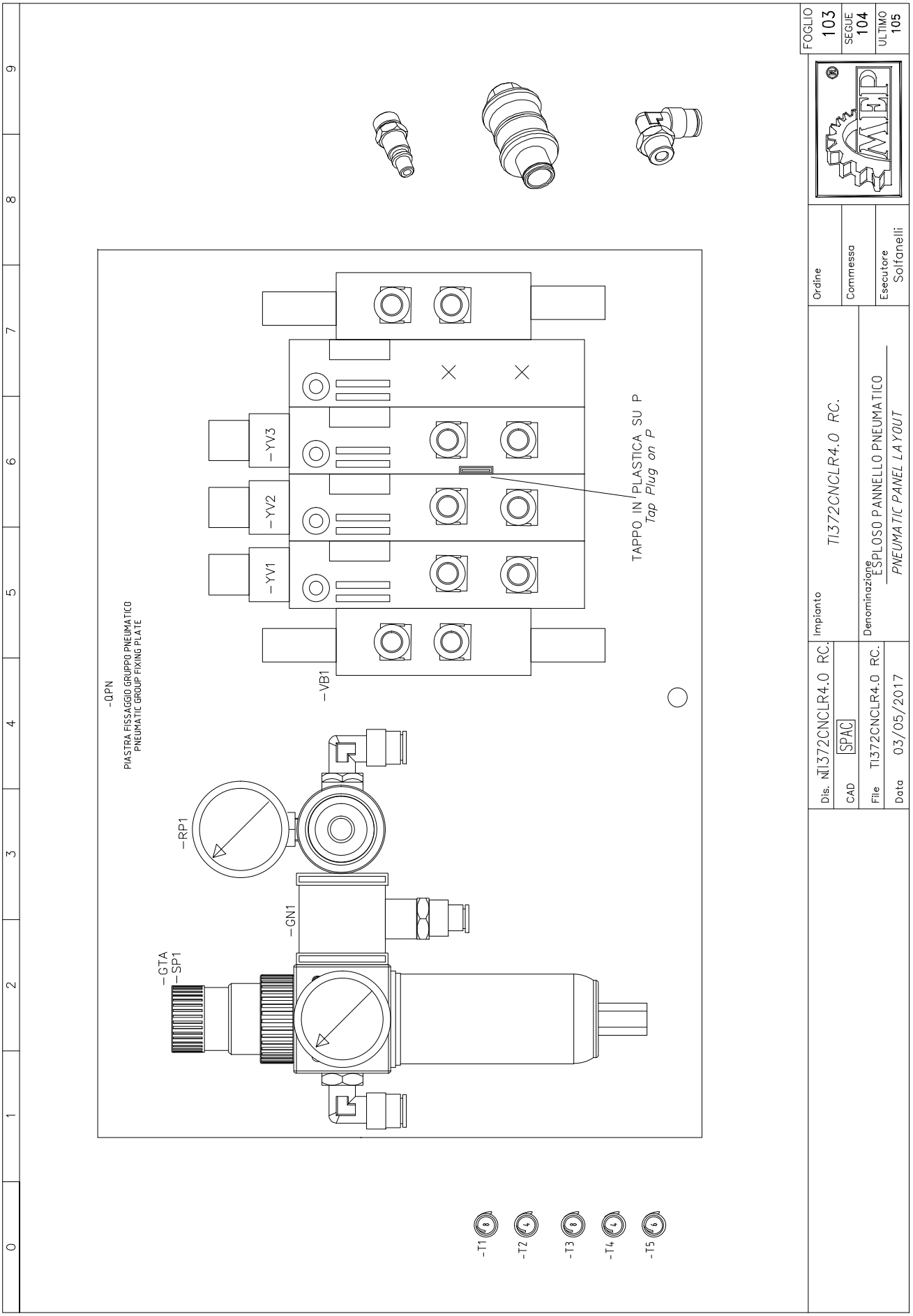
Foglio Sheet	Descrizione Description	Revisione \ Revision 0 1 2 3 4 5 6 7 8 9	Foglio Sheet	Descrizione Description	Revisione \ Revision 0 1 2 3 4 5 6 7 8 9
100	INDICE DEI CONTENUTI / CONTENT INDEX				
101	ALIMENTAZIONE ARIA / AIR SUPPLY				
102	GRUPPO ELETTROVALVOLE / SOLENOID VALVES BLOCK				
103	ESPLOSO PANNELLO PNEUMATICO / PNEUMATIC PANEL LAYOUT				
104	ESPLOSO PANNELLO PNEUMATICO / PNEUMATIC PANEL LAYOUT				
105	ESPLOSO PANNELLO PNEUMATICO / PNEUMATIC PANEL LAYOUT				

Note :

Dis. N° TI372CNCLR4.0 RC.	Impianto TI372CNCLR4.0 RC.	Ordine	FOGLIO 100
CAD SPAC		Commessa	SEGUE 101
File TI372CNCLR4.0 RC.	Denominazione INDICE DEI CONTENUTI / CONTENT INDEX	Esecutore Solfanelli	ULTIMO 105
Data 03/05/2017			


ALIMENTAZIONE ARIA – 6 BAR
AIR SUPPLY– 6 BARS
-VMS
-R1
-R2
Tubo ø8
-R3
-GTA
-SP1
-GN1
-R5
Tubo ø8
RACCORDO CON DERIVAZIONE A T da 1/4"
Joint T 1/4"
-RP1
-R4
ALIMENTAZIONE PER -YV1 E -YV2 CILINDRI MORSE
AIR SUPPLY FOR -YV1 AND -YV2 VISES CILYNDER
Tubo ø8
52
1011
ALIMENTAZIONE PER -YV3 E -YV4 CILINDRI TESTA E ROTAZIONE
AIR SUPPLY FOR -YV3 AND -YV4 HEAD AND LOCK ROTATION CILYNDER
Tubo ø8
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1011
FOGLIO 101
SEGUE 102
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Ordine
Commessa
Esecutore Solfanelli
Impianto TI372CNCLR4.0 RC.
Denominazione ALIMENTAZIONE ARIA
AIR SUPPLY
Dis. TI372CNCLR4.0 RC.
CAD SPAC
File TI372CNCLR4.0 RC.
Data 03/05/2017


FOGLIO 102
SEGUE 103
ULTIMO 105
Ordine
Commessa
Esecutore Solfanelli
Impianto TI372CNCLR4.0 RC.
Denominazione GRUPPO ELETTROVALVOLE
SOLENOID VALVES BLOCK
Dis. TI372CNCLR4.0 RC.
CAD SPAC
File TI372CNCLR4.0 RC.
Data 03/05/2017
CILINDRO BLOCCAGGIO PIANO ROTANTE
LOCK ROTARY PLAN CILYNDER
CILINDRO MORSA DI TAGLIO DX
CUT VISE CILYNDER DX
CILINDRO MORSA ALIMENTATORE
SHUTTLE VISE CILYNDER
CILINDRO MORSA DI TAGLIO SX
CUT VISE CILYNDER SX
CILINDRO MORSA VERTICALE DI TAGLIO
VERTICAL CUT VISE CILYNDER
-CIL3
-CIL2
-CIL1A
-CIL1
-CIL1V
-YV3
-YV2
-YV1
-BV1
-FT1
-FT2
-FT3
-FT4
Tubo ø4
Tubo ø8
Tubo ø8 ø8
100.9
52
51


FOGLIO 103
SEGUE 104
ULTIMO 105
Ordine
Commessa
Esecutore Solfanelli
Impianto
TI372CNCLR4.0 RC.
Denominazione
ESPLOSO PANNELLO PNEUMATICO
PNEUMATIC PANEL LAYOUT
Dis. TI372CNCLR4.0 RC.
CAD SPAC
File TI372CNCLR4.0 RC.
Data 03/05/2017
-QPN
PIASTRA FISSAGGIO GRUPPO PNEUMATICO
PNEUMATIC GROUP FIXING PLATE
-VB1
-YV1
-YV2
-YV3
TAPPO IN PLASTICA SU P
Tap Plug on P
-RP1
-GN1
-GTA
-SP1
-T1
-T2
-T3
-T4
-T5

0	1	2	3	4	5	6	7	8	9

Nome/NAme	Mep__code	Descrizione/Description	Description EN	Codice Interno	Q.ta/Q.ty	Quadro/Board	Fg/Sh
-T3	043.0301	Tubo rilsan 8X6 NERO COD.17257181		043.0301	1	=BmMep	103
-T4	043.0302	Tubo rilsan 4X2.7 NERO C.17257162		043.0302	1	=BmMep	103
-CIL1V	043.0041	CILINDRO MORSA VERT.PNEU 50X10 0 40	50X10 DOUBLE EFFECT VICE CYLINDER L=150mm		1	=BmPnMep	102
-R1	043.0290	Innesto rapido ghiotto 1/4"G 13/A		043.0290	1	=BmPnMep	101
-R12	043.0199	Raccordo a gomito da 1/8"G a Ø4mm		043.0199	1	=BmPnMep	102
-R13	043.0199	Raccordo a gomito da 1/8"G a Ø4mm		043.0199	1	=BmPnMep	102
-R14	043.0280	Manicotto da 1/4"G		043.0280	1	=BmPnMep	102
	043.0195	Raccordo a diritto da 1/4"G a Ø8mm CL1050		043.0195	2		
-R15	043.0195	Raccordo a diritto da 1/4"G a Ø8mm CL1050		043.0195	2	=BmPnMep	102
	043.0280	Manicotto da 1/4"G		043.0280	1		
-R16	043.0195	Raccordo a diritto da 1/4"G a Ø8mm CL1050		043.0195	1	=BmPnMep	102
-R17	043.0195	Raccordo a diritto da 1/4"G a Ø8mm CL1050		043.0195	1	=BmPnMep	102
-R2	043.0205	Attacco a esagono 8x1/4 -CL 6510		043.0205	1	=BmPnMep	101
-R20	043.0199	Raccordo a gomito da 1/8"G a Ø4mm		043.0199	1	=BmPnMep	102
-R21	043.0199	Raccordo a gomito da 1/8"G a Ø4mm		043.0199	1	=BmPnMep	102
-R24	043.0206	Raccordo diritto da 1/8"G a Ø4mm		043.0206	2	=BmPnMep	102
	043.0281	Manicotto da 1/8"G		043.0281	1		
-R25	043.0206	Raccordo diritto da 1/8"G a Ø4mm		043.0206	2	=BmPnMep	102
	043.0281	Manicotto da 1/8"G		043.0281	1		
-R26	043.0199	Raccordo a gomito da 1/8"G a Ø4mm		043.0199	1	=BmPnMep	102
-R27	043.0199	Raccordo a gomito da 1/8"G a Ø4mm		043.0199	1	=BmPnMep	102
-R28	043.0195	Raccordo a diritto da 1/4"G a Ø8mm CL1050		043.0195	1	=BmPnMep	102
-R29	043.0199	Raccordo a gomito da 1/8"G a Ø4mm		043.0199	1	=BmPnMep	102
-R32	043.0215	Raccordo a "T" Ø8mm		CL6540	1	=BmPnMep	102
-R33	043.0215	Raccordo a "T" Ø8mm		CL6540	1	=BmPnMep	102
-VMS	043.0601	Valvola VMS 114-1/4 08		043.0601	1	=BmPnMep	101
-BV1	043.0174	Blocco di valvole da 2 espandibile SS5Y51-NHV013 TI372-402CNC	Valve Block with 2 solenoid valve and silencers SS5Y51-NHV013 TI372-402CNC	SS5Y51-NHV013	1	=PnMep	102
-FT1					1	=PnMep	102
-FT2					1	=PnMep	102
-FT3					1	=PnMep	102
-FT4					1	=PnMep	102
-GN1	043.0243	RACCORDO 1/4 T Y210-F02-A	Joint 1/4 T Y210-F02-A	Y210-F02-A	1	=PnMep	101
	043.0244	RACCORDO INTERMEDIO Y200-A	Intermediate Joint Y200-A	Y200-A	1		
	043.0245	RACCORDO INTERM. CON SQUADRETTA Y200T-	Intermediate Joint with bracket Y200T-	Y200T-	1		
-GTA	043.0458	FILTRO REGOLATORE 1/4 AW20-F02-B	Filter Regulator 1/4 AW20-F02-B	1/4 AW20-F02-B	1	=PnMep	101
-QPN	016.3212	PIASTRA ZINCATA PANNELLO PNEUMATICO TI 372-402 CNC	Galvanyzed Plate Pneumatic Group TI 372-402 CNC		1	=PnMep	103
-R08	043.0204	Raccordo a gomito da 1/4"G a Ø8mm		043.0204	1	=PnMep	102
-R09	043.0204	Raccordo a gomito da 1/4"G a Ø8mm		043.0204	1	=PnMep	102
-R10	043.0215	Raccordo a "T" Ø8mm		CL6540	1	=PnMep	102
-R11	043.0215	Raccordo a "T" Ø8mm		CL6540	1	=PnMep	102
-R18	043.0206	Raccordo diritto da 1/8"G a Ø4mm		043.0206	1	=PnMep	102
-R19	043.0206	Raccordo diritto da 1/8"G a Ø4mm		043.0206	1	=PnMep	102
-R22	043.0206	Raccordo diritto da 1/8"G a Ø4mm		043.0206	1	=PnMep	102
-R23	043.0206	Raccordo diritto da 1/8"G a Ø4mm		043.0206	1	=PnMep	102
-R3	043.0204	Raccordo a gomito da 1/4"G a Ø8mm		043.0204	1	=PnMep	101

Dis. N° TI372CNCLR4.0 RC.	Impianto TI372CNCLR4.0 RC.	Ordine		FOGLIO 104
CAD SPAC		Commessa		SEGUE 105
File TI372CNCLR4.0 RC.	Denominazione ESPLOSO PANNELLO PNEUMATICO	Esecutore Solfanelli		ULTIMO 105
Data 03/05/2017	*PNEUMATIC PANEL LAYOUT*			

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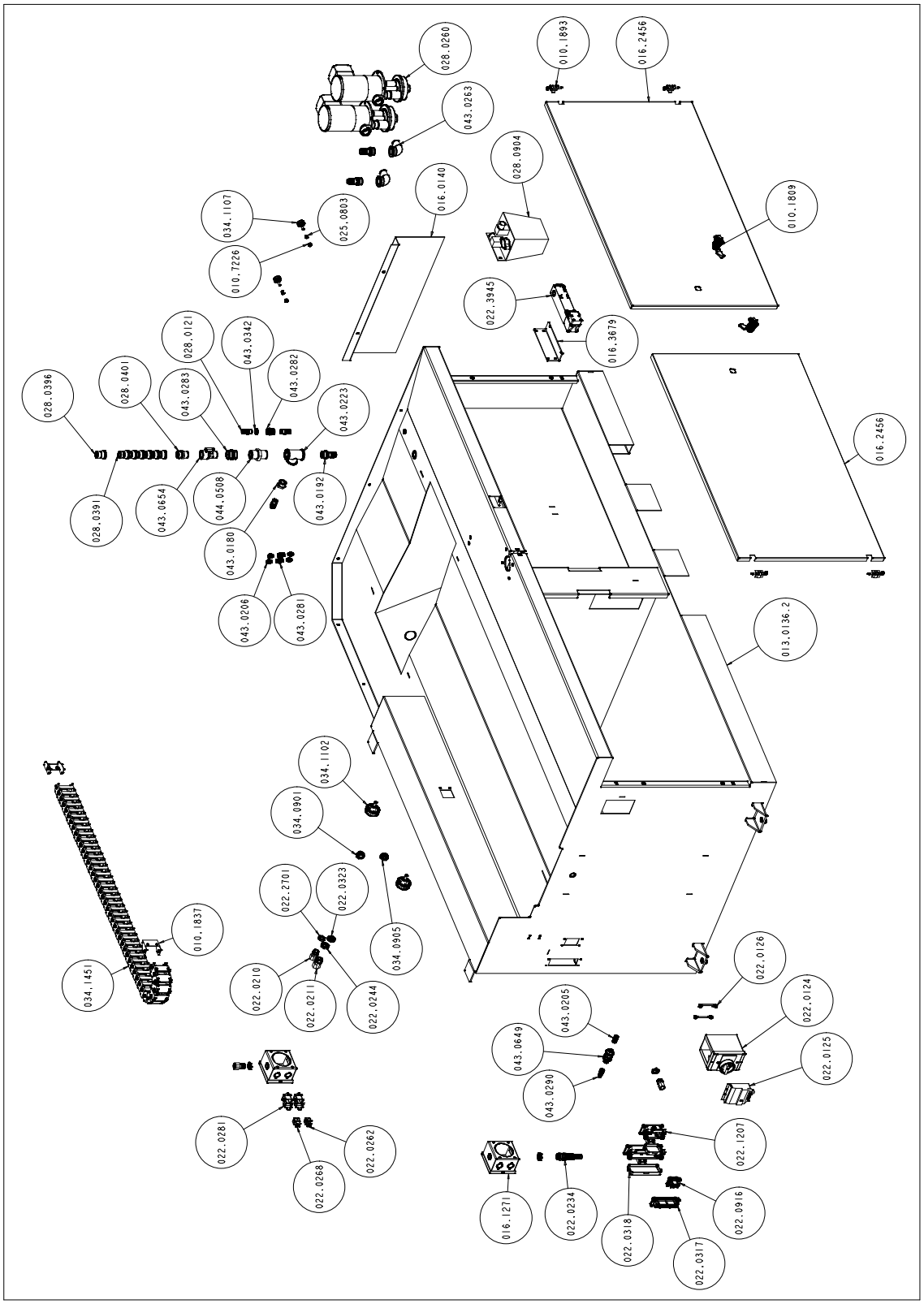
Nome/NAme	Mep__code	Descrizione/Description	Description EN	Codice Interno	Q.ta/Q.ty	Quadro/Board	Fg/Sh
-R30	043.0225	Riduzione M/F da tubo Ø8/Ø4mm		043.0225	1	=PnMep	102
-R31	043.0225	Riduzione M/F da tubo Ø8/Ø4mm		043.0225	1	=PnMep	102
-R4	043.0204	Raccordo a gomito da 1/4"G a Ø8mm		043.0204	1	=PnMep	101
-R5	043.0195	Raccordo a diritto da 1/4"G a Ø8mm CL1050		043.0195	1	=PnMep	101
-R6	043.0195	Raccordo a diritto da 1/4"G a Ø8mm CL1050		043.0195	1	=PnMep	102
	043.0246	RIDUZIONE 10-8 KQ2R08-10A	Joint reduction 10-8 KQ2R08-10A	10-8 KQ2R08-10A	1		
-R7	043.0195	Raccordo a diritto da 1/4"G a Ø8mm CL1050		043.0195	1	=PnMep	102
	043.0246	RIDUZIONE 10-8 KQ2R08-10A	Joint reduction 10-8 KQ2R08-10A	10-8 KQ2R08-10A	1		
-RP1	043.0552	Manometro 0-10bar Ø40 con attacco assiale da 1/8"G		043.0552	1	=PnMep	101
	043.0450	REGOLATORE Modulare 1/4 AR20-F02-Y-B	Modular Regulator 1/4 AR20-F02-Y-B	1/4 AR20-F02-Y-B	1		
-SP1	043.0570	Manometro 1/8 CON PRESSOSTATO completo di connettore M8	Manometer 1/8 with Pressure Switch and M8 connector	043.0570	1	=PnMep	101
-YV1	043.1103	Elettrovalvola bistabile 5 VIE	Electric Valve 5 ways	SY5330-5U1-01F SMC	1	=PnMep	102
-YV2	043.1103	Elettrovalvola bistabile 5 VIE	Electric Valve 5 ways	SY5330-5U1-01F SMC	1	=PnMep	102
-YV3	043.1103	Elettrovalvola bistabile 5 VIE	Electric Valve 5 ways	SY5330-5U1-01F SMC	1	=PnMep	102

Dis. N° TI372CNCLR4.0 RC.	Impianto TI372CNCLR4.0 RC.	Ordine		FOGLIO 105
CAD SPAC		Commessa		SEGUE /
File TI372CNCLR4.0 RC.	Denominazione ESPLOSO PANNELLO PNEUMATICO	Esecutore Solfanelli		ULTIMO 105
Data 03/05/2017	*PNEUMATIC PANEL LAYOUT*			

Exploded views

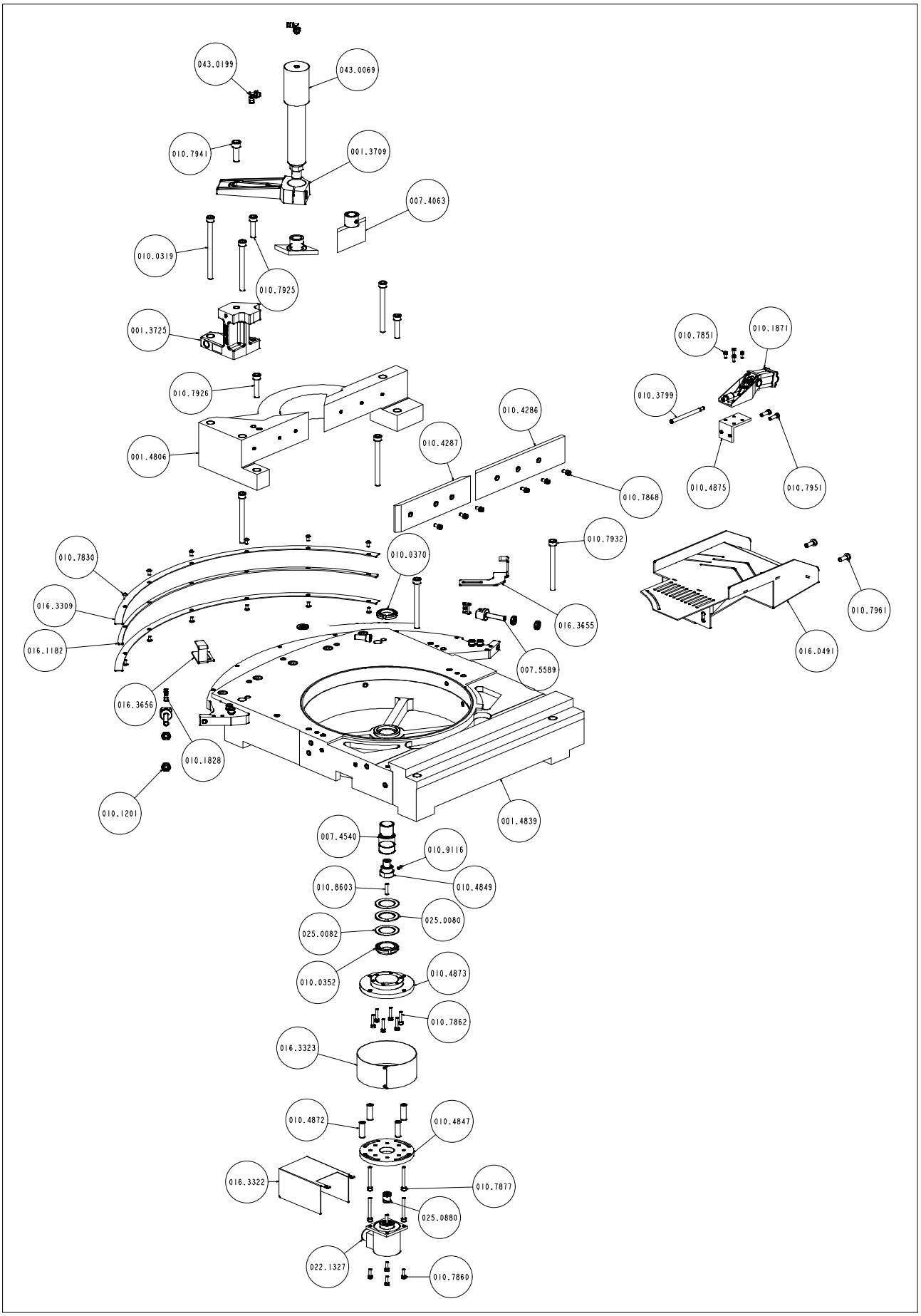
This part of the manual contains detailed exploded views of the machine which can help to gain a deeper knowledge of how it is made.

Base



Code	Description	Description	Q.ty
010.1809	CHIUSURA SPORTELLO	DOOR LOCKING WIT KEY	1,000
010.1837	SET ATTACCHI 905.010−905.011 AX−CNC	ATTACHMENTS SET AX−CNC	1,000
010.1893	CERNIERA SPORTELLO PIEDISTALLO N.T.	PROTECTION DOOR HINGE N.T.	1,000
010.7226	DADO AUTOBLOCCANTE M6	M6 SELF−LOCKING SCREW NUT	1,000
013.0136.2	PIEDISTALLO TI 370 CNC − TI 402 CNC	STEEL BASE TI 370 CNC − TI 402 CNC	1,000
016.0140	CARTER POMPE TI 370 CNC	PUMP COVER TI 370 CNC	1,000
016.1271	SCATOLA DI GIUNZIONE PICCOLA 95X95X70	JUNCTION BOX 95X95X70	1,000
016.2456	SPORTELLO PIEDISTALLO TI 370 − 402 CNC	STEEL BASE DOOR TI 370 CNC − TI 402 CNC	1,000
016.3679	STAFFA FISSAGGIO RFID PROT. FRONTALE	FRONT PROTECTION FIXING BRACKET	1,000
022.0124	CUSTODIA ISOLANTE E−PKZO−GR CON MANOPOLA	HOUSING W.RED HANDLE	1,000
022.0125	BLOCCO LUCCHETTABILE SBV−PKZ0−E	LOCKABLE BLOCK	1,000
022.0126	BARRETTA X NEUTRO N−PKZO COD.82160	LOCKABLE DEVICE	1,000
022.0210	RACCORDO RAPIDO SEM PG 11	RAPID JOINT SEM PG 11	1,000
022.0211	RACCORDO RAPIDO SEM PG 13,5	RAPID JOINT SEM PG 13,5	1,000
022.0234	PRESSACORDONE 3246 NERO PG 13,5	CORD PRESSER	1,000
022.0244	CONTRODADO 3217B GRIGIO PG 13	LOCK NUT 3217B GREY PG 13,5	2,000
022.0262	FRUTTO PRESA 4P. 10A. CKF03	YIELD SOCKET 4P. 10A. CKF03	1,000
022.0268	FRUTTO PRESA 5P. 10A. CKF04	YIELD SOCKET 5P. 10A. CKF04	1,000
022.0281	CUSTODIA PRESA A PARETE 4P. CK03I	SOCKET HOUSING 4P. CK03I	1,000
022.0317	FRUTTO PRESA 24P 16A TEG CNEF24T	YIELD SOCKET 24P 16A TEG CNEF24T	1,000
022.0318	CUSTODIA DA INCASSO CHIUSURA SINGOLA 1	COVER FOR ONE LEVER SP.4 POLES	1,000
022.0323	PASSACAVI 18 INC.MM.2,5	FAIRLEADS 18 INC.M M.2,5	1,000
022.0916	FRUTTO PRESA 6P 16A CNEF 06 TX	YIELD SOCKET 6P 16A CNEF 06 TX	1,000
022.1207	CUSTODIA DA INCASSO CHIUSURA SINGOLA	FLUSH CASE CLOSING SINGLE WITH LEVER	1,000
022.2701	DADO PG 11 BL03	NUT PG 11 BL03	1,000
022.3945	FINECORSA DI SICUREZZA RFID CON INTER	SAFETY LIMIT SWITCH WITH INTERLOCK	1,000
025.0803	BOCCOLA GRAFITATA L. 10 DIAM. 6	GRAPHITIZED BUSHING L. 10 DIA M. 6	1,000
028.0121	RACCORDO 3/8−17 CL 2601	JOINT 3/8−17 CL 2601	1,000
028.0260	ELETTROPOMPA	ELECTROPUMP 230−400.50 HZ SPV33	2,000
028.0391	TUBO LOOC LINE SPD FP50.10315 3/4	LOOC LINE HOSE SPD ART.69540 3/4	1,000
028.0396	UGELLO 0 20 SPD FP50.11B50	NOZZLE 0 20 SPD FP50.11B50	1,000
028.0401	RACCORDO 3/4 SPD FP50.17A20	FITTING 3/4 SPD FP50.17A20	1,000
028.0904	UNITA'DI LUBRIFICAZIONE ELETTROMAG. 3600	ELEC.MEC.LUBRICATION UNIT	1,000
034.0901	TAPPO LIVELLO OLIO 1/2 "GAS.	1/2" GAS. OIL LEVEL CAP	1,000
034.0905	TAPPO OLIO TAO/3 1/2" NERO	TAO/3 1/2" BLACK OIL CAP	1,000
034.1102	VOLANTINO O 50 8MA X 20	O 50 8MA HANDWHEEL	1,000
034.1107	VOLANTINO O 30 M6 X 20	O 30 M6 X 20 HANDWHEEL	1,000
034.1451	CATENA PORTACAVI E17.04.63.0	CABLES CHAIN AX−CNC	1,000
043.0180	RIDUZIONE M 3/4−F 3/8	REDUCTION M 3/4−F 3/8	1,000
043.0192	RACCORDO RB 9889 3/4X20	RB 9889 JOINT 3/4X20	3,000
043.0205	ATTACCO A ESAGONO 8X1/4 − CL 6510	8X1/4−CL6510 HEXAGONAL COUPLING	1,000
043.0206	ATTACCO A ESAGONO 4X1/8 − CL 6511	4X1/8−CL6511 HEXAGONAL COUPLING	9,000
043.0223	RACCORDO TE FFF ZINCATO 3/4	TE FFF GALVANISED 3/4 JOINT	1,000
043.0263	RACCORDO A GOMITO M/F ZINCATO 3/4	3/4 ELBOW JOINT	2,000
043.0281	MANICOTTO 1/8 M 8/8 − CL 2543	1/8 M 8/8 − CL 2543 SLEEVE	2,000
043.0282	MANICOTTO 3/8	3/8 SLEEVE	1,000
043.0290	INNESTO RAPIDO 1/4 GHIOTTO 13/A	1/4 QUICK COUPLING	2,000
043.0342	RONDELLA RAME 17X23X1,5−3/8	COPPER WASHER 17X23X1,5−3/8	1,000
043.0649	VALVOLA A CORSOIO LUCCHETTABILE 1/4	LOCKABLE VALVE 1/4	1,000
043.0654	RUBINETTO M/F 3/4 CL 6310	M/F 3/4 CL 6310 TAP	1,000
043.0283	MANICOTTO 3/4	3/4 SLEEVE	1,000
044.0508	NIPPLO NP 3/4 IDRAULICO	NP 3/4 HYDRAULIC NIPPLE	1,000

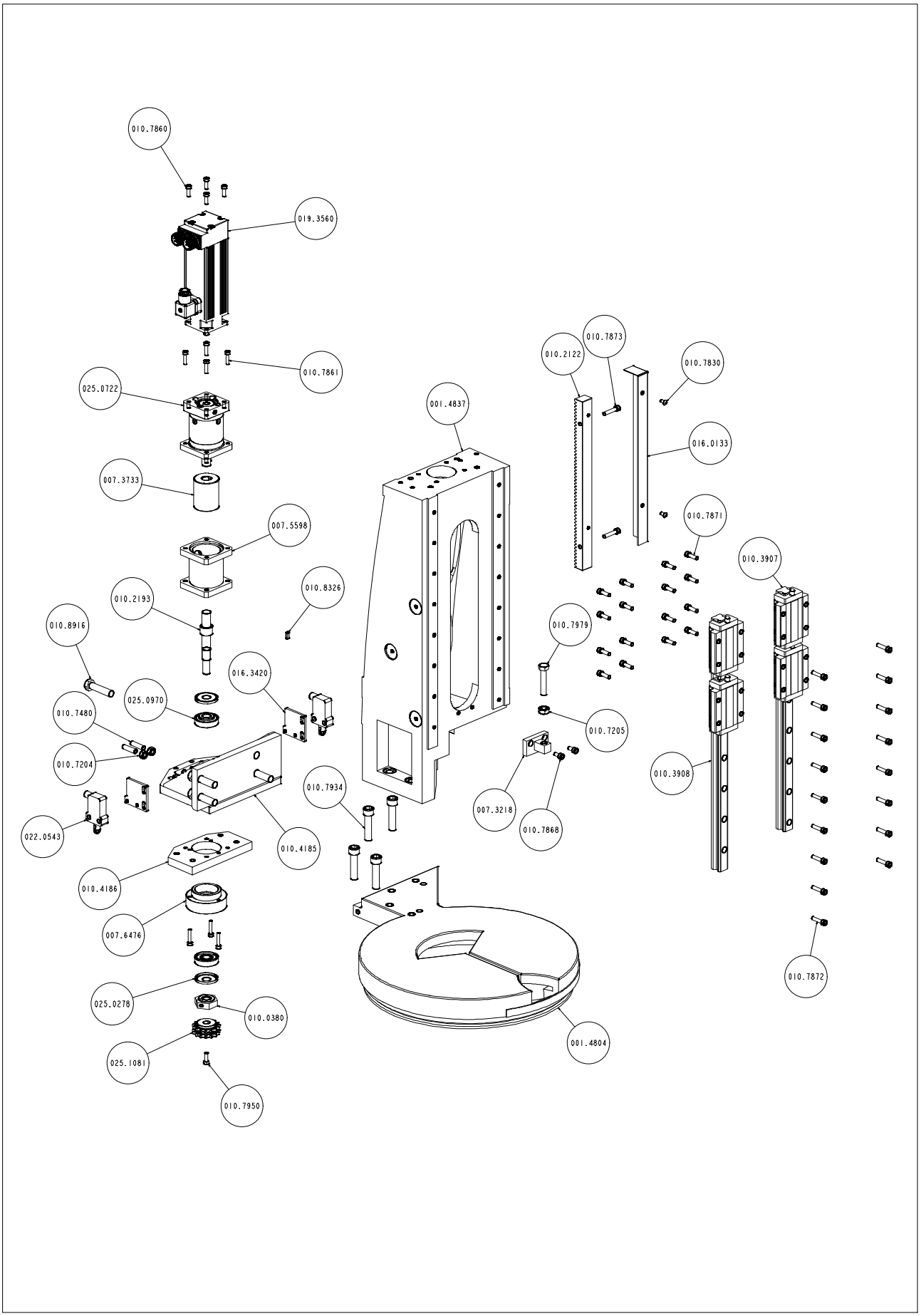
Fixed worktable



Code	Description	Description	Q.ty
001.3709	STAFFA BLOCCAGGIO CILINDRO SUPPLE-MENTARE TI−CB−330−400−450 MOD. 706	BRACKET TI−CB 330−400−450 MOD.706	1
001.3725	SUPPORTO CILINDRO SUPPLEMENTARE	SUPPORT TI 350 SX−AX−CNC	1
001.4806	SQUADRO MORSA TI 370 CNC	VICE BACK STOP TI 370 CNC	1
001.4839	PIATTAFORMA FISSA COMPL. DI PIASTRA CATENA TI372−402 CNC R.C	COMPLETE PLATE PLATFORM TI372−402 CNC R.C	1
007.3234	BOCCOLA GANASCIA X CILINDRO SUPPLE MENTARE TI−CB	JAW BUSHING TI−CB	1
007.4063	BOCCOLA GANASCIA CILINDRO SUPPLE-MENTARE	ADDITIONAL CYLINDER JACKET	1
007.4540	PERNO DI CENTRO TI 372 CNCLR 4.0 RC	CENTER PIN TI 372 CNCLR 4.0 RC	1
007.5589	PERNO FISSAGGIO CATENA TRASMIS-SIONEPIANO GIREVOLE SH 652 SXI−EVO	TURNTABLE TRANS.CHAIN FIXPIN SH652SX	2
010.0319	VITE 8.8 TESTA CILINDRICA ESAGONO IN-CASSATO 10X140 TI	SCREW 8.8 10X140 TI	2
010.0352	GHIERA AUTOBLOCCANTE 35X1,5 CN−TI−SH−FC	SELF−LOCKING RING NUT 35X1,5 CN−TI−SH−FC	1
010.0370	GHIERA 5S 30X1,5 SH 200−260−280−282 292−332	RING NUT 5S 30X1,5 SH200−260−280	1
010.1201	VITERIA E BULLONERIA	SCREWS AND BOLTS	4
010.1828	MAGLIA DI GIUNZIONE 3/8 06−B2 X SH 652SXI EVO	JUNCTION SLEEVE 3/8 06−B2 FOR SH 652	2
010.1871	ATTREZZO DI SERRAGGIO COMANDO PNEUMATICO CON ASTA DI SPINTA	PNEUMATIC CLAMPS WITH PUSH LEVER	1
010.3799	PERNO FIX. PIANO GIREVOLE TI 372 CNC CON ROTAZIONE	FASTING ROTATING TABLE PIN TI372CNC	1
010.4286	GANASCIA MORSA DESTRA RETT. TI 372 CNCLR	RECTIFIED RIGHT HANDLE JAW	1
010.4287	GANASCIA MORSA SINISTRA RETT. TI 372	RECTIFIED LEFT HANDLE JAW	1
010.4847	STAFFA REGOLAZIONE ENCODER DMF 18/25	ENCODER ADJUSTMENT STAFF DMF 18/25	1
010.4849	GIUNTO ENCODER DMF 18/25	JOIN ENCODER DMF 18/25	1
010.4872	DISTANZIALE SUPPORTO ENCODER TI372 CNCLR 4.0 RC	ENCODER SUPPORT DISTANCE TI372CN-CLR 4.0 RC	4
010.4873	SUPPORTO ENCODER TI 372 CNCLR 4.0 RC	ENCODER SUPPORT	1
010.4875	STAFFA FISSAGGIO FRENO PIANO GIREVO-LE TI 372−402 CNC R.C.	BRAKET SHAFT BRAKE TOURNATABLE TI372−402 CNC RC	1
010.7830	VITE BUTON 5 X 10	5 X 10 BUTON SCREW	12
010.7851	VITE TCEI 4 X 10	TCEI 4 X 10 SCREW	4
010.7860	VITE TCEI 5 X 15	TCEI 5 X 15 SCREW	4
010.7862	VITE TCEI 5 X 25	TCEI 5 X 25 SCREW	10
010.7868	VITE TCEI 6 X 12	TCEI 6 X 12 SCREW	4
010.7877	VITE TCEI 6 X 45	TCEI 6 X 45 SCREW	4
010.7924	VITE TCEI 10 X 30	TCEI 10 X 30 SCREW	1
010.7926	VITE TCEI 10 X 45	TCEI 10 X 45 SCREW	2
010.7932	VITE TCEI 10 X 110	TCEI 10 X 110 SCREW	5
010.7941	VITE TCEI 12 X 35	TCEI 12 X 35 SCREW	1
010.7951	VITE TE 6 X 20	TE 6 X 20 SCREW	2
010.7961	VITE TE 8 X 20	TE 8 X 20 SCREW	2
010.8603	SPINA CILINDRICA DIAM. 6 X 25	PARALLEL PIN DIAM.6 X 25	1
010.9116	GRANO VCE PUNTA PIANA 5 X 8	5X8 FLAT POINT GRUB SCREW	1
016.0491	GUIDA SCARICA PEZZI TI 370 CNC	BAR UNLOAD GUIDE TI 370 CNC	1
016.1182	DISTANZIALE CARTER COPERTURA CATE-NA TI 372 CNCLR 4.0 RC	CHAIR COVERING CARTRIDGE	1
016.3309	CARTER COPERTURA CATENA ROTAZIONE P.G. TI 372 CNCLR	CARTER COVERING ROTATION CHAIN	2
016.3322	CARTER PROT. CONNETTORE ENCODER TI 372 CNCLR 4.0 RC	CARTER PROTECTION ENCODER CONNEC-TOR	1
016.3323	CARTER PROT. ENCODER ROTAZIONE TI 372 CNCLR 4.0 RC	ROTATING ENCODER PROTECTION CAR-TER	1

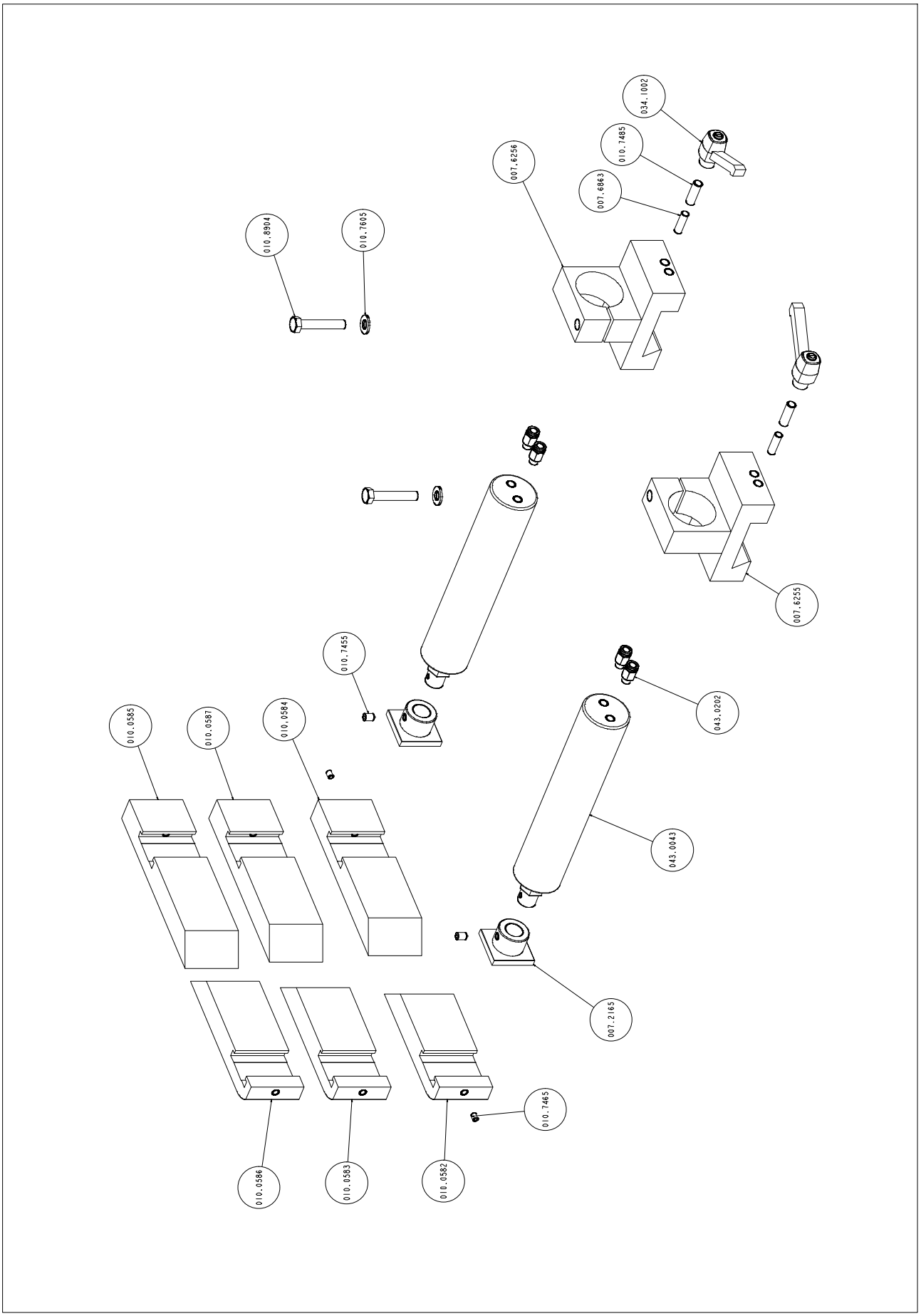
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016.3655	STAFFA BATTUTA FINECORSA 45 GRADI DX N.T. TI 372 CNCLR RC	45 DEGREES RIGHT LIMIT SWITCHED BRACKET	1
016.3656	STAFFA BATTUTA FINECORSA 60 GRADI SX N.T. TI 372 CNCLR RC	60 DEGREES RIGHT LIMIT SWITCHED BRACKET	1
022.1327	ENCODER AST616/GA−6−QCPR	ENCODER	1
025.0080	GABBIA ASSIALE A RULLINI AXK 3552	AXIAL CAGE WITH ROLLERS AXK 3552	1
025.0082	RALLA AS 3552	CENTER PLATE AS 3552	2
025.0880	GIUNTO RIGIDO XRP−16C−6X6	RIGID JUNCTION XRP−16C−6X6	1
043.0041	CILINDRO MORSA VERT.PNEU 50X10 0 40L.150 D.E.	50X10 DOUBLE EFFECT VICE CYLINDER	1
043.0199	ATTACCO A GOMITO GIREVOLE 4X1/8 CL 6521	4X1/8 TURNING ELBOW JOINT	2

Turntable


010.7860
019.3560
010.7861
025.0722
007.3733
007.5598
010.2193
010.8326
010.8916
016.3420
025.0970
010.7480
010.7204
022.0543
010.4185
010.4186
007.6476
025.0278
010.0380
025.1081
010.7950
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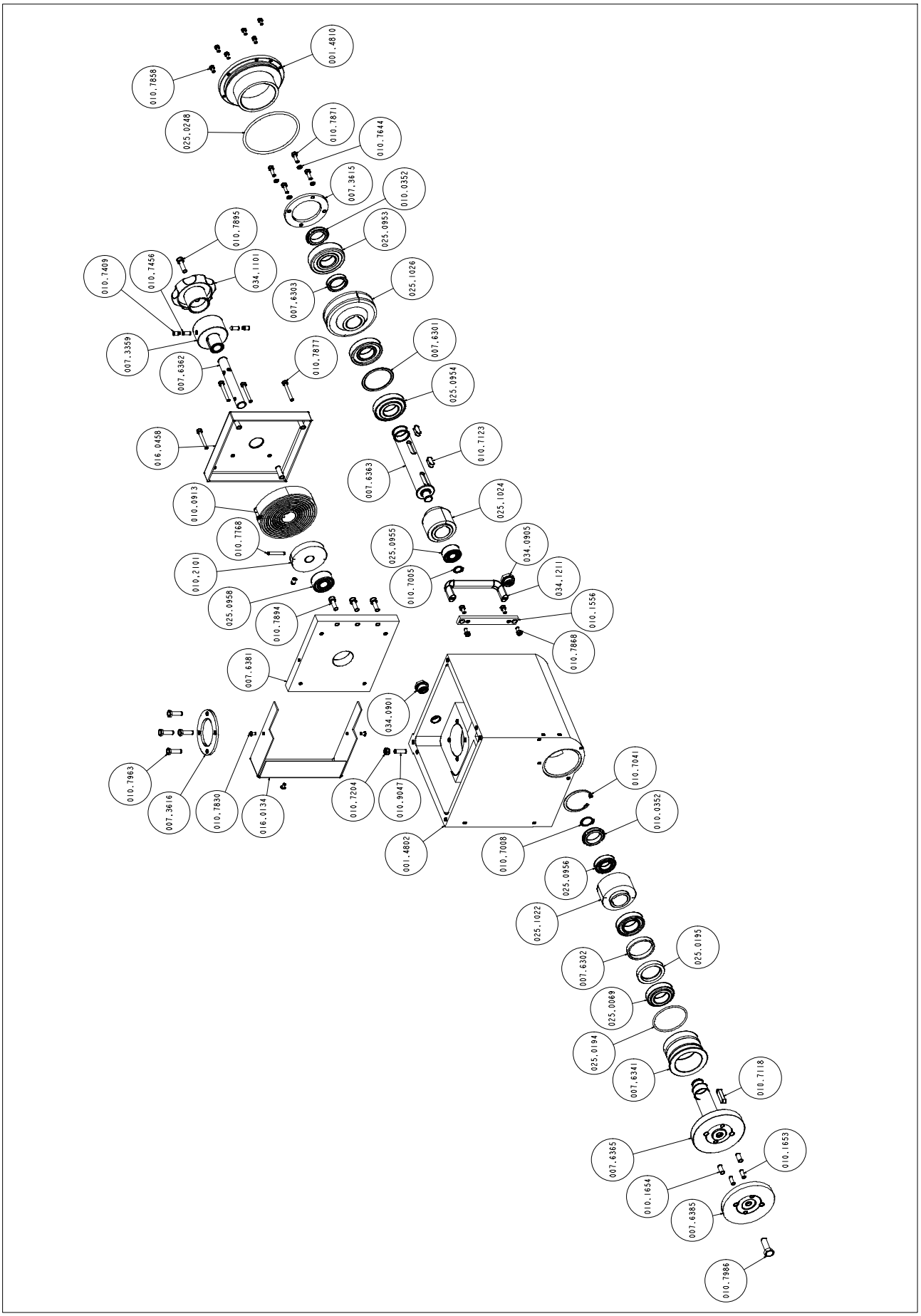
Code	Description	Description	Q.ty
001.4804	PIATTAFORMA ROTANTE TI 370 CNC MOD. 1754	ROTATING PLATFORM TI 370 CNC	1
001.4837	COLONNA PORTANTE TI 372−402 CNC R.C.	PORTANT COLUMN	1
007.3218	BATTUTA FINECORSA TESTA IN BASSO TI370TI372 TI402	LIMIT SWITCH STOP TI370−TI372−TI402	1
007.3733	GIUNTO MOTORE BRUSHLESS BILAN-CIAMENTOARCHETTO V20PT	BALANCING HEAD BRUSH.MOT. COUPLING V20PT	1
007.5598	SUPPORTO MOTORE BRUSHLESS BILAN-CIAMENTOARCHETTO V20PT	BAL.BRUSHLESS MOTOR SUPPORT V20 PT	1
007.6476	MANICOTTO VITE RICIRCOLO ALIMENTATO-RESH 500−420	SLEEVE FOR RECIRCULATING BALLSCREW	1
010.0380	GHIERA FISSAGGIO VITE RICIRCOLO ALI-MENTATORE SH N.T.	FIXING RING NUT FOR FEEDER	1
010.2122	CREMAGLIERA TI 370 CNCFE	RACK TI 370 CNCFE	1
010.2193	ALBERO PIGNONE ROTAZIONE P.G. TI 372 CNCLR	TREE SPIN GEAR	1
010.3907	GUIDA + 2 PATTINI HSR25LA2SSC0S+465L−E30(GK)−MT15	SLIDE GUIDE HSR25LA2SSC0S+465L−E30(GK)−M	1
010.3908	GUIDA + 2 PATTINI HSR25LA2SSC0S+490L−E30(GK)−MT15	SLIDE GUIDE HSR25LA2SSC0S+490L−E30(GK)−M	1
010.4185	PIASTRA FISSAGGIO DISPOSITIVO ROTA-ZIONE TI 372 CNCLR	ROTATING DEVICE FIXING PLATE	1
010.4186	PIASTRA REGOLAZIONE SIST. ROTAZIONE P.G. TI 372 CNCLR	ROTATING SYSTEM ADJUSTMENT PLATE	1
010.7204	DADO M8 (010.7204)	M8 SCREW NUT (010.7204)	2
010.7205	DADO M10 (010.7205)	M10 SCREW NUT (010.7205)	1
010.7480	GRANO VCE PUNTA PIANA 8 X 30 (010.7480)	8 X 30 FLAT POINT VCE GRUB SCREW	2
010.7830	VITE BUTON 5 X 10 (010.7830)	5 X 10 BUTON SCREW (010.7830)	2
010.7860	VITE TCEI 5 X 15 (010.7860)	TCEI 5 X 15 SCREW (010.7860)	4
010.7861	VITE TCEI 5 X 20 (010.7861)	TCEI 5 X 20 SCREW (010.7861)	8
010.7868	VITE TCEI 6 X 12 (010.7868)	TCEI 6 X 12 SCREW	2
010.7871	VITE TCEI 6 X 20 (010.7871)	TCEI 6 X 20 SCREW (010.7871)	16
010.7872	VITE TCEI 6 X 25 (010.7872)	TCEI 6 X 25 SCREW (010.7872)	17
010.7873	VITE TCEI 6 X 30 (010.7873)	TCEI 6 X 30 SCREW (010.7873)	2
010.7934	VITE TCEI 12 X 50 (010.7934)	TCEI 12 X 50 SCREW (010.7934)	4
010.7950	VITE TE 6 X 16	TE 6 X 16 SCREW	1
010.7979	VITE TE 10 X 50	TE 10 X 50 SCREW	1
010.8326	CHIAVETTA 4 X 4 X 14	KEY 4 X 4 X 14	1
010.8916	VITE TE 12 X 50	12 X 50 TE SCREW	4
016.0133	CARTER CREMAGLIERA SOLLEVAMENTO TESTATI 370 CNC	RACK COVER TI 370 CNC	1
016.3420	SUPPORTO FINECORSA ROTAZ. TESTA N.T. 372 CNCLR RC	HEAD ROTATION LIMIT SWITCH SUPPORT	1
019.3560	MOTORE BRUSHLESS B05M 4000RPM RESOLVER EFRENO 266W 230V CON CON-NETTORI ANGOLARI	BRUSHLESS MOTOR−BRAKE 4000RPM 266W 230V	1
022.0543	FINECORSA A ROTELLA X SH 230 / H−14A	LIMIT SWITCH	2
025.0278	ANELLO DI PROTEZIONE NILOS 30302 AV	NILOS SEAL RING 30302 AV	2
025.0722	RIDUTTORE PLQE060−032−SSSA3AC−Z9_23_40_63_B5_M4 ROTAZIONE	ROTATION ADAPTER PLQE060−032−SS-SA3AC−Z9_23_40_63_B5_M4	1
025.0970	CUSCINETTO 30302J2	BEARING	2
025.1081	PIGNONE DOPPIO CATENA 3/8 X 7/32 Z15	DOUBLE GEAR CHAIN 3/8 X 7/32 Z15	1

Vice assembly



Code	Description	Description	Q.ty
007.2165	STAFFA SUPP. GANASCIA MORSA CB 349−350	VICE JAW SUPPORT CB 349/350	1,000
007.6255	SUPPORTO CILINDRO MORSA DESTRA TI 370	RIGHT JAW CYLINDER SUPPORT TI 370 CNC HR	1,000
007.6256	SUPPORTO CILINDRO MORSA SINISTRO TI 370	LEFT JAW CYLINDER SUPPORT TI 370 CNC LR	1,000
007.6863	PERNO BLOCCAGGIO MORSA TI 372−402 CNC	PIN LOCKING PIN	1,000
010.0582	GANASCIA MORSA MOBILE SINISTRA 0 60	LEFT MOBILE VICE JAW 060 TI 370 RB	1,000
010.0583	GANASCIA MORSA MOBILE SINISTRA 0 50	LEFT MOBILE VICE JAW 060 TI 370 RB	1,000
010.0584	GANASCIA MORSA MOBILE DESTRA 0 60	RIGHT MOBILE VICE JAW 060 TI 370 RB	1,000
010.0585	GANASCIA MORSA MOBILE DESTRA 0 40	RIGHT MOBILE VICE JAW 040 TI 370 RB	1,000
010.0586	GANASCIA MORSA MOBILE SINISTRA 0 40	LEFT MOBILE VICE JAW 040 TI 370 RB	1,000
010.0587	GANASCIA MORSA MOBILE DESTRA 0 50	RIGHT MOBILE VICE JAW 050 TI 370 RB	1,000
010.7455	GRANO VCE PUNTA CONICA 8 X 10	8 X 10 CONICAL POINT VCE GRUB SCREW	1,000
010.7465	GRANO VCE PUNTA PIANA 6 X 8	6 X 8 FLAT POINT VCE GRUB SCREW	1,000
010.7485	GRANO VCE PUNTA PIANA 10X30	10 X 30 FLAT POINT VCE GRUB SCREW	1,000
010.7605	RONDELLA DIAM. 10	0 10 WASHER (010.7605)	3,000
010.8904	VITE TE 10 X 55	10 X55 TE SCREW	1,000
034.1002	LEVA A SCATTO 10 MA	LEVER 10 MA	2,000
043.0043	CILINDRO MORSE 0 55 C8 DE CB AX−CNC	VICE CYLINDER 0 50 CB AX−CNC CB 352	1,000
043.0202	ATTACCO A ESAGONO 8X1/8 − CL 6511	8X1/8 − CL 6511 HEXAGONAL COUPLING	1,000

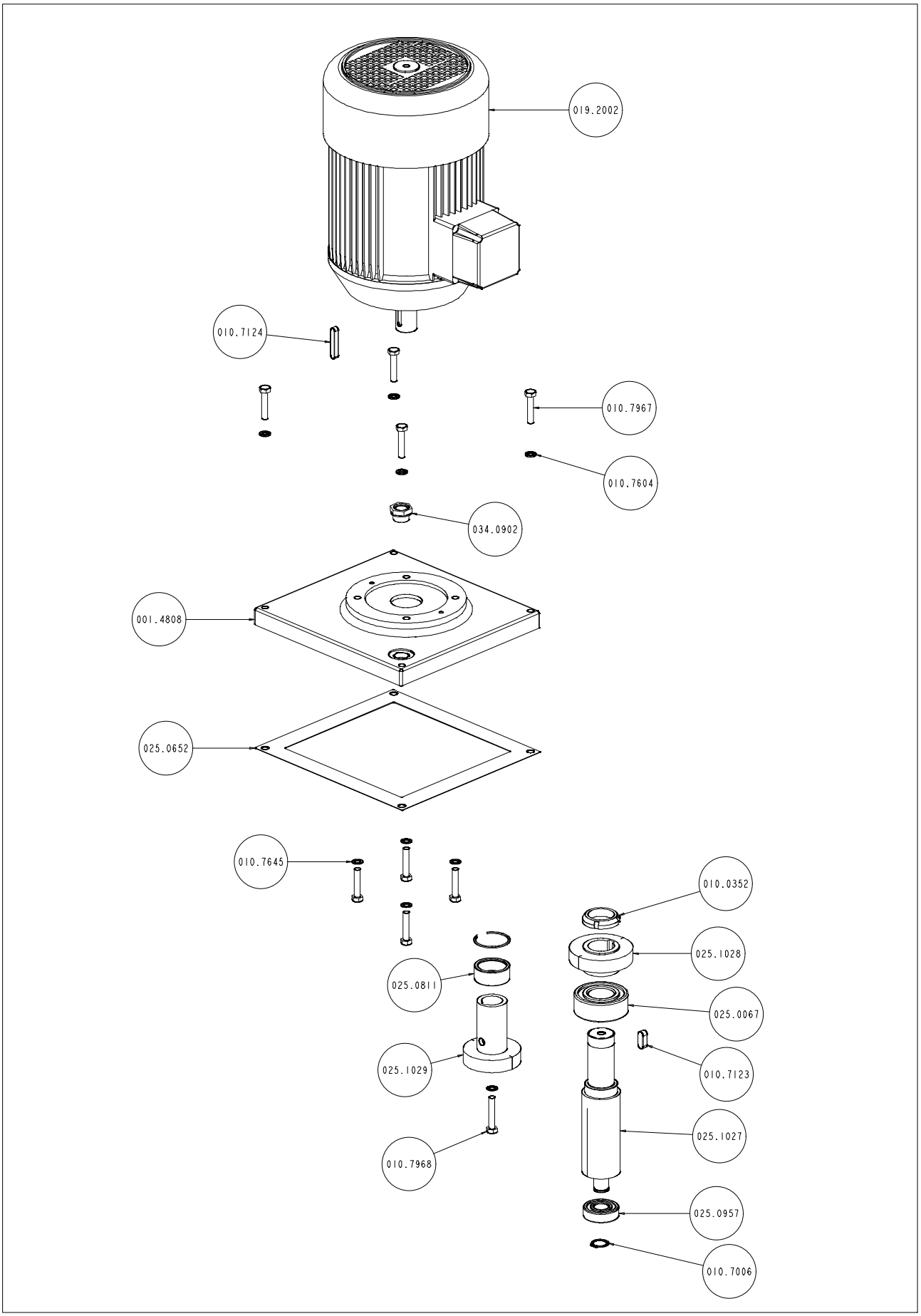
Head unit


001.4810
010.7858
025.0248
010.7871
010.7644
007.3615
010.0352
025.0953
010.7895
034.1101
010.7456
010.7409
007.6303
025.1026
007.3359
007.6362
010.7877
007.6301
025.0954
016.0458
010.7123
007.6363
010.0913
025.1024
010.7168
025.0955
034.0905
010.2101
010.7005
034.1211
025.0958
010.7894
010.1556
010.7868
007.6381
034.0901
010.7963
007.3616
010.7830
016.0134
010.7204
010.9047
001.4802
010.7008
010.7041
010.0352
025.0956
025.1022
007.6302
025.0195
025.0069
025.0194
007.6341
010.7118
007.6365
010.1653
010.1654
007.6385
010.7986

Code	Description	Description	Q.ty
001.4802	TESTA OPERATRICE	GEAR BOX TI 370 CNC	1,000
001.4810	FLANGIA SECONDO STADIO	FLANGE TI 370 CNC	1,000
007.3359	BOCCOLA RIPRESA CORSA	BUSHING TI 350	1,000
007.3615	GHIERA SECONDO STADIO TI 370 CNCFE	SECOND STAGE RING NUT TI 370 CNCFE	1,000
007.3616	GHIERA FIX CUSCINETTO	RING NUT CN−TI 350−SH 280*320	1,000
007.6301	DISTANZIALE SECONDO STADIO TI370CNC	SECOND STAGE SPACER TI 370 CNCFE	1,000
007.6302	DISTANZIALE IØ STADIO TI 370 CNCFE	FIRST STAGE SPACER TI 370 CNCFE	1,000
007.6303	DISTANZIALE CORONA II STADIO TI 370	SECOND STAGE BRONZE SPACER TI 370	1,000
007.6341	TAMPONE IØ STADIO RIDUZIONE	FIRST STAGE PAD TI 370	1,000
007.6362	ALBERO MOVIMENTO TESTA TI 370 CNCFE	HEAD MOVEMENT SHAFT TI 370 CNCFE	1,000
007.6363	ALBERO D.35 IIØ STADIO TI 370 CNCFE	SECOND STAGE SHAFT D.35 TI 370 CNCFE	1,000
007.6365	ALBERO PORTADISCO TI 370CNCLR 0 120	BLADE SHAFT TI 370 CNC LR 0 120	1,000
007.6381	FLANGIA PORTAMOLLA RICHIAMO TESTA	SPRING HOLDER FLANGE TI 370 CNC	1,000
007.6385	FLANGIA ALB PORTADISCO TI370 CNCLR 0 120	BLADE SHAFT FLANGE TI 370 CNCLR 0 120	1,000
010.0352	GHIERA AUTOBLOCCANTE 35X1,5	SELF−LOCKING RING NUT 35X1,5 CN−TI−SH−FC	2,000
010.0352	GHIERA AUTOBLOCCANTE 35X1,5 CN−TI−SH−FC	SELF−LOCKING RING NUT 35X1,5 CN−TI−SH−FC	1,000
010.0913	MOLLA SOLLEVAMENTO TESTA	HEAD SPRING TI 350/370	1,000
010.1556	STAFFA FISSAGGIO MANIGLIA TESTA	GEAR BOX HANDLE FIX BRACKET TI 370 CNC	1,000
010.1653	PERNO FLANGIA	FLANGE PIN 0 7 X 22	2,000
010.1654	PERNO FLANGIA	FLANGE PIN 0 9 X 19	2,000
010.2101	RUOTA SOLLEVAMENTO TESTA	HEAD LIFTING WHEEL TI 350	1,000
010.7005	ANELLO SEEGER DIAM. 17	0 17 SEEGER RING (010.7005)	1,000
010.7008	ANELLO SEEGER DIAM. 25	0 25 SEEGER RING	1,000
010.7041	ANELLO SEEGER PER FORI 0 65	0 65 SEEGER RING FOR HOLES	1,000
010.7118	CHIAVETTA 10 X 8 X 40	10 X 8 X 40 KEY	1,000
010.7123	CHIAVETTA 10 X 8 X 25	10 X 8 X 25 KEY	3,000
010.7204	DADO M8	M8 SCREW NUT (010.7204)	1,000
010.7409	GRANO VCE P.CIL. 8 X 10	8 X 10 CYLIND.POINT VCE GRUB SCREW	3,000
010.7456	GRANO VCE P.CON. 8 X 16	8 X 16 CONICAL POINT VCE GRUB SCREW	2,000
010.7644	RONDELLA GROOVER M6	WASHER GROOVER M6	1,000
010.7768	SPINA ELASTICA DIAM. 6 X 40	ELASTIC PIN DIAM. 6 X 40	1,000
010.7830	VITE BUTON 5 X 10	5 X 10 BUTON SCREW (010.7830)	3,000
010.7858	VITE TCEI 5 X 10	TCEI 5 X 10 SCREW	6,000
010.7868	VITE TCEI 6 X 12	TCEI 6 X 12 SCREW	4,000
010.7871	VITE TCEI 6 X 20	TCEI 6 X 20 SCREW (010.7871)	4,000
010.7877	VITE TCEI 6 X 45	TCEI 6 X 45 SCREW	4,000
010.7894	VITE TCEI 8 X 25	TCEI 8 X 25 SCREW (010.7894)	3,000
010.7895	VITE TCEI 8 X 30	TCEI 8 X 30 SCREW	1,000
010.7963	VITE TE 8 X 25	TE 8 X 25 SCREW (010.7963)	4,000
010.7986	VITE TE 12 X 35	TE 12 X 35 SCREW	1,000
010.9047	GRANO VCE PUNTA CONICA 8 X 25	CONIC POITED VCE DOWEL 8 X 25	1,000
016.0134	CARTER RUOTA SOLLEVAMENTO TESTA DI	GEAR BOX WHEEL COVER TI 370 CNCFE	1,000
016.0458	COPERCHIO MOLLA	SPRING COVER TI 350/370	1,000
025.0069	CUSCINETTO 32007X	BEARING 32007X	2,000
025.0194	ANELLO DI TENUTA OR 176 G VITON	176 G VITON OR CLAMPING RING	1,000
025.0195	ANELLO DI TENUTA 45X62X10 G VITON	45X62X10 G VITON CLAMPING RING	1,000
025.0248	ANELLO DI TENUTA OR PARKER 2−351	PARKER O RING 2−351	1,000
025.0953	CUSCINETTO 6307	BEARING 6307	1,000
025.0954	CUSCINETTO 30207	BEARING 30207	2,000
025.0955	CUSCINETTO 3203	BEARING 3203	1,000
025.0956	CUSCINETTO 6005	BEARING 6005	1,000
025.0958	CUSCINETTO 3204 A 2RS	BEARING 3204 A 2RS	1,000
025.1022	RUOTA ELIC.CILINDR.ALBERO MANDRINO	SPINDLE WHEEL TI 370 CNCFE	1,000
025.1024	RUOTA ELICOIDALE CILINDR.IIØSTADIO	HELICOIDAL WHEEL TI 370 CNCFE	1,000
025.1026	CORONA ELICOIDALE Z 20 MN 5	BRONZE GEAR Z 20 MN 5 TI 370	1,000

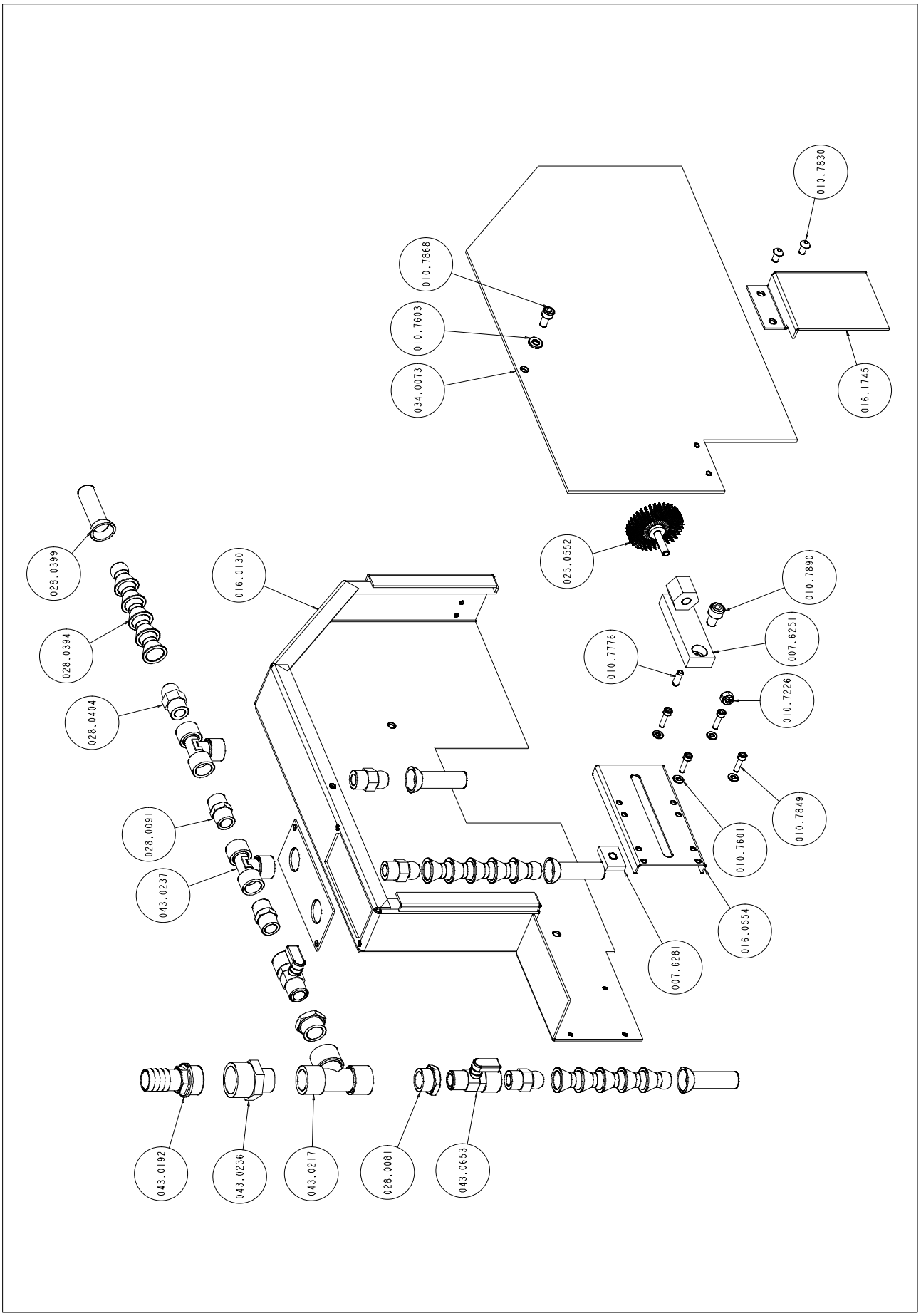
Code	Description	Description	Q.ty
034.0901	TAPPO LIVELLO OLIO 1/2 ”GAS.	1/2” GAS. OIL LEVEL CAP	1,000
034.0905	TAPPO OLIO TAO/3 1/2” NERO	TAO/3 1/2” BLACK OIL CAP	1,000
034.1101	VOLANTINO DIAM.100 A 6 LOBI	O 100/6 LOBE HANDWHEEL TIGER	1,000
034.1211	MANIGLIA GN−565−20−128.SW	GN−565−20−128.SW HANDLE	1,000

Motor assembly



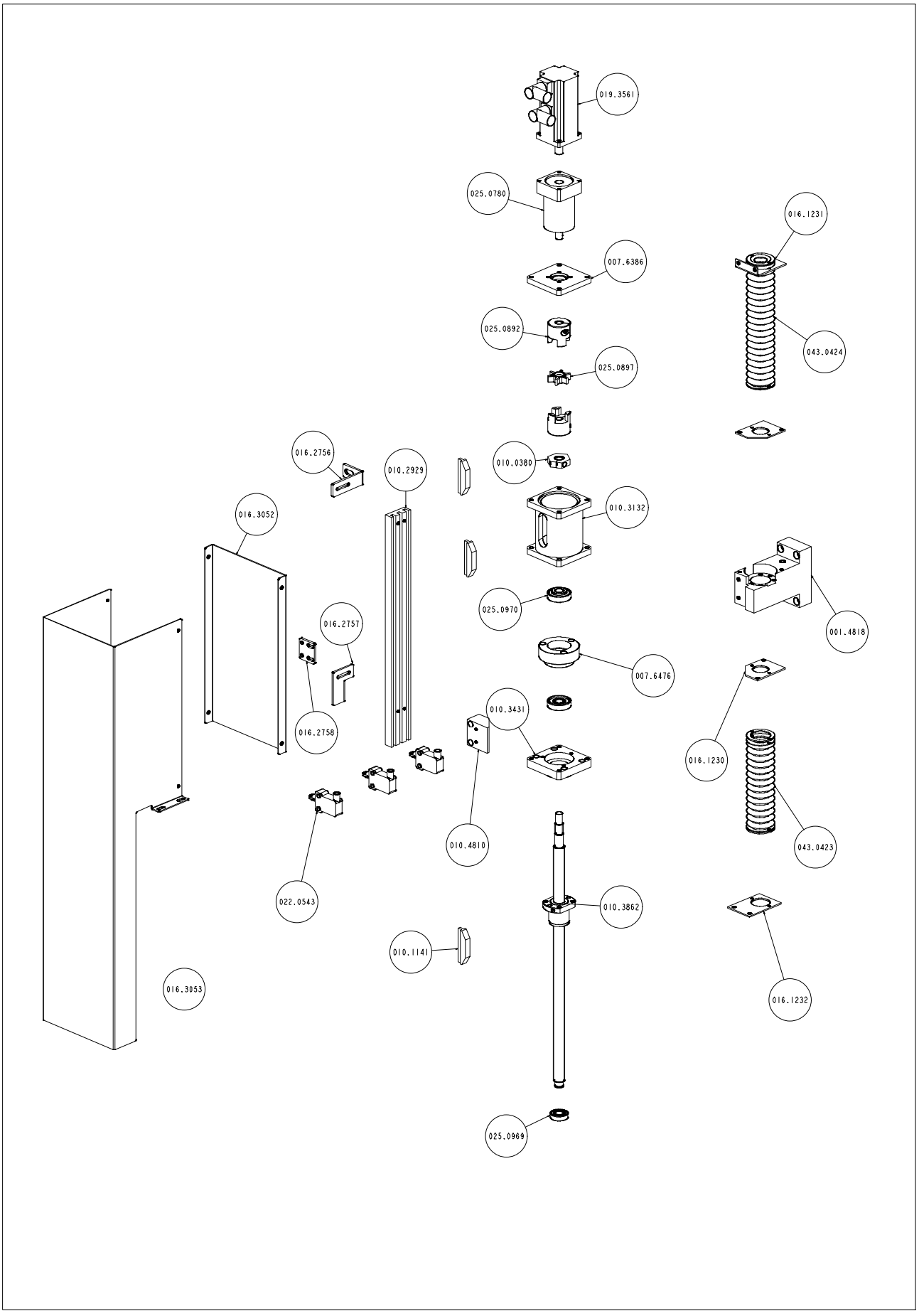
Code	Description	Description	Q.ty
001.4808	FLANGIA MOTORE VERTICALE	VERTICAL MOTOR FLANGE TI 370 CNC	1,000
010.0352	GHIERA AUTOBLOCCANTE 35X1,5	SELF−LOCKING RING NUT 35X1,5 CN−TI−SH−FC	1,000
010.7006	ANELLO SEEGER DIAM. 20	0 20 SEEGER RING (010.7006)	1,000
010.7123	CHIAVETTA 10 X 8 X 25	10 X 8 X 25 KEY	1,000
010.7604	RONDELLA DIAM. 8	0 8 WASHER (010.7604)	4,000
010.7967	VITE TE 8 X 40	TE 8 X 40 SCREW	4,000
019.2002	KW 4 4P.B.14 GR112 V.230−400 TI 370	KW 4 4P.B.14 GR112 S6 60% V.230−400/240−	1,000
025.0067	CUSCINETTO 3207	BEARING 3207	1,000
025.0652	GUARNIZIONE COPERCHIO TESTA TI 372	HEAD COVER SEAL	1,000
025.0811	BOCCOLA A RULLINI DHK 4020 HK	ROLLER BUSHING DHK 4020 HK	1,000
025.0957	CUSCINETTO 6204	BEARING 6204	1,000
025.1027	VITE SENZA FINE MN 5	WORM SCREW MN 5	1,000
025.1028	RUOTA ELIC.CIL.VITE S/F CONDOTTA	HELICOIDAL WHEEL Z 39 MN 2	1,000
025.1029	RUOTA ELIC.CIL.ELBERO MOTORE PIGN.	HELICOIDAL WHEEL Z 35 MN 2	1,000
034.0902	TAPPO OLIO CENTRALINA IDRAULICA	”SFP 1/2”” RED OIL CAP”	1,000

Blade guard unit



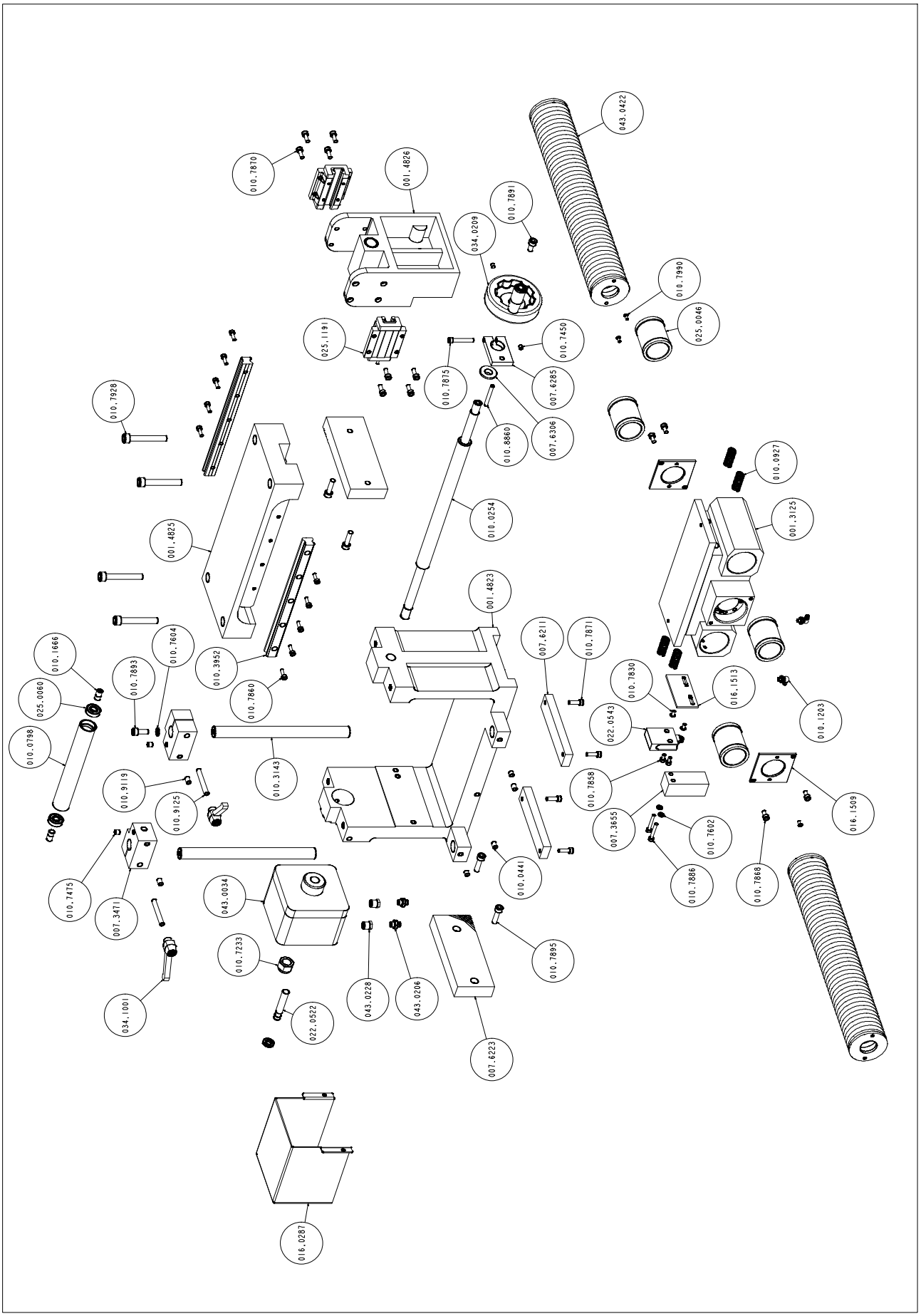
Code	Description	Description	Q.ty
007.6251	SUPPORTO SPAZZOLA PULILAMA TI370CNC	WIRE CHIP BRUSH SUPPORT TI 370 CNC	1
007.6281	TASSELLO FISSAGGIO SUPPORTO SPAZZO-LA	FIXING PLATE TI 370 CNC FE	1
010.7226	DADO AUTOBLOCCANTE M6 (010.7226)	M6 SELF−LOCKING SCREW NUT	1
010.7601	RONDELLA 0 4 (010.7601)	0 4 WASHER (010.7601)	4
010.7603	RONDELLA 0 6 (010.7603)	0 6 WASHER (010.7603)	1
010.7776	SPINA ELASTICA DIAM. 5X16	ELASTIC PIN DIAM. 5 X 16	1
010.7830	VITE BUTON 5 X 10 (010.7830)	5 X 10 BUTON SCREW (010.7830)	2
010.7849	VITE TCEI 4 X 16	TCEI 4 X 16 SCREW	4
010.7868	VITE TCEI 6 X 12 (010.7868)	TCEI 6 X 12 SCREW	1
010.7890	VITE TCEI 8 X 12 (010.7890)	TCEI 8 X 12 SCREW (010.7890)	1
016.0130	CARTER DISCO TI 370 CNCFE	BLADE COVER TI 370 CNCFE	1
016.0554	GUIDA SPAZZOLA PULILAMA CN 90 − TI 370	BAND BRUSH GUDE CN 90 − TI 370	1
016.1745	PROTEZIONE SPAZZOLA PULILAMA TI 370CNCFE	BAND BRUSH GUARD TI 370 CNCFE	1
025.0552	SPAZZOLA PULILAMA SHARK 6X25X50	BAND BRUSH 6X25 030 SHARK	1
028.0081	RIDUZIONE MASCHIO FEMMINA 1/2−3/8 CL 2531	MALE/FEMALE REDUCTION 1/2−3/8 CL 2531	2
028.0091	NIPPLO 3/8’ − CL 2500	”NIPPLE 3/8”” − CL 2500”	2
028.0394	TUBO LOOC LINE 1/2 ART. 59861	LOOC LINE HOSE 1/2	3
028.0399	UGELLO 0 12,7 − 1/2 ART. 59863	NOZZLE 0 12,7 − 1/2	4
028.0404	RACCORDO 3/8 NPT LOOC LINE 1/2 ART.59864	FITTING 3/8 NPT	4
034.0073	PROTEZIONE LEXAN CARTER LAMA TI 370 CNC+ADESIVO SCELTA LAME	BLADE COVER LEXAN GUARD TI 370 CNC	1
043.0192	RACCORDO RB 9889 3/4X20	RB 9889 JOINT 3/4X20	1
043.0217	RACCORDO A −T− FFF 1/2	FFF 1/2 T JOINT	1
043.0236	RIDUZIONE M 1/2−F 3/4 ZINCATA	M 1/2−F 3/4 REDUCTION	1
043.0237	RACCORDO A T FFF 3/8	3/8 T JOINT	2
043.0653	RUBINETTO M/F 3/8 CL 6310	M/F 3/8 CL 6310 TAP	2

Electro−cylinder unit



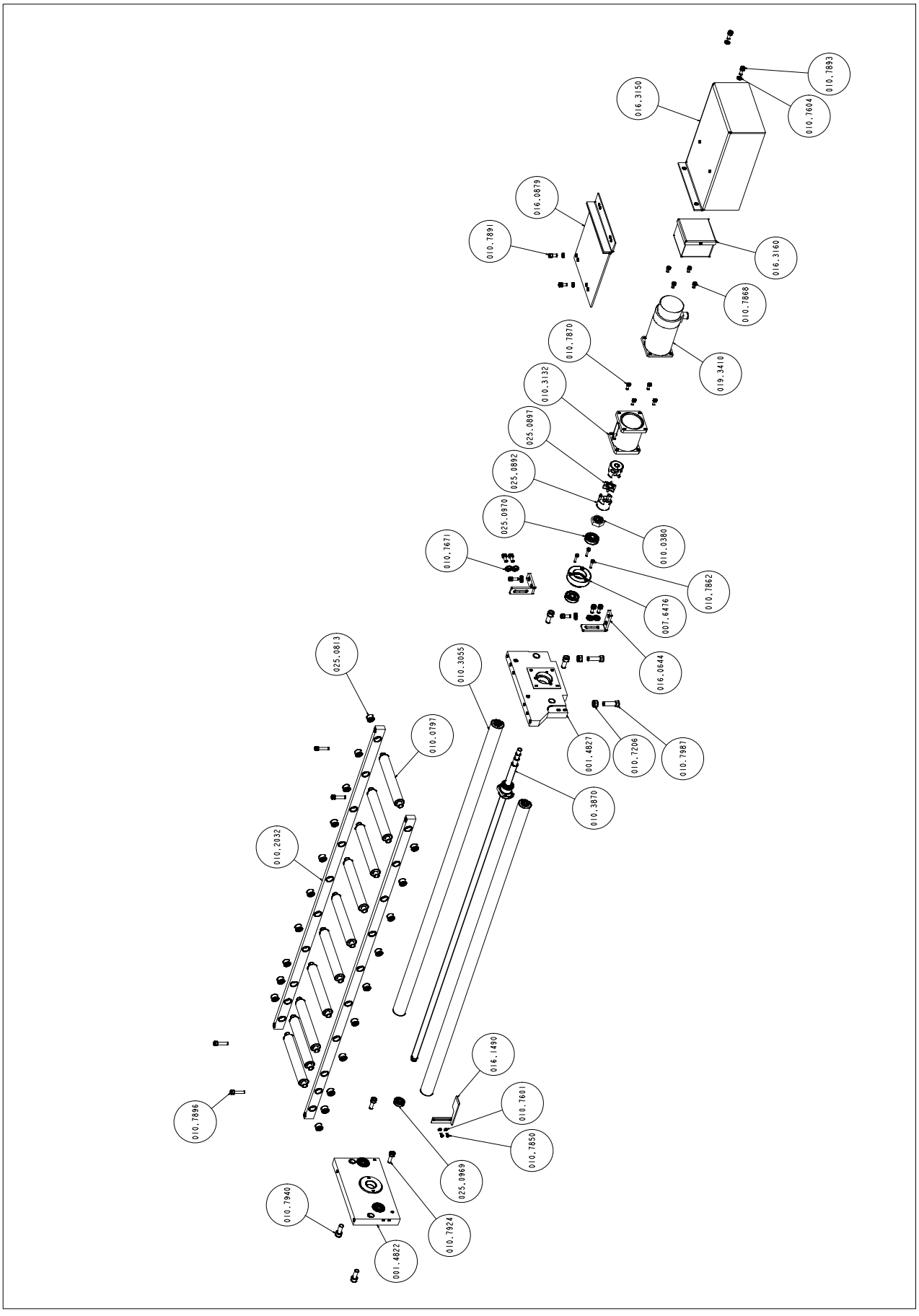
Code	Description	Description	Q.ty
001.4818	SUPPORTO PER CHIOCCIOLA MOVIMENTA ZIONETESTA DI TAGLIO TI 370 CNCLR N.T.	SCREW NUT SUPPORT	1
007.6386	FLANGIA RIDUTTORE ELETTROCILINDRO-SH 310 CNC−S TI 370 CNLR	ELEC.CYL.FLANGE REDU.SH310CNC TI370CNLR	1
007.6476	MANICOTTO VITE RICIRCOLO ALIMENTATO-RESH 500−420	SLEEVE FOR RECIRCULATING BALLSCREW	1
010.0380	GHIERA FISSAGGIO VITE RICIRCOLO ALI-MENTATORE SH N.T.	FIXING RING NUT FOR FEEDER	1
010.1141	CAMMA LUNG. UTILE 40 MM PER GUIDA PASSO16 DU40	CAM LENGTH 40 MM FOR DRIVING PAS-SO16 DU40	3
010.2929	GUIDA PORTACAMME TESTA TI370 L.450	GUIDE HEAD CAM HOLDER	1
010.3132	SUPPORTO MOTORE P/P ALIMENT.SH NC	SUPPORT FOR FEEDER STEPPER MOTOR SH NC	1
010.3431	SUPPORTO VITE A RICIRCOLO DI SFERE 0 20TI 370 CNCLR	RECIR.BALL SCREW SUP. 0 20TI370CNCLR	1
010.3862	VITE A RIC. DI SFERE SDA2010VZS−3CCGS−0539L−CT7 + CHIOC-CIOLA	LIFT HEAD RECIR.BALL SCREW MM539 + SPLIT	1
010.4810	STAFFA FISSAGGIO F.C. TESTA TI 370	STEERING FIXING HOLDER HEAD TI 370	1
010.7205	DADO M10 (010.7205)	M10 SCREW NUT (010.7205)	1
010.8908	VITE TE 10 X 90	10 X 90 TE SCREW	1
016.1230	PIASTRINO FISSAGGIO SOFFIETTO X SUP-PORTOCHIOCCIOLA TI 370 CNCFE	FIXING PLATE F.BAR SUPPORT TI370CNCFE	2
016.1231	PIASTRINO FISSAGGIO SOFFIETTO X COLONNASUPERIORE TI 370 CNCFE	FIXING PLATE F.UPPER COLUMN TI370CNC-FE	1
016.1232	PIASTRINO FISSAGGIO SOFFIETTO X COLONNAINFERIORE TI 370 CNCFE	FIX.PLATE F.LOWER COLUMN TI370CNCFE	1
016.2756	STAFFA SUPERIORE FIX. PORTACAMME TE-STA TI 370	HEADLESS HEADLIGHT MOUNTING HOL-DER TI370	1
016.2757	STAFFA INFERIORE FIX. PORTACAMME TE-STA TI 370	LOWER BRACKET FIXING HEAD CAM HOL-DER	1
016.2758	STAFFA INFERIORE REGOL. PORTACAMME TESTA TI 370	LOWER BRACKET ADJUSTMENT HEAD CAM HOLDER	1
016.3052	CARTER PROT. ANTERIORE ELETTROCILIN-DRO TESTA TI370	FRONT ELECTROCYLINDER GUARD TI 370	1
016.3053	CARTER PROT. POSTERIORE ELETTROCI-LINDRO TESTA TI370	REAR ELECTROCYLINDER GUARD TI 370	1
016.3321	CARTER MOTORE ROTAZIONE TI 372 CN-CLR 4.0 RC	CARTER MOTOR ROTATION	1
019.3561	MOTORE BRUS. S0601B302HC2 0,8NM 230V4000RPM ENC.5000I	BRUS.MOTOR S0601B302HC2 0,8NM 230V	1
022.0543	FINECORSA A ROTELLA X SH 230 / H−14A	LIMIT SWITCH	3
025.0780	RIDUTTORE MP053.2.20.15'.14.30.50.70.S1	REDUCTION MP053.2.20.15'.14.30.50.70.S1	1
025.0892	MOZZO 1A RTX 19 AL−H−12−2.0 ART. 13050500380	HUB	2
025.0897	STELLA RTX 19−98 GS ART.13051500120	RTX STAR	1
025.0969	CUSCINETTO 6002 2Z	BEARING	1
025.0970	CUSCINETTO 30302J2	BEARING	2
043.0423	SOFFIETTO CIRCOLARE 14 SPIRE−2 FLAN GE P.MM.43 VITE MOVIM.TESTA TI 370	TI 370 CIRCULAR BELLOWS	1
043.0424	SOFFIETTO CIRCOLARE AZ=280 ZD=50 TI370 CNCLR	CIRCULAR BELLOW TI 370 CNC	1

Supply carriage unit



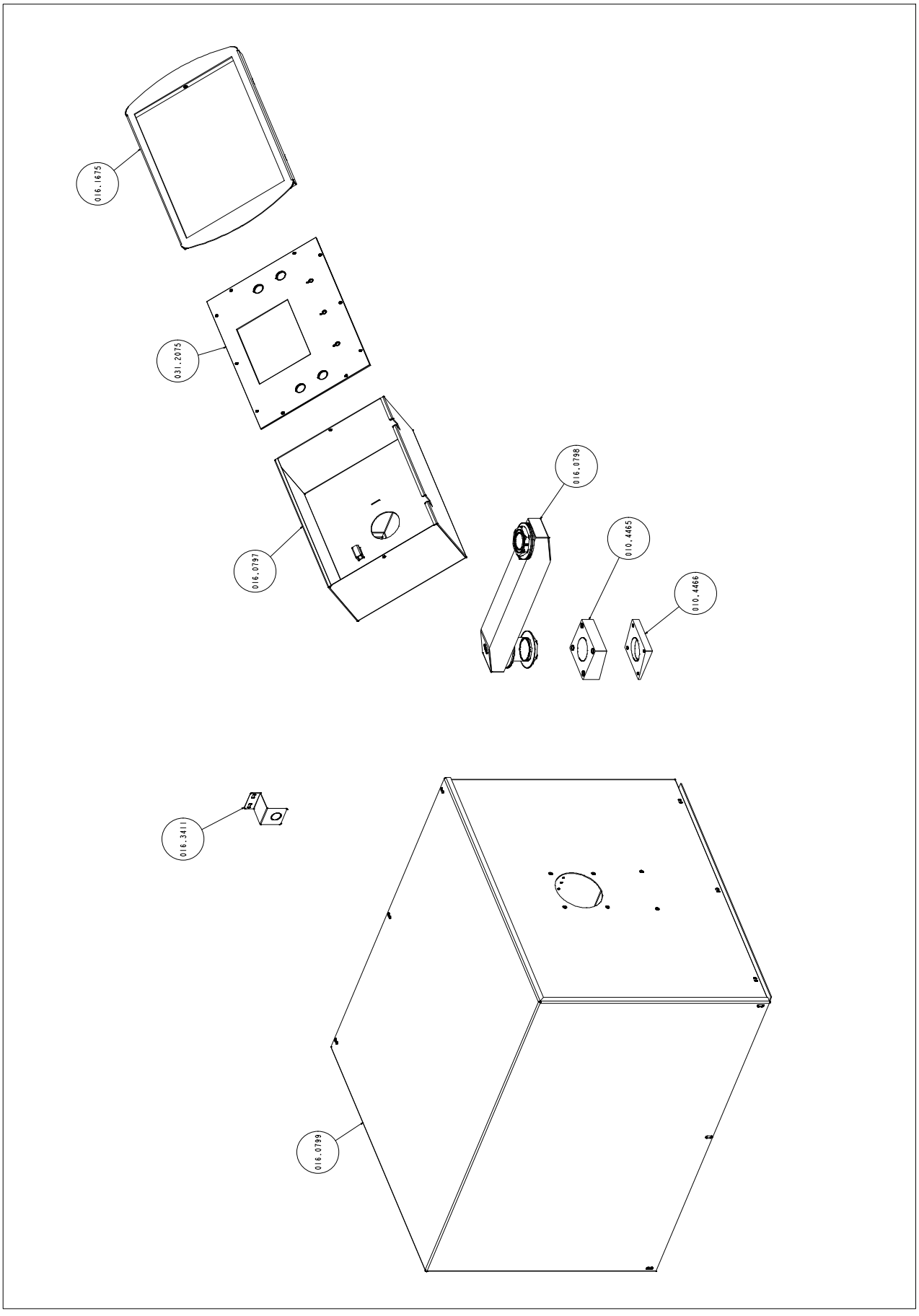
Code	Description	Description	Q.ty
001.3125	CARRELLO ALIMENTATORE	FEEDER CARRIAGE TI−CB NC EVO	1,000
001.4823	SLITTA BASCULANTE ALIMENTATORE	FEEDER SLIDE TI 370 CNC FE	1,000
001.4825	TRAVERSA SLITTA BASCULANTE ALIMETA−	SLIDE CROSS BEAM TI 370 CNC FE	1,000
001.4826	STAFFA FISSAGGIO GANASCIA MOBILE	CLAMPING BRACKET TI 370 CNC FE	1,000
007.3471	TASSELLO FISSAGGIO RULLO PREMIBARRA	FIXING PLATE TI 370 CNCFE	2,000
007.3655	SUPPORTO CATENA PORTACAVI CN 90	CHAIN SUPPORT CN 90−TI 370 CNCFE	1,000
007.6211	PIASTRINO REGOLAZIONE SLITTA BASCU−	SLIDE REGULATION PLATE TI 370 CNC	2,000
007.6223	GANASCIA ALIMENTATORE TI 370 CNCFE	FEEDER JAW TI 370 CNC FE	2,000
007.6285	DISTANZIALE BLOCCAGGIO DISTANZIALE ALIMENTATORE	FEEDER HAND WHEEL CLAMPING BRACKET	1,000
007.6306	DISTANZIALE BLOCCAGGIO VOLANTINO ALIMENTATORE	FEEDER HANDWEEL CLAMPING SPACER	1,000
010.0254	VITE MORSA ALIMENTATORE 535X24 TI	VICE SCREW 535X24 TI 370 CNC L.THREAD	1,000
010.0441	GRANO CON TERMINALE A SFERA M8 X 12	BALL HEADED GRUB SCREW	2,000
010.0798	RULLO PREMIBARRA ALIMENTATORE TI ME	FEEDER ROLLER TI ME	1,000
010.0927	MOLLA CARRELLO ALIMENTATORE	FEEDER CARRIAGE SPRING CNCFE	4,000
010.1203	OLIATORE A 90Ø 6X1	90? OIL FILLER DIAM.8 6X1	2,000
010.1666	PERNO RULLO 20 MM ALIMENT. TI−CB	FEEDER ROLLER PIN SH	1,000
010.3143	SUPPORTO RULLO PREMIBARRA	BAR PUSHER ROLLER SUPPORT	2,000
010.3952	GUIDA LINEARE HSV20−280L−E20RAIL	SLIDE GUIDEHGR HSV20−280L−E20RAIL	1,000
010.7233	DADO AUTOBLOCCANTE M16	M16 SELF−LOCKING SCREW NUT	1,000
010.7450	GRANO VCE P.CIL. 6 X 6	6 X 6 CYLINDRICAL POINT VCE GRUB	2,000
010.7475	GRANO VCE P.PIANA 8 X 8	8 X 8 FLAT POINT VCE GRUB SCREW	4,000
010.7602	RONDELLA DIAM. 5	0 5 WASHER	2,000
010.7604	RONDELLA DIAM. 8	0 8 WASHER	1,000
010.7830	VITE BUTON 5 X 10	5 X 10 BUTON SCREW	2,000
010.7858	VITE TCEI 5 X 10	TCEI 5 X 10 SCREW	2,000
010.7860	VITE TCEI 5 X 15	TCEI 5 X 15 SCREW	10,000
010.7868	VITE TCEI 6 X 12	TCEI 6 X 12 SCREW	8,000
010.7870	VITE TCEI 6 X 16	TCEI 6 X 16 SCREW	8,000
010.7871	VITE TCEI 6 X 20	TCEI 6 X 20 SCREW	4,000
010.7875	VITE TCEI 6 X 40	TCEI 6 X 40 SCREW	1,000
010.7886	VITE TCEI 5 X 35	TCEI 5 X 35 SCREW	2,000
010.7891	VITE TCEI 8 X 16	TCEI 8 X 16 SCREW	1,000
010.7893	VITE TCEI 8 X 20	TCEI 8 X 20 SCREW	1,000
010.7895	VITE TCEI 8 X 30	TCEI 8 X 30 SCREW	4,000
010.7928	VITE TCEI 10 X 70	TCEI 10 X 70 SCREW	4,000
010.7990	VITE TSPEI 4 X 8	TSPEI 4 X 8 SCREW	4,000
010.8860	SPINA ELASTICA 6 X 50	ELASTIC PIN DIAM. 6 X 50	1,000
010.9119	GRANO VCE PUNTA PIANA 8 X 12	8X12 FLAT POINT GRUB SCREW	2,000
010.9125	GRANO VCE PUNTA PIANA 8 X 60	8X60 FLAT POINT GRUB SCREW	2,000
016.0287	PROTEZIONE VOLAMPRESS	AIR VICE CYL. TI−CB AX−CNC TI 370 CNC	1,000
016.1509	STAFFA FIX SOFFIETTO CIRCOLARE	CIRCULAR BELLOWS FIX BRACKET	2,000
016.1513	STAFFA FIX MICROINTERRUTTORE	MICROSW.FIX.BRACKET	1,000
022.0522	SENSORE PROSSIMITA' PNP X AX−NCEVO	PROXIMITY PNP AX	1,000
022.0543	FINECORSA ALIMENTATORE	LIMIT SWITCH FEEDER	1,000
025.0046	MANICOTTO A RIC.SFERE LBBS12−2LS	BALL SLEEVE 0658.040.00 AL. SH	4,000
025.0060	CUSCINETTO 6000 2Z	BEARING 6000 2Z	4,000
025.1191	PATTINO HSR20LC1SSCTBLOCK(A)	SLIDE HSR20LC1SSCTBLOCK(A)	1,000
034.0209	VOLANTINO MORSA	VICE HANDWHEEL	1,000
034.1001	LEVA A SCATTO 8 MA PK55	LEVER 8 MA PK55	2,000
043.0034	CILINDRO VOLAMPRESS 100−8 ALIM.	AIR CYLINDER 100−8 F.TIGER FEEDER	1,000
043.0206	ATTACCO A ESAGONO 4X1/8 − CL 6511	4X1/8 − CL 6511 HEXAGONAL COUPLING	1,000
043.0228	RIDUZIONE MF 1/4 − 1/8 − CL 2531	1/4−1/8 − CL 2531 REDUCTION	2,000
043.0422	SOFFIETTO CIRCOLARE ALIMENTATORE	CN 90−TI 370 CNC FEEDER CIRC.BELLOWS	2,000

Supply roller unit



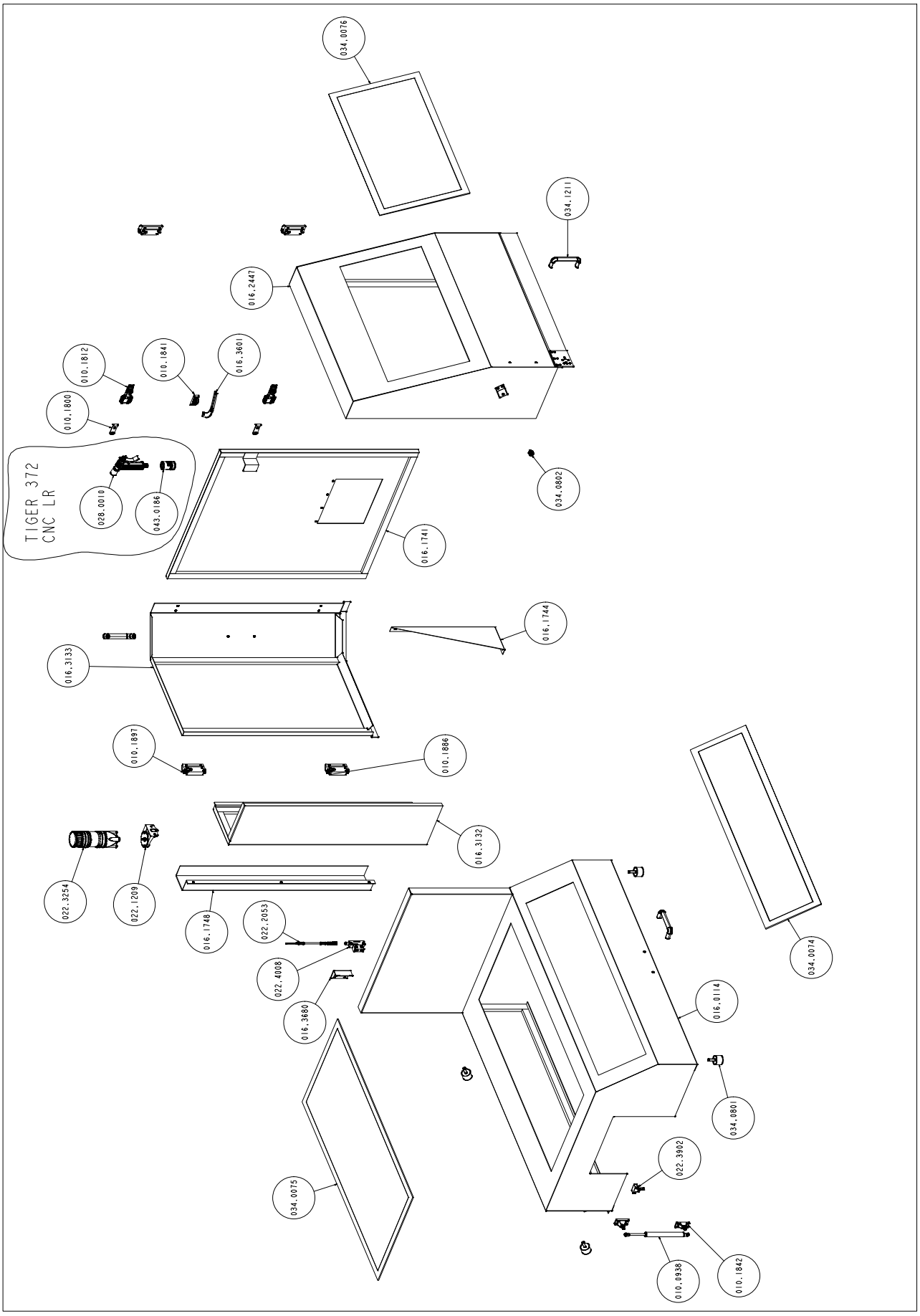
Code	Description	Description	Q.ty
001.4822	STAFFA ANTERIORE ALIMENTATORE	FEEDER FRONT BRACKET TI 370 CNC FE	1,000
001.4827	STAFFA POSTERIORE ALIMENTATORE	FEEDER REAR BRACKET TI370CNC	1,000
010.0380	GHIERA FISSAGGIO VITE RICIRCOLO ALIMENTATORE	FIXING RING NUT FOR FEEDER	1,000
007.6476	MANICOTTO VITE RICIRCOLO ALIMENTATORE	SLEEVE FOR RECIRCULATING BALLSCREW	1,000
010.0797	RULLO ALIMENTATORE	FEEDER ROLLER 0 30 TI 370 CNCFE	10,000
010.2032	GUIDA RULLI ALIMENTATORE	FEEDER ROLLER GUIDE	2,000
010.3055	GUIDA CARRELLO 0 40 MM.1283	FEEDER CARRIAGE GUIDE 0 40 TI 370 CNC	2,000
010.3132	SUPPORTO MOTORE P/P ALIMENTATORE	SUPPORT FOR FEEDER STEPPER MOTOR	1,000
010.3870	VITE A RIC. DI SFERE WTF2040−2ZZ+1380LC7	RECIRC.BALL SCREW+SPLIT NUT	1,000
010.7206	DADO M12	M12 SCREW NUT	1,000
010.7601	RONDELLA DIAM. 4	0 4 WASHER (010.7601)	2,000
010.7604	RONDELLA DIAM. 8	0 8 WASHER (010.7604)	4,000
010.7671	RONDELLA SPESSORE DIAM. 8 X 3	THICKNESS WASHER DIAM. 8 X 3	1,000
010.7850	VITE TCEI 4 X 8	TCEI 4 X 8 SCREW	2,000
010.7862	VITE TCEI 5 X 25	TCEI 5 X 25 SCREW	4,000
010.7868	VITE TCEI 6 X 12	TCEI 6 X 12 SCREW	8,000
010.7870	VITE TCEI 6 X 16	TCEI 6 X 16 SCREW (010.7870)	4,000
010.7891	VITE TCEI 8 X 16	TCEI 8 X 16 SCREW (010.7891)	2,000
010.7893	VITE TCEI 8 X 20	TCEI 8 X 20 SCREW (010.7893)	2,000
010.7896	VITE TCEI 8 X 35	TCEI 8 X 35 SCREW	4,000
010.7924	VITE TCEI 10 X 30	TCEI 10 X 30 SCREW (010.7924)	2,000
010.7940	VITE TCEI 12 X 30	TCEI 12 X 30 SCREW	4,000
010.7987	VITE TE 12 X 40	TE 12 X 40 SCREW	1,000
016.0644	SUPPORTO ALIMENTATORE TI 372−402	FEEDER SUPPORT TI 372−402	1,000
016.0879	ADATTATORE DI CARICO PIANALE K 35	ADAPTER F.LOADING TABLE K35 CN90	1,000
016.1490	STAFFA COMANDO MICROINTERRUTT.	MICROSWITCH BRACKET CN 90 TI 370 CNC	1,000
016.3150	PROTEZIONE MOTORE ALIM. TI 372−402 CNC	FEEDER MOTOR GUARD TI 372−402 CNC	1,000
016.3160	PROTEZIONE FRENO MOTORE ALIMENTATORE	BRAKE MOTOR PROTECTION FEEDER	1,000
019.3410	MOTORE P/P CON FRENO FL86STH156−5708−BK	MOTOR FL86STH156−5708−BK	1,000
025.0813	BOCCOLA A RULLINI INA HK 1512	ROLLER BUSHING HK 1512	20,000
025.0892	MOZZO 1A RTX 19	HUB	1,000
025.0897	STELLA RTX 19−98	RTX STAR	1,000
025.0969	CUSCINETTO 6002 2Z	BEARING	1,000
025.0970	CUSCINETTO 30302 J2	BEARING	1,000

Control panel



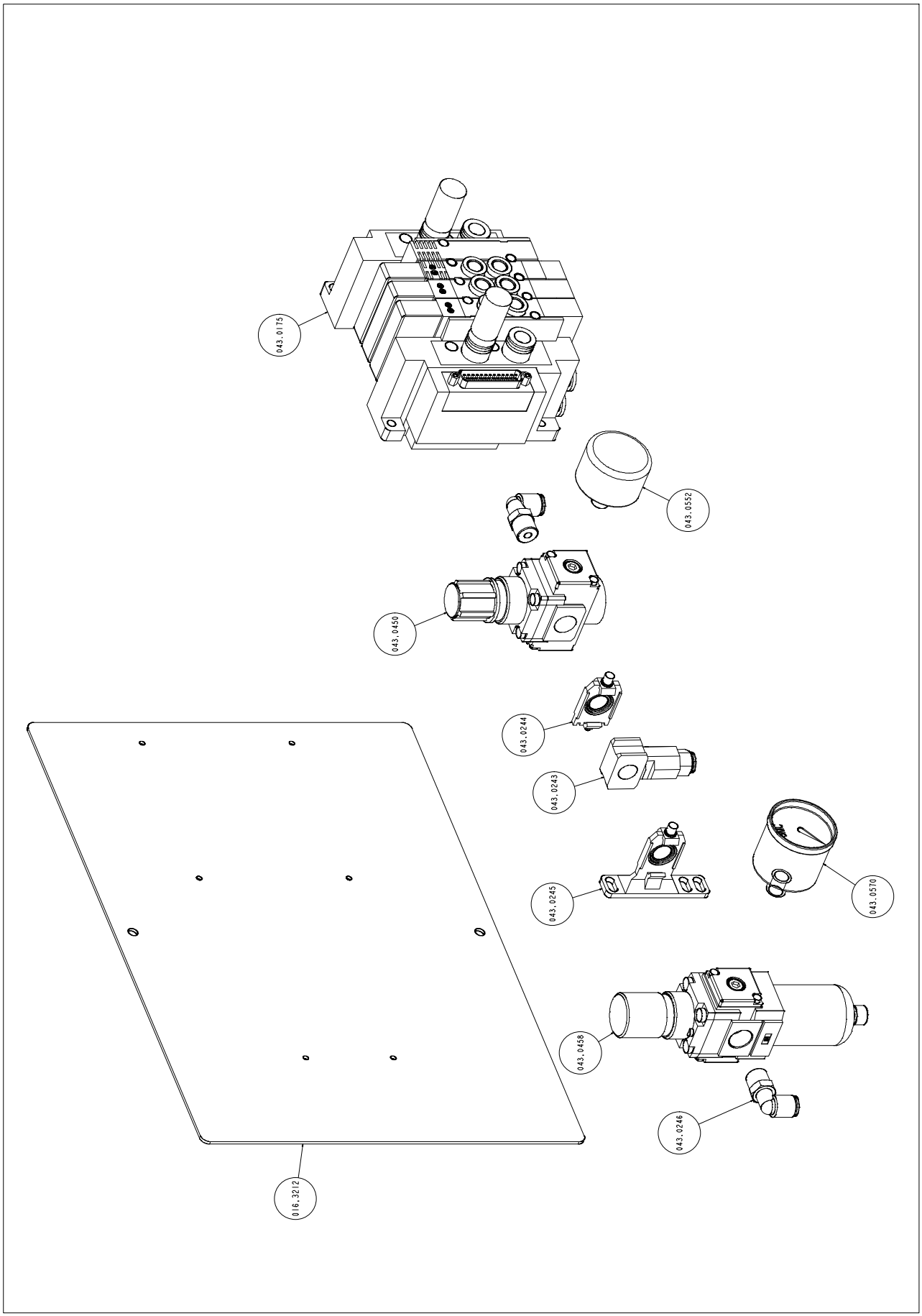
Code	Description	Description	Q.ty
010.4465	PIASTRA FIX. ASTA MOBILE X CONSOLLE N.T.	FIX PLATE CONSOLLE MOBILE ROD	1,000
010.4466	CONTROPIASTRA FIX ASTA MOBILE X CONSOLLE	OPPOSITE PLATE FIX PLATE CONSOLLE MOBILE ROD	1,000
016.0797	QUADRO COMANDI TI 372−402	CONTROL PANEL TI 372−402	1,000
016.0798	ASTA MOBILE X CONSOLLE N.T. TI 372−402	CONSOLLE MOVABLE ROD N.T. TI 372−402	1,000
016.0799	QUADRO ELETTRICO N.T. TI 372−402	ELECTRIC PANEL N.T. TI 372−402	1,000
016.1675	CORNICE QUADRO COMANDI X 4.0	CONTROL PANEL FRAME	1,000
016.3411	SUPPORTO SELETTORE QUADRO ELETT. NC	ELECTRICAL PANEL SELECTOR SUPPORT NC	1,000
031.2075	CONSOLLE DI PROGRAMMAZIONE MEP 40 TOUCH−SCREEN 8 INCH	PROGRAMMING CONSOLLE MEP40 8 INCH MEP	1,000

Guard rail


034.0076
034.1211
016.2447
010.1812
010.1841
016.3601
010.1800
TIGER 372
CNC LR
028.0010
043.0186
034.0802
016.1741
016.1744
016.3133
010.1897
010.1886
016.3132
022.3254
022.1209
016.1748
022.2053
022.4008
016.3680
034.0074
016.0114
034.0801
022.3902
034.0075
010.0938
010.1842

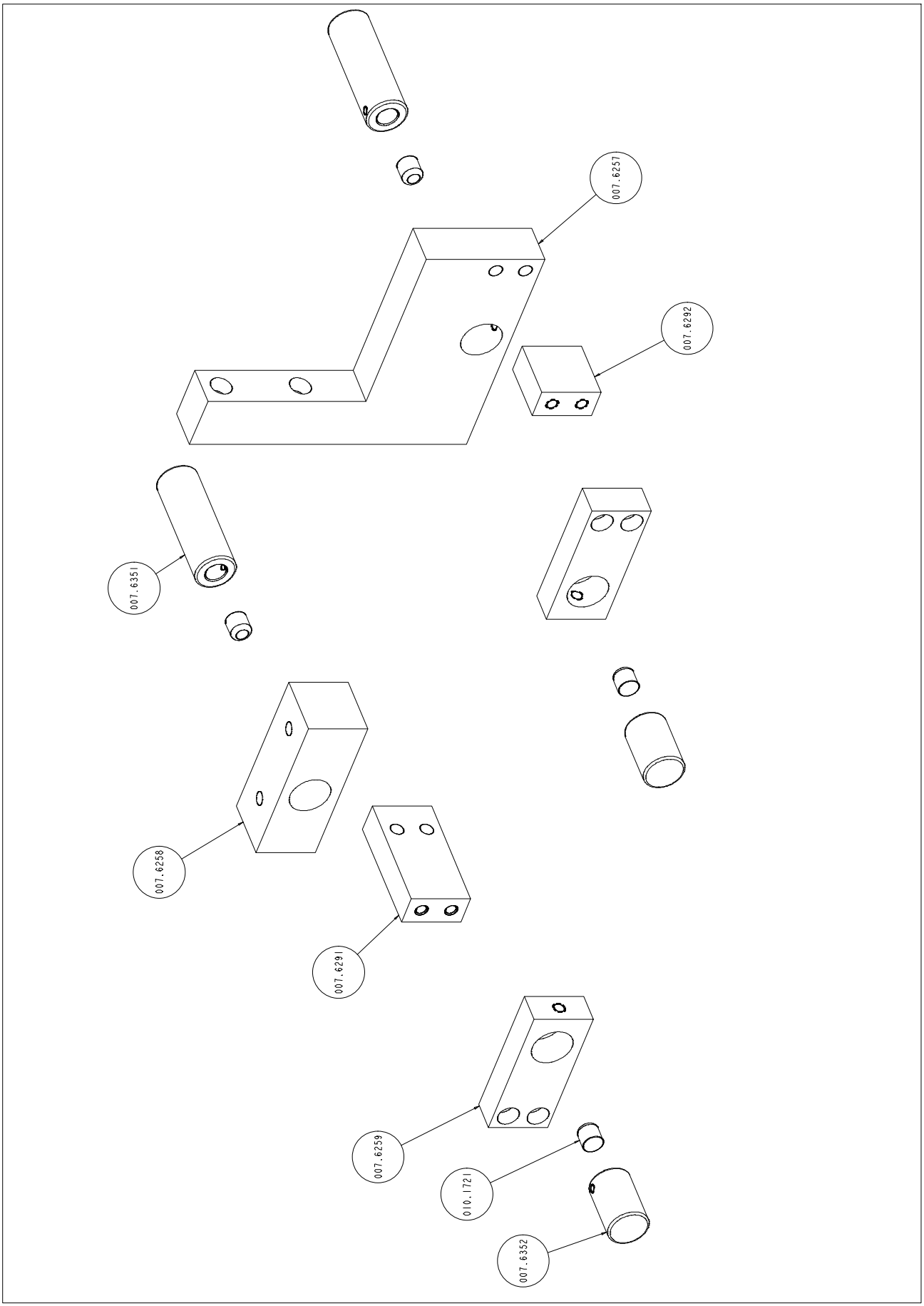
Code	Description	Description	Q.ty
010.0938	MOLLA GAS 120MM.1000N SH AX−AXI−CNC	GAS SPRING 120M M.1000N SH AX−AXI−CNC	1
010.1800	RISCONTRO CHIUSURA A MOLLA 6010−12JQ	SWITCH CLOSURE REMOVAL	2
010.1812	CHIUSURA A MOLLA CON APERTURA AG. SH 230	SWITCH CLOSURE WITH OPENING	2
010.1841	SUPPORTO FEMMINA X MOLLA A GAS	SPRING FEMALE SUPPORT	1
010.1842	SUPPORTO MASCHIO X MOLLA A GAS	SPRING MALE SUPPORT	2
010.1886	CERNIERA COMPLEMENTARE H=100 L.49 PROTEZSH 420 CNC−HS	ADITI.HINGE H=100 L.49 PROTEC. SH 410 DC	3
010.1897	CERNIERA X INT. DI SICUREZZA H=100 L.49+CAVO PUR 70CM+CON. M12 SH 230−420 NC−HS	SAFETY SWITCH HINGE SH420CNCHS SH230NCHS	1
016.0114	CARTER ALIMENTATORE TI 370 N.T.	FEEDER COVER TI 370 N.S.	1
016.1741	PROTEZIONE LATERALE TI 370	LATERAL GUARD TI 370	1
016.1744	RINFORZO PROTEZIONE LATERALE TI 370	LATERAL GUARD REINFORCEMENT TI 370	1
016.1748	PROTEZIONE CAVI TI 370 CNC	CABLES GUARD TI 370 CNC	1
016.2447	SPORTELLO PROT. MACCHINA N.T. TI 372−402	MACHINE GUARD DOOR N.T. TI 372−402	1
016.3132	PROTEZIONE POSTERIORE TI372 CNCLR 4.0 RC	REAR GUARD TI372 CNCLR 4.0 RC	1
016.3133	SPORTELLO POSTERIORE TI372 CNCLR 4.0 RC	REAR DOOR TI 372 CNCLR 4.0 RC	1
016.3601	STAFFA BLOCC. ROTAZIONE SPORTELLO TI 372 CNCLR 4.0 RC	STOP LOCKING ROTATION SPORTELLO	1
016.3680	STAFFA FISSAGGIO RFID CARTER ALIMEN-TAT.	BRACKET FEEDER CARTER	1
022.1209	SUPPORTO A SQUADRO X LAMPEGGIANTE LED	SUPPORT FOR LED LAMP	1
022.2053	CONNETTORE FEMMINA M12 8P DIRITTO UL/CSA	FEMALE CONNECTOR M12 8P UL/CSA+CAB-LE	1
022.3254	LAMPEGGIANTE LED 24 VAC SL7−CB−IMH +SL7−BL24Y + SL7−AP24	FLASHING LED LIGHT 24 VAC SL7−CB−IMH	1
022.3902	CHIAVE X INTERRUTTORE DI SICUREZZA SH331SPIDER	EMERGENCY SWITCH KEY SH 331	1
022.4008	SENSORE DI SICUREZZA RFID ST DD420MK−D1T	SAFETY SENSORS WITH RFID TECHNOLO-GY	1
028.0010	PISTOLA SH−TI ART. 8966	COOLANT PISTOL SH−TI 8966	1
034.0074	PROTEZIONE LEXAN CARTER ALIMENTA-TO− RE FRONTALE TI 370 CNC MM.1120X270	FEEDER FRONT COVER LEXAN GUARD	1
034.0075	PROTEZIONE LEXAN CARTER ALIMENTA-TO− RE SUPERIORE TI 370 CNC MM.1120X530	FEEDER UPPER COVER LEXAN GUARD	1
034.0076	PROTEZIONE LEXAN X SPORTELLO MAC-CHI NA TI 370 CNC MM.760X420	DOOR LEXAN GUARD TI 370 CNC	1
034.0801	ARRESTO ELASTICO P 40/30 CB−RA 350SH 260−270−282	ELASTIC STOP P 40/30 CB−RA350 SH 260−270	4
034.0802	ARRESTO ELASTICO P 20/10 SH 640 CNC−HS	ELASTIC STOP P 20/10 SH 640 CNC−HS	1
034.1211	MANIGLIA GN−565−20−128.SW	GN−565−20−128.SW HANDLE	3
043.0186	RACCORDO FEMMINA 1/2 ACQUASTOP	1/2 WATERASTOP FEMALE JOINT	1

Electro− pneumatic panel



Code	Description	Description	Q.ty
016.3212	PIASTRA ZINCATA PANNELLO PNEUMATICO	ZINCED PLATE PNEUMATIC PANEL	1,000
043.0175	BLOCCO DI VALVOLE DA 3 ESPANDIBILE	3 EXPANDABLE VALVES BLOCK	1,000
043.0243	RACCORDO 1/4 T Y210−F02−A	FITTING 1/4 T Y210−F02−A	1,000
043.0244	RACCORDO INTERMEDIO Y200−A	INTERMEDIATE FITTING	1,000
043.0245	RACCORDO INTERM. CON SQUADRETTA Y200T−A	INTERMEDIATE FITTING WITH SQUADRATE	1,000
043.0246	RIDUZIONE 10−8 KQ2R08−10A	REDUCTION 10−8 KQ2R08−10A	1,000
043.0450	REGOLATORE MODULARE 1/4 AR20−F02−Y−B	MODULAR REGULATOR 1/4 AR20−F02−Y−B	1,000
043.0458	FILTRO REGOLATORE 1/4 AW20−F02−B	FILTER 1/4 AW20−F02−B	1,000
043.0552	MANOMETRO O 40	MANOMETER 0 40	1,000
043.0570	MANOMETRO 1/8 CON PRESSOSTATO COMPL. DI CAVO 0,5M. E CONNETT.	MANOMETER 1/8 WITH COMPLETE CABLE 0.5M PRESSURE. AND CONNECTOR	1,000

Blade guide kit



Code	Description	Description	Q.ty
007.6257	SUPPORTO CILINDRO DESTRO ANTE-RIORETI 370 CNCLR	VICE CLAMPING LEVER SC−PK 250 MOD.3	1
007.6258	SUPPORTO CILINDRO DESTRO POSTE-RIORETI 370 CNCLR	VICE CLAMPING LEVER SC−PK 250 MOD.3	1
007.6259	SUPPORTO CILINDRO ANTERIORE POSTE-RIORESINISTRO TI 370 CNCLR	FRONT AND BACK CYLINDER SUPPORT TI 370	2
007.6291	STAFFA FISSAGGIO SUPPORTO CILINDRO GUIDALAMA POSTERIORE TI 370 CNCLR	GUIDE FOR CILINDER HOLDER FIXING BRACKET	1
007.6292	STAFFA FISSAGGIO SUPPORTO CILINDRO GUIDALAMA ANTERIORE TI 370 CNCLR	FRONT BLADE FIX BRACKET	1
007.6351	CILINDRO GUIDALAMA DESTRO TI 370CNC	RIGHT BLADE GUIDE CYLINDER TI 370 CNC	2
007.6352	CILINDRO GUIDALAMA SINISTRO TI 370 CN-CLR	VICE CLAMPING LEVER SC−PK 250 MOD.3	2
010.1721	PREMILAMA SHARK	TOP CARBIDE SHARK	4

Adjustments

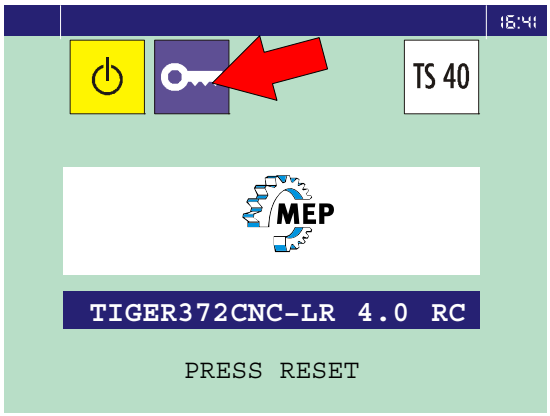


This chapter describes the adjustment operations of the electronic, mechanic and hydraulic systems.
These indications will help you to customize your machine for the cut to be executed, thus improving operations.

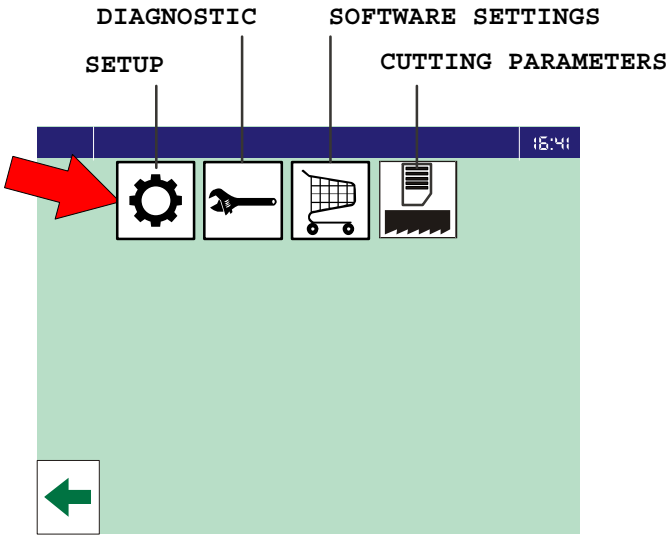
Displaying and editing the set−up parameters

The machine set−up parameters may be programmed directly from the control console.

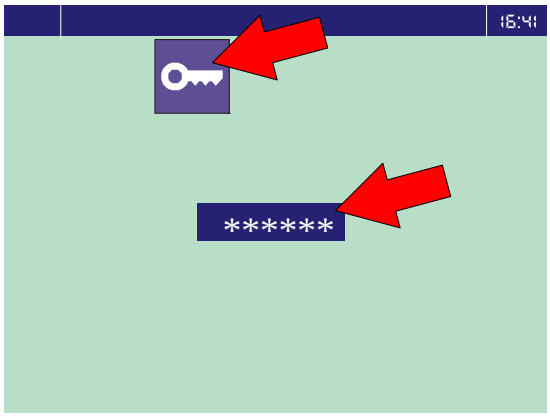
- ▶ Connect the power supply;
- ▶ Press RESET to enable the safety relay.
- ▶ press the box with the ”wrench” symbol on the touch screen;



- ▶ Press the SETUP box



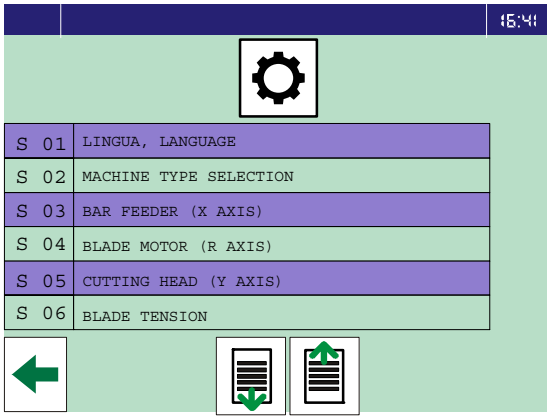
▶ Press the indicated box and on the keypad enter the password.



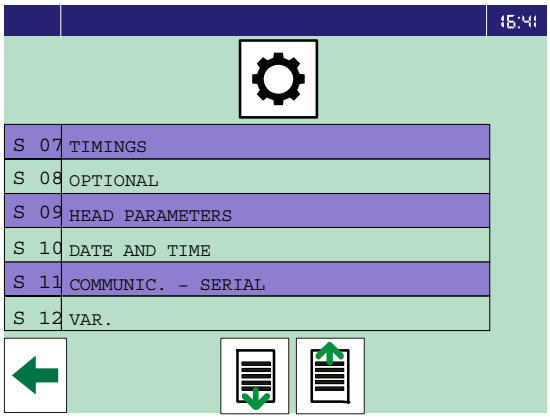
Attention The values shown in this section are extremely important for the correct machine operation. Each change of the parameters must be carried out under the supervision of MEP technical service.

N.B. The Setup parameters are listed on several pages: to display the complete list, press the page scrolling keys at the bottom of the video page. To return to the previous menu, press the “EXIT” key (green arrow on the left).

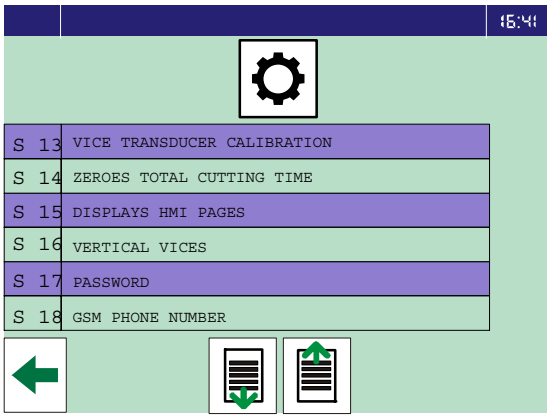
▶ The first Setup video page enables to access the following parameters.



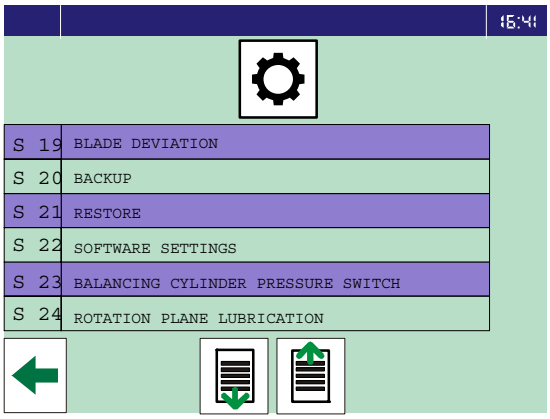
▶ The second Setup video page enables to access the following parameters.



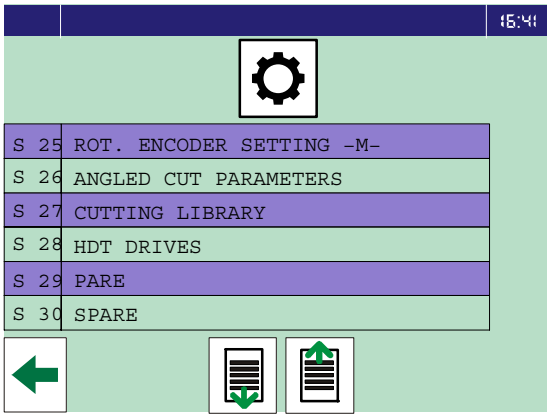
▶ The third Setup screen enables to access the following parameters.



▶ The fourth Setup screen enables to access the following parameters.

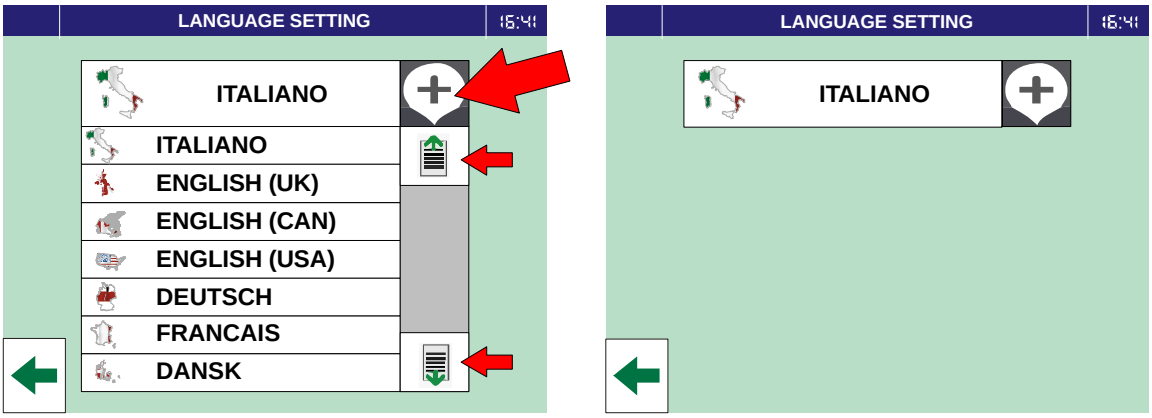


▶ The fifth Setup screen enables to access the following parameters.



S 01 – Set language parameter

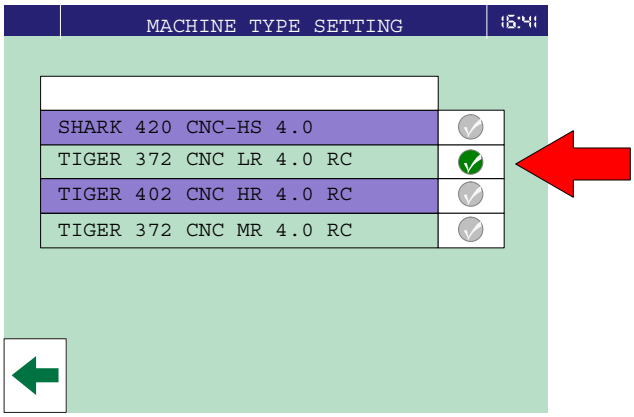
▶ Press the box of the parameter S 01 to access the language SETUP, select the box corresponding to the chosen language.



▶ Press “EXIT” to return to previous menu.

S 02 – Set parameter for machine type

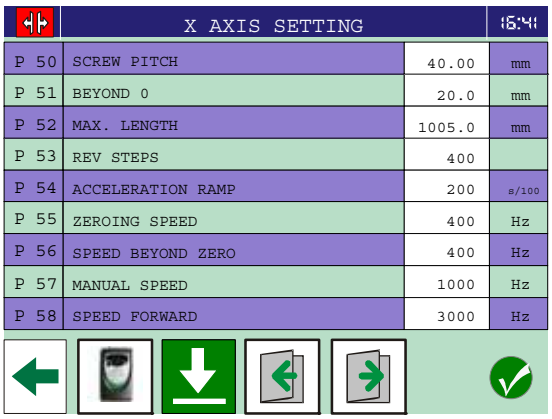
▶ Press the box of the parameter S 02 to access the SETUP, selection of the machine type, select the box corresponding to the wished machine type.



▶ Press “EXIT” to return to PREVIOUS MENU.

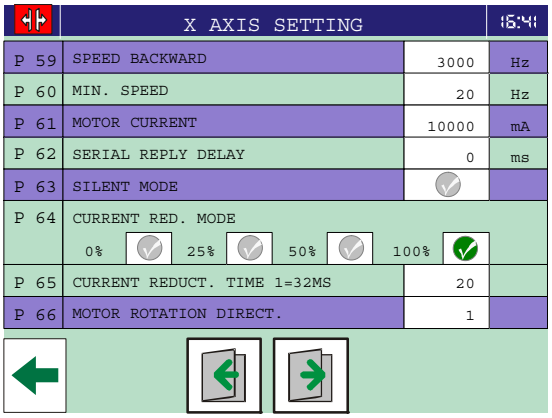
S 03 – X axis and step motor parameter setting

▶ Press the box of the parameter S 03 to access the SETUP of the step motor.
▶ Press “EXIT” to return to PREVIOUS MENU.



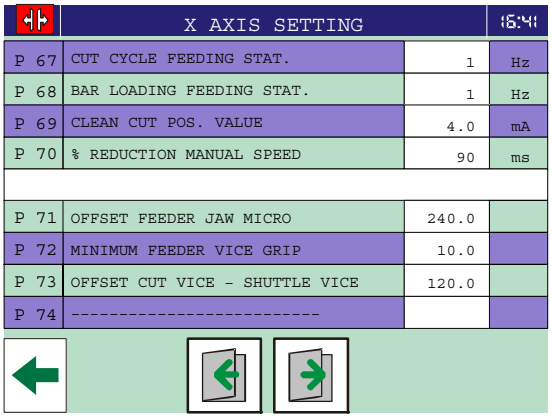
Nr.	Parameter / Description	Value
P 50	**SCREW PITCH**: value of the distance covered by the feeder with a complete turn of the screw.	40.00 mm
P 51	**BEYOND 0**: value assigned to the feeder after the zeroing has been performed.	20.0 mm
P 52	**MAX. LENGTH**: value of the useful stroke allowed to the feeder.	1005.0 mm
P 53	**REV STEPS**: value of the step motor resolution (number of steps for every complete turn of the screw).	400 mm
P 54	**ACCELERATION RAMP**: acceleration of the step motor expressed in second hundredths (range 1÷1000 h/s:).	200 cs
P 55	**ZEROING SPEED**: speed of the feeder shuttle during the X axis zeroing.	400 Hz
P 56	**SPEED BEYOND ZERO**: must always be slower than the zeroing speed.	400 Hz
P 57	**MANUAL SPEED**: speed set for the movement with the keys of the X+ and X− console.	1000 Hz
P 58	**SPEED FORWARD**: speed during the automatic operation.	3000 Hz

▶ Press the page scrolling box to display the next video page.



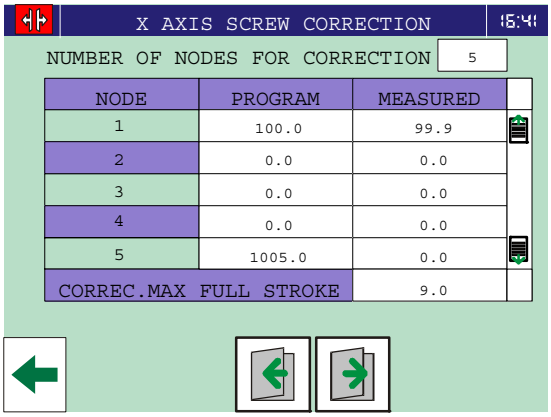
Nr.	Parameter / Description	Value
P 59	**SPEED BACKWARD**: speed during the automatic operation.	3000 Hz
P 60	**MIN. SPEED**: speed by which the driver correct the X axis positioning.	20 Hz
P 61	**MOTOR CURRENT**: value of the feeder motor max. current.	10000 mA
P 62	**SERIAL REPLY DELAY**: value of the reply in real time for the communication (0=max).	0 ms
P 63	**SILENT MODE**: value for feeder motor working type.	ON
P 64	**CURRENT RED. MODE**: percentage value for reducing the max. current absorption with idle motor.	50%
P 65	**CURRENT REDUCT. TIME**: value of the delay to apply the current reduction.	20
P 66	**MOTOR ROTATION DIRECT.**: value to revert the feeder motor rotating direction.	1

▶ Press the page scrolling box to display the next video page.

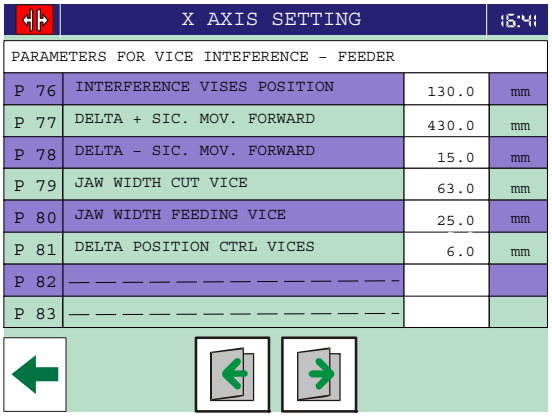


Nr.	Parameter / Description	Value
P 67	**CUT CYCLE FEEDER STOP.**: value for forward or backward stopping mode of the feeder during the cutting cycle.	1 (Av:0_Ind:1)
P 68	**BAR LOADING FEEDER STOP.**: value for stopping mode of the feeder while loading the feeder bar.	1
P 69	**CLEAN CUT POS. VALUE**: feeder vice backing after the cut (after enabling ”Software settings” in page 1)	4.0 mm
P 70	**MAN. SP. RED. % FOR SLOW MODE:** indicates the percentage of speed reduction backward and forward of the feeding vice. This when using X+ and X− buttons.	90 %
P 71	**OFFSET FEEDER JAW MICRO**: value expressed in mm of offset of the microswitch for detecting the bar presence in the jaws of the feeder vice.	240.0 mm
P 72	**MINIMUM FEEDER VICE GRIP**: Value expressed in mm of the min. force for clamping the material inside the feeder vice.	10.0 mm
P 73	**FEEDER VICE CUTTING LINE DISTANCE**: distance between cutting blade and feeder vice, with the feeder in zeroing position.	120.0 mm
P 74	Spare	–

In the third video page of the X axis setup, it is possible to correct the measurement error of the fed material. This adjustment can be operated when the actually cut measurement is longer or shorter than the value indicated by the machine. By increasing or decreasing the correction value of the ”actual” measurement (in the display on the right), possible errors due to the screw wear can be corrected as follows:

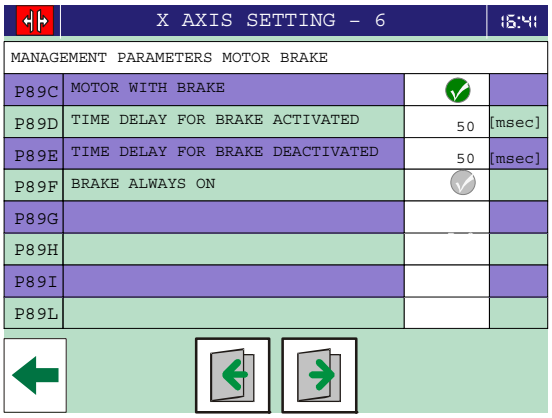


- ▶ to enter the programming, press the box corresponding to the “Number of nodes for corrections” and, using the keypad, enter the wished value (5 preset) that is automatically stored.
- ▶ Press the box of the ”ideal” dimension for the first node and enter the value (in mm) where a positioning error of the feeder drawer has been found;
- ▶ if the real dimension of the piece is lower at that level, enter in the ”real” field the value to be added to get the correct value;
  if the real dimension of the piece is higher, enter the value to be subtracted to get the correct value.
- ▶ Proceed in the same way for the other nodes.
- ▶ Press the page scrolling box to display the next video page.



Nr.	Parameter / Description	Value
P 76	**Vices interference value:** indicates the min. dimension within which the movement of a vice corresponds to the movement of the other.	130.0 mm
P 77	**Delta + Forward mov. s.:** value indicating the max. opening of the feeder vice compared to the cutting vice for the feeder to move forward.	430.0 mm
P 78	**Delta – Forward mov. s.:** value indicating the min. opening of the feeder vice compared to the cutting vice for the feeder to move forward.	15.0 mm
P 79	**Cutting v. jaws thickness:** Value for the cutting vice movable jaws thickness.	63.0 mm
P 80	**Feeder v. jaws thickness:** Value for the feeder vice movable jaws thickness.	25.0 mm
P 81	**Vice ctrl position delta:** Value for controlling the vice position (feeder and cut closing).	6.0 mm
P 82	Spare	–
P 83	Spare	–

▶ Press the page scrolling box to display the next video page.

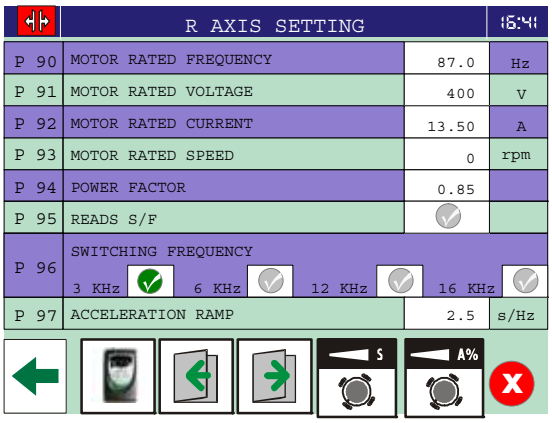


Nr.	Parameter / Description	Value
P 89C	**Motor with brake:** indicates whether or not there is a motor with a self–braking device	ON
P 89D	**Delay time for activated brake:** Allowed time for activated brake control	50 msec
P 89E	**Delay time for deactivated brake:** Allowed time for deactivated brake control	50 msec
P 89F	**Brake always ON:** motor brake control always active	OFF

▶ Press “EXIT” to return to PREVIOUS MENU.

S 04 – Blade motor setting (R axis)

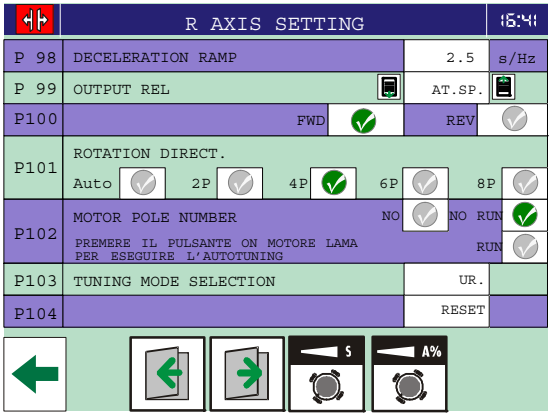
▶ Press the box of the parameter S 04 to access the SETUP of the “Blade motor setting (Axis R)”.



Nr.	Parameter / Description	Value
P 90	**MOTOR RATED FREQUENCY**: parameter to be set for the basic frequency with delta connection.	87.0 Hz
P 91	**MOTOR RATED VOLTAGE**: blade motor supply voltage.	400 V
P 92	**MOTOR RATED CURRENT**: max. current with delta connection.	13.50 A
P 93	**MOTOR RATED SPEED**: default setting.	0 rpm
P 94	**POWER FACTOR**: depending on the motor type.	0.85
P 95	**READS S/F**: voltage parameter: frequency = 0, vectorial= 1	OFF

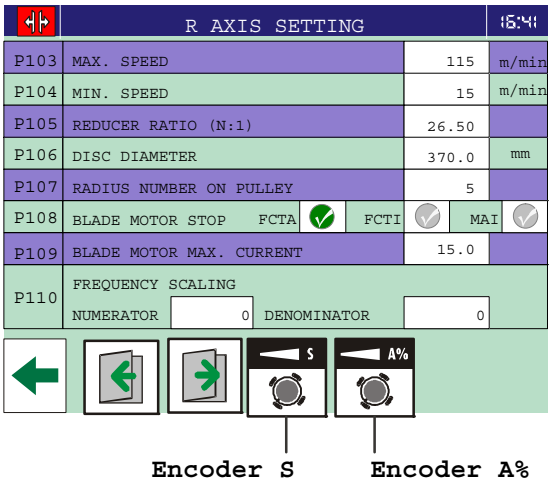
P 96	**SWITCHING FREQUENCY**: 0 = 4, 1 = 6, 2 = 8 (kHz).	3 KHz
P 97	**ACCELERATION RAMP**: time set to make the blade motor reach the rotation speed.	2.5 s/Hz

▶ Press the page scrolling box to display the next video page.



Nr.	Parameter / Description	Value
P 98	**DECELERATION RAMP**: time set to make the blade motor stop.	2.5 s/HZ
P 99	**OUTPUT RELAY**: output relay working type.	AT.SP
P 100	**ROTATION DIRECT.**: defines the blade rotation direction.	FWD
P 101	**MOTOR POLE NUMBER**: blade motor poles.	4 P
P 102	**TUNING MODE SELECTION:** 1 = under control, 0 = never, 2 = always.	NO RUN
P 103	**CONTROL MODE:** selecting the inverter's startup mode.	UR
P 104	**SOURCE OF REFERENCE:** parameter to automatically configure the inverter according to the current.	PRESET

▶ Press the page scrolling box to display the next video page.

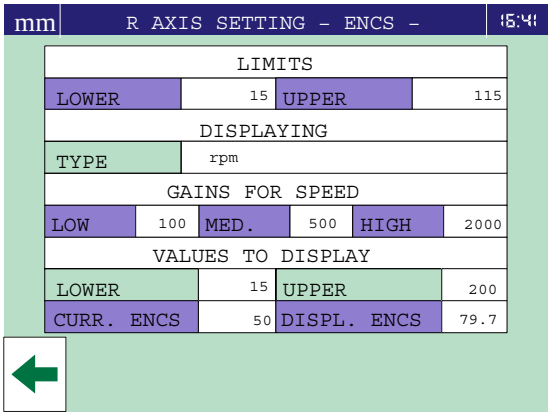


P 103	**MAX. SPEED:** blade max. speed (writes the motor max. freq.)	115 m/min
P 104	**MIN. SPEED:** blade min. speed (writes the motor min. freq.)	15 m/min
P 105	**REDUCER RATIO (N:1):** indicates the reduction ratio 38= N:1	26.50
P 106	**DISC DIAMETER** disc diameter dimension.	370 mm
P 107	**RADIUS NUMBER ON PULLEY:** number of spokes on the pulley.	5

P 108	**BLADE MOTOR STOP:** stops the motor at FHLS, RHLS or never.	FCTA
P 109	**BLADE MOTOR MAX. CURRENT:** max. current value setting in the working page.	15.0
P 110	**FREQUENCY SCALING.**	0

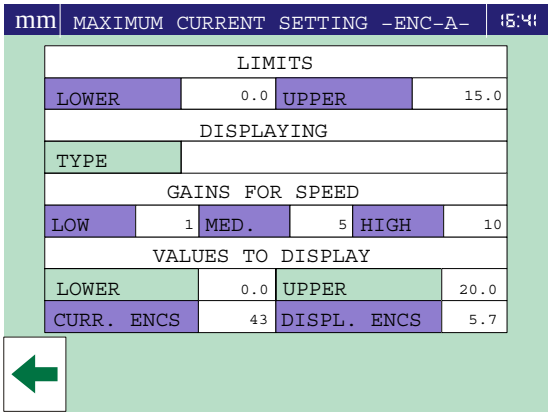
N.B. It is possible to access the Setup video pages of the Encoder S related to the blade rotation speed and “A%” for the current absorption of the blade motor from all video pages of the Axis R setting.

▶ Press the box of the Encoder “S” to access the relevant Setup.



3. **LIMITS:** indicates the upper and lower limits of the EncS encoder stroke.
4. **DISPLAYING:** sets the type of measurement unit to be displayed.
5. **GAINS FOR SPEED:** parameters used to adjust the sensitivity of the encoder potentiometer during the manual rotation: slow, medium or fast.
6. **VALUES TO DISPLAY:** indicates the actual displayed values by which it is possible to make corrections in the working page.

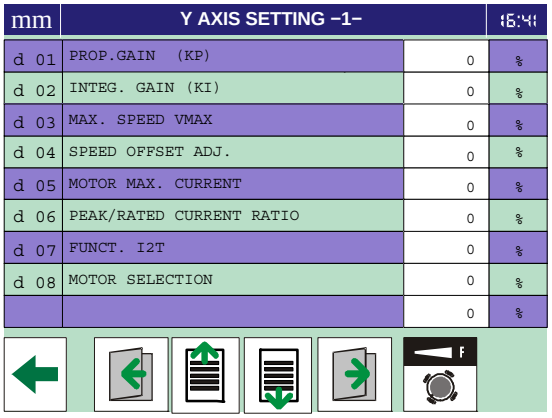
▶ Press the box of the Encoder “A%” to access the relevant Setup.



7. **LIMITS:** indicates the upper and lower limits of the Enc A% encoder stroke.
8. **DISPLAYING:** sets the type of measurement unit to be displayed.
9. **GAINS FOR SPEED:** parameters used to adjust the sensitivity of the encoder potentiometer during the manual rotation: slow, medium or fast.
10. **VALUES TO DISPLAY:** indicates the actual displayed values by which it is possible to make corrections in the working page.

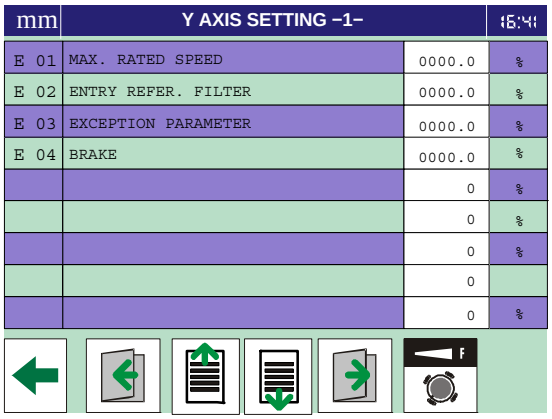
S 05 − Cutting head setting (Y axis)

▶ Press the box of the parameter S 05 to access the SET UP “Cutting head setting (Axis Y)”; to scroll the list of all parameters, press the scrolling boxes with the vertical up and down arrows.

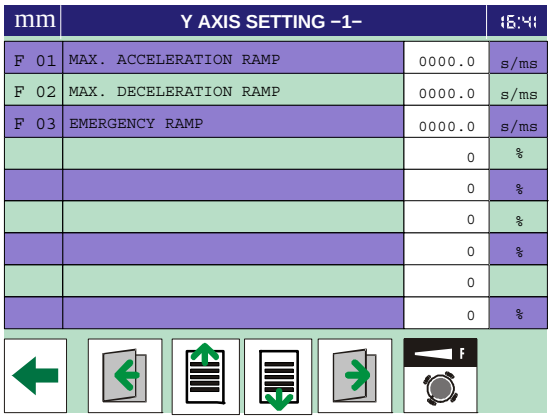


Nr.	Parameter / Description	Value
d 01	**PROP. GAIN (KP):** proportional gain of the KP speed loop: you must choose the suitable value depending on the load inertia moment to enable an efficient adjustment of the motor speed.	0 %
d 02	**INTEG. GAIN (KI):** integral gain of the KI speed loop: the integral gain in 80% of the applications is sized in the best way if set at its rated value. If the load inertia moment exceeds by 5 times the rotor one it is advisable to proportionally reduce its value. If instead frequent changes of resistant torque occur, the value must be suitably increased.	0 %
d 03	**MAX. SPEED:** Vmax: this parameter enables to further tune the Speed Full Scale adjustment (from 01 to 99).	0 %
d 04	**SPEED OFFSET ADJ.:** this adjustment is equivalent to the offset adjustment of the speed set−point given to the drive. The motor rotating direction refers to a shaft directed towards the observer.	0 %
d 05	**MOTOR MAX. CURRENT:** max. current of the Imax motor: max. rated current to the delivered to the motor means the Inom indicated in the motor tables. The value of the parameter is negligible if the torque limiting EXTREF hardware input is used. Parameter depending on the motor type and automatically set to its rated value. It is automatically changed if the motor type is varied (parameter “d8”).	0 %
d 06	**PEAK/RATED CURRENT RATIO:** peak/rated current ratio: the parameter changes the value of the peak I depending on the indicated ratio while the rated current value set by ”d5” is unchanged. The ratio variation range is not always steady rather it changes depending on the selected motor and of the max. peak I that can be delivered by the used Drive model. Parameter depending on the motor type and automatically set to its rated value to the set of ”d8”.	0 %
d 07	**I2T FUNCTION:** the I2T function enables to supply the motor with a current higher than the rated one for a limited time, in order to ensure that the thermal disposal parameters of the engine are complied with. If the motor use cycle is not compatible with its thermal model, the I2T function sets the limit of the peak current to the motor rated current, thus guaranteeing its protection. See OP menu, variable O3.	0 %

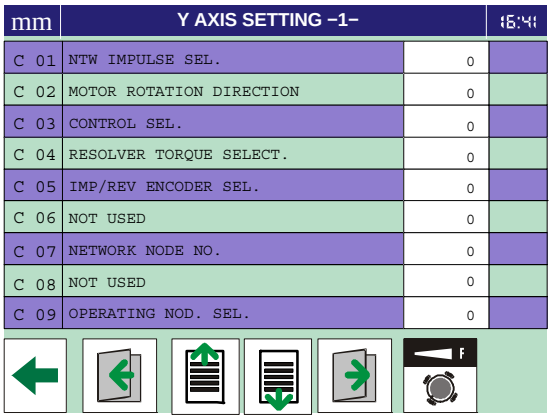
d 08	**MOTOR SELECTION:** the value of the parameter to be set, to select the used motor that the drive must control, can be deduced from the motor tables.	0 %
d 09	Spare	–



Nr.	Parameter / Description	Value
E 01	**MAX. RATED SPEED:** this is the speed the motor must rotate with the max. speed setpoint (e.g. 10 V for the analogic setpoint). Obviously, the max. speed cannot exceed the rated speed full scale which obviously depends on the motor type.	0 %
E 02	**INFEED REFERENCE FILTER:** the filter on the low pitch infeed reference on the speed setpoint (REF\, REF or digital setpoint).	0 %
E 03	**EXCWPTION PARAMETER:** 00 – default value. 01 – scale filter modified reference to enter. 02 – temporary interruption of the positioning.	0 %
E 04	**BRAKE:** motor brake, if present.	0 %
E 05	Spare	–
E 06	Spare	–
E 07	Spare	–
E 08	Spare	–
E 09	Spare	–

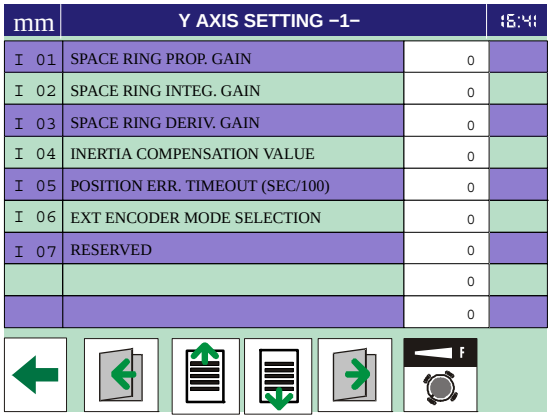


Nr.	Parameter / Description	Value
F 01	**MAX. ACCELERATION RAMP:** time required to take the motor from zero speed to rated speed.	0 s/ms
F 02	**MAX. DECELERATION RAMP:** time required to take the motor from rated speed to zero speed.	0 s/ms
F 03	**EMERGENCY RAMP:** value of the deceleration ramp from the IEN deactivation (to be adopted as possible emergency stop) or identification of a few alarms inside the drive which enable the Drive to stop the axis (alarm 2, 5, 6, 10, 13).	0 s/ms
F 04	Spare	–
F 05	Spare	–
F 06	Spare	–
F 07	Spare	–
F 08	Spare	–
F 09	Spare	–



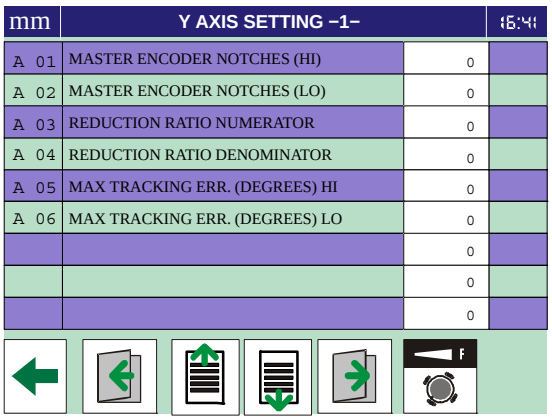
Nr.	Parameter / Description	Value
C 01	**NTW IMP. SEL.:** by this parameter it is possible to select the digitally simulated encoder output impulses. C1 = 1 –> 1024 impulses/el. rev, resolution 12 bit (default) C1 = 2 –> 512 impulses/el. rev, resolution 12 bit C1 = 3 –> 256 impulses/el. rev, resolution 10 bit C1 = 4 –> 128 impulses/el. rev, resolution 10 bit The number of impulses per mechanical rev is calculated by multiplying the impulses per electric rev by the number of polar torques of the resolver (1 polar torque = 2 poles).	0
C 02	**MOTOR ROTATION DIRECTION:** the rotation direction is to be meant observing the motor shaft: 00 = Clockwise direction (00 = default value); 01 = Counterclockwise direction (inverted).	0
C 03	**CONTROL SEL.:** this parameter defines if the control is on speed or torque: 00 = Speed control (00 = default value); 01 = Torque control.	0
C 04	**RESOLVER TORQUE SELECTION:** the resolver polar torques are fixed inside the MOTOR TABLE and depend on the relevant selected “d8” (00 = default value); Caution! Not to be changed. To be used in special cases only.	0

C 05	**IMP/REV ENCODER SEL.:** when the encoder is used in the place of the Resolver this parameter must be set as a function of the encoder installed on the motor. (00 – 09): 00 = 4096 impulses/rev; 01 = 2048 impulses/rev (01 = default value); 02 = 1024 impulses/rev; 03 = 512 impulses/rev; 04 = 4000 impulses/rev; 05 = 2000 impulses/rev; 06 = 1000 impulses/rev; 07 = 500 impulses/rev. 08, 09 = torque motors (see “Torque Motors – Technical Manual”). Check that the value of c5 is the same as the one indicated in the section “Notes” of the motor table used to select the motor (parameter d8).	0
C 06	**NOT USED**	0
C 07	**NETWORK NODE NO.:** the value indicates the address to be associated with the drive connected in the network (01 – 99): (01 = default value).	0
C 08	**NOT USED**	0
C 09	**OPERATING MODE SEL.:** selection of the Operating mode (analogic input or positioning). 00 = analogic input, torque or speed setpoint acquired by the REF and REF\ inputs. (00 = default value). 01 = Impulse positioning input, if available as option. 02 = Electric axis option, if available as option. 03 = MODBUS & S–NET network, if available as option. 04 = S–CAN, if available as option. 05 = CANopen, if available as option. 06 = Electronic CAM, if available as option. 07 = SAP (Stand Alone Positioner), if available as option.	0

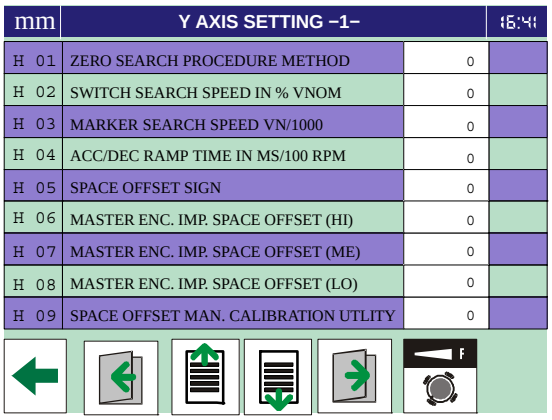


Nr.	Parameter / Description	Value
I 01	**SPACE RING PROP. GAIN.**	0
I 02	**SPACE RING INTEG. GAIN.**	0
I 03	**SPACE RING DERIV. GAIN.**	0
I 04	**INERTIA COMPENSATION VALUE.**	0
I 05	**POSITION ERR. TIMEOUT (sec/100).**	0
I 06	**EXT ENCODER MODE SELECTION.**	0
I 07	Spare	–

I 08	**NOT USED**	0
I 09	**NOT USED**	0

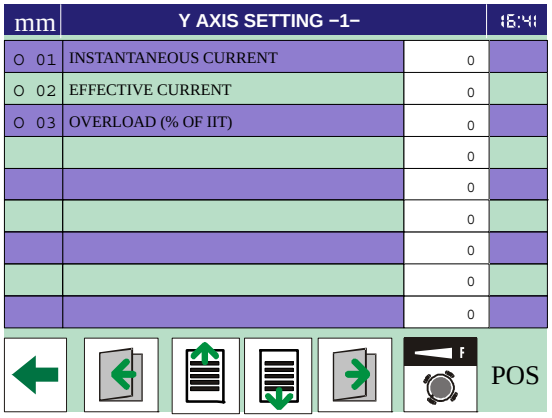


Nr.	Parameter / Description	Value
A 01	**MASTER ENCODER NOTCHES (HI).**	0
A 02	**MASTER ENCODER NOTCHES (LO).**	0
A 03	**REDUCTION RATIO NUMERATOR.**	0
A 04	**REDUCTION RATIO DENOMINATOR.**	0
A 05	**MAX. TRACKING ERROR (in degrees) HI.**	0
A 06	**MAX. TRACKING ERROR (in degrees) LO.**	0
A 07	**NOT USED**	0
A 08	**NOT USED**	0
A 09	**NOT USED**	0

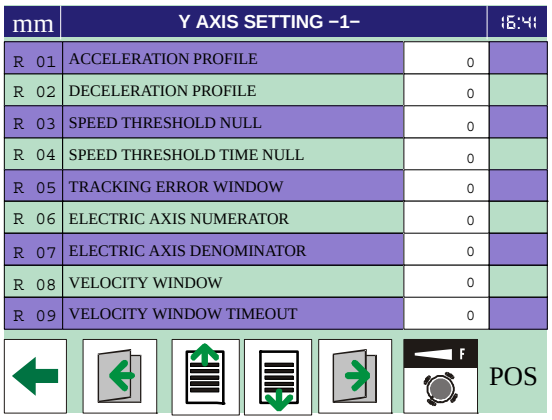


Nr.	Parameter / Description	Value
H 01	**ZERO SEARCH PROCEDURE METHOD.**	0
H 02	**SWITCH SEARCH SPEED IN % Vnom.**	0
H 03	**MARKER SEARCH SPEED Vn/1000.**	0
H 04	**ACC/DEC RAMP TIME IN ms/100 rpm.**	0
H 05	**SPACE OFFSET SIGN.**	0
H 06	**MASTER ENC. IMP. SPACE OFFSET (HI).**	0

H 07	**MASTER ENC. IMP. SPACE OFFSET (ME).**	0
H 08	**MASTER ENC. IMP. SPACE OFFSET (LO).**	0
H 09	**SPACE OFFSET MAN. CALIBRATION UTILITY.**	0



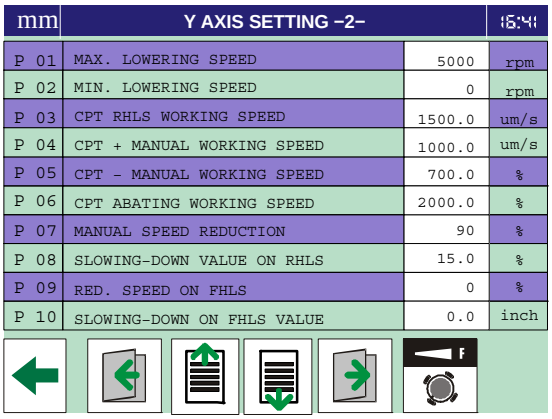
Nr.	Parameter / Description	Value
O 01	**INSTANTANEOUS CURRENT.**	0
O 02	**EFFECTIVE CURRENT.**	0
O 03	**OVERLOAD (% OF IIT).**	0
O 04	**NOT USED**	0
O 05	**NOT USED**	0
O 06	**NOT USED**	0
O 07	**NOT USED**	0
O 08	**NOT USED**	0
O 09	**NOT USED**	0



Nr.	Parameter / Description	Value
R 01	**ACCELERATION PROFILE.**	0
R 02	**DECELERATION PROFILE.**	0
R 03	**SPEED THRESHOLD NULL.**	0
R 04	**SPEED THRESHOLD TIME NULL.**	0
R 05	**TRACKING ERROR WINDOW.**	0

R 06	**ELECTRIC AXIS NUMERATOR.**	0
R 07	**ALECTRIC AXIS DENOMINATOR.**	0
R 08	**VELOCITY WINDOW.**	0
R 09	**VELOCITY WINDOW TIMEOUT.**	0

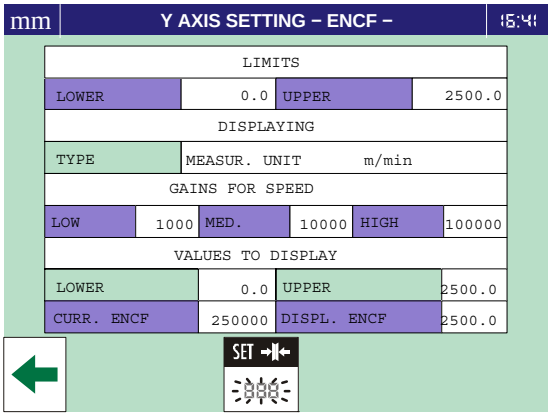
▶ Press the page scrolling box to display the next video page.



Nr.	Parameter / Description	Value
P 01	**MAX. LOWERING SPEED:** indicates the max. revolution number of the head lowering motor (shown in the data plate).	5000 rpm
P 02	**MIN. LOWERING SPEED:** indicates the min. revolution number of the head lowering (set to 0).	0 rpm
P 03	**CPT RHLS WORKING SPEED:** indicates the head speed in the automatic movements to RHLS.	1500.0 mm/ min
P 04	**CPT + MANUAL WORKING SPEED:** speed of head movement upwards when the head lifting button (Y+)	1000.0 mm/ min
P 05	**CPT – MANUAL WORKING SPEED:** speed of head movement downwards when the head lowering button (Y–)	700.0 mm/min
P 06	**CPT ABATING WORKING SPEED:** speed while reaching the RHLS in the head automatic movements.	2000.0 mm/ min
P 07	**MANUAL SPEED REDUCTION:** indicates the speed reduction percentage during the head lifting or lowering when the keys Y+ and Y–	90 %
P 08	**SLOWING–DOWN VALUE ON RHLS:** indicates the min. value where the slowing (deceleration ramp) intervenes till the RHLS point is reached.	15.0 mm
P 09	**RED. SPEED ON FHLS:** speed while reaching the FHLS in the head automatic movements.	0 %
P 10	**SLOWING–DOWN ON FHLS VALUE:** indicates the min. value where the slowing (deceleration ramp) intervenes till the FHLS point is reached.	0.0 mm

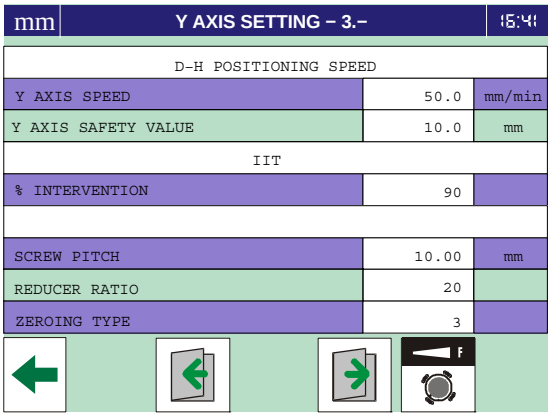
N.B. It is possible to access the Setup video pages of the “F” encoder for the cutting head lowering speed from the video pages of the Axis Y –1– and –2– Setting.

▶ Press the box of the Encoder “F” to access the relevant Setup.



11. **LIMITS:** indicates the upper and lower limits of the EncF encoder stroke.
12. **DISPLAYING:** sets the type of measurement unit to be displayed.
13. **GAINS FOR SPEED:** parameters used to adjust the sensitivity of the encoder potentiometer during the manual rotation: slow, medium or fast.
14. **VALUES TO DISPLAY:** indicates the actual displayed values by which it is possible to make corrections in the working page.

▶ Press the page scrolling box to display the next video page.



15. **Y AXIS SPEED:** automatic positioning speed according to the set cut geometry and dimensions.
16. **Y AXIS SAFETY VALUE:** indicates the value where, during the automatic positioning movement, the control stops the head stroke.
17. **INTERVENTION %:** read–only value.

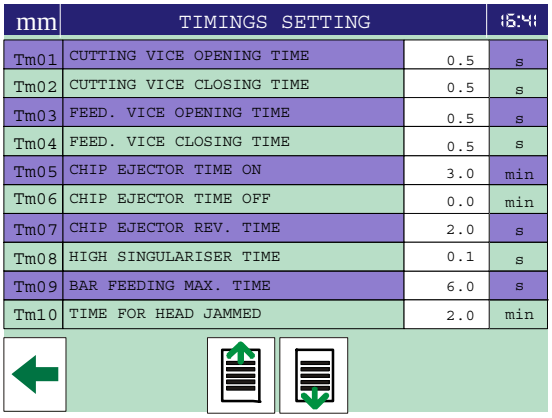
▶ Press “EXIT” to return to previous menu.

S 06 – Blade tension setting

This function is not active on this machine model.

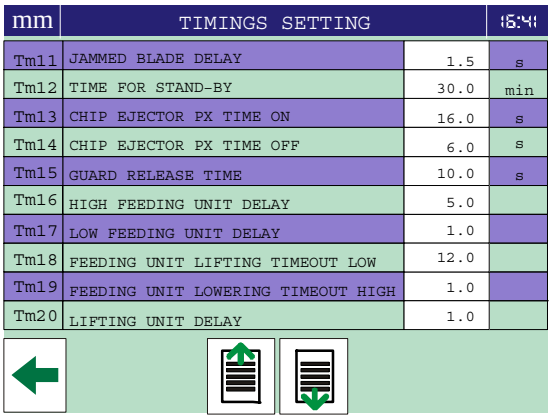
S 07 – Timings

▶ Press the box of the parameter S 07 to access the SET UP “Timings”; to scroll the list of all parameters, press the scrolling boxes with the vertical up and down arrows.



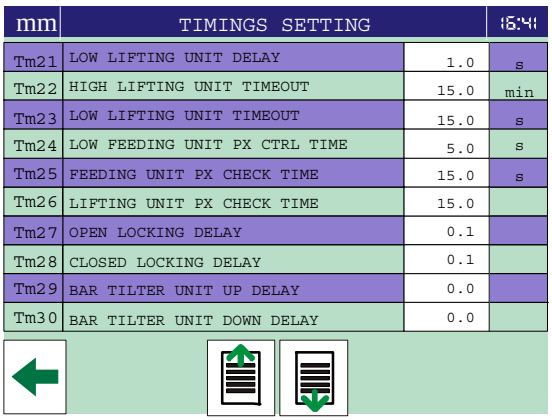
mm	TIMINGS SETTING		16:41
Tm01	CUTTING VICE OPENING TIME	0.5	s
Tm02	CUTTING VICE CLOSING TIME	0.5	s
Tm03	FEED. VICE OPENING TIME	0.5	s
Tm04	FEED. VICE CLOSING TIME	0.5	s
Tm05	CHIP EJECTOR TIME ON	3.0	min
Tm06	CHIP EJECTOR TIME OFF	0.0	min
Tm07	CHIP EJECTOR REV. TIME	2.0	s
Tm08	HIGH SINGULARISER TIME	0.1	s
Tm09	BAR FEEDING MAX. TIME	6.0	s
Tm10	TIME FOR HEAD JAMMED	2.0	min

▶ Press the page scrolling box to display the next video page.



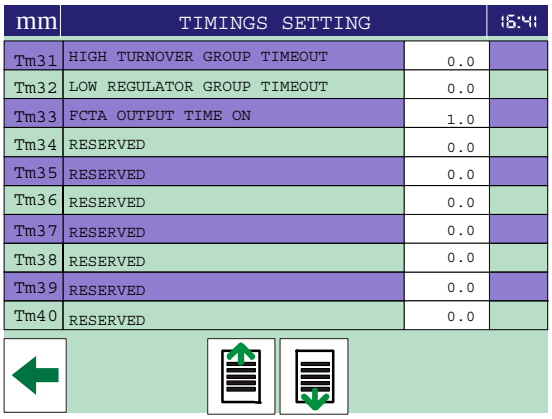
mm	TIMINGS SETTING		16:41
Tm11	JAMMED BLADE DELAY	1.5	s
Tm12	TIME FOR STAND-BY	30.0	min
Tm13	CHIP EJECTOR PX TIME ON	16.0	s
Tm14	CHIP EJECTOR PX TIME OFF	6.0	s
Tm15	GUARD RELEASE TIME	10.0	s
Tm16	HIGH FEEDING UNIT DELAY	5.0	
Tm17	LOW FEEDING UNIT DELAY	1.0	
Tm18	FEEDING UNIT LIFTING TIMEOUT LOW	12.0	
Tm19	FEEDING UNIT LOWERING TIMEOUT HIGH	1.0	
Tm20	LIFTING UNIT DELAY	1.0	

▶ Press the page scrolling box to display the next video page.



mm	TIMINGS SETTING		16:41
Tm21	LOW LIFTING UNIT DELAY	1.0	s
Tm22	HIGH LIFTING UNIT TIMEOUT	15.0	min
Tm23	LOW LIFTING UNIT TIMEOUT	15.0	s
Tm24	LOW FEEDING UNIT PX CTRL TIME	5.0	s
Tm25	FEEDING UNIT PX CHECK TIME	15.0	s
Tm26	LIFTING UNIT PX CHECK TIME	15.0	
Tm27	OPEN LOCKING DELAY	0.1	
Tm28	CLOSED LOCKING DELAY	0.1	
Tm29	BAR TILTER UNIT UP DELAY	0.0	
Tm30	BAR TILTER UNIT DOWN DELAY	0.0	

▶ Press the page scrolling box to display the next video page.

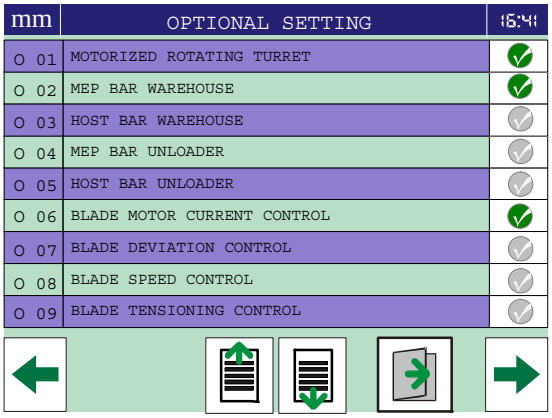


N.B. The timing values can change remarkably depending on the machine working setting. It is recommended to contact the Technical service before any change.

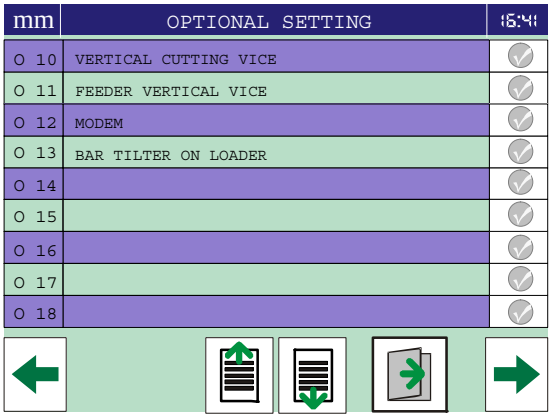
▶ Press “EXIT” to return to PREVIOUS MENU.

S 08 – Optionals

▶ Press the box of the parameter S 08 to access the SET UP “Options”; to scroll the list of all parameters, press the scrolling boxes with the vertical up and down arrows.

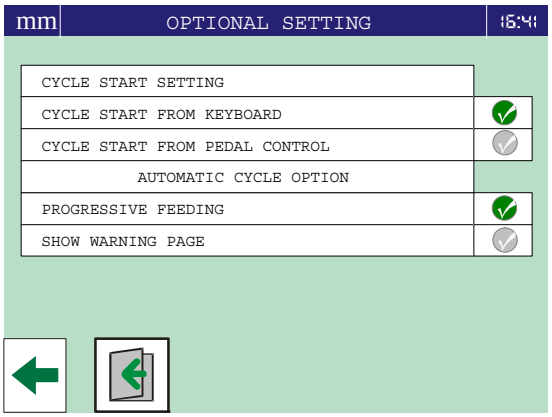


▶ Press the page scrolling box to display the next video page.



▶ Configure the sawing machine correctly, activating or deactivating its options.

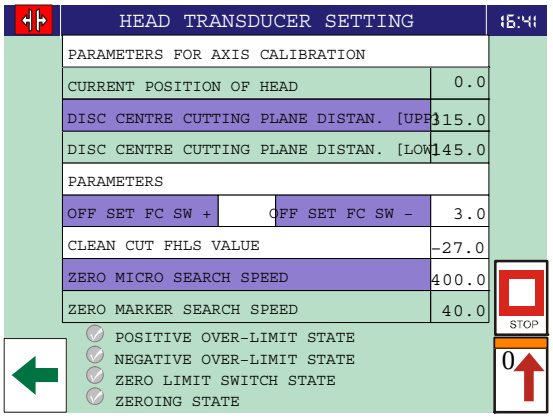
▶ Press the page scrolling box to display the next video page.



▶ Press “EXIT” to return to PREVIOUS MENU.

S 09 – Head parameters

▶ Press the box of the parameter S 09 to access the “Head parameters”; to scroll the list of all parameters, press the scrolling boxes with the vertical up and down arrows.

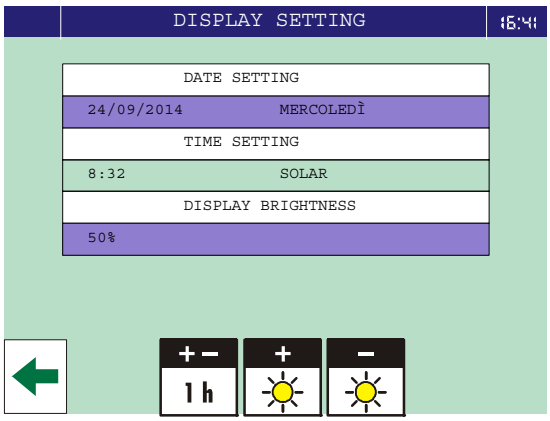


18. **CURRENT POSITION OF HEAD:** indicates the current position of the head in mm.
19. **DISC CENTRE CUTTING PLANE DISTANCE [UPPER]:** indicates the distance from the cutting plane at the centre of the disc when the head is totally up, expressed in mm.
20. **DISC CENTRE CUTTING PLANE DISTANCE [LOWER]:** indicates the distance from the cutting plane at the centre of the disc when the head is totally down, expressed in mm.
21. **OS LS SW +:** value expressed in mm assigned for the upper measurement tolerance of the transducer.
22. **OS LS SW –:** value expressed in mm assigned for the lower measurement tolerance of the transducer.
23. **CLEAN CUT FHLS VALUE:** Used to prevent the disc from breaking during cycles with clean cut function, locking and making the Forward Head Limit Switch (FHLS) point non–modifiable.
24. **ZERO MICRO SEARCH SPEED:** indicates the speed in mm/min of upwards head movement to activate the zero microswitch.
25. ZERO MARKER SEARCH SPEED: indicates the speed in mm/min of downwards head movement to deactivate the zero microswitch.

▶ Press “EXIT” to return to PREVIOUS MENU.

S 10 − Date and time

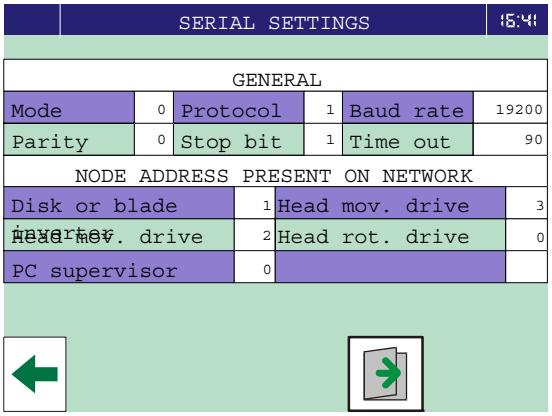
▶ Press the box of the parameter S 10 to access the Display Setting;



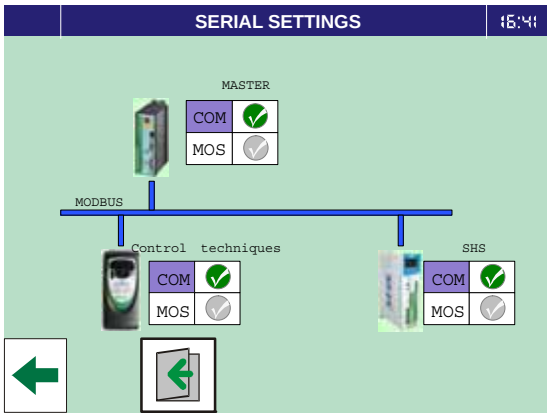
▶ Press “EXIT” to return to PREVIOUS MENU.

S 11 − Communications − serial

▶ Press the box of the parameter S 11 to access the Communication Setting – Serial;



▶ Press the page scrolling box to display the next video page.

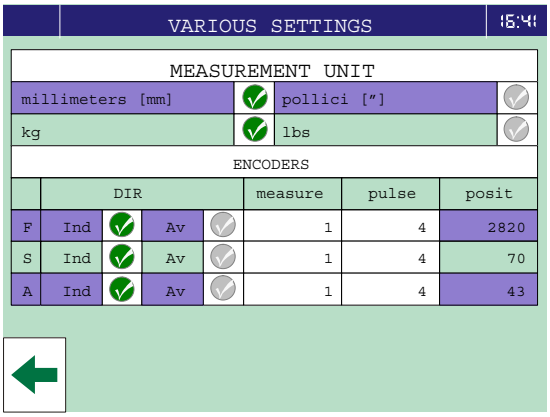


▶ Press “EXIT” to return to PREVIOUS MENU.

N.B. The access to the menu “Serial communications” must be made with the aid of the technical assistance.

S 12 – Various

▶ Press the box of the parameter S 12 to access the Setting of various parameters;



▶ In this video page it is advisable to change only the measurement unit from mm to inch and vice versa.

N.B. The parameters displayed in the video page are very important for the machine operation. Please contact the Technical service before any change.

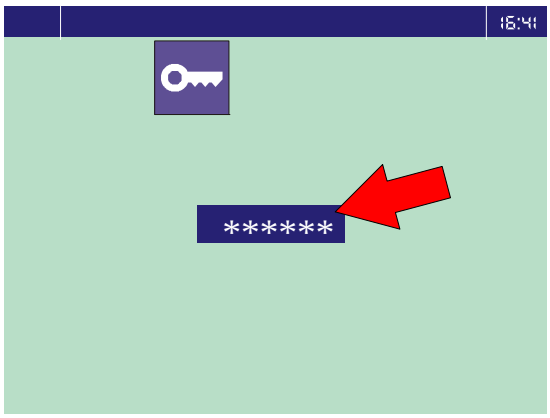
S 13 – Vice transducer calibration

This function is not active on this machine model.

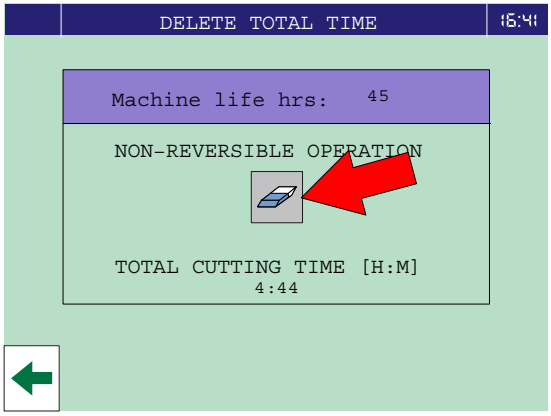
S 14 – Zeroes total cutting time

▶ Press the box of the parameter S 14 to access the Setup of the Total cutting time zeroing.

▶ Press the indicated box and on the keypad enter the password: 987655 (digits are shown as asterisks); press “ENTER”.



▶ Press the indicated box to zero the Total cutting time.



Attention The zeroing of the Total cutting time is not reversible. It is not instead possible to zero the machine life hours.

S 15 – Displays HMI pages

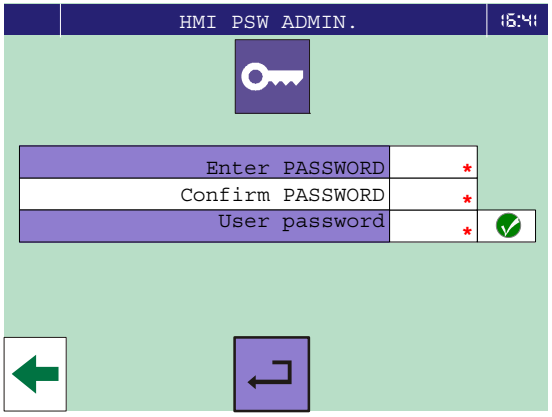
This function is not active on this machine model.

S 16 – Vertical vices (optional)

This function is not active on this machine model.

S 17 – Password

▶ Press the box of the parameter S 17 to access the Password Setting.

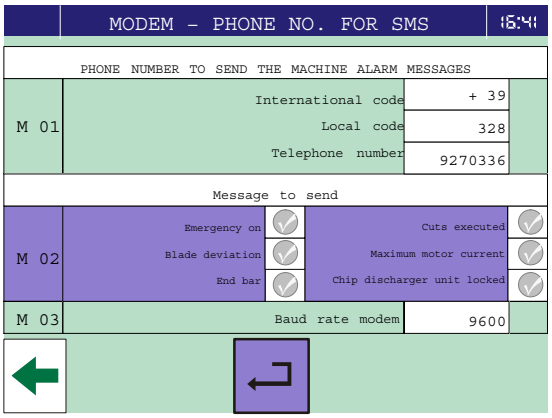


▶ In this video page it is possible to change the user password to access the protected settings.

▶ Press EXIT to return to PREVIOUS MENU.

S 18 − GSM phone number

▶ Press the box of the parameter S 18 to access the GSM mobile Setting.



N.B. If the sawing machine is equipped with the ”Vertical vices” accessory it is necessary to configure its presence (by activating the control box, as described above in paragraph “S 08 − Options”) and operating modes.

▶ In this video page it is possible to change the phone number to which the machine messages are sent, as well as the list of messages that can be received from the sawing machine controller.

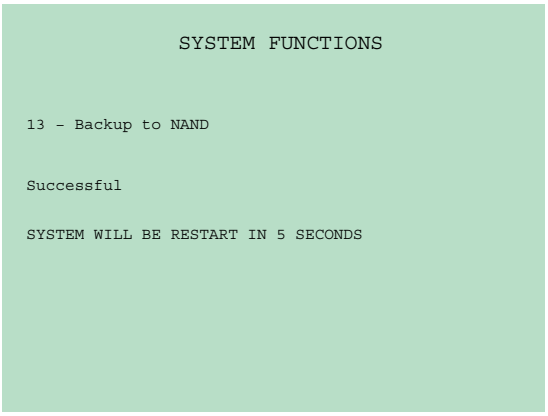
▶ Press EXIT to return to PREVIOUS MENU.

S 19 − Blade deviation

This function is not active on this machine model.

S 20 − Backup

▶ Press the box of the parameter S 20 to save the parameters and cutting programs of the machine (Backup).

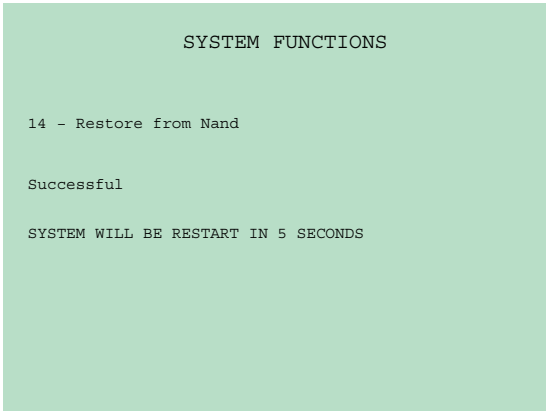


Attention The backup is immediate and deletes the previous saving. To get detailed information on the saving management, contact MEP Technical Service.

▶ Press EXIT to return to PREVIOUS MENU.

S 21 − Restore

▶ Press the box of the parameter S 21 to restore the parameters and cutting programs previously saved in the machine memory.

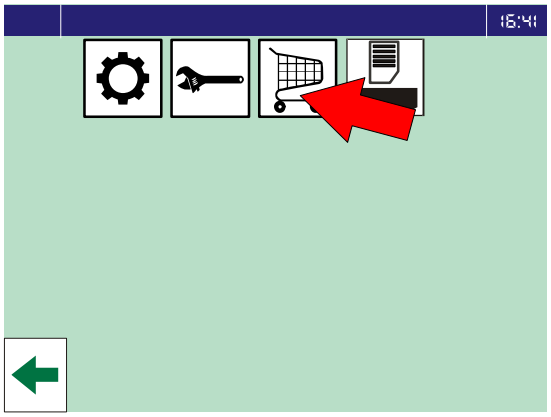


Attention The backup is immediate and deletes the previous saving. To get detailed information on the saving management, contact MEP Technical Service.

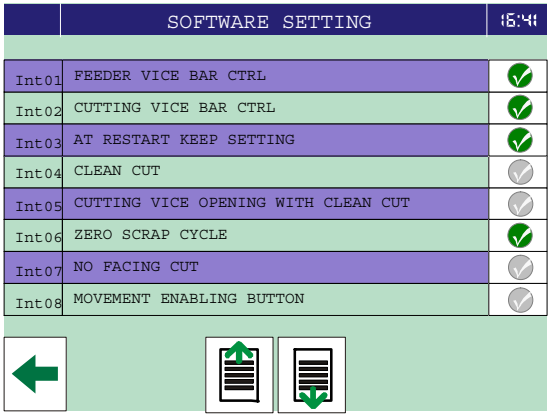
▶ Press EXIT to return to PREVIOUS MENU.

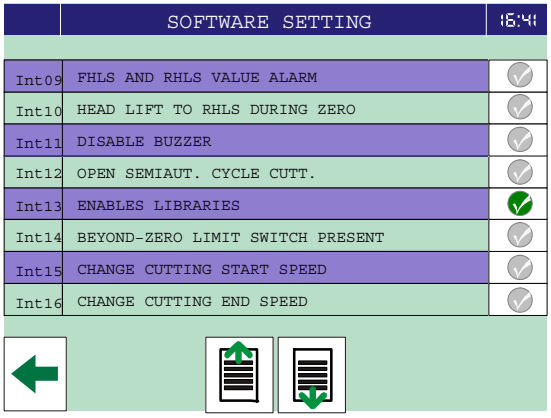
S 22 − Software settings

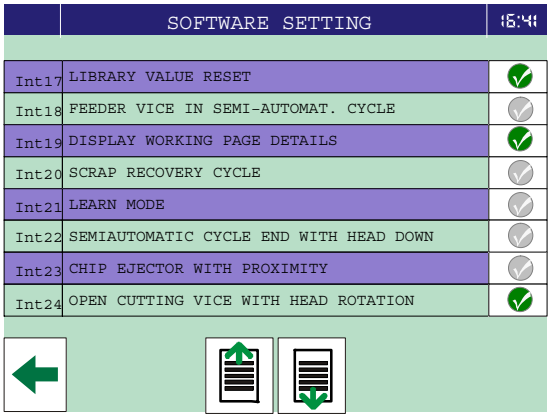
▶ Press the S 22 parameter box to access the Software Settings.
▶ From the Set−up initial page you can directly access the Software Settings by pressing the box indicated.

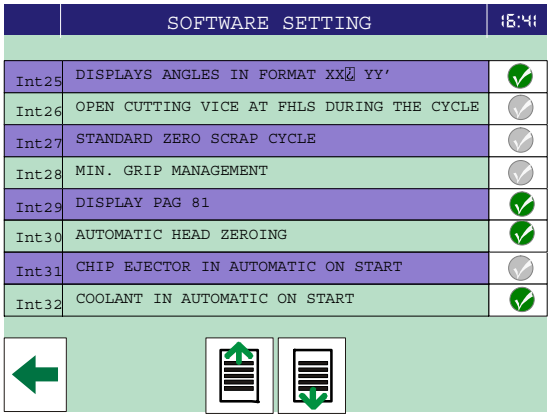


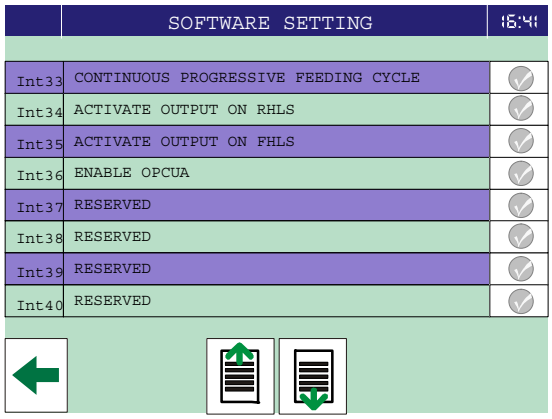
▶ Press the vertical arrows up and down to scroll through the list of all Software Settings.











Nr.	Parameter / Description	Value
Int. 01	**Feeder vice bar ctrl:** enables or disables the control of the bar presence inside the feeder vice.	ON
Int. 02	**Cutting vice bar ctrl:** enables or disables the control of the bar presence inside the cutting vice.	ON
Int. 03	**At restart keep setting:** enables or disable the keeping of the settings at the machine restart.	ON
Int. 04	**Clean cut:** enables or disable the ”Clean cut” function and is indicated by a closed padlock (as shown in the figure below) on the display. This function enables the blade to exit from the cut made without contact with the material.	OFF

N.B. Sequence of machine operations with set ”clean cut” function: the blade ends the cut and stops the rotation at FHLS (forward head limit switch) − the feeder moves the material away from the blade by a few mm − the blade returns upwards to RHLS (rear head limit switch) − the feeder moves the bar forwards for the next cut by adding the difference made for the ”clean cut” to the value set.

Warning The padlock displayed warns the operator that the clean cut cycle has been activated and therefore the FHLS (forward head limit switch) has been set again by the system and cannot be modified as long as this function is active.

Nr.	Parameter / Description	Value
Int. 05	**Cutting vice opening with clean cut**: enables or disables the cutting vice opening in the cycle with clean cut; it must be activated if the clean cut is activated.	OFF
Int. 06	**Zero scrap cycle:** Enables or disables the “Zero scrap cycle”.	OFF

Nr.	Parameter / Description	Value
Int. 07	**No facing cut:** Enables or disables the facing cut function from the working cycle, directly cutting the first length set.	OFF
Int. 08	**Movement enabling button:** Not available in this machine model	OFF

▶ In the first setup screen of the software settings, press the page scroll button to access the second screen.

Nr.	Parameter / Description	Value
Int. 09	**FHLS and RHLS value alarm:** enables or disables the publication of alarms concerning the two limit switch points.	OFF
Int. 10	**Head lift to RHLS during zero:** enables the head automatic positioning at FHLS while zeroing.	OFF
Int. 11	**Disable buzzer:** enables or disables the sawing machine buzzer.	OFF
Int. 12	**Open semiaut. cycle cutt.** vice: enables or disables the cutting vice opening at the cut end. The vice remains closed at cut end during the standard operation.	OFF
Int. 13	**Enables user libraries:** enables to access the user customized material libraries to optimize the cutting parameters according to the characteristics and geometry of the material being processed.	ON
Int. 14	**Beyond−zero limit switch present:** not present in this machine model.	OFF
Int. 15	**Change cutting start speed:** enables or disables the function to adjust the speed with which the blade touches the material being machined for the first time.	OFF
Int. 16	**Change cutting end speed:** enables or disables the function to adjust the speed with which the blade touches the material being machined for the last time.	OFF

N.B. The cutting start and end speed change function (“Override”, described in chapter 5 in the sawing machine operating cycles) can be set with a positive or negative value so as to improve the cut quality and tool life according to the characteristics of the material being machined.

▶ In the second setup screen of the software settings press the page scroll button to access the third screen.

Nr.	Parameter / Description	Value
Int. 17	**Library value reset:** enables to reset the material standard libraries eliminating any possible user customization.	ON
Int. 18	**Feeder vice in semi−automatic cycle:** enables to use the feeder vice in semiautomatic cycle as well.	OFF
Int. 19	**Display working page details:** this function enables to activate or deactivate the displaying of the reduced video pages.	ON
Int. 20	**Scrap recovery cycle:** Enables or disables the scrap recovery cycle.	OFF

N.B. The " **Scrap recovery cycle:** " is a function for reducing the end scrap of the bars being machined when they are faced. Close to the end of the bar being machined, the machine control checks the length still available and, if necessary, feeds only the length of the bar scrap holding the useful piece closed in the vice. It can be activated only if the optional "Bar detecting sensors" are installed.

Nr.	Parameter / Description	Value
Int. 21	**Learn mode:** allows programming of sawing using a wizard step-by-step.	OFF
Int. 22	**Semiautomatic cycle end with head down:** this function enables to let the head stay down at the end of the cut and after the blade rotation has stopped.	OFF
Int. 23	**Chip ejector with proximity:** function for detecting ejector locks while operating.	OFF
Int. 24	**Open cutting vice with head rotation:** function allowing the head to rotate even when the cutting vice is open	ON

▶ In the third setup screen of the software settings press the page scroll button to access the fourth screen.

Nr.	Parameter / Description	Value
Int. 25	**See Angles in XX ° YY 'format**: Enables angle view in sessagesimal format.	OFF
Int. 26	**Open cutting vice at FHLS during the cycle:** Enables or disables the opening of the cutting vice when the head is at the FHLS point.	OFF
Int. 27	**Standard zero scrap cycle:** Enables or disables the "Standard zero scrap cycle" function.	OFF

N.B. The "**Standard zero scrap cycle**" is a function with the same features as the "Zero scrap reduction cycle" that also allows reduced machining times as the cut starts when the cutting vice closes, without waiting for the feeder shuttle to be positioned at the value of the next cut.

Nr.	Parameter / Description	Value
Int. 28	**Min. grip management:** Enables or disables the function "Min. grip management".	OFF

N.B. The function "Min. grip management" allows the min. value for gripping the bar being machined by the feeder jaws to be set. It can be activated only if the optional "Bar detecting sensors" are installed. It is useful to reduce the scrap of

the bar being machined, which must be faced from both sides.
Further, as in the “Standard scrap reduction cycle”, it brings the cut forward without waiting for the feeder vice to be positioned.

Nr.	Parameter / Description	Value
Int. 29	**Display page 81:** displays the page of the sequences of the programs set.	ON
Int. 30	**Head zeroing in automatic mode:** Enables or disables automatic head zeroing.	ON
Int. 31	**Automatic chip ejector on start:** Enables or disables the automatic operation of the chip ejector.	OFF
Int. 32	**Automatic coolant on start:** Enables or disables automatic activation of the coolant at the start of the cycle.	OFF
Int. 33	**Continuous progressive feeding cycle:** function that extends the ”progressive feeding” mode to all the material being processed and to a possible bar warehouse connected to the machine	OFF
Int. 34	**Activate output on RHLS:** function depending on the presence of equipment outside the machine.	OFF
Int. 35	**Activate output on FHLS:** function depending on the presence of equipment outside the machine.	OFF
Int. 36	**ENABLE OPCUA:** enable or disable the OPCUA functionality.	OFF

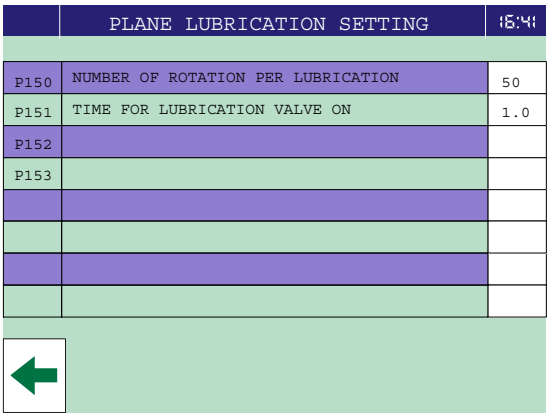
▶ Press EXIT to return to PREVIOUS MENU.

S 23 − Balancing cylinder pressure switch

This function is not active on this machine model.

S 24 − Rotation plane lubrication

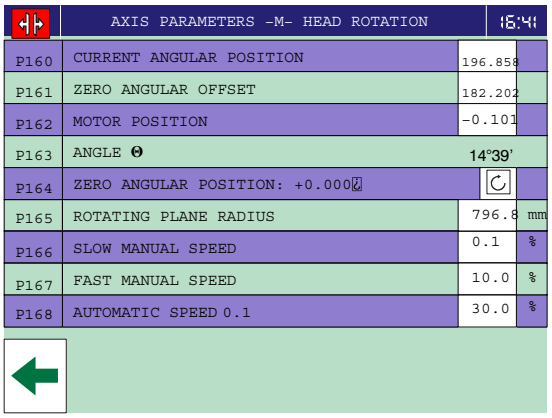
The number of rotations of the rotating platform between lubricating operations and the lubrication time can be defined in this page.



Nr.	Parameter / Description	Value
P 150	**Number of rotations for lubrication**	50
P 151	**Lubrication valve ON time**	1.0 s

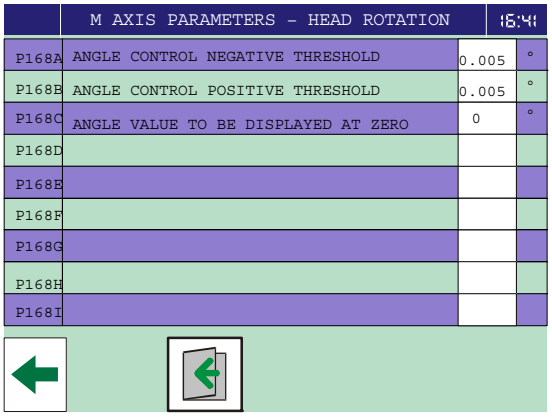
S 25 – M encoder setting

In this page you can set the parameters for configuring the cutting head.



Nr.	Parameter / Description	Value
P 160	CURRENT ANGULAR POSITION	196.858 °
P 161	ZERO ANGULAR OFFSET	182.202 °
P 162	MOTOR POSITION	–0.101
P 163	ANGLE Θ	14° 39’
P 164	ZERO ANGULAR POSITION: +0.000°	Reload
P 165	ROTATING PLANE RADIUS	796.8 mm
P 166	SLOW MANUAL SPEED	0.1 %
P 167	FAST MANUAL SPEED	10.0 %
P 168	AUTOMATIC SPEED	30.0 %

▶ Press the page scrolling box to display the next video page.

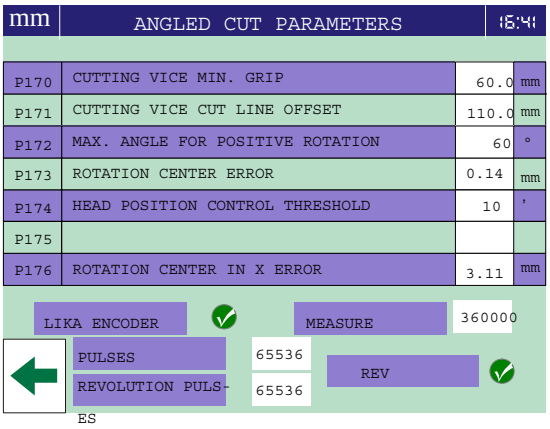


Nr.	Parameter / Description	Value
P 168A	ANGLE CONTROL NEGATIVE THRESHOLD	0.005 °
P 168B	ANGLE CONTROL POSITIVE THRESHOLD	0.005 °
P 168C	ANGLE VALUE TO BE DISPLAYED AT ZERO	0°

▶ Press EXIT to return to PREVIOUS MENU.

S 26 – Angled cut parameters

In this page you can set the parameters for the angled cut.

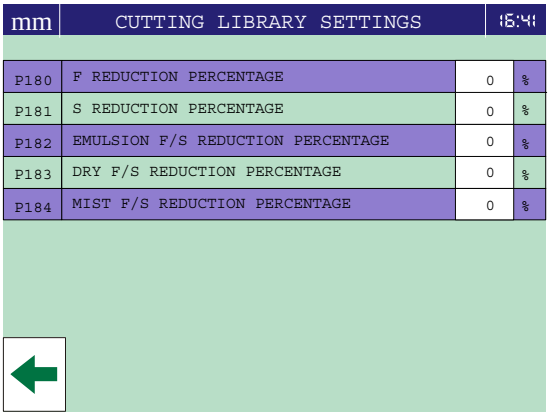


Nr.	Parameter / Description	Value
P 170	**Cutting vice min. grip:** value expressed in mm of the minimum grip of the cutting vice	60.0 mm
P 171	**Cutting vie–cutting line offset:** distance in mm between the blade and the cutting vice	110.0 mm
P 172	**Max. angle for positive rotation**	60°
P 173	**Rotation center error**	0.14 mm
P 174	**Head position control threshold**	10 ’
P 175	Spare	–
P 176	**Rotation center in X error**	3.11 mm

▶ Press EXIT to return to PREVIOUS MENU.

S 27 – Cutting libraries

In this page you can set the parameters for the cutting libraries.

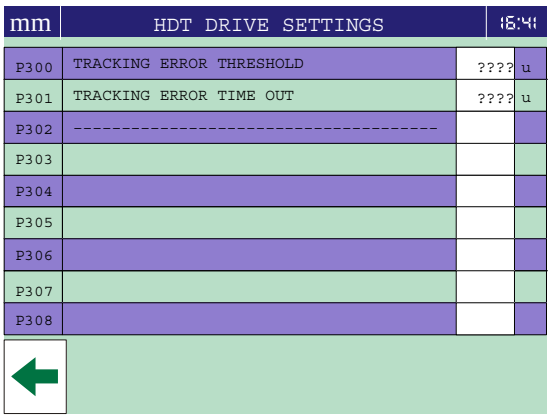


Nr.	Parameter / Description	Value
P 180	F REDUCTION PERCENTAGE	0 %
P 181	S REDUCTION PERCENTAGES	0 %
P 182	EMULSION F/S REDUCTION PERCENTAGE	0 %
P 183	DRY F/S REDUCTION PERCENTAGE	0 %
P 184	MIST F/S REDUCTION PERCENTAGE	0 %

▶ Press EXIT to return to PREVIOUS MENU.

S 28 – HDT drive

In this page you can set the parameters for the HDT drive.



Nr.	Parameter / Description	Value
P 180	TRACKING ERROR THRESHOLD	u
P 181	TRACKING ERROR TIME OUT	u

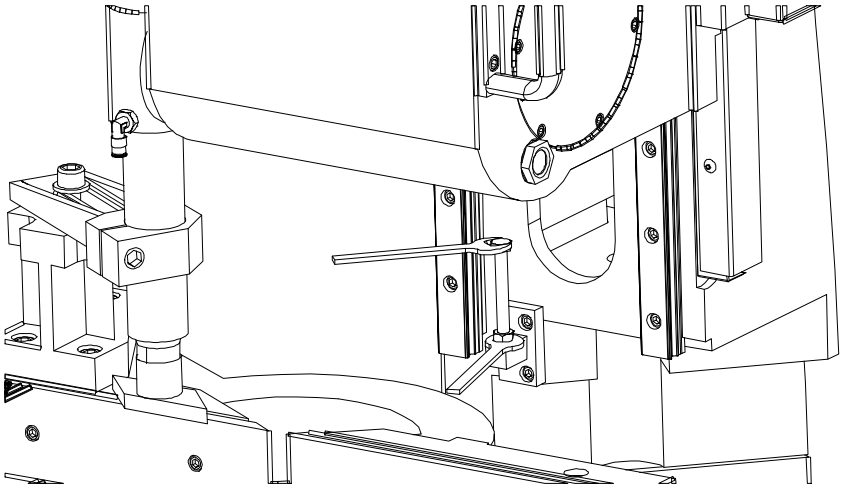
▶ Press EXIT to return to PREVIOUS MENU.

Mechanical systems

Cutting head stroke

The head cutting stroke is defined by the cut start position (Head Upstroke Limit) and cut end position (Head Downstroke Limit) which are electronically programmed by the control console. The cutting head is also equipped with a mechanical stop which defines the bottom limit of its stroke:

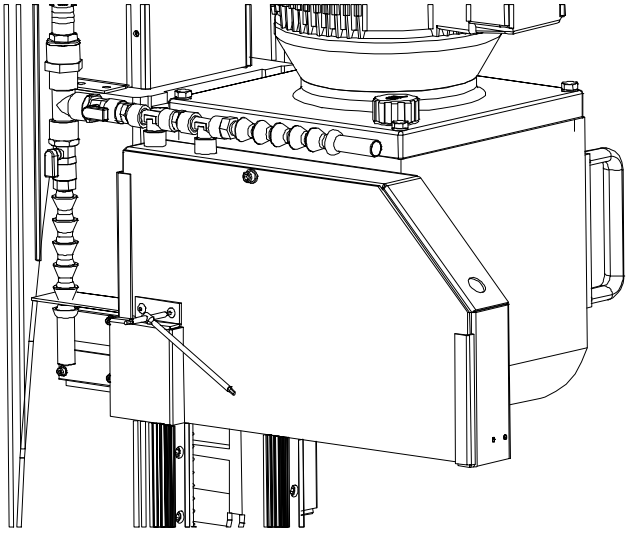
▶ to adjust this stop, use two hex wrenches, one to lock the nut and the other to tighten or slacken the stop screw.



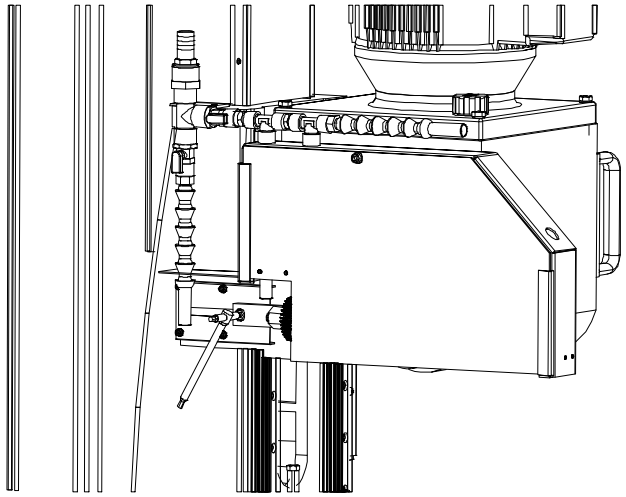
Adjusting the position of the blade−cleaning brush

When the cutter disk is not clean enough, check the blade−cleaning brush for wear and if it's working correctly. The figure below illustrates how the brush should be adjusted if need be.

▶ Loosen the screw highlighted in the drawing, and remove the protection;



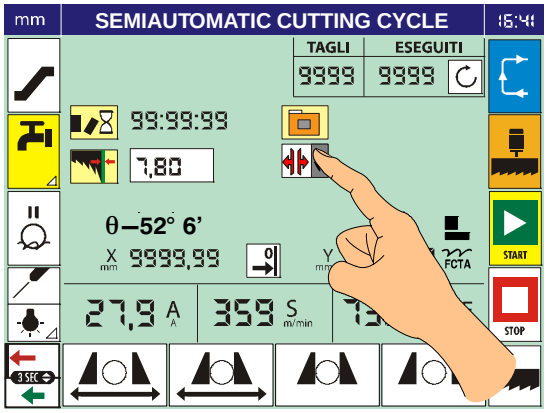
▶ adjust the position of the blade in relation to the teeth, as shown;



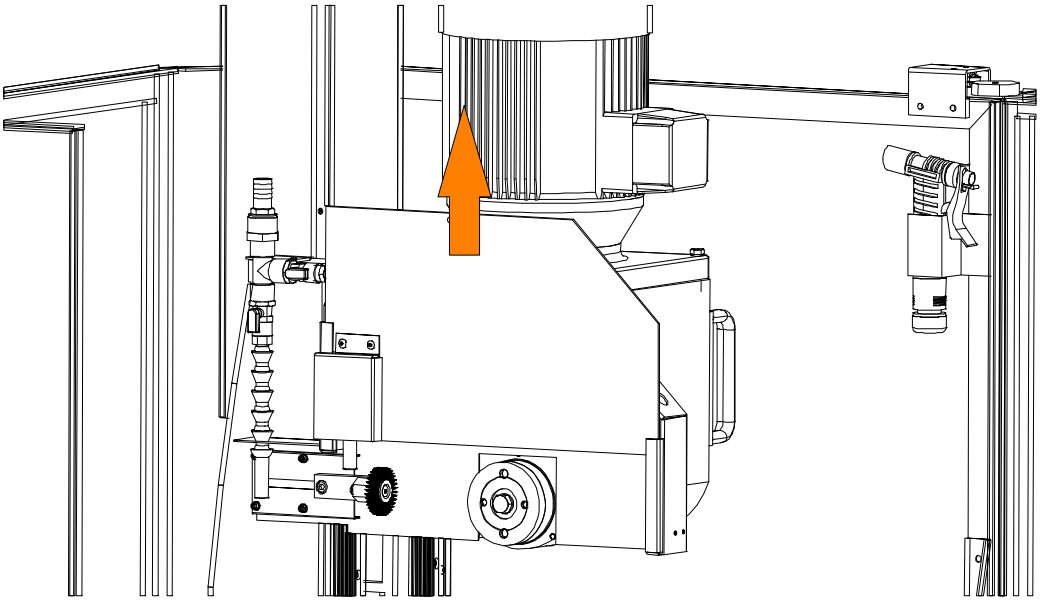
Replacing tool

As we have already said, this machine uses different kinds of blades according to the material to be cut. The procedures described below, however, also apply in the event of wear or breakage of the blade. To replace the blade, proceed as follows:

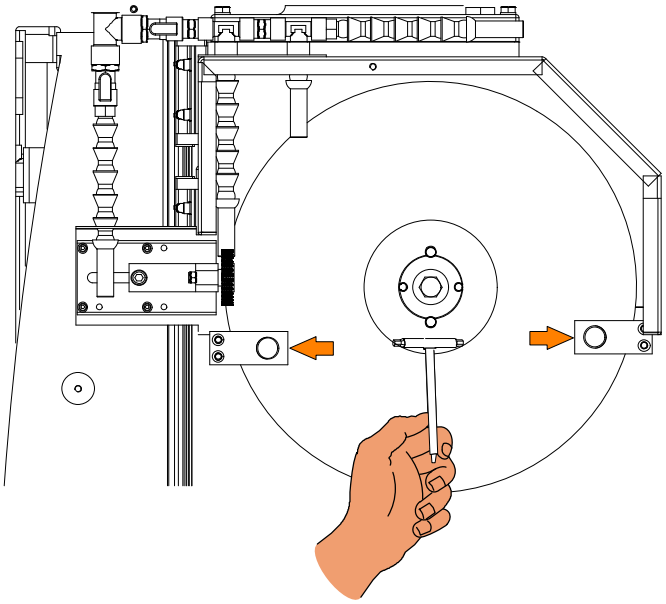
- switch off the machine and position the head so that the disc is easily accessible;
- press the box shown in the figure to release the front guard;



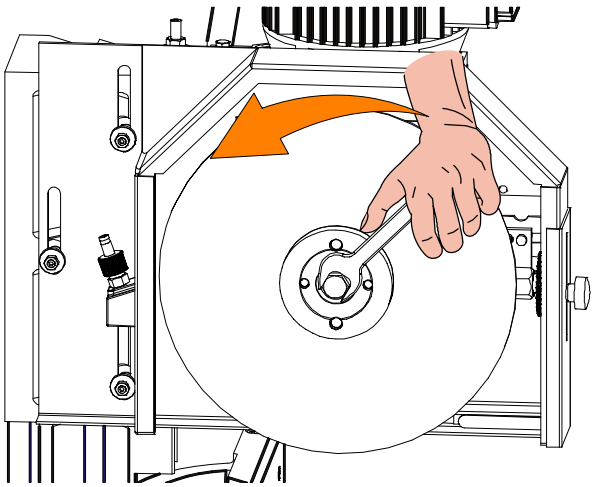
- the machine is equipped with a vertical pneumatic vice that can be moved away from the guard by unfastening the screw fixing it to the support;
- remove the screw with knob to free the plexiglass guard cover and lift it off in a vertical direction;



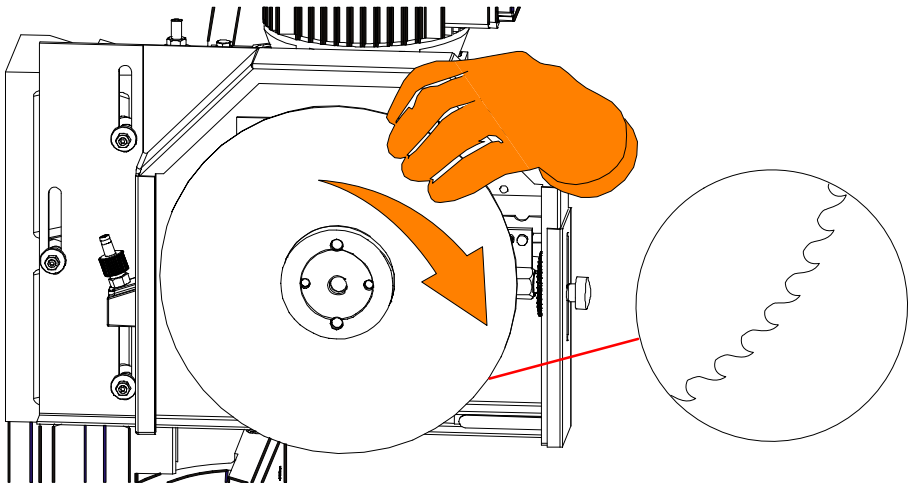
▶ move the blade guide inserts away from the disk so that you can remove it, loosening the dowels shown in the figure;



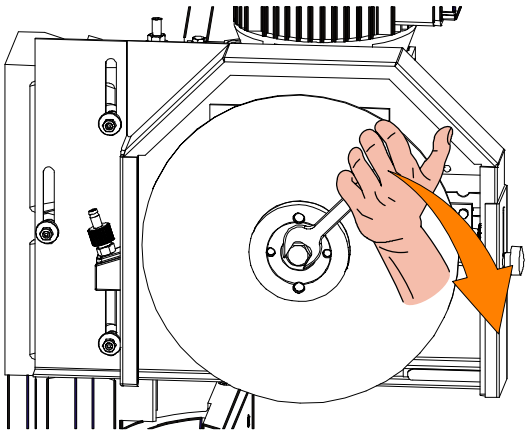
▶ use a 19 mm spanner to slacken the hexagonal screw that locks the disc, turning the spanner in the direction of rotation of the disc; remove the old disc and insert the new one, making sure that the centering pins fit correctly into the holes in the disc.



Attention Make sure that the teeth on the cutter blade are facing in the direction of rotation. When changing the tool, turn the cutter blade until drive is engaged to eliminate any backlash in the drive pins.



▶ Tighten the lock nut and refit all guards and any other components you may have removed to facilitate installation.

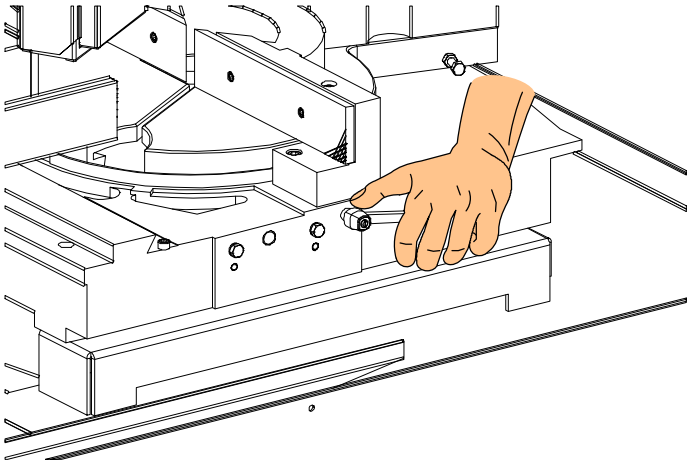


N.B. Adjust the position of the blade−cleaning brush, or replace it when worn.

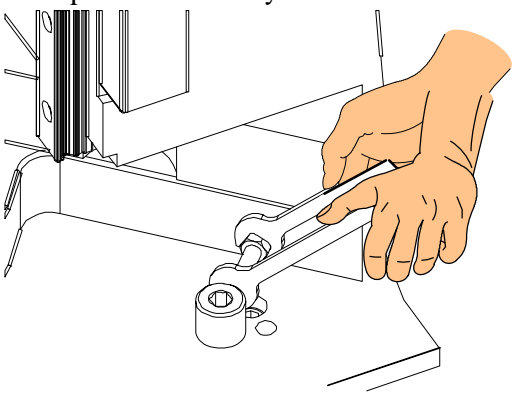
Adjusting the turntable stops

If it found that a cut at 0°, 45° or 60° does not correspond exactly to the angle shown on the turntable, the right and left stops will need adjusting. The procedures for correcting and adjusting the disc stops at 0°, 45° and 60° right and left are described below. Sequence of operations for 0° stop:

- release the turntable by means of the release lever on the right hand side of the table;

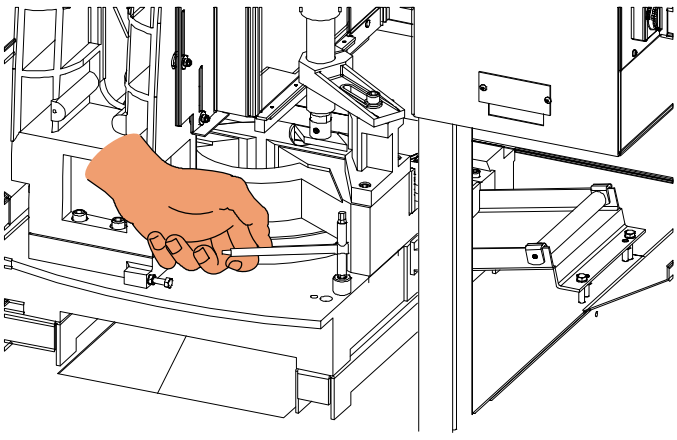


- adjust the nut using two 10 mm spanners until the stop corresponds to the 0° notch; loosen the lock nut and adjust; tighten the lock nut while holding the bolt steady; check and repeat if necessary.



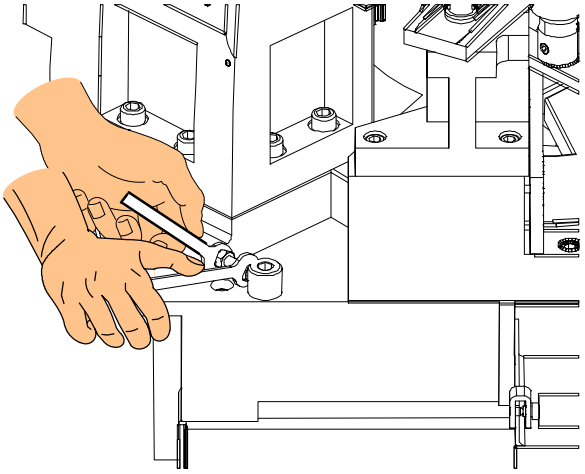
Sequence of operations for 45° right stop:

- release the turntable by means of the release lever on the right hand side of the table;
- remove the screw that functions as the 0° stop so as to reach the 45° right position;



▶ adjust the nut using two 10 mm spanners until the stop corresponds to the 45° notch; loosen the lock nut and adjust;

To adjust the 45° and 60° left stops, proceed as for the other positions, but remove the 45° stop screw (shown by the arrow in the photo) to reach the 60° left stop, in the same way as for the 45° right stop described above.

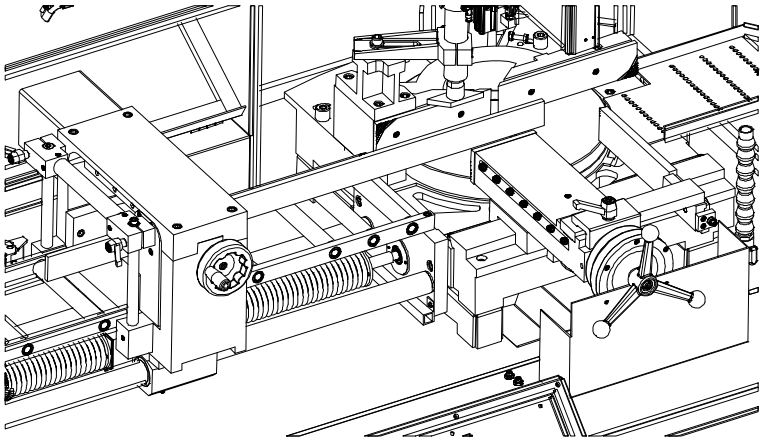


Feeder

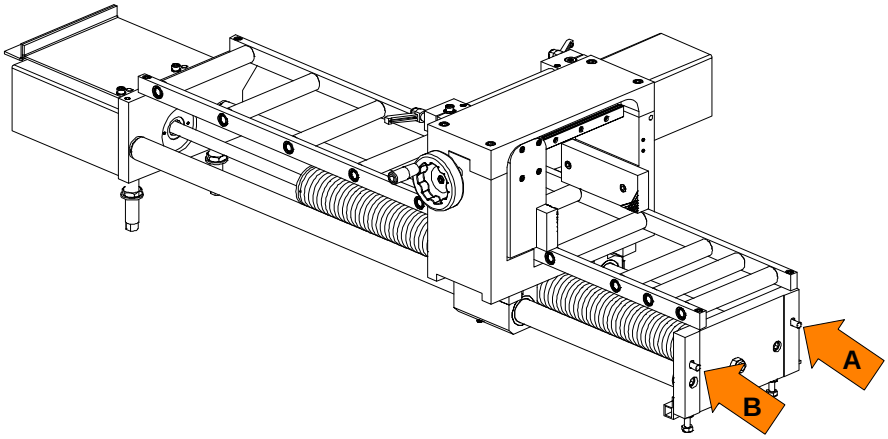
Should the feeder at a later stage in time become misaligned with the cutting table, then use the levelling devices located on the side of the machine and the loading table to restore. Misalignment can be measured using a workshop standard ruler or a straight bar section.

▶ Lower the rear guard rail.

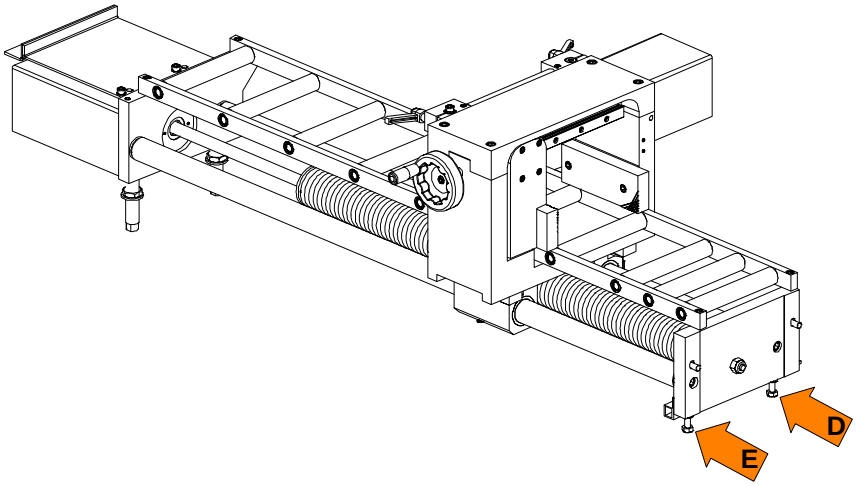
▶ Place the ruler on top of the feeder to check that the feeder is parallel to the cutting table.



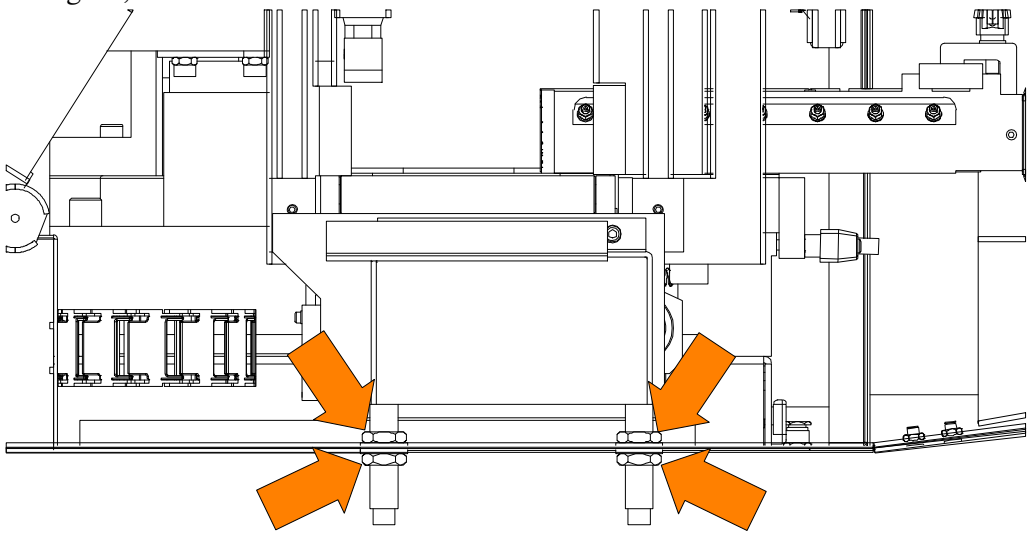
▶ If the feed table is not parallel to the cutting table, move the feed carriage away from the platform, then loosen the fixing TCEI screws on the feeder (A–B).



▶ Adjust the foot height (D−E), according to the measurement read on the ruler on the cutting table so as to obtain a difference in level of 0.1 mm between the two tables.

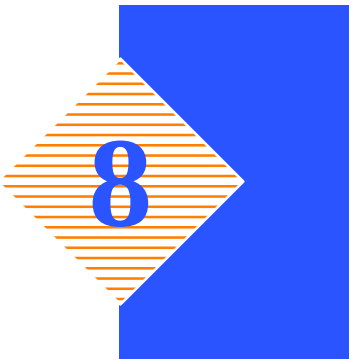


▶ Once the height has been set with a standard ruler near the fixed platform, line up the rest of the feeder using the support pins to adjust as shown in the figure;



▶ open the left door panel on the base to access the adjustment nuts and the 4 support pins;

Maintenance and choice of consumables



TIGER 372 CNC LR RC 4.0 is built to be sturdy and long−lasting It has no need of any special maintenance, though, like all other tools, it needs adjusting from time to time, especially if not regularly looked over or used without due care.

This chapter, therefore, is intended as a guide for those who want to look after the machine and get the most out of it for as long as possible.

The role of the operator

The person operating and maintaining the machine must follow these instructions for his own safety, as well as for the safety of other personnel, and in the interests of machine productivity:

- check that his own work and that of the other operators of the machine always complies with the relevant safety standards. Therefore, check that the safety devices are in position and work perfectly and that personal safety requirements are complied with.
- ensure that the working cycle is efficient and guarantees maximum productivity, checking:
  - the functions of the main components of the machine;
  - the sharpness of the blade and coolant flow;
  - the optimum working parameters for the type of material.
- check that the quality of the cut is that required and that the final product does not have any machining defects.

Maintenance requirements

- All routine and extraordinary maintenance operations must be carried out with the power disconnection device open and the power plug disconnected from the power socket.
- To guarantee perfect operation, all spare parts must be MEP S.p.A originals.
- On completion of maintenance works, ensure that the replaced parts or any tools used have been removed from the machine before starting it up.
- Any behaviour not in accordance with the instructions for using the machine may create risks for the operator.
- Therefore, read and follow all the instructions for use and maintenance of the machine and those on the product itself.

General maintenance

Daily

The daily maintenance operations to carry out on the machine are as follows:

▶ remove all swarf from the machine (using compressed air or preferably thread−free cloth;

▶ top up the lubricant/coolant fluid level;



▶ check the wear of the blade and change if necessary;

Weekly

The weekly maintenance operations are as follows:

▶ remove all swarf from the machine;

▶ empty the chip drawer on the side of the pedestal;

▶ clean the vice and lubricate all the joints and sliding surfaces using a good quality oil;

▶ check the oil level in the drive box: if necessary top up through the filler cap;

▶ Check the cutting clamp slide, if it is not precise or there is sideways movement, regulate as indicated in chapter 7.

Monthly

This section lists the operations to be carried out for the monthly maintenance of the machine.

- clean thoroughly the water tank and the electric pump filter;

Maintenance of working parts

During maintenance work on the **TIGER 372 CNC LR RC 4.0**, special attention should be paid to operating units such as the transmission box.

Transmission box

After 1000 work hours, empty the drive box using the following procedure:

- remove the outlet plug, collect oil in a container for used oils; to speed up the operation remove the inlet plug positioned on the top of the head;
- once the operation is complete, replace the outlet plug and fill with CASTROL OPTIGEAR SYNTHETIC PD 150 ES or equivalent, up to the point indicated by the level plug positioned on the right−hand side of the head;
- after every 2000 working hours repeat the oil change operation.

Consumable materials

It is essential to use specific oils for the pneumatic and lubricant/coolant circuits. The oils suitable for each of these circuits are listed below.

Oils for transmission box

The machine is supplied with CASTROL OPTIGEAR SYNTHETIC PD 150 ES.

Transmission box:
– capacity lt. 4,8

Oils for lubrication/coolant liquid

The oil used for the lubrication/coolant fluid in the machine is BLASER VASCO 6000.

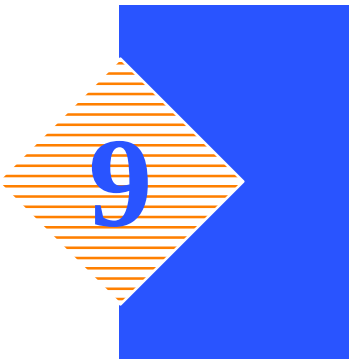
Coolant tank:
– tank capacity 85 litres
– oil concentration 5–6%

Oils for spray mist system (optional)

The used oil type for the optional spray mist system is BLASER VASCO 6000.

– tank capacity Lt. 1

Cutting speed and choice of tools



The cutting speed depends on the disk rotation speed and supply speed. This chapter illustrates the speed tolerance of the basic version of the machine.

Cutting speed

Basic version

The inverter is an electronic instrument fitted to the **TIGER 372 CNC LR RC 4.0** for varying spindle motor rpm. This device facilitates the operator's task to execute special cuts, by adapting the rotation speed of the tool to the specific material. Blade use can thus be optimised, inasmuch as a blade not especially suitable for cutting a certain material can be adjusted all the same to the task, and premature wear is avoided.
The basic version, with 4−pole motor and inverter, has this range of cutting speeds:

- 15÷150 rpm.

The speeds can be set on the control panel via a potentiometer.

Inverter technical specifications	
Protection rating	IP 31
Vibration and shock resistance (EN50178)	0.6 gn from 10 to 50 Hz 2 gn from 50 to 150 Hz
Max. relative humidity	93% without condensation or drop−forming
Acceptable Temperature Range (EN 50178)	For warehouse storing: from −25° C to +65° C For operating purposes: from −10° C to +40° C
Max. altitude	1000mt. with no derating
Supply	− single phase: 200V − 15% to 240V + 10%
	− three phase: 200V − 15% to 230V + 10% 380V − 15% to 460V + 10%
Frequency	50/60 Hz ± 5%
Output voltage	Maximum voltage equal to the supply voltage
Output frequency range	0,5 a 320 Hz
Max. transients	150% of electronic speed control rated current for 60 secs.
Frequency resolution	− Display: 0.1 Hz − Analog inputs: 0.1 Hz per 100 Hz max.
Switching frequency	Adjustable from 2.2 to 12 Hz max.

Inverter technical specifications	
Electronic speed control protection and safety devices	Galvanic insulation between power and control panel
	Short circuit protection: − of available internal supplies; −between U−V−W output phases between phase and earth for calibres from 5.5 to 15Kw
Motor protections	Thermal protection against overheating and overcurrents
Motor protections	Protection integrated in the electronic speed control with 1^2t calculation
	Protection integrated in the electronic speed control with 1^2t calculation
Motor protections	Protection integrated in the electronic speed control with 1^2t calculation

Choice of blade

The different types of blade that can be used for the **TIGER 372 CNC LR RC 4.0** must in any case respect the following general characteristics:

- “Fine tooth pitch”: for thin wall materials such as sheet steel, tubes and profiles;
- “Coarse tooth pitch”: for large cross−sections; for soft materials (aluminium alloys and soft alloys in general).

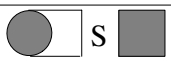
Tooth pitch

The choice of the most suitable tooth pitch depends on various factors:

- the size of the section;
- the hardness of the material;
- wall thickness.

Solid sections call for discs with a coarse tooth pitch, while small cross−sections require blades with finer teeth. This is because when cutting walls of small cross−section (1÷7 mm) profiles, it is important that the number of teeth actually making the cut should not be too small, otherwise the effect obtained will be one of tearing rather than of swarf removal, leading to a large increase in shearing stress. On the other hand, when cutting thick materials or solid sections using an excessively fine tooth pitch, the swarf collects as a spiral inside the gullet, and since fine tooth pitches have small gullets, the accumulated swarf will exceed the gullet capacity and press against the walls of the workpieces, resulting in poor cutting (same situation with soft materials), greater shearing stress and hence breakage of the blade.

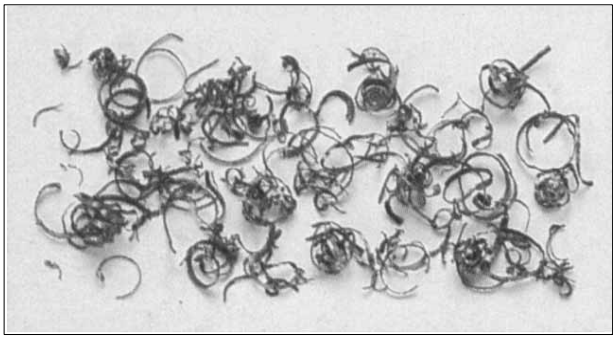
Choice of tooth pitch T as a function of cross−section to be cut for light alloy solid pieces and profiles

			
S in mm	Pitch T	S and sp in mm	Pitch T
10	4−5	10 sp = 0,5	3
30	6−8	30 sp = 1,5	4 − 5
50	8−10	50 sp = 2,5	5 − 6
70	10−12	70 sp = 3,5	6−7
90	12	90 sp = 4,5	7 − 8
130	16	130 sp = 6,5	8

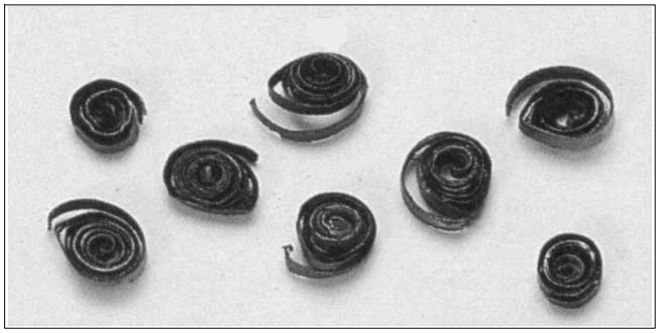
KEY:
S = diameter or width of the solid piece to be cut in mm;
sp = thickness of the wall to be cut in mm;
T = tooth pitch in mm.
A larger pitch should be chosen when, as a result of the shape of the piece to be cut, the cross−section at any given point exceeds the average cross−section given above.

Types of swarf:

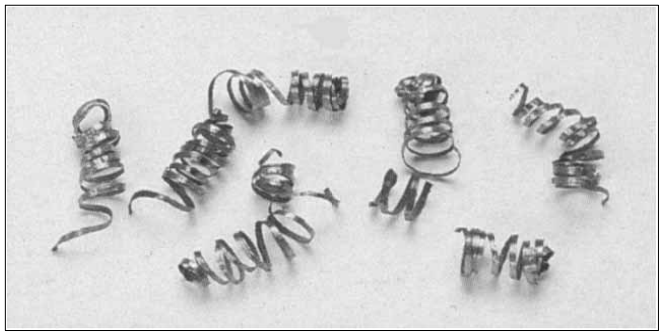
- Very fine or fragmented swarf indicates that the downstroke speed and/or cutting pressure is too low.



- Thick and/or blue swarf indicates that the blade is overloaded.



- Long coils of swarf indicate ideal cutting conditions.



Cutting and feeding speed

The cutting speed, in m/min, and the head feeding speed, in cm^2/min, are limited by the amount of heat generated near to the points of the teeth. If the head feeding speed is too high, the cut will not be straight in either the vertical or the horizontal plane. As we have already said, the cutting speed depends on the strength (kg/mm^2) and hardness (HRC) of the material and the dimensions of the thickest section. The feeding speed depends on the cross−section of the material. Solid or thick−walled materials (thickness > 5 mm), can therefore be cut at high speed providing there is sufficient swarf removal by the blade, while thin−walled materials such as tubes or thin profiles must be cut with a low feeding speed. A new blade requires a wearing−in period, during which time a feeding speed of about half normal speed should be used.

Lubricant/coolant

The lubricating/cooling fluid must ensure that the blade teeth and material in the area of the cut do not overheat. Furthermore, the quantity and pressure must be sufficient to remove the swarf from the cutting zone. The fluid must be an excellent lubricant, such that prevents abrasion of the teeth and welding of the swarf to the teeth themselves (seizing).

Blade structure

The circular blades most frequently used for cutting−off machines are HSS−DMo5/M2 consisting of a single piece and characterised by a high level of toughness and a good cutting resistance.

Key									
Mo	Molyb-denum	Ni	Nickel	Si	Silicon	V	Vanadium	W	Tungsten
Al	Aluminium	C	Carbon	Co	Cobalt	Cr	Chromium	Mn	Manganese

BLADE BODY	*C*	*Cr*	*W*	*Mo*	*V*	*Co*	*HRC*
71 Cr1	0,71 – 0,78	0,20 – 0,30	0,40 – 0,70				43+/−1

N.B. The numbers in the columns indicate the % content of the element in the steel.

Types of blades

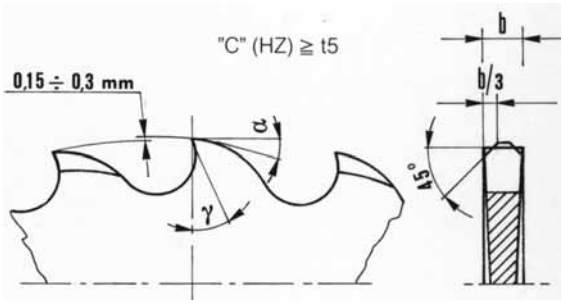
The blades fitted to the **TIGER 372 CNC LR RC 4.0** have dimensions 370x32x3 mm and are of HSS DMo5 hard steel type since the machine is to be used for cutting non−ferrous materials. In addition to the size and pitch of the teeth, however, the blades also have different geometric characteristics in accordance with their particular use:

- tooth sharpening, which in this case may be BW with alternate raked tooth or C with roughing tooth raked on both sides and non−raked finishing tooth;
- tooth pitch, the distance between the crests of two subsequent teeth (tooth pitch = T).

Tooth shape

“C” TYPE SHARPENING (HZ)

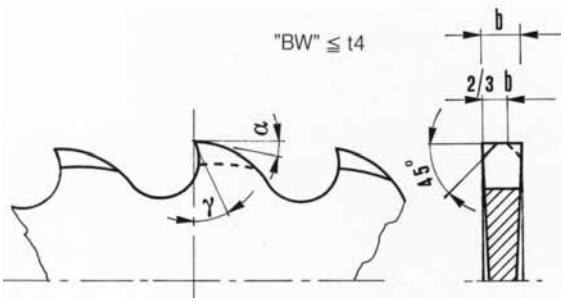
Coarse toothing with roughing tooth raked on both sides and non−raked finishing tooth. The roughing tooth is about 0.3 mm higher.



Coarse toothing with roughing tooth and finishing tooth. Used in saws with pitch greater than or equal to 5 mm for cutting ferrous and non−ferrous materials with solid or solid−profiled sections.

“BW” TYPE SHARPENING DIN 1838−UNI 4014

Coarse toothing with teeth alternately raked to the right and left.



Toothing generally used on cutting−off machines for cutting ferrous and alloy materials with tubular and profiled sections.

The disks for the **TIGER 372 CNC LR RC 4.0** are ∅ 370x32x3 with C−type sharpness; however, also the tooth pitch is important, as indicated in the table below.

D.	T	Z	D.	T	Z	D.	T	Z
370	5	220	370	8	140	370	12	90

This table can be used to facilitate the choice of toothing since it takes into account both the size of the material to be cut and the diameter of the disc to be used.

Solid section



Hollow section



	D 200		225		250		275		300		315		350		370		400		425		450		500	
S	t z	t z	t z	t z	t z	t z	t z	t z	t z	t z	t z	t z	t z	t z	t z	t z	t z	t z	t z	t z	t z	t z	t z	t z
10	5 130	6 100	5 140	6 120	5 160	6 128	5 180	6 140																
30	6 100	8 80	6 120	8 80	6 128	8 100	6 140	8 110	6 160	8 120	7 140	8 120												
50			8 90	10 70	8 100	10 80	8 110	10 90	8 120	10 90	8 120	10 100	9 120	10 110	10 110	11 100								
70							10 90	12 70	10 90	12 80	10 100	12 80	11 100	12 90	11 100	12 90	10 120	12 100	10 130	12 110	10 140	12 120	10 150	12 130
90									12 80	14 70	12 80	14 70	12 90	14 80	12 90	14 80	12 100	14 90	12 110	14 94	12 120	14 100	12 130	14 110
110											12 80	14 70	12 80	14 70	12 90	14 80	12 100	14 90	12 110	14 94	12 120	14 100	12 130	14 110
130													12 80	16 70	14 80	16 70	14 90	16 80	14 94	16 84	14 100	16 90	14 110	16 100
150																	14 90	16 80	14 94	16 84	14 100	16 90	14 110	16 100
D																								
10	3 200	3 200	3 220	3 220	3 250	3 250	3 280	3 280																
30	4 160	5 130	4 180	5 140	4 200	5 160	4 220	5 180	4 220	5 180	4 240	5 200												
50			5 140	6 120	5 160	6 128	5 180	6 140	5 180	6 160	5 200	6 160	5 200	6 180	5 220	7 160								
70							6 140	8 110	6 160	8 120	6 160	7 140	6 180	7 160	7 160	8 140	6 200	7 180	6 220	7 190	6 230	7 200	6 260	7 220
90									8 120	10 100	7 140	8 120	7 160	8 140	7 160	8 140	7 180	8 160	7 190	8 160	7 200	8 180	7 220	8 200
110											8 120	10 100	8 140	9 120	8 140	9 120	8 160	9 140	8 160	9 150	8 180	9 160	8 200	9 170
130													9 120	10 110	9 120	10 110	9 140	10 120	9 150	10 130	9 160	10 140	9 170	10 150
150															9 120	10 110	9 140	10 120	9 150	10 130	9 160	10 140	9 170	10 150

Blade selection table with respect to cutting speed and downstroke speed

RECOMMENDED CUTTING PARAMETERS	CUTTING ANGLE α	CUTTING ANGLE γ	Cutting section (in mm) 10–20	10–20	20–40	20–40	40–60	40–60	60–90	60–90	90–110	90–110	110–130	110–130	130–150	130–150	Recommended lubricants
			T mm	Vt rpm	T mm	Vt rpm	T mm	Vt rpm	T mm	Vt rpm	T mm	Vt rpm	T mm	Vt rpm	T mm	Vt rpm	
			Av mm/1'	Av rpm	Av rpm	Av rpm	Av rpm	Av rpm	Av rpm	Av rpm	Av rpm	Av rpm	Av rpm	Av rpm	Av rpm	Av rpm	
Mild steel R = 350–500 N/mmq	20	8	5	50	7	45	10	150	45	140	12	45	16	110	18	130	Emulsion – cutting oil
Medium steel R = 500–700 N/mmq	18	8	4	30	6	30	9	120	25	110	14	40	16	100	16	80	
Hard steel R = 750–950N/mmq	15	8	4	20	6	20	8	110	18	100	14	20	16	80	16	60	
Super hard steel R = 950–1000 N/mmq	12	6	3	15	4	15	6	60	14	50	12	13	14	45	14	40	
Hardened and tempered steel R = 950–1300 N/mmq	10	6	2	9	3	9	4	33	9	30	8	8	10	25	12	22	
Austenitic stainless steel R = 500–800 N/mmq	12	8	4	20	6	19	8	45	18	45	15	15	16	40	16	35	
Martensiticstainless R = 500–800 N/mmq	15	6	4	20	6	19	8	45	18	45	15	15	16	40	16	35	
Grey iron	12	8	4	25	6	23	8	100	22	90	19	70	17	60	16	60	
Aluminium and alloys R = 200–400 N/mmq	22	10	6	1100	8	1000	12	1700	900	1600	700	1300	600	1100	500	900	
Aluminium and alloys R = 300–500 N/mmq	20	8	5	200	7	180	10	400	160	350	140	300	130	250	130	250	
Copper R = 200–350 N/mmq	20	10	6	400	8	350	11	600	300	550	200	500	150	500	120	400	Emulsion
Hard bronze R = 600–900 N/mmq	15	8	5	400	7	400	10	700	350	700	250	600	200	500	150	400	
Phosphor bronze R = 400–600 N/mmq	12	8	4	120	8	110	8	150	100	140	70	110	60	100	50	90	
Brass R = 200–400 N/mmq	16	16	5	600	6	600	10	1100	550	1000	500	900	500	800	450	800	Cutting oil
Alloyed brass R = 400–700 N/mmq	12	16	5	500	7	400	10	600	350	600	300	500	300	400	200	400	
Titanium and alloys R = 300–800 N/mmq	18	8	4	50	4	45	6	150	45	140	40	110	35	100	30	90	
Profiles and tubes with wall thickness 0.05 D R = 300–600 N/mmq	18	8	3	19	4	18	5	120	18	110	16	100	16	90	15	80	Emulsion
Profiles and tubes with wall thickness 0.25 D R = 300–600 N/mmq	15	8	2	35	3	33	4	120	30	110	28	100	26	90	24	80	

Classification of steels

The tables on this page provide users with information on materials to cut, enabling their classification with respect to hardness and consequently the correct blade to use.

Types of steel				Hardness		
UNI	DIN	BS	AISI	Brinell HB	HRB	Kg/mmq
C 22 – C 35	CK 22 – CK 3	En 2 C – En 6	1022 – 1035	160 – 170	34 – 87	55 – 59
C 45	CK 45	En 8	1040	160 – 180	84 – 89	55 – 61
C 10 – C 15	CK 10 – CK 15	En 32 A – En 328	1010 – 1015	150 – 175	81 – 87	51 – 59
C 60	CK 60	En 9	1060	160 – 180	84 – 89	55 – 61
		4360 – 50 A		160 – 180	84 – 89	55 – 61
	17100	3706 – 1.2.3.	ASTMA – 36/68	160 – 180	84 – 89	55 – 61
45 Cr Si 9	17115	4360		160 – 180	84 – 89	55 – 61
		En 20 A		190 – 215	91 – 97	64 – 73
34 Cr Mo 5	17221	970 – 1955	1065	180 – 205	89 – 94	61 – 69
		En 18 B	5135 – 5145	180 – 200	89 – 93	61 – 67
35 Cr Mo 4	34 Cr Mo	En 19 B	4135	200 – 230	93 – 99	67 – 77
	36 Ni Cr 6	En 111	3135	190 – 230	91 – 99	64 – 77
		En 36	3310 – 3315	200 – 230	93 – 99	67 – 77
20 Nc Cr Mo 2		En 362	4315	200 – 225	93 – 98	67 – 75
		En 100 D	8645	190 – 220	91 – 97	64 – 74
	1880 X C 95	DX	W 1	150 – 190	80 – 91	51 – 64
100 Cr 6	100 Cr 6	En 31	52100	210 – 230	96 – 99	71 – 77
		B 2	L 6	190 – 230	91 – 99	64 – 77
52 Nc Cr Mo KU	56 Ni Cr Mo V 7			217 – 248	97 – 102	73 – 83
	2750 (280W18)	18 % W	T 1	217 – 248	97 – 102	73 – 83
		1507 – 825	1310	160 – 220	84 – 91	55 – 64
		A 2	M 13	200 – 230	93 – 99	67 – 77
	210 Cr 46	A 1	D 3	215 – 240	97 – 101	73 – 81
	4845	En 58 G	309 S	150 – 200	80 – 93	51 – 67
X 12 Cr 13	4001	En 56 A	410	150 – 200	80 – 93	51 – 67
X 6 Cr Ni 1810	4301	En 58 E	304	130 – 170	74 – 86	45 – 58
X Cr Ni 1910						
X 8 Cr Ni Mo 1713	4401	1501 – 845	316	160 – 200	84 – 93	55 – 67
Phosphor bronze				60 – 100	56,5	36
Aluminium bronze				70 – 90	49	32
Manganese bronze				95 – 120	51 – 69	34 – 42
Silicon bronze				70 – 100	56,5	36

Classification of steels

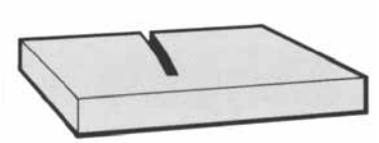
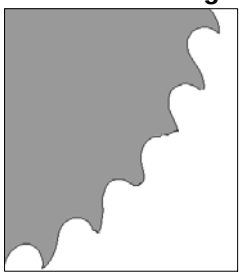
Material	SS Sweden	AISI U.S.A.	DIN Germany	BS Great Britain	UNI Italy	AFNOR France
Carbon steels	1311	1015 – 1035	C 22 – C 35	050 A 20	C 15 – C 35	XC 18
			20 Mn 5 – 28 Mn 6	080 M 46 – 50	C 22 Mn	XC 38 H 1
	1572		CK 22 – CK 50	120 M 19	C 28 Mn	20 M 5
				150 M 28		
Carbon steels	1650	1040 – 1064	CK 60 – CK 101	060 A 40 – 060 A 96		XC 60 – XC 75
			36 Mn 5	070 M 55		40 M 5
	1880	1770 – 1880	Cm 45 – Cm 55	080 A 40 – 080 A 62	C 45 – C 60	XC 42 H 1
						XC 55 H 1
Alloy steel	2120	1335 – 1345		1717 CDS 110		25 CD 4
			25 Cr Mo 4 – 42 Cr Mo 4	708 A 37	25 Cr Mo 4 – 42 Cr Mo 4	
	2255	4130 – 4140		708 M 40		42 CD 4
Alloy steels	2541	4337 – 4340	40 Ni Cr Mo 6	735 A 50, 534 A 99	40 Ni Cr Mo 2 – 40 Ni Cr Mo 7	35 NCD 6
	2230	50100 – 52100	40 Ni Cr Mo 73	817 M 40	30 Ni Cr Mo 8 – 35 Ni Cr Mo 6 KB	50 CV 4
	2258	6145 – 6152 8630 – 8645	34 Cr Ni Mo 6, 100 Cr 6	311 tipo 6 e 7	50 Cr V 4, 100 Cr 6	100 C 6
Tool steels	2310 – 12	D – 2, D – 3	X 210 Cr 12	BD 2, BD 3	X 205 Cr 12 KU	Z 160 CVD 12
	2754 – 55		X 155 Cr V Mo 121		X 155 Cr V Mo 121 KU	Z 200 C 12
Tool steel	2550	S – 1	60 W Cr V 7	BS 1	55 W Cr V 8 Ku	55 NCVD 7
	2710		55 Ni Cr Mo V 6		55 Ni Cr Mo V 6	
Stainless steels	2324	201, 202	X 2 Cr Ni 189	304 S 15	X 2 Cr Ni 18.11	Z 2 CN 18.10
	2333	302, 304	X 5 Cr Ni 189	304 C 12	X 5 Cr Ni 18.10	Z 6 CN 18.09
			G – X 2 Cr Ni 189	304 S 12	G – X 2 Cr Ni 19.10	Z 3 CN 19.10
Stainless steel	2343	314, 316	X 15 Cr Ni Si 2520	316 S 16	X 16 Cr Ni Si 2520	Z 12 CNS 25.20
			X 5 Cr Ni Mo 1812		X 5 Cr Ni Mo 1713	
	2353	317	X 5 Cr Ni Mo 1713	317 S 16	X 5 Cr Ni Mo 1815	Z 6 CND 17.12

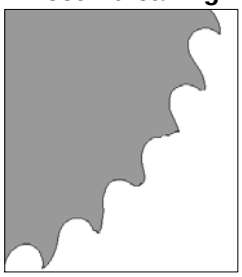
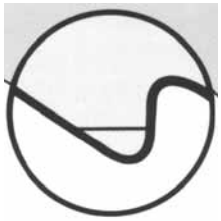
Troubleshooting

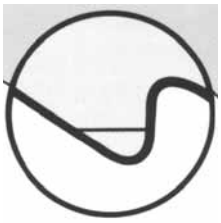
10

This chapter describes the inspection and troubleshooting procedures for the **TIGER 372 CNC LR RC 4.0**. Regular inspections and efficient maintenance are essential to ensure your machine gives you a long, trouble−free service life. The chapter is divided into two sections: the first being dedicated specifically to TROUBLESHOOTING BLADE AND CUTTING PROBLEMS, while the second TROUBLESHOOTING section concerns troubleshooting general machine operating faults. Taken together they form a comprehensive troubleshooting guide which will enable you to follow a methodical procedure for solving any problem.

Troubleshooting blade and cutting problems

PROBLEM	PROBABLE CAUSE	SOLUTION
Cuts not at 90 degrees or angled 	◗ Head speed too high	☞Reduce head speed
	◗ Disc with worn teeth	☞Replace disc
	◗ Perpendicularity of disc to work surface	☞If this is not the case, contact our technical service department
	◗ Cutting speed too low	☞Increase cutting speed.
	◗ Broken teeth	☞Check the hardness of the material being cut.
Teeth breaking 	◗ Incorrect lubricant/coolant fluid	☞Check the water and oil emulsion; check that the holes and hoses are not blocked; direct the nozzles correctly.
	◗ Material too hard	☞Check the cutting speed, feed speed and disc pressure parameters and the type of disc you are using.

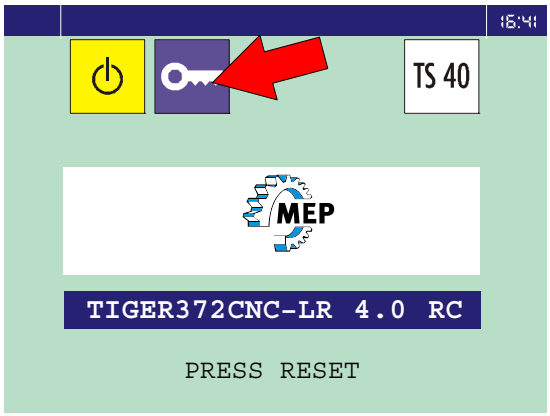
PROBLEM	PROBABLE CAUSE	SOLUTION
Teeth breaking 	◗ Disc not worn−in correctly	☞With a new disc it is necessary to start cutting at half feeding speed. After the wearing−in period (a cutting surface of about 300 cm2 for hard materials and about 1000 cm^2 for soft materials) the cutting and feed speeds can be brought up to normal values.
	◗ Disc with excessively fine tooth pitch	☞The swarf wedges into the bottom of the teeth causing excessive pressure on the teeth themselves.
	◗ New blade inserted in a partially completed cut.	☞The surface of the cut may have undergone local thermal alteration, making it harder: when starting work again, use a lower cutting speed and head feed speed. A tooth from the old blade may be left in the cut: check and remove before starting work again.
	◗ Workpiece not clamped firmly in place	☞Any movement of the workpiece during cutting can cause broken teeth: check the vice, jaws and clamping pressure.
	◗ Vibration	☞Workpiece vibrates in the vice: check that the slide has been adjusted correctly; check the clamping pressure and if necessary increase.
Rapid tooth wear 	◗ Head speed too slow	☞The blade runs over the material without removing it: increase head speed.
	◗ Cutting pressure too high	☞Reduce cutting pressure.
	◗ Cutting speed too high	☞The teeth slide over the material without cutting it: reduce the cutting speed.
	◗ Insufficient coolant	☞Check the coolant level and clean piping and nozzles.
	◗ Incorrect fluid concentration	☞Check and use the correct concentration.

PROBLEM	PROBABLE CAUSE	SOLUTION
Rapid tooth wear 	◗ Material defective	☞The materials may present altered zones either on the surface, such as oxides or sand, or in section, such as under−cooled inclusions. These zones, which are much harder than the blade, cause the teeth to break: discard or clean these materials.
Broken blade 	◗ Head speed too high	☞Reduce head speed.
	◗ Teeth in contact with material before starting the cut	☞Always check the position of the blade before starting a new job.
	◗ Insufficient coolant	☞Check the coolant level and clean piping and nozzles.
	◗ Vibrations	☞Workpiece vibrates in the vice: check that the slide is regulated correctly; check the clamping pressure and if necessary increase.

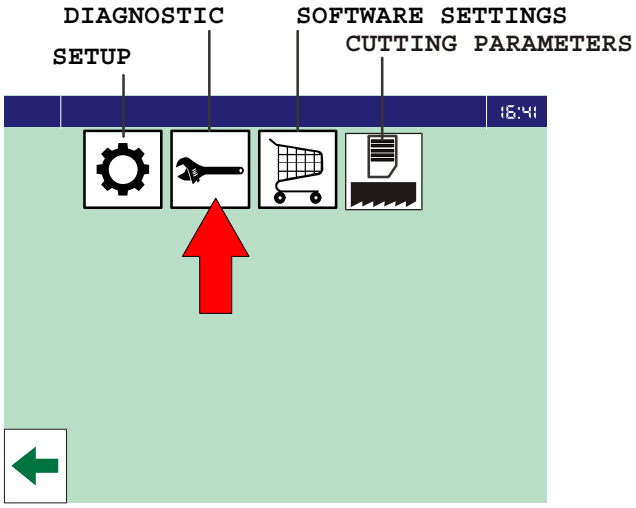
Troubleshooting

This section deals with the problems which may occur during machine operation. The MEP 40 controller allows you to test all the machine's electric and electronic devices by checking the status of the input and output signals.

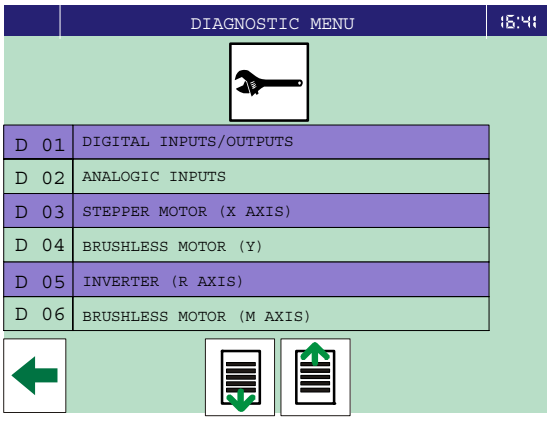
- ▶ Connect the power supply;
- ▶ press RESET to enable the safety relay.
- ▶ Press the box with the "wrench" symbol on the touch screen;



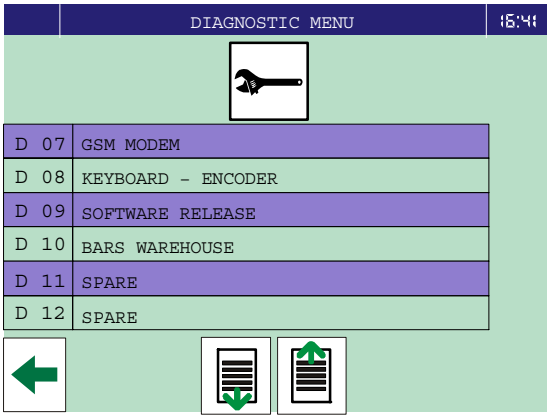
- ▶ press the SETUP box.



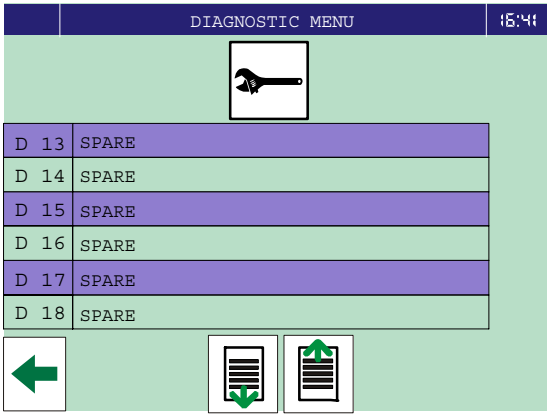
After entering the Diagnostic, the display shows the list of the devices for which the digital input and output status can be checked.



▶ Press the page scrolling box to display the next video page.

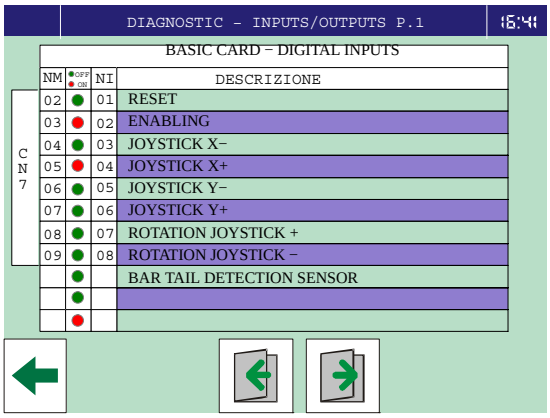


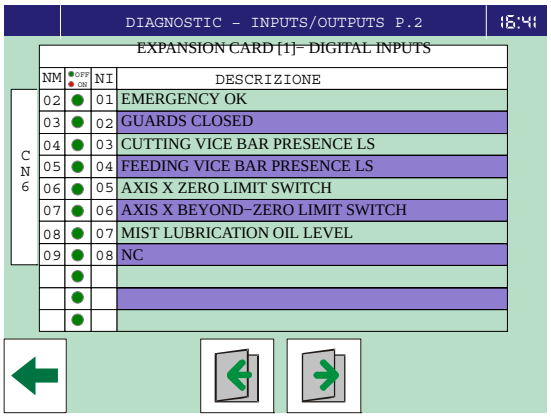
▶ Press the page scrolling box to display the next video page.

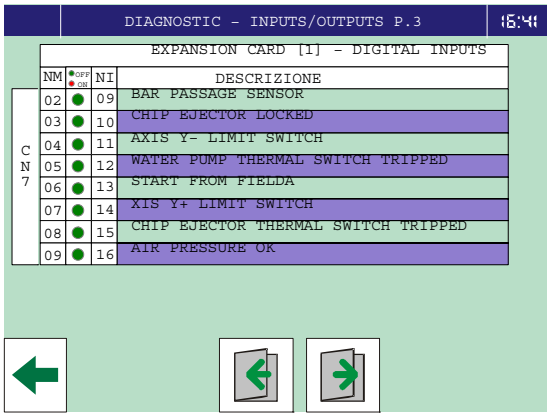


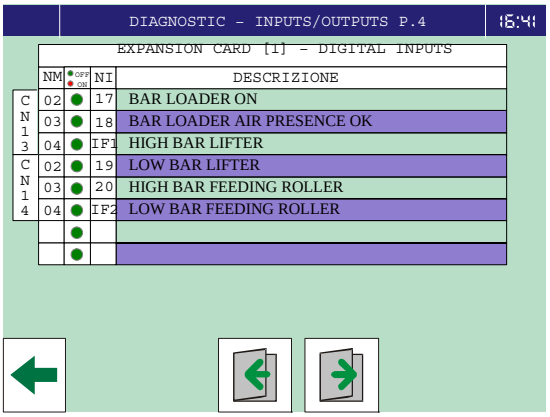
D 01 – DIGITAL INPUT/OUTPUT

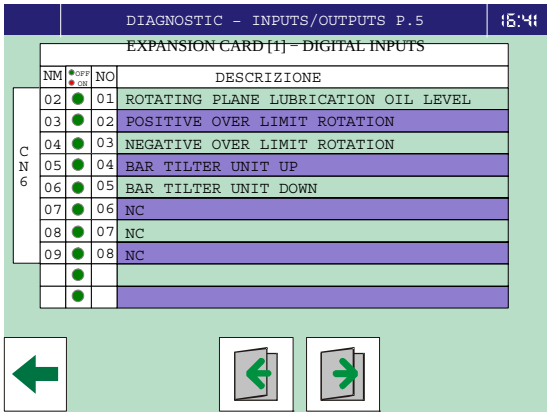
▶ From the main menu press the text box for D 01 on the display to access the section “Digital inputs/outputs”.

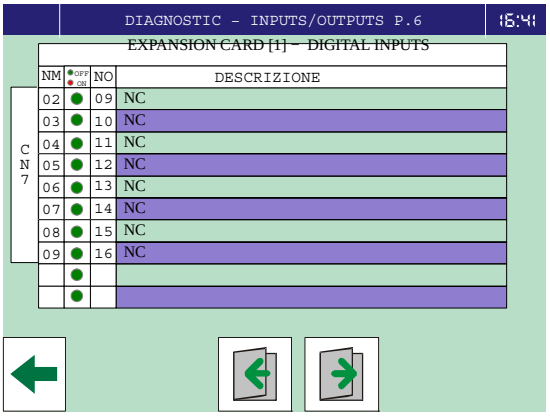




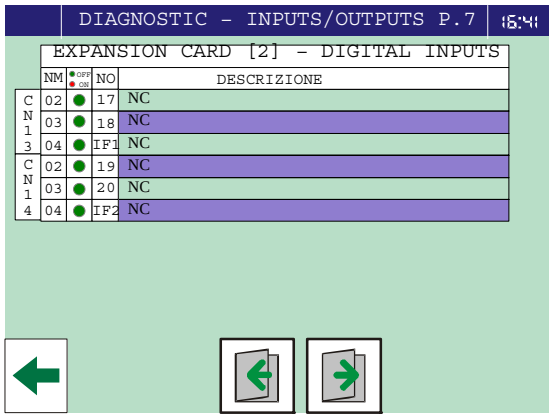


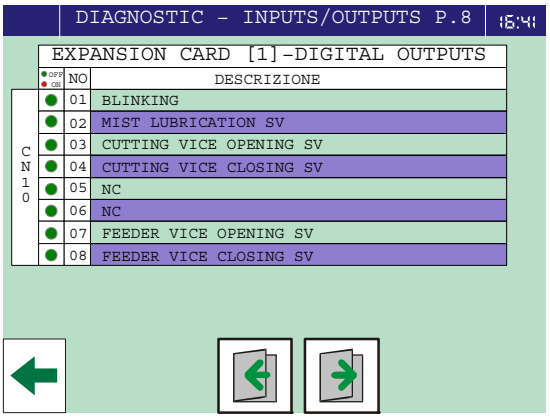


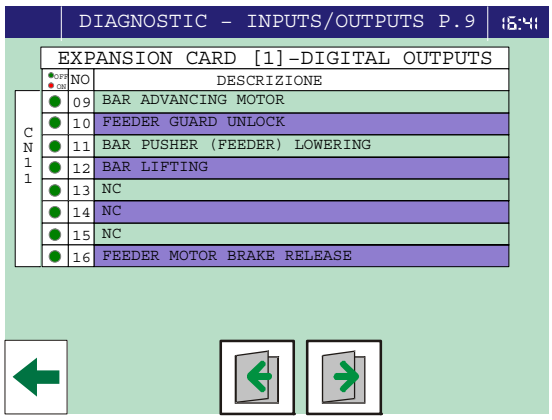


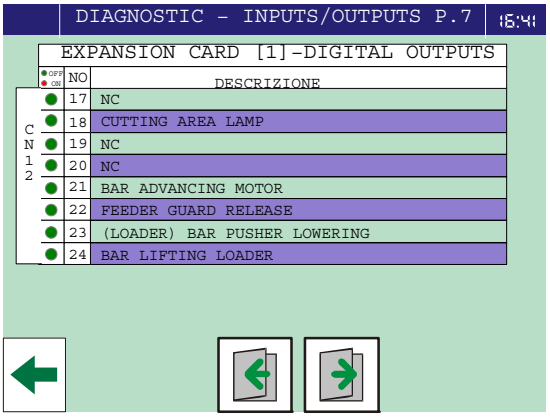


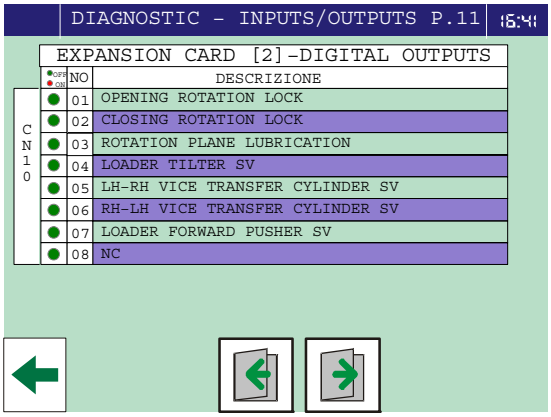
▶ The first four video pages relate to the digital inputs, the following four pages relate to the digital outputs. It is possible to advance page by page pressing the right−left scrolling boxes.

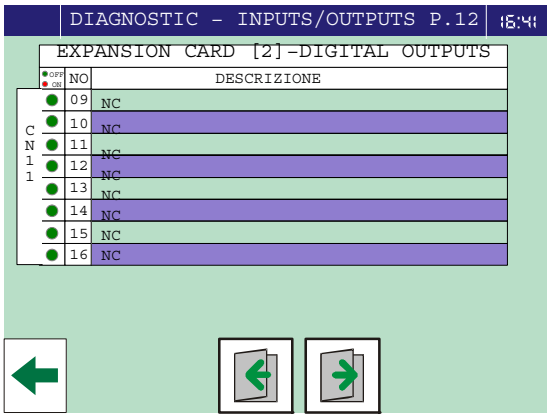


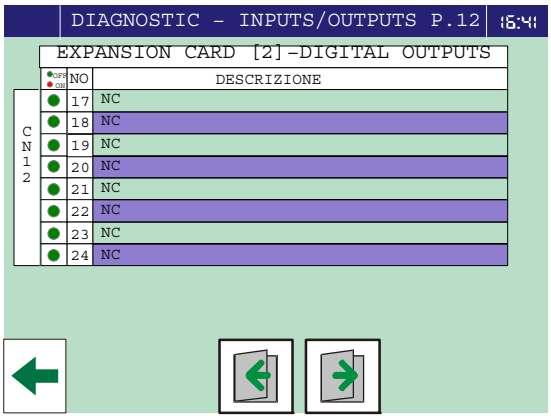












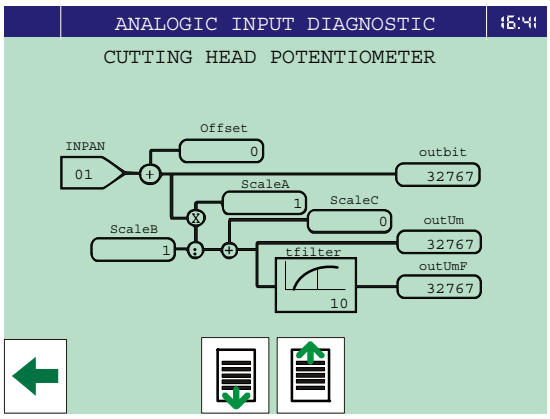
The status of the inputs and outputs can be changed in these video pages. The first column (NM) indicates the number of the connection pin on the board, in the second column, the green dot indicates the status ON (1), the red dot indicates the status OFF (0) of the relevant IN/OUT; the third column shows the ID number of the IN/OUT.

N.B. A few inputs are red (in status OFF=0), like the emergency button and the blade protection cover limit switch, as their function is naturally inverse; for example, when the emergency button is pressed the dot turns green because the input is active (ON=1)

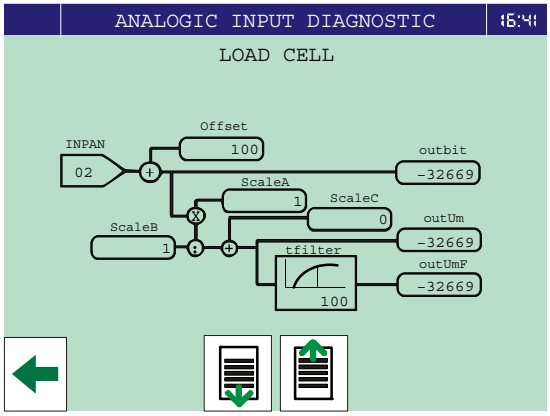
As for the digital outputs (pages 5, 6, 7 and 8), their functioning can be checked by pressing the control box of each single item activating it (red dot) or deactivating it (green dot).

D 02 – ANALOGIC INPUTS

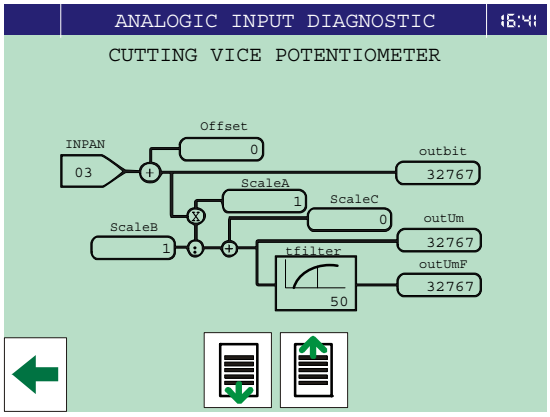
▶ From the main menu press the text box for D 02 on the display to access the section “Analog inputs”.



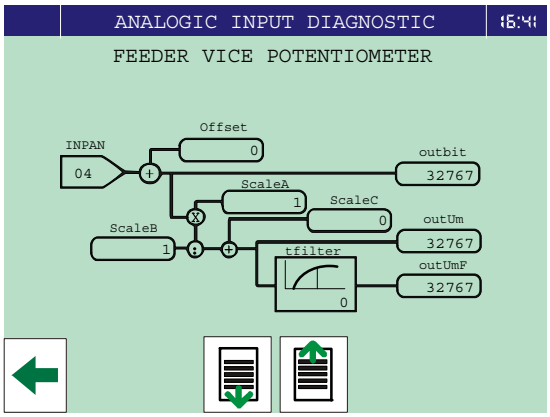
▶ Press the page scrolling box to display the next video page.



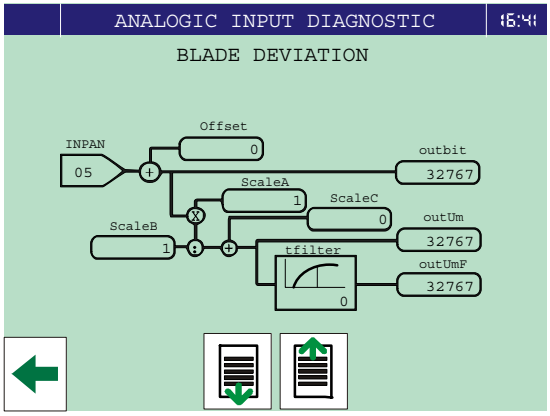
▶ Press the page scrolling box to display the next video page.



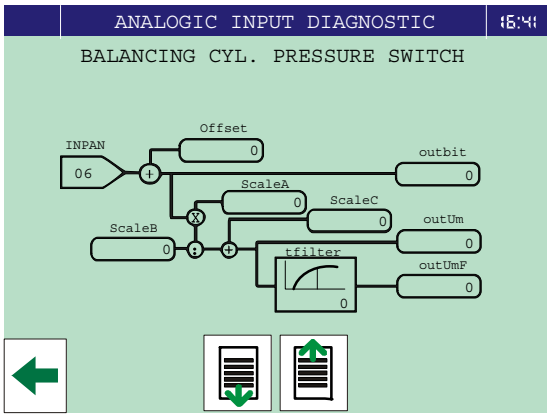
▶ Press the page scrolling box to display the next video page.



▶ Press the page scrolling box to display the next video page.

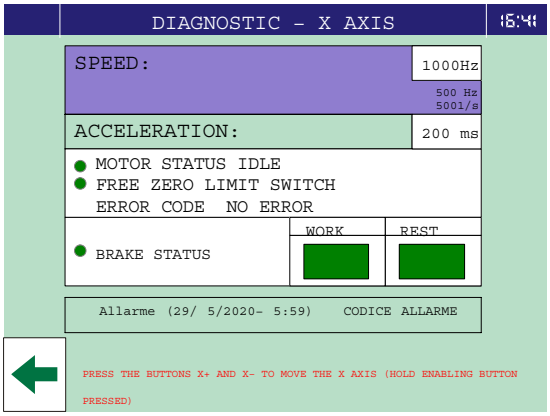


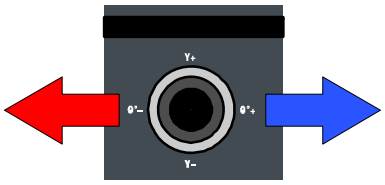
▶ Press the page scrolling box to display the next video page.



D 03 – X AXIS STEPPER MOTOR

▶ From the main menu press the text box for D 03 on the display to access the section “Analog inputs”.





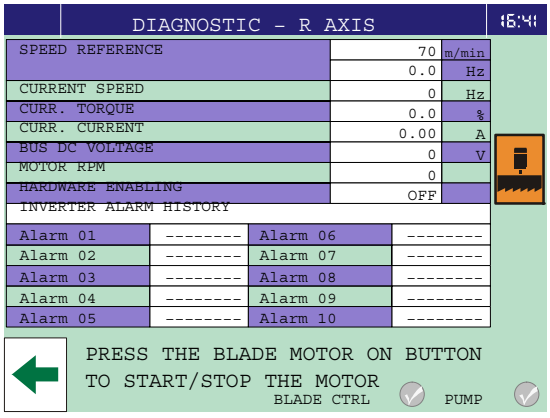
▶ To check the operation of the feeder step motor press the keys X+ or X–. During the standard operation, the green warning light turns red when the motor is operating, when the shuttle is in zeroing position or if an error occurs; in this case, it is notified with its code.

D 04 – Brushless motor (Y AXIS)

▶ The page no. 4, relating to the “Brushless motor” is not available for this machine model.

D 05 – Inverter (R AXIS)

▶ From the main menu press the text box for D 05 on the display to access the section “Inverter (R AXIS)”.



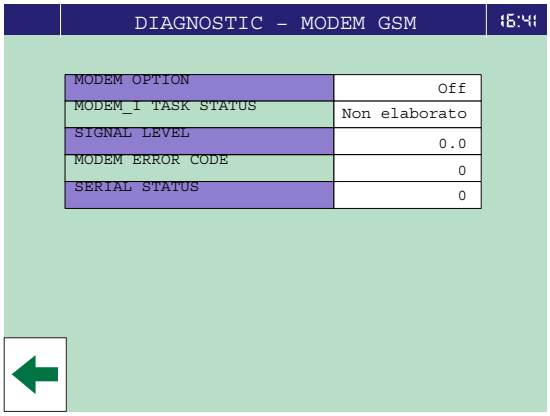
▶ To check the operation of the potentiometer of the “S” disc speed, enable the blade motor and increase or decrease the speed to display the variation.

D 06 – Brushless motor (M AXIS)

▶ The page no. 6, relating to the “M axis brushless motor” is not available for this machine model.

D 07 – GSM modem (option)

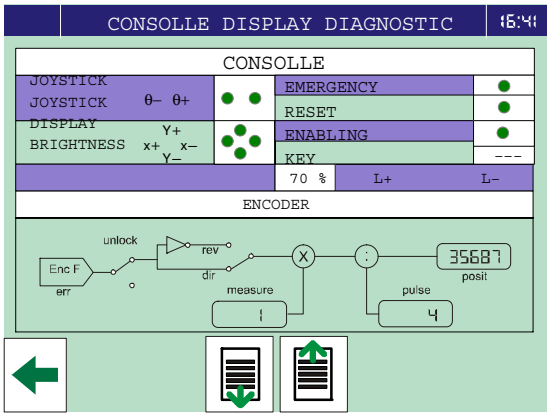
▶ From the main menu press the text box for D 07 on the display to access the section “GSM modem” (option).

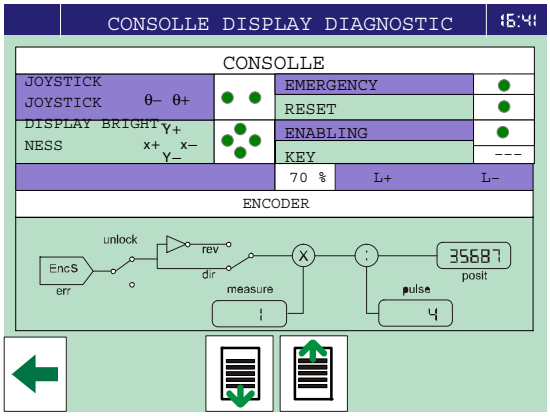


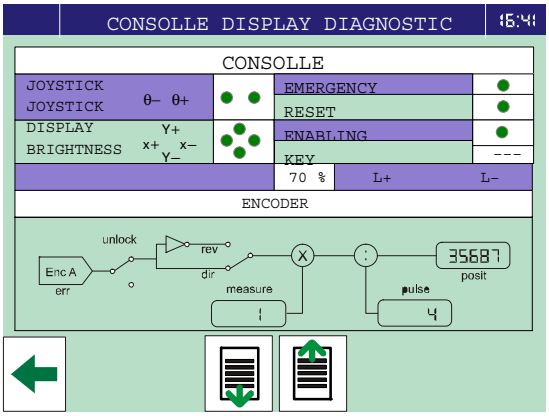
▶ In this video page it is possible to configure the optional GSM module to send SMS to a preset number notifying the type of occurred emergency when the sawing machine is not supervised.

D 08 – Keyboard– Encoder

▶ From the main menu press the text box for D 08 on the display to access the section “Keyboard – Encoder”.



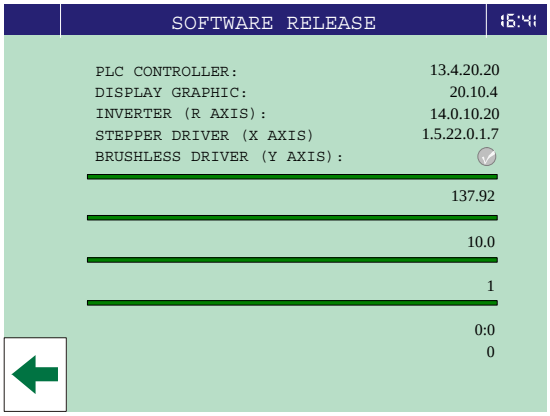




▶ In this video page it is possible to control the operation of the buttons for RESET and Control enabling, of the Emergency mushroom button and of the Joystick. It is also possible to adjust the display brightness and to check the operation of the Encoder adjusting knobs: F for head lowering, S for disc speed, A for blade motor absorption.

D 09 – SOFTWARE RELEASE

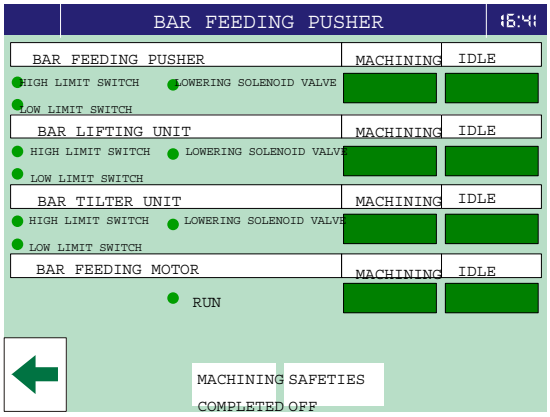
▶ From the main menu press the text box for D 09 on the display to access the section “Software release”.



▶ In this video page it is possible to check the release of the installed software.
▶ Press “EXIT” to return to PREVIOUS MENU.

D 10 – BAR WAREHOUSE

▶ From the main menu press the text box for D 10 on the display to access the section “”.



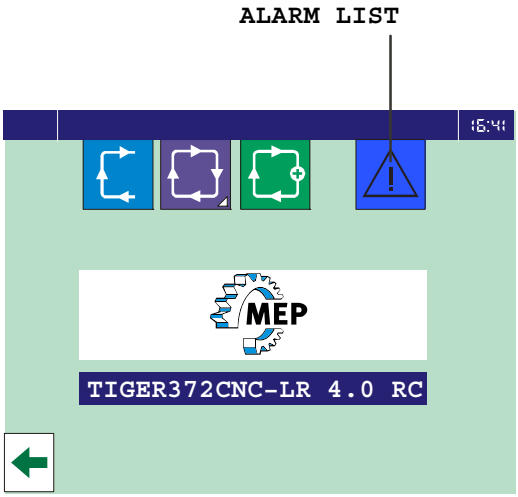
▶ Press “EXIT” to return to PREVIOUS MENU.

Machine alarms and emergencies

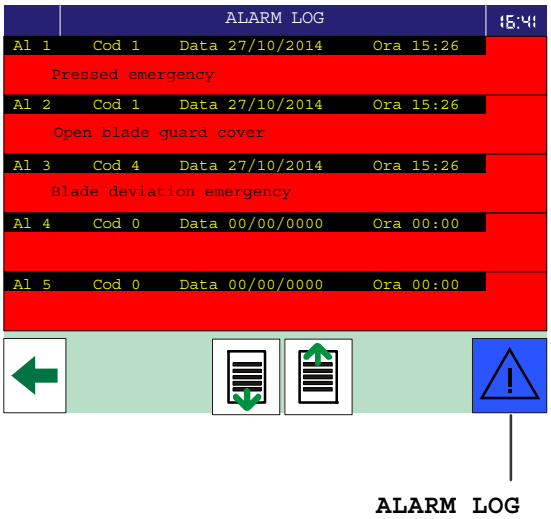
The machine's controller notifies the operator of any alarm or emergency condition which may occur during production by way of acoustic and visual signals. This section lists the messages shown on the display.
The controller of the sawing machine records all messages for warning, alarms, emergencies or cautions during the operations, and stores the last 100 occurred. This feature is extremely useful to analyze possible malfunctions during the working cycles, above all when the sawing machine is not supervised.

N.B. In case of emergency it is necessary to restore the standard operation and then press RESET to remove the emergency warning.

▶ To display the list of the error messages initialize the machine and press the box indicated in the figure:

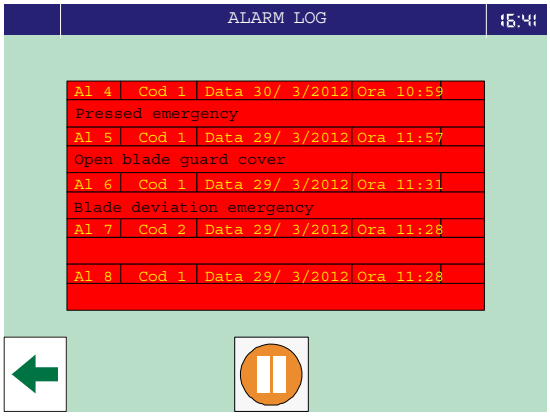


▶ The video page shows the list of the last 100 alarm occurred on the sawing machine chronologically starting from the most recent; to scroll the list use the vertical "scroll" boxes;



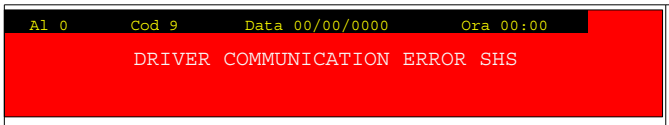
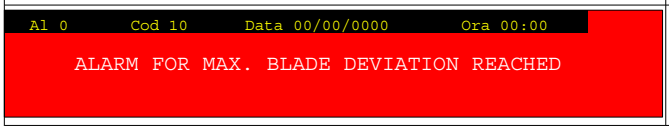
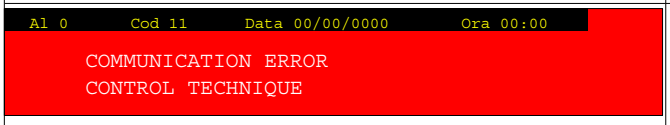
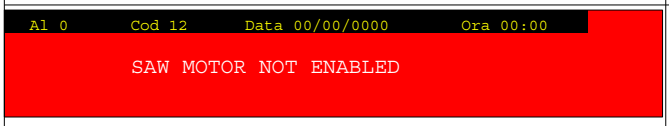
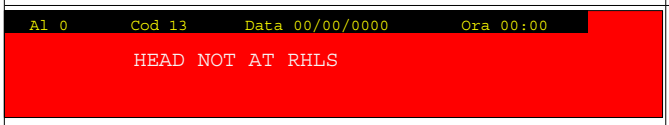
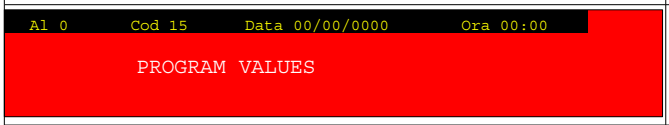
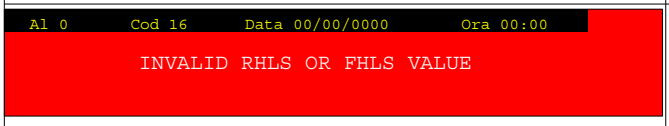
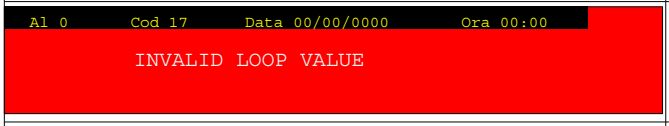
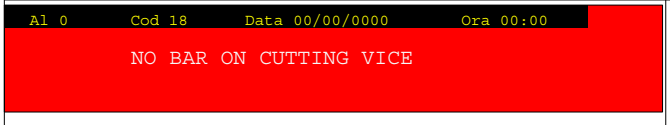
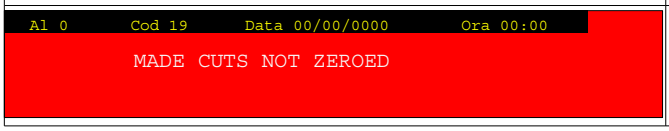
▶ Each alarm is features by a sequence number, an ID code, the occurrence date and time. To view the list of the alarm history press the indicated box:

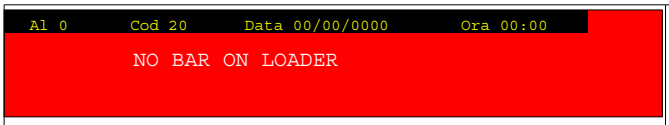
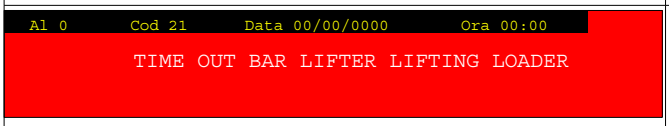
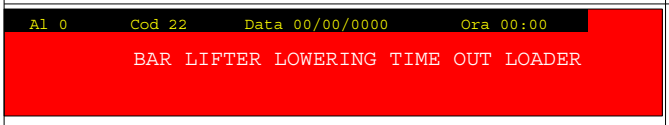
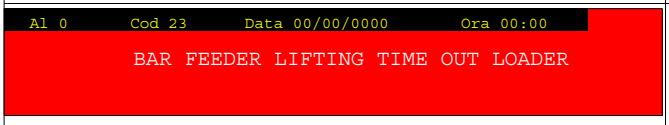
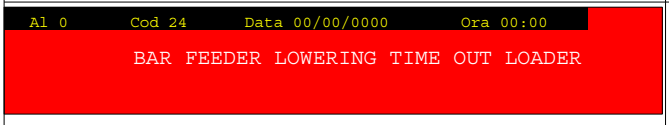
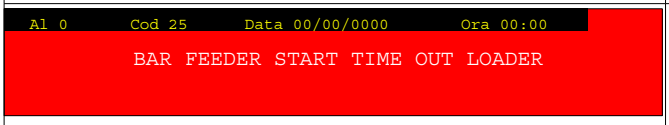
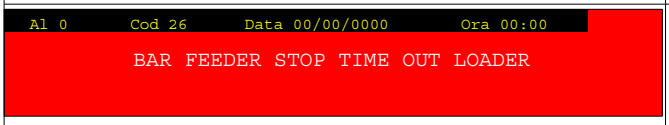
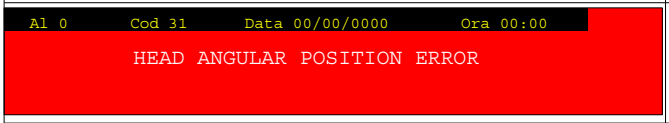
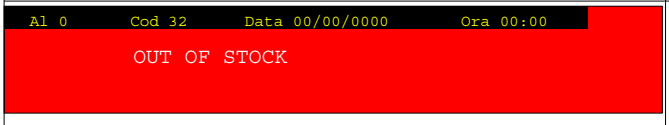
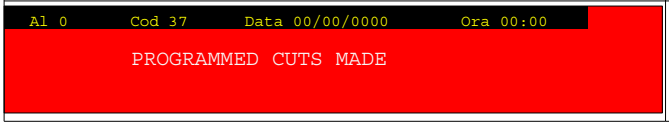
▶ The display scrolls the messages automatically. To stop and read them carefully press the ”pause” key indicated by the arrow; press it again to continue scrolling.



Alarm decoding

Al 0 Cod 1 Data 00/00/0000 Ora 00:00 PRESSED EMERGENCY	It is displayed when the emergency mushroom button is pressed. ▶ Reset the emergency button turning it by 45°.
Al 0 Cod 2 Data 00/00/0000 Ora 00:00 OPEN BLADE GUARD COVER	This message is displayed if the blade guard is opened, for example, to change the blade. ▶ Make sure the blade guard is closed. ▶ Check the safety limit switch. ▶ Check the connections.
Al 0 Cod 3 Data 00/00/0000 Ora 00:00 OPEN FEEDER GUARD COVER	Not available in this machine model
Al 0 Cod 4 Data 00/00/0000 Ora 00:00 EMERGENCY BLADE DEVIATION	Not available in this machine model
Al 0 Cod 5 Data 00/00/0000 Ora 00:00 NO BAR ON FEEDER	It is displayed when there is no material anymore inside the vices or the material cannot be fed anymore. ▶ Load a new bar to continue the interrupted machining cycle. ▶ Check the linear potentiometers of the feeding and cutting vices
Al 0 Cod 6 Data 00/00/0000 Ora 00:00 BAR PASSAGE LIMIT SWITCH BROKEN	It is displayed when the bar passage limit switch on the feeder is not activated anymore. ▶ Check the electric limit switch and the digital input of the MEP40 controller
Al 0 Cod 7 Data 00/00/0000 Ora 00:00 X AXIS ZERO LIMIT SWITCH BROKEN	It is displayed when the feeder carriage does not activate the reset limit switch anymore. ▶ Check the electric limit switch and the digital input of the MEP40 controller
Al 0 Cod 8 Data 00/00/0000 Ora 00:00 Y AXIS ZERO LIMIT SWITCH BROKEN	Not available in this machine model

	It is displayed when the step motor of the X axis (feeder) interrupts the communication with the SHS driver ▶ Check the driver−motor connection ▶ Check the status of the motor in the relevant diagnostic video page
	Not available in this machine model
	It is displayed when the inverter interrupts the communication with the MEP40 controller ▶ Check the inverter−controller connection ▶ Check the status of the inverter in the relevant diagnostic video page
	It is displayed when the motor has not been activated with the suitable key on the console ▶ Check the operation of the key in relevant diagnostic video page ▶ Check the relevant digital output of MEP40
	This message is displayed if the head is not positioned at the RHLS position when the cycle is STARTED. ▶ Return the head to the RHLS position before resuming the cycle
	It is displayed when the resetting of one of the axes of the machine has not been carried out
	It is displayed when an inconsistent value is entered in the cut or sequence programming ▶ Review and correct the programming
	This message is displayed when the cutting start position is lower than the previous position saved for the cutting end position. ▶ Save both the RHLS and FHLS positions again. ▶ Check if the set cut dimensions are compatible with the machine capacity
	It is displayed when an inconsistent value is entered in the loop programming ▶ Review and correct the programming
	It is displayed when the cutting vice does not detect the piece presence ▶ Increase the bar till taking it to the cutting area
	It is displayed when the cut pieces are not zeroed after a cutting cycle ▶ Press CLEAR to reset the cut number

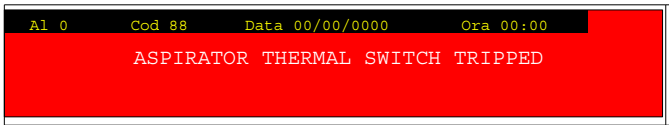
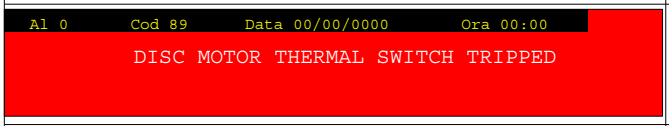
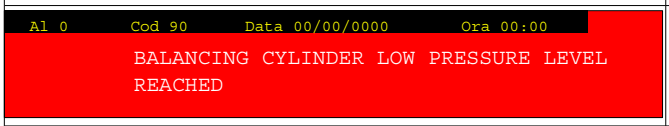
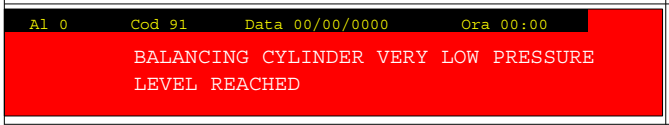
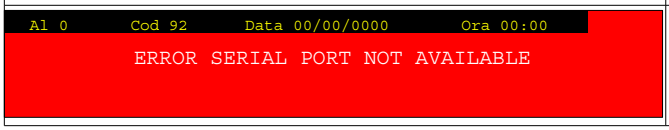
	Displayed when the START command is given to the cycle without cutting material on the bar loader ▶ Load the cutting material into the bar magazine
	Displayed when the pneumatic bar lifting cylinder on the loader does not reach the top limit switch position ▶ Check that there are no mechanical obstacles in the bar loading area and that the cylinder is working properly
	Displayed when the pneumatic bar lifting cylinder on the loader does not reach the bottom limit switch position ▶ Check that there are no mechanical obstacles in the bar loading area and that the cylinder is working properly
	Displayed when the pneumatic bar feeding cylinder on the loader does not reach the top limit switch position ▶ Check that there are no mechanical obstacles in the bar loading area and that the cylinder is working properly
	Displayed when the pneumatic bar lifting cylinder on the loader does not reach the bottom limit switch position ▶ Check that there are no mechanical obstacles in the bar loading area and that the cylinder is working properly
	Displayed when the fed material does not reach the bar detection position within the specified time ▶ Check that there are no mechanical obstacles in the area of the feeder vice
	Displayed when the fed material remains in the loader and does not stop at the feeder vice ▶ Check that there are no mechanical obstacles in the area of the feeder vice
	Displayed when the cutting angle is not reached within the default tolerance range limits
	Displayed when the cutting material is no longer fed during the working cycle ▶ Make sure that the cutting material is present on the loader and that the feeder clamp is correctly adjusted
	It is displayed when the sawing machine ends the working program ▶ Enter a new cutting program

Al 0 Cod 38 Data 00/00/0000 Ora 00:00 1° CLEAR ZEROES CUT PIECES 2° CLEAR ZEROES PERFORMED PROG.	It is displayed when the sawing machine ends the working program ▶ Press CLEAR once to zero the cut pieces ▶ Press CLEAR twice to reset the performed programs
Al 0 Cod 39 Data 00/00/0000 Ora 00:00 BOTH VICES CLOSED	It is displayed when the machine control cannot move the X axis due to the vice closing ▶ Open the cutting and feeding vices
Al 0 Cod 40 Data 00/00/0000 Ora 00:00 LOADER SWITCH ON OFF	Displayed when the bar feeder is disabled ▶ Set the local selector on the bar feeder to enabled
Al 0 Cod 41 Data 00/00/0000 Ora 00:00 UNLOADER SWITCH ON OFF	Displayed when the bar unloader is disabled ▶ Set the local selector on the bar unloader to enabled
Al 0 Cod 42 Data 00/00/0000 Ora 00:00 PIECE LENGTH SHORTER THAN LENGTH	Displayed when the measurement entered is incompatible with the min. cutting parameter of the machine
Al 0 Cod 43 Data 00/00/0000 Ora 00:00 HEAD ROTATION ON ANGLE TIME OUT	Displayed when the time for rotation at the programmed angle ”Teta1” exceeds the time defined in the parameters
Al 0 Cod 44 Data 00/00/0000 Ora 00:00 HEAD ROTATION ON ANGLE TIME OUT	Displayed when the time for rotation at the programmed angle ”Teta2” exceeds the time defined in the parameters
Al 0 Cod 45 Data 00/00/0000 Ora 00:00 WRONG RHLS OR FHLS VALUE	It is displayed when the FHLS value is inconsistent with the RHLS value ▶ Set the FHLS and RHLS values correctly
Al 0 Cod 46 Data 00/00/0000 Ora 00:00 SPRAY MIST OIL LEVEL	It is displayed when the oil level in the min. lubrication system lowers. ▶ Top the oil up in the tray till restoring the level.
Al 0 Cod 47 Data 00/00/0000 Ora 00:00 WRONG START CONTROL	Displayed when attempting to start a device or sawing machine activity with the wrong command
Al 0 Cod 48 Data 00/00/0000 Ora 00:00 SHS DRIVE ALARM	It is displayed when an error in the SHS driver operation occurs ▶ Check the SHS driver operation
Al 0 Cod 49 Data 00/00/0000 Ora 00:00 BLADE TENSIONING TIME-OUT	Not available in this machine model
Al 0 Cod 50 Data 00/00/0000 Ora 00:00 CONTROL TECHNIQUE TOOL INVERTER ALARM	It is displayed when an error in the inverter operation occurs ▶ Check the inverter operation
Al 0 Cod 51 Data 00/00/0000 Ora 00:00 BLADE MOTOR SWITCH.-ON TIME OUT	It is displayed when the blade does not start. ▶ Check the inverter status and press Reset
Al 0 Cod 52 Data 00/00/0000 Ora 00:00 BLADE MOTOR SWITCH.-OFF TIME OUT	It is displayed when the blade does not stop. ▶ Check the inverter status and press Reset

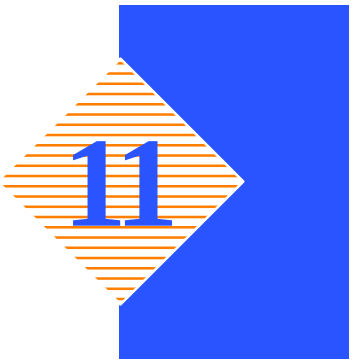
Al 0 Cod 53 Data 00/00/0000 Ora 00:00 BLADE LOCKED	This appears when the blade is locked in the cut
Al 0 Cod 54 Data 00/00/0000 Ora 00:00 NO AIR	It is displayed when the working pressure is below the min. operating threshold
Al 0 Cod 55 Data 00/00/0000 Ora 00:00 BAR TILTER UNIT MICRO INCONSISTENCY	Not available in this machine model
Al 0 Cod 56 Data 00/00/0000 Ora 00:00 TILTER UNIT HIGH MOVEMENT TIME OUT	Not available in this machine model
Al 0 Cod 57 Data 00/00/0000 Ora 00:00 TILTER UNIT LOW MOVEMENT TIME OUT	Not available in this machine model
Al 0 Cod 58 Data 00/00/0000 Ora 00:00 LOAD CELL FAILURE	Not available in this machine model
Al 0 Cod 59 Data 00/00/0000 Ora 00:00 CUTTING VICE: OPENING CONTROL PARITY ERROR	It is displayed when the cutting vice does not open correctly ▶ Check the cutting vice potentiometer connector ▶ Check the pressure on the control unit pressure gauge and the electric connections of the solenoid valves
Al 0 Cod 60 Data 00/00/0000 Ora 00:00 CUTTING VICE: CLOSING CONTROL PARITY ERROR	It is displayed when the cutting vice does not close correctly ▶ Check the cutting vice potentiometer connector ▶ Check the pressure on the control unit pressure gauge and the electric connections of the solenoid valves
Al 0 Cod 61 Data 00/00/0000 Ora 00:00 CUTTING VICE: POTENTIOMETER NOT OK	It is displayed when the cutting vice potentiometer does not work correctly ▶ Check the electric connection and the potentiometer operation
Al 0 Cod 62 Data 00/00/0000 Ora 00:00 FEEDING VICE: OPENING CONTROL PARITY ERROR	It is displayed when the feeding vice does not open correctly ▶ Check the feeding vice potentiometer connector ▶ Check the pressure on the control unit pressure gauge and the electric connections of the solenoid valves

Al 0 Cod 63 Data 00/00/0000 Ora 00:00 FEEDING VICE: CLOSING CONTROL PARITY ERROR	It is displayed when the feeding vice does not close correctly ▶ Check the feeding vice potentiometer connector ▶ Check the pressure on the control unit pressure gauge and the electric connections of the solenoid valves
Al 0 Cod 64 Data 00/00/0000 Ora 00:00 FEEDER VICE: POTENTIOMETER NOT OK	It is displayed when the feeding vice potentiometer does not work correctly ▶ Check the electric connection and the potentiometer operation
Al 0 Cod 65 Data 00/00/0000 Ora 00:00 FEEDER JAMMED	This video page is displayed when the feeder cannot move forwards or backwards due to a mechanical or electro−mechanical obstacle. ▶ Check and remove possible mechanical obstacles. ▶ Check the ST.M. driver, the electric connections and the feeder forward limit switch.
Al 0 Cod 66 Data 00/00/0000 Ora 00:00 HEAD JAMMED	This video page is displayed when the head cannot move upwards or downwards due to a mechanical or hydraulic obstacle. ▶ Check and remove possible mechanical obstacles. ▶ Check pipes, solenoid valves and the hydraulic power pack.
Al 0 Cod 67 Data 00/00/0000 Ora 00:00 COMMAND DISABLED. INTERFERENCE WITH CUTTING VICE	It is displayed when there is an interference between the cutting vice and the feeding vice (if equipped with optional jaws for reducing the scrap) during the “zero scrap” cutting cycle ▶ Close the feeding vice and open the cutting vice
Al 0 Cod 68 Data 00/00/0000 Ora 00:00 LUBRICANT PUMP THERMAL SWITCH TRIPPED	Not available in this machine model
Al 0 Cod 69 Data 00/00/0000 Ora 00:00 BLADE DEVIATION INTERVENTION	Not available in this machine model
Al 0 Cod 70 Data 00/00/0000 Ora 00:00 THERMAL OVERLOAD AUXILIARY PUMPS	It is displayed when the thermal relay of the blade tensioning or of the chip ejector or of the blade−cleaning brush trips. ▶ Restore the thermal switch and press Reset
Al 0 Cod 71 Data 00/00/0000 Ora 00:00 PROGRAMMED MEASURE CANNOT BE PERFORMED	It is displayed when, after having activated the progressive material feeding, the set feeding measure is excessive ▶ Set again the feeding measure
Al 0 Cod 72 Data 00/00/0000 Ora 00:00 CHIP EJECTOR JAMMED	It is displayed when the chip ejector jams ▶ Check the connection of the chip ejector and the operation

Al 0 Cod 73 Data 00/00/0000 Ora 00:00 PRESS RESET BUTTON FOR ENABLE COMMANDS	It is displayed when the machine is switched on. ▶ Press reset to continue
Al 0 Cod 74 Data 00/00/0000 Ora 00:00 INSIDE COMMUNICATION SELEMA DRIVER	It is displayed when a Selema driver malfunctioning occurs.
Al 0 Cod 75 Data 00/00/0000 Ora 00:00 SELEMA DRIVE ALARM	It is displayed when a driver malfunctioning occurs. ▶ Check the driver status and press Reset
Al 0 Cod 76 Data 00/00/0000 Ora 00:00 CANOPEN BUS FAULT	It is displayed when a CAN OPEN network malfunctioning occurs. ▶ Check the status of the RMC module remote expansion board and start the machine again
Al 0 Cod 77 Data 00/00/0000 Ora 00:00 ALARM SLAVE'S DRIVE SELEMA	Not available in this machine model
Al 0 Cod 78 Data 00/00/0000 Ora 00:00 Y AXE, POSITIVE OVER LIMIT ACTIVATED	It is displayed when, positive over limit reached
Al 0 Cod 79 Data 00/00/0000 Ora 00:00 Y AXE, NEGATIVE OVER LIMIT ACTIVATED	It is displayed when, negative over limit reached
Al 0 Cod 80 Data 00/00/0000 Ora 00:00 HEAD NOT ZEROING	It is displayed when, press "START" button and head is not at zero position
Al 0 Cod 81 Data 00/00/0000 Ora 00:00 BAR LOADER AIR LACK	It is displayed when the bar loader air pressure is insufficient
Al 0 Cod 82 Data 00/00/0000 Ora 00:00 OVER LIMIT PLUS HEAD ROTATION ACTIVATED	It is displayed when the positive over limit point of the cutting head rotation is reached
Al 0 Cod 83 Data 00/00/0000 Ora 00:00 OVER LIMIT MINUS HEAD ROTATION ACTIVATED	Displayed when the negative over limit point of the cutting head rotation is reached
Al 0 Cod 84 Data 00/00/0000 Ora 00:00 ROTATION PLANE LUBRICATION OIL LEVEL LOW	It is displayed when the oil level in the cutting plane lubrication tank is insufficient
Al 0 Cod 85 Data 00/00/0000 Ora 00:00 NODE 1 CANOPEN IN ALARM	CANOPEN communication error with the first expansion module
Al 0 Cod 86 Data 00/00/0000 Ora 00:00 NODE 2 CANOPEN IN ALARM	CANOPEN communication error with the second expansion module
Al 0 Cod 87 Data 00/00/0000 Ora 00:00 HDT DRIVE ALARM	Displayed when there is an alarm of the head rotation axis drive

	Displayed when the thermal protection device of the chip aspirator motor trips
	Displayed when the thermal protection device of the disc motor is activated
	Not available in this machine model
	Not available in this machine model
	Displayed when the serial port is not available due to a hardware problem

Optional



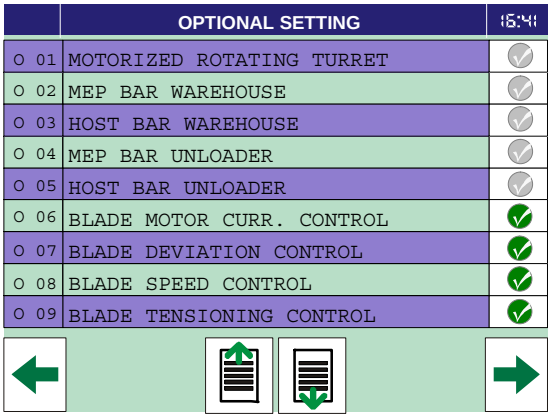
This chapter provides a list of the available accessories that can be fitted to this machine, along with assembly instructions.

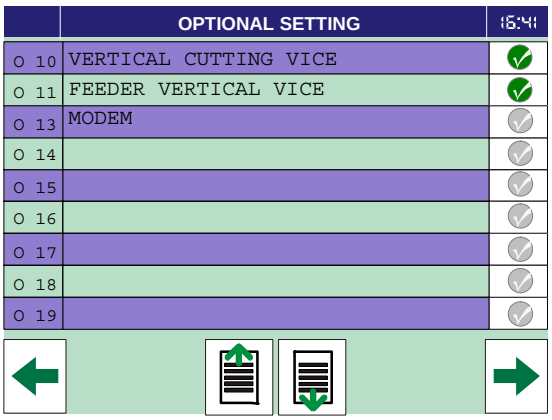
Option setting

In item S 08, you can set the presence of options.

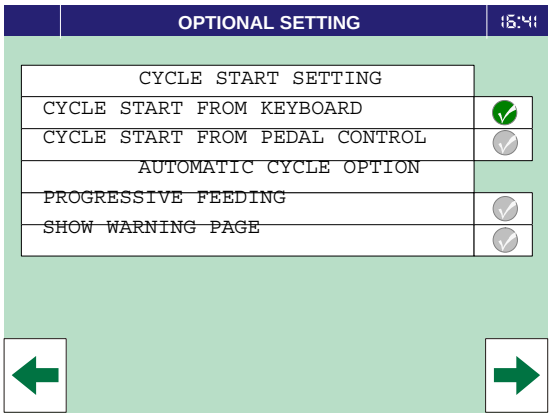
S 08 − Optionals

▶ Press the “check” box to activate (green) or deactivate (white) the presence of options. To scroll the list of all parameters, press the scrolling boxes with the up and down vertical arrows.





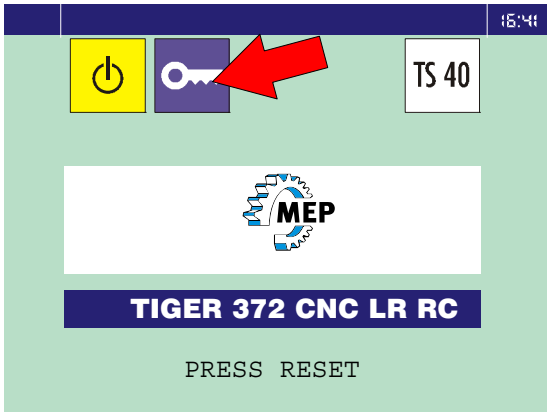
▶ Press the page scrolling box to display the next video page.



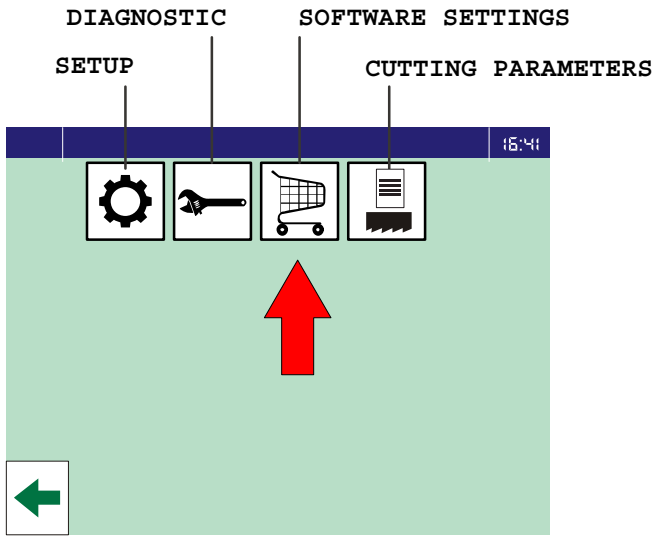
▶ Press “EXIT” to return to PREVIOUS MENU.

Software setting for the options

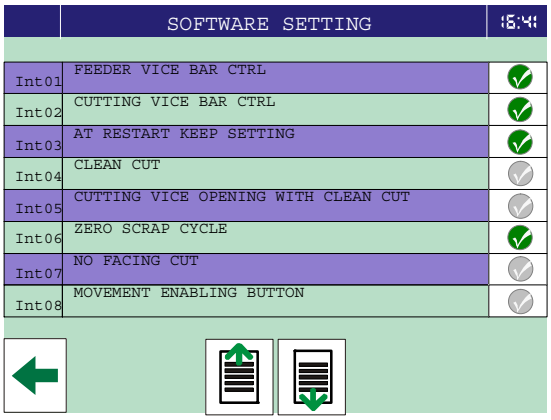
To access the options page of the software program, press the box shown in the figure:

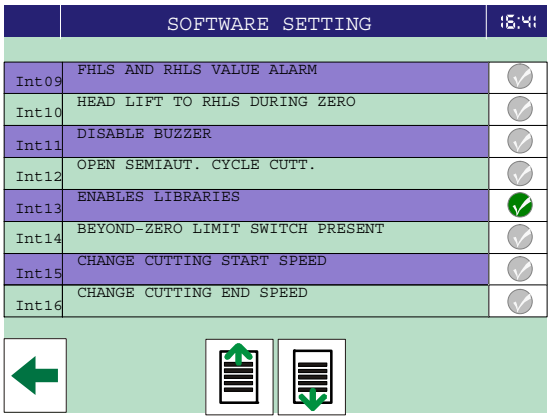


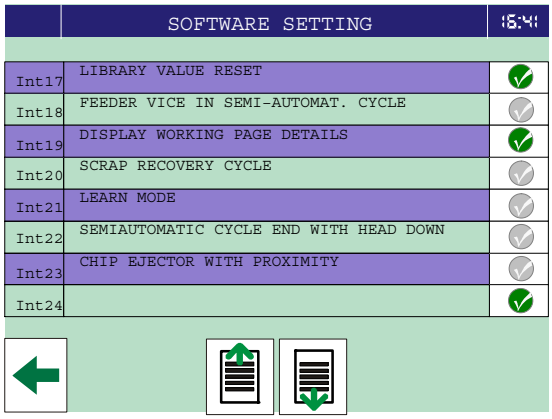
▶ Tap on the box shown in the figure.

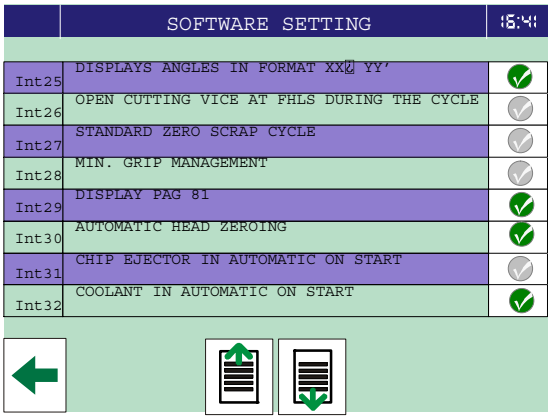


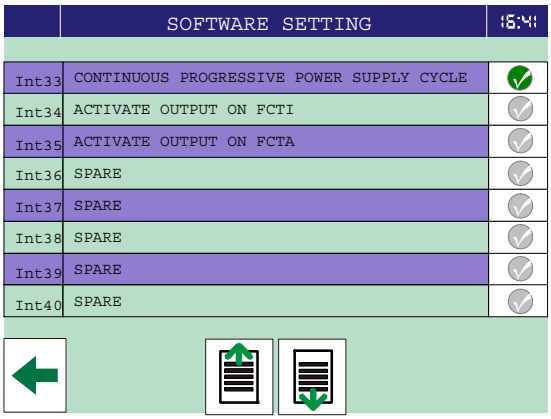
The options installed on the machine must be activated in the list of software settings displayed below:











Accessories available on request

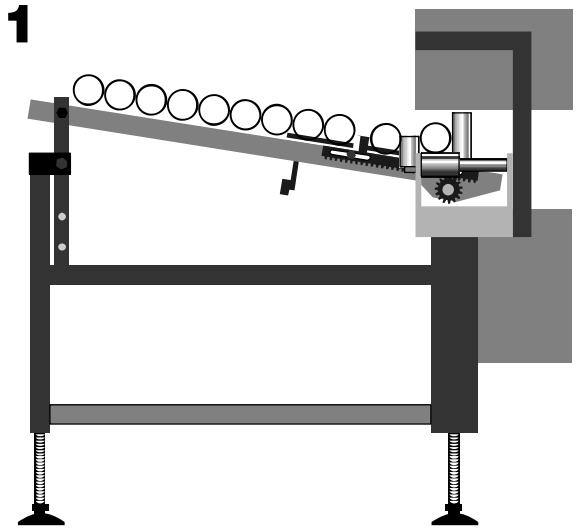
These optional extras must be fitted in the manufacturer's factory, inasmuch as they could be difficult for the user to mount by himself. A list of these parts is provided below.

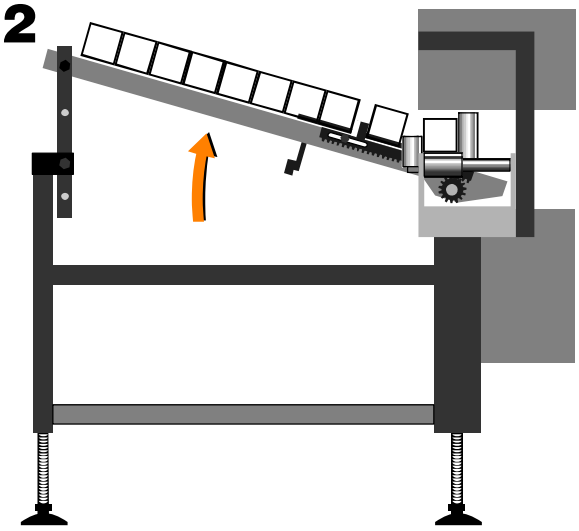
Chute type bar loader CB 6001

This accessory delivers all the bars on the loader chute in order, giving long autonomy to the saw even when unattended.

N.B. CB 6001 must be ordered with the saw, as it is necessary to enhance the controller and to test it carefully before delivery.

It has a surface of 80 cm with adjustable tilt feature, can be loaded entirely with circular bars (1) or square bars (2), solid or tubular, in the dimensions indicated in the table below:





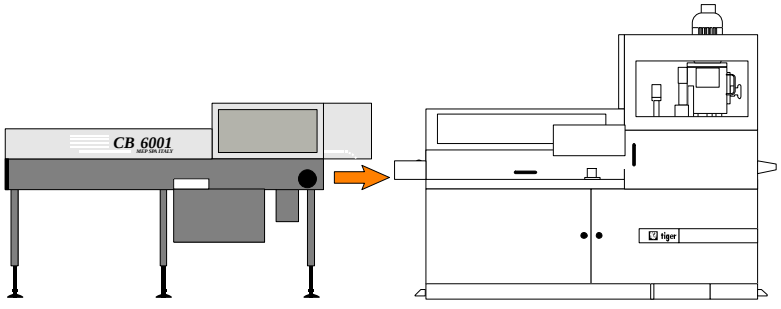
LOAD TABLE						
Sections	●	○	■	□	▬	▭
mm	20÷80	20÷100	20÷80	20÷100	130 x h 10÷35	130 x h 10÷100

It must be connected to a 6 Bar pneumatic power supply and the motor is fed by the saw control.

CHARACTERISTICS		
AIR	3~ 1 0	
BAR	**kw**	**kg**
6	0.37	485

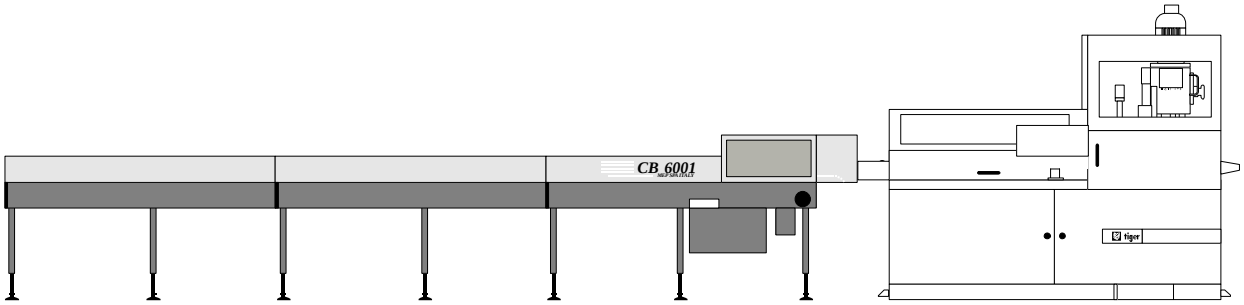
Installation:

- ▶ fit the adaptor, which is together with the motor unit, on the loading side of the machine;
- ▶ position the motor unit on the loading side (left) and connect it to the machine adaptor;



- ▶ before tightening the screws, use a ground bar and place the first module level with the working surface, adjusting the feet;

- fit the other two modules, by inserting the male tubes into the female ones;

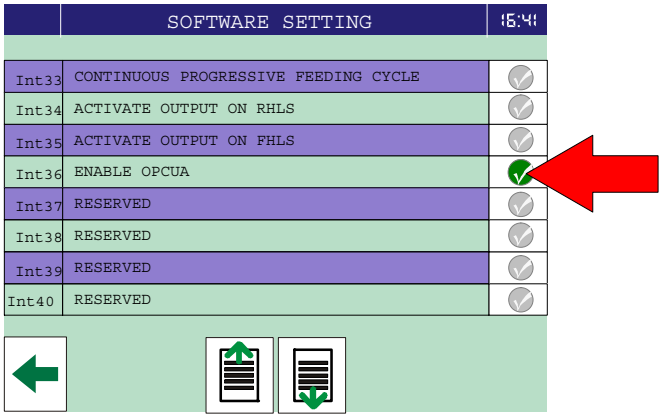


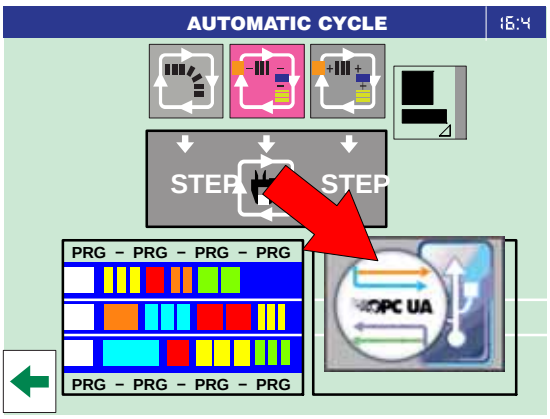
- open the rollers that determine the load section entirely; then insert the drive connection coupling in the crown gear of modules 1 and 2, then of modules 2 and 3;
- fix the modules using screws and bolts in the tube holes;
- unwind the emergency winding, located on the first module, until the device reaches the last module; fix it using screws in an easily accessible place;
- take the emergency mushroom, located on the first module, to the end of the last module which is set for fixing and connecting the cables;
- insert the power supply plug into the socket on the left−hand side of the machine;
- connect the male terminals of the signal cables to the controller card, making them pass through the hole in the electric cabinet with sheath and fitting, then connect the male terminals with the female terminals inside the cabinet.

OPCUA

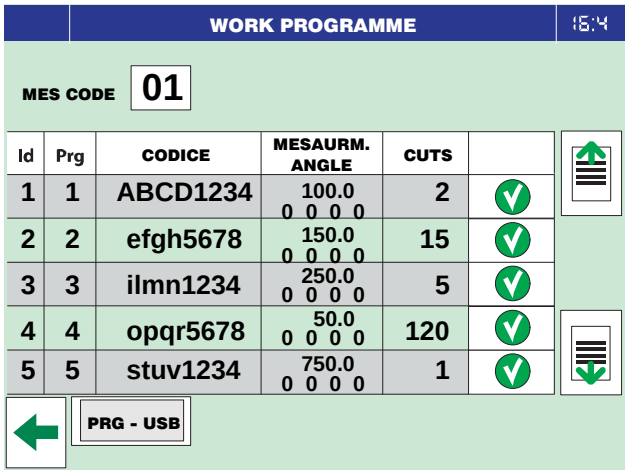
By enabling the relevant item on the Software Setting" page, the icon shown in the figure appears on the programming page of the automatic cycle.

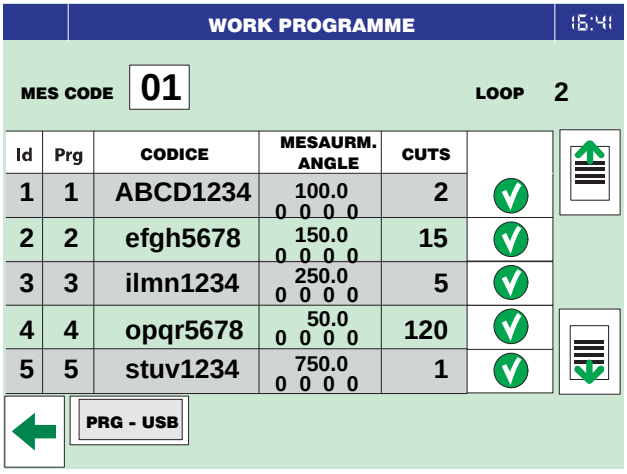
N.B. The OPCUA functionality can only be activated if the machine is equipped with the optional "IoT Industry 4.0 Ready Kit", which can be purchased upon the order.



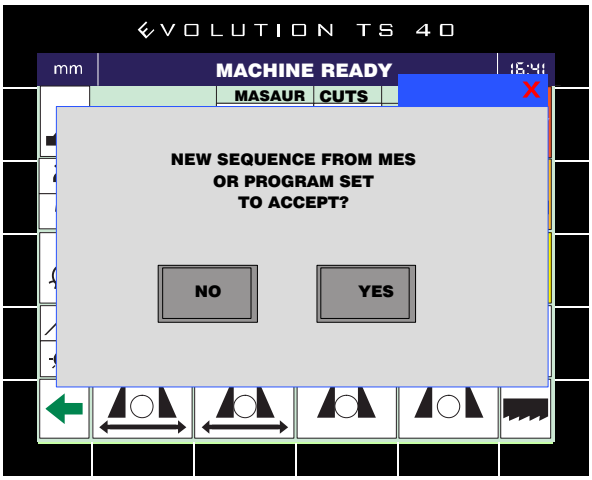


▶ It can only be activated in single or continuous cycle and in single or continuous loop. Press the icon and the following screen is displayed, where you can view the remotely transmitted work program:

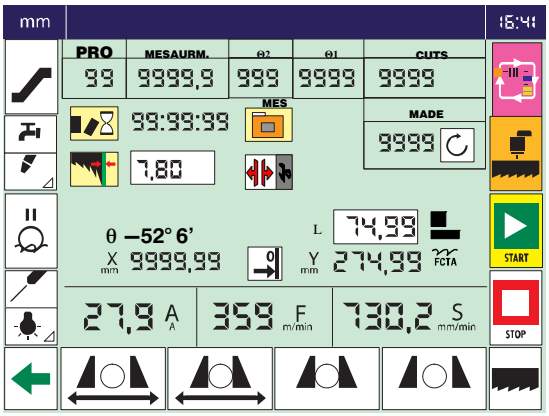




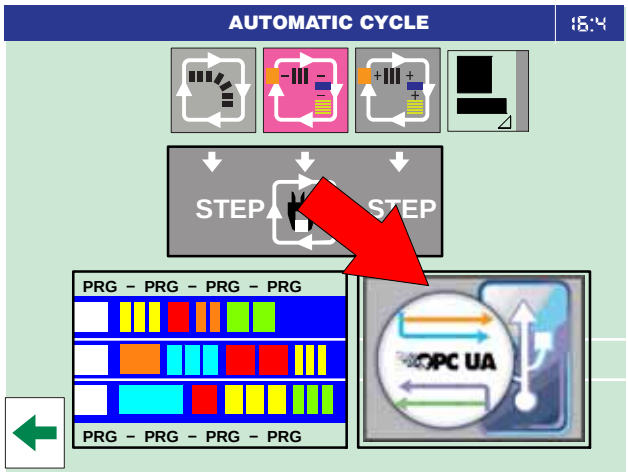
N.B. When the remote write procedure is started via OPCUA, the following message is displayed. Press "Yes" to accept or "No" to reject.

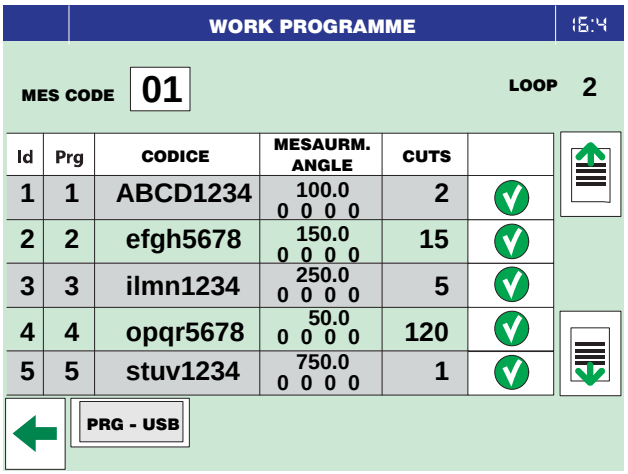


▶ When running a remotely transmitted work program, the work screen in “Single Cycle” or “Continuous Cycle” becomes as follows.

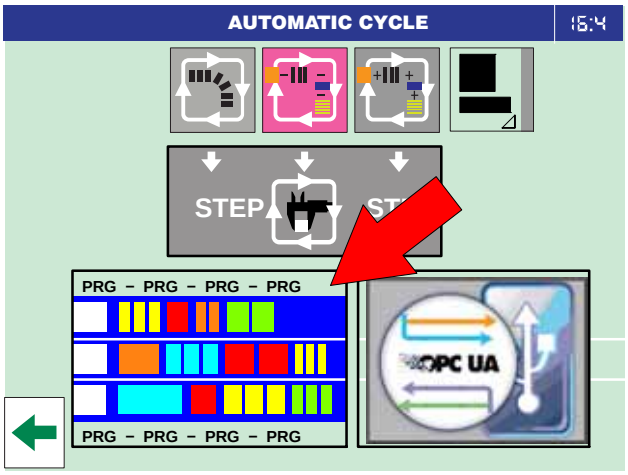


▶ To open the list of remotely transmitted sequences, from which the desired sequence can be selected, return to the automatic cycle programming screen and press the icon shown in the figure.

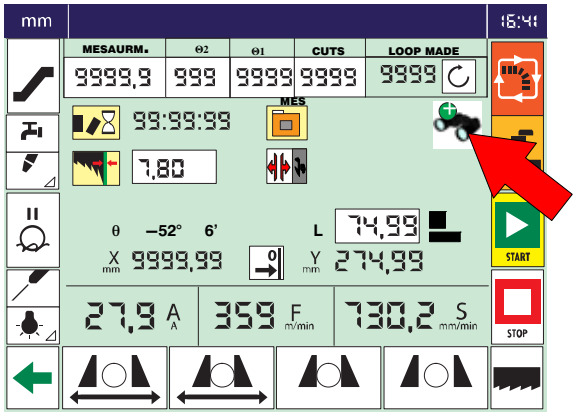


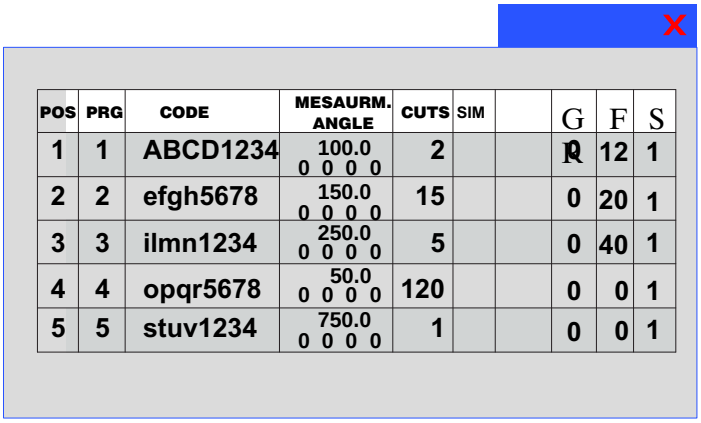


▶ To return to normal local operation of the sawing machine, press the icon shown in the figure.



▶ When running a remotely transmitted work program, the work screen in “Single Program” becomes as follows. Press the “Magnifying glass” to open the list of programs transmitted remotely, from which the desired program can be selected.





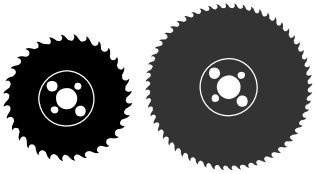
POS	PRG	CODE	MESAURM. ANGLE	CUTS	SIM		G	F	S
1	1	ABCD1234	100.0 0 0 0 0	2			0	12	1
2	2	efgh5678	150.0 0 0 0 0	15			0	20	1
3	3	ilmn1234	250.0 0 0 0 0	5			0	40	1
4	4	opqr5678	50.0 0 0 0 0	120			0	0	1
5	5	stuv1234	750.0 0 0 0 0	1			0	0	1

Optional

Blade (to be requested when ordering)

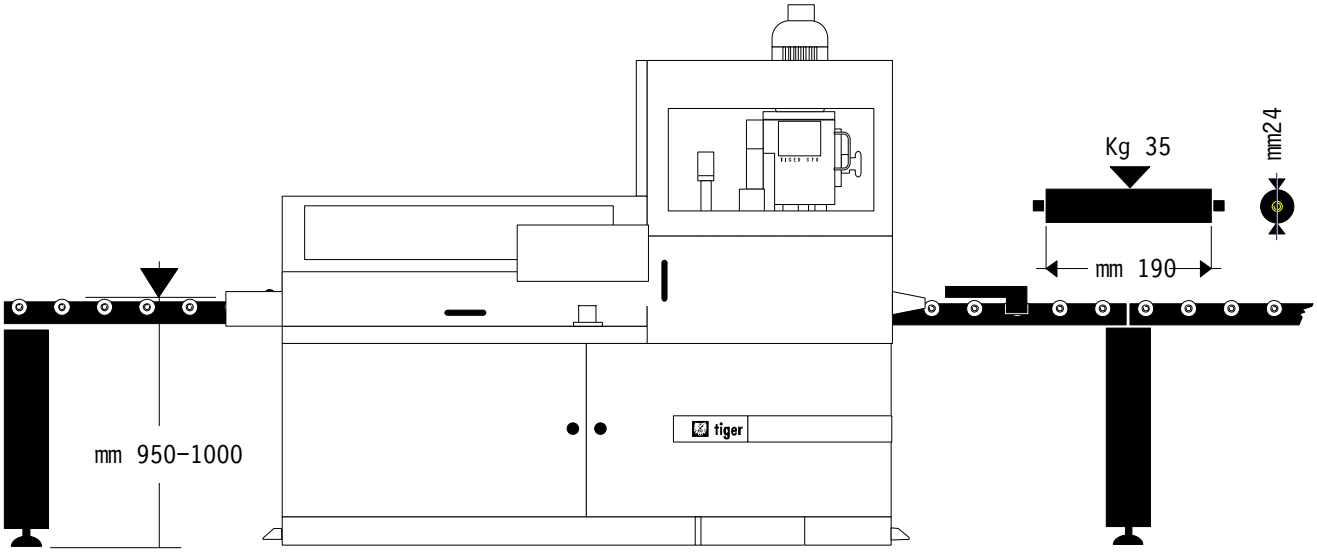
The disk for the **TIGER 372 CNC LR RC 4.0** is:

- circular blade HSS DMo5/M2 D.350x32x2,5.



Roller table

- KK200 roller table module for feed side, 1500 mm;



- KK200 roller table module for discharge side, 1500 mm.

Can of emulsible oil

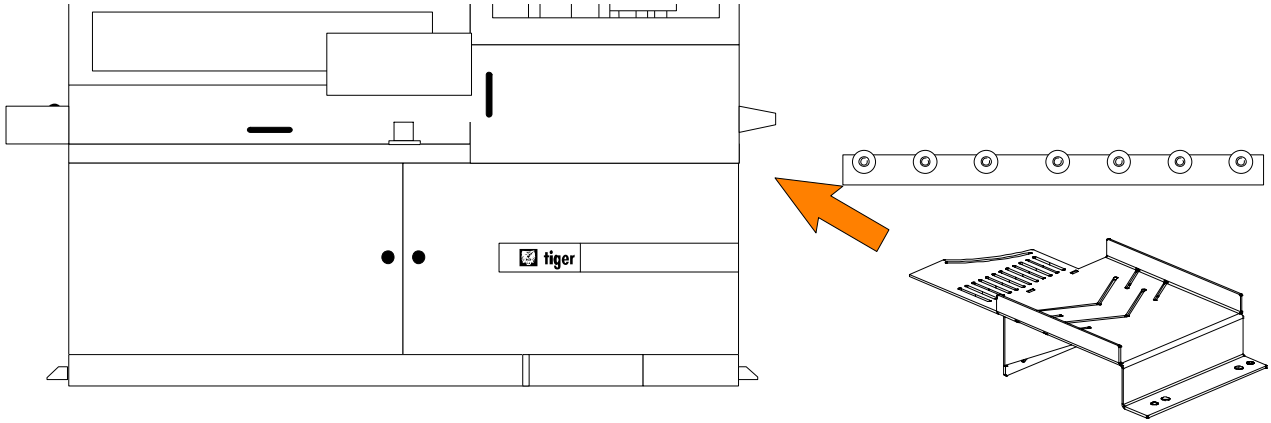
5 l can of emulsible oil.

Adattatore pianale a rulli lato scarico

This device is used to attach the discharge roller table to the machine, and instructions are supplied below for how to assemble it:

▶ remove the chute from the right−hand side of the fixed platform;

▶ attach the adapter and secure it in place with the screws removed previously.

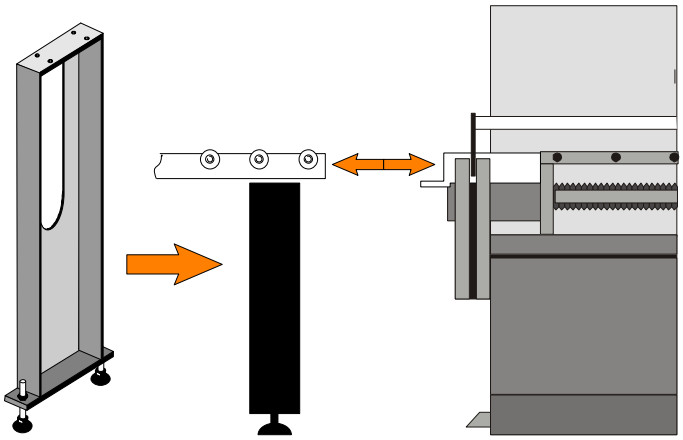


▶ Attach the outfeed rolling deck by fixing it with the screws supplied.

Feed side roller table support

This device is used to increase the load−bearing strength of the roller table, both during feeding and discharge. The steps which should be followed to assemble it are illustrated below.

▶ Disconnect the table from the adapter (on the discharge side, for example);

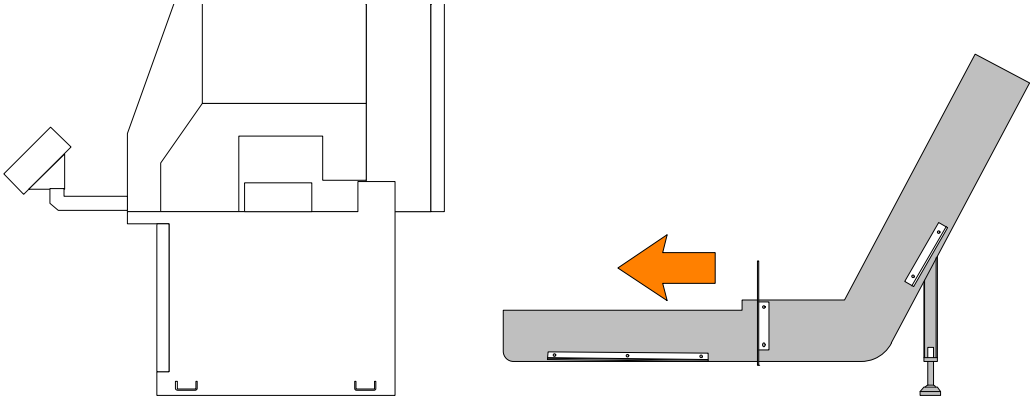


▶ position the support to correspond with the holes on the base of the trailer and reconnect to the adapter.

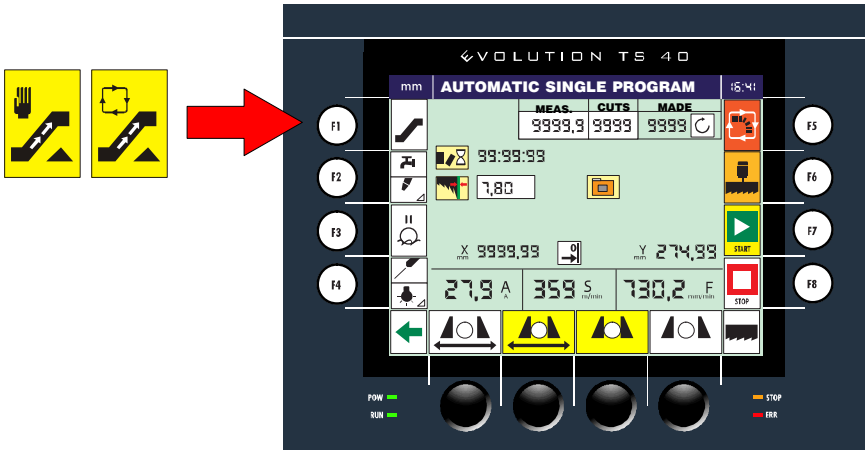
Motor chip discharger unit

This device can be used to eliminate the chips from the chip collection drawer; for installation, proceed as follows:

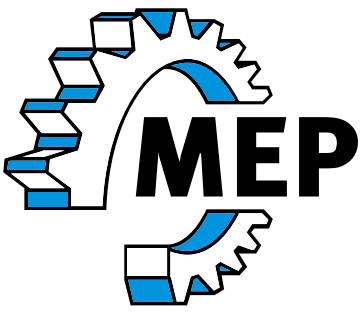
- disconnect the machine from the power supply;
- extract and remove the chip collection drawer;



- fit the lower part of the discharger unit in the place of the drawer, making the holes coincide for the screws;
- adjust the discharger unit feet so that the conveyor belt is slightly tilted;
- connect the machine to the power supply again;
- start the machine and select the operating mode on the control panel.



Mep spa guarantees that the sold product is free from defects making it unsuitable for its intended use or significantly decreasing its value.
The guarantee shall not apply if the buyer was aware of defects in the product when buying it or if defects were clearly recognizable.
Regulations by the Italian law shall apply to this article.


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