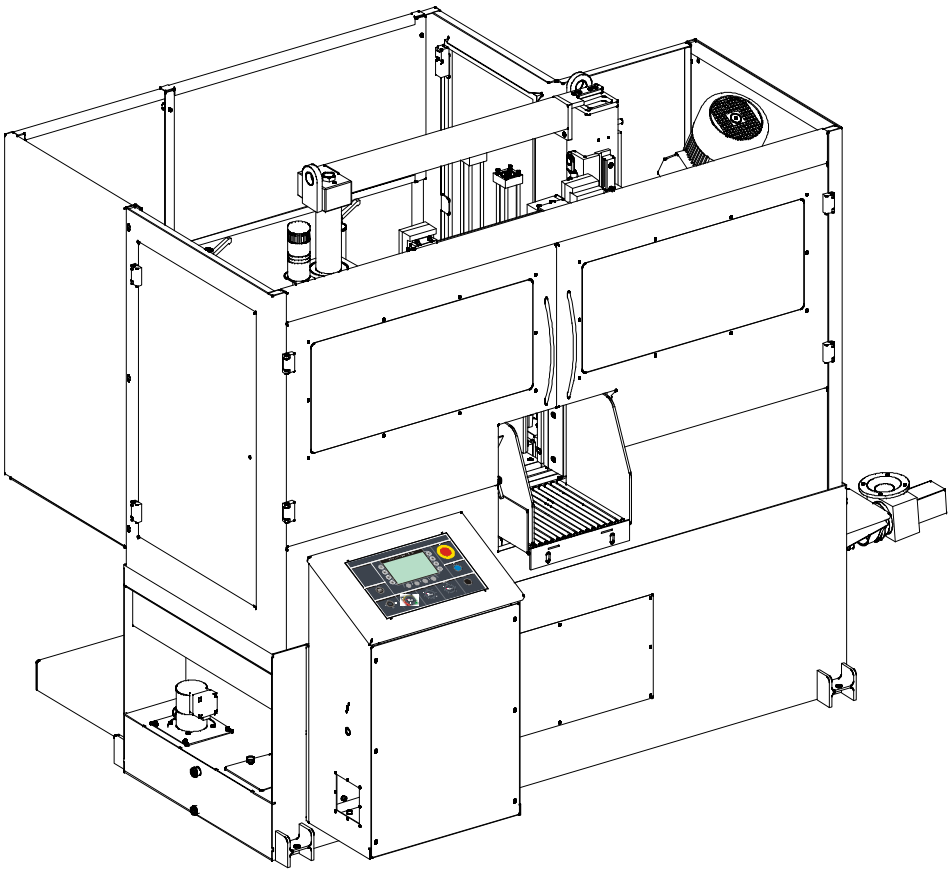


USE AND MAINTENANCE MANUAL

EN H- 11A

YEAR OF MANUFACTURE: _____

CEDECLARATIONOFCONFORMITY
(UndersectionCEE2006/42/CE,MachineDirective,supplementIIA)

Themanufacturer: **MEP(SUZHOU)CO.LTD**
(PR.CHINA)

Herebydeclaresthatthebandsawingmachine:

MachineType: **Sawingmachine**

BandSawModel: **H-11A**

SerialNumber:

YearofManufacture:

isinspecificationwiththefollowingdirectives:

MACHINEDIRECTIVECEE2006/42/CE
DIRECTIVE2006/95/CE"LVD"
DIRECTIVE2004/108/CE"EMC"

ResponsibleforT.C.F.:_____
(WalterDiGiovanni)
(Italy)

ManagingDirector: _____ Date:_____
(MicheleD'Angelo)
(China)

MEPGROUP

ITALY:MEPSPA,SEGATRICI,ViaEnzoMagnani,1,61045Pergola(PU)ITALIA.(T)072173721(F)0721734533

CANADA: 1079ParkinsonRoad,Woodstock,Ontario,N4S0A9,(p)519-537-2103(f)519-539-5843

CHINA: Building6,FuMinIndustrialPark,No.318SuwangRoad,WuzhongDistrict,215104Suzhou,China

Introduction and technical specifications

1

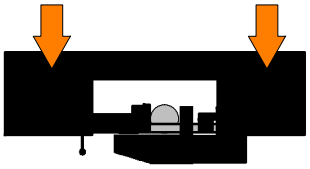
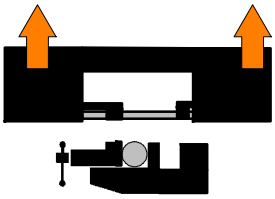
Foreword

For decades we have been committed to construction of the very best in metal cutting saws. With all our experience, technological know how for the latest in product and design, Hyd- Mech is able to offer customers specific solutions to all cutting needs and requirements.
In response to modern production technologies **Hyd- Mech** has developed this new band saw. **H- 11A** .
This work tool has been designed as a simple and reliable answer to the wide range of cutting needs of the modern workshop.
Sturdy structure, silent and safe operation it can cut with minimal waste and is extremely versatile, ideal for cutting stainless steel, light alloys, aluminium, copper and bronze offering exceptional speed and precision.
Its high cutting capacity enables it to handle both single workpieces and bundles, making this machine the ideal solution for satisfying the wide range of cutting needs of machine shops, turneries, structural steel shops and engineering workshops.
Congratulations for having chosen this product which, **by following the instructions contained in this user and maintenance handbook** will guarantee years of dependable service.

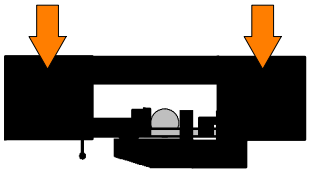
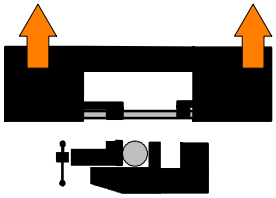
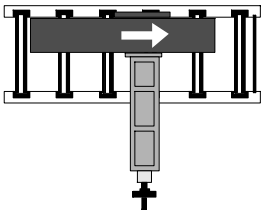
Warning This band saw has been exclusively designed to cut metals.

Machine presentation

La **H- 11A** is a hydraulic electro- mechanical cutting saw for solid and section cutting of metals. Machine operation is either SEMIAUTOMATIC or AUTOMATIC.
In the Semiautomatic cycle, after setting the bow cutting sequence from the control panel and the speed of the descent cutting head, the operator closes the vice by pushing the button from the control panel and pushes the start key to start up the belt. Then:

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
			

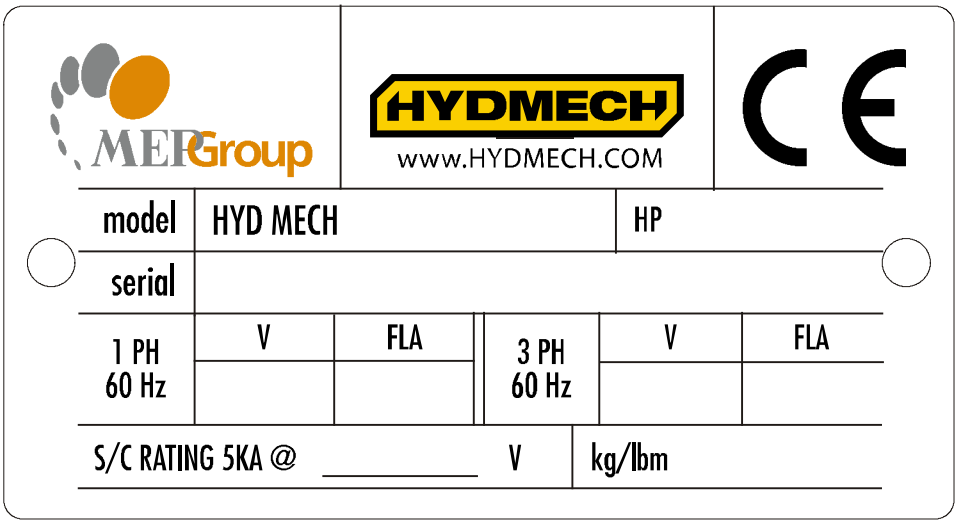
In the Automatic cycle, after setting the bow cutting sequence from the control panel and the speed of the descent cutting head, the operator closes the vice by pushing the key from the control panel and pushes the start key to start the belt. Then:

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

Attention Before starting any of the work cycles, consult Chapter 5, where all the work phases are explained in detail.

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 general table

CUTTING SPEEDS		
Blade rotation speed	mt/min ft/min	15÷115 49÷377

BAND SAW		
Nominal dimensions	mm in	4500 x 34 x 1,1 177.16x1.34x0.04
Development	mm in	4500 ± 40 177.16 ± 1.57
Blade height	mm in	34 1.34
Blade thickness	mm in	1,1 0.04
Blade tension	kg lbs	1600 3520

Attention

When choosing the cutting tool, if its dimensions do not correspond to those included in the ”Rated size” section, check that the dimensions at least fall within the admissible max/min specifications.

RATED ELECTRICAL POWER		
Head spindle motor	kW hp	4 5.36
VFD	kW hp	5,5 7.37
Electric coolant pump motor	kW hp	0,12 0.16
Power pack motor M1	kW hp	1,3 1.74
Feed step motor	kW hp	0,44 0.59
Max. installed electrical power	kW hp	7,36 9.86

FULL LOAD AMPERAGE		
FLA (230 V)	Amps	25
FLA (480 V)	Amps	16

WORKING PRESSURE		
Head working pressure during descent/ascent	bar psi	25 362.56
Vice working pressure during opening/closure phase	bar psi	25 362.56
Hydraulic control unit working pressure	bar psi	38 551.14

MATERIAL FEEDER		
Feeder stroke	mm in	460 18.11
Max weight capacity	kg lbs	1500 3300
Bar feed force	N	6000

LUBRICANT/COOLANT FLUID AND OIL		
Oil for monobloc hydraulic power pack	capacity lt	36
Lubricant/coolant fluid (5- 6% oil concentration)	capacity lt	200

CUTTING AND FEED VICES		
Vice max. opening	mm in	345 13.58

SPINDLE MOTOR
4- pole, three- phase, asynchronous;

No.of poles	Frequency (Hz)	Current (Volts)	Absorption (Amps)	Power (kW) (hp)	rpm
4	60	133/230	25,1/4,5	4 5.36	1730
4	60	278/480	12/6,97	4 5.36	1730

Stator wound with enamelled copper wire, class H 200° C.

Class F insulation (limit temperature TL 155° C).

Protection rating IP 54.

Conforming to CEI norms, publication: IEC 34 of 01/07/1985.

HYDRAULIC POWER PACK MOTOR SPECIFICATIONS M1
4- pole, three- phase, asynchronous; Frequency 60 Hz.

No.of poles	Current (Volts)	Absorption (Amps)	Power (kW) (hp)	rpm
4	240/480	5,0/2,5	1,3 1.74	1660

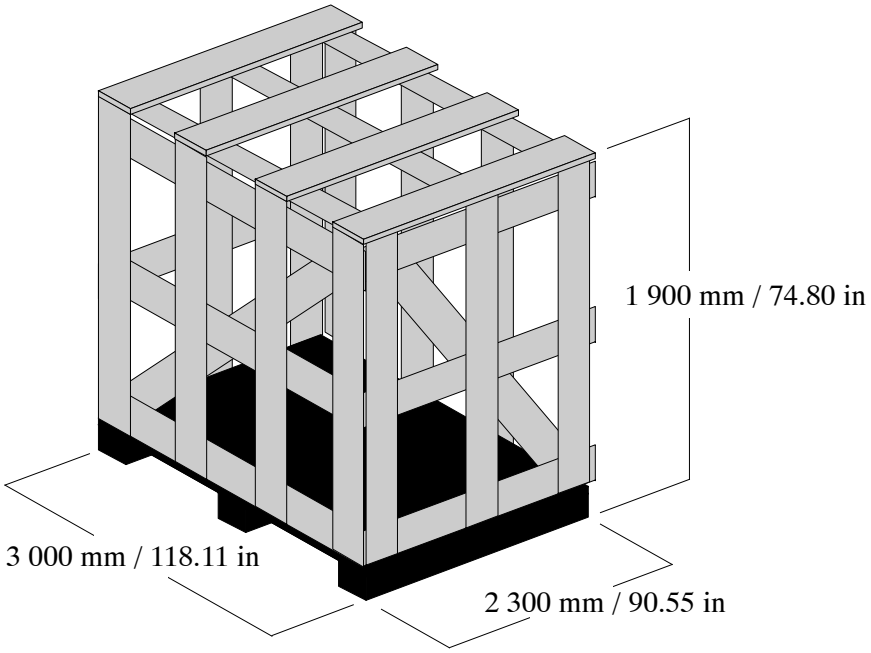
Protection rating IP 55.

Conforming to CEI norms, publication: IEC 34 of 01/07/1985.

ELECTROPUMP MOTOR Single phase; Frequency 60 Hz.					
Voltage (Volts)	**Absorption (Amps)**	**Power (kW) (hp)**	**rpm**	**Delivery rate lt/min**	**Head (mt.) (ft)**
240	0,58	0,12 0.16	2800	50	6 19.68
Protection rating IP 55.					
Conforming to CEI norms, publication: IEC 34 of 01/07/1985.					

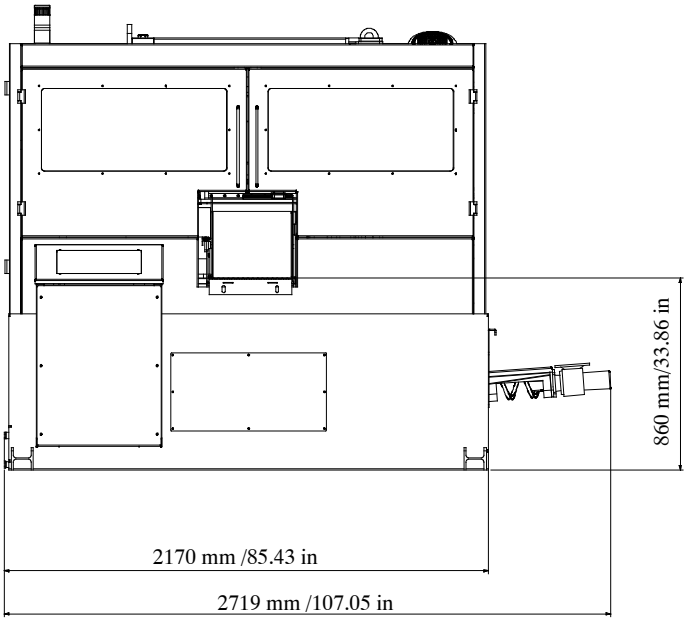
CUTTING CAPACITY		
Section	●	■
0°	280 11.02	280x280 11.02x11.02
Remnant length: 40 mm / 1.57 in		

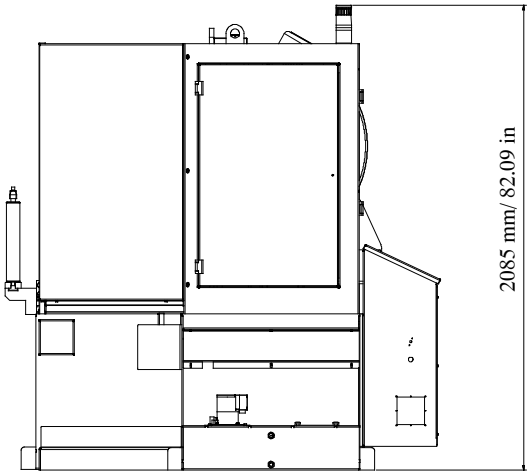
PACKED WEIGHT		
Wooden cage and pallet	kg lbs	300 660
Wooden pallet	kg lbs	150 330

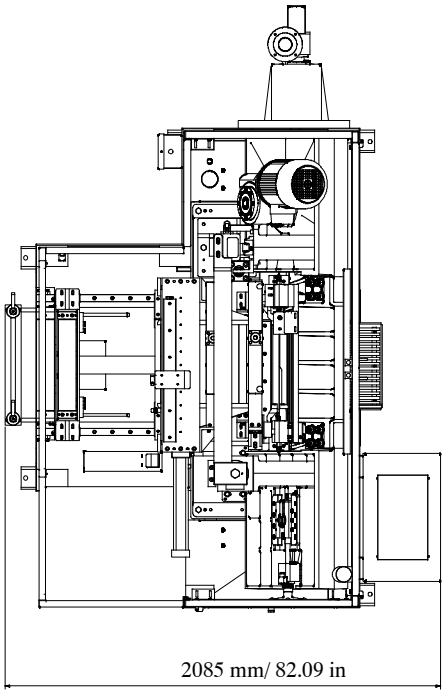


Dimensions

MACHINE INSTALLED		
Work table height	mm in	860 33.86
Weight	kg lbs	2600 5720





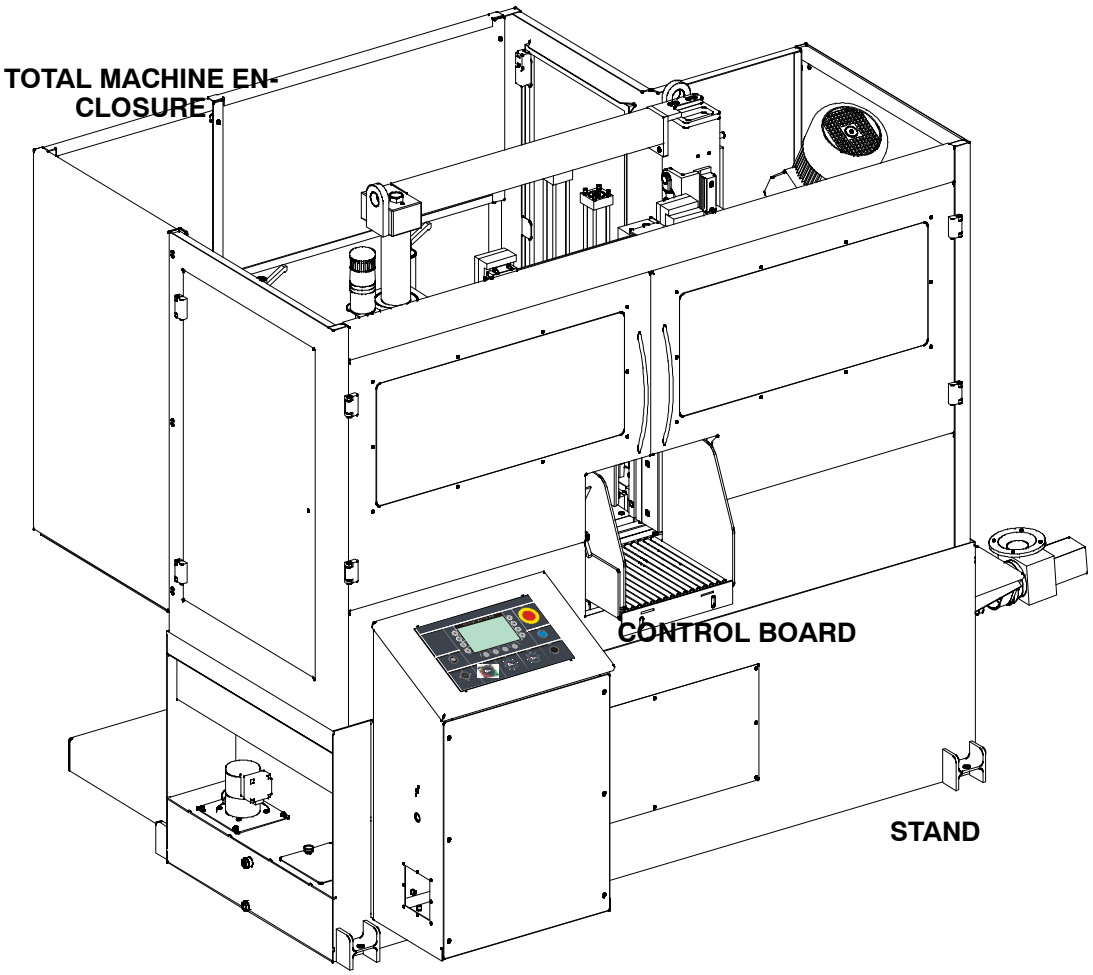


Functional parts

2

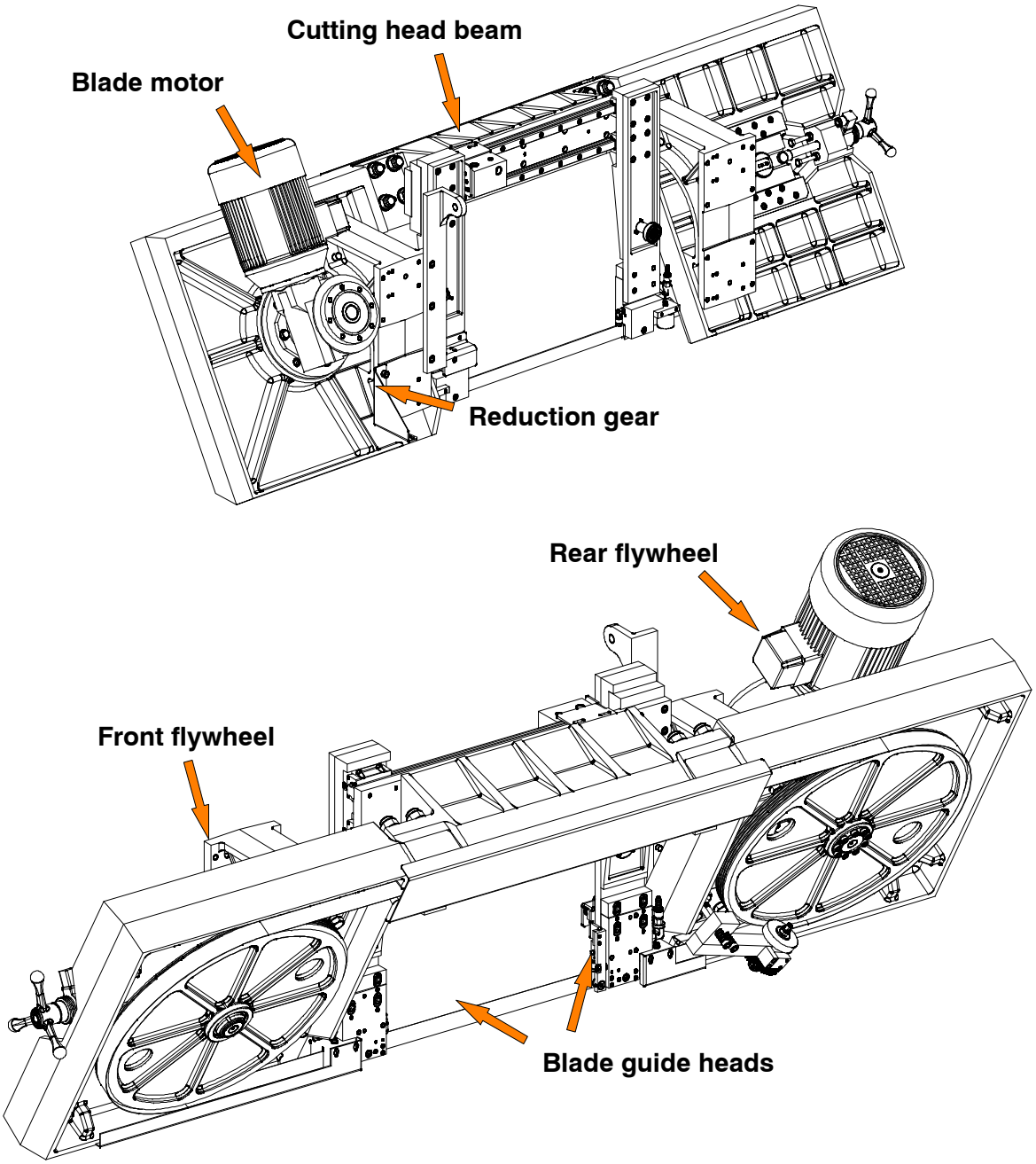
H-11A model

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.



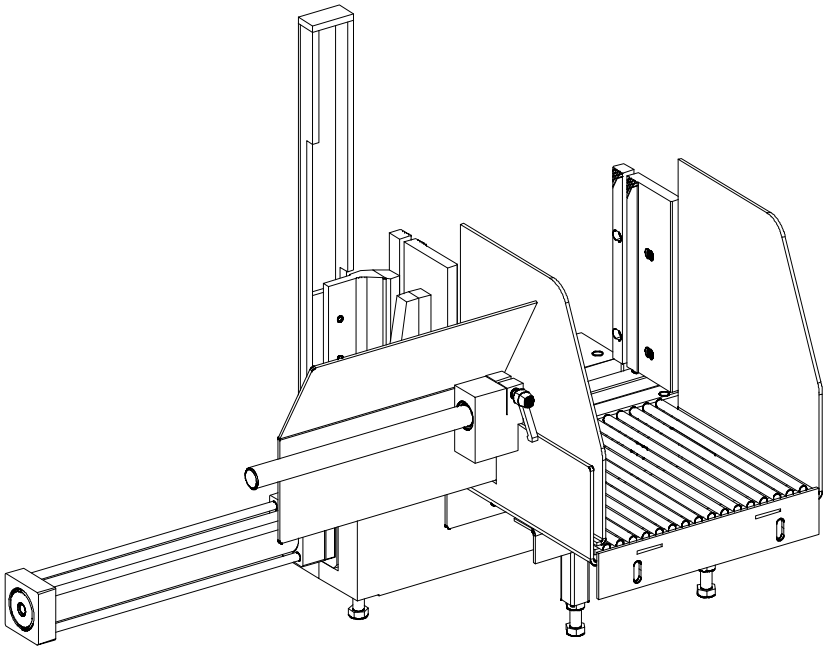
Cutting bow (Cutting head)

The operating head is the cutting component and is made up of a bow from cast iron on which the following elements are installed: band, band guide components, band tensioning unit, worm screw reducer and spindle motor.
The cutting bow slides on linear guides, with ball- recirculation slides, installed on columns for getting a better cutting stability and longer blade life. Feeding is by a hydraulic cylinder on linear guides with ball- recirculating slides.
The machine is equipped with a laser system to position the bar accurately to carry out non--standard or facing cuts.



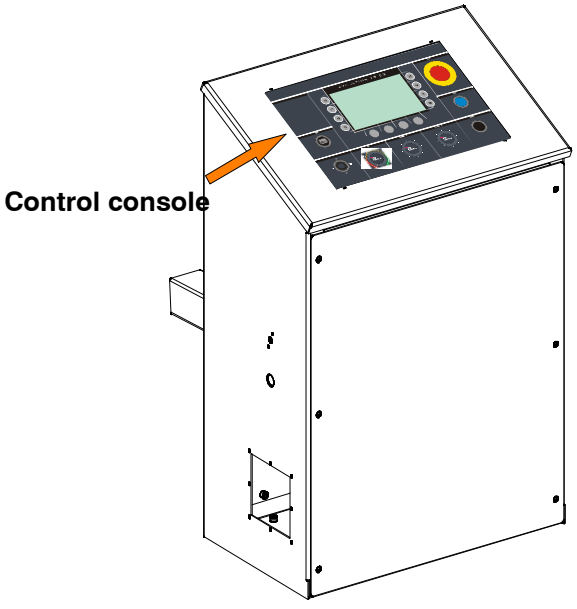
Cutting vice

The vice is the unit that clamps the workpiece during cutting; it consists of a vice support, commonly known as a “lead nut” fixed to the work table on which a mobile jaw is mounted. The opening or closing movement is carried out through the relevant keys on the console.



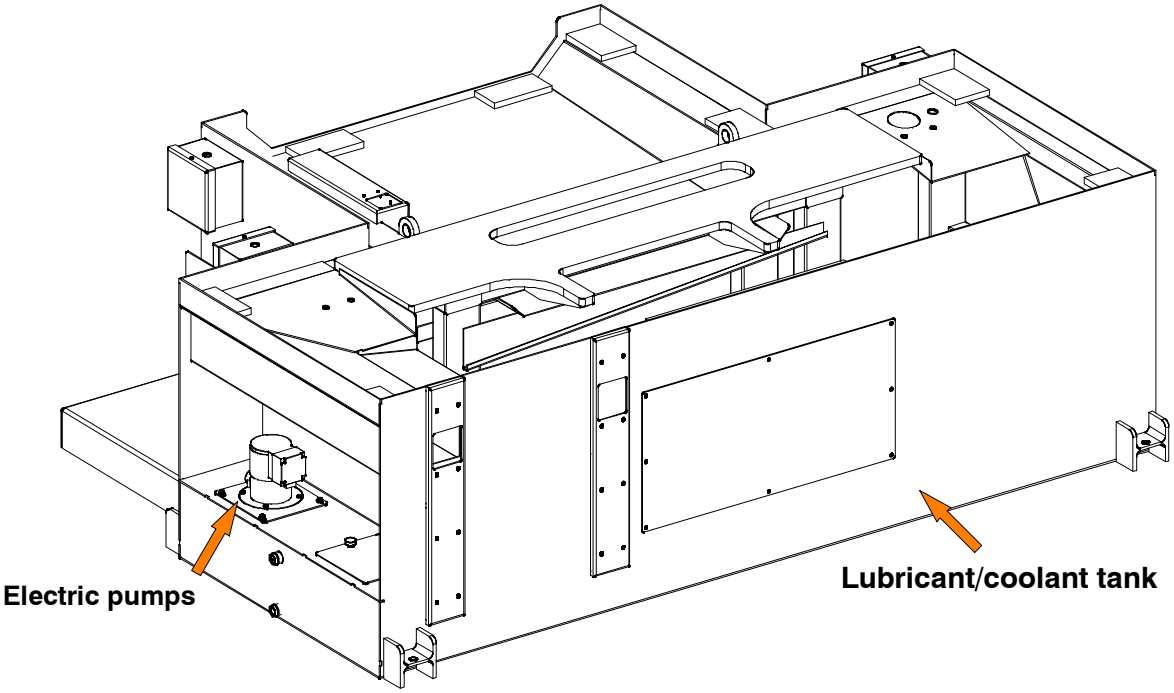
Control Panel

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.



Base

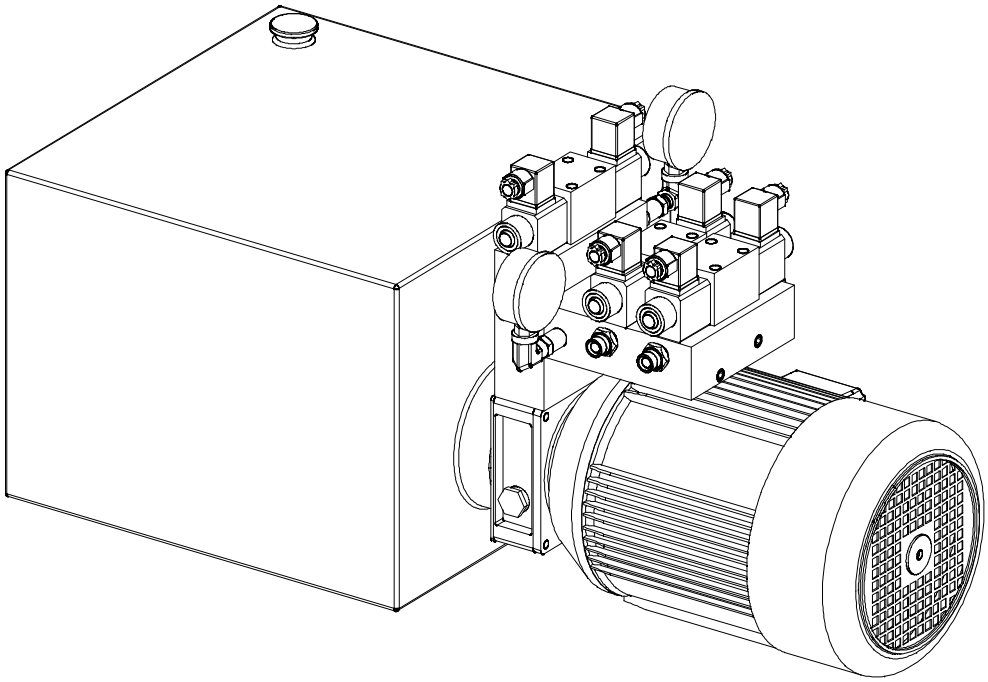
This unit features a large coolant collection surface which conveys the coolant to the rear tank via the tank cover, and a swarf collection drawer.
The electric pump seated inside the tray sucks the clean liquid from the progressive filter system and makes it circulate again to ensure an efficient flowing of the processing residues and the lube- refrigeration of the cutting tool.



The coolant gun is on the right of the cutting plane. On the front right of the base there is a chip tray that can be replaced with an optional chip extractor.
The hydraulic control unit and the electric board are located in the right rear side.

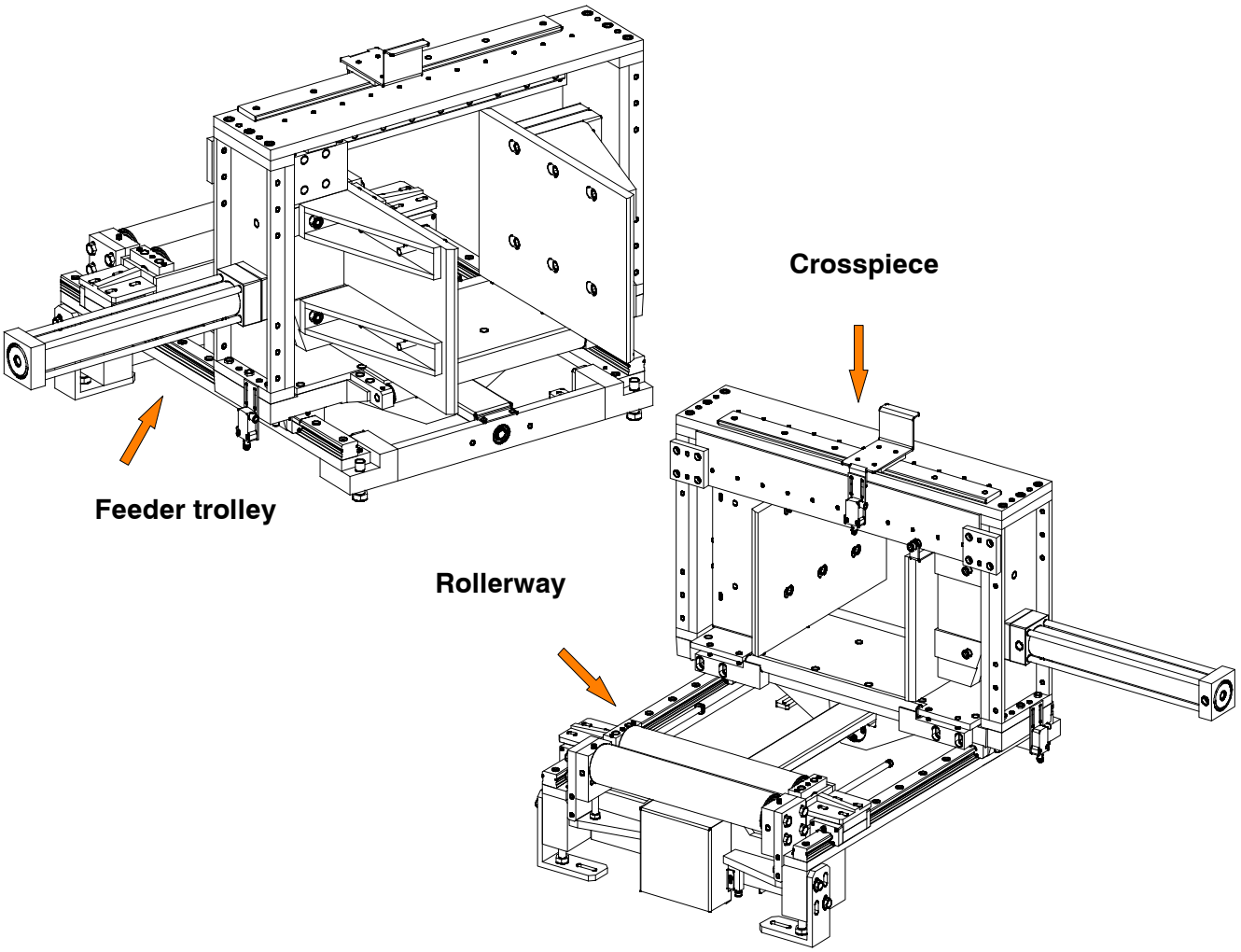
Hydraulic control unit

The hydraulic control unit operates the cutting vice and the feeding vice and balances the weight of the cutting bow. It is located in the machine rear part under the metal protection. The oil exchange in the circuits is operated by solenoid valves driven by the machine controller.



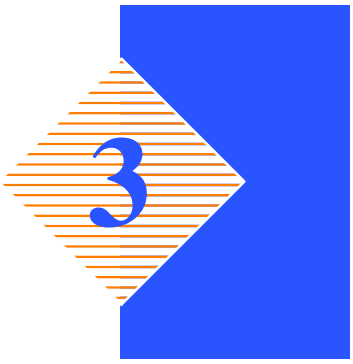
Feeder

The material is fed by the feeding shuttle which clamps the material with the hydraulic vice and draws the cutting material by sliding on ground guides. The numeric control very accurately drives the stepper motor of the feeding shuttle, thus enabling the operator to set 24 sequences of 50 programs each chosen among max. 300 cutting programs, with different quantity and length, on the same bar.



The stepper motor and the power supply structure, can supply power to bars up to 3000 Kg (6600 lbs) even when sheared, because they are equipped with a self- aligned vice.

Safety and accident prevention



The **H- 11A** 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 **H- 11A** band saw cutting machine 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 **EEC 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 ISO 8995- 89 "Lighting in work environments").

CONNECTIONS

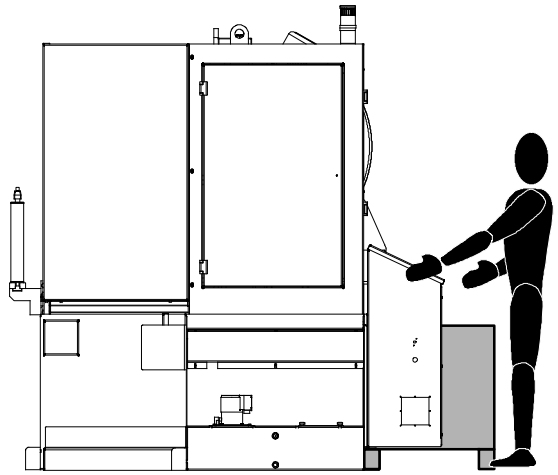
Check that the power supply cables and pneumatic feed systems comply with the maximum machine absorption values listed in the "Machine Specification" tables; replace if necessary.

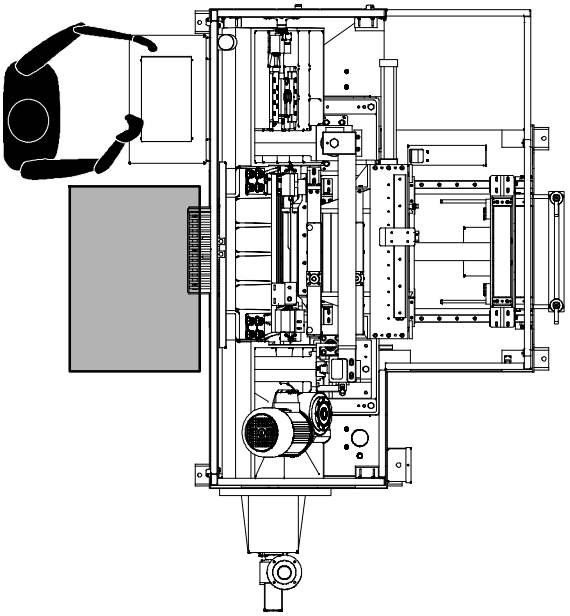
EARTHING

The installation of the earthing system must comply with the requirements set out in NORMA EN 60204- 1:2010.

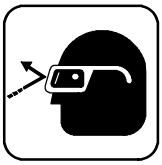
OPERATOR POSITION

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





Recommendations to the operator



Always wear proper goggles or protective glasses.

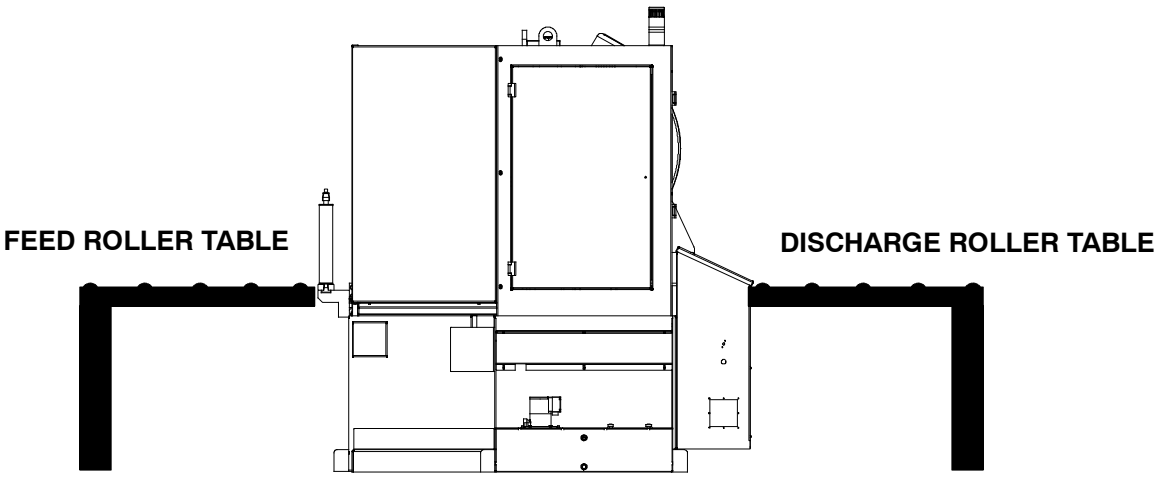
Do not use the machine without the guards in position. Replace the polycarbonate windows , if subject to corrosion.

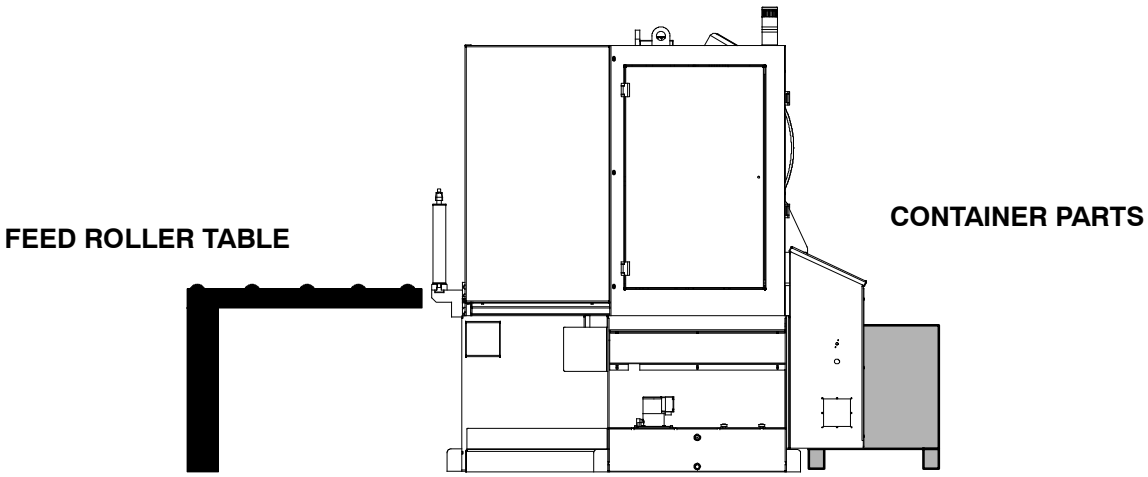
Do not allow hands or arms to encroach on the cutting zone while the machine is in operation.

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 cutting, suitably support the material on both machines sides, using the standard bar supporting arm, or optional accessories such as the load and unload roller ways as shown in the drawing here below. Before removing the material supporting and driving devices, lock the material with the machine clamping devices or other suitable tools. If the unloading table is not available, position a basket for collecting the cut pieces close to the sawing machine on the unloading side.



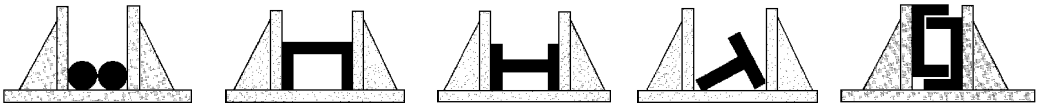


Any maintenance work on the hydraulic or pneumatic systems must be carried out only after the pressure in the system has been released.

The operator must not perform any risky operations or operations not required for the machining operation under way (e.g. remove swarf or metal shavings from the machine while cutting).

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

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 different profiles correctly in our machines are shown below.



Do not use the machine to cut pieces that exceed the capacity of the machine as listed in the machine specifications.

Never move the machine while it is cutting.

Do not use blades of different sizes to those recommended in the machine 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 (MA version) check that the jaws move right up to and effectively clamp the workpiece, as the maximum travel is only 8 mm, (0.31 in) and check that the clamping procedure is correct.

When working on the band saw, wear gloves only when handling materials and for tool changing or adjustment operations. Only perform 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 push- button immediately. If this does not free the blade, slowly loosen the vice, remove the piece and check the blade or blade teeth for breakage. Replace the blade if necessary.

Before carrying out any repair work on the machine, consult the Hyd-Mech Technical Assistance Service: this can be done through a representative in the country of use of the machine.

Adjustment of the blade- guide head must only be carried out with the machine at a standstill.

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 **H- 11A** band saw.

Reference standards

MACHINE SAFETY

- EEC MACHINES DIRECTIVE 2006/42/CE ;
- EEC directive no. 89/336 ”EMC - Electromagnetic Compatibility”;
- EEC Directive No. 2006/95/CE known as ”Low voltage directive”.
- EN 13898:2003+A1:2009 Machine tools - Safety - Sawing machines for cold metal

HEALTH AND SAFETY AT WORK

- EEC Directive No. 80/1107; 83/477;86/188;88/188; 88/642 for the protection of workers against risks caused by exposure to physical, chemical and biological agents during working;
- EEC Directive No. 89/391 and Special EEC Directives No. 89/654 and No. 89/655 for improvements in health and safety at work;
- EEC Directive No. 90/394 for the protection of workers against risks deriving from exposure at work to carcinogenic substances;
- EEC Directive No. 77/576 and No. 79/640 on safety signs at work.

PERSONAL PROTECTION

- EEC Directive No. 89/656 and No. 89/686 on the use of personal protection devices.

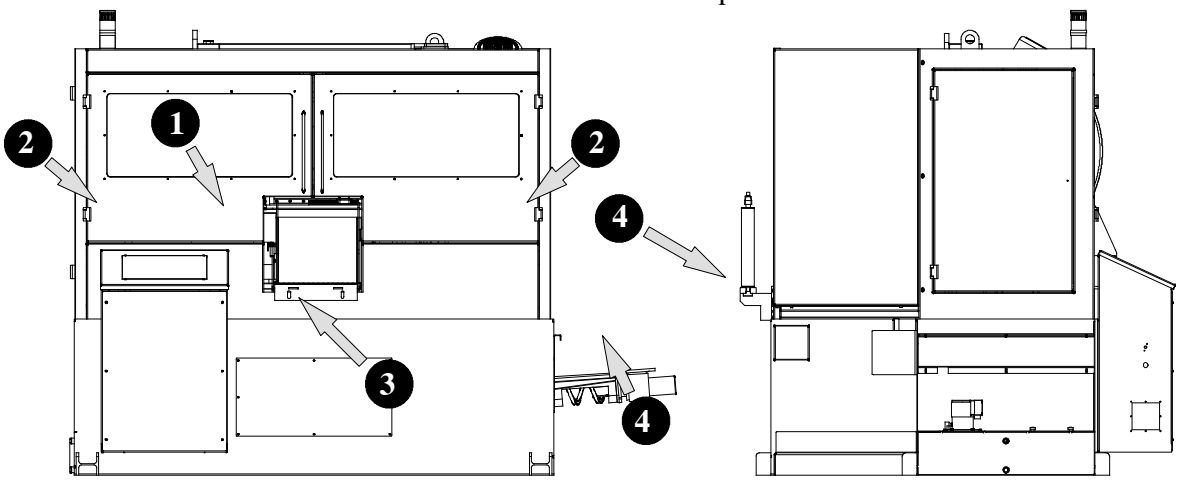
ENVIRONMENTAL PROTECTION

- EEC Directive No. 75/442 on waste disposal;
- EEC Directive No. 75/439 on the disposal of used oil.
- Directive 2002/95/EC on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS).

Protection against accidental contact with the blade

1. front head sliding support: when the head is at maximum aperture, the support ensures that the blade is covered, leaving free only the part of the blade engaged in the actual cutting, in accordance with Presidential Decree no. 547/55, art. 108;
2. front protection doors, with electric limit switches, to enable the access to the cutting area only with stopped machine;
3. the cutting vice is started up by hydraulic devices, and the blocking of the piece occurs through a control panel key;

4. enclosure on the whole machine perimeter.



Electrical equipment

In accordance with Italian standard CEI EN 60204- 1:2010, derived from European Standard EN 60204- 1:2010:

- Access to electrical control panel limited by screws and panel- lock device, allowing panel to be opened only after the electricity supply has been turned off;
- 24 Vac Control voltage for actuators, in accordance with chapter 6 or European Standard ”Control and indication circuits”, paragraph 2 ”Control Circuits” sub- section 1 ”Preferential voltage values for control circuits”;
- plant short- circuit protection by means of rapid fuses, earthing of all plant parts connected with work as well as all foreseeable accidental contact; a thermal- magnetic overload cutout switch shuts down the motor;
- protection from accidental start- up by a minimum voltage relay in case of power failure.

Emergency devices

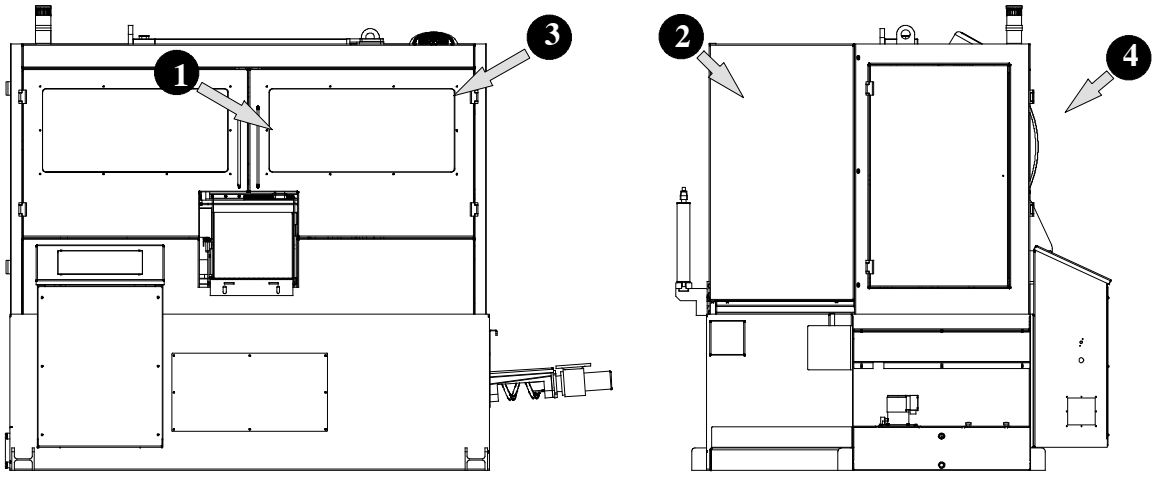
In accordance with Standard EN 60204- 1: 2010:

- **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 Sub- section 4 Point 7 ”Protective guards”:** «the removal of protective guards designed to prevent access to dangerous parts or zones causes the machine to stop immediately; replacing the guards does not restart the functions, which must be reset».

...Emergency devices applicable to the H- 11A :

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.
2. **Automatic thermal- magnetic cutout switch with thermal- magnetic relay:** the machine auto switch, has two protection systems against voltage drops. In the case of a voltage drop, all electrical components are disengaged, the machine stops immediately, and automatic restart when the power supply returns is inhibited. Another function is that of resetting the thermal relay provided to protect against overcurrents.
3. **Loading cell for band tensioning detection:** the machine stops immediately if the blade breaks or pressure in the tensioning cylinder drops.

4. **Blade guard** a coded- key micro- switch trips if the blade guard is inadvertently or intentionally opened during the machine operating cycle, causing the machine to shut down immediately.



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 **EEC 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 13898:2003 + A1:2009, EN ISO 12001:2010 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		Band saw for metal applications
Model		**H- 11A**
Reference standard		ISO 3746

Results		
Test 1st	**Description**	Steel cut C40 - tube thickness Ø 250 s10 mm bi- metal blade 4500x34x1.1 mm
	Results	**Mean sound level (Leq) 72,45 dB (A)** Environmental correction (K) 3,84 dB(A) Peak sound power (Lw) 83,60 dB(A)
Test 2nd	**Descriprion**	Steel cut Fe37 - IPE 240 x 120 mm bi- metal blade 4500x34x1.1 mm
	Results	**Mean sound level (Leq) 70,33 dB(A)** Environmental correction (K) 3,84 dB(A) Peak sound power (Lw) 81,48 dB(A)
Test 3rd	**Description**	Ø 150 mm (5.90 in) solid tube in chromed stainless steel bi- metal blade 4500x34x1.1 mm
	Results	**Mean sound level (Leq) 71,95 dB(A)** Environmental correction (K) 3,84 dB(A) Peak sound power (Lw) 83,11 dB(A)

Vibration emission

This sawing machine complies with the norms EN1299 and EN1033, 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 CEE 2004/108/CE e 2006/95/CE and **EEC 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 **H- 11A** ; Test report no. 011200.

Emissions

- CEI EN 61000-6-4 (2002): Electromagnetic Compatibility (EMC) - Part 6-4 Generic standard regarding emissions - Industrial Environment.
- EN 55011 (1999) Industrial, scientific, and medical radio frequency appliances (ISM). Characteristics of radio frequency disturbance - Limits and methods of measurement.
- EN 55014-1 (2002) Electromagnetic Compatibility - Prescriptions for domestic appliances, electric power tools, and similar equipment. Part 1: Standard Emission in relation to product family.

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

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

Immunity

- EN 50082-2 (1995) Electromagnetic Compatibility (EMC) - Part 6-2: Generic standard on immunity - 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.
- EN 61000-4-3 Electromagnetic Compatibility (EMC) - Part 4: Test and measurement techniques. Section 3: Radiated, radio- frequency, electromagnetic field immunity test.
- EN 61000-4-4 (1996) Electromagnetic Compatibility (EMC) - Part 4: Test and measurement techniques - Section 4: Fast transients/bursts immunity tests - Basic publication.
- EN 61000-4-5 (1997) Electromagnetic Compatibility (EMC) - Part 4: Test and measurement techniques - Section 5: Surge immunity test.
- EN 61000-4-6 (1995) Electromagnetic Compatibility (EMC) - Part 4: Test and measurement techniques - Section 6: Immunity to conducted interference, induced by radio frequency fields.
- EN 61000-4-11 (1977) Electromagnetic Compatibility (EMC) - Part 4: Test and measurement techniques - Section 11: Voltage dips, short interruptions and voltage variations immunity tests.

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 input	2 kV	B	Complies

IMMUNITY TO HIGH VOLTAGE PULSES (Surge)			
Gate	**Test levels**	**Evaluation criterion**	**Result**
A.C. power supply input	1 kV (Phase - phase) 2 kV (Phase - earth)	B	Complies

IMMUNITY TO DIPS AND SHORT VOLTAGE INTERRUPTIONS (PQT)			
Gate	**Test levels**	**Evaluation criterion**	**Result**
A.C. power supply input	70% per 0.5 periods	B	Complies
	0% per 0.5 periods 40% per 5 periods 40% per 50 periods	B	

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

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

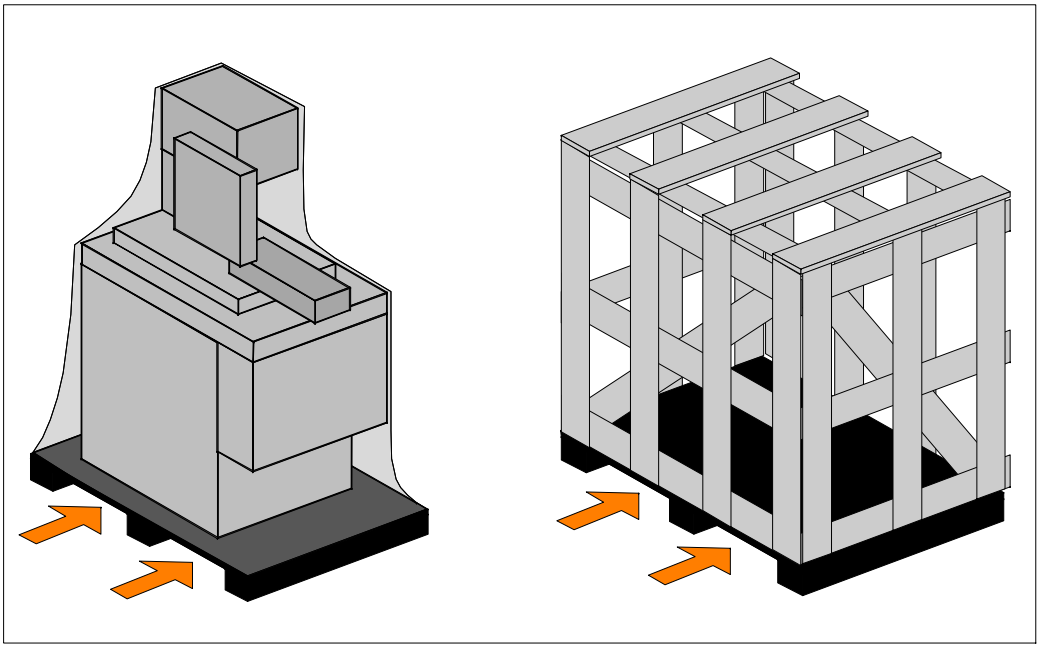
Machine installation

4

Packaging and storage

HYDMECH 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:



5. on a pallet with straps and heat- shrink plastic;
6. on a pallet with straps, heat- shrink plastic and a wooden crate.

Warning

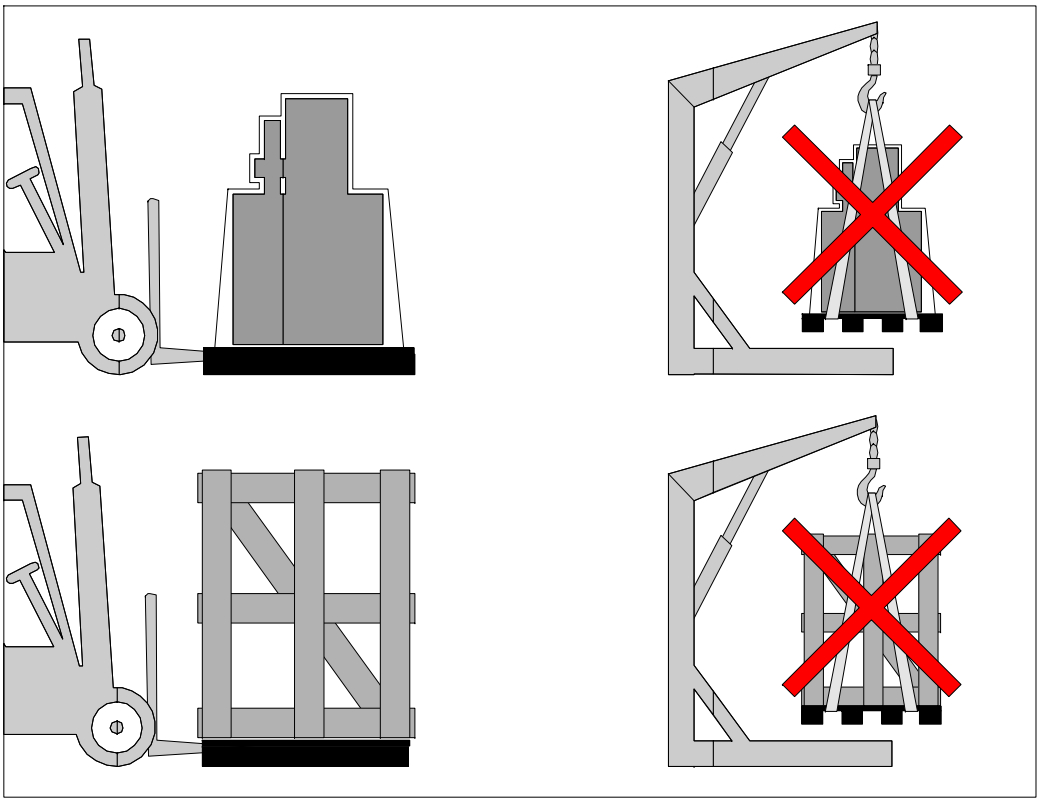
In both cases, for correct balancing the machine must be handled using a fork- lift truck, inserting the tines at the points indicated by the arrows, using the reference marks on the crate itself. The pallet length dimension is 110” (2794 mm). A minimum fork length of 48” (1219 mm) is recommended to safely lift the pallet.

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.

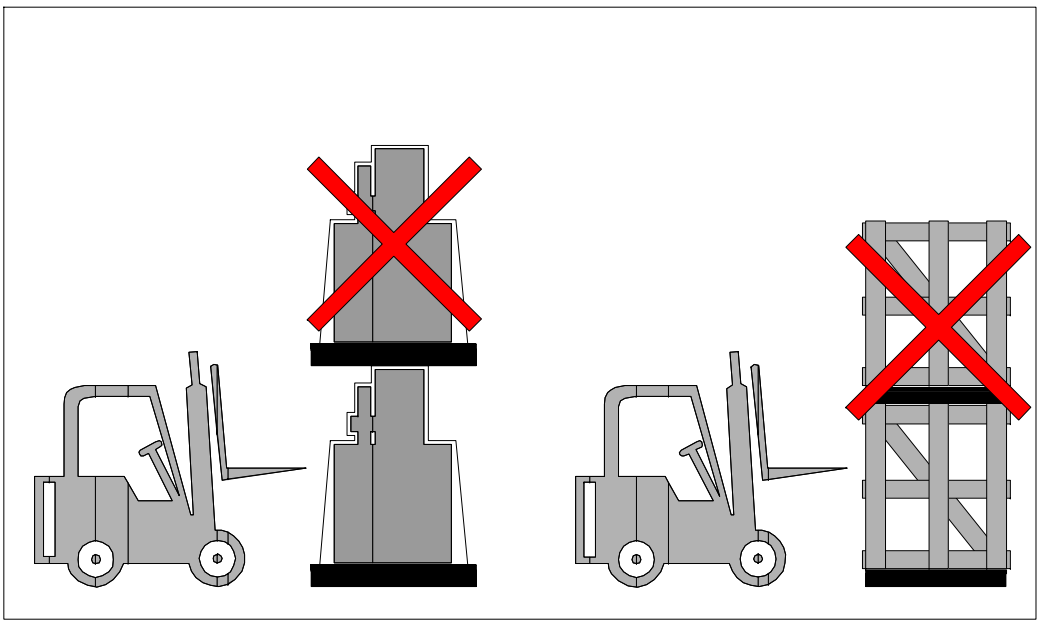
Attention

Do not handle the packed machine using slings.



Attention

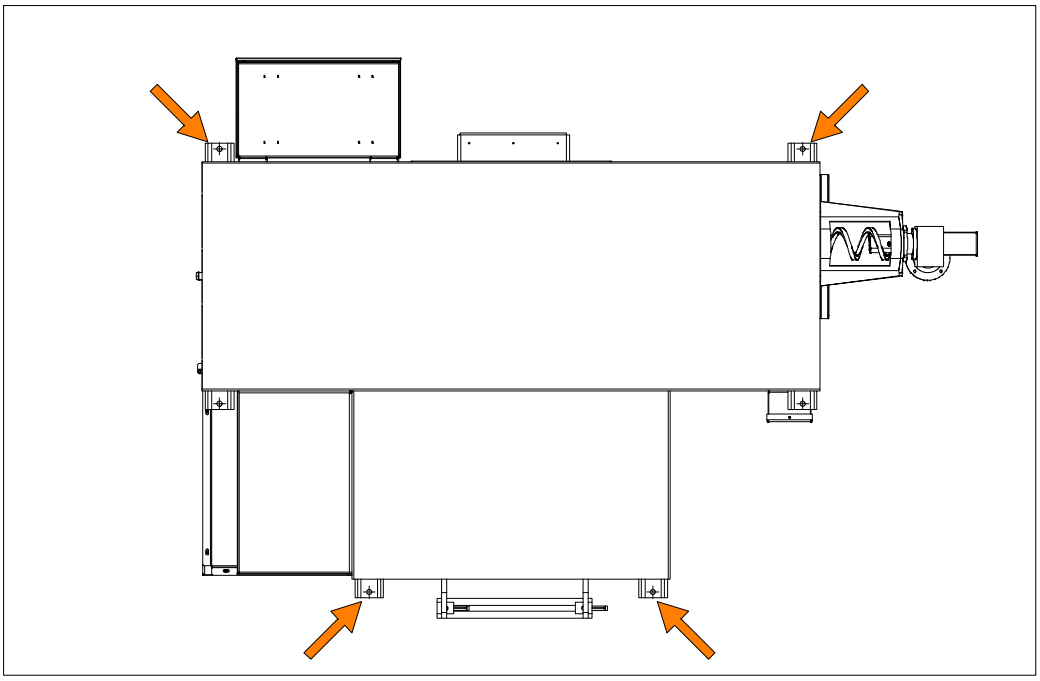
When storing, machines palletized and shrink- wrapped must not be stacked two high, and machines pallettized and crated must not be stacked two high.



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 the wrapping from around the saw.
2. Complete the inspection for signs of damage.

3. Remove the four lag bolts that hold the saw to the pallet (these will be used when anchoring the machine). The larger diameter hole is used for retaining during shipping and for use with concrete floor anchors. The smaller diameter, threaded holes are used for leveling the saw.



4. The machine should be lifted from the each side high enough to place some blocks under each corner. The machine can then be lifted off of the pallet from the front side using **FORK EXTENSIONS** - 72” (1829 mm).

POSITION FORKS

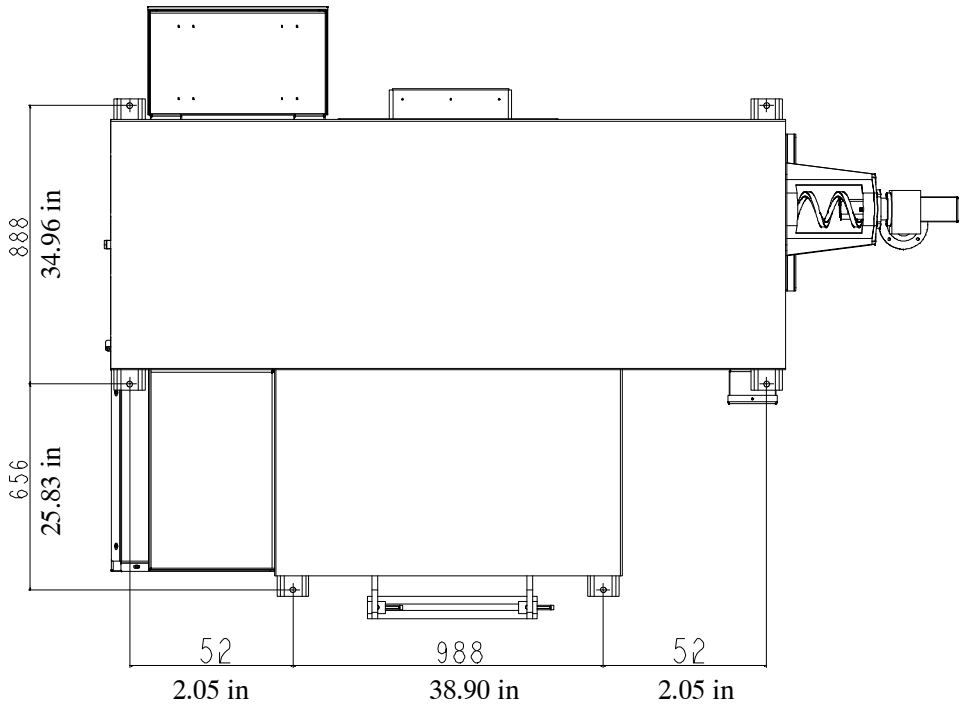
To locate the machine in the workplace, **the machine dimensions** and necessary operator working space, including **the spaces laid** down in safety standards, **must be taken into account.**

Levelling and anchoring the machine

Use the bolts provided to level the machine after it is taken off the skid. Levelling bolts have been used to mount machine to skid. The two back bolts were replaced with lags.

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

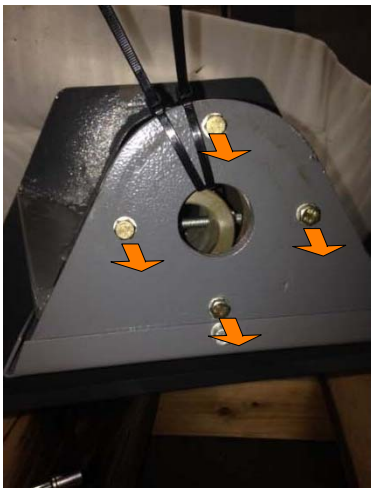
concrete, and tightened from above with lock nuts. The schematic specifications set out in Chapter 1 should be taken into account when positioning the machine.



Auger set up

The Auger motor has been taken off of the auger trough for shipping purposes; it must be reassembled to the auger and trough as follows.

▶ Remove through bolt from chip screw and remove 4 bolt from auger support



▶ Re-insert the shaft of the motor- reducer and tighten through bolt, orient motor in the vertical position, use the 4, 10 mm headed cap screws (in end of trough) to attach motor to trough.

▶ Auger assembly must be slid into machine and held in place by allen headed bolts provided.

▶ Power and control plugs have different alignment tabs and different terminal configurations, as shown in the following photographs. They must be inserted in the proper location.

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;
- 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 **H- 11A** machine is supplied complete with:

CHARACTERISTICS	STANDARD	OPTIONAL
The bow is made from alloy cast iron to give more stability to the machine and also for longer blade duration	✓	
Bow runs on linear guides with ball- bearing slides	✓	
Bow movement with hydraulic cylinder on linear guides with ball- recirculating slides	✓	
Protection from contact with the machine's moving parts (see drawing with overall dimensions)	✓	
Blade 4500 x 34 x 1,1 mm (177.16x1.34x0.04 in)	✓	
Hydraulic vertical vice*		✓
Cabinet for electrical and electronic equipment with totally identifiable cabling	✓	
Control and enabling system protected from electrical or electromechanical hazard at input and output	✓	
Simplified touchscreen control panel managed by next- generation Hyd-Mech controlled designed exclusively for Hyd- Mech sawing machines	✓	
Programmable head travel limit via control panel according to dimensions of bars to be cut	✓	
Software to control, assess and correct in real time the shearing stress, the shearing torque and the blade tensioning.	✓	
M50 controller with EC Windows operating system	✓	
Laser projector to position the bar accurately to carry out non- standard or facing cuts and lamp for lighting the cutting area	✓	
Control keyboard to reach positions from which the operator can perform operations with safety and maintain visual control	✓	
Control from keyboard to move the pulley for belt substitution	✓	
Pneumatic control unit for self- registering forward	✓	
Emergency with signalling of open blade door with interlocked safety limit switches	✓	
Electro- mechanical actuator and dynamic control for the blade tightening	✓	
Inverter for continuous blade speed regulation single range from 15 to 115 m/min (49÷377 ft/min)	✓	
Motor- driven chip ejector	✓	
Vertical roller table pair		✓
Great quantities of cutting liquid (230 lt/min)	✓	
Steel blade- guiding cutting heads, with rollers and recordable hard metal slides, can be open for easier blade substitution, with prepared nozzles for traditional lubrication and minimal lubrication (optional)	✓	
Automatic adjustment of the front blade- guide head according to the dimensions of the bars to be cut to make the blade as stable as possible and to protect its section not involved in the cutting	✓	
Brush for cleaning the blade	✓	
Band rotation control with immediate stop system in case of tool blockage	✓	
Feed roller table K110HD		✓
Discharge roller table K110HD		✓
Acoustic signal and flashing light device for machine- stop	✓	
Feed device with recirculating ball/lead screw with 600 mm (23.62 in)	✓	

CHARACTERISTICS	STANDARD	OPTIONAL
Maximum non- feedable bar waste 120 mm (4.72 in)	✓	
Self- aligning feed vice for bar feed (Including deformed bars)	✓	
Work table spray gun	✓	
Coolant tank incorporated in pedestal	✓	
Pair of electric pumps for the band lubrication and cooling.	✓	
Coolant flow for conveying chips	✓	
Cutting oil 5 lt		✓
Jaws to reduce scraps to max. 20 mm (0.79 in)*		✓
Blade deviation control*		✓
Vice pressure adjustment		✓
Special vertical clamps complete with jaws for reducing scrap		✓
Software update and changes through USB: insert in the suitable port on the control console	✓	
Min. lubrication system		✓
Machine preset for being handled by lift truck	✓	
Bi- metal blade for section and solid cuts		✓
Wrenches, Instruction Manual, complete with spare parts order form in corresponding user language	✓	

***ACCESSORIES AVAILABLE ON REQUEST**

The bag of accessories is enclosed in the machine before being packed and contains:

- hex wrenches 3/4/5/6/10 mm (0.12/0.16/0.20/0.24/0.39 in)
- 10 mm (0.39 in) socket wrench;
- 36 mm (1.42 in) wrench;
- blade cleaning brushes;
- use and Maintenance manual, including order form for parts in relevant user language.

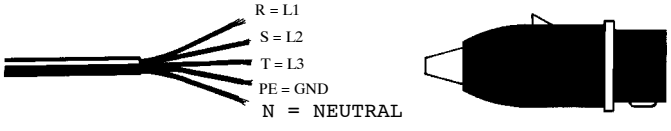
Connection to the power supply

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.

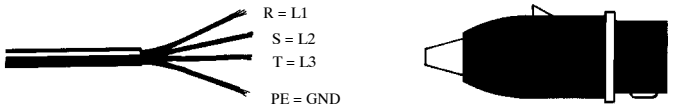
To connect the machine to the power supply, proceed as follows:

▶ 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



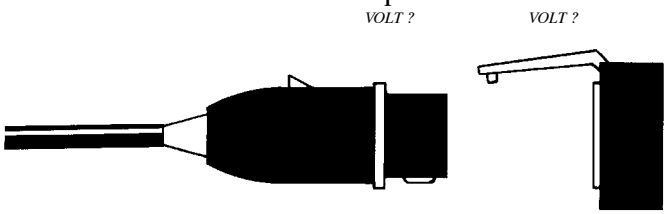
CONNECTION FOR **"4-CORE"** WIRE SYSTEMS WITH NEUTRAL



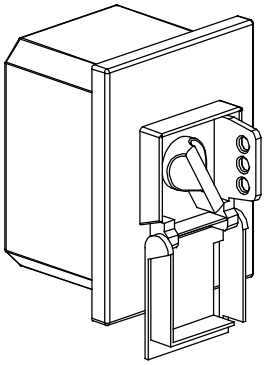
Attention

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.

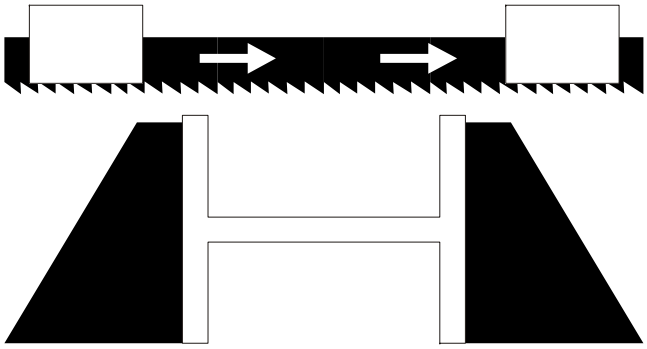


▶ Power the machine, rotating the main switch on the console left side (the control console lights up).



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 power supply input.



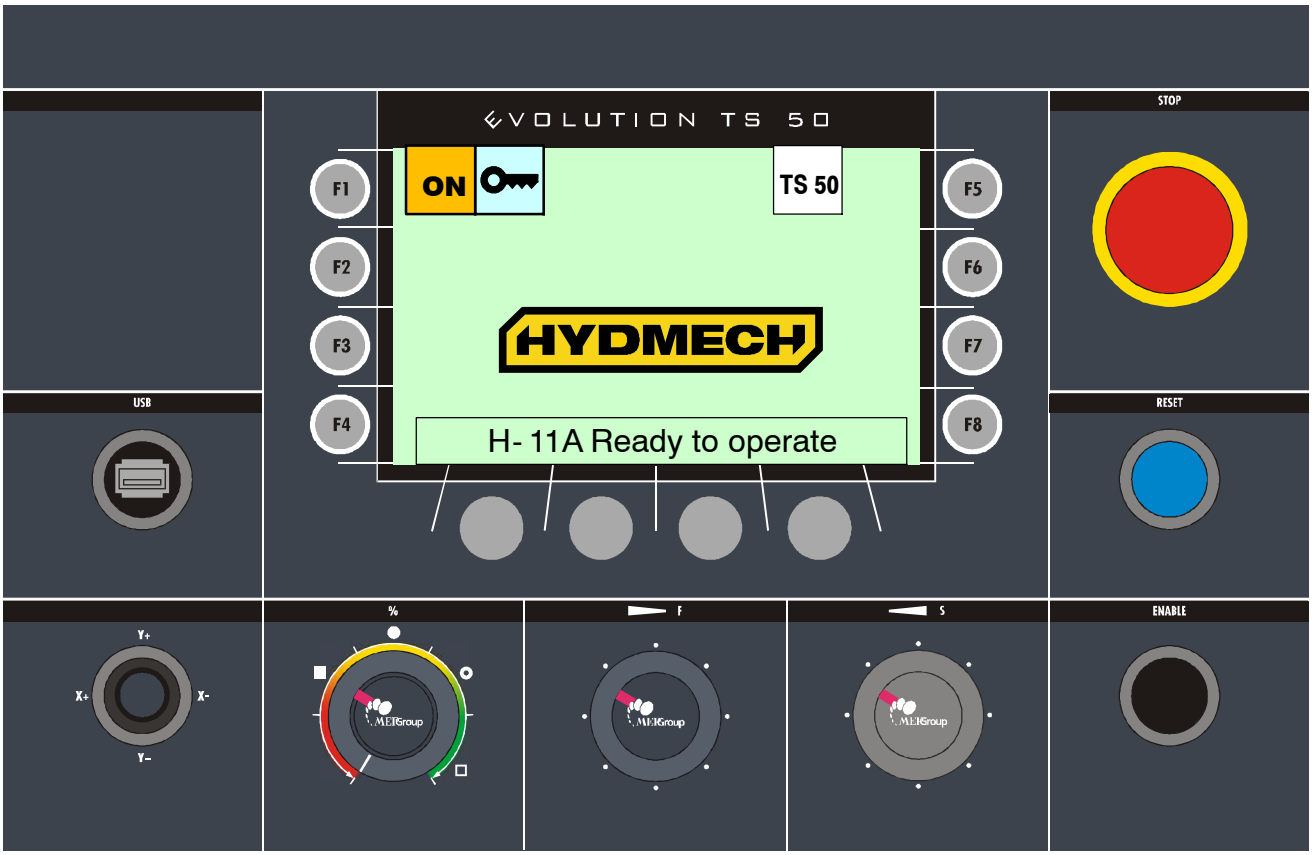
The sawing machine is now ready to start the work for which it was designed. Chapter 5 provides a detailed description of the various functions of the machine and its operating cycles.

Description of machine operation

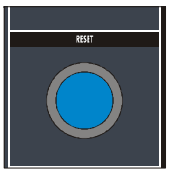
This chapter analyses all the machine functions. We begin with a description of the pushbuttons and other components on the control panel.

Description of the control panel

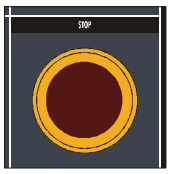
The control console is housed inside the control panel, a tamperproof IP 54 protection class housing sealed against dust and moisture. The control panel swivels on two articulated joints so that it can be positioned as required by the operator for greater ease- of- use and safety. The control board of the **H- 11A** is shown in the picture below:



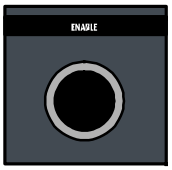
Key of control console keyboard



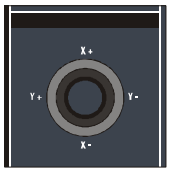
RESET:
Press to reactivate machine functions after an alarm.



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°.



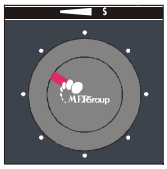
ENABLE COMMANDS:
Hold pressed to enable machine commands.



JOYSTICK:
is enabled to move the head upwards and downwards and to move the feeder forwards and backwards, when the control enabling button is pressed.

FEED RATE POTENTIOMETER:
Adjusts the head feeding speed.

FEED FORCE POTENTIOMETER:
Potentiometer for adjusting the blade motor max. absorption.



BLADE SPEED POTENTIOMETER:
Potentiometer for the continuous adjustment (inverter) of the band rotation speed.

FAST ADVANCE:
key for the fast advancing of the head and of the feeder.

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

THERMAL - MAGNETIC CIRCUIT - BREAKER WITH UNDERVOLTAGE COIL

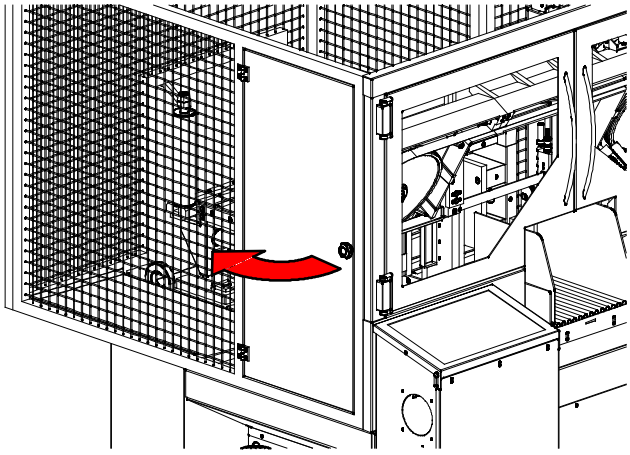
On the left side of the control board, the machine is equipped with a main switch that, when set ON (1), powers the machine.
The main switch is fitted with three power failure protection systems. In fact, in the event of a power failure, this switch disconnects all the electrical devices, causing the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

Basic instructions for carrying out a cutting operation cycle

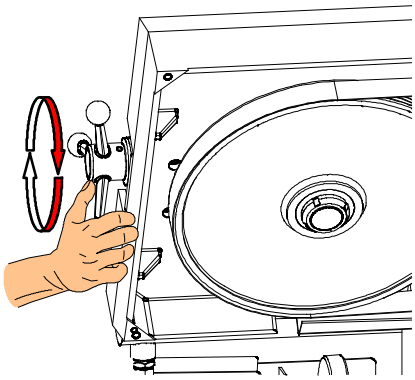
Blade tension

To increase blade life it is recommended to tension the blade at the beginning of the work shift and to detension it at the end.
The saw machine cannot work if the blade tensioning value is not within 600 and 1250 kg (1320 - 2750 lbs) range (default values within machine parameters).

▶ Open the door on the left side of the machine.



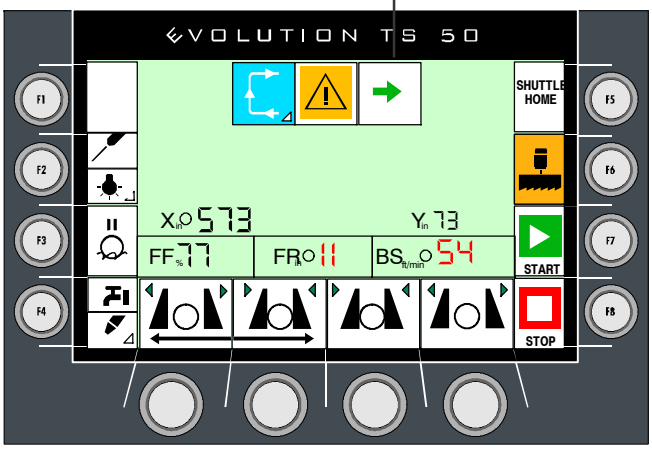
▶ Turn the hand wheel clockwise to increase the tension of the blade and check the value in kg on the display (the optimal value during the working phase is 1250 kg / 2750 lbs).

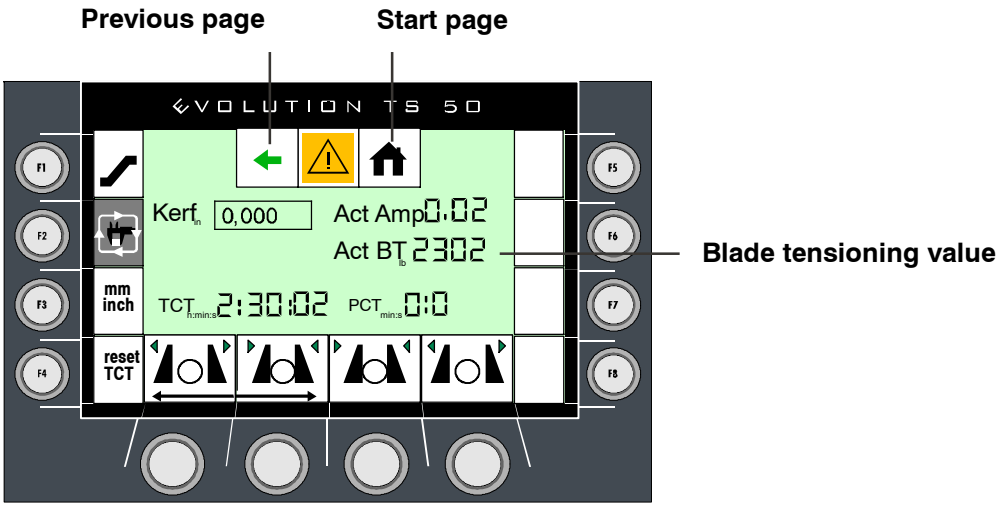


To check the blade tensioning value it is necessary to get in the second working screen:

▶ From the first working screen, touch the green arrow on the display to get in the second working screen.

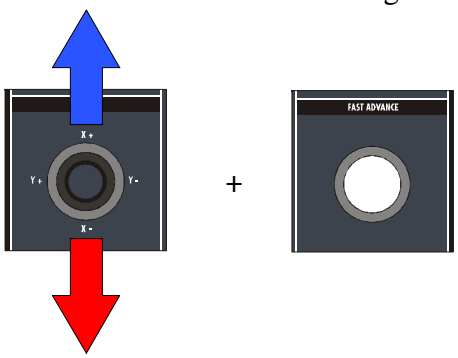
Next page





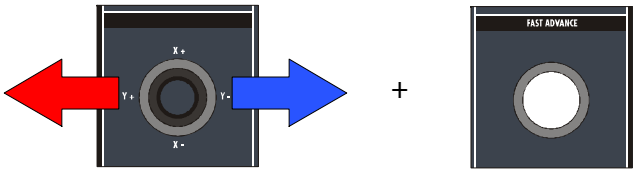
Moving the cutting head up and down

The feeding head can be moved upwards and downwards using the joystick; if you hold the fast advance key pressed at the same time the cutting head moves faster.



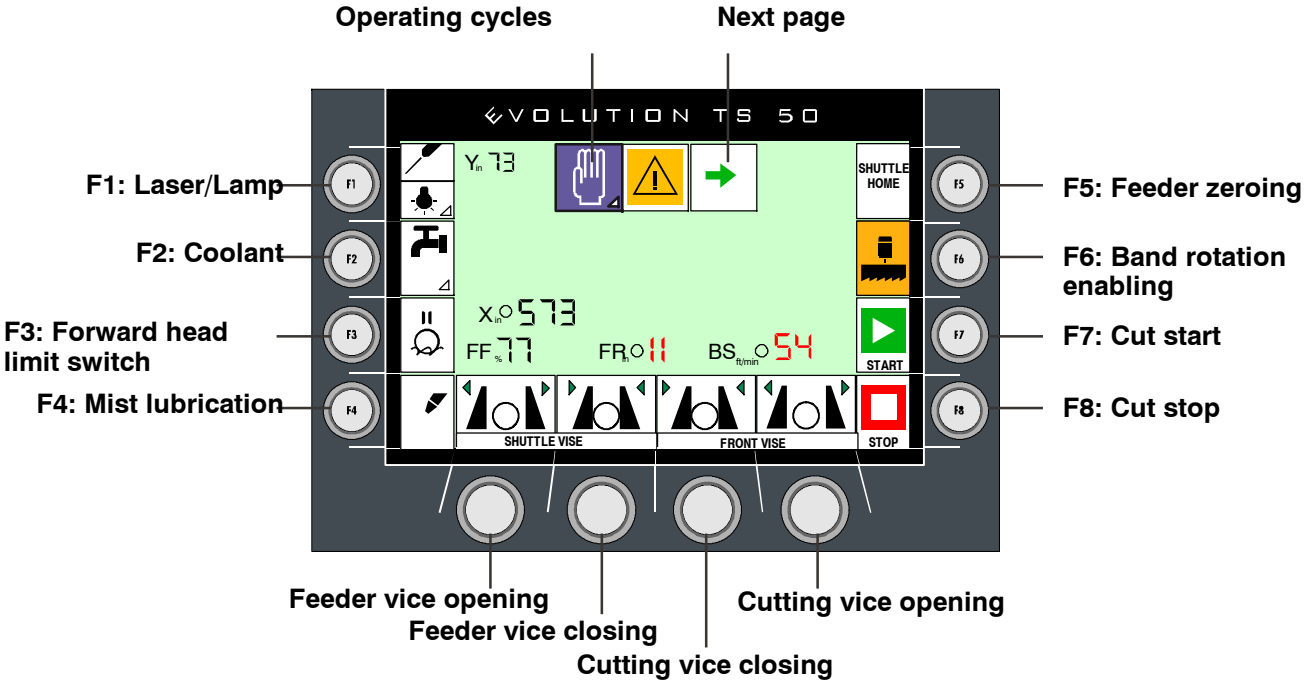
Manoeuvring the feeder

The feeder can be moved using the joystick, only if the head is completely up. If you hold the fast advance key pressed at the same time the feeder moves faster.

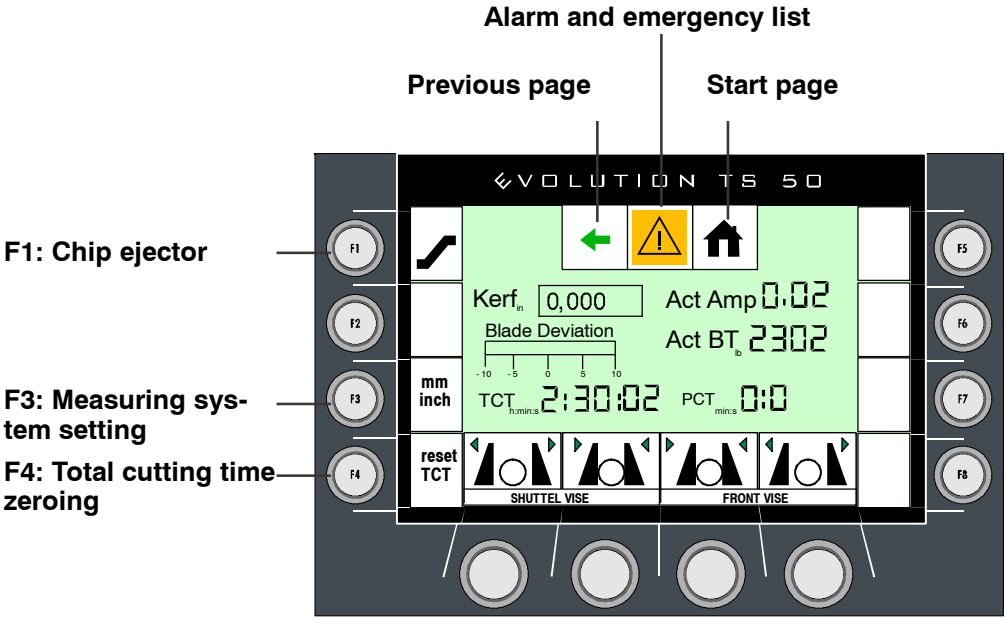


Symbol key

The key for the symbols used on the display follows.

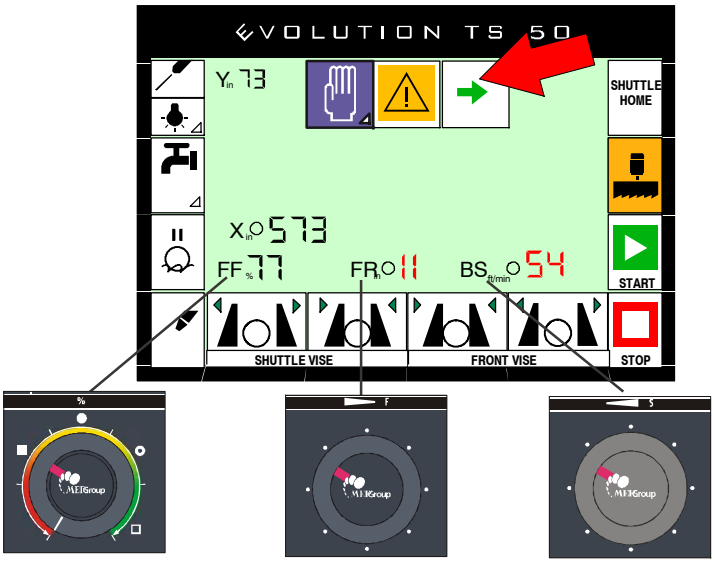


Pressing the “Next page” key, you can display the second machining screen:

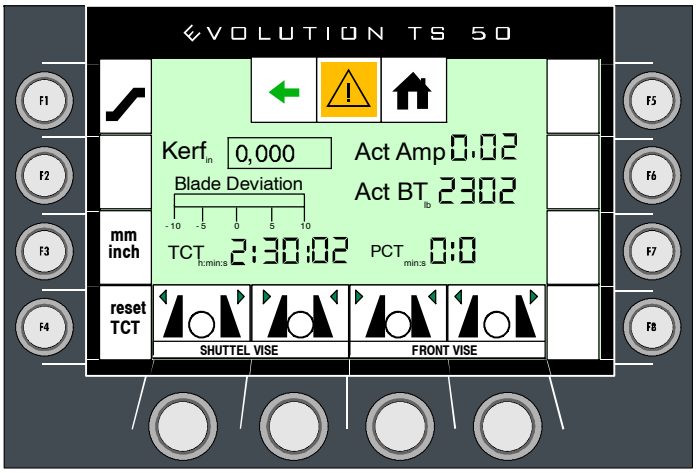


Operating parameters

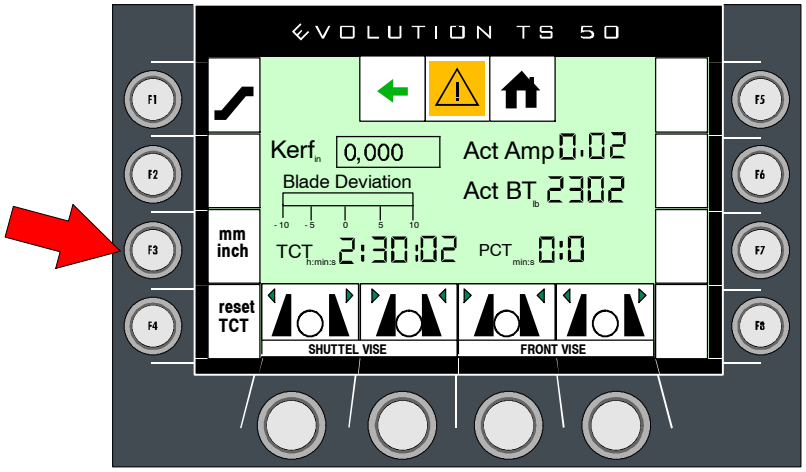
During the machining cycle, by pressing the box in the figure, it is possible to check the machine operating parameters:
FF = Feed Force, value of the cutting force that can be set through the potentiometer from the control board.
FR = Feed Rate, value of the cutting head lowering speed that can be set through the potentiometer from the control board.
BS = Blade Speed, value of the band rotation speed that can be set through the potentiometer from the control board.



Pressing the arrow key shown in the figure the second page of the operating parameters can be displayed:
Kerf = blade thickness
Blade deviation = deviation blade
Act BT = Actual Blade Tension, current value of blade tension;
Act AMP = Actual Ampere, current value of motor absorption;
PCT = Partial Cutting Time;
TCT = Total Cutting Time.

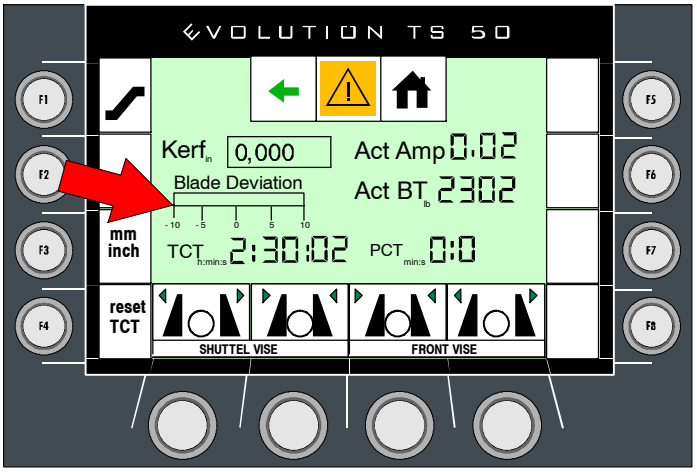


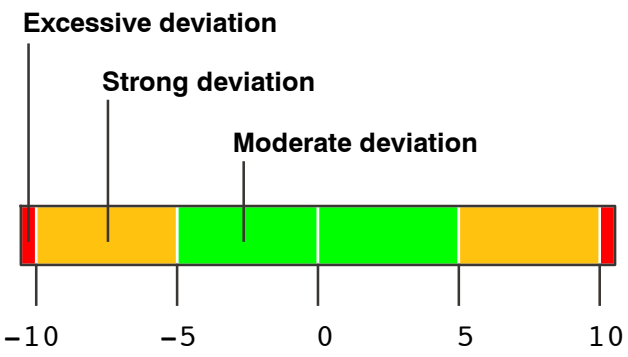
N.B. Pressing the key shown in the figure the decimal metric measuring system or the Imperial measuring system can be set. After making the change of measurement system, you still need to set again the values of Set-up machine as indicated in Chapter 7.



Warning

The machine is provided of ”Blade deviation control” that allows to monitoring in real time the blade flexion, showing an alarm over the display. The diagram shows the left and right range of the blade deviation, green when the deviation is within +/- 5 and yellow when it is within +/- 10. If the value exceeds the range, the diagram shows a red color and the machine stops.
It is recommended to check the blade tension, blade speed based on the hardness of the material, the blade wear and the blade guides wear, or the setting of the blade guide components.



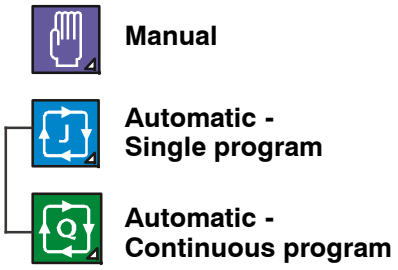


To enable or disable the control deviation blade must enter SET-UP and set the operation in ”BLADE DEVIATION” as indicated in Chapter 7.

Cutting cycles

This sawing machine can carry out single or series cuts stored in max. 10 programs, that can even be repeated, to be ordered in a preset sequence.

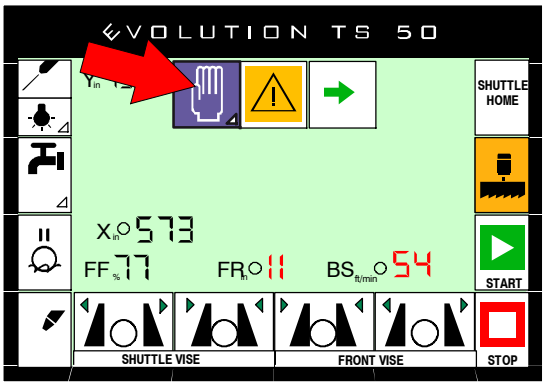
▶ After the initialization of the sawing machine the display shows the following screen. Press the box shown in the figure until the symbol of the wished cycle is displayed.



Manual

Automatic - Single program

Automatic - Continuous program

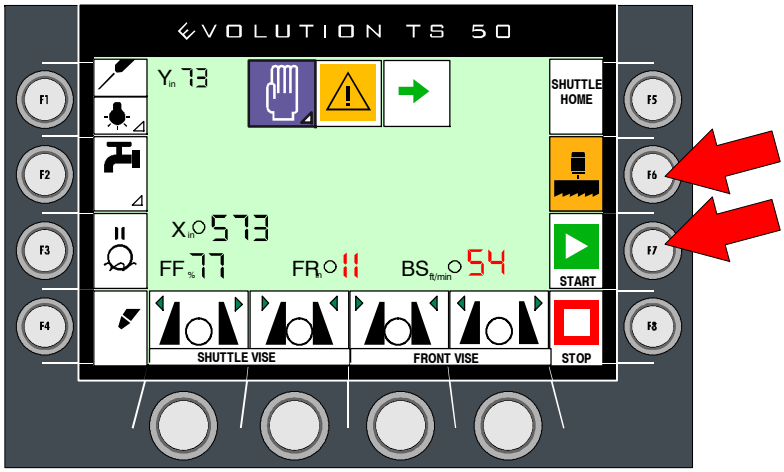


The available machining cycles are: manual, automatic with single program and automatic with continuous program.
In the manual cycle the cutting only involves the setting of the rear head limit switches (RHLS) and forward head limit switches (FHLS); then, after having positioned the material at the wished cutting length, start by the Cut start key (F7).
As for the automatic cycle, it can operate with single or automatic program.

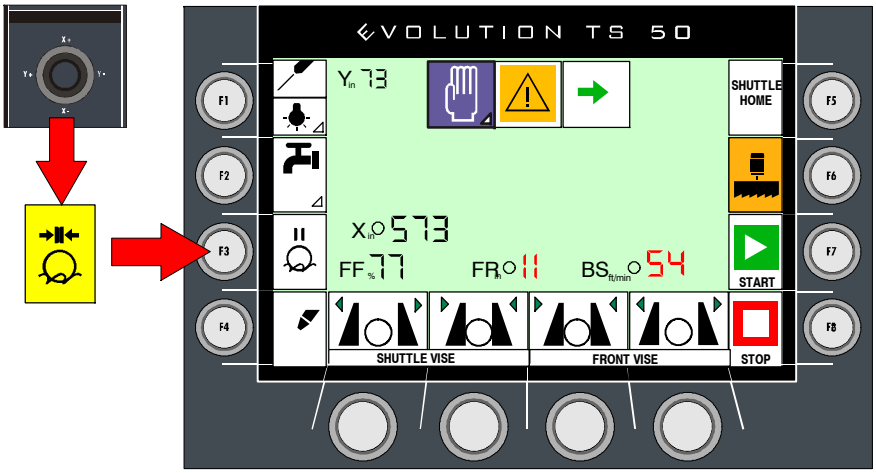
Cutting stroke setting

To set the cutting stroke it is necessary to determine the RHLS (rear head limit switch) and FHLS (forward head limit switch) points.

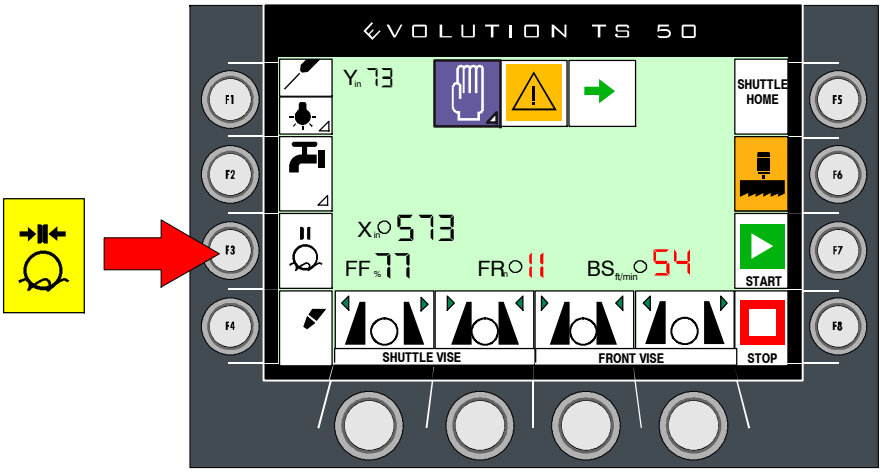
▶ To set the RHLS point just press the cycle start key (F7), after having pressed the band rotation enabling key (F6), to start the band rotation and the head lowering: in this way the RHLS (rear head limit switch) point is automatically stored and determines the head start position when the cycle is started.



▶ To set the FHLS after having set the RHLS point, delete the existing FHLS point lowering the head using the joystick; the FHLS setting box (F2) starts flashing to indicate that the FHLS point has been deleted.

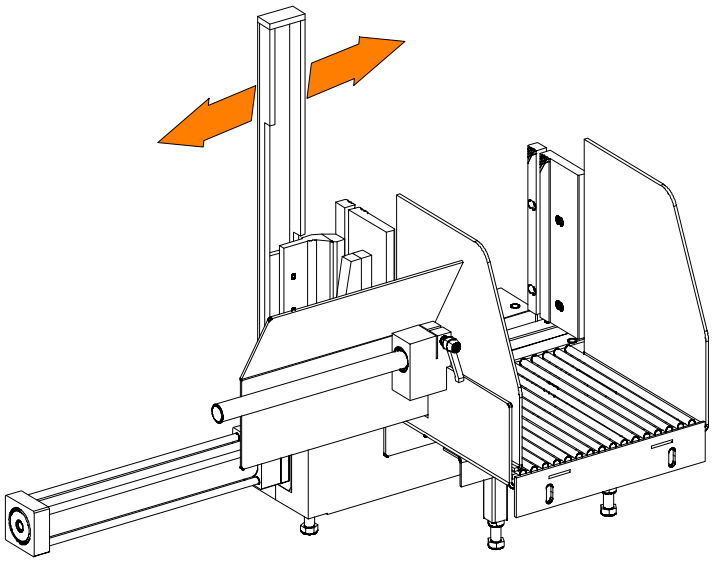


▶ When the head reaches the wished cutting end point, press the FHLS setting key (F2) shown in the figure, the corresponding box lights up to indicate that it has been set.

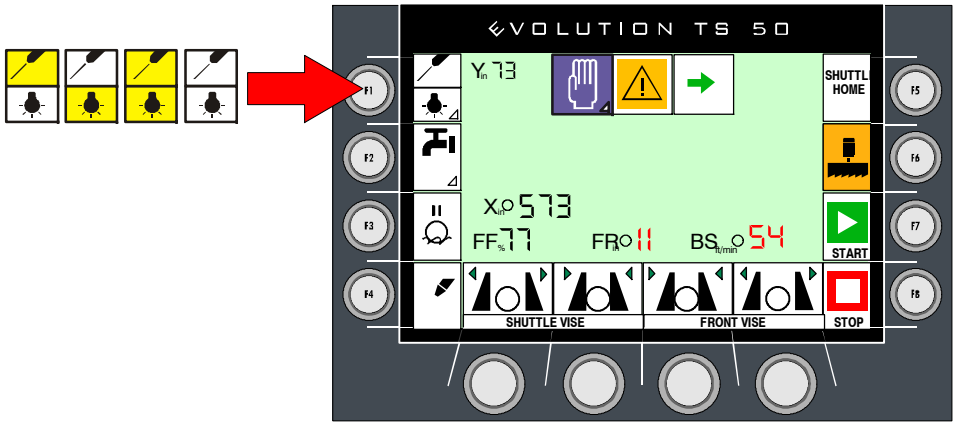


Width of cut

The machine is fitted with protections that protect the entire blade stroke leaving only the part of the blade required to make the cut itself exposed. This includes the rear (fixed) head and the front (mobile) head, as required by current standards.
The cutting width is automatically adapted with the positioning of the cutting vice on the loading side.



N.B. The machine is equipped with a lamp for lighting the working table and with a laser projector to aid the machine positioning under the blade vertical. These options can be selected by pressing once or more times the same key (F1) on the icon left.



Preliminary check list for cutting operation

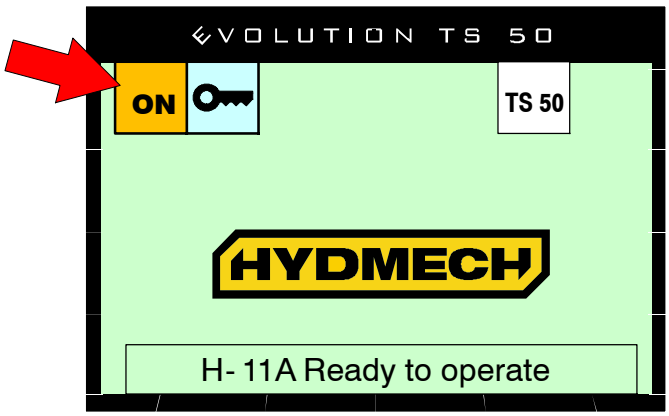
To guarantee complete safety during cutting cycles, the operator should work through a check list of the entire apparatus, checking:

- blade tension;
- that the work piece is properly clamped in place;
- that the blade teeth are correct for the job to be begun;
- that the speed selected is right for the kind of piece to be cut;
- that all protections are in place and correctly locked;
- the level of lubricant/coolant and that the electropump is activated;

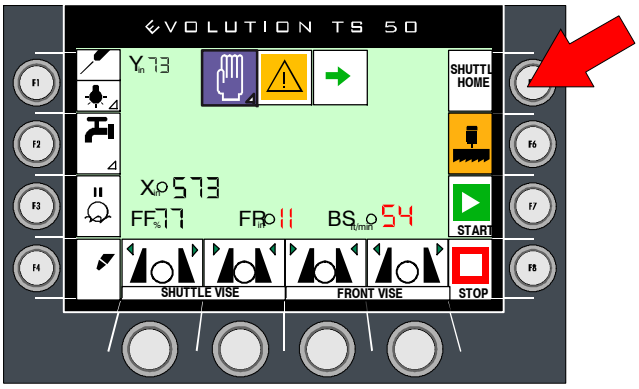
Manual operating cycle

The operation sequence for running a manual cutting cycle:

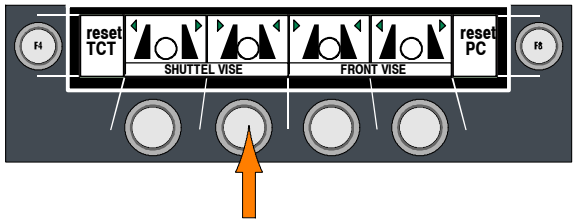
- power up the machine by turning the main switch;
- Tap on the box with the on symbol on the touchscreen.



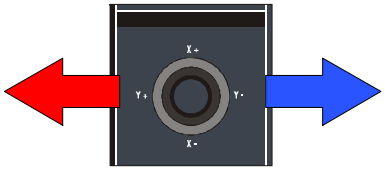
- press reset and release the emergency mushroom button if pressed, the head rises completely
- Zero the feeder by pressing the key shown in figure (F5).



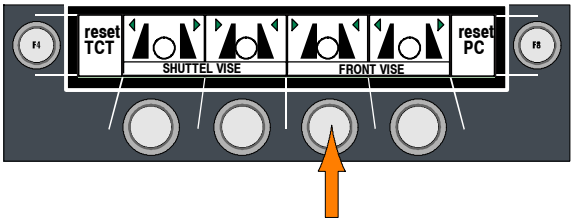
- Position the material inside the feeding vice.
- Close the feeding vice by pressing the relevant key on the console.



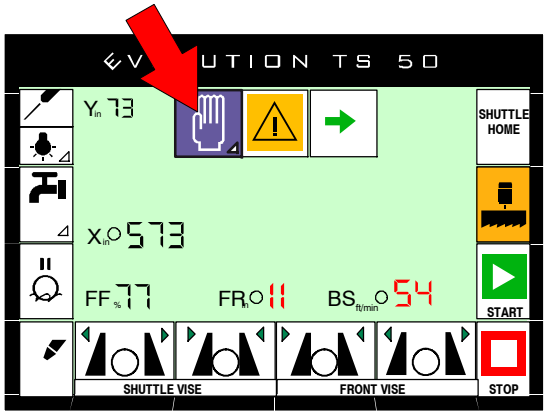
- Feed the material being machined and move it using the joystick. The machine is equipped with a lamp for lighting the working table and with a laser projector to aid the machine positioning under the blade vertical.



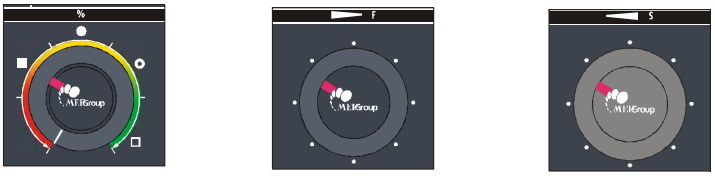
▶ Close the front vice by holding down the corresponding key from the control panel.



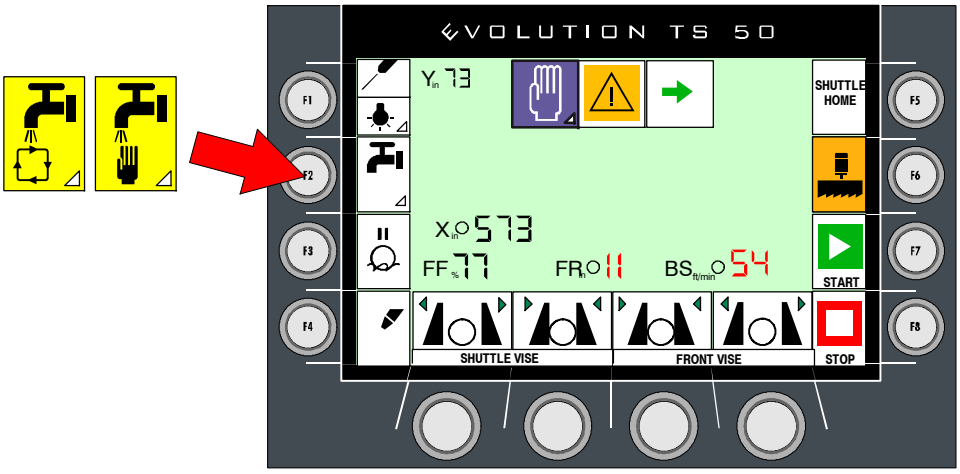
▶ Select the manual machining mode, pressing the box shown in the figure on the touch screen.



▶ Set the cutting parameters, previously shown, using the following adjusters.

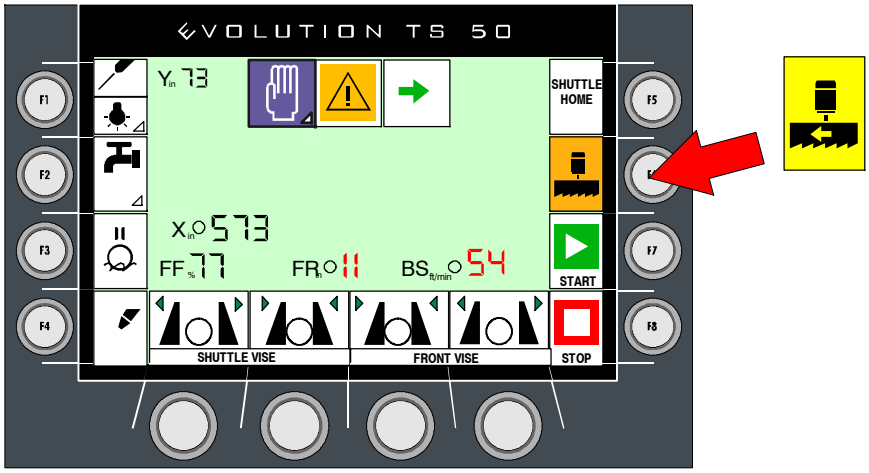


▶ Set the fluid jet by pressing the button shown in the figure (F2). The box will light up to indicate that it is selected. Adjust the amount using the valves on the blade guide head. Press the button repeatedly to select the dispensing mode (automatic or manual).

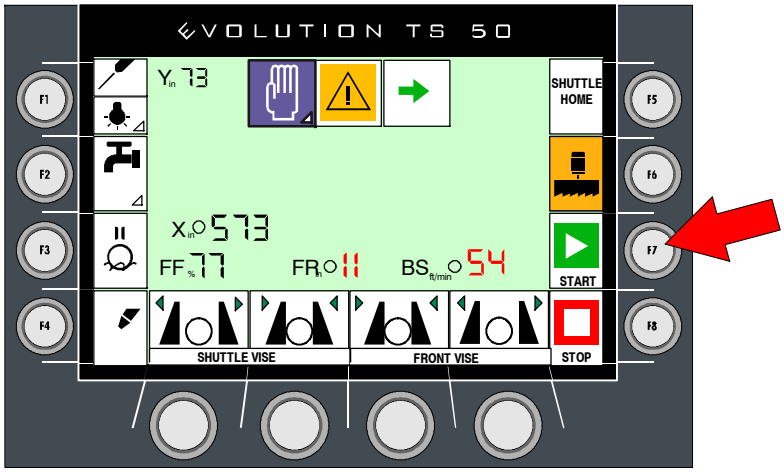


▶ Position the head at approximately 10 mm (0.39 in) from the workpiece.

▶ Press the band rotation enabling key (F6).



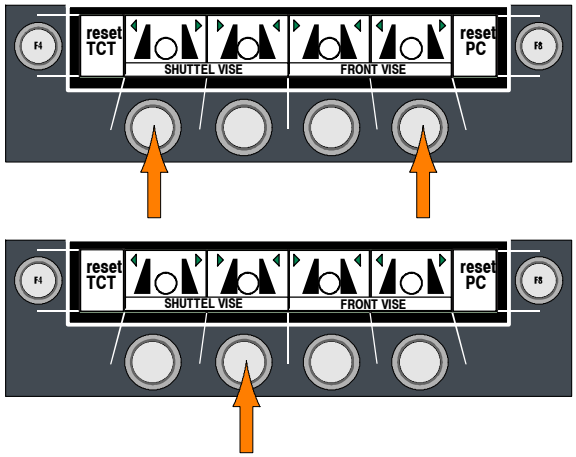
▶ Press the cycle start key (F7) to start the band rotation and the head lowering at the set speeds. The RHLS point is automatically stored in this way, as explained before.



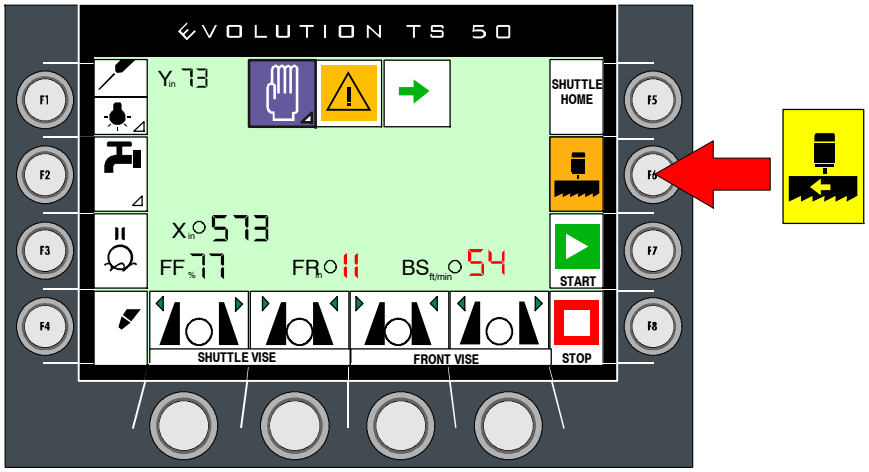
N.B. If the existing FHLS point is to be deleted now, follow the operations described above.

▶ When the head reaches the FHLS point the band stops and the head returns to the set RHLS point, ready to make a new cutting cycle.

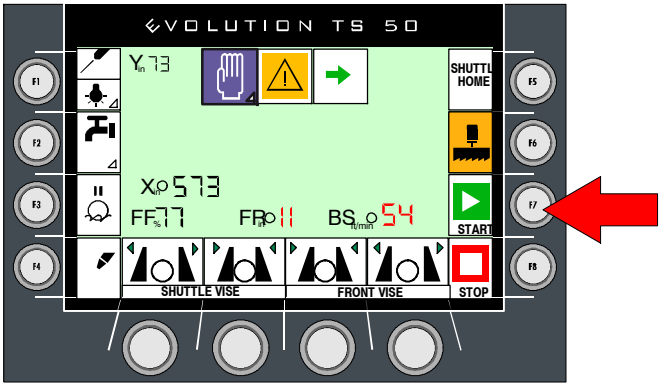
▶ Open both vices by holding the open vices button.
Then feed the workpiece, as already explained, and finally close the front vice by holding down the corresponding key from the control panel.



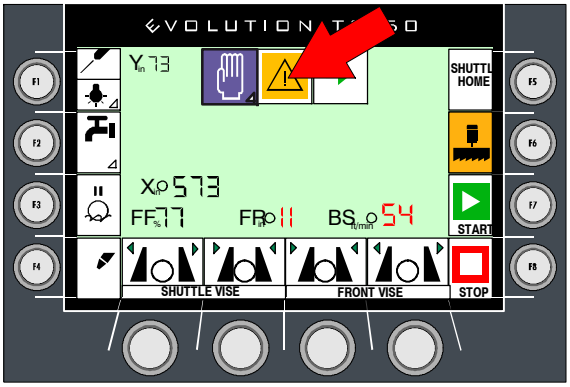
▶ Enable the band rotation by pressing the key shown in the figure (F6), the box lights on to indicate it has been selected.



▶ Start the cutting cycle pressing the key shown in the figure (F7), the band starts turning and the machine cuts.
At the cut end, the head rises again, ready for a new machining cycle.



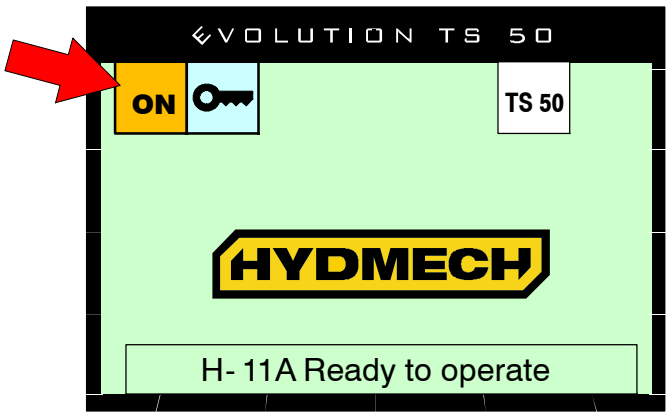
N.B. Tap on the touchscreen box shown in the figure to see problems during operation. The box will turn blue to indicate caution and red to indicate a machine alarm. See chapter 10 for a complete list of alarms.



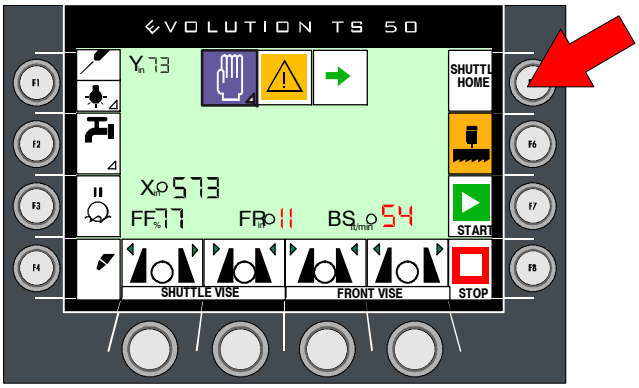
Automatic mode single job

The operation sequence for running in automatic mode and single job:

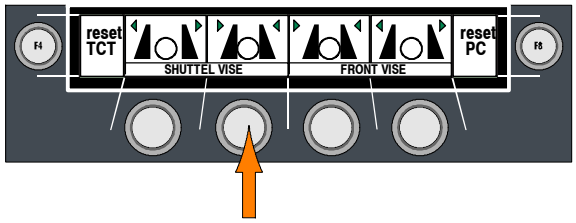
- power up the machine by turning the main switch;
- tap on the box with the on symbol on the touchscreen;



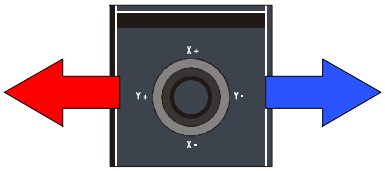
- press reset and release the emergency mushroom button if pressed, the head rises completely.
- Zero the feeder by pressing the key shown in figure (F5).



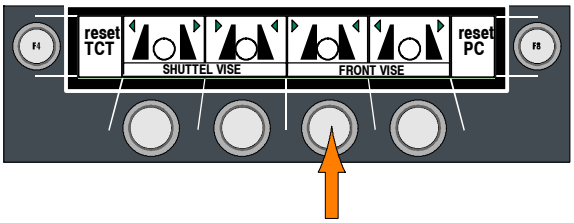
- Position the material inside the feeding vice.
- Close the feeding vice by pressing the relevant key on the console.



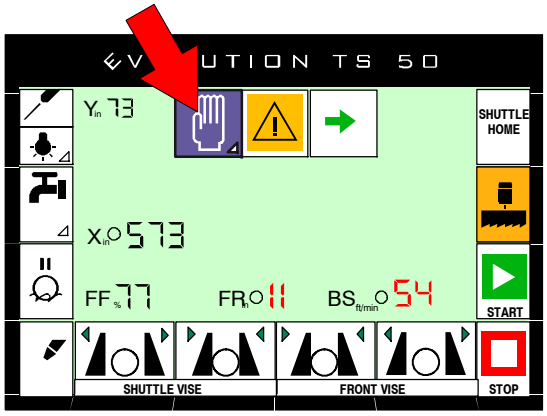
- Position the workpiece, moving it by the joystick.



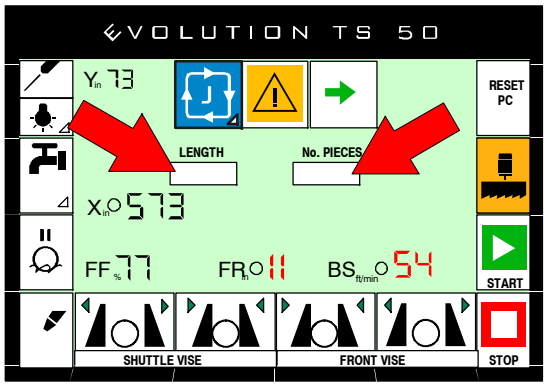
▶ Close the front vice by holding down the corresponding key from the control panel.



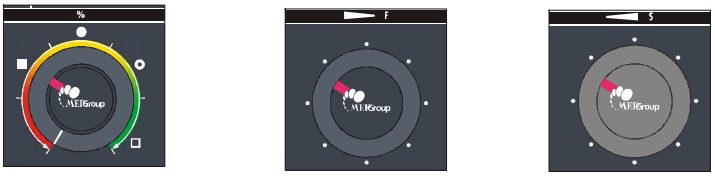
▶ Select the automatic machining mode with single program, pressing the box shown in the figure on the touch screen.



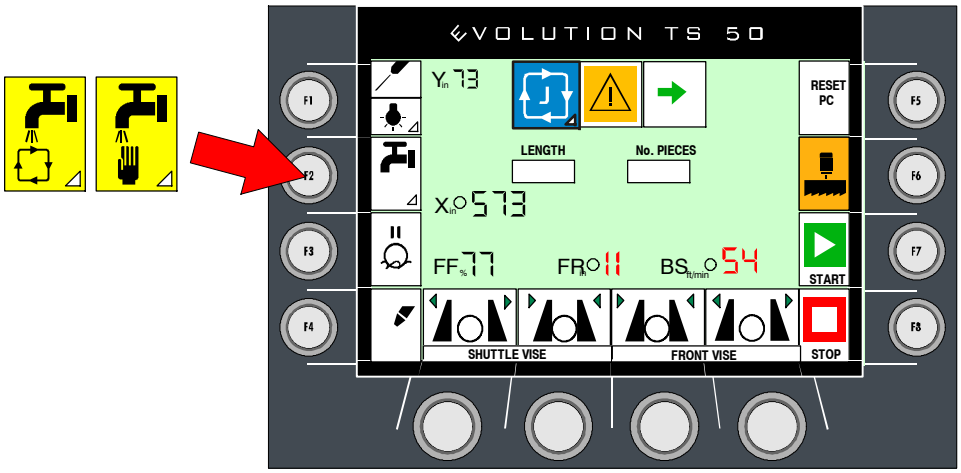
▶ Set the wished length and the wished number of cuts pressing the boxes shown in the figure and entering the values on the keypad that pops up automatically.



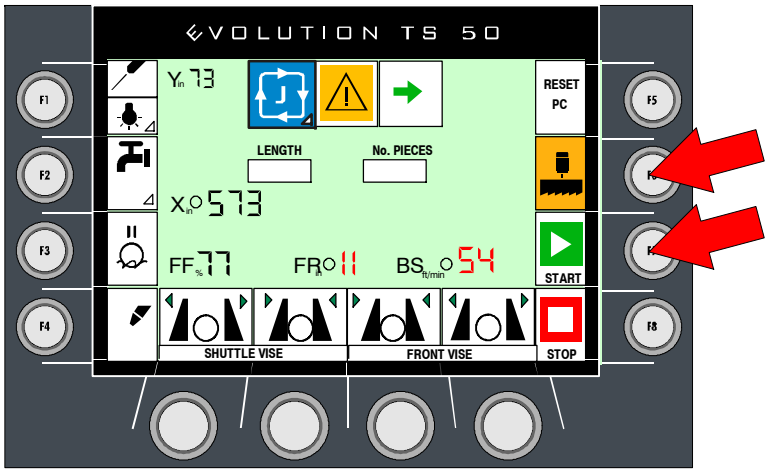
▶ Set the cutting parameters, previously shown, using the following adjusters.



▶ Set the fluid jet by pressing the button shown in the figure (F2). The box will light up to indicate that it is selected. Adjust the amount using the valves on the blade guide head. Press the button repeatedly to select the dispensing mode (automatic or manual).

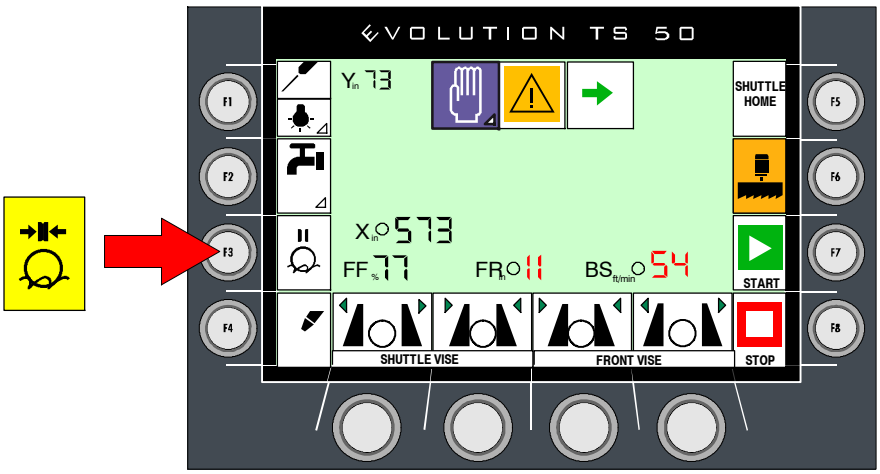


▶ Position the head at approximately 10 mm (0.39 in) from the workpiece.
▶ Press the band rotation enabling key (F6).



▶ Press the cycle start key (F7) to start the band rotation and the head lowering at the set speeds. The RHLS point is automatically stored in this way, as explained before.

N.B. If the existing FHLS point is to be deleted now, follow the operations described above.

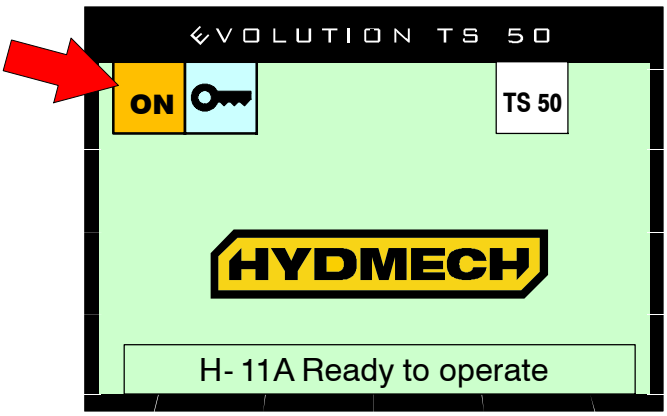


The sawing machine makes the programmed cuts. At the end, the head rises again and the band motor stops.

Automatic mode queue

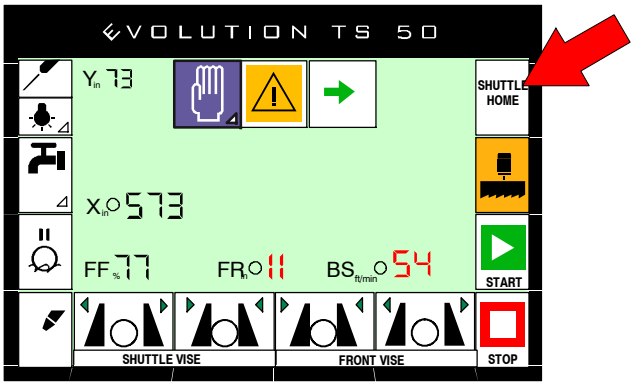
The operation sequence for running in automatic mode queue:

- ▶ power up the machine by turning the main switch;
- ▶ tap on the box with the on symbol on the touchscreen;

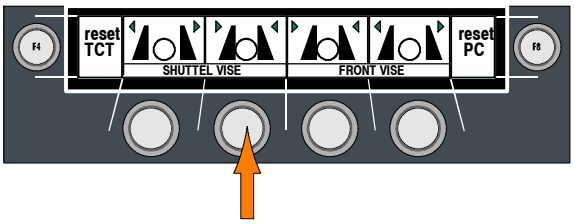


- ▶ press reset and release the emergency mushroom button if pressed, the head rises completely.

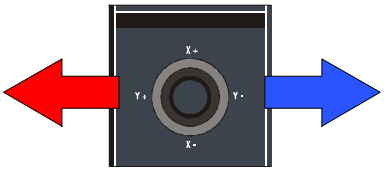
N.B. If previous machinings have been made already and the feeder has not been zeroed, zero it pressing the key shown in the figure.



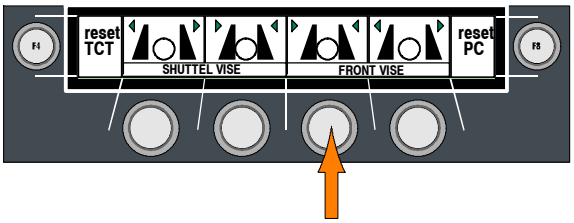
- ▶ Position the material inside the feeding vice.
- ▶ Close the feeding vice by pressing the relevant key on the console.



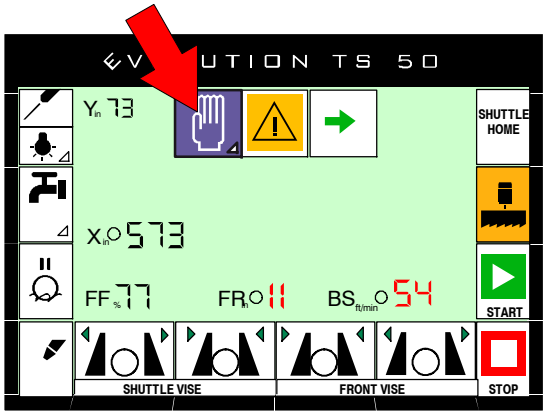
- ▶ Position the workpiece, moving it by the joystick.



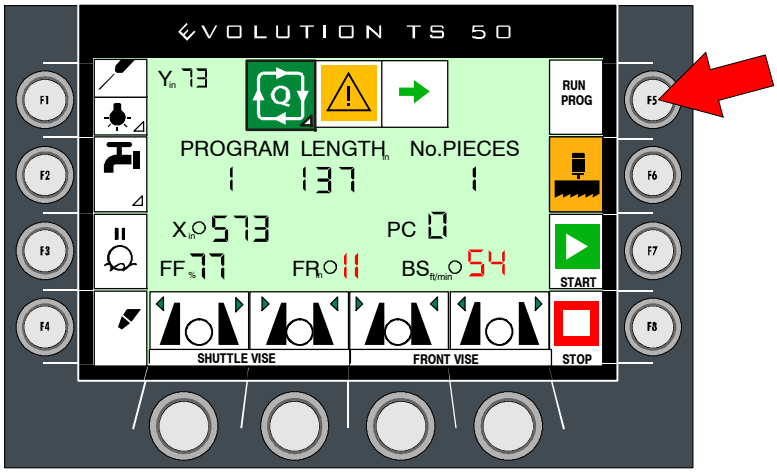
▶ Close the front vice by holding down the corresponding key from the control panel.



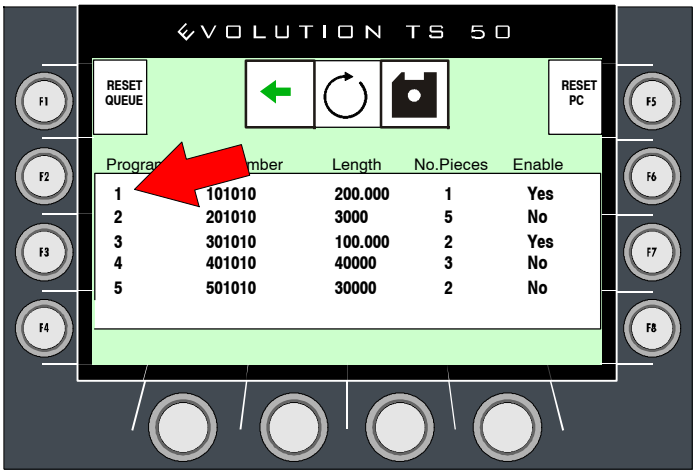
▶ Select the automatic machining mode with continuous program, pressing the box shown in the figure on the touch screen.



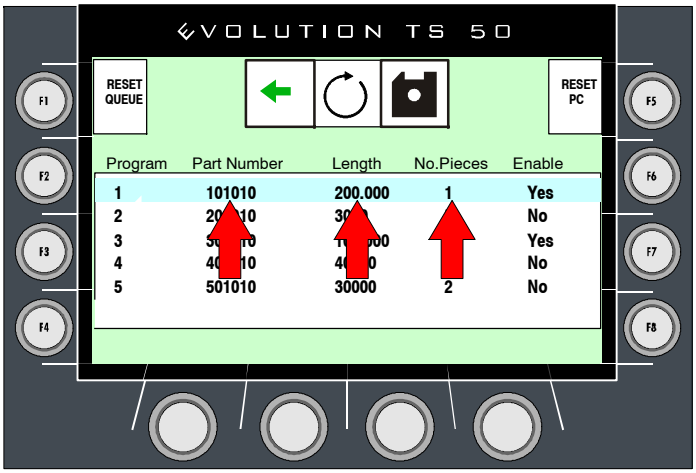
▶ Press the RUN/PROG key to access the programming page for the automatic operation with continuous program.



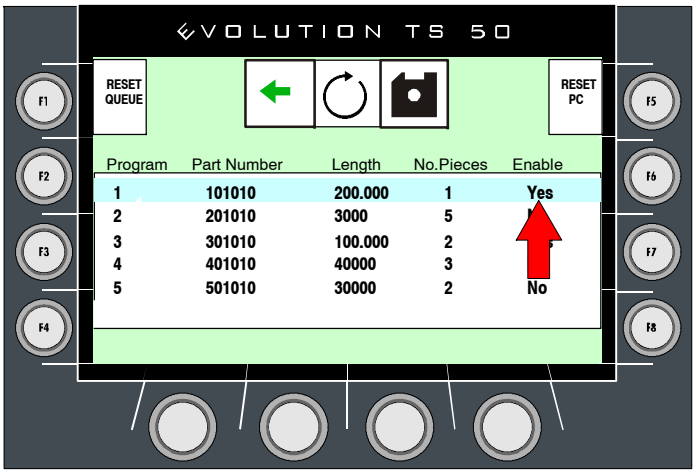
▶ The display shows the following screen listing all programs (max. 10). Press the program number to select the one to be set.



▶ Press to edit all values of “Part Number” (company identification code), “Length” (piece length), and “Nr. Pieces” (number of pieces) using the key-pad.

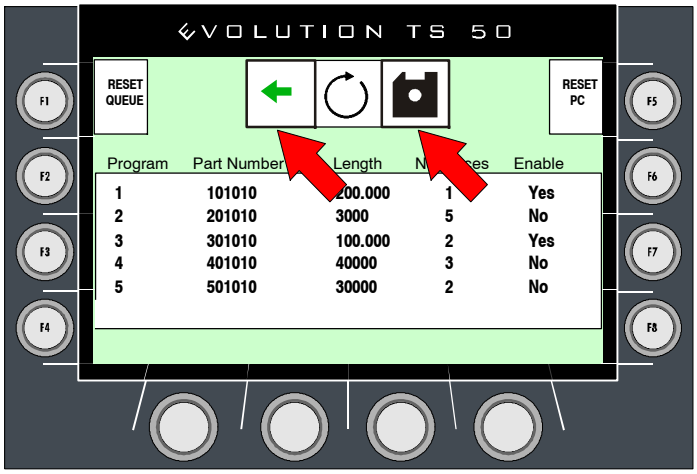


▶ In the end choose to activate or deactivate the selected by “Enable” (Yes / No).

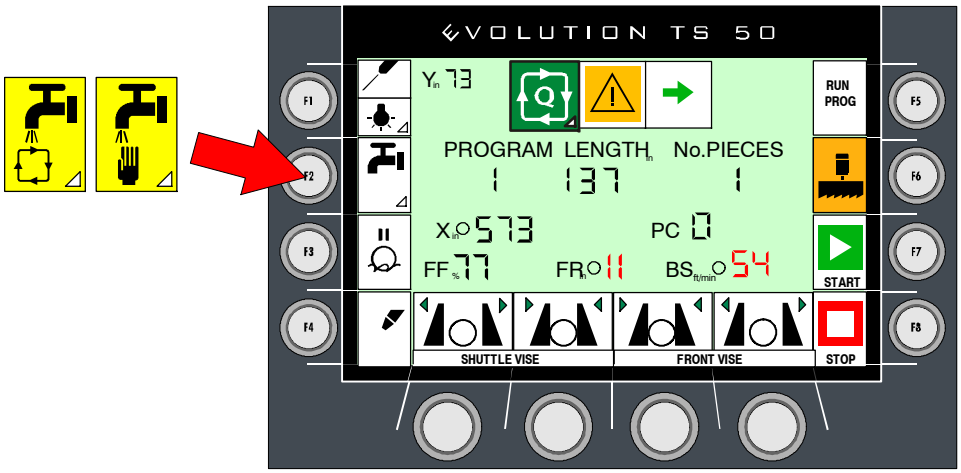


N.B. Press the F1 key to zero the program queue.
Press the F5 key to zero the piece number.

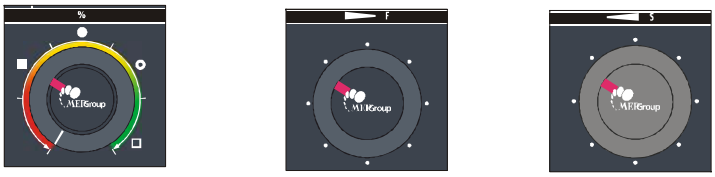
Before returning to the machining screen, press the data saving key and then the green arrow shown in the figure.



▶ Set the fluid jet by pressing the button shown in the figure. The box will light up to indicate that it is selected. Adjust the amount using the valves on the blade guide head. Press the button repeatedly to select the dispensing mode (automatic or manual).

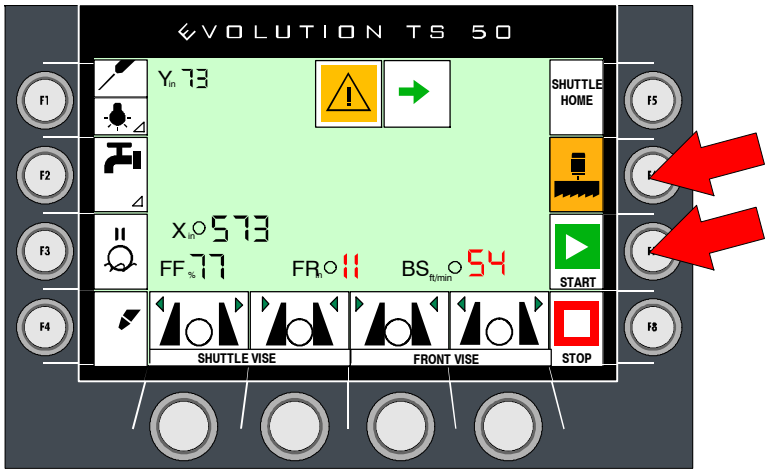


▶ Set the cutting parameters, previously shown, using the following adjusters.



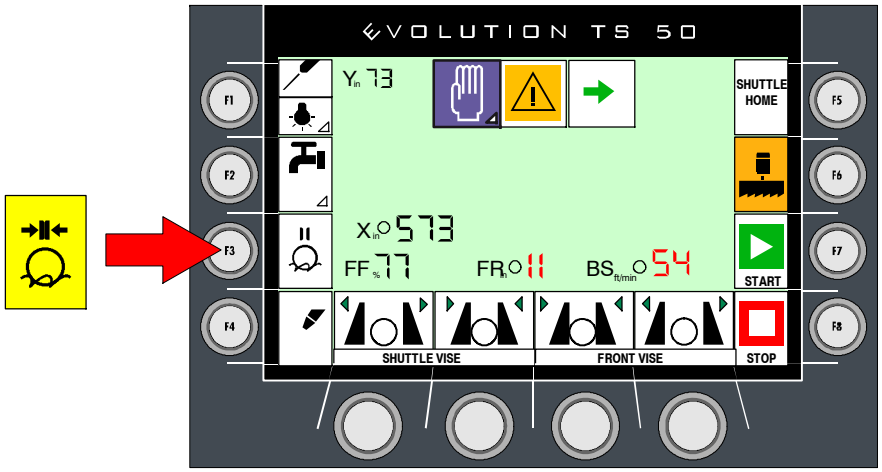
▶ Position the head at about 10 mm (0.39 in) from the material being machined, moving it with the joystick.

▶ Press the band rotation enabling key (F6).



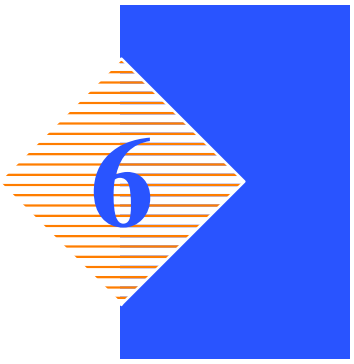
▶ Press the F7 cycle start key to start the band rotation and the head lowering. The RHLS point is automatically stored in this way, as explained before. At the end, the band stops and the head rises again.

N.B. If the existing FHLS point is to be deleted now, follow the operations described above.



The sawing machine then feeds new material performing all the program cuts and continues with the set sequence. If the machining cycle must be stopped, press F8 Cycle Stop. To start it again, press F7 Cycle Start.

Diagrams, exploded views and replacement parts



This chapter contains functional diagrams and exploded views of the **H- 11A** . 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.

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	Content Index			Stepper Motor Auxiliary Circuits	
2	INDICE CONTENUTI		15	UNITA' CENTRALE MEP50	
	Content Index			Central Unit MEP50	
3	LEGENDA SIMBOLI		16	INGRESSI DIGITALI MEP50	
	Symbol Key			Digital Input MEP50	
4	LEGENDA SIMBOLI		17	INGRESSI DIGITALI MEP50	
	Symbol Key			Digital Input MEP50	
5	ALIMENTAZIONE		18	USCITE DIGITALI MEP50	
	Power Supply			Digital Output MEP50	
6	ALIMENTAZIONE MOTORI 480V		19	USCITE DIGITALI MEP50	
	Motor Power Supply 480V			Digital Output MEP50	
7	ALIMENTAZIONE MOTORI 480V		20	INGRESSI ANALOGICI MEP50	
	Motor Power Supply 480V			Analog Input MEP50	
8	ALIMENTAZIONE TRASFORMATORI		21	INGRESSI ANALOGICI MEP50	
	Transformer Power Supply			Analog Input MEP50	
9	ALIMENTAZIONE MOTORE STEPPER		22	USCITE STEPPER MEP50	
	Stepper Motor Power Supply			Stepper Output MEP50	
10	ALIMENTAZIONE AUSILIARI		23	USCITA ANALOGICA E SERIALE MEP50	
	Auxiliary Circuit Power Supply			Analog Output and Serial MEP50	
11	RELE SICUREZZA EMERGENZA		24	ALIMENTAZIONE E ENCODER PANNELLO	
	Emergency safety relay			Power Supplay and Panel Encoder	
12	RELE SICUREZZA RIPARI		25	OPTIONAL	
	Machine Guard Safety Relay			Optional	
13	AUSILIARI INVERTER		26	MORSETTIERA QUADRO	
	Inverter Auxiliary Circuits			Panel Terminal Board	

Note :

REV.	MODIFICA	DATA	FIRME

Dis. N. H11A
CAD SPAC
File H11A\1.dwg
Data 28/01/2015

Impianto/Plant: Schematic H-11A_480/60Hz
Denominazione/Title: INDICE CONTENUTI / Content Index
Ordine/Requisition:
Commessa/Order: H-11A
Esecutore/Executor: Solfanelli

MEP

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	Board Inside										
28	RIASSUNTIVO CAVI										
	Cable summary										
29	RIASSUNTIVO CAVI										
	Cable Summary										
30	RIASSUNTIVO CAVI										
	Cable Summary										
31	RIASSUNTIVO CAVI										
	Cable Summary										
32	RIASSUNTIVO CAVI										
	Cable Summary										
33	RIASSUNTIVO CAVI										
	Cable Summary										
34	RIASSUNTIVO CAVI										
	Cable Summary										
35	RIASSUNTIVO CAVI										
	Cable Summary										
36	RIASSUNTIVO CAVI										
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37	DISTINTA MATERIALI										
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	Material List										
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	Material List										

Foglio Sheet	Descrizione Description	Revisione \ Revision 0	1	2	3	4	5	6	7	8	9
40	DISTINTA CAVI										
	Cable list										
41											

Note :

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Dis. N. H11A
CAD SPAC
File H11A\1.dwg
Data 28/01/2015

Impianto/Plant: *Schematic H-11A_480/60Hz*
Denominazione/Title: INDICE CONTENUTI / *Content Index*
Ordine/Requisition:
Commessa/Order: H-11A
Esecutore/Executor: Solfanelli

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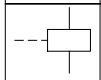
Sim.\Sym.	File	Descrizione\Description
	H5	Lampada *Lamp*
	H11	LED *Led*
	M2	Motore asincrono trifase *Three–phase inductor motor*
	M9	Motore corrente alternata monofase *Single–phase inductor motor*
	Q1360	Int. automatico magnetotermico sezionatore tripolare *Three–phase automatic switch*
	R1	Resistore *Resistor*
	R6	Potenziometro *Potentiometer*
	R60	Potenziometro *Potentiometer*
	S2	Comando a Pulsante NO *Push button NO*
	S4C	Pulsante di emergenza NC *Emergency push button NC*
	S5	Comando rotativo a due posizioni NO *Rotary selector two position*

Sim.\Sym.	File	Descrizione\Description
	S7	Comando a pedale NO *Control pedal NO*
	S13C	Fine corsa comandato a camma libero NC *Limit switch free NC*
	S14C	Fine corsa comandato a camma azionato NC *Limit switch actuated NC*
	S15C	Comandato dal livello di un fluido (livellostato) NC *Water gauge NC*
	T2	Trasformatore per ausiliari con schermo *Trasformer for auxiliary white shield*
	Y1	Elettrovalvola (A) *Solenoid valve (A)*
	Y1A	Elettrovalvola (B) *Solenoid valve (B)*
	KA1	Bobina rele' Aux *Auxiliary relay coil*
	KM1	Bobina contattore *Contactor coil*
	BLK11	Trasformatore per ausiliari con schermo *Trasformer for auxiliary white shield*
	BLK12	Inverter (potenza) *Inverter (power)*

Sim.\Sym.	File	Descrizione\Description
	BLK13	Azionamento (potenza) *Drive (power)*
	BLK14	Inverter (ausiliari) *Inverter (auxiliary)*
	BLK15	Azionamento (ausiliari) *Drive (auxiliary)*
	BLK21	Motore passo-passo *Stepper motor*
	BLK41	Raccordo SX *Connector SX*
	BLK42	Raccordo DX *Connector DX*
	BLK43	Tubo corrugato *Corrugated pipe*
	BLK44	Riduzione PG *PG adapter*
	BLK51	Dado PG *PG nut*
	BLK56	Terminale a puntale *Terminal*
	BLK57	Filo unipolare *Wire*

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Dis. N. H11A
CAD SPAC
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Data 28/01/2015

Impianto/Plant
Schematic H–11A_480/60Hz

Denominazione/Title
LEGENDA SIMBOLI
Symbol Key

Ordine/Requisition
Commessa/Order H–11A
Esecutore/Executor Solfanelli

MEP

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Sim.\Sym.	File	Descrizione\Description
	BLK58	Fascette plastiche di fissaggio *Plastic clamp*
	BLK60	Terminale a occhiello *Terminal*
	BLK66	Sacchetto portafusibile *Bag fuse*
	SPX08E	Dispositivo di prossimita' induttivo D.C. NO *Sensor of proximity fed DC NO*

Sim.\Sym.	File	Descrizione\Description

Sim.\Sym.	File	Descrizione\Description

REV.	MODIFICA	DATA	FIRME

Dis. N. H11A
CAD SPAC
File H11A\1.dwg
Data 28/01/2015

Impianto/Plant
Schematic H-11A_480/60Hz

Denominazione/Title
LEGENDA SIMBOLI
Symbol Key

Ordine/Requisition

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H-11A

Esecutore/Executor
Solfanelli

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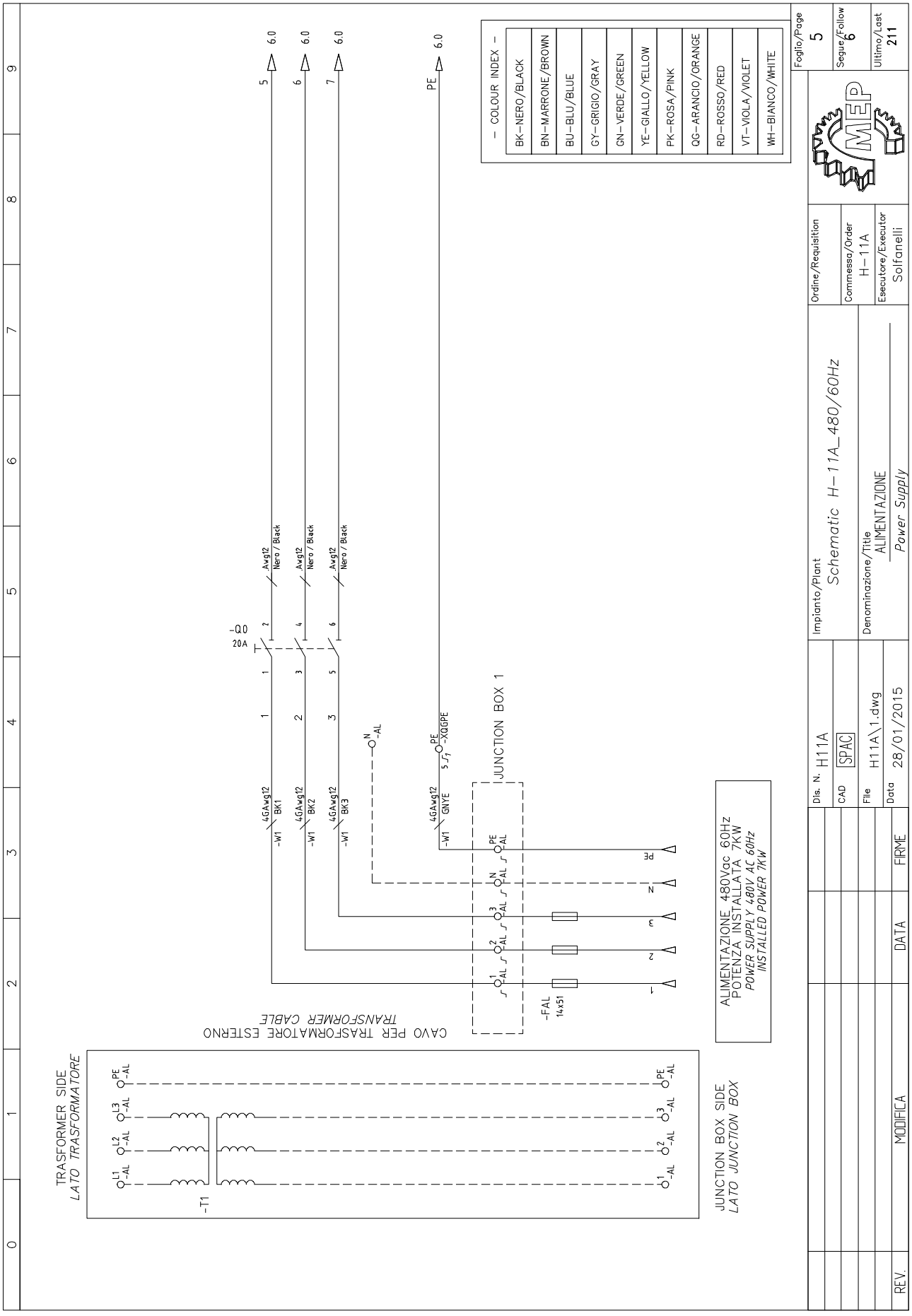
TRASFORMER SIDE
LATO TRASFORMATORE
-T1
JUNCTION BOX SIDE
LATO JUNCTION BOX
CAVO PER TRASFORMATORE ESTERNO
TRANSFORMER CABLE
-FAL
14x51
JUNCTION BOX 1
-Q0
20A
4GAwg12
Avg12
Nero / Black
- COLOUR INDEX -
BK-NERO/BLACK
BN-MARRONE/BROWN
BU-BLU/BLUE
GY-GRIGIO/GRAY
GN-VERDE/GREEN
YE-GIALLO/YELLOW
PK-ROSA/PINK
QG-ARANCIO/ORANGE
RD-ROSSO/RED
VT-VIOLA/VIOLET
WH-BIANCO/WHITE
ALIMENTAZIONE 480Vac 60Hz
POTENZA INSTALLATA 7KW
POWER SUPPLY 480V AC 60Hz
INSTALLED POWER 7KW
Impianto/Plant
Schematic H-11A_480/60Hz
Denominazione/Title
ALIMENTAZIONE
Power Supply
Ordine/Requisition
Commessa/Order
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Esecutore/Executor
Solfanelli
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Dis. N. H11A
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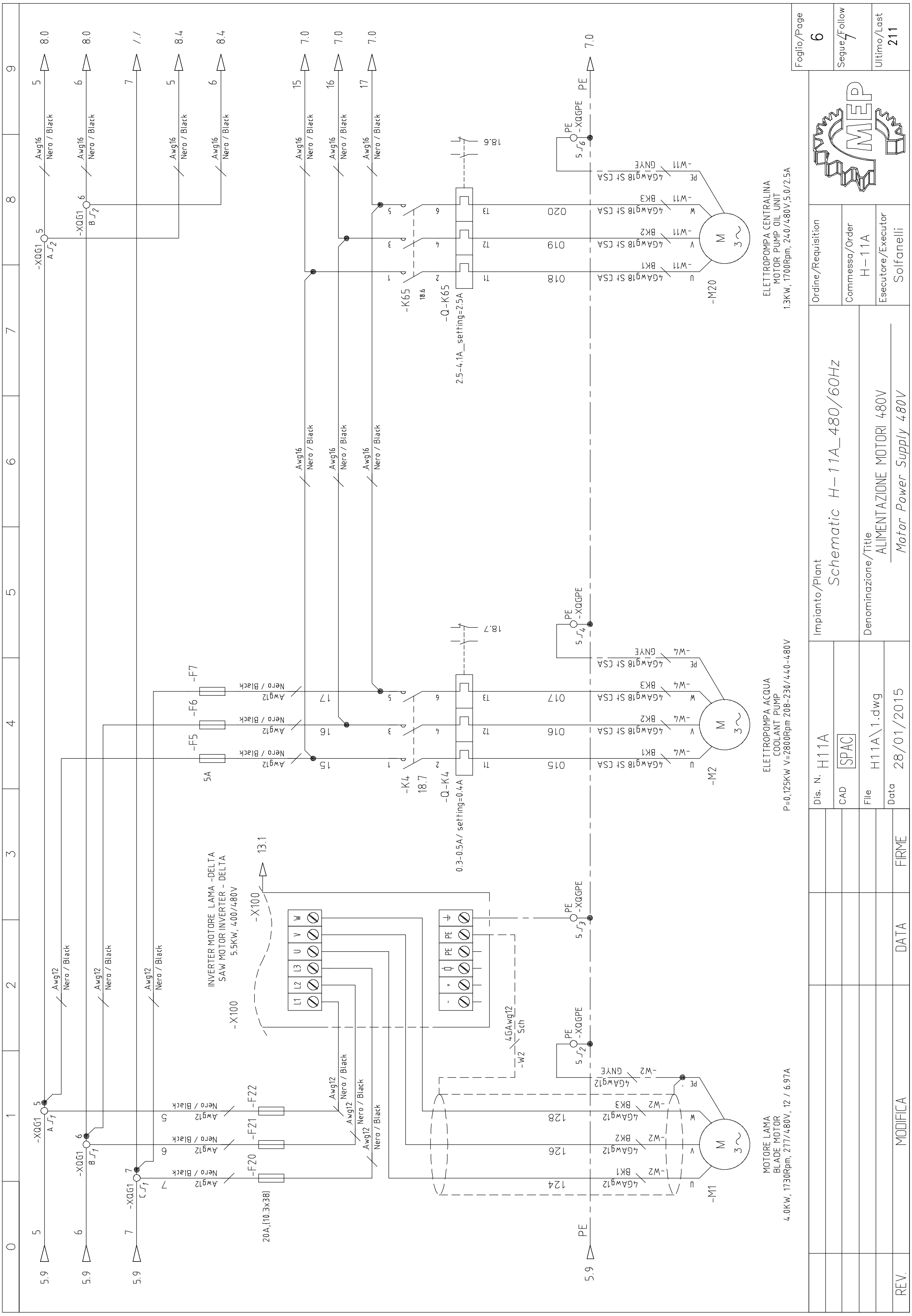
File H11A\1.dwg
Data 28/01/2015
REV.
MODIFICA
DATA
FIRME


MOTORE LAMA
BLADE MOTOR
4.0KW, 1730Rpm, 277/480V, 12 / 6.97A
ELETTROPOMPA ACQUA
COOLANT PUMP
P=0,125KW V=2800Rpm 208-230/440-480V
ELETTROPOMPA CENTRALINA
MOTOR PUMP OIL UNIT
1.3KW, 1700Rpm, 240/480V, 5.0/2.5A
INVERTER MOTORE LAMA -DELTA
SAW MOTOR INVERTER - DELTA
5,5KW, 400/480V
Impianto/Plant
Schematic H-11A_480/60Hz
Denominazione/Title
ALIMENTAZIONE MOTORI 480V
Motor Power Supply 480V
Dis. N. H11A
CAD SPAC
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Ordine/Requisition
Commessa/Order H-11A
Esecutore/Executor Solfanelli
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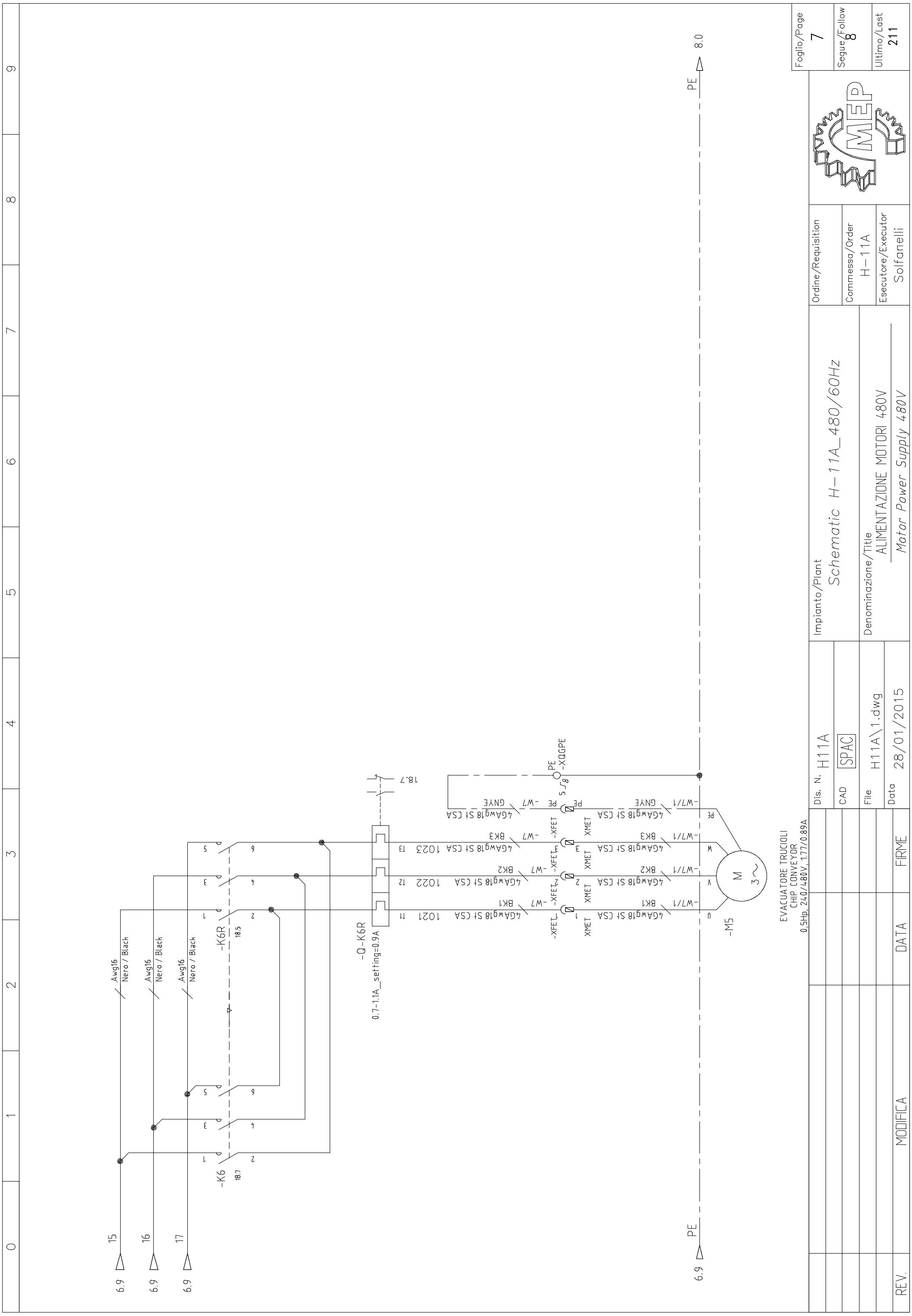
REV.
MODIFICA
DATA
FIRME


EVACUATORE TRUCIOLI
CHIP CONVEYOR
0.5Hp, 240/480V, 1.77/0.89A
-K6
-K6R
-Q-K6R
0.7-1.1A_setting=0.9A
-M5
Impianto/Plant
Schematic H-11A_480/60Hz
Denominazione/Title
ALIMENTAZIONE MOTORI 480V
Motor Power Supply 480V
Ordine/Requisition
Commessa/Order
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Esecutore/Executor
Solfanelli
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CAD SPAC
File H11A\1.dwg
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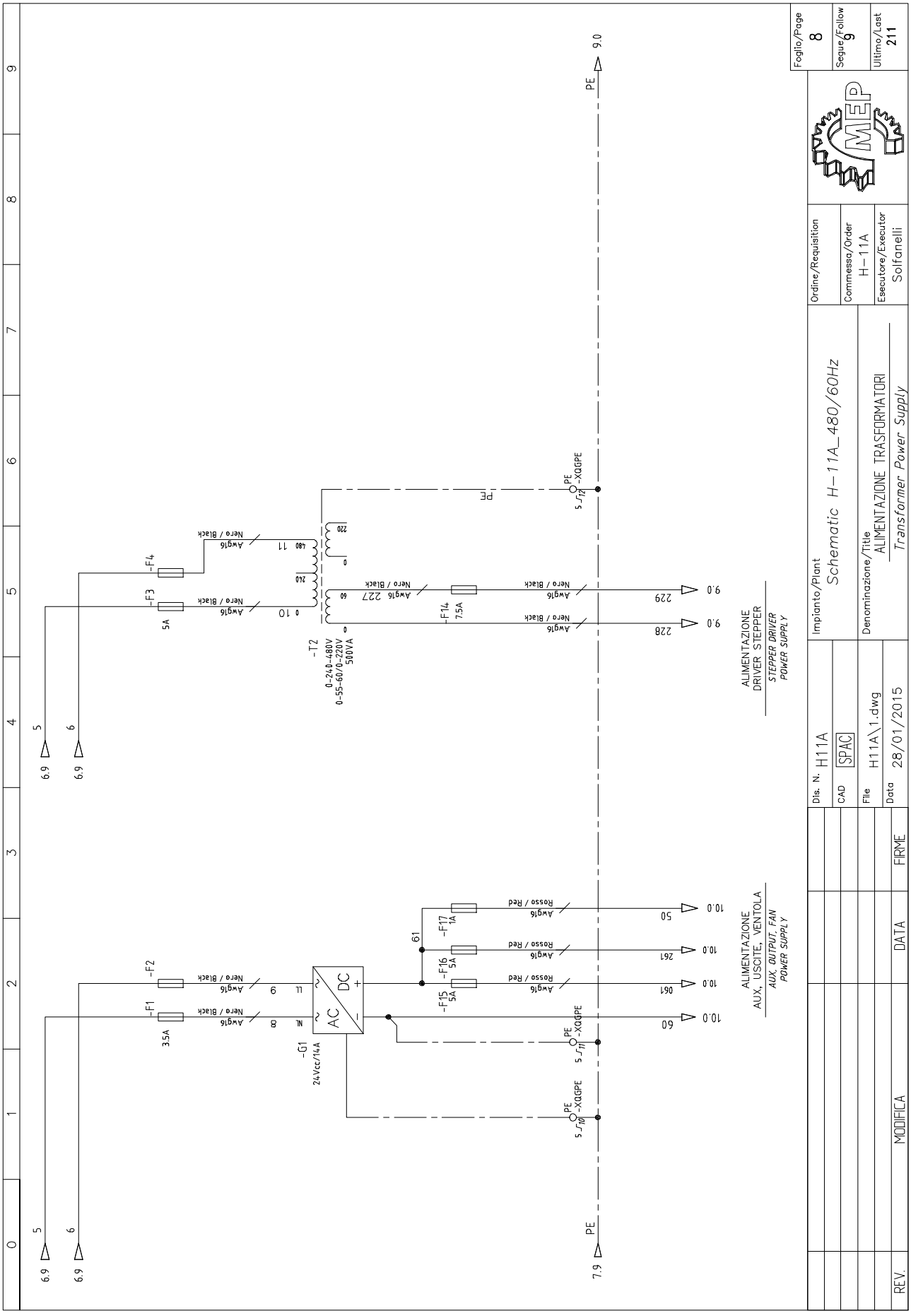
REV.
MODIFICA
DATA
FIRME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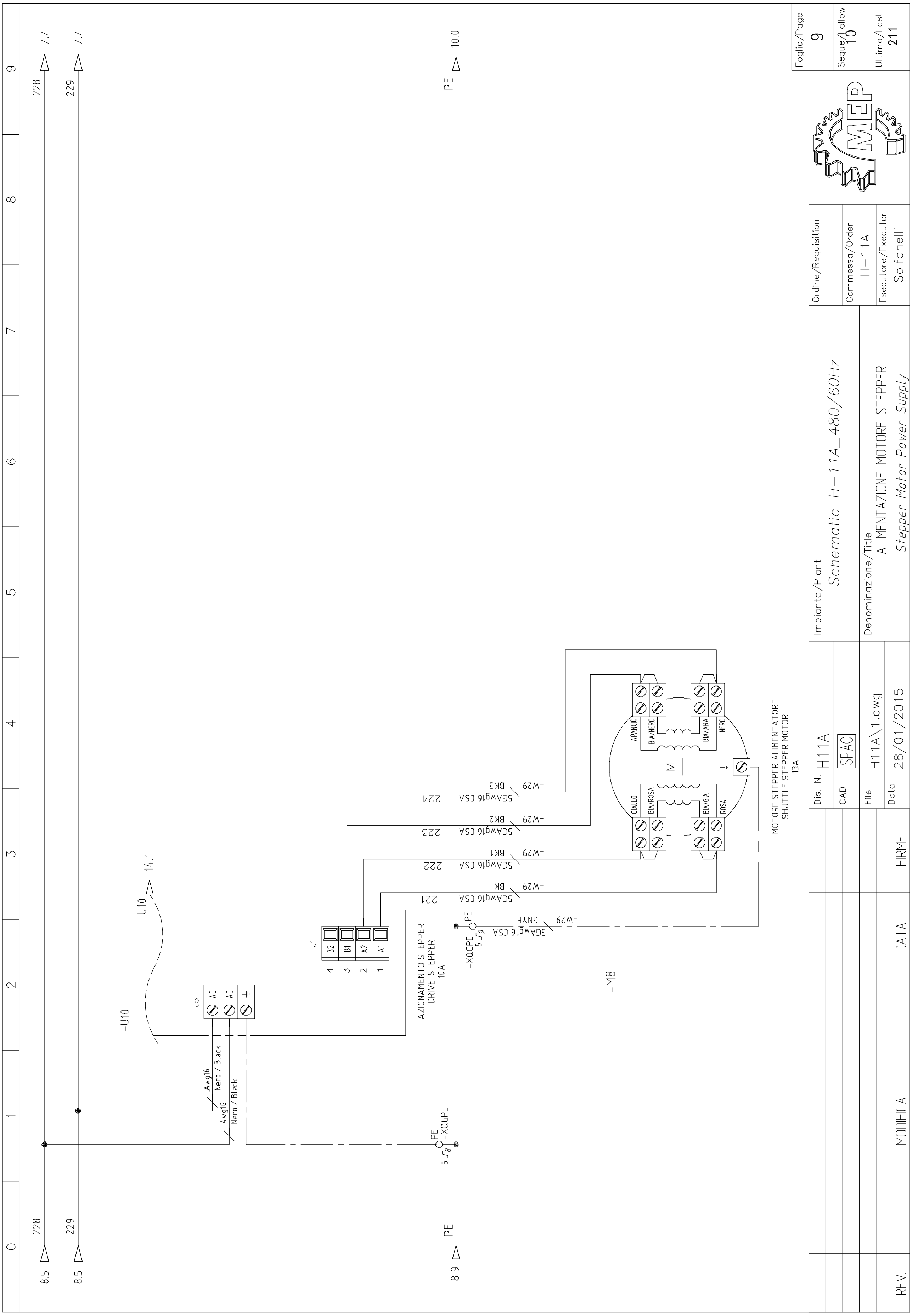
Ordine/Requisition
Commessa/Order H-11A
Esecutore/Executor Solfanelli
Impianto/Plant Schematic H-11A_480/60Hz
Denominazione/Title ALIMENTAZIONE TRASFORMATORI
Transformer Power Supply
Dis. N. H11A
CAD SPAC
File H11A\1.dwg
Data 28/01/2015
REV. MODIFICA DATA FIRME
-T2 0-240-480V 0-55-60/0-220V 500VA
-G1 24Vcc/14A AC DC
-F1 3.5A
-F2
-F3 5A
-F4
-F14 7.5A
-F15 5A
-F16 5A
-F17 1A
ALIMENTAZIONE DRIVER STEPPER
STEPPER DRIVER POWER SUPPLY
ALIMENTAZIONE AUX, USCITE, VENTOLA
AUX, OUTPUT, FAN POWER SUPPLY
Awg16 Nero / Black
Awg16 Rosso / Red
PE
-XAGPE



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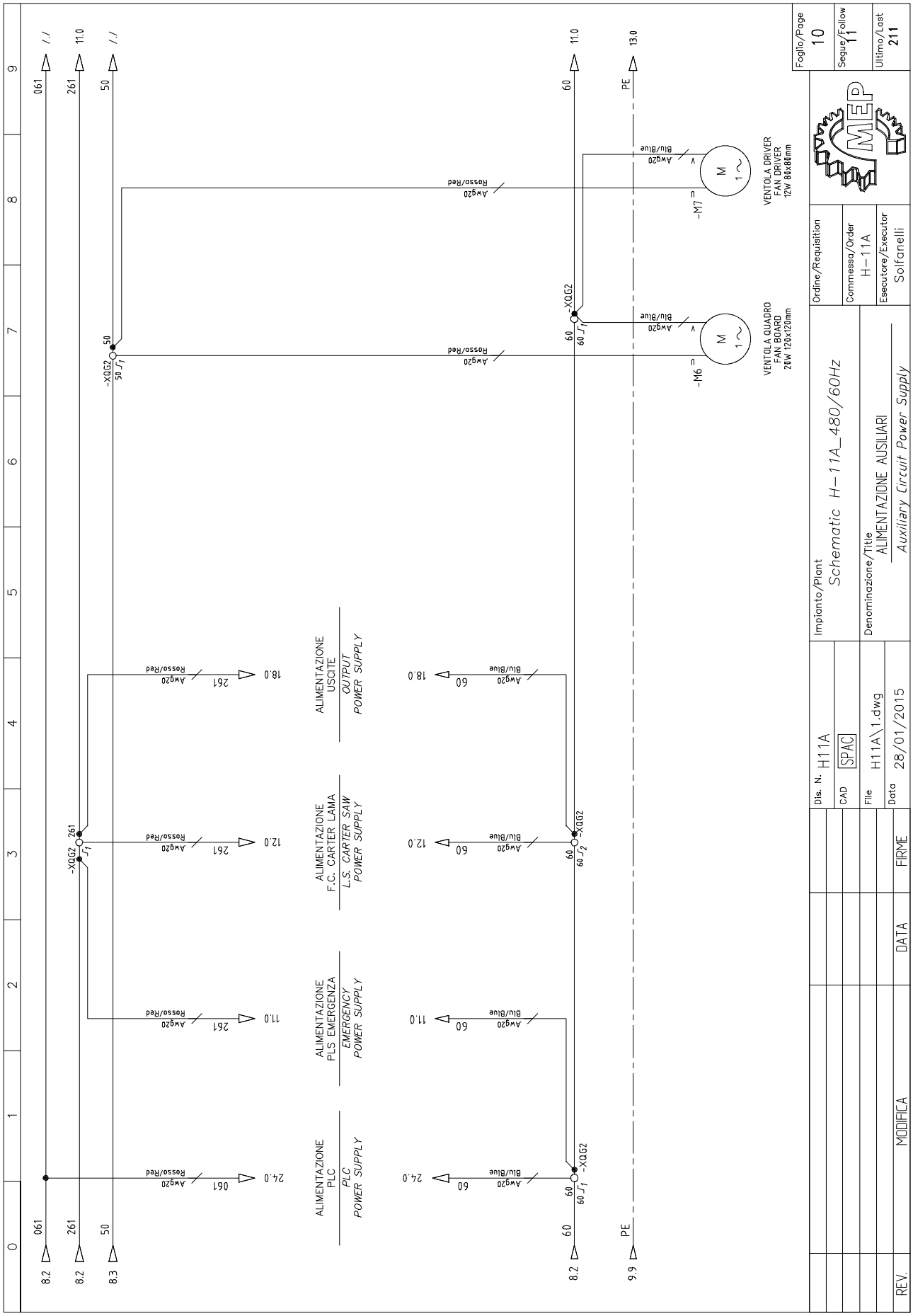
Ordine/Requisition
Commessa/Order H-11A
Esecutore/Executor Solfanelli
Impianto/Plant Schematic H-11A_480/60Hz
Denominazione/Title ALIMENTAZIONE MOTORE STEPPER
Stepper Motor Power Supply
Dis. N. H11A
CAD SPAC
File H11A\1.dwg
Data 28/01/2015
REV. MODIFICA DATA FIRME
MOTORE STEPPER ALIMENTATORE
SHUTTLE STEPPER MOTOR
13A
AZIONAMENTO STEPPER
DRIVE STEPPER
10A
-U10
-M8
-XQGPE
-W29
5GAwg16 CSA
GNYE
BK
BK1
BK2
BK3
221
222
223
224
228
229
PE
J1
J5
B2
B1
A2
A1
AC
Awg16
Nero / Black
ARANCIO
BIA/NERO
BIA/ARA
NERO
GIALLO
BIA/ROSA
BIA/GIA
ROSA
8.5
8.9
10.0
14.1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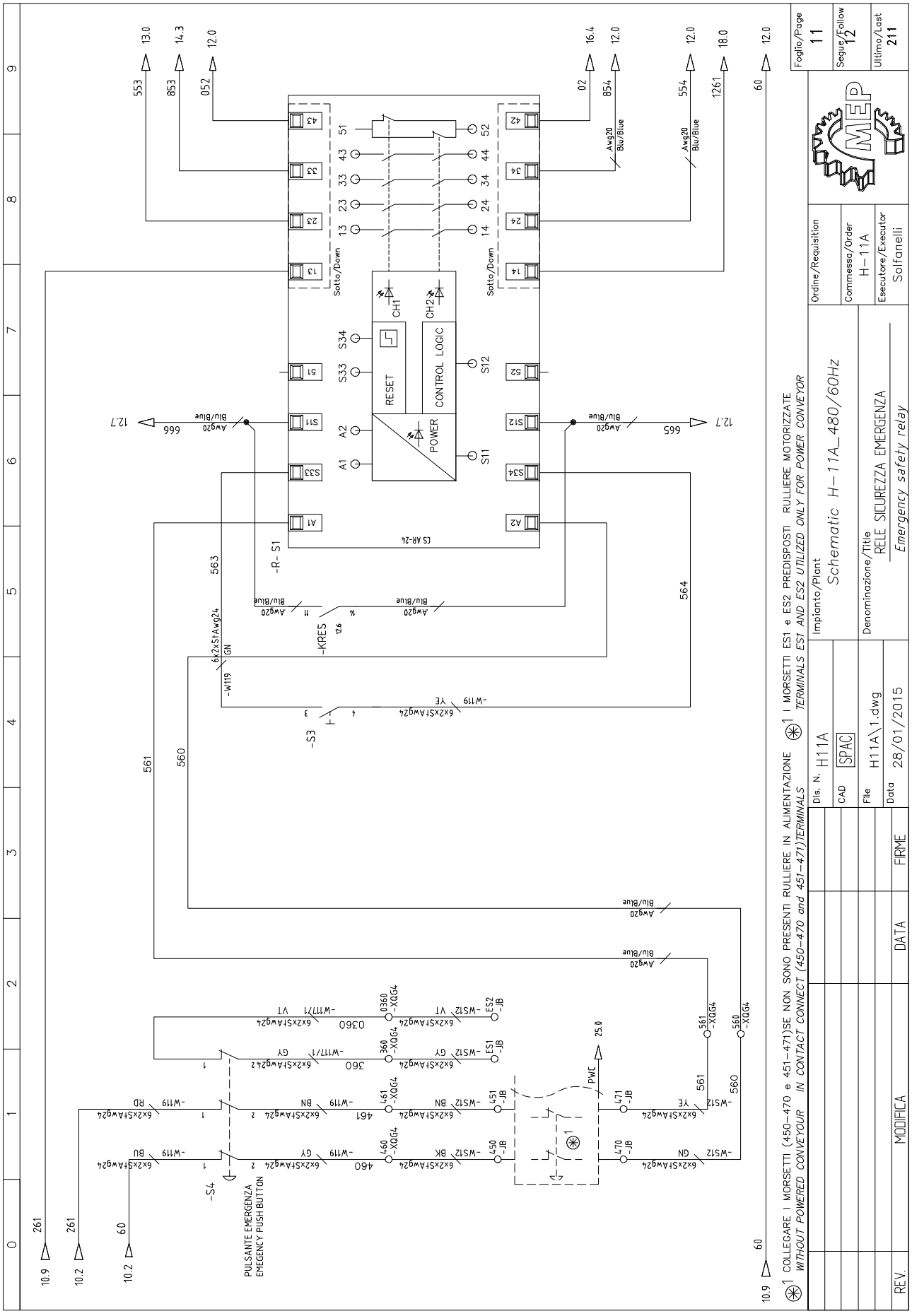
Ultimo/Last 211
Ordine/Requisition
Commessa/Order H-11A
Esecutore/Executor Solfanelli
Impianto/Plant Schematic H-11A_480/60Hz
Denominazione/Title ALIMENTAZIONE AUSILIARI
Auxiliary Circuit Power Supply
Dis. N. H11A
CAD SPAC
File H11A\1.dwg
Data 28/01/2015
REV. MODIFICA DATA FIRME
VENTOLA DRIVER FAN DRIVER 12W 80x80mm
VENTOLA QUADRO FAN BOARD 20W 120x120mm
-M7
-M6
-XQG2
ALIMENTAZIONE PLC POWER SUPPLY
ALIMENTAZIONE PLS EMERGENZA EMERGENCY POWER SUPPLY
ALIMENTAZIONE F.C. CARTER LAMA L.S. CARTER SAW POWER SUPPLY
ALIMENTAZIONE USCITE OUTPUT POWER SUPPLY
Awg20 Rosso/Red
Awg20 Blu/Blue
061
261
50
60
PE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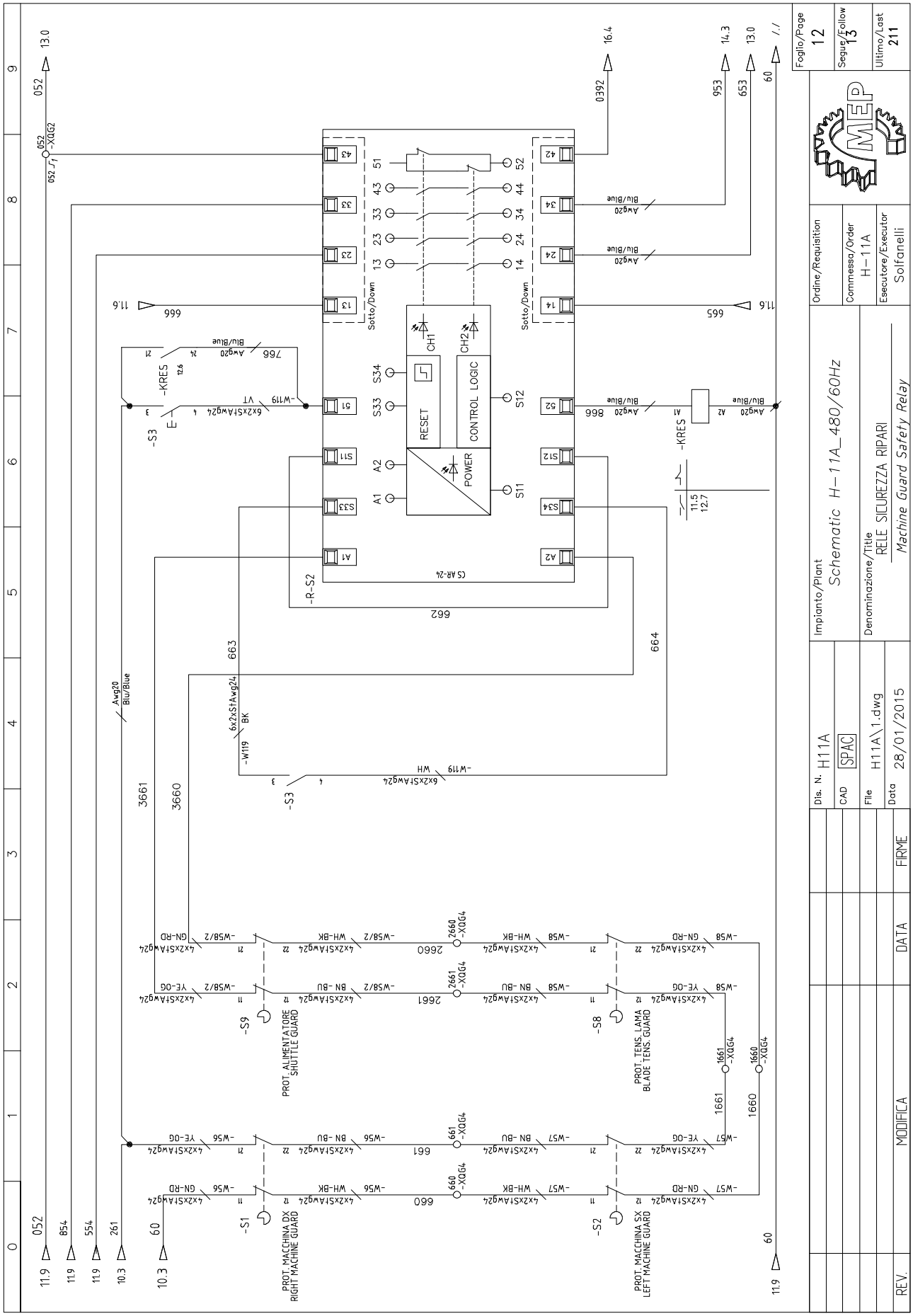
Commessa/Order H-11A
Esecutore/Executor Solfanelli
Impianto/Plant Schematic H-11A_480/60Hz
Denominazione/Title RELE SICUREZZA EMERGENZA
Emergency safety relay
Dis. N. H11A
CAD SPAC
File H11A\1.dwg
Data 28/01/2015
DATA FIRME
REV. MODIFICA
1 COLLEGARE I MORSETTI (450-470 e 451-471)SE NON SONO PRESENTI RULLIERE IN ALIMENTAZIONE
WITHOUT POWERED CONVEYOUR IN CONTACT CONNECT (450-470 and 451-471)TERMINALS
1 I MORSETTI ES1 e ES2 PREDISPOSTI RULLIERE MOTORIZZATE
TERMINALS ES1 AND ES2 UTILIZED ONLY FOR POWER CONVEYOR
-S4
PULSANTE EMERGENZA
EMEGENCY PUSH BUTTON
-S3
-R- S1
-KRES
CS AR-24
RESET
CONTROL LOGIC
POWER
CH1
CH2
Sotto/Down
Awg20 Blu/Blue
6x2xSTAwg24
-W119
-W117/1
-XQG4
-JB
-WS12
PWC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Segue/Follow 13
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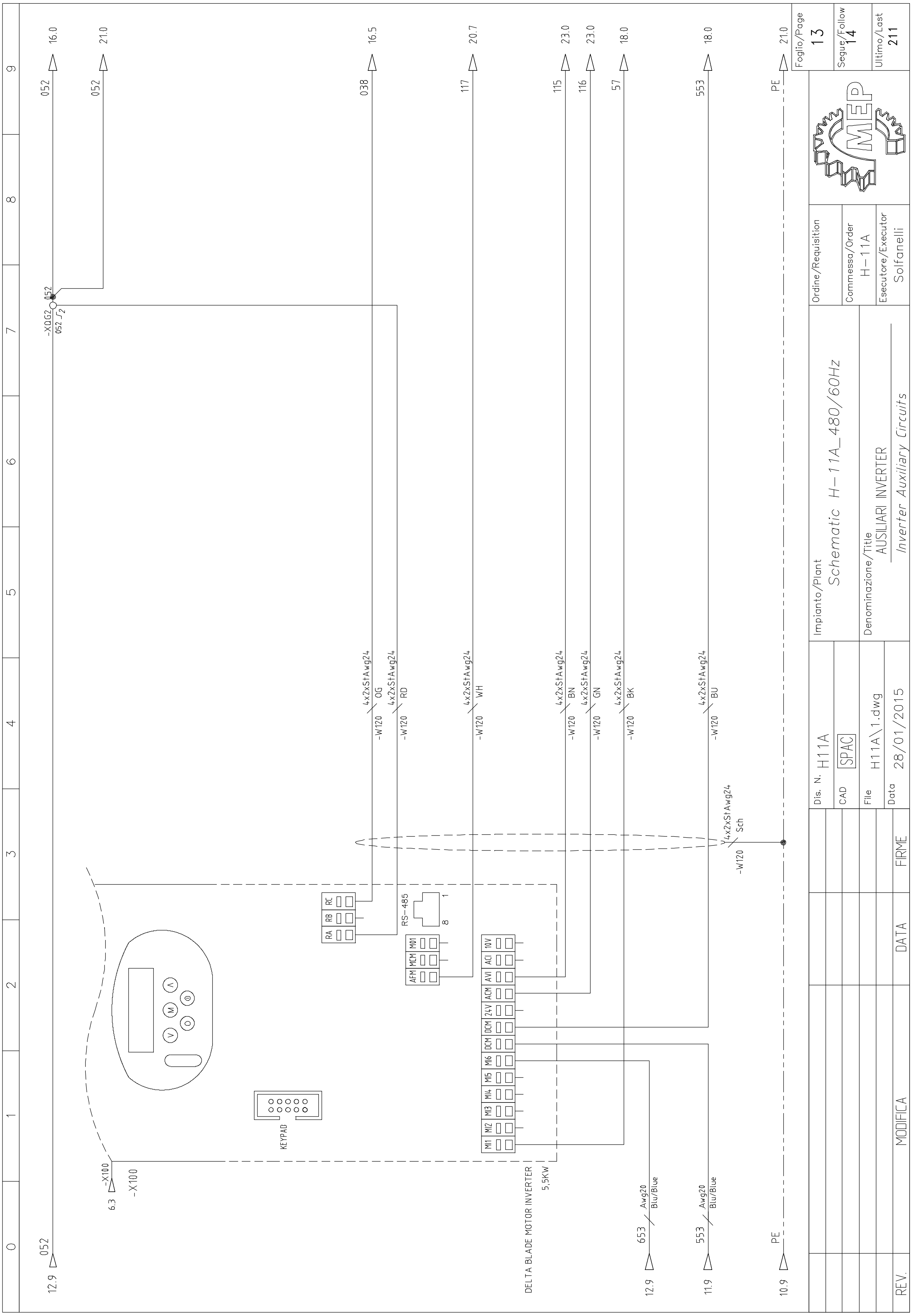
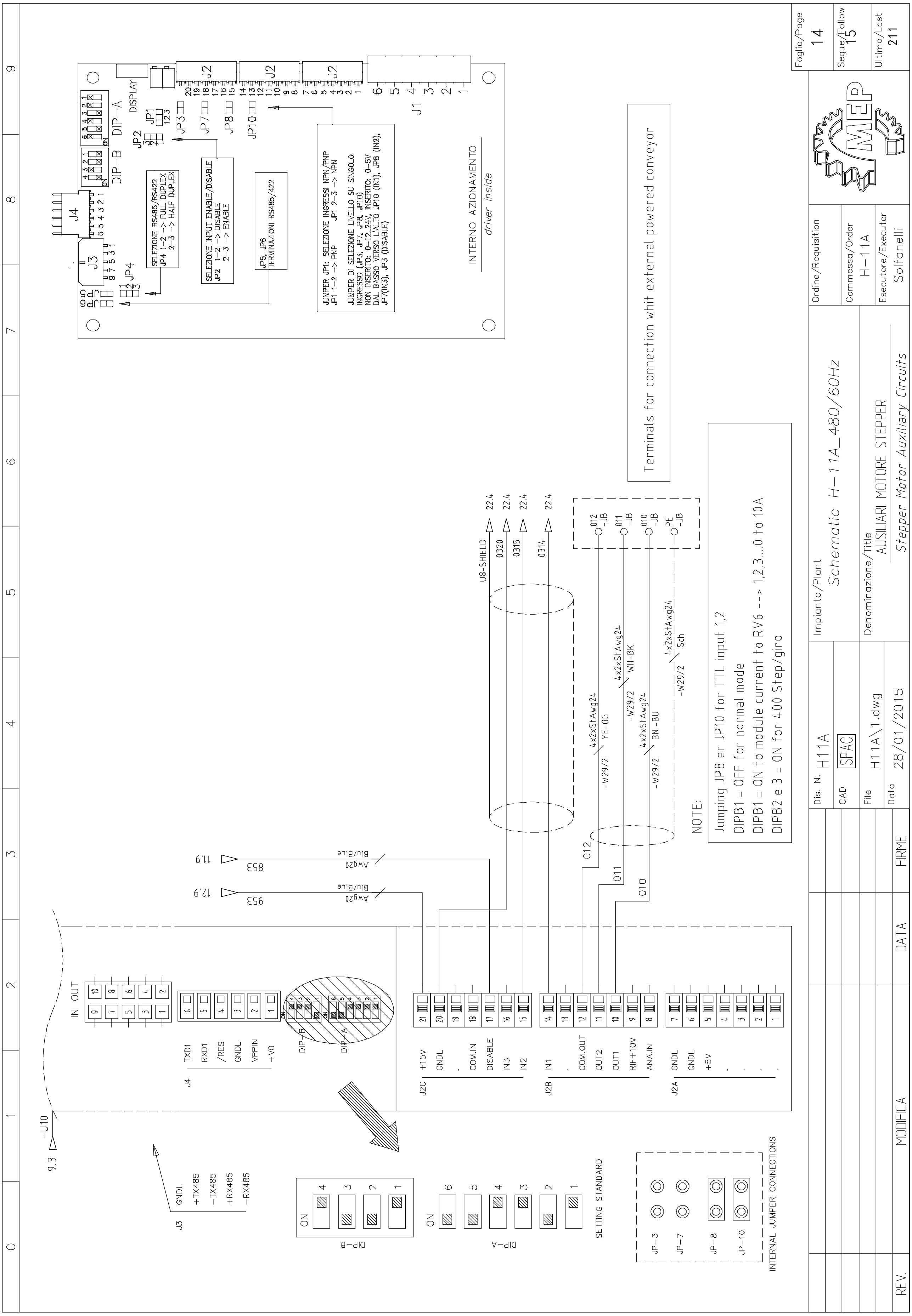
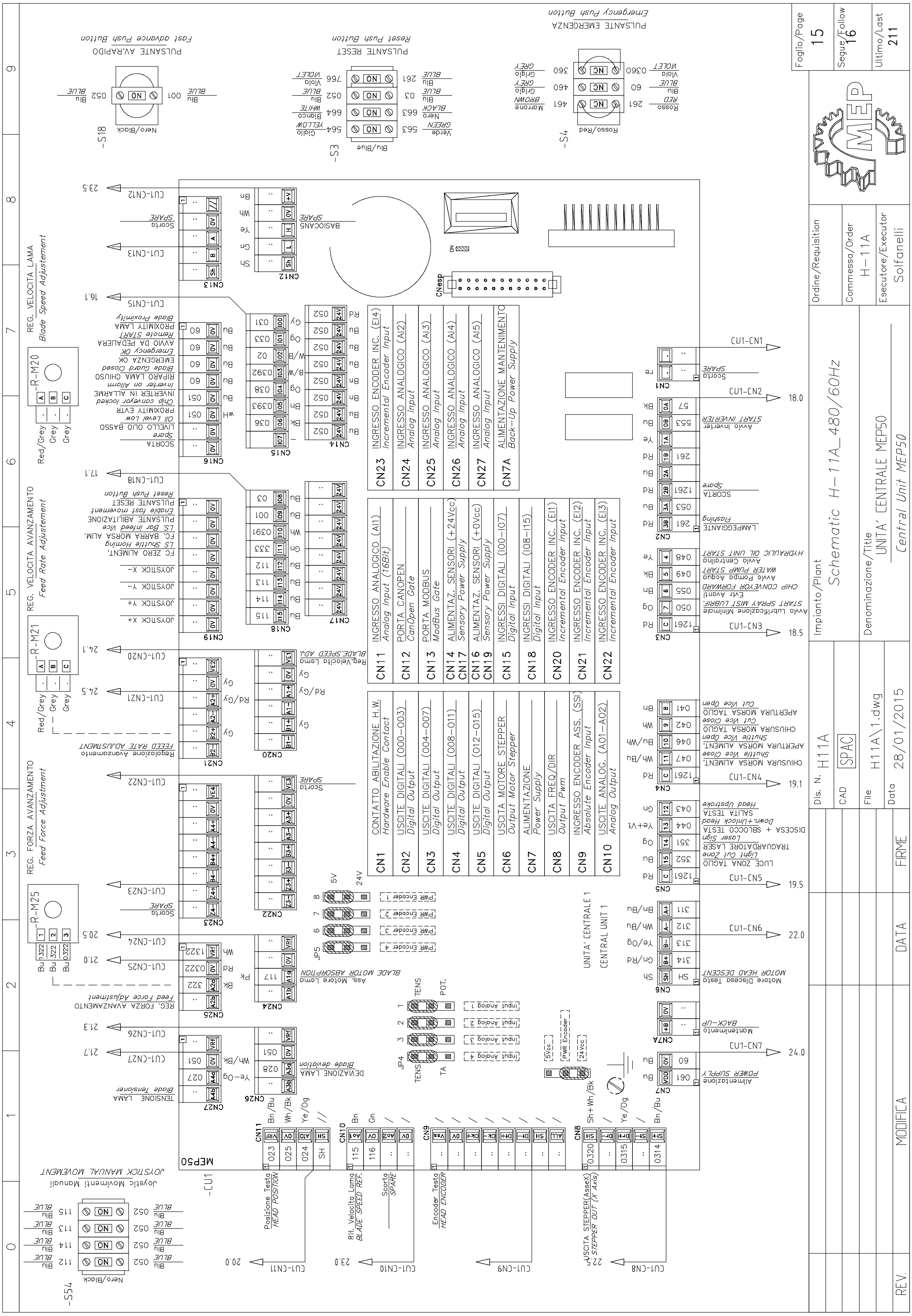
Ordine/Requisition
Commessa/Order H-11A
Esecutore/Executor Solfanelli
Impianto/Plant Schematic H-11A_480/60Hz
Denominazione/Title RELE SICUREZZA RIPARI
Machine Guard Safety Relay
Dis. N. H11A
CAD SPAC
File H11A\1.dwg
Data 28/01/2015
REV. MODIFICA DATA FIRME
-S3
-KRES
-R-S2
CS AR-24
RESET
CONTROL LOGIC
POWER
CH1
CH2
Sotto/Down
-S1
-S2
-S8
-S9
PROT. MACCHINA DX RIGHT MACHINE GUARD
PROT. MACCHINA SX LEFT MACHINE GUARD
PROT. ALIMENTATORE SHUTTLE GUARD
PROT. TENS. LAMA BLADE TENS. GUARD


DELTA BLADE MOTOR INVERTER
5,5KW
KEYPAD
RS-485
Impianto/Plant
Schematic H-11A_480/60Hz
Denominazione/Title
AUSILIARI INVERTER
Inverter Auxiliary Circuits
Ordine/Requisition
Commessa/Order
H-11A
Esecutore/Executor
Solfanelli
Foglio/Page
13
Segue/Follow
14
Ultimo/Last
211
Dis. N. H11A
CAD SPAC
File H11A\1.dwg
Data 28/01/2015
REV.
MODIFICA
DATA
FIRME


Terminals for connection whit external powered conveyor
INTERNO AZIONAMENTO
driver inside
SELEZIONE RS485/RS422
JP4 1-2 -> FULL DUPLEX
2-3 -> HALF DUPLEX
SELEZIONE INPUT ENABLE/DISABLE
JP2 1-2 -> DISABLE
2-3 -> ENABLE
JP5, JP6
TERMINAZIONI RS485/422
JUMPER JP1: SELEZIONE INGRESSI NPN/PNP
JP1 1-2 -> PNP JP1 2-3 -> NPN
JUMPER DI SELEZIONE LIVELLO SU SINGOLO INGRESSO (JP3, JP7, JP8, JP10)
NON INSERITO: 0-12..24V, INSERITO: 0-5V
DAL BASSO VERSO L'ALTO JP10 (IN1), JP8 (IN2), JP7(IN3), JP3 (DISABLE)
DISPLAY
DIP-A
DIP-B
NOTE:
Jumping JP8 er JP10 for TTL input 1,2
DIPB1 = OFF for normal mode
DIPB1 = ON to module current to RV6 --> 1,2,3....0 to 10A
DIPB2 e 3 = ON for 400 Step/giro
J2C +15V GNDL . COM.IN DISABLE IN3 IN2
J2B IN1 . COM.OUT OUT2 OUT1 RIF+10V ANA.IN
J2A GNDL GNDL +5V
J4 TXD1 RXD1 /RES GNDL VPPIN +V0
J3 GNDL +TX485 -TX485 +RX485 -RX485
SETTING STANDARD
INTERNAL JUMPER CONNECTIONS
JP-3 JP-7 JP-8 JP-10
U8-SHIELD 0320 0315 0314
-U10 9.3
Foglio/Page 14
Segue/Follow 15
Ultimo/Last 211
Ordine/Requisition
Commessa/Order H-11A
Esecutore/Executor Solfanelli
Impianto/Plant Schematic H-11A_480/60Hz
Denominazione/Title AUSILIARI MOTORE STEPPER
Stepper Motor Auxiliary Circuits
Dis. N. H11A
CAD SPAC
File H11A\1.dwg
Data 28/01/2015
REV. MODIFICA DATA FIRME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Segue/Follow
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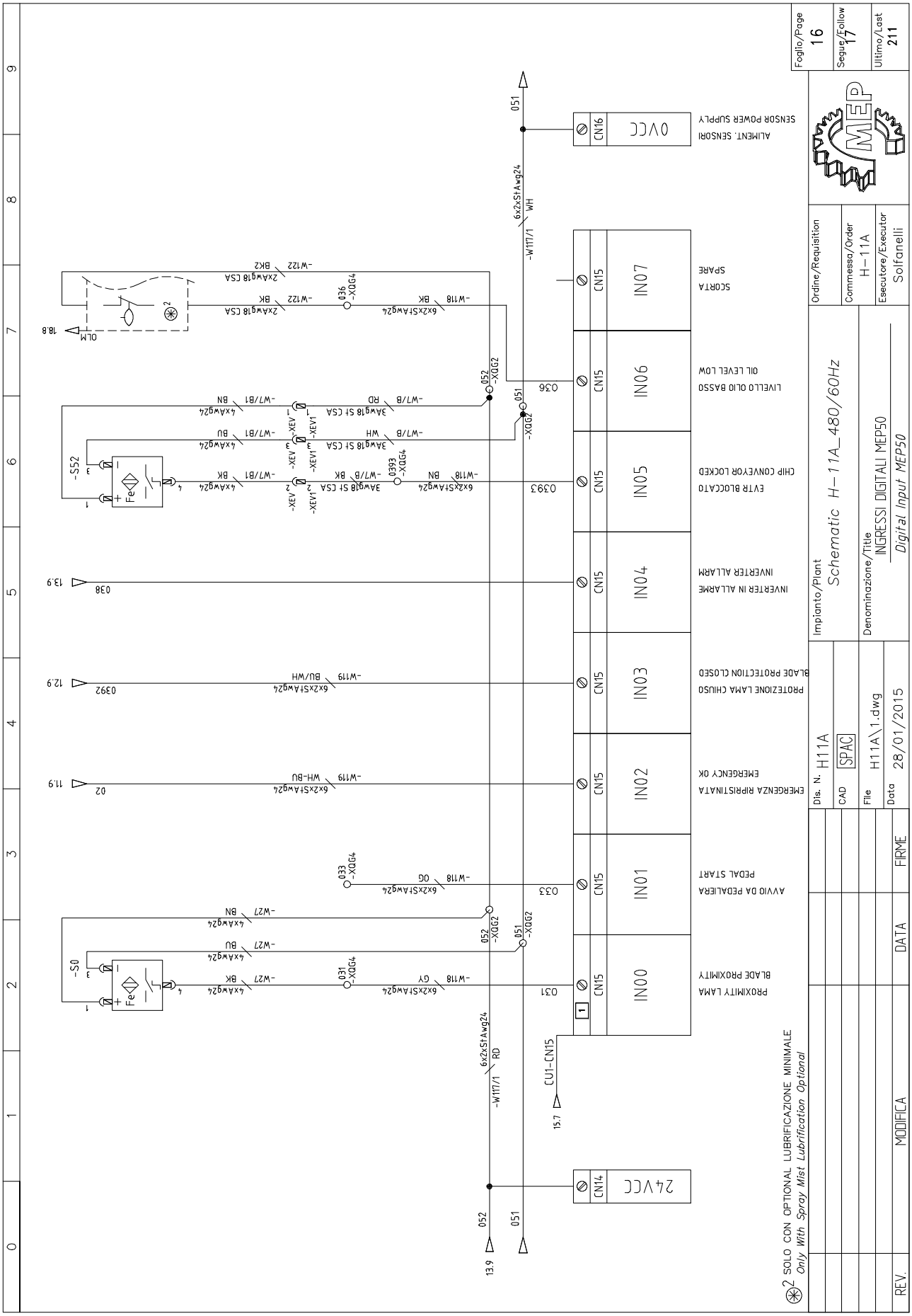
Ultimo/Last
211
Ordine/Requisition
Commessa/Order
H-11A
Esecutore/Executor
Solfanelli
Impianto/Plant
Schematic H-11A_480/60Hz
Denominazione/Title
UNITA' CENTRALE MEP50
Central Unit MEP50
Dis. N. H11A
CAD SPAC
File H11A\1.dwg
Data 28/01/2015
REV.
MODIFICA
DATA
FIRME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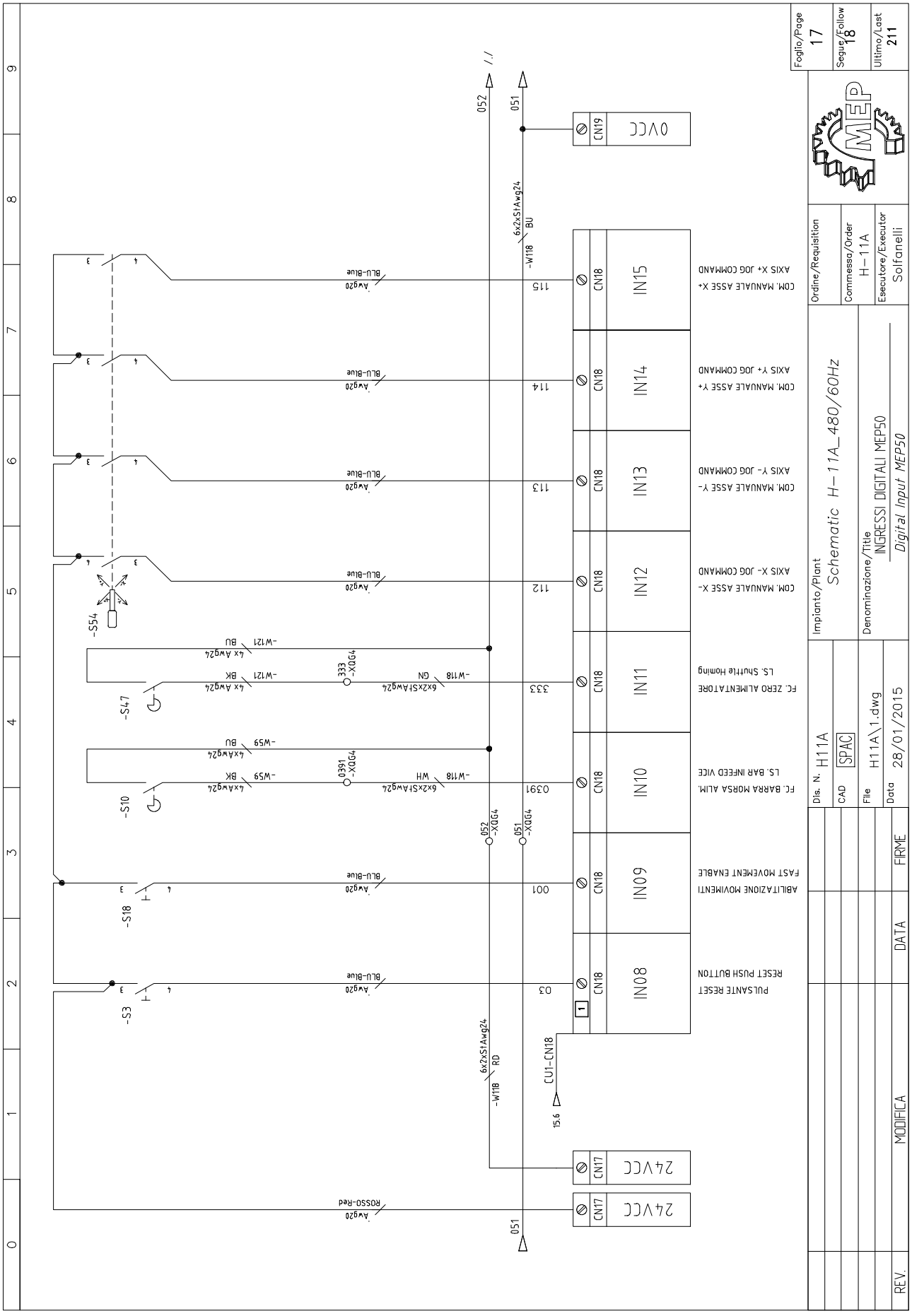
Ultimo/Last 211
Ordine/Requisition
Commessa/Order H-11A
Esecutore/Executor Solfanelli
Impianto/Plant Schematic H-11A_480/60Hz
Denominazione/Title INGRESSI DIGITALI MEP50
Digital Input MEP50
Dis. N. H11A
CAD SPAC
File H11A\1.dwg
Data 28/01/2015
REV. MODIFICA DATA FIRME
2 SOLO CON OPTIONAL LUBRIFICAZIONE MINIMALE
Only With Spray Mist Lubrification Optional
0VCC
24VCC
CN16
CN14
CN15
IN00
IN01
IN02
IN03
IN04
IN05
IN06
IN07
PROXIMITY LAMA
BLADE PROXIMITY
AVVIO DA PEDALIERA
PEDAL START
EMERGENCY OK
EMERGENZA RIPRISTINATA
BLADE PROTECTION CLOSED
PROTEZIONE LAMA CHIUSO
INVERTER IN ALLARME
INVERTER ALLARM
CHIP CONVEYOR LOCKED
EVTR BLOCCATO
OIL LEVEL LOW
LIVELLO OLIO BASSO
SPARE
RISERVA
SENSOR POWER SUPPLY
ALIMENT. SENSORI
-SS1
-SS2
-XEV
-XEV1
-XQG2
-XQG4
-W117/1
-W118
-W119
-W122
-W27
-W7/B
-W7/B1
6x2xStAwg24
4xAwg24
3Awg18 St CSA
2xAwg18 CSA
OLM
CU1-CN15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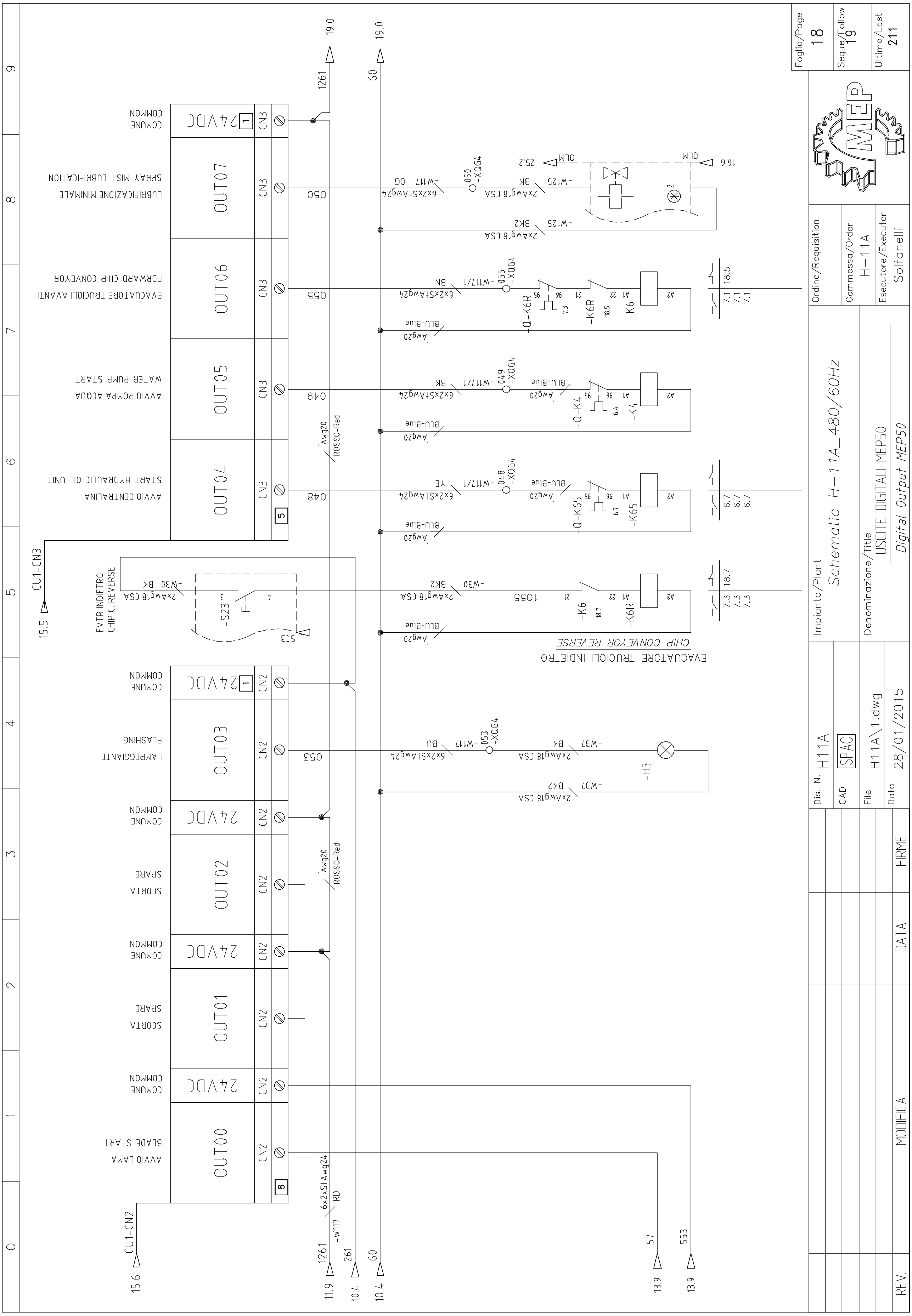
Ultimo/Last 211
Ordine/Requisition
Commessa/Order H-11A
Esecutore/Executor Solfanelli
Impianto/Plant Schematic H-11A_480/60Hz
Denominazione/Title INGRESSI DIGITALI MEP50
Digital Input MEP50
Dis. N. H11A
CAD SPAC
File H11A\1.dwg
Data 28/01/2015
REV. MODIFICA DATA FIRME
0VCC
24VCC
24VCC
IN15
IN14
IN13
IN12
IN11
IN10
IN09
IN08
COM. MANUALE ASSE X+ AXIS X+ JOG COMMAND
COM. MANUALE ASSE Y+ AXIS Y+ JOG COMMAND
COM. MANUALE ASSE Y- AXIS Y- JOG COMMAND
COM. MANUALE ASSE X- AXIS X- JOG COMMAND
FC. ZERO ALIMENTATORE L.S. Shuttle Homing
FC. BARRA MORSA ALIM. L.S. BAR INFEED VICE
ABILITAZIONE MOVIMENTI FAST MOVEMENT ENABLE
PULSANTE RESET RESET PUSH BUTTON
-S54
-S47
-S10
-S18
-S3
-XQG4
6x2xSTAwg24
4xAwg24
Awg20
BLU-Blue
ROSSO-Red
CU1-CN18



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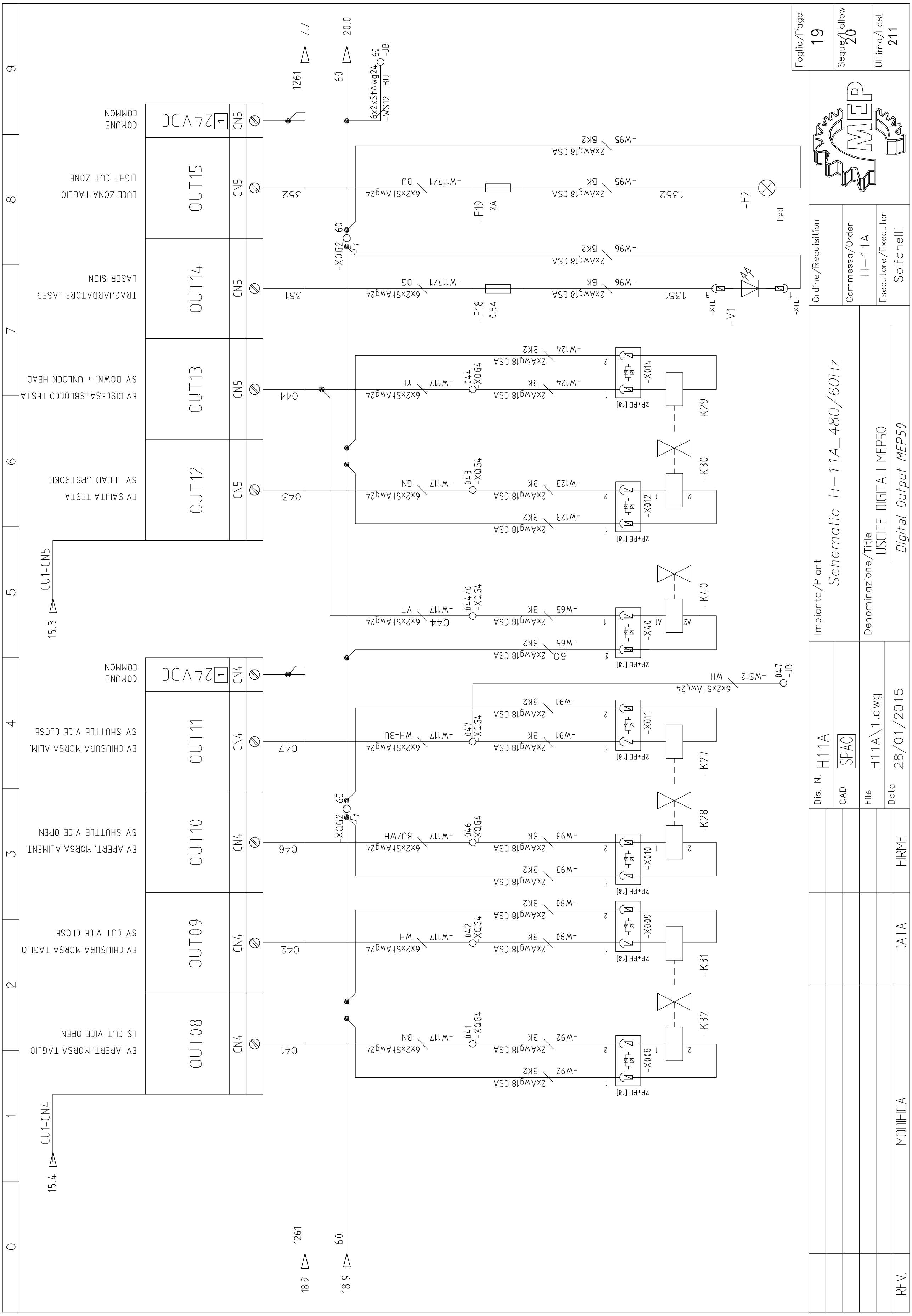
Ordine/Requisition
Commessa/Order H-11A
Esecutore/Executor Solfanelli
Impianto/Plant
Schematic H-11A_480/60Hz
Denominazione/Title
USCITE DIGITALI MEP50
Digital Output MEP50
Dis. N. H11A
CAD SPAC
File H11A\1.dwg
Data 28/01/2015
REV.
MODIFICA
DATA
FIRME
AVVIO LAMA
BLADE START
SCORTA
SPARE
COMUNE
COMMON
LAMPEGGIANTE
FLASHING
AVVIO CENTRALINA
START HYDRAULIC OIL UNIT
AVVIO POMPA ACQUA
WATER PUMP START
EVACUATORE TRUCIOLI AVANTI
FORWARD CHIP CONVEYOR
LUBRIFICAZIONE MINIMALE
SPRAY MIST LUBRIFICATION
EVTR INDIETRO
CHIP C. REVERSE
EVACUATORE TRUCIOLI INDIETRO
CHIP CONVEYOR REVERSE
OUT00
OUT01
OUT02
OUT03
OUT04
OUT05
OUT06
OUT07
24VDC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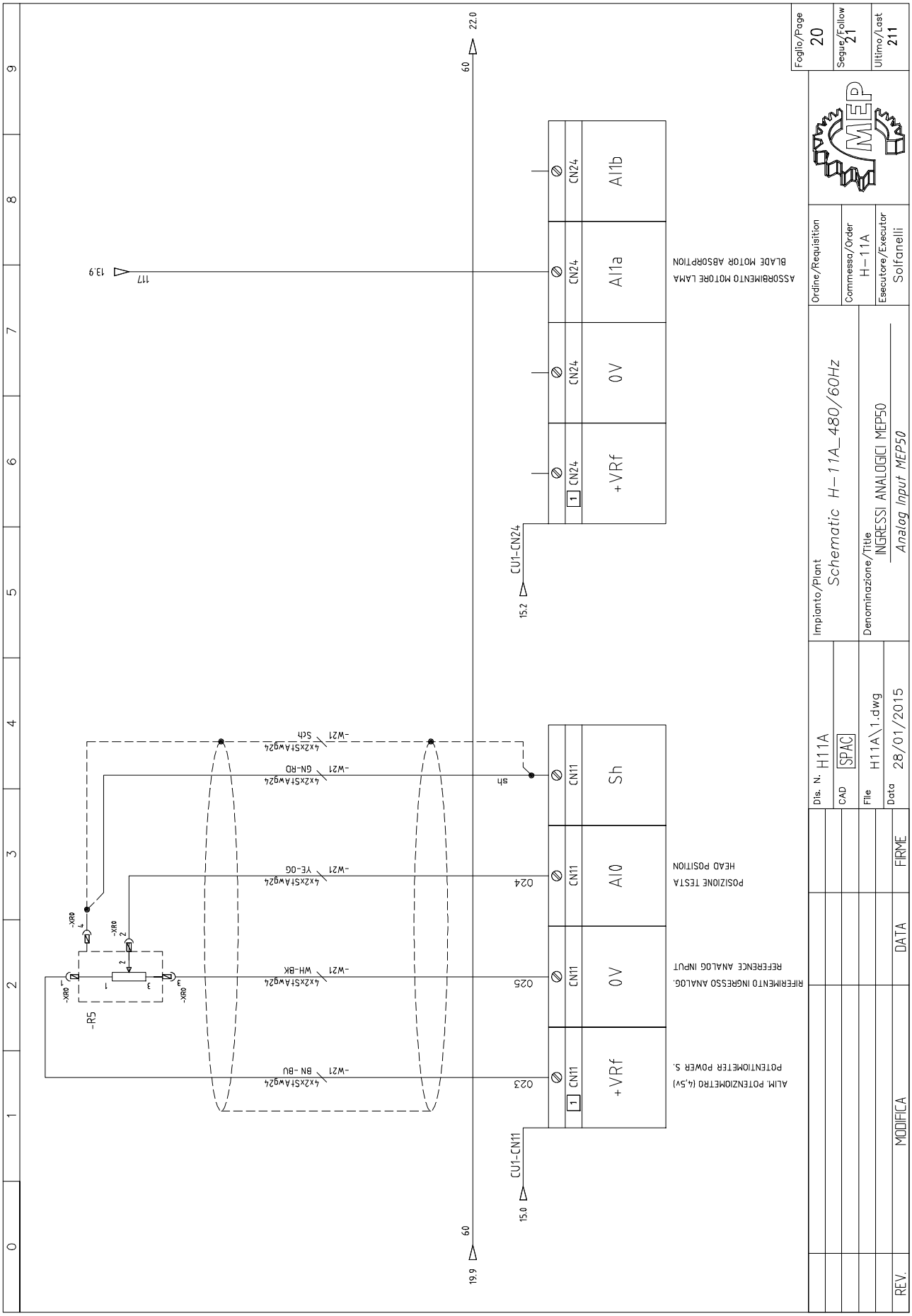
Ultimo/Last 211
Commessa/Order H-11A
Esecutore/Executor Solfanelli
Impianto/Plant Schematic H-11A_480/60Hz
Denominazione/Title USCITE DIGITALI MEP50
Digital Output MEP50
Dis. N. H11A
CAD SPAC
File H11A\1.dwg
Data 28/01/2015
MODIFICA
DATA
FIRME
REV.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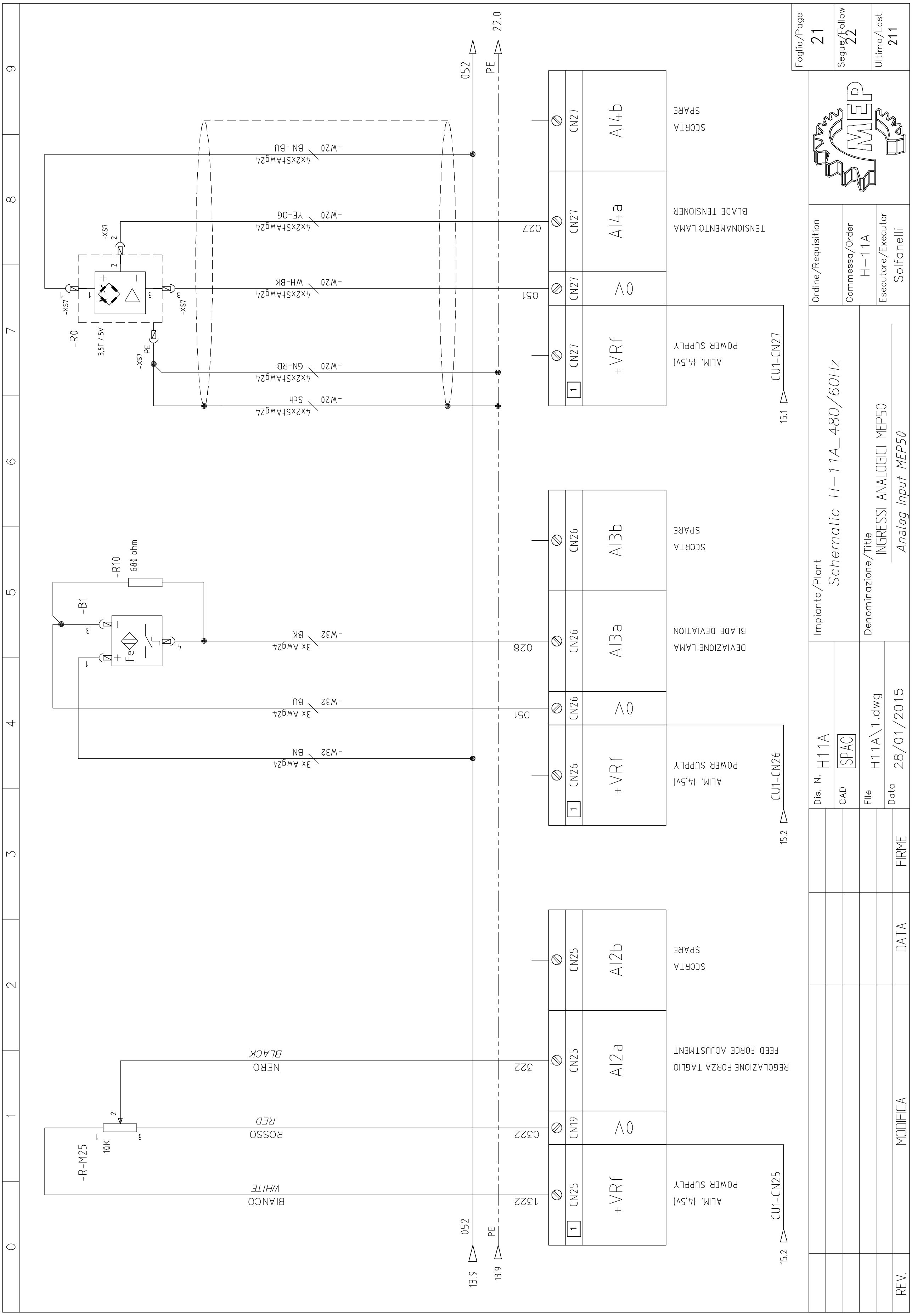
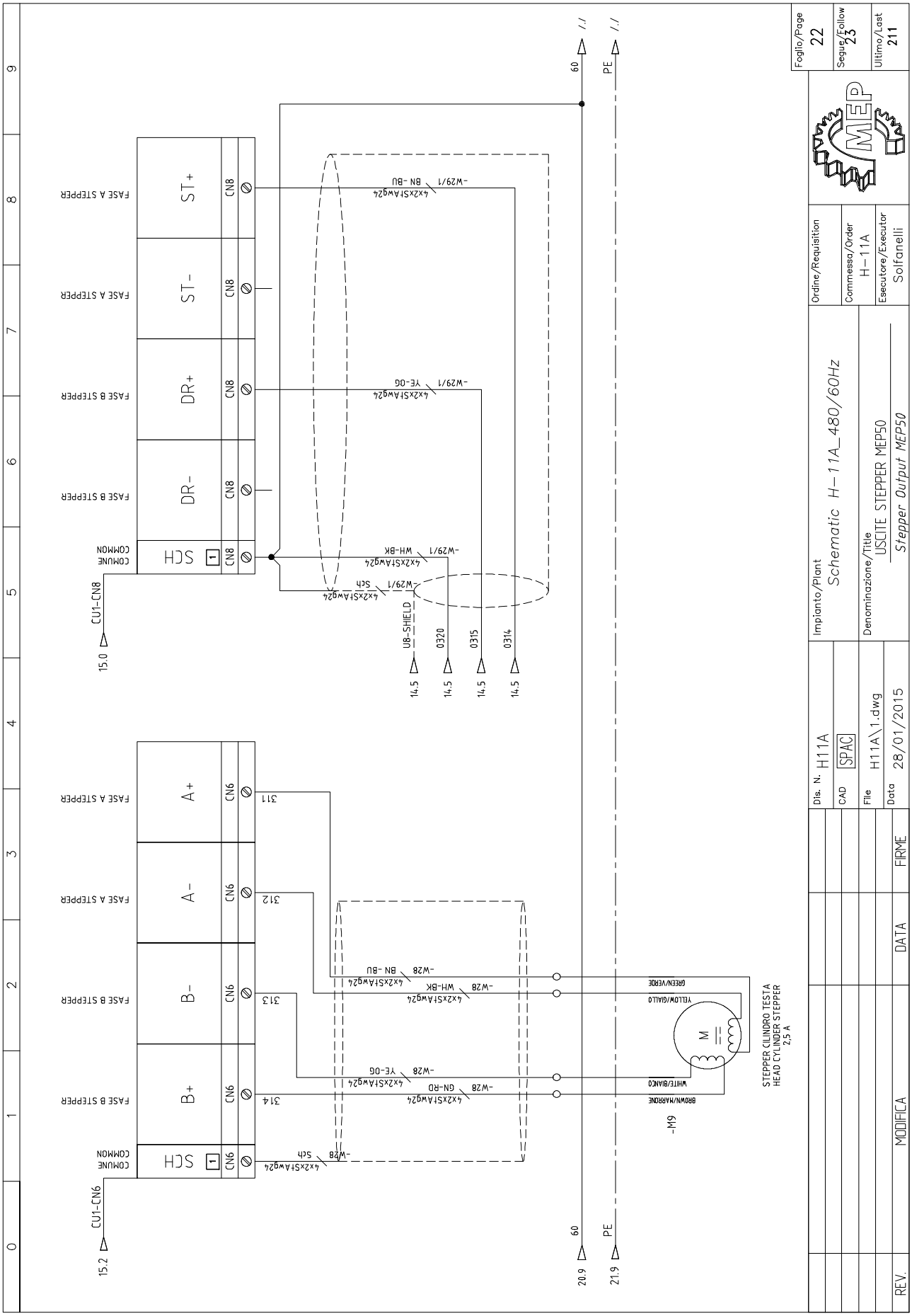
Ultimo/Last 211
Ordine/Requisition
Commessa/Order H-11A
Esecutore/Executor Solfanelli
Impianto/Plant Schematic H-11A_480/60Hz
Denominazione/Title INGRESSI ANALOGICI MEP50
Analog Input MEP50
Dis. N. H11A
CAD SPAC
File H11A\1.dwg
Data 28/01/2015
REV. MODIFICA DATA FIRME
ASSORBIMENTO MOTORE LAMA
BLADE MOTOR ABSORPTION
A11b
A11a
0V
+VRf
CN24
CU1-CN24
POSIZIONE TESTA
HEAD POSITION
A10
Sh
CN11
CU1-CN11
RIFERIMENTO INGRESSO ANALOG.
REFERENCE ANALOG INPUT
ALIM. POTENZIOMETRO (4,5V)
POTENTIOMETER POWER S.
-R5
-W21
4x2xSTAWG24
BN-BU
WH-BK
YE-OG
GN-RD
Sch
-XR0


Foglio/Page 21
Segue/Follow 22
Ultimo/Last 211
Ordine/Requisition
Commessa/Order H-11A
Esecutore/Executor Solfanelli
Impianto/Plant
Schematic H-11A_480/60Hz
Denominazione/Title
INGRESSI ANALOGICI MEP50
Analog Input MEP50
Dis. N. H11A
CAD SPAC
File H11A\1.dwg
Data 28/01/2015
REV.
MODIFICA
DATA
FIRME
CN27
AI4b
SCORTA
SPARE
AI4a
TENSIONAMENTO LAMA
BLADE TENSIONER
0V
+VRf
ALIM. (4,5V)
POWER SUPPLY
CU1-CN27
CN26
AI3b
AI3a
DEVIAZIONE LAMA
BLADE DEVIATION
CU1-CN26
CN25
CN19
AI2b
AI2a
REGOLAZIONE FORZA TAGLIO
FEED FORCE ADJUSTMENT
CU1-CN25
-R0
-B1
-R10
680 ohm
-R-M25
10K
-W20
-W32
4x2xSTAWg24
3x AWg24
BN-BU
YE-OG
WH-BK
GN-RD
Sch
BK
BU
BN
NERO
BLACK
ROSSO
RED
BIANCO
WHITE
052
PE
027
051
028
322
0322
1322
22.0
13.9
15.1
15.2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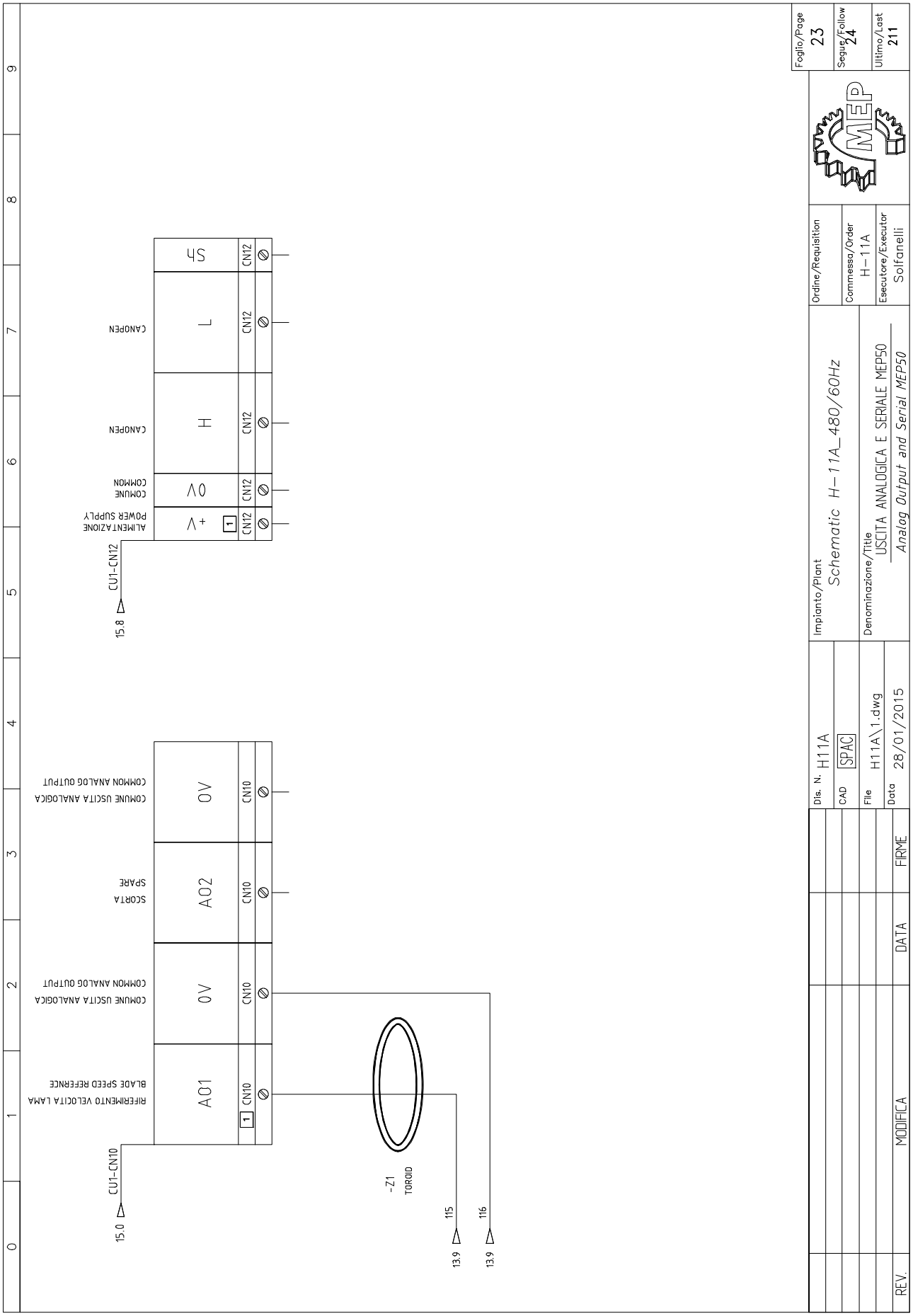
Segue/Follow 23
Ultimo/Last 211
Ordine/Requisition
Commessa/Order H-11A
Esecutore/Executor Solfanelli
Impianto/Plant Schematic H-11A_480/60Hz
Denominazione/Title USCITE STEPPER MEP50
Stepper Output MEP50
Dis. N. H11A
CAD SPAC
File H11A\1.dwg
Data 28/01/2015
REV. MODIFICA DATA FIRME
CU1-CN8
CU1-CN6
COMUNE COMMON
DR- DR+ ST- ST+ A- A+ B- B+
CN8 CN6
FASE B STEPPER
FASE A STEPPER
-W29/1 4x2xSTAWG24 BN-BU
-W29/1 4x2xSTAWG24 YE-OG
-W29/1 4x2xSTAWG24 WH-BK
-W29/1 Sch 4x2xSTAWG24
-W28 4x2xSTAWG24 BN-BU
-W28 4x2xSTAWG24 WH-BK
-W28 4x2xSTAWG24 YE-OG
-W28 4x2xSTAWG24 GN-RD
-W28 Sch 4x2xSTAWG24
U8-SHIELD
0320
0315
0314
311
312
313
314
60
PE
-M9
M
BROWN/MARRONE
WHITE/BIANCO
YELLOW/GIALLO
GREEN/VERDE
STEPPER CILINDRO TESTA
HEAD CYLINDER STEPPER
2,5 A
15.0
14.5
15.2
20.9
21.9


0 1 2 3 4 5 6 7 8 9
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Segue/Follow 24
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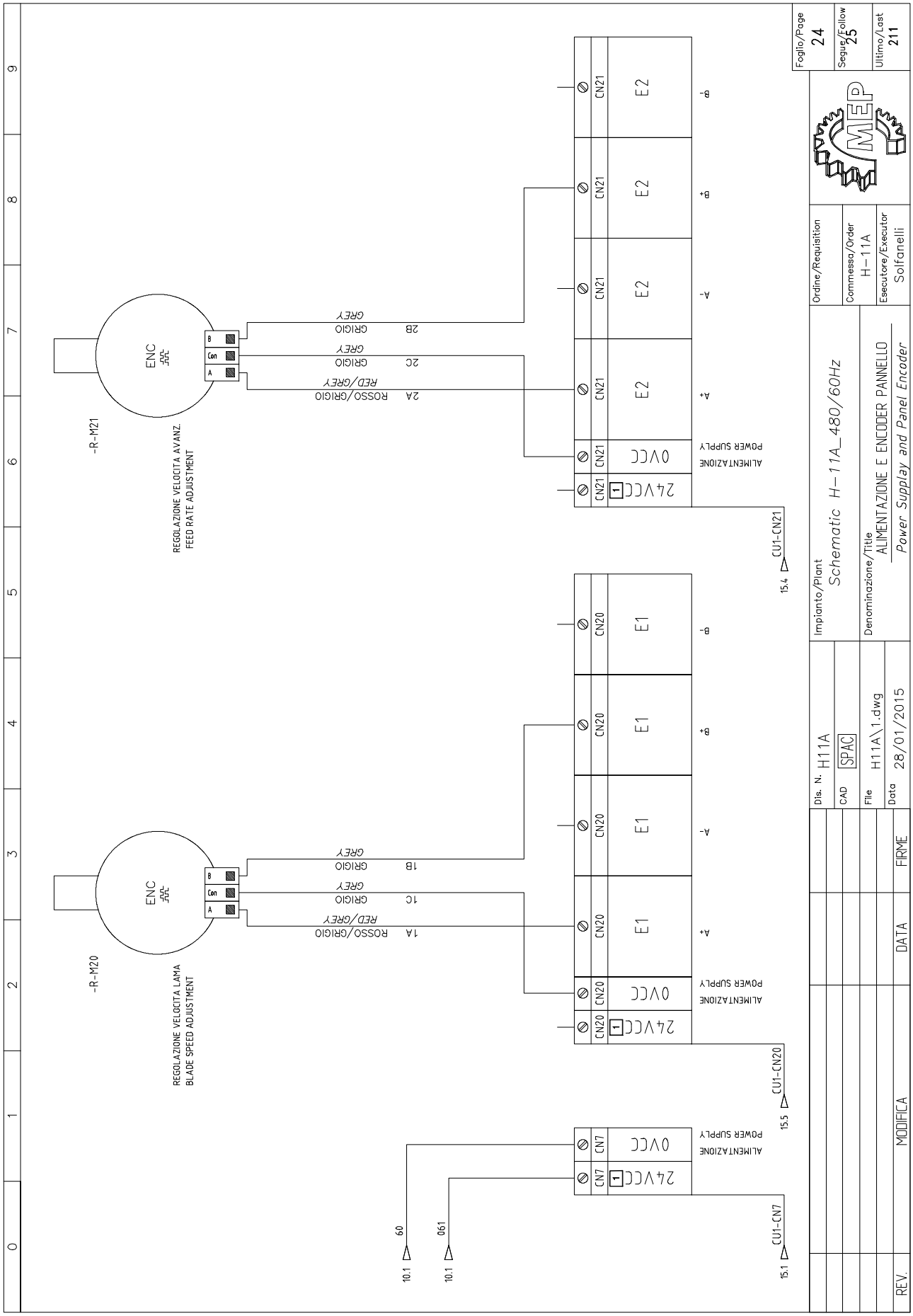
Ordine/Requisition
Commessa/Order H-11A
Esecutore/Executor Solfanelli
Impianto/Plant Schematic H-11A_480/60Hz
Denominazione/Title USCITA ANALOGICA E SERIALE MEP50
Analog Output and Serial MEP50
Dis. N. H11A
CAD SPAC
File H11A\1.dwg
Data 28/01/2015
REV. MODIFICA DATA FIRME
CU1-CN12
15.8
ALIMENTAZIONE POWER SUPPLY
+V
0V
COMUNE COMMON
H
L
CANOPEN
5V
CN12
CU1-CN10
15.0
RIFERIMENTO VELOCITA' LAMA BLADE SPEED REFERENCE
AO1
0V
COMUNE USCITA ANALOGICA COMMON ANALOG OUTPUT
AO2
SCORTA SPARE
0V
COMUNE USCITA ANALOGICA COMMON ANALOG OUTPUT
CN10
-Z1 TOROID
115
116
13.9
13.9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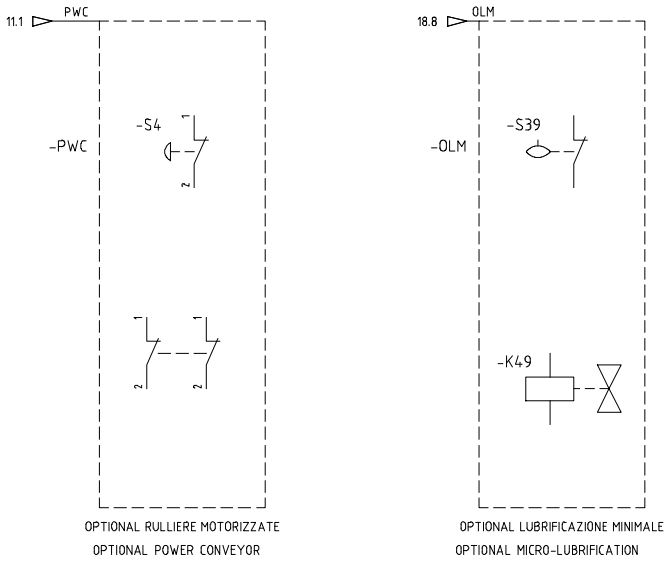
Ordine/Requisition
Commessa/Order H-11A
Esecutore/Executor Solfanelli
Impianto/Plant Schematic H-11A_480/60Hz
Denominazione/Title ALIMENTAZIONE E ENCODER PANNELLO
Power Supply and Panel Encoder
Dis. N. H11A
CAD SPAC
File H11A\1.dwg
Data 28/01/2015
REV. MODIFICA DATA FIRME
-R-M21
REGOLAZIONE VELOCITA AVANZ.
FEED RATE ADJUSTMENT
-R-M20
REGOLAZIONE VELOCITA LAMA
BLADE SPEED ADJUSTMENT
ENC
2A ROSSO/GRIGIO RED/GREY
2C GRIGIO GREY
2B GRIGIO GREY
1A ROSSO/GRIGIO RED/GREY
1C GRIGIO GREY
1B GRIGIO GREY
ALIMENTAZIONE
POWER SUPPLY
24VCC
0VCC
CN21
CN20
CN7
E1
E2
A+
A-
B+
B-
CU1-CN21
CU1-CN20
CU1-CN7
15.4
15.5
15.1
10.1
60
61

0	1	2	3	4	5	6	7	8	9



REV.	MODIFICA	DATA	FIRME

Dis. N. H11A
CAD SPAC
File H11A\1.dwg
Data 28/01/2015

Impianto/Plant
Schematic H-11A_480/60Hz

Denominazione/Title
OPTIONAL
Optional

Ordine/Requisition

Commessa/Order
H-11A

Esecutore/Executor
Solfanelli

MEP

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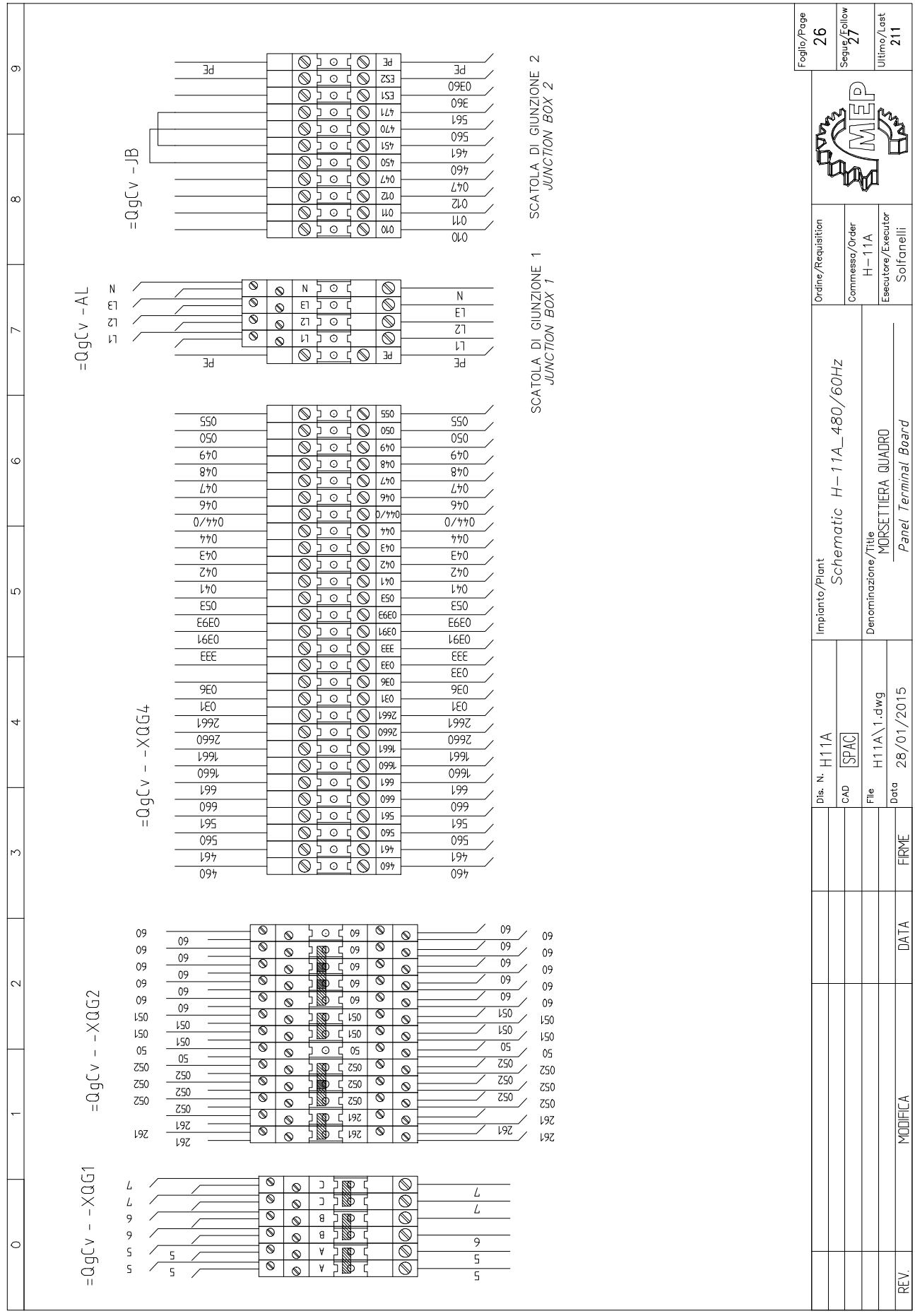
=QgCv - -XQG1
=QgCv - -XQG2
=QgCv - -XQG4
=QgCv -AL
=QgCv -JB
SCATOLA DI GIUNZIONE 1
JUNCTION BOX 1
SCATOLA DI GIUNZIONE 2
JUNCTION BOX 2
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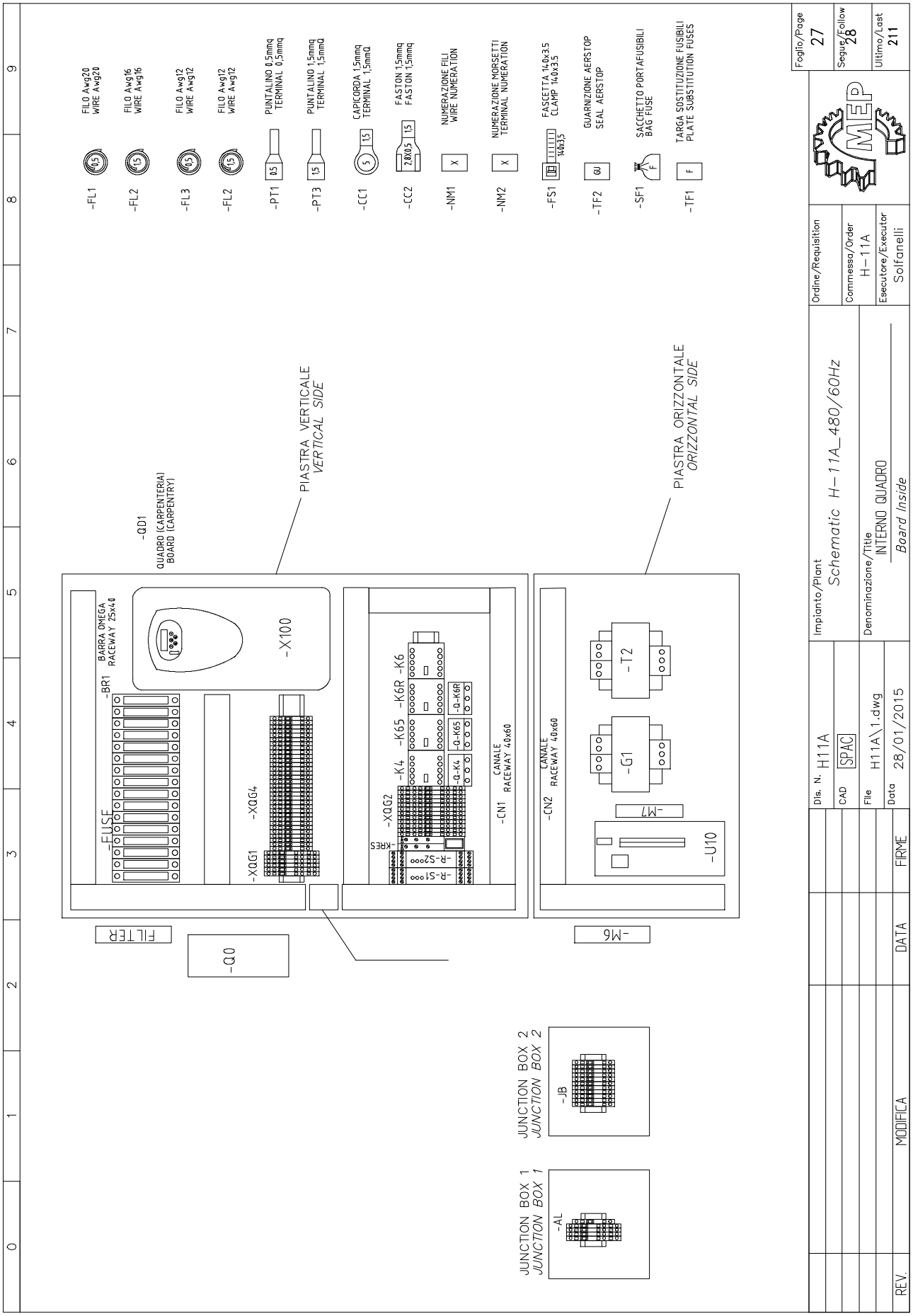
Ordine/Requisition
Commessa/Order H-11A
Esecutore/Executor Solfanelli
Impianto/Plant Schematic H-11A_480/60Hz
Denominazione/Title MORSETTIERA QUADRO
Panel Terminal Board
Dis. N. H11A
CAD SPAC
File H11A\1.dwg
Data 28/01/2015
REV.
MODIFICA
DATA
FIRME


-QD1
QUADRO (CARPENTERIA)
BOARD (CARPENTRY)
PIASTRA VERTICALE
VERTICAL SIDE
PIASTRA ORIZZONTALE
ORIZZONTAL SIDE
-FL1 FILO Awg20 WIRE Awg20
-FL2 FILO Awg16 WIRE Awg16
-FL3 FILO Awg12 WIRE Awg12
-FL2 FILO Awg12 WIRE Awg12
-PT1 PUNTALINO 0,5mmq TERMINAL 0,5mmq
-PT3 PUNTALINO 1,5mmq TERMINAL 1,5mmQ
-CC1 CAPICORDA 1,5mmq TERMINAL 1,5mmQ
-CC2 FASTON 1,5mmq FASTON 1,5mmq
-NM1 NUMERAZIONE FILI WIRE NUMERATION
-NM2 NUMERAZIONE MORSETTI TERMINAL NUMERATION
-FS1 FASCETTA 14.0x3.5 CLAMP 14.0x3.5
-TF2 GUARNIZIONE AERSTOP SEAL AERSTOP
-SF1 SACCHETTO PORTAFUSIBILI BAG FUSE
-TF1 TARGA SOSTITUZIONE FUSIBILI PLATE SUBSTITUTION FUSES
-BR1 BARRA OMEGA RACEWAY 25x40
-X100
FUSE
-XQG1
-XQG4
-XQG2
-KRES
-K4
-K65
-K6R
-K6
-CN1 CANALE RACEWAY 40x60
-CN2 CANALE RACEWAY 40x60
-T2
-G1
-M7
-U10
-M6
-Q0
FILTER
JUNCTION BOX 1
JUNCTION BOX 1
-AL
JUNCTION BOX 2
JUNCTION BOX 2
-JB
Dis. N. H11A
CAD SPAC
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Data 28/01/2015
REV.
MODIFICA
DATA
FIRME
Impianto/Plant
Schematic H-11A_480/60Hz
Denominazione/Title
INTERNO QUADRO
Board Inside
Ordine/Requisition
Commessa/Order
H-11A
Esecutore/Executor
Solfanelli
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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
=QgCv -AL	5/2	__	1	BK1	-W1 022.1983 General supply cable	5.00Mt		BK1	1	1	5/4	=QgCv -Q0
=QgCv -AL	5/2	__	2	BK2				BK2	2	3	5/4	=QgCv -Q0
=QgCv -AL	5/3	__	3	BK3				BK3	3	5	5/4	=QgCv -Q0
=QgCv -AL	5/3	__	PE	GNYE				GNYE	PE	5_1	5/4	=QgCv -XQGPE
				Sch				Sch				
=QgCv -Q-K65	6/7	T1	018	BK1	-W11 022.1981 Hydraulic motor cable	4.00Mt		BK1	018	U	6/7	=BmMep -M20
=QgCv -Q-K65	6/8	T2	019	BK2				BK2	019	V	6/8	=BmMep -M20
=QgCv -Q-K65	6/8	T3	020	BK3				BK3	020	W	6/8	=BmMep -M20
=QgCv -XQGPE	6/8	5_6	PE	GNYE				GNYE	PE	PE	6/8	=BmMep -M20
				BK	-W117 022.1906 Output controller cable	1,5Mt		BK				
=QgCv -XQG4	19/2	041	041	BN				BN	041	CN4	19/2	OUT08
				GY				GY				
=QgCv -XQG4	18/4	053	053	BU				BU	053	CN2	18/4	OUT03
=QgCv -XQG4	19/6	043	043	GN				GN	043	CN5	19/6	OUT12
=QgCv -XQG4	19/7	044	044	YE				YE	044	CN5	19/7	OUT13
=QgCv -XQG4	19/2	042	042	WH				WH	042	CN4	19/2	OUT09
=QgCv -XQG4	19/5	044/0	044	VT				VT	044	CN5	19/7	OUT13
=QgCv -R- S1	11/7	CS AR-24	1261	RD				RD	1261	CN2	18/2	24VDC
=QgCv -XQG4	18/8	050	050	OG				OG	050	CN3	18/8	OUT07
				RD-BU				RD-BU				
=QgCv -XQG4	19/4	047	047	WH-BU				WH-BU	047	CN4	19/4	OUT11
				Sch				Sch				

REV.	MODIFICA	DATA	FIRME

Dis. N. H11A
CAD SPAC
File H11A\1.dwg
Data 28/01/2015

Impianto/Plant: *Schematic H-11A_480/60Hz*
Denominazione/Title: RIASSUNTIVO CAVI
Cable summary

Ordine/Requisition:
Commessa/Order: H-11A
Esecutore/Executor: Solfanelli

MEP

Foglio/Page: 28
Segue/Follow: 29
Ultimo/Last: 211

0	1	2	3	4	5	6	7	8	9

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 -XQG4	18/7	049 ○	049	BK			BK	049	CN3	18/7	OUT05
=QgCv -XQG4	18/7	055 ○	055	BN			BN	055	CN3	18/7	OUT06
=QgCv -XQG4	11/1	360 ○	360	GY			GY	360	2	11/1	
=QgCv -F19	19/8		352	BU			BU	352	CN5	19/8	OUT15
				GN			GN				
			048	YE			YE	048			
=QgCv -XQG4	18/6	048 ○	051	WH	-W117/1 022.1906	1,5Mt	WH	051	CN3	18/6	OUT04
=QgCv -XQG4	17/3	051 ○	0360	VT	Output controller cable		VT	0360	○ 051	16/6	=QgCv -XQG2
=QgCv -XQG4	11/2	0360 ○	052	RD			RD	052	1	11/1	
=QgCv -XQG2	13/7	052_2 ○	351	OG			OG	351	○ 052	16/3	=QgCv -XQG2
=QgCv -F18	19/7			RD-BU			RD-BU		CN5	19/7	OUT14
				WH-BU			WH-BU				
				Sch			Sch				
			036	BK			BK	036			
=QgCv -XQG4	16/7	036 ○	0393	BN			BN	0393	CN15	16/7	IN06
=QgCv -XQG4	16/6	0393 ○	031	GY			GY	031	CN15	16/6	IN05
=QgCv -XQG4	16/2	031 ○	051	BU			BU	051	CN15	16/2	IN00
=QgCv -XQG4	17/3	051 ○	333	GN			GN	333	051	17/9	
=QgCv -XQG4	17/4	333 ○		YE			YE		CN18	17/4	IN11
			0391	WH	-W118 022.1906	1,5Mt	WH	0391			
=QgCv -XQG4	17/4	0391 ○		VT	Input-output cable		VT		CN18	17/4	IN10
			052	RD			RD	052	CN17	17/1	24VCC
=QgCv -XQG4	17/3	052 ○	033	OG			OG	033	CN15	16/3	IN01
=QgCv -XQG4	16/3	033 ○		RD-BU			RD-BU				
				WH-BU			WH-BU				
				Sch			Sch				

REV.	MODIFICA	DATA	FIRME

Dis. N.	H11A
CAD	SPAC
File	H11A\1.dwg
Data	28/01/2015
Impianto/Plant	Schematic H-11A_480/60Hz
Denominazione/Title	RIASSUNTIVO CAVI / Cable Summary
Ordine/Requisition	
Commessa/Order	H-11A
Esecutore/Executor	Solfanelli
Foglio/Page	29
Segue/Follow	30
Ultimo/Last	211

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
			663	BK				BK	663			
=QgCv -R-S2	12/6	CS AR-24	461	BN				BN	461	3	12/4	=QgCv -S3
=QgCv -XQG4	11/1	461 ○	460	GY				GY	460			
=QgCv -S4	11/1	2	60	BU				BU	60	○ 460	11/1	=QgCv -XQG4
=QgCv -XQG2	10/1	60_1 ○	563	GN				GN	563	1	11/1	=QgCv -S4
=QgCv -S3	11/4	3	564	YE				YE	564	CS AR-24	11/6	=QgCv -R- S1
=QgCv -S3	11/4	4	664	WH	-W119 022.1906	3.0Mt		WH	664	CS AR-24	11/6	=QgCv -R- S1
=QgCv -R-S2	12/6	CS AR-24	766	VT	Junction cable			VT	766	4	12/4	=QgCv -S3
=QgCv -R-S2	12/6	CS AR-24	261	RD				RD	261	4	12/6	=BmCv -S3
=QgCv -XQG2	10/3	_1 ○		OG				OG				
			0392	BU-WH				BU-WH	0392			
			02	WH-BU				WH-BU	02			
=QgCv -R- S1	11/9	CS AR-24		Sch				Sch		CN15	16/4	IN02
			116	GN				GN	116	CN10	23/2	0V
=QgCv -X100	13/2	ACM	115	BN				BN	115	CN10	23/1	AO1
=QgCv -X100	13/2	AVI	57	BK				BK	57	CN2	18/1	OUT00
=QgCv -X100	13/1	MI1	553	BU				BU	553	CN2	18/1	24VDC
=QgCv -X100	13/2	MI2	052	RD	-W120 022.1905	2.50Mt		RD	052	KEYPAD	13/2	=QgCv -X100
=QgCv -XQG2	13/7	052_2 ○		YE	Auxiliary inverter cable			YE				
			117	WH				WH	117	CN24	20/7	AI1a
=QgCv -X100	13/2	KEYPAD	038	OG				OG	038	CN15	16/5	IN04
=QgCv -X100	13/3	M01	PE	Sch				Sch	PE			
=QgCv -XQGPE	5/4	5_1 ○										
			333	BK				BK	333		17/4	=BmMep -S47
=QgCv -XQG4	17/4	333 ○	052	BU	-W121 022.0398	10.00Mt		BU	052		17/4	=BmMep -S47
=QgCv -XQG4	17/3	052 ○		BN	Zero setting shuttle limit switch			BN				
				WH				WH				
			036	BK				BK	036		16/7	
=QgCv -XQG4	16/7	036 ○	052	BK2	-W122 022.1980	5.00Mt		BK2	052		16/7	
=QgCv -XQG2	16/7	052 ○			Minimal lubrification optional cable							
			043	BK				BK	043	2	19/6	=QgCv -X012
=QgCv -XQG4	19/6	043 ○	60	BK2	-W123 022.1980	3.00Mt		BK2	60	1	19/6	=QgCv -X012
=QgCv -XQG2	19/8	_1 ○			SV head up cable							

REV.	MODIFICA	DATA	FIRME

Dis. N. H11A
CAD SPAC
File H11A\1.dwg
Data 28/01/2015

Impianto/Plant: Schematic H-11A_480/60Hz
Denominazione/Title: RIASSUNTIVO CAVI / Cable Summary
Ordine/Requisition:
Commessa/Order: H-11A
Esecutore/Executor: Solfanelli

MEP

Foglio/Page: 30
Segue/Follow: 31
Ultimo/Last: 211

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 -XQG4	19/7	044 ○	044	BK	-W124 022.1980	3.00Mt		BK	044	1	19/7	=QgCv -X014
=QgCv -XQG2	19/3	_1 ○	60	BK2	SV head down cable			BK2	60	2	19/7	=QgCv -X014
=QgCv -XQG4	18/8	050 ○	050	BK	-W125 022.1980	4.00Mt		BK	050		18/8	
=QgCv -XQG2	10/3	60_2 ○	60	BK2	Minimal lubrification cable			BK2	60		18/8	
=QgCv -X100	6/2	U	124	BK1				BK1	124	U	6/1	=BmMep -M1
=QgCv -X100	6/2	V	126	BK2				BK2	126	V	6/1	=BmMep -M1
=QgCv -X100	6/3	W	128	BK3	-W2 022.1983	5.00Mt		BK3	128	W	6/1	=BmMep -M1
=QgCv -XQGPE	6/2	5_2 ○	PE	GNYE	Blade motor cable			GNYE	PE	PE	6/1	=BmMep -M1
=QgCv -X100	6/2	PE	PE	Sch				Sch	PE	PE	6/1	=BmMep -M1
=QgCv -XQGPE	5/4	5_1 ○	PE	GN-RD				GN-RD	PE	⊂— PE	21/7	=QgMep -XS7
=QgCv -XQG2	13/7	052_2 ○	052	BN -BU				BN -BU	052	⊂— 1	21/7	=QgMep -XS7
0V	21/7	CN27	051	WH-BK	-W20 022..1905	7.00Mt		WH-BK	051	⊂— 3	21/7	=QgMep -XS7
AI4a	21/8	CN27	027	YE-OG	Strain gauge cable			YE-OG	027	⊂— 2	21/8	=QgMep -XS7
=QgCv -XQGPE	5/4	5_1 ○	PE	Sch				Sch	PE	⊂— PE	21/7	=QgMep -XS7
=QgMep -XR0	20/3	4 ⊂—	sh	GN-RD				GN-RD	sh	CN11	20/4	Sh
=QgMep -XR0	20/2	1 ⊂—	023	BN -BU				BN -BU	023	CN11	20/1	+VRf
=QgMep -XR0	20/2	3 ⊂—	025	WH-BK	-W21 022..1905	3.00Mt		WH-BK	025	CN11	20/2	0V
=QgMep -XR0	20/2	2 ⊂—	024	YE-OG	Head potentiometer cable			YE-OG	024	CN11	20/3	AI0
=QgMep -XR0	20/3	4 ⊂—	sh	Sch				Sch	sh	CN11	20/4	Sh
=BmMep -S0	16/2	1	052	BN				BN	052			
=QgCv -XQG4	16/2	031 ○	031	BK	-W27 022.0422	10.00Mt		BK	031	4	16/2	=BmMep -S0
=BmMep -S0	16/2	3	051	BU	Blade proximity cable			BU	051			
				WH				WH				
=SaCv	22/1		314	GN-RD				GN-RD	314	CN6	22/1	B+
=SaCv	22/2		311	BN -BU				BN -BU	311	CN6	22/3	A+
=SaCv	22/2		312	WH-BK	-W28 022..1905	3.00Mt		WH-BK	312	CN6	22/3	A-
=SaCv	22/1		313	YE-OG	Stepper head cable			YE-OG	313	CN6	22/2	B-
SCH	22/1	CN6	SCR	Sch				Sch	SCR			

REV.	MODIFICA	DATA	FIRME

Dis. N. H11A
CAD SPAC
File H11A\1.dwg
Data 28/01/2015

Impianto/Plant: Schematic H-11A_480/60Hz
Denominazione/Title: RIASSUNTIVO CAVI / Cable Summary
Ordine/Requisition:
Commessa/Order: H-11A
Esecutore/Executor: Solfanelli

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Segue/Follow 32
Ultimo/Last 211

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 -U10	9/3	A1	221	BK	-W29 022.1979 Power stepper motor cable	5.00Mt		BK	221	BIA/GIA	9/3	=BmMep -M8
=QgCv -U10	9/3	A1	222	BK1				BK1	222	GIALLO	9/3	=BmMep -M8
=QgCv -U10	9/3	B1	223	BK2				BK2	223	ARANCIO	9/4	=BmMep -M8
=QgCv -U10	9/3	B2	224	BK3				BK3	224	BIA/ARA	9/4	=BmMep -M8
=QgCv -XQGPE	9/2	5_9 ○	PE	GNYE				GNYE	PE		9/4	=BmMep -M8
				GN-RD				GN-RD				
=QgCv	14/2	14	0314	BN -BU	-W29/1 022..1905 Drive step motor cable	2.00Mt		BN -BU	0314	CN8	22/8	ST+
=QgCv	14/2	20	0320	WH-BK				WH-BK	0320	CN8	22/5	SCH
=QgCv	14/2	15	0315	YE-OG				YE-OG	0315	CN8	22/7	DR+
SCH	22/5	CN8	U8-SHIELD	Sch				Sch	U8-SHIELD			
				GN-RD				GN-RD				
=QgCv -JB	14/5	010 ○	010	BN -BU	-W29/2 022..1905 Powered conveyor cable	2.00Mt		BN -BU	010	10	14/2	=QgCv
=QgCv -JB	14/5	011 ○	011	WH-BK				WH-BK	011	11	14/2	=QgCv
=QgCv -JB	14/5	012 ○	012	YE-OG				YE-OG	012	12	14/2	=QgCv
=QgCv -JB	14/5	PE ○	13	Sch				Sch	13			
24VDC	18/4	CN2	261	BK	-W30 022.1980 Reverse run chip-conveyour cable	4,00Mt		BK	261	3	18/5	=QgMep -S23
=QgCv -K6	18/5	21	1055	BK2				BK2	1055	4	18/5	=QgMep -S23
=QgCv -XQG2	13/7	052_2 ○	052	BN	-W32 022.0355 Blade deviation sensor cable	5.00Mt		BN	052	1	21/4	=BmMep -B1
AI3a	21/5	CN26	028	BK				BK	028	4	21/5	=BmMep -B1
0V	21/4	CN26	051	BU				BU	051	3	21/5	=BmMep -B1
=QgCv -XQG4	18/4	053 ○	053	BK	-W37 022.1980 Flashing cable	5.00Mt		BK	053		18/4	=BmMep -H3
=QgCv -XQG2	10/3	60_2 ○	60	BK2				BK2	60		18/4	=BmMep -H3
=QgCv -Q-K4	6/4	T1	015	BK1	-W4 022.1981 Coolant pump cable	5.00Mt		BK1	015	U	6/4	=BmMep -M2
=QgCv -Q-K4	6/4	T2	016	BK2				BK2	016	V	6/4	=BmMep -M2
=QgCv -Q-K4	6/4	T3	017	BK3				BK3	017	W	6/4	=BmMep -M2
=QgCv -XQGPE	6/5	5_4 ○	PE	GNYE				GNYE	PE	PE	6/4	=BmMep -M2

REV.	MODIFICA	DATA	FIRME

Dis. N. H11A
CAD SPAC
File H11A\1.dwg
Data 28/01/2015

Impianto/Plant: *Schematic H-11A_480/60Hz*
Denominazione/Title: RIASSUNTIVO CAVI
Cable Summary

Ordine/Requisition:
Commessa/Order: H-11A
Esecutore/Executor: Solfanelli

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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
=QgCv -XQG2	10/3	60_2	60	GN-RD				GN-RD	60			
=QgCv -XQG4	12/1	661	661	BN -BU				BN -BU	661	11	12/0	=BmMep -S1
=QgCv -XQG4	12/0	660	660	WH-BK	-W56 022..1905	5.00Mt		WH-BK	660	22	12/1	-S1
=QgCv -XQG2	10/3	1	261	YE-OG	FC right guard cable			YE-OG	261	12	12/0	=BmMep -S1
				Sch				Sch		21	12/1	-S1
=QgCv -XQG4	12/1	1660	1660	GN-RD				GN-RD	1660	12	12/0	=BmMep -S2
=QgCv -XQG4	12/1	661	661	BN -BU				BN -BU	661	21	12/1	-S2
=QgCv -XQG4	12/0	660	660	WH-BK	-W57 022..1905	5.00Mt		WH-BK	660	11	12/0	=BmMep -S2
=QgCv -XQG4	12/1	1661	1661	YE-OG	FC left guard cable			YE-OG	1661	22	12/1	-S2
				Sch				Sch				
=QgCv -XQG4	12/1	1660	1660	GN-RD				GN-RD	1660	22	12/2	-S3
=QgCv -XQG4	12/2	2661	2661	BN -BU				BN -BU	2661	11	12/2	=BmMep -S8
=QgCv -XQG4	12/2	2660	2660	WH-BK	-W58 022..1905	5.00Mt		WH-BK	2660	21	12/2	-S3
=QgCv -XQG4	12/1	1661	1661	YE-OG	FC blade tens. guard cable			YE-OG	1661	12	12/2	=BmMep -S8
				Sch				Sch				
=QgCv -R-S2	12/5	CS AR-24	3660	GN-RD				GN-RD	3660	21	12/2	-S1
=QgCv -XQG4	12/2	2661	2661	BN -BU				BN -BU	2661	12	12/2	=BmMep -S9
=QgCv -XQG4	12/2	2660	2660	WH-BK	-W58/2 022..1905	5.00Mt		WH-BK	2660	22	12/2	-S1
=QgCv -R-S2	12/5	CS AR-24	3661	YE-OG	FC shuttle guard cable			YE-OG	3661	11	12/2	=BmMep -S9
				Sch				Sch				
				BN				BN				
=QgCv -XQG4	17/4	0391	0391	BK	-W59 022.0422	5.00Mt		BK	0391		17/4	=BmMep -S10
=QgCv -XQG4	17/3	052	052	BU	Bar in infeed vice limit switch			BU	052		17/4	=BmMep -S10
				WH				WH				
=QgCv -XQG4	19/5	044/0	54	BK	-W65 022.1980	5.00Mt		BK	54	1	19/5	=QgCv -X40
=QgCv -XQG2	19/3	1	60	BK2	S.V Block head			BK2	60	2	19/5	=QgCv -X40

REV.	MODIFICA	DATA	FIRME

Dis. N. H11A
CAD SPAC
File H11A\1.dwg
Data 28/01/2015

Impianto/Plant: Schematic H-11A_480/60Hz
Denominazione/Title: RIASSUNTIVO CAVI / Cable Summary
Ordine/Requisition:
Commessa/Order: H-11A
Esecutore/Executor: Solfanelli

MEP

Foglio/Page: 33
Segue/Follow: 34
Ultimo/Last: 211

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 -XFET	7/3	1	1021	BK1				BK1	1021	T1	7/3	=QgCv -Q-K6R
=QgCv -XFET	7/3	2	1022	BK2				BK2	1022	T2	7/3	=QgCv -Q-K6R
=QgCv -XFET	7/3	3	1023	BK3	-W7 022.1981	5.00Mt		BK3	1023	T3	7/3	=QgCv -Q-K6R
=QgCv -XFET	7/3	PE	7	GNYE	Chip conveyour cable			GNYE	7	5_8	7/4	=QgCv -XQGPE
=QgEtMep XMET	7/3	1	1024	BK1				BK1	1024	U	7/3	=QgEtMep -M5
=QgEtMep XMET	7/3	2	1025	BK2				BK2	1025	V	7/3	=QgEtMep -M5
=QgEtMep XMET	7/3	3	1026	BK3	-W7/1 022.1981	2.00Mt		BK3	1026	W	7/3	=QgEtMep -M5
=QgEtMep XMET	7/3	PE	7	GNYE	Chip conveyour cable			GNYE	7	PE	7/3	=QgEtMep -M5
=QgCv -XQG4	19/2	042	042	BK	-W90 022.1980	3.00Mt		BK	042	1	19/2	=QgCv -X009
=QgCv -XQG2	10/3	60_2	60	BK2	SV cutting vice closing cable			BK2	60	2	19/3	=QgCv -X009
=QgCv -XQG4	19/4	047	047	BK	-W91 022.1980	3.00Mt		BK	047	1	19/4	=QgCv -X011
=QgCv -XQG2	19/3	_1	60	BK2	SV shuttle vice closing cable			BK2	60	2	19/4	=QgCv -X011
=QgCv -XQG4	19/2	041	041	BK	-W92 022.1980	3.00Mt		BK	041	2	19/2	=QgCv -X008
=QgCv -XQG2	19/3	_1	60	BK2	SV cutting vice opening cable			BK2	60	1	19/1	=QgCv -X008
=QgCv -XQG4	19/3	046	046	BK	-W93 022.1980	3.00Mt		BK	046	2	19/3	=QgCv -X010
=QgCv -XQG2	19/3	_1	60	BK2	SV shuttle vice opening cable			BK2	60	1	19/3	=QgCv -X010
=QgCv -F19	19/8		1352	BK	-W95 022.1980	5.00Mt		BK	1352		19/8	=BmMep -H2
=QgCv -XQG2	19/8	_1	60	BK2	Work zone lamp cable			BK2	60		19/8	=BmMep -H2
=QgCv -XTL	19/7	3	1351	BK	-W96 022.1980	5.00Mt		BK	1351		19/7	=QgCv -F18
=QgCv -XTL	19/7	1	60	BK2	Laser cable			BK2	60	_1	19/8	=QgCv -XQG2

REV.	MODIFICA	DATA	FIRME

Dis. N. H11A
CAD SPAC
File H11A\1.dwg
Data 28/01/2015

Impianto/Plant: *Schematic H-11A_480/60Hz*
Denominazione/Title: RIASSUNTIVO CAVI
Cable Summary

Ordine/Requisition:
Commessa/Order: H-11A
Esecutore/Executor: Solfanelli

MEP

Foglio/Page: 34
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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
=QgCv -XQG4	11/1	460	560	BK				BK	560	450	11/1	=QgCv -JB
=QgCv -XQG4	11/1	461	561	BN				BN	561	451	11/1	=QgCv -JB
=QgCv -XQG4	11/1	360	360	GY				GY	360	ES1	11/1	=QgCv -JB
=QgCv -XQG2	19/8	1	60	BU				BU	60	60	19/9	=QgCv -JB
=QgCv -XQG4	11/2	560	560	GN				GN	560	470	11/1	=QgCv -JB
=QgCv -XQG4	11/2	561	561	YE				YE	561	471	11/1	=QgCv -JB
=QgCv -XQG4	19/4	047	471	WH	-WS12 022.1906	4.00Mt		WH	471	047	19/4	=QgCv -JB
=QgCv -XQG4	11/2	0360	0360	VT	P.conveyor emergency			VT	0360	ES2	11/2	=QgCv -JB
				RD				RD				
				OG				OG				
				RD-BU				RD-BU				
				WH-BU				WH-BU				
				Sch				Sch				

REV.	MODIFICA	DATA	FIRME

Dis. N. H11A
CAD SPAC
File H11A\1.dwg
Data 28/01/2015

Impianto/Plant: *Schematic H-11A_480/60Hz*

Denominazione/Title: RIASSUNTIVO CAVI
Cable Summary

Ordine/Requisition
Commessa/Order: H-11A
Esecutore/Executor: Solfanelli

MEP

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Nome/ Name	Mep_Ita-ly_code	Mep_Chin a_code	Description EN	Quadro/ Board	Fg/Sh	Q.ta/Q.ty	Costrutto-re/Sup-plier
-OLM	090.1601	A000069	Spray mist oil system for Shark	=BmLmCv	25	1	Mep
-K27		E001002	Hydraulic electrovalve 4/3 close center CETOP3 24Vdc	=BmMep	19	1	Mep
-K29		E001002	Hydraulic electrovalve 4/3 close center CETOP3 24Vdc	=BmMep	19	1	Mep
-K31		E001002	Hydraulic electrovalve 4/3 close center CETOP3 24Vdc	=BmMep	19	1	Mep
-K40		H000026	Hydraulic electrovalve 2/2 NC 1/4"G 24Vdc	=BmMep	19	1	Mep
-M1		P00002-480	Motor 4.0KW, 277/480V, 12/6,97A	=BmMep	6	1	Mep
-M2		P00003-480	Electropump 120W, V=2800rpm, 480V/60Hz	=BmMep	6	1	Mep
-M5		P000008	Motor 0,37KW, 240/480V, 1,77/0,89A	=QgEt-Mep	7	1	Mep
-M20		P000004-480	Motor oil unit 1.3KW, 240/480V, 5,0/2,5A	=BmMep	6	1	Mep
-M8	019.3408	P000001	Stepper Motor 21Nm 13A 1,8° FL110STH150-1304A-H-1	=BmMep	9	1	FULLING
-M9	019.3555	P000007	Stepper motor 1,9Nmt 2,8A 1,8°	=BmMep	22	1	FULLING
-XEV		E000400	Fixed connector ILME (CK03VS + CKF04) 5 poles	=BmMep		1	ILME
-XEV1		E000399	Mobile connector ILME (CK03VS + CKM04) 5 poles	=BmMep		1	ILME
-S0		E000013	Proximity PNP (long) with connec-tor M12	=BmMep	16	1	Mep
-S52		E000013	Proximity PNP (long) with connec-tor M12	=BmMep	16	1	Mep
-B1		E000015	Inductive sensor 0-16mA / 1-2,5mm	=BmMep	21	1	Mep
-S10		E000004	Limit Switch with roll 1NO+1NC	=BmMep	17	1	Mep
-S47		E000004	Limit Switch with roll 1NO+1NC	=BmMep	17	1	Mep
-S1		E000018	Limit Switch with fork 2NC	=BmMep	12	1	EATON
-S2		E000018_	Limit Switch with fork 2NC	=BmMep	12	1	EATON
-S8		E000018_	Limit Switch with fork 2NC	=BmMep	12	1	EATON
-S9		E000018	Limit Switch with fork 2NC	=BmMep	12	1	EATON
-V1		E000011	Laser Line Sign	=BmMep	19	1	Mep
-R5		E000003	Linear potentiometer 500mm	=BmMep	20	1	NOVO-TECNICK
-H3		E000012	Flashing 24Vac x SH NC	=BmMep	18	1	Mep
-H2		E000010	Led Lamp	=BmMep	19	1	Mep
-Q0		E003053-480	Disconnect switch three-poles 20A	=QgCv	5	1	Mep
-QD1		A000048	Carpentry general electric panel	=QgCv	27	1	Mep
-R10		E001000	Resistor 1W 680ohm	=QgCv	21	1	RS
-X100		E000014-480	Variable frequency drive DELTA 5.5KW, 400-480V	=QgCv	6	1	DELTA
-Z1		E002903	Ferrites Toroids N30 r40	=QgCv	23	1	RS
-R-M20	010.3749	E003749	Anthracite Knob with HydMech Icon	=QgCv	24	1	Mep
-R-M21	010.3749	E003749	Anthracite Knob with HydMech Icon	=QgCv	24	1	Mep
-R-M25	010.3753	E003753	Silver Knob with HydMech Icon	=QgCv	21	1	Mep
-M7		M000080	Support for driver fan cooler	=QgCv	10	1	Mep
-M6		E005220	Cover for fan cooler 120x120	=QgCv	10	1	Mep
-M7		E005221	Cover for fan cooler 80x80	=QgCv	10	1	Mep
-M6		E005220	Fan cooling 120x120 24Vdc	=QgCv	10	1	Mep
-M7		E005221	Fan cooling 80x80 - 24Vdc	=QgCv	10	1	Mep
-FS1		E000226	Plastic clamp 140x3,5	=QgCv	27	1	Mep
-R-M25		E001816	Potentiometer 10K single turn	=QgCv	21	1	Mep
-FL1		E000133	Single wire AWG20 CSA (0.5mmq)	=QgCv	27	1	Mep
-FL2		E000134	Single wire AWG16 CSA (1.5mmq)	=QgCv	27	1	Mep
-XFET		E004001	Fixed connector ILME (CK03VS + CKF03) 4 poles	=QgCv		1	ILME
-NM1		E000290	Cable maker and wire	=QgCv	27	1	Mep
-NM2		E000290_	Cable maker and wire	=QgCv	27	1	Mep
-CC1		E000218	Wire Terminal Connection Red	=QgCv	27	1	Mep
-CC2		E000214	Wire Terminal Connection Red	=QgCv	27	1	Mep
-PT1		E000394	Wire Terminal Connection White	=QgCv	27	1	Mep
-PT3		E000395	Wire Terminal Connection Black	=QgCv	27	1	Mep
-XTL	022.0376		Connector F303N5000	=QgCv		1	Mep
-X008		E000429	Connector for solenoid valve DC	=QgCv	19	1	Mep

-X009		E000429_	Connector for solenoid valve DC	=QgCv	19	1	Mep
-X010		E000429_	Connector for solenoid valve DC	=QgCv	19	1	Mep
-X011		E000429_	Connector for solenoid valve DC	=QgCv	19	1	Mep
-X012		E000429_	Connector for solenoid valve DC	=QgCv	19	1	Mep
-X014		E000429_	Connector for solenoid valve DC	=QgCv	19	1	Mep
-X40		E000429_	Connector for solenoid valve DC	=QgCv	19	1	Mep
-BR1		E000222	Omega guide	=QgCv	27	1	Mep
-CN1		E000157	Cable holding plastic channel	=QgCv	27	1	Mep
-CN2		E000157	Cable holding plastic channel	=QgCv	27	1	Mep
-G1	022.0908	E000016	Switching power supply Vi 240-400-500VAC Vu 24Vcc 14A	=QgCv	8	1	Adelsys-tem
-S3		E000911	Carrier for pushbutton	=QgCv	17	1	Mep
-S4		E000911_	Carrier for pushbutton	=QgCv	11	1	Mep
-S18		E000911_	Carrier for pushbutton	=QgCv	17	1	Mep
-S54		E000932	Normally open contact	=QgCv	17	4	Mep
-S4		E000936	Normally close contact	=QgCv	11	3	Mep
-S3		E000937	Normally open contact	=QgCv	17	4	Mep
-S18		E000937	Normally open contact	=QgCv	17	1	Mep
-KRES		E002393	Relay 24 VCC - 2 exchange con-tacts + base	=QgCv	12	1	FINDER
-S4		E001245	Emergency push button	=QgCv	11	1	Mep
-R-M20	022.1322	E001322	Panel encoder Mep 50	=QgCv	24	1	Mep
-R-M21	022.1322	E001322	Panel encoder Mep 50	=QgCv	24	1	Mep
-U10	022.1330	E001230	Driver for step motor (60VAC.10A) + modbus	=QgCv	9	1	SHS
-S18		E001405	Black push button	=QgCv	17	1	Mep
-S3		E001408	Blue push button	=QgCv	17	1	Mep
-T2		E000020-480	Transformer UL/CSA 500VA, Vin 0-240-480/ Vout 0-60,0-220V	=QgCv	8	1	Mep
-FL3		E001995	Cable 1AWG12 NERO	=QgCv	27	1	Mep
-FL2		E001996	Cable 1AWG12 GN/YE	=QgCv	27	1	Mep
-R0		E000005	Electronic tensioner 3,5T (strain gauge)	=QgCv	21	1	DELTA-TECK
-AL		E000229	Terminal 6mmq for 3 wires - PHOENIX	=QgCv		4	Mep
-F5 -F6 -F7		E002239	Fuse holding terminal 3 x (10,3x38) 690V 32A	=QgCv	6	1	BUSS-MANN
-F20 -F21 -F22		E002239	Fuse holding terminal 3 x (10,3x38) 690V 32A	=QgCv	6	1	BUSS-MANN
-F1 -F2		E002240	Fuse holding terminal 2 x (10,3x38) 690V 32A	=QgCv	8	1	BUSS-MANN
-F3 -F4		E002240	Fuse holding terminal 2 x (10,3x38) 690V 32A	=QgCv	8	1	BUSS-MANN
-XQG2		E000144	Terminal 2,5mmq for 4 wires - PHOENIX	=QgCv		13	Mep
-F14		E000139	Fuse holding terminal 1 x (10,3x38) 690V 32A	=QgCv	8	1	BUSS-MANN
-F15		E000139	Fuse holding terminal 1 x (10,3x38) 690V 32A	=QgCv	8	1	BUSS-MANN
-F16		E000139	Fuse holding terminal 1 x (10,3x38) 690V 32A	=QgCv	8	1	BUSS-MANN
-F17		E000139	Fuse holding terminal 1 x (10,3x38) 690V 32A	=QgCv	8	1	BUSS-MANN
-F18		E000139	Fuse holding terminal 1 x (10,3x38) 690V 32A	=QgCv	19	1	BUSS-MANN
-F19		E000139	Fuse holding terminal 1 x (10,3x38) 690V 32A	=QgCv	19	1	BUSS-MANN
-JB		E000142	Single pole spring terminal ST 2.5	=QgCv		10	PHOENIX
-XQG1		E000229	Triple pole spring terminal ST4	=QgCv		6	PHOENIX
-XQG4		E000142	Single pole spring terminal ST 2.5	=QgCv		29	PHOENIX
-XQPE		E000146	Double pole spring terminal 4,0mmq PE	=QgCv		4	PHOENIX
-XQPE		E002263	Quadruple pole spring PE terminal 6,0mmq	=QgCv		3	PHOENIX
-XQG4		E002270	Clousure plate single-terminal	=QgCv		1	PHOENIX
-XQG1		E000147	Clousure plate double-terminal	=QgCv		1	PHOENIX
JB			Clousure plate single-terminal	=QgCv		1	PHOENIX
-XQG2		E000149	Clousure plate quadruple-terminal	=QgCv		1	PHOENIX
-CU1	022.2825	E000002	Controller Mep50C	=QgCv	15	1	ISAC
-K6		E003011	Contactor 3KW NC (24 V Dc)	=QgCv	18	1	Shilhin electric
-K6R		E003011	Contactor 3KW NC (24 V Dc)	=QgCv	18	1	Shilhin electric
-K4		E003012	Contactor 3KW NO (24 V Dc)	=QgCv	18	1	Shilhin electric

-K65		E003012	Contactor 3KW NO (24 V Dc)	=QgCv	18	1	Shilhin electric
-R- S1	022.3811	E000009	Safety relay 4NO, 1NC cat.3	=QgCv	11	1	PIZZATO
-R-S2	022.3811	E000009	Safety relay 4NO, 1NC cat.3	=QgCv	12	1	PIZZATO
-Q-K65		E002541	Termal overload 2,5-4.1A	=QgCv	6	1	Shilhin electric
-Q-K6R		E000610	Termal overload 0.7-1.1A	=QgCv	7	1	Shilhin electric
-Q-K4		E000406	Termal overload 0.3-0.5A	=QgCv	6	1	Shilhin electric
-S54		E003920	Joystic 4 positions unstable with unlocking	=QgCv	17	1	ABB
-K6R		E003924	Kit for contactor reversing	=QgCv	18	1	Mep
-CU1	022.4091	E004091	Cable USB for command panel wi-th connector	=QgCv	15	1	EATON
-R-M20		E000235	Ring 'NI-18-25-4.5	=QgCv	24	1	Mep
-R-M21		E000235	Ring 'NI-18-25-4.5	=QgCv	24	1	Mep
-R-M25		E000235	Ring 'NI-18-25-4.5	=QgCv	21	1	Mep
-TF2		E000209	Control panel gasket	=QgCv	27	1	Mep
-M6		E005220	Fan filter 120x120	=QgCv	10	1	Mep
-TF1	031.2622		Replace fuse adhesive sign	=QgCv	27	1	Mep
-M6		E005220	Fan filter 120x120	=QgCv	10	1	Mep
-M6		E005220	Base for fan cooling 120x120	=QgCv	10	1	Mep
-F3 -F4		E004538	Fuse Time delay 10.3x38 - 5A UL/ CSA	=QgCv	8	2	Mep
-F5 -F6 -F7		E004538	Fuse Time delay 10.3x38 - 5A UL/ CSA	=QgCv	6	3	Mep
-F15		E004538	Fuse Time delay 10.3x38 - 5A UL/ CSA	=QgCv	8	1	Mep
-F16		E004538	Fuse Time delay 10.3x38 - 5A UL/ CSA	=QgCv	8	1	Mep
-F18		E004659	Fuse Time delay10.3x38 - 0.5A UL/ CSA	=QgCv	19	1	Mep
-F14		E004664	Fuse Time delay 10.3x38 - 7.5A UL/ CSA	=QgCv	8	1	Mep
-F17		E004673	Fuse Time delay 10.3x38- 1A UL/ CSA	=QgCv	8	1	Mep
-F19		E004675	Fuse Time delay 10.3x38 - 2A UL/ CSA	=QgCv	19	1	Mep
-F1 -F2		E004676	Fuse Time delay 10.3x38 - 3.5A UL/ CSA	=QgCv	8	2	Mep
-F20 -F21 -F22		E004677	Fuse Time delay 10.3x38 - 20A UL/ CSA	=QgCv	6	3	Mep
XMET		E004002	Mobile connector ILME (CK03VS + CKM03) 4 poles	=QgEt-Mep		1	ILME
-XR0		E000369	Connector 3 poles for strain gauge	=QgMep		1	Mep
-XS7		E000369	Connector 3 poles for strain gauge	=QgMep		1	Mep
-S23		E000911	Carrier for pushbutton	=QgMep	18	1	Mep
-S23		E000937	Normally open contact	=QgMep	18	1	Mep
-S23		E001405	Black push button	=QgMep	18	1	Mep
-PT1		E000150	Bridge for 2 terminals	=QgCv		6	Mep
-PT1		E000151	Bridge for 3 terminals	=QgCv		2	Mep
-W7/B1		E001397	Cable with M12 90° connector: lenght 5Mt	=BmCv		2	MEP
-W120		E001905	Cable shielded 4x2 Awg24 CSA	=BmCv		2.5	MEP
-W118		E001906	Cable shielded 6x2 Awg24 CSA	=QgCv		3	MEP
-W7/1		E001981	Cable 4G AWG18 OIL RESISTANT UL 2587 CSA	=BmCv		2	MEP
-W20		E001905	Cable shielded 4x2StA-wg24(0.20mmq) UL 2587 CSA	=QgCv		7	MEP
-W28		E001905	Cable shielded 4x2StA-wg24(0.20mmq) UL 2587 CSA	=QgCv		3	MEP
-W29/1		E001905	Cable shielded 4x2StA-wg24(0.20mmq) UL 2587 CSA	=QgCv		2	MEP
-W29/2		E001905	Cable shielded 4x2StA-wg24(0.20mmq) UL 2587 CSA	=QgCv		2	MEP
-W56		E001905	Cable shielded 4x2StA-wg24(0.20mmq) UL 2587 CSA	=QgCv		5	MEP
-W57		E001905	Cable shielded 4x2StA-wg24(0.20mmq) UL 2587 CSA	=QgCv		5	MEP
-W58		E001905	Cable shielded 4x2StA-wg24(0.20mmq) UL 2587 CSA	=QgCv		5	MEP

-W58/2		E001905	Cable shielded 4x2StA-wg24(0.20mmq) UL 2587 CSA	=QgCv		5	MEP
-W32		E000393	Cable with straight connector M8. L=5Mt	=QgCv		5	MEP
-W121		E000398	Straight connector M12 10MT cable 4x0.34mmq	=QgCv		10	MEP
-W27		E000397	Cable with M12 90° connector; Lenght: 10Mt	=QgCv		10	MEP
-W59		E000397	Cable with M12 90° connector; Lenght: 10Mt	=QgCv		10	MEP
-W117		E001906	Cable shielded 6x2 Awg24 CSA	=QgCv		1	MEP
-W117/1		E001906	Cable shielded 6x2 Awg24 CSA	=QgCv		1	MEP
-W119		E001906	Cable shielded 6x2 Awg24 CSA	=QgCv		3	MEP
-WS12		E001906	Cable shielded 6x2 Awg24 CSA	=QgCv		4	MEP
-W29		E001979	Cable 5G AWG16 UL 2587 CSA	=QgCv		5	MEP
-W30		E001980	Cable 2X AWG18 OIL RESISTANT UL 2587 CSA	=QgCv		4	MEP
-W37		E001980	Cable 2X AWG18 OIL RESISTANT UL 2587 CSA	=QgCv		5	MEP
-W39		E001980	Cable 2X AWG18 OIL RESISTANT UL 2587 CSA	=QgCv		5	MEP
-W65		E001980	Cable 2X AWG18 OIL RESISTANT UL 2587 CSA	=QgCv		5	MEP
-W90		E001980	Cable 2X AWG18 OIL RESISTANT UL 2587 CSA	=QgCv		3	MEP
-W91		E001980	Cable 2X AWG18 OIL RESISTANT UL 2587 CSA	=QgCv		3	MEP
-W92		E001980	Cable 2X AWG18 OIL RESISTANT UL 2587 CSA	=QgCv		3	MEP
-W93		E001980	Cable 2X AWG18 OIL RESISTANT UL 2587 CSA	=QgCv		3	MEP
-W95		E001980	Cable 2X AWG18 OIL RESISTANT UL 2587 CSA	=QgCv		5	MEP
-W96		E001980	Cable 2X AWG18 OIL RESISTANT UL 2587 CSA	=QgCv		5	MEP
-W122		E001980	Cable 2X AWG18 OIL RESISTANT UL 2587 CSA	=QgCv		5	MEP
-W123		E001980	Cable 2X AWG18 OIL RESISTANT UL 2587 CSA	=QgCv		3	MEP
-W124		E001980	Cable 2X AWG18 OIL RESISTANT UL 2587 CSA	=QgCv		3	MEP
-W125		E001980	Cable 2X AWG18 OIL RESISTANT UL 2587 CSA	=QgCv		4	MEP
-W4		E001981	Cable 4G AWG18 OIL RESISTANT UL 2587 CSA	=QgCv		5	MEP
-W7		E001981	Cable 4G AWG18 OIL RESISTANT UL 2587 CSA	=QgCv		5	MEP
-W11		E001981	Cable 4G AWG18 OIL RESISTANT UL 2587 CSA	=QgCv		4	MEP
-W7/B		E001982	Cable 3xAWG18ST OIL RESISTANT UL 2587 CSA	=QgCv		5	MEP
-W1		E001983	Cable 4G X AWG12 schielded	=QgCv		5	MEP
-W2		E001983	Cable 4G X AWG12 schielded	=QgCv		5	MEP
FL1		E000133	Single pole wire Awg20 CSA	=QgCv		33	MEP
FL2		E000134	Single pole wire Awg16 CSA	=QgCv		15	MEP
FL3		E001995	Single pole wire Awg12 CSA	=QgCv		15	MEP

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	Symbol Key										
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13	AUSILIARI INVERTER										
	Inverter Auxiliary Circuits										

Foglio Sheet	Descrizione Description	Revisione \ Revision 0	1	2	3	4	5	6	7	8	9
14	AUSILIARI MOTORE STEPPER										
	Stepper Motor Auxiliary Circuits										
15	UNITA' CENTRALE MEP50										
	Central Unit MEP50										
16	INGRESSI DIGITALI MEP50										
	Digital Input MEP50										
17	INGRESSI DIGITALI MEP50										
	Digital Input MEP50										
18	USCITE DIGITALI MEP50										
	Digital Output MEP50										
19	USCITE DIGITALI MEP50										
	Digital Output MEP50										
20	INGRESSI ANALOGICI MEP50										
	Analog Input MEP50										
21	INGRESSI ANALOGICI MEP50										
	Analog Input MEP50										
22	USCITE STEPPER MEP50										
	Stepper Output MEP50										
23	USCITA ANALOGICA E SERIALE MEP50										
	Analog Output and Serial MEP50										
24	ALIMENTAZIONE E ENCODER PANNELLO										
	Power Supplay and Panel Encoder										
25	OPTIONAL										
	Optional										
26	MORSETTIERA QUADRO										
	Panel Terminal Board										

Note :

REV.	MODIFICA	DATA	FIRME

Dis. N. H11A
CAD SPAC
File H11A\1.dwg
Data 07/02/2015

Impianto/Plant: *Schematic H-11A_240/60Hz*
Denominazione/Title: INDICE CONTENUTI
Content Index

Ordine/Requisition:
Commessa/Order: H-11A
Esecutore/Executor: Solfanelli

Foglio/Page: 1
Segue/Follow: 2
Ultimo/Last: 211

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
27	INTERNO QUADRO		40	DISTINTA CAVI	
	Board Inside			Cable list	
28	RIASSUNTIVO CAVI		41		
	Cable summary				
29	RIASSUNTIVO CAVI				
	Cable Summary				
30	RIASSUNTIVO CAVI				
	Cable Summary				
31	RIASSUNTIVO CAVI				
	Cable Summary				
32	RIASSUNTIVO CAVI				
	Cable Summary				
33	RIASSUNTIVO CAVI				
	Cable Summary				
34	RIASSUNTIVO CAVI				
	Cable Summary				
35	RIASSUNTIVO CAVI				
	Cable Summary				
36	RIASSUNTIVO CAVI				
37	DISTINTA MATERIALI				
	Material List				
38	DISTINTA MATERIALI				
	Material List				
39	DISTINTA MATERIALI				
	Material List				

Note :

REV.	MODIFICA	DATA	FIRME

Dis. N. H11A
CAD SPAC
File H11A\1.dwg
Data 07/02/2015

Impianto/Plant: Schematic H-11A_240/60Hz
Denominazione/Title: INDICE CONTENUTI / Content Index
Ordine/Requisition:
Commessa/Order: H-11A
Esecutore/Executor: Solfanelli

Foglio/Page: 2
Segue/Follow: 3
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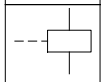
Sim.\Sym.	File	Descrizione\Description
	H5	Lampada *Lamp*
	H11	LED *Led*
	M2	Motore asincrono trifase *Three–phase inductor motor*
	M9	Motore corrente alternata monofase *Single–phase inductor motor*
	Q1360	Int. automatico magnetotermico sezionatore tripolare *Three–phase automatic switch*
	R1	Resistore *Resistor*
	R6	Potenziometro *Potentiometer*
	R60	Potenziometro *Potentiometer*
	S2	Comando a Pulsante NO *Push button NO*
	S4C	Pulsante di emergenza NC *Emergency push button NC*
	S5	Comando rotativo a due posizioni NO *Rotary selector two position*

Sim.\Sym.	File	Descrizione\Description
	S7	Comando a pedale NO *Control pedal NO*
	S13C	Fine corsa comandato a camma libero NC *Limit switch free NC*
	S14C	Fine corsa comandato a camma azionato NC *Limit switch actuated NC*
	S15C	Comandato dal livello di un fluido (livellostato) NC *Water gauge NC*
	T2	Trasformatore per ausiliari con schermo *Trasformer for auxiliary white shield*
	Y1	Elettrovalvola (A) *Solenoid valve (A)*
	Y1A	Elettrovalvola (B) *Solenoid valve (B)*
	KA1	Bobina rele' Aux *Auxiliary relay coil*
	KM1	Bobina contattore *Contactor coil*
	BLK11	Trasformatore per ausiliari con schermo *Trasformer for auxiliary white shield*
	BLK12	Inverter (potenza) *Inverter (power)*

Sim.\Sym.	File	Descrizione\Description
	BLK13	Azionamento (potenza) *Drive (power)*
	BLK14	Inverter (ausiliari) *Inverter (auxiliary)*
	BLK15	Azionamento (ausiliari) *Drive (auxiliary)*
	BLK21	Motore passo-passo *Stepper motor*
	BLK41	Raccordo SX *Connector SX*
	BLK42	Raccordo DX *Connector DX*
	BLK43	Tubo corrugato *Corrugated pipe*
	BLK44	Riduzione PG *PG adapter*
	BLK51	Dado PG *PG nut*
	BLK56	Terminale a puntale *Terminal*
	BLK57	Filo unipolare *Wire*

REV.	MODIFICA	DATA	FIRME

Dis. N. H11A
CAD SPAC
File H11A\1.dwg
Data 07/02/2015

Impianto/Plant
Schematic H–11A_240/60Hz

Denominazione/Title
LEGENDA SIMBOLI
Symbol Key

Ordine/Requisition

Commessa/Order
H–11A

Esecutore/Executor
Solfanelli

MEP

Foglio/Page 3
Segue/Follow 4
Ultimo/Last 211

Sim.\Sym.	File	Descrizione\Description
	BLK58	Fascette plastiche di fissaggio *Plastic clamp*
	BLK60	Terminale a occhiello *Terminal*
	BLK66	Sacchetto portafusibile *Bag fuse*
	SPX08E	Dispositivo di prossimita' induttivo D.C. NO *Sensor of proximity fed DC NO*

Sim.\Sym.	File	Descrizione\Description

Sim.\Sym.	File	Descrizione\Description

REV.	MODIFICA	DATA	FIRME

Dis. N. H11A
CAD SPAC
File H11A\1.dwg
Data 07/02/2015

Impianto/Plant
Schematic H-11A_240/60Hz

Denominazione/Title
LEGENDA SIMBOLI
Symbol Key

Ordine/Requisition
Commessa/Order H-11A
Esecutore/Executor Solfanelli

MEP

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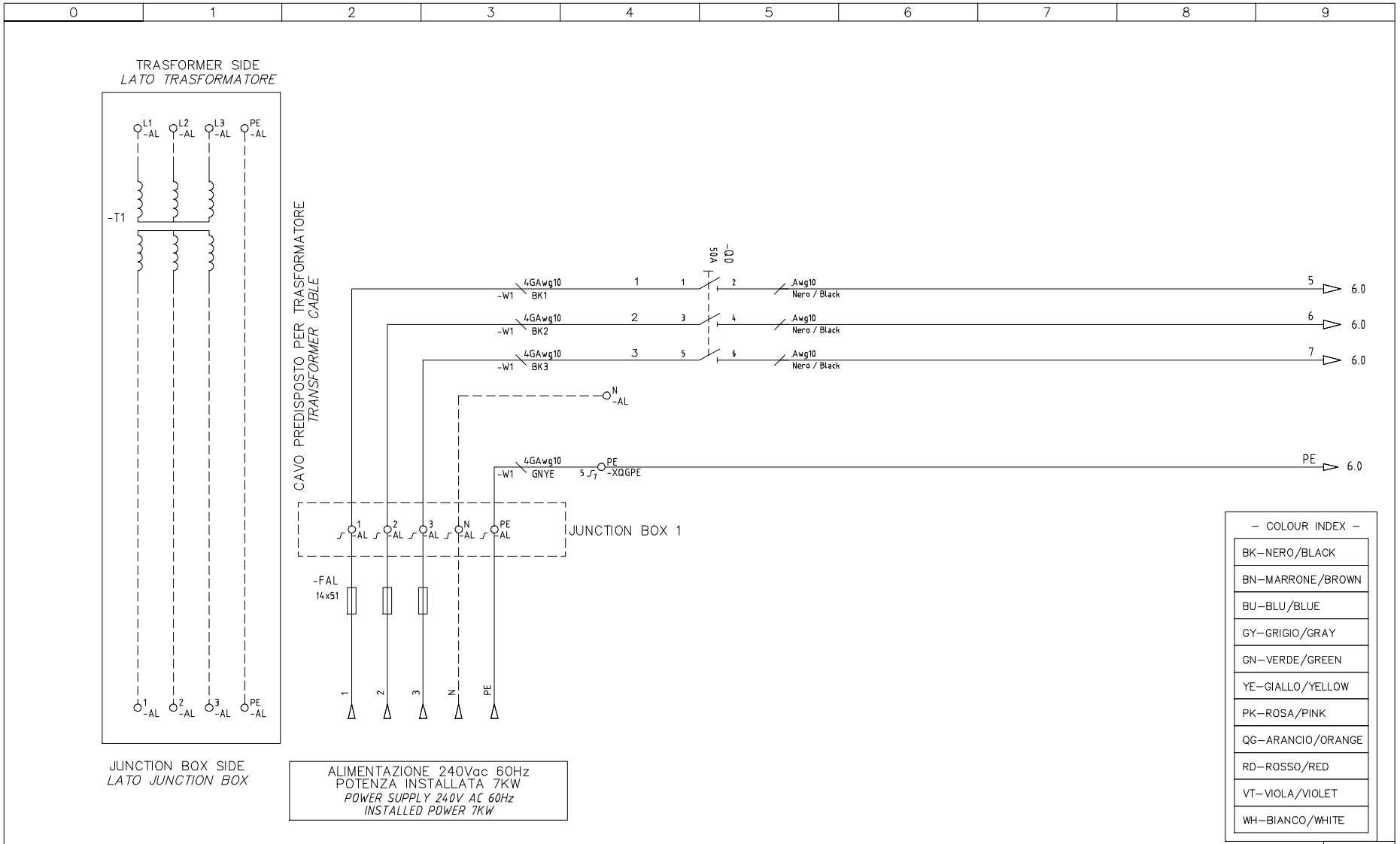
Segue/Follow 5
Ultimo/Last 211



REV.	MODIFICA	DATA	FIRME

Dis. N. H11A
CAD SPAC
File H11A\1.dwg
Data 07/02/2015

Impianto/Plant: Schematic H–11A_240/60Hz
Denominazione/Title: ALIMENTAZIONE / Power Supply

Ordine/Requisition:
Commessa/Order: H–11A
Esecutore/Executor: Solfanelli

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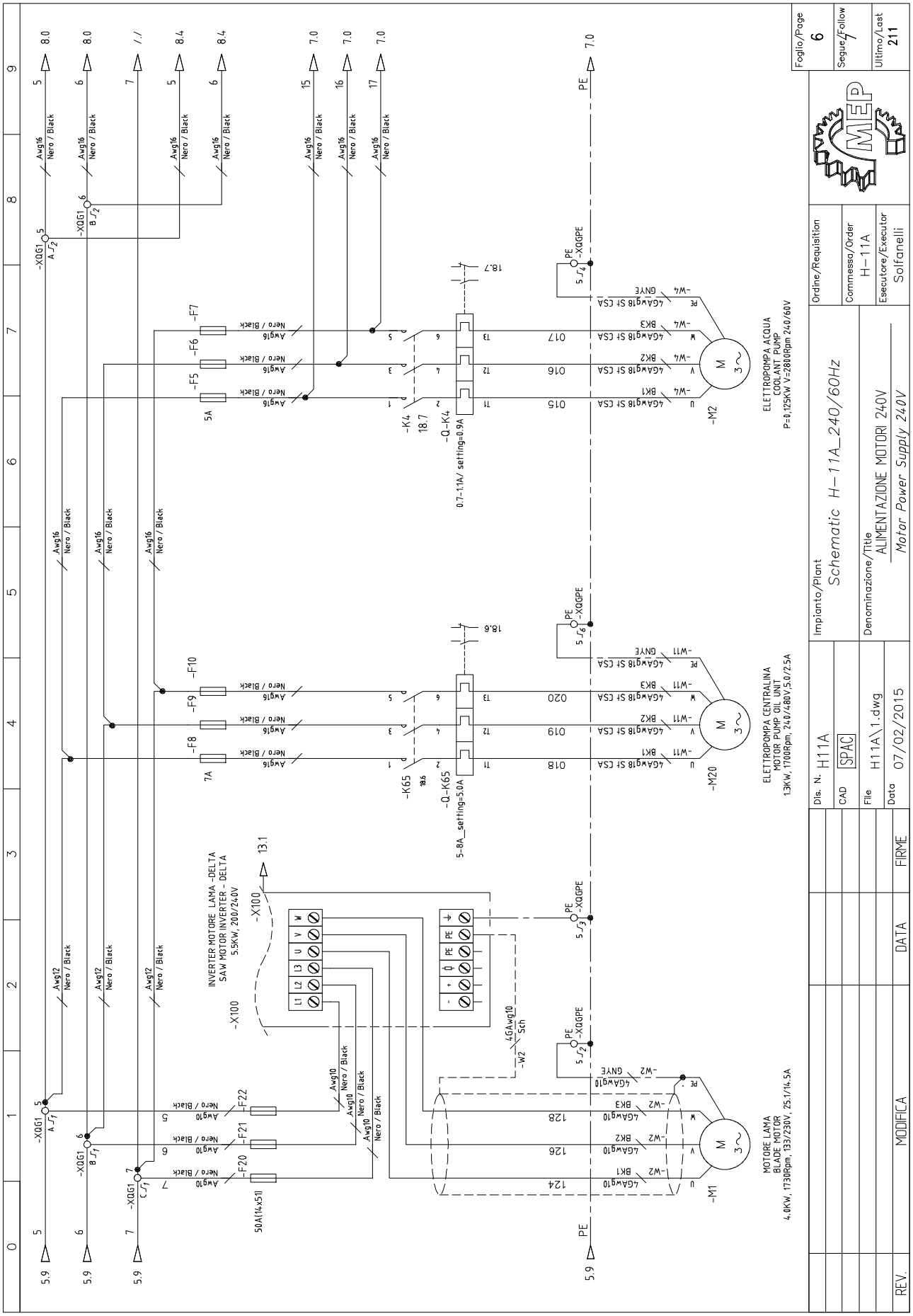
Ultimo/Last: 211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Segue/Follow 7
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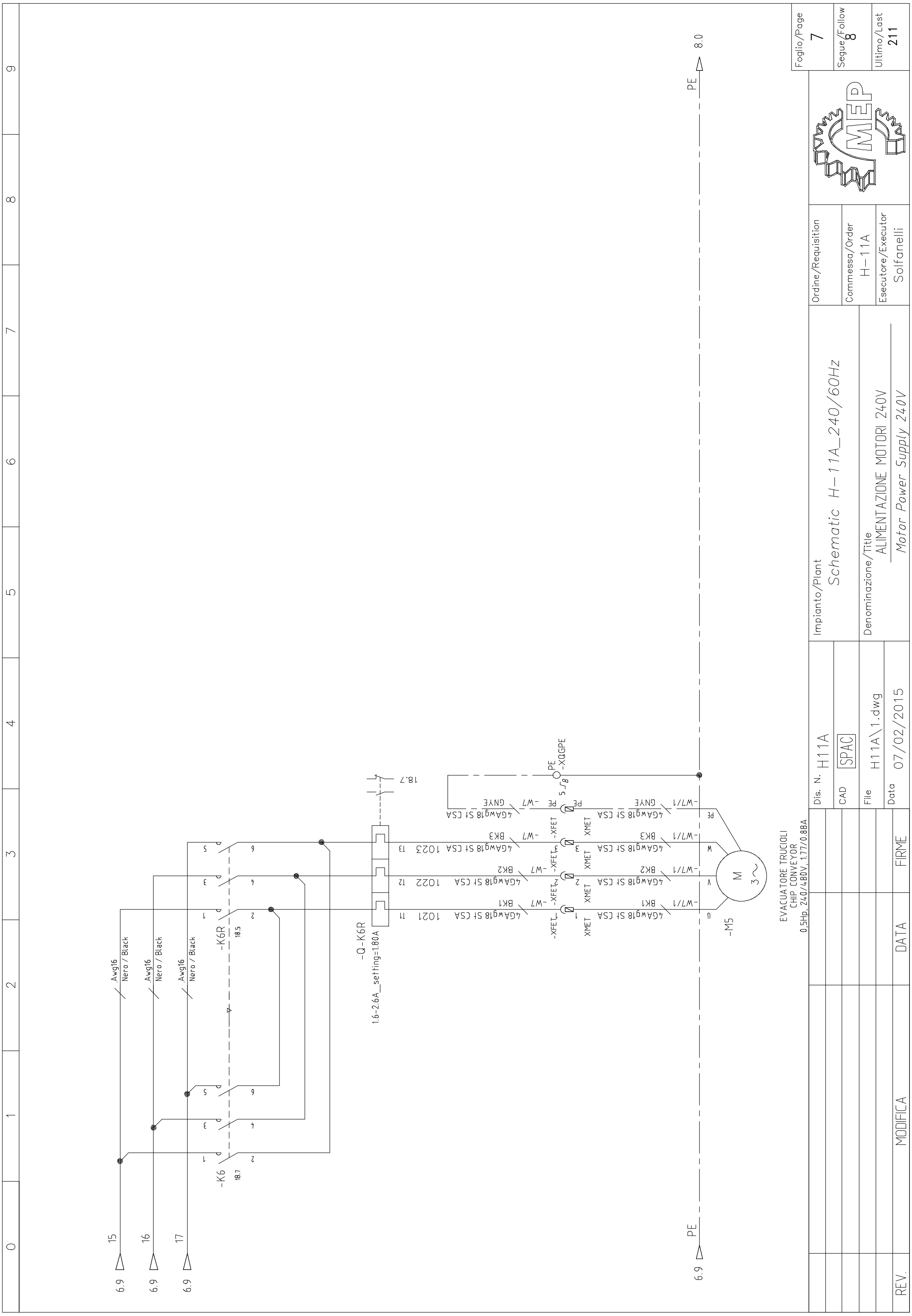
Ordine/Requisition
Commessa/Order H-11A
Esecutore/Executor Solfanelli
Impianto/Plant Schematic H-11A_240/60Hz
Denominazione/Title ALIMENTAZIONE MOTORI 240V
Motor Power Supply 240V
Dis. N. H11A
CAD SPAC
File H11A\1.dwg
Data 07/02/2015
REV. MODIFICA DATA FIRME
ELETTROPOMPA ACQUA
COOLANT PUMP
P=0,125KW V=2800Rpm 240/60V
ELETTROPOMPA CENTRALINA
MOTOR PUMP OIL UNIT
1.3KW, 1700Rpm, 240/480V,5.0/2.5A
MOTORE LAMA
BLADE MOTOR
4.0KW, 1730Rpm, 133/230V, 25.1/14.5A
INVERTER MOTORE LAMA -DELTA
SAW MOTOR INVERTER - DELTA
5.5KW, 200/240V
-K4
-Q-K4
0.7-1.1A/ setting=0.9A
-K65
-Q-K65
5-8A_setting=5.0A
-M1
-M2
-M20
-X100
-XQG1
-XQGPE
-W2
-W4
-W11
50A(14x51)
7A
5A


EVACUATORE TRUCIOLI
CHIP CONVEYOR
0.5Hp, 240/480V, 1.77/0.88A
-Q-K6R
1.6-2.6A_setting=1.80A
-M5
Impianto/Plant
Schematic H-11A_240/60Hz
Denominazione/Title
ALIMENTAZIONE MOTORI 240V
Motor Power Supply 240V
Ordine/Requisition
Commessa/Order
H-11A
Esecutore/Executor
Solfanelli
Foglio/Page
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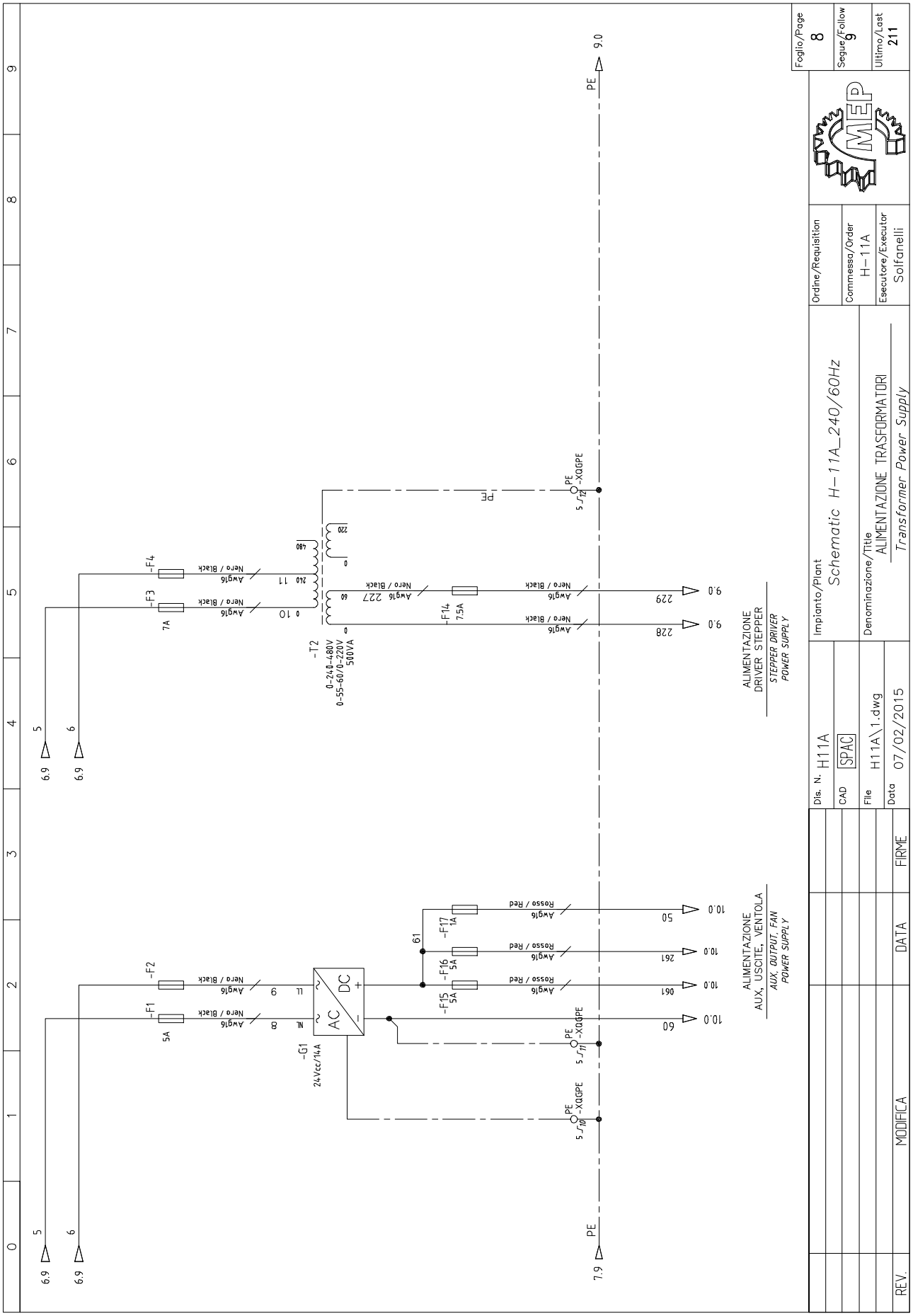
211
Dis. N. H11A
CAD SPAC
File H11A\1.dwg
Data 07/02/2015
REV.
MODIFICA
DATA
FIRME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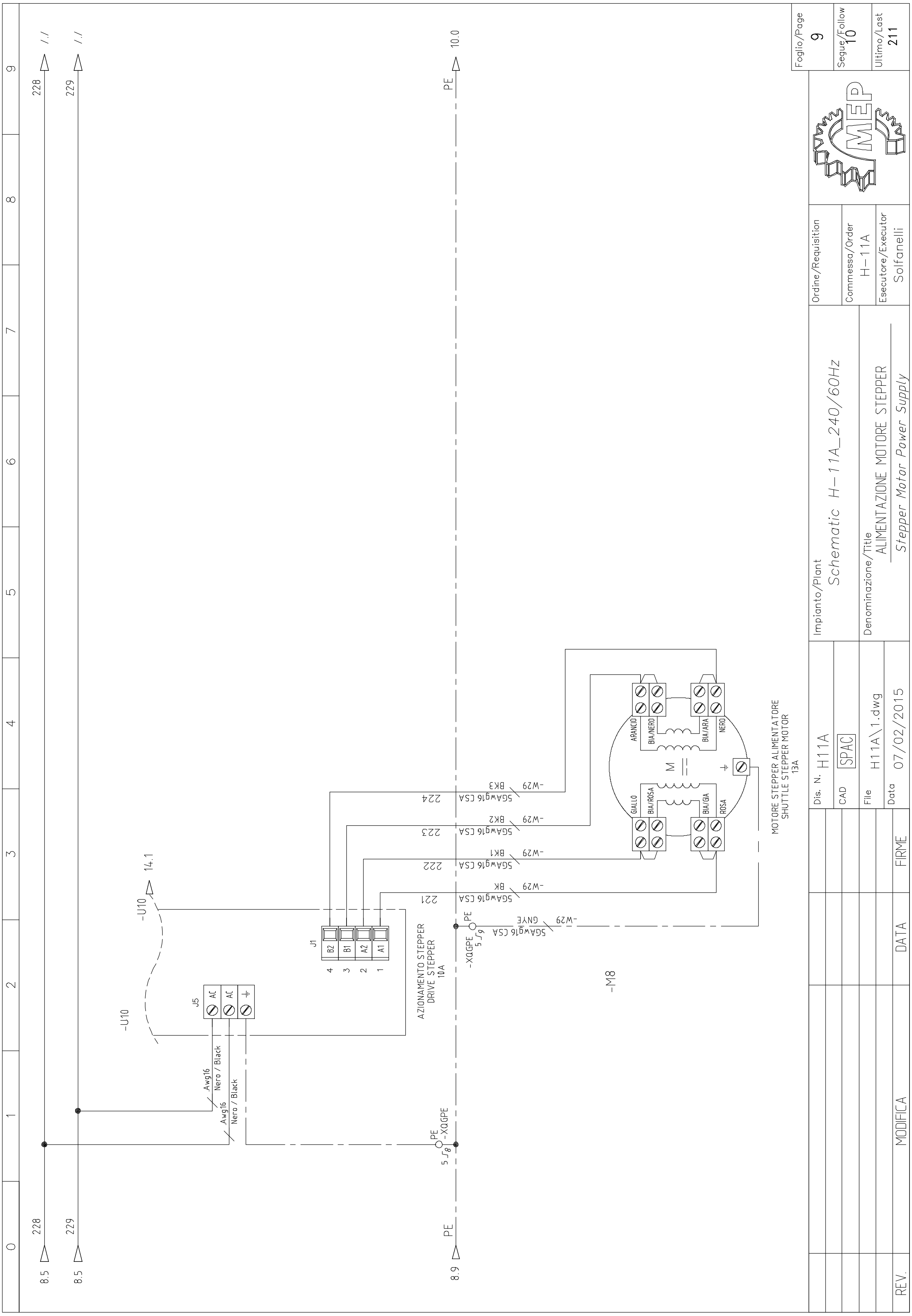
Ordine/Requisition
Commessa/Order H-11A
Esecutore/Executor Solfanelli
Impianto/Plant Schematic H-11A_240/60Hz
Denominazione/Title ALIMENTAZIONE TRASFORMATORI
Transformer Power Supply
Dis. N. H11A
CAD SPAC
File H11A\1.dwg
Data 07/02/2015
REV. MODIFICA DATA FIRME
-T2 0-240-480V 0-55-60/0-220V 500VA
-G1 24Vcc/14A AC DC
-F1 5A
-F2
-F3 7A
-F4
-F14 7.5A
-F15 5A
-F16 5A
-F17 1A
-XAGPE
PE
ALIMENTAZIONE DRIVER STEPPER
STEPPER DRIVER POWER SUPPLY
ALIMENTAZIONE AUX, USCITE, VENTOLA
AUX, OUTPUT, FAN POWER SUPPLY
Awg16 Nero / Black
Awg16 Rosso / Red
Awg16 227
229
228
50
261
061
60



AZIONAMENTO STEPPER
DRIVE STEPPER
10A
MOTORE STEPPER ALIMENTATORE
SHUTTLE STEPPER MOTOR
13A
-U10
-M8
J5
J1
-XQGPE
PE
228
229
221
222
223
224
-W29
5GAwg16 CSA
BK
BK1
BK2
BK3
GNYE
Awg16
Nero / Black
ARANCIO
BIA/NERO
BIA/ARA
NERO
GIALLO
BIA/ROSA
BIA/GIA
ROSA
8.5
8.9
10.0
14.1
Foglio/Page
9
Segue/Follow
10
Ultimo/Last
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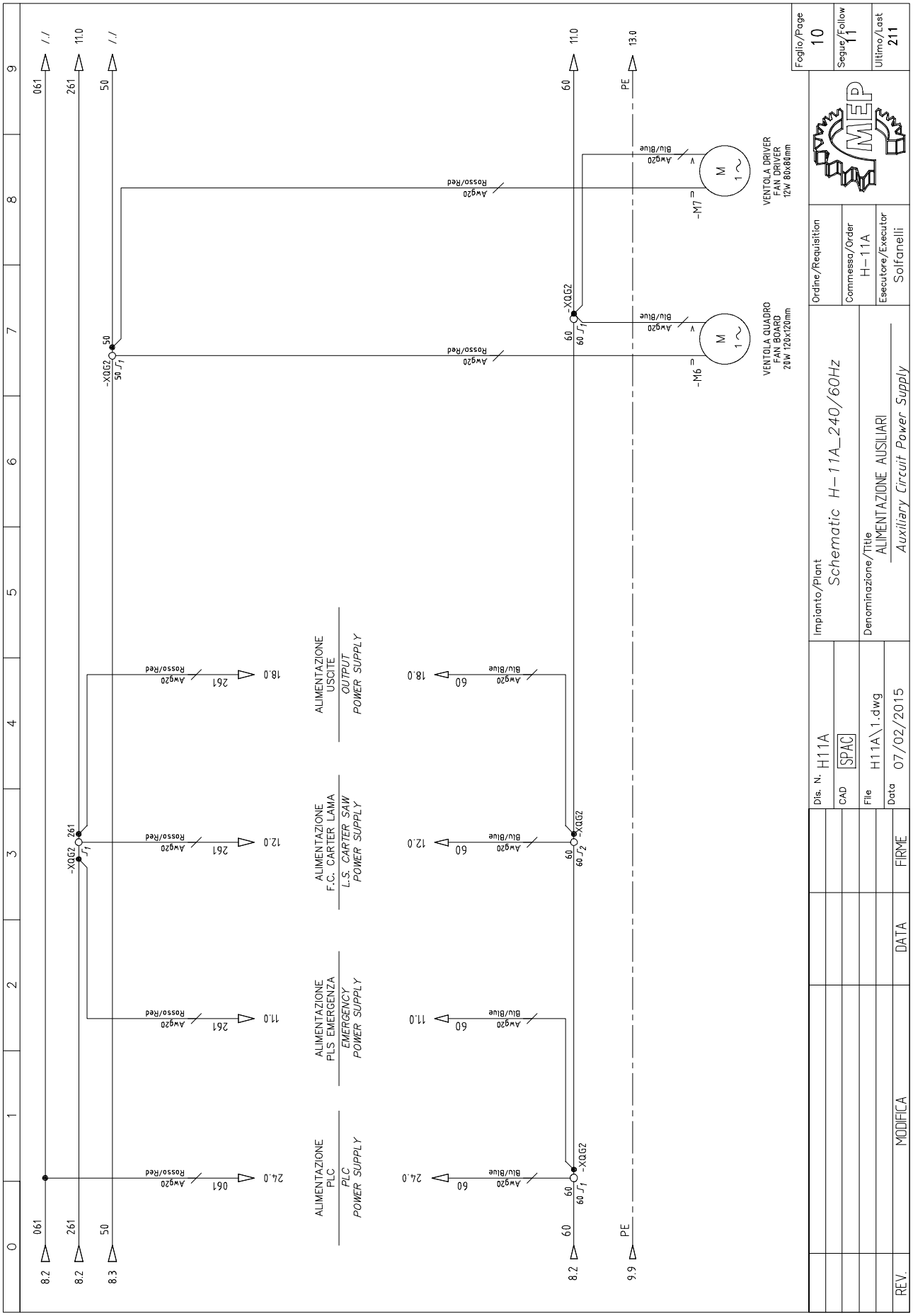
Ordine/Requisition
Commessa/Order
H-11A
Esecutore/Executor
Solfanelli
Impianto/Plant
Schematic H-11A_240/60Hz
Denominazione/Title
ALIMENTAZIONE MOTORE STEPPER
Stepper Motor Power Supply
Dis. N. H11A
CAD SPAC
File H11A\1.dwg
Data 07/02/2015
REV.
MODIFICA
DATA
FIRME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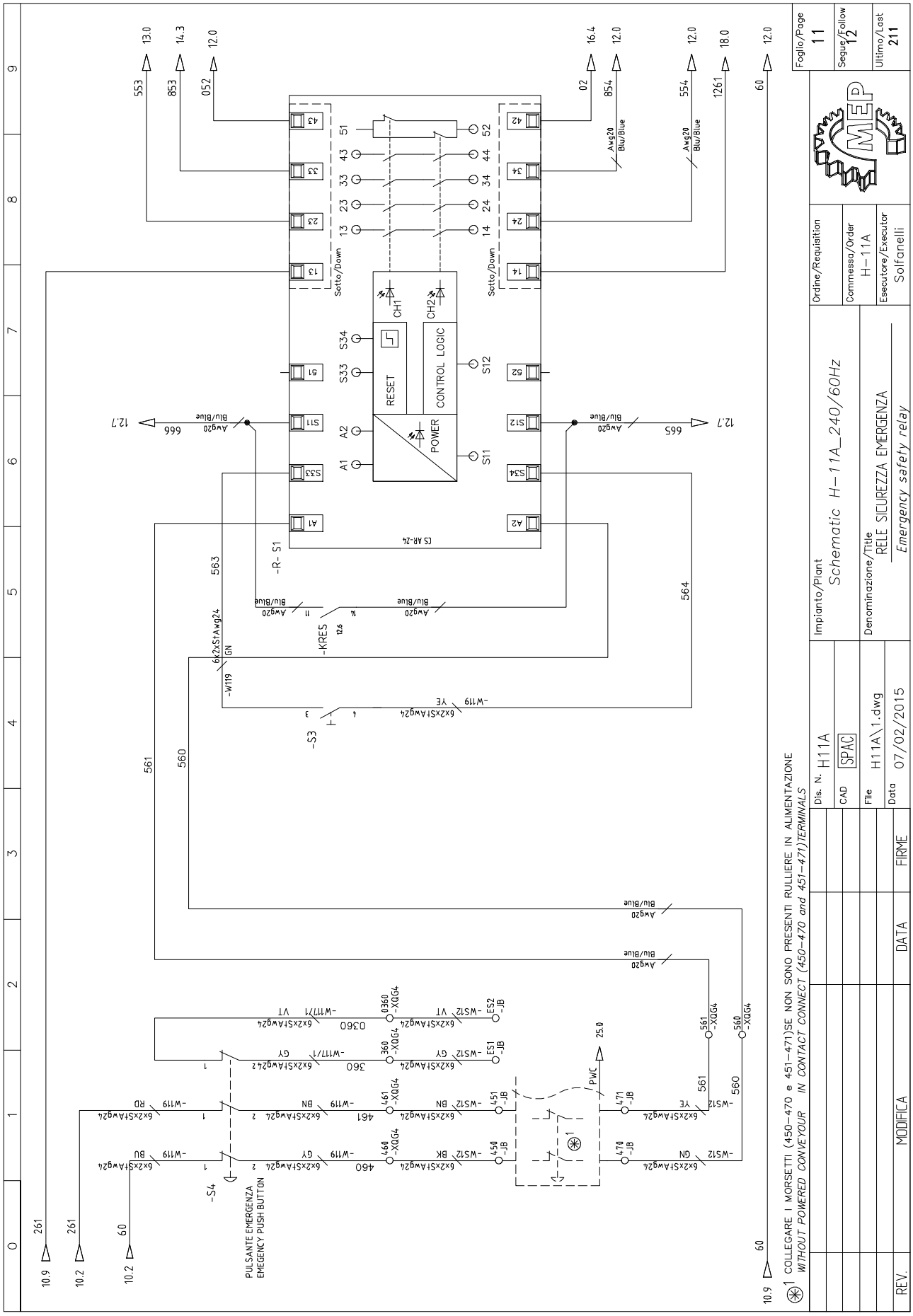
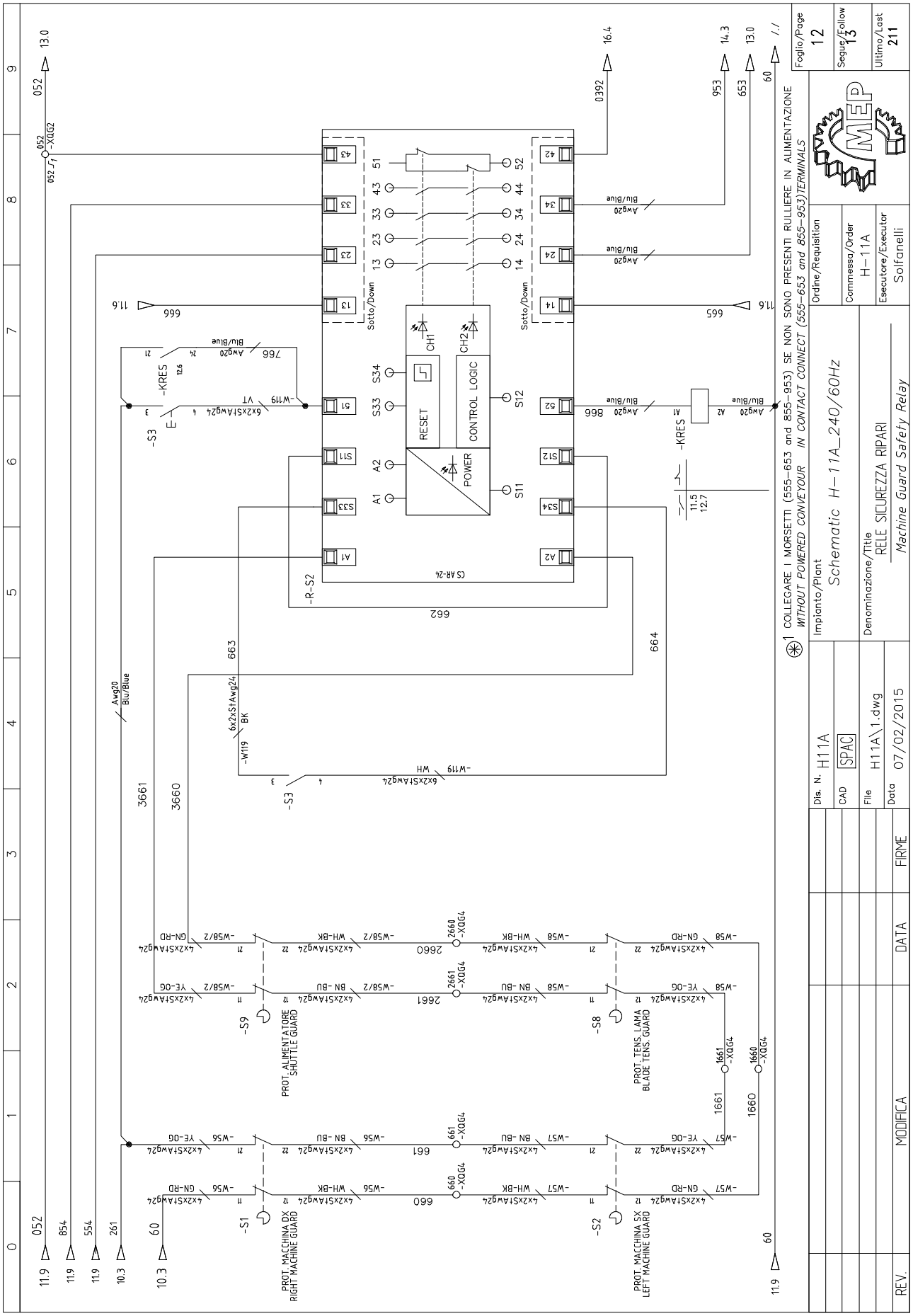
Segue/Follow 11
Ultimo/Last 211
Ordine/Requisition
Commessa/Order H-11A
Esecutore/Executor Solfanelli
Impianto/Plant Schematic H-11A_240/60Hz
Denominazione/Title ALIMENTAZIONE AUSILIARI
Auxiliary Circuit Power Supply
Dis. N. H11A
CAD SPAC
File H11A\1.dwg
Data 07/02/2015
REV. MODIFICA DATA FIRME
VENTOLA DRIVER
FAN DRIVER
12W 80x80mm
VENTOLA QUADRO
FAN BOARD
20W 120x120mm
-M7
-M6
-XQG2
ALIMENTAZIONE PLC
PLC POWER SUPPLY
ALIMENTAZIONE PLS EMERGENZA
EMERGENCY POWER SUPPLY
ALIMENTAZIONE F.C. CARTER LAMA
L.S. CARTER SAW POWER SUPPLY
ALIMENTAZIONE USCITE
OUTPUT POWER SUPPLY
Awg20 Rosso/Red
Awg20 Blu/Blue
061
261
50
60
PE


Schematic H-11A_240/60Hz
RELE SICUREZZA EMERGENZA
Emergency safety relay
H-11A
Solfanelli
H11A
SPAC
H11A\1.dwg
07/02/2015
MODIFICA
DATA
FIRME
-R- S1
CONTROL LOGIC
RESET
POWER
CH1
CH2
-KRES
-S3
-S4
PULSANTE EMERGENZA
EMEGENCY PUSH BUTTON
COLLEGARE I MORSETTI (450-470 e 451-471)SE NON SONO PRESENTI RULLIERE IN ALIMENTAZIONE
WITHOUT POWERED CONVEYOUR IN CONTACT CONNECT (450-470 and 451-471)TERMINALS


1 COLLEGARE I MORSETTI (555-653 and 855-953) SE NON SONO PRESENTI RULLIERE IN ALIMENTAZIONE
WITHOUT POWERED CONVEYOUR IN CONTACT CONNECT (555-653 and 855-953)TERMINALS
Impianto/Plant
Schematic H-11A_240/60Hz
Denominazione/Title
RELE SICUREZZA RIPARI
Machine Guard Safety Relay
Ordine/Requisition
Commessa/Order
H-11A
Esecutore/Executor
Solfanelli
Foglio/Page
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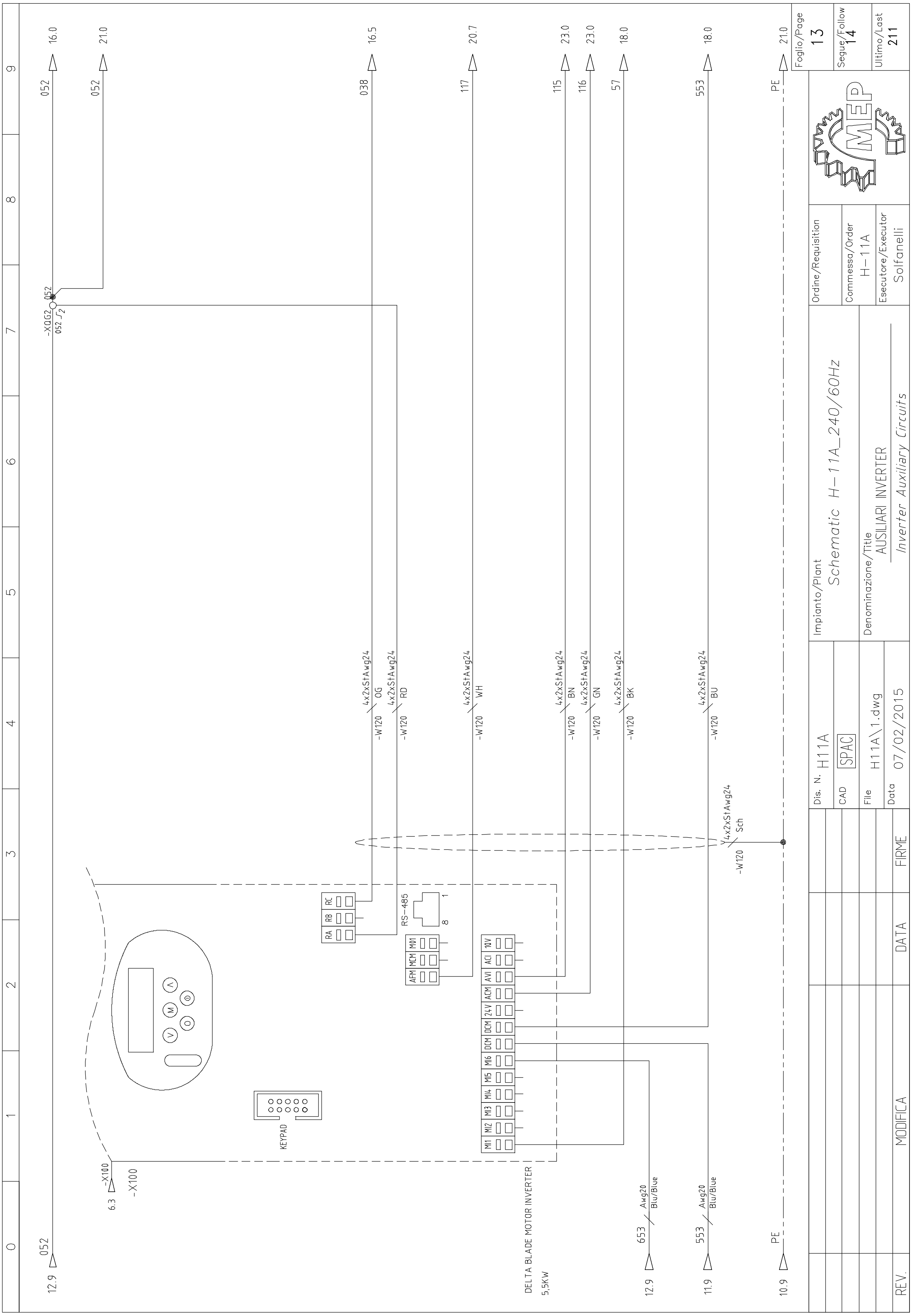
Segue/Follow
13
Ultimo/Last
211
Dis. N. H11A
CAD SPAC
File H11A\1.dwg
Data 07/02/2015
REV. MODIFICA DATA FIRME
CONTROL LOGIC
RESET
POWER
CH1
CH2
Sotto/Down
-S1
-S2
-S3
-S8
-S9
-KRES
-R-S2
PROT. MACCHINA DX RIGHT MACHINE GUARD
PROT. MACCHINA SX LEFT MACHINE GUARD
PROT. ALIMENTATORE SHUTTLE GUARD
PROT. TENS. LAMA BLADE TENS. GUARD


DELTA BLADE MOTOR INVERTER
5,5KW
KEYPAD
RS-485
-X100
-XQG2
-W120
4x2xSt Awg24
Awg20 Blu/Blue
Impianto/Plant
Schematic H-11A_240/60Hz
Denominazione/Title
AUSILIARI INVERTER
Inverter Auxiliary Circuits
Ordine/Requisition
Commessa/Order
H-11A
Esecutore/Executor
Solfanelli
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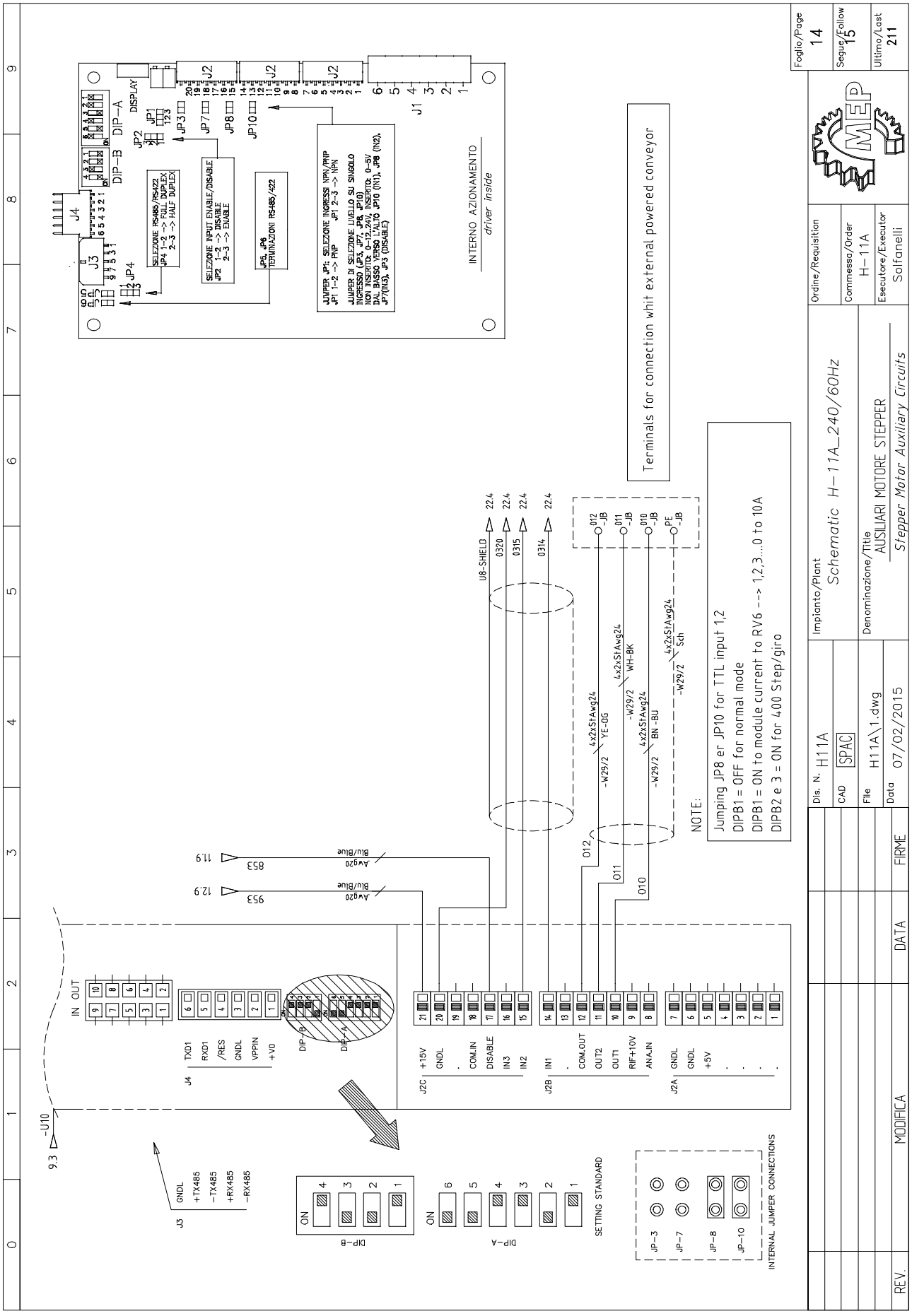
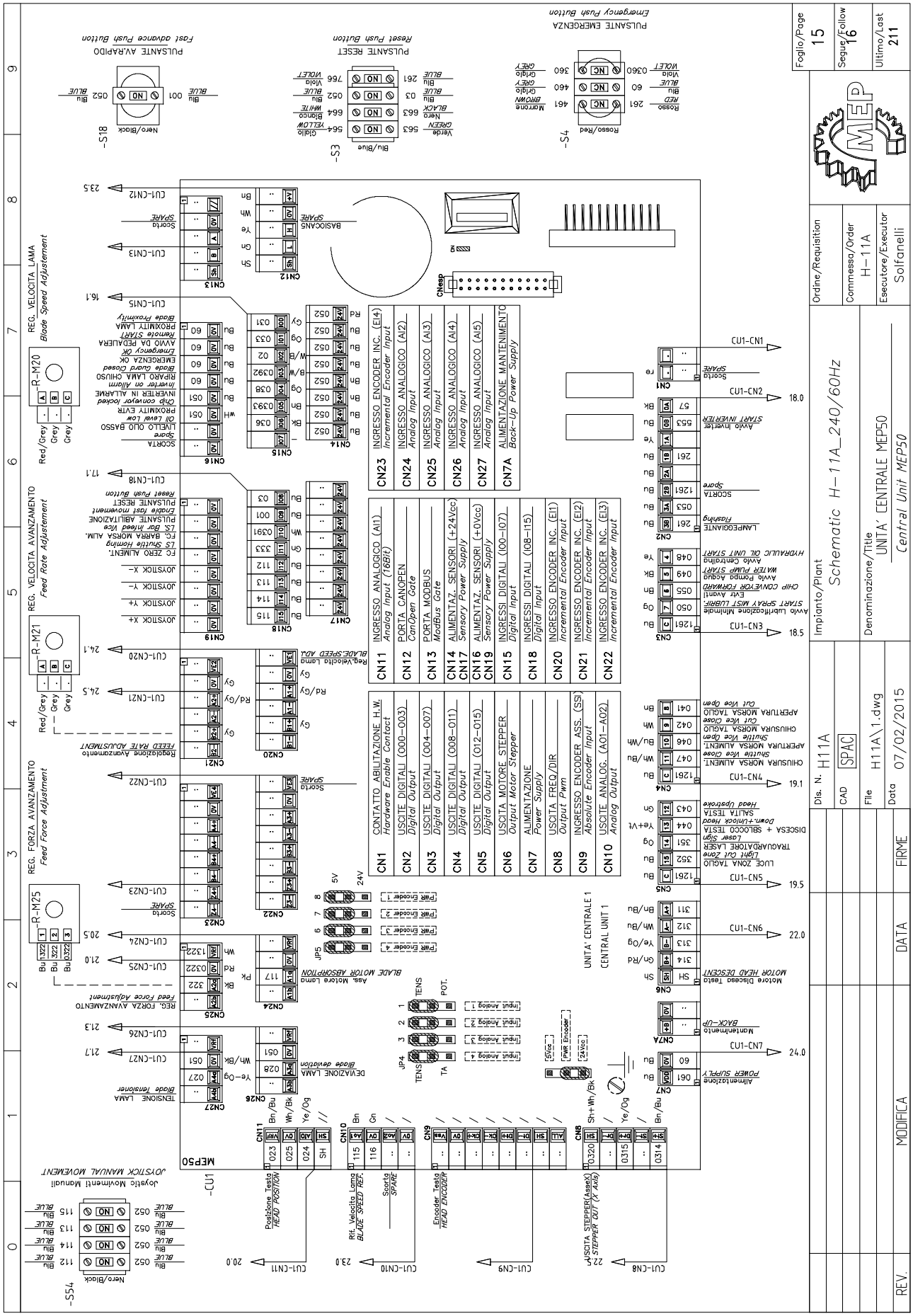
Dis. N. H11A
CAD SPAC
File H11A\1.dwg
Data 07/02/2015
REV.
MODIFICA
DATA
FIRME


Terminals for connection whit external powered conveyor
Jumping JP8 er JP10 for TTL input 1,2
DIPB1 = OFF for normal mode
DIPB1 = ON to module current to RV6 --> 1,2,3....0 to 10A
DIPB2 e 3 = ON for 400 Step/giro
NOTE:
Schematic H-11A_240/60Hz
Stepper Motor Auxiliary Circuits
AUSILIARI MOTORE STEPPER
H11A\1.dwg
07/02/2015
MODIFICA
DATA
FIRME
SETTING STANDARD
INTERNAL JUMPER CONNECTIONS
INTERNO AZIONAMENTO
driver inside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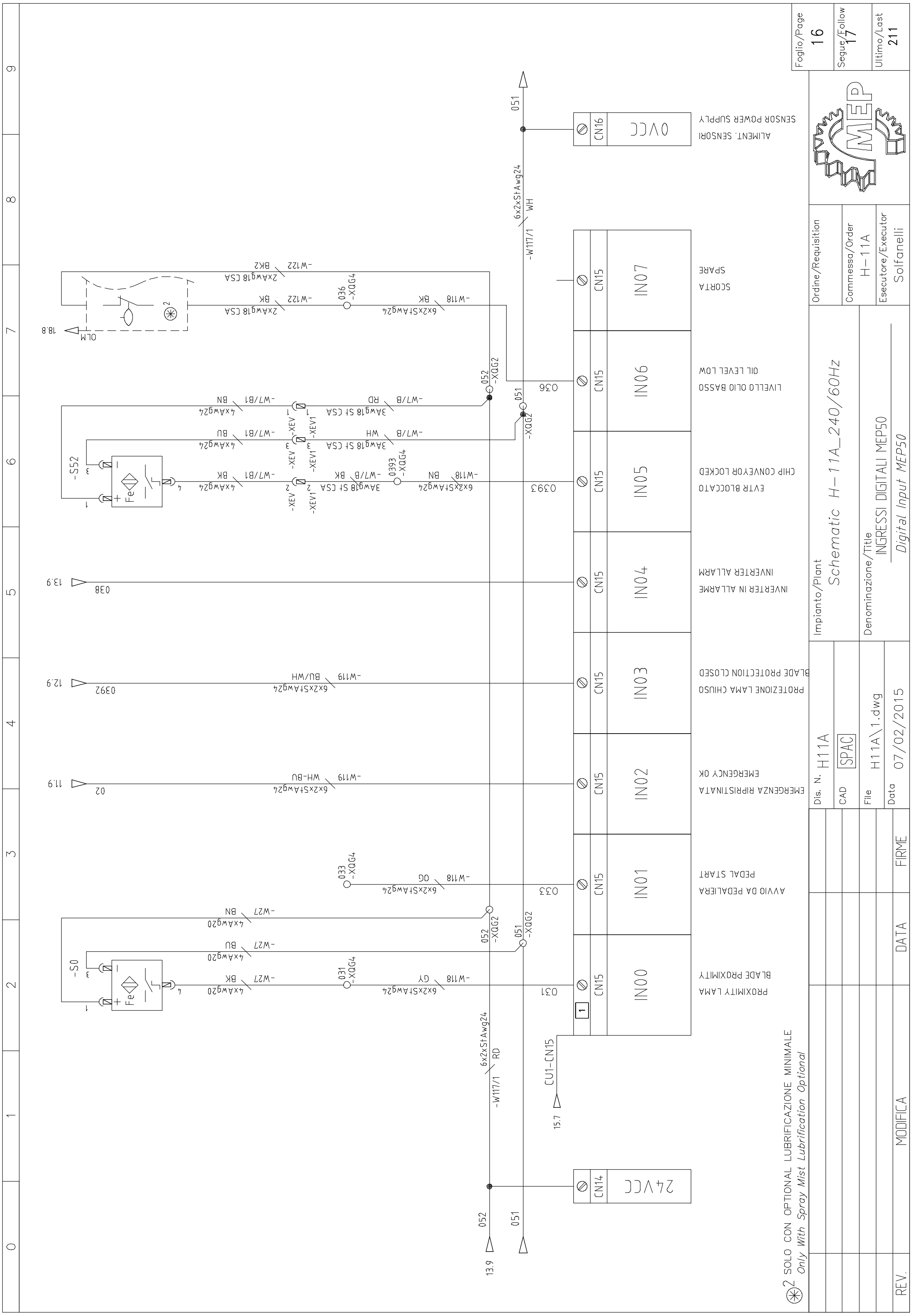
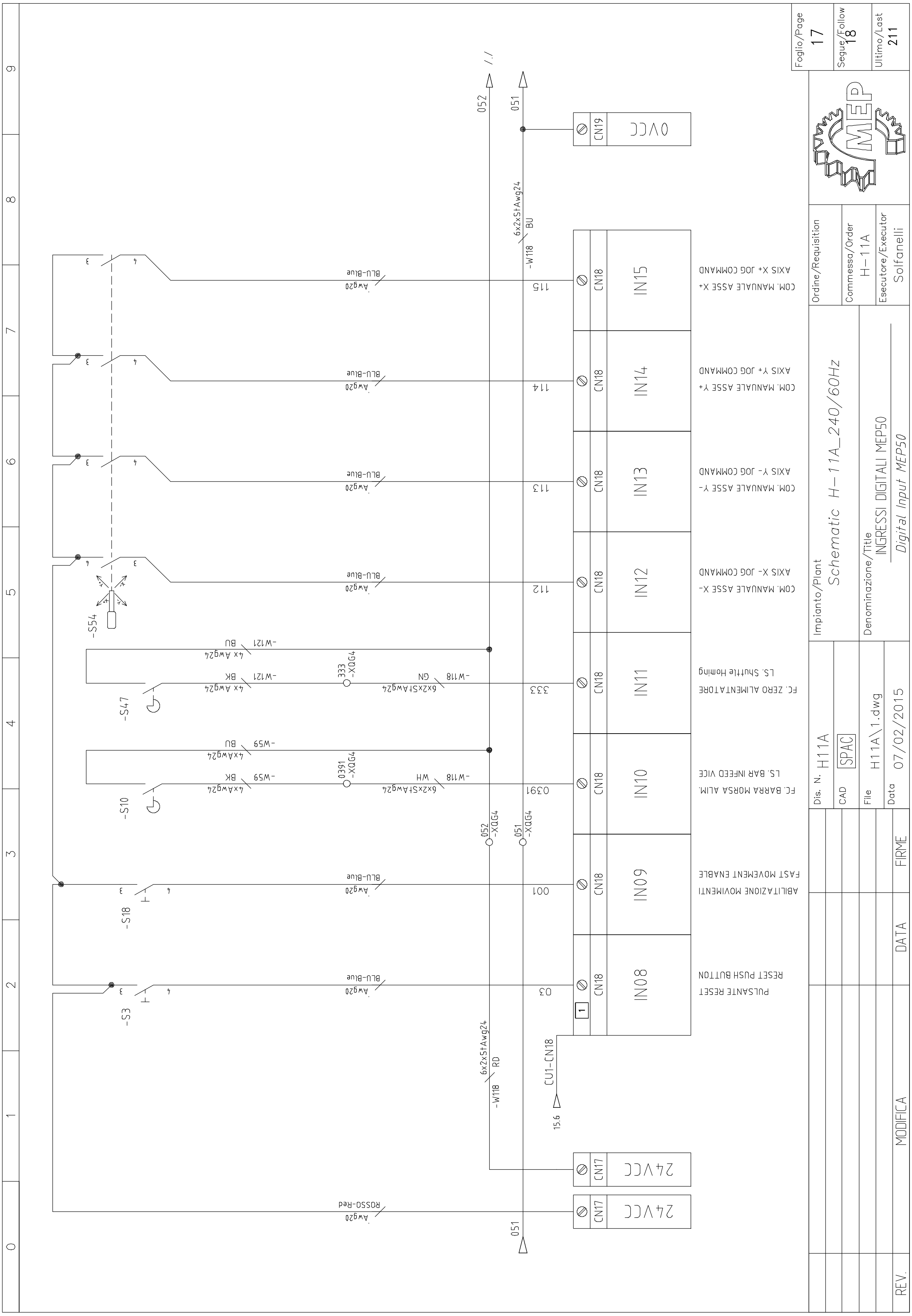
Segue/Follow 16
Ultimo/Last 211
Ordine/Requisition
Commessa/Order H-11A
Esecutore/Executor Solfanelli
Impianto/Plant Schematic H-11A_240/60Hz
Denominazione/Title UNITA' CENTRALE MEP50 Central Unit MEP50
Dis. N. H11A
CAD SPAC
File H11A\1.dwg
Data 07/02/2015
REV. MODIFICA DATA FIRME
ME P50
CU1
CN1 INGRESSO ANALOGICO (AI1) Analog Input (16Bit)
CN2 USCITE DIGITALI (O00–O03) Digital Output
CN3 USCITE DIGITALI (O04–O07) Digital Output
CN4 USCITE DIGITALI (O08–O11) Digital Output
CN5 USCITE DIGITALI (O12–O15) Digital Output
CN6 USCITA MOTORE STEPPER Output Motor Stepper
CN7 ALIMENTAZIONE Power Supply
CN8 USCITA FREQ/DIR Output Pwm
CN9 INGRESSO ENCODER ASS. (SSI) Absolute Encoder Input
CN10 USCITE ANALOG. (AO1–AO2) Analog Output
CN11 CONTATTO ABILITAZIONE H.W. Hardware Enable Contact
CN12 PORTA CANOPEN CanOpen Gate
CN13 PORTA MODBUS ModBus Gate
CN14 ALIMENTAZ. SENSORI (+24Vcc) Sensory Power Supply
CN17
CN16 ALIMENTAZ. SENSORI (+0Vcc) Sensory Power Supply
CN19
CN15 INGRESSI DIGITALI (I00–I07) Digital Input
CN18 INGRESSI DIGITALI (I08–I15) Digital Input
CN20 INGRESSO ENCODER INC. (EI1) Incremental Encoder Input
CN21 INGRESSO ENCODER INC. (EI2) Incremental Encoder Input
CN22 INGRESSO ENCODER INC. (EI3) Incremental Encoder Input
CN23 INGRESSO ENCODER INC. (EI4) Incremental Encoder Input
CN24 INGRESSO ANALOGICO (AI2) Analog Input
CN25 INGRESSO ANALOGICO (AI3) Analog Input
CN26 INGRESSO ANALOGICO (AI4) Analog Input
CN27 INGRESSO ANALOGICO (AI5) Analog Input
CN7A ALIMENTAZIONE MANTENIMENTO Back-Up Power Supply
CNesp
CN12 CN13 CN15 CN16 CN17 CN18 CN19 CN20 CN21 CN22 CN23 CN24 CN25 CN26 CN7 CN7A CN1 CN2 CN3 CN4 CN5 CN6
CU1-CN1 CU1-CN2 CU1-CN3 CU1-CN4 CU1-CN5 CU1-CN6 CU1-CN7
CU1-CN8 CU1-CN9 CU1-CN10 CU1-CN11
CU1-CN12 CU1-CN13 CU1-CN15 CU1-CN16 CU1-CN17 CU1-CN18 CU1-CN19 CU1-CN20 CU1-CN21 CU1-CN22 CU1-CN23 CU1-CN24 CU1-CN25 CU1-CN26 CU1-CN27 CU1-CN7A
BASICANS
Scorta SPARE
Avvio Inverter START INVERTER
SCORTA Spare
LAMPEGGIANTE Flashing
Avvio lubrificazione Minimale START SPRAY MIST LUBRIF.
Ext. Avanti CHIP CONVEYOR FORWARD
Avvio Pompa Acqua WATER PUMP START
Avvio Centralina HYDRAULIC OIL UNIT START
CHIUSURA MORSA ALIMENT. Shuttle Vice Close
APERTURA MORSA ALIMENT. Shuttle Vice Open
Out Vice Close
APERTURA MORSA TAGLIO Out Vice Open
LUCE ZONA TAGLIO Light Cut Zone
TRASGUARDATORE LASER Laser Sign
DISCESA + SBLOCCO TESTA Down+Unlock Head
SALITA TESTA Head Upstroke
Motore Disegno Testa MOTOR HEAD DESIGN
Mantenimento BACK-UP
Alimentazione POWER SUPPLY
Scorta SPARE
Avvio Inverter START INVERTER
SCORTA Spare
LAMPEGGIANTE Flashing
Avvio lubrificazione Minimale START SPRAY MIST LUBRIF.
Ext. Avanti CHIP CONVEYOR FORWARD
Avvio Pompa Acqua WATER PUMP START
Avvio Centralina HYDRAULIC OIL UNIT START
CHIUSURA MORSA ALIMENT. Shuttle Vice Close
APERTURA MORSA ALIMENT. Shuttle Vice Open
Out Vice Close
APERTURA MORSA TAGLIO Out Vice Open
LUCE ZONA TAGLIO Light Cut Zone
TRASGUARDATORE LASER Laser Sign
DISCESA + SBLOCCO TESTA Down+Unlock Head
SALITA TESTA Head Upstroke
Motore Disegno Testa MOTOR HEAD DESIGN
Mantenimento BACK-UP
Alimentazione POWER SUPPLY
Scorta SPARE
Regolazione Avanzamento FEED RATE ADJUSTMENT
Scorta SPARE
REG. FORZA AVANZAMENTO Feed Force Adjustment
TENSIONE LAMA Blade Tensioner
DEVIAZIONE LAMA Blade deviation
Ass. Motore lama BLADE MOTOR ABSORPTION
Read Velocità Lama BLADE SPEED ADJ.
REG. VELOCITA LAMA Blade Speed Adjustement
REG. VELOCITA AVANZAMENTO Feed Rate Adjustement
REG. FORZA AVANZAMENTO Feed Force Adjustement
SCORTA Spare
LIVELLO OLIO BASSO Oil Level Low
PROSSIMITA' EVTR Chip conveyor locked
INVERTER IN ALLARME Inverter on Alarm
RIPARO LAMA CHIUSO Blade Guard Closed
EMERGENZA OK Emergency Ok
AVVIO DA PEDALIERA Remote START
PROSSIMITA' LAMA Blade Proximity
Joystick Movimenti Manuali
JOYSTICK MANUAL MOVEMENT
Rif. Velocità Lama BLADE SPEED REF.
Scorta SPARE
Encoder Testa HEAD ENCODER
USCITA STEPPER(Asse X) STEPPER OUT (X Axis)
UNITA' CENTRALE 1
CENTRAL UNIT 1
Posizione Testa HEAD POSITION
Rif. Velocità Lama BLADE SPEED REF.
Scorta SPARE
Encoder Testa HEAD ENCODER
USCITA STEPPER(Asse X) STEPPER OUT (X Axis)
Input Analog 1
Input Analog 2
Input Analog 3
Input Analog 4
PWR Encoder
5Vcc
24Vcc
TENS
POT.
TA
JP4
JP5
5V
24V
R-M20
R-M21
R-M25
Red/Grey
Grey
Grey
Bu\322
Bu\322
Bu\0322
S1
S2
S3
S4
S18
S54
Rosso/Red
Nero/Black
Blu/Blue
Fast advance Push Button
PULSANTE AVANZAMENTO
Reset Push Button
PULSANTE RESET
Emergency Push Button
PULSANTE EMERGENZA


Foglio/Page 16
Segue/Follow 17
Ultimo/Last 211
Ordine/Requisition
Commessa/Order H-11A
Esecutore/Executor Solfanelli
Impianto/Plant Schematic H-11A_240/60Hz
Denominazione/Title INGRESSI DIGITALI MEP50
Digital Input MEP50
Dis. N. H11A
CAD SPAC
File H11A\1.dwg
Data 07/02/2015
REV. MODIFICA DATA FIRME
SOLO CON OPTIONAL LUBRIFICAZIONE MINIMALE
Only With Spray Mist Lubrification Optional
0VCC
ALIMENT. SENSORI
SENSOR POWER SUPPLY
IN07 SCORTA SPARE
IN06 LIVELLO OLIO BASSO OIL LEVEL LOW
IN05 EVTR BLOCCATO CHIP CONVEYOR LOCKED
IN04 INVERTER IN ALLARME INVERTER ALLARM
IN03 PROTEZIONE LAMA CHIUSO BLADE PROTECTION CLOSED
IN02 EMERGENZA RIPRISTINATA EMERGENCY OK
IN01 AVVIO DA PEDALIERA PEDAL START
IN00 PROSSIMITY LAMA BLADE PROXIMITY
24VCC
CN14
CN15
CN16
CU1-CN15
-S52
-S0
OLM
051
052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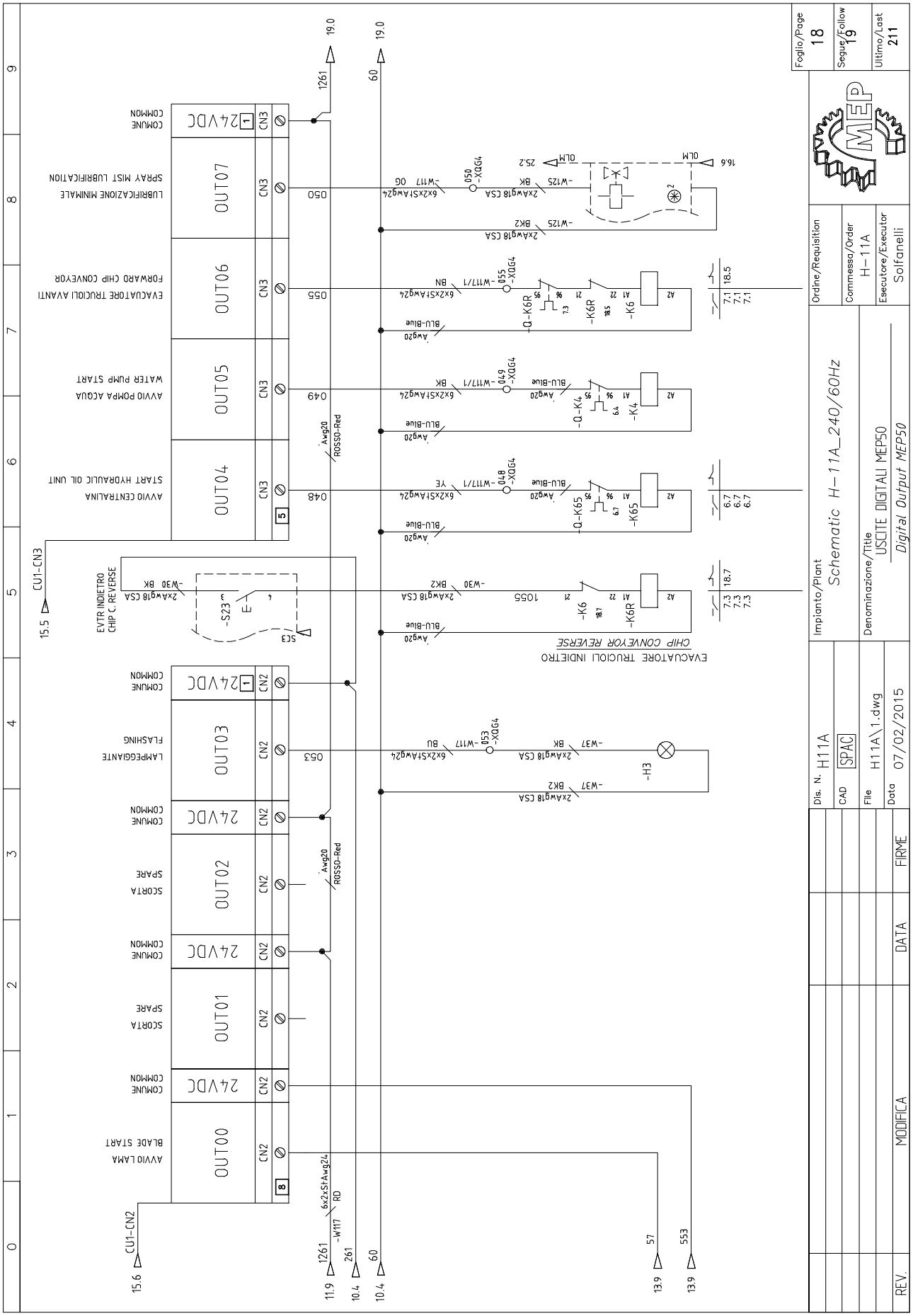
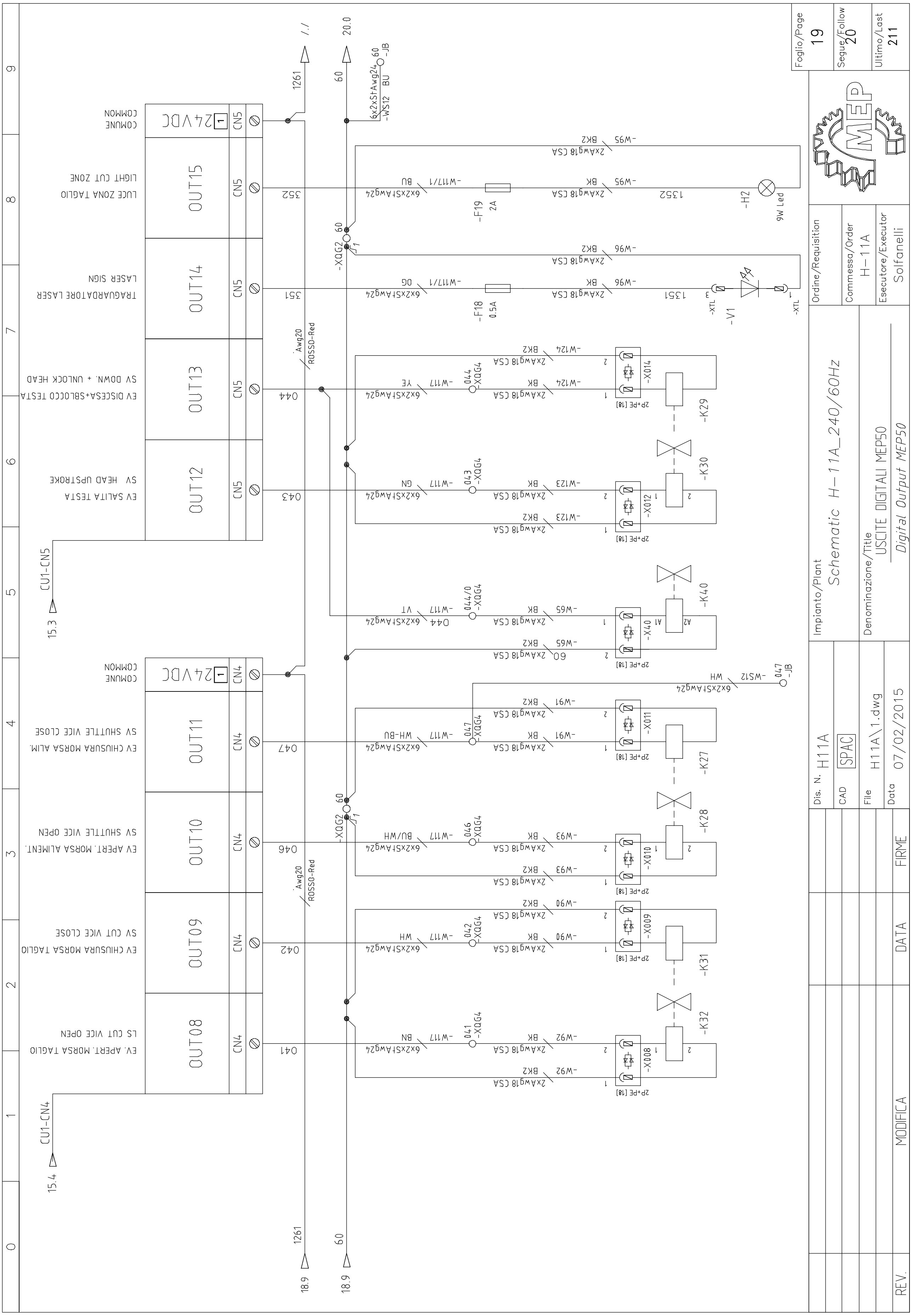
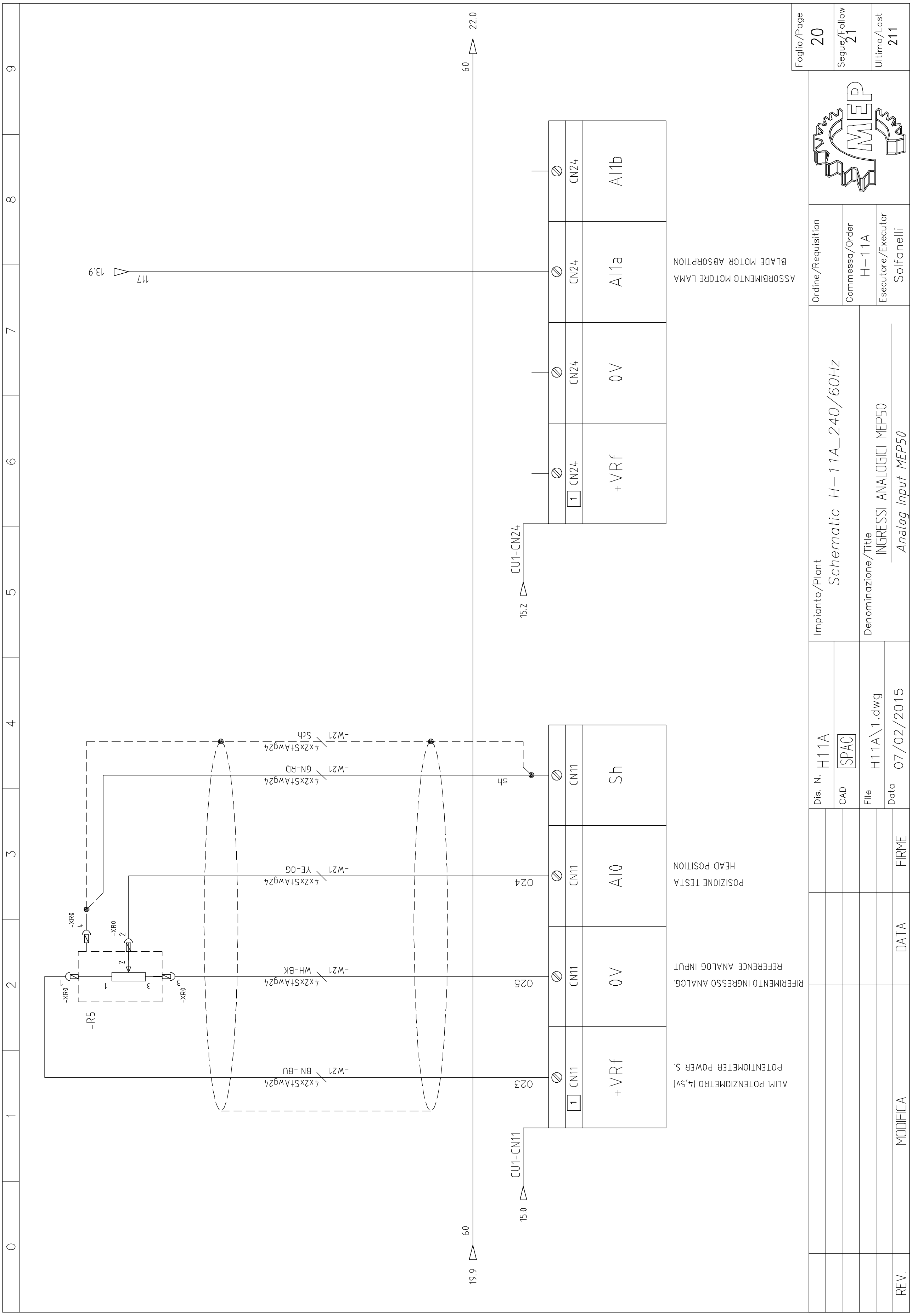
Segue/Follow 18
Ultimo/Last 211
Ordine/Requisition
Commessa/Order H-11A
Esecutore/Executor Solfanelli
Impianto/Plant Schematic H-11A_240/60Hz
Denominazione/Title INGRESSI DIGITALI MEP50
Digital Input MEP50
Dis. N. H11A
CAD SPAC
File H11A\1.dwg
Data 07/02/2015
REV. MODIFICA DATA FIRME
COM. MANUALE ASSE X+
AXIS X+ JOG COMMAND
COM. MANUALE ASSE Y+
AXIS Y+ JOG COMMAND
COM. MANUALE ASSE Y-
AXIS Y- JOG COMMAND
COM. MANUALE ASSE X-
AXIS X- JOG COMMAND
FC. ZERO ALIMENTATORE
LS. Shuttle Homing
FC. BARRA MORSA ALIM.
LS. BAR INFEED VICE
ABILITAZIONE MOVIMENTI
FAST MOVEMENT ENABLE
PULSANTE RESET
RESET PUSH BUTTON
IN15
IN14
IN13
IN12
IN11
IN10
IN09
IN08
CN18
CN19
CN17
0VCC
24VCC
24VCC
-S54
-S47
-S10
-S18
-S3
-W118
-W121
-W59
6x2xStAwg24
4x Awg24
BLU-Blue
Awg20
ROSSO-Red
CU1-CN18
15.6
052
051
115
114
113
112
333
0391
001
03


Foglio/Page 18
Segue/Follow 19
Ultimo/Last 211
Ordine/Requisition
Commessa/Order H-11A
Esecutore/Executor Solfanelli
Impianto/Plant Schematic H-11A_240/60Hz
Denominazione/Title USCITE DIGITALI MEP50
Digital Output MEP50
Dis. N. H11A
CAD SPAC
File H11A\1.dwg
Data 07/02/2015
REV. MODIFICA DATA FIRME
OUT00 OUT01 OUT02 OUT03 OUT04 OUT05 OUT06 OUT07
AVVIO LAMA BLADE START
SCORTA SPARE
LAMPEGGIANTE FLASHING
AVVIO CENTRALINA START HYDRAULIC OIL UNIT
AVVIO POMPA ACQUA WATER PUMP START
EVACUATORE TRUCIOLI AVANTI FORWARD CHIP CONVEYOR
LUBRIFICAZIONE MINIMALE SPRAY MIST LUBRIFICATION
COMUNE COMMON
24VDC
CN1 CN2 CN3
EVACUATORE TRUCIOLI INDIETRO
CHIP CONVEYOR REVERSE
EVTR INDIETRO CHIP C. REVERSE
ROSSO-Red
BLU-Blue
CU1-CN2
CU1-CN3


Foglio/Page 19
Segue/Follow 20
Ultimo/Last 211
Impianto/Plant
Schematic H-11A_240/60Hz
Denominazione/Title
USCITE DIGITALI MEP50
Digital Output MEP50
Commessa/Order
H-11A
Esecutore/Executor
Solfanelli
Dis. N. H11A
CAD SPAC
File H11A\1.dwg
Data 07/02/2015
REV.
MODIFICA
DATA
FIRME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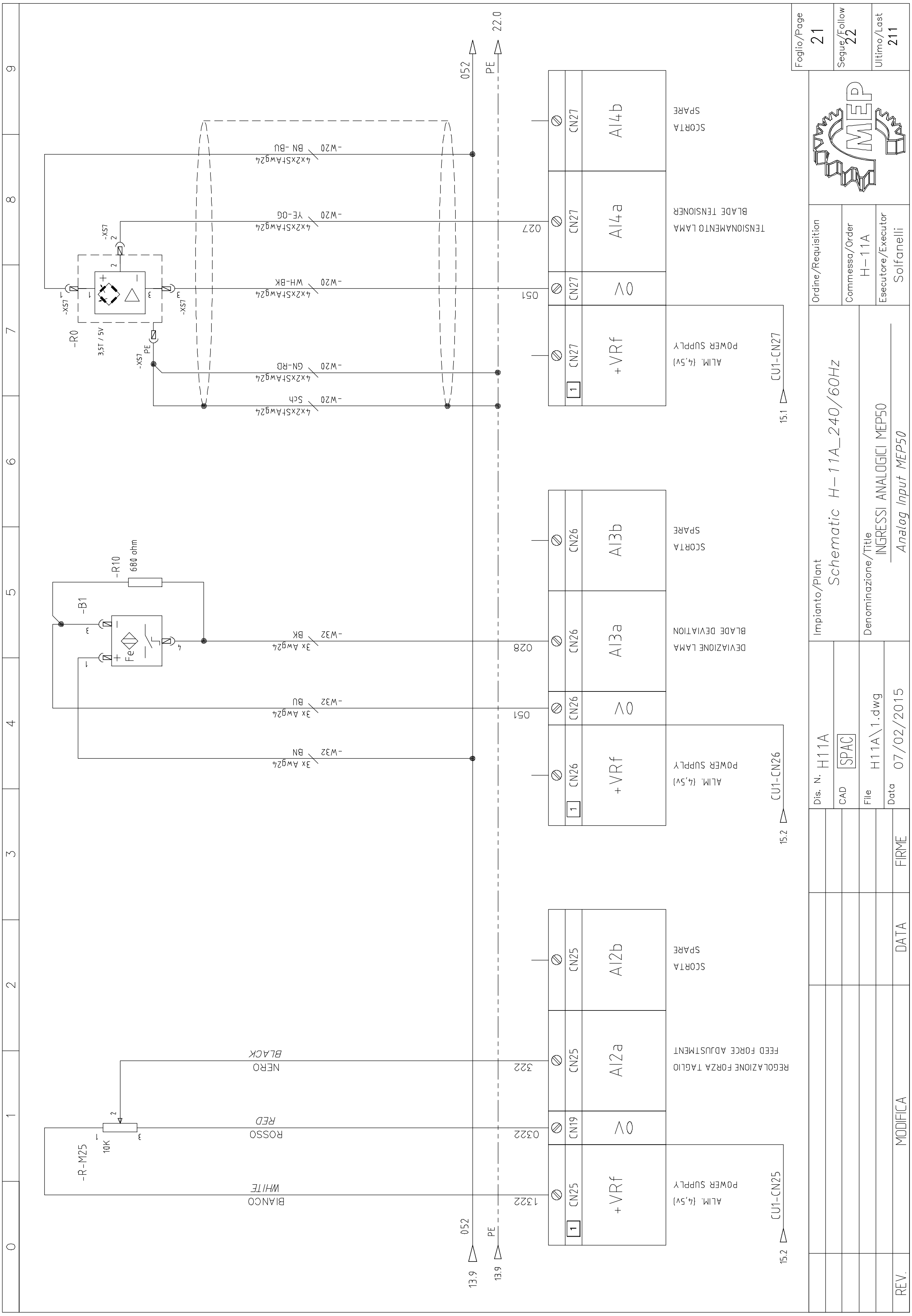
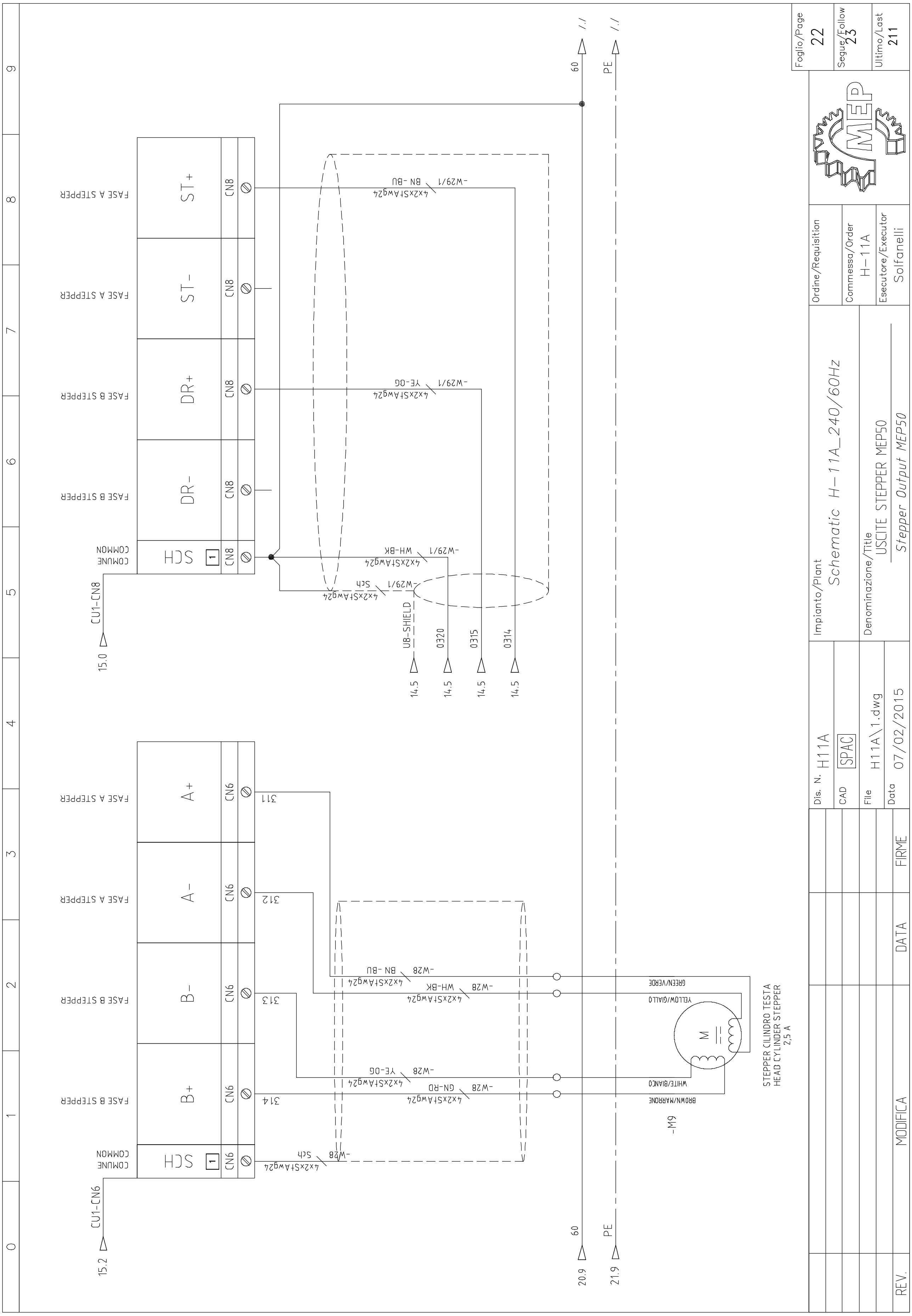
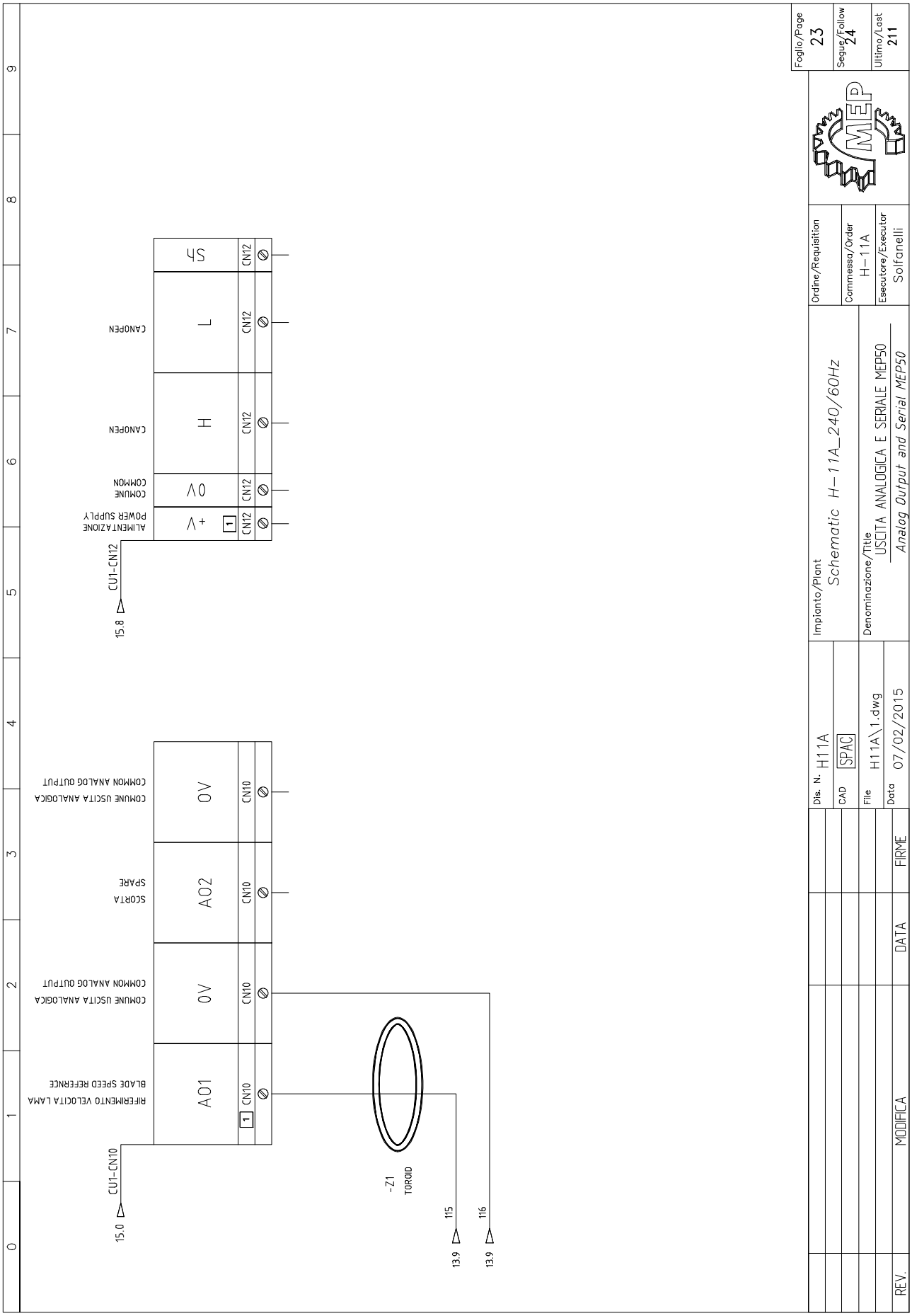
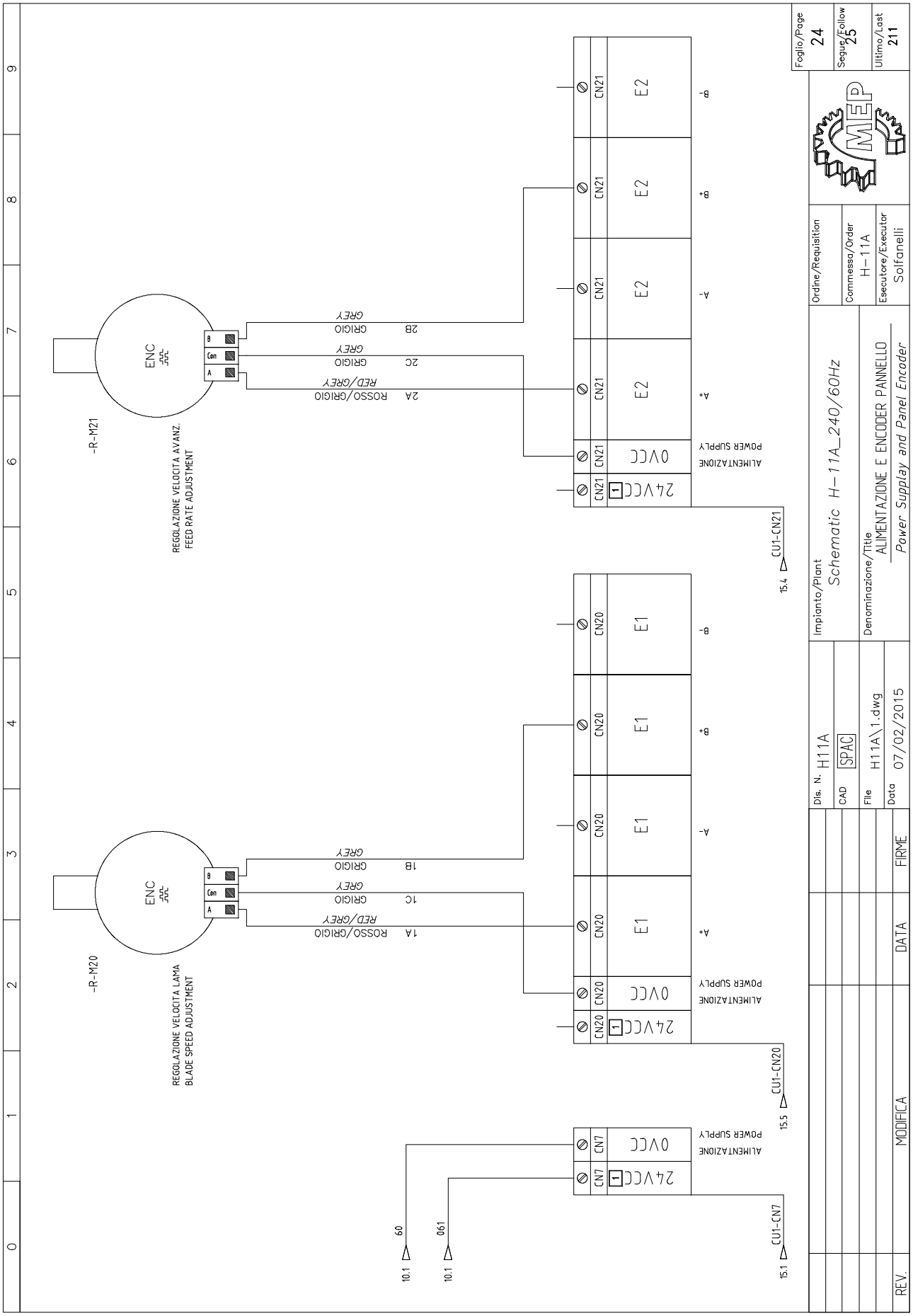
Segue/Follow 21
Ultimo/Last 211
Impianto/Plant
Schematic H-11A_240/60Hz
Denominazione/Title
INGRESSI ANALOGICI MEP50
Analog Input MEP50
Ordine/Requisition
Commessa/Order H-11A
Esecutore/Executor Solfanelli
Dis. N. H11A
CAD SPAC
File H11A\1.dwg
Data 07/02/2015
REV.
MODIFICA
DATA
FIRME
ASSORBIMENTO MOTORE LAMA
BLADE MOTOR ABSORPTION
POSIZIONE TESTA
HEAD POSITION
RIFERIMENTO INGRESSO ANALOG.
REFERENCE ANALOG INPUT
ALIM. POTENZIOMETRO (4,5V)
POTENTIOMETER POWER S.
CU1-CN24
CU1-CN11
+VRf
0V
AI1a
AI1b
AI0
Sh
-R5
-XR0
-W21
4x2xSfAwg24

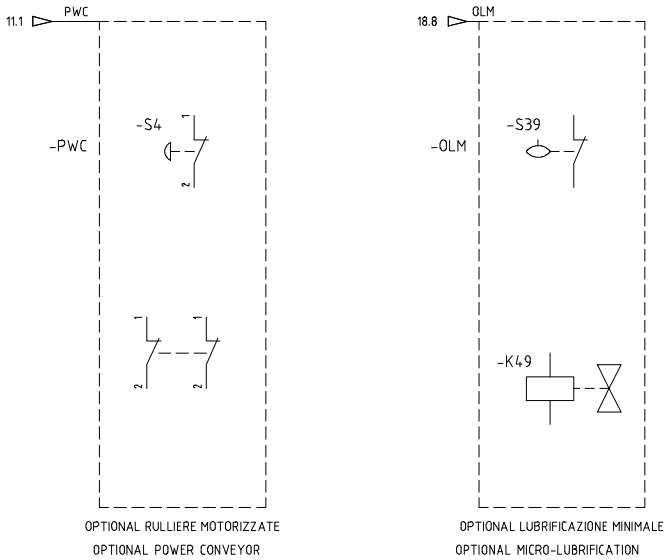

Schematic H-11A_240/60Hz
INGRESSI ANALOGICI MEP50
Analog Input MEP50
Foglio/Page 21
Segue/Follow 22
Ultimo/Last 211
Dis. N. H11A
CAD SPAC
File H11A\1.dwg
Data 07/02/2015
Commessa/Order H-11A
Esecutore/Executor Solfanelli
REGOLAZIONE FORZA TAGLIO
FEED FORCE ADJUSTMENT
DEVIAZIONE LAMA
BLADE DEVIATION
TENSIONAMENTO LAMA
BLADE TENSIONER
SCORTA
SPARE
ALIM. (4,5V)
POWER SUPPLY
MODIFICA
DATA
FIRME
REV.


Schematic H-11A_240/60Hz
USCITE STEPPER MEP50
Stepper Output MEP50
Foglio/Page 22
Segue/Follow 23
Ultimo/Last 211
Ordine/Requisition
Commessa/Order H-11A
Esecutore/Executor Solfanelli
Impianto/Plant
Denominazione/Title
Dis. N. H11A
CAD SPAC
File H11A\1.dwg
Data 07/02/2015
REV.
MODIFICA
DATA
FIRME
ST+
ST-
DR+
DR-
SCH
A+
A-
B-
B+
CN8
CN6
FASE A STEPPER
FASE B STEPPER
COMUNE
COMMON
CU1-CN8
CU1-CN6
15.0
15.2
-W29/1 BN-BU
-W29/1 YE-GG
-W29/1 WH-BK
-W29/1 Sch
4x2xSfAwg24
U8-SHIELD
0320
0315
0314
14,5
311
312
313
314
-W28 BN-BU
-W28 WH-BK
-W28 YE-GG
-W28 GN-RD
-W28 Sch
GREEN/VERDE
YELLOW/GIALLO
WHITE/BIANCO
BROWN/MARRONE
-M9
STEPPER CILINDRO TESTA
HEAD CYLINDER STEPPER
2,5 A
60
PE
20.9
21.9


Foglio/Page 23
Segue/Follow 24
Ultimo/Last 211
Ordine/Requisition
Commessa/Order H-11A
Esecutore/Executor Solfanelli
Impianto/Plant Schematic H-11A_240/60Hz
Denominazione/Title USCITA ANALOGICA E SERIALE MEP50
Analog Output and Serial MEP50
Dis. N. H11A
CAD SPAC
File H11A\1.dwg
Data 07/02/2015
REV. MODIFICA DATA FIRME
CU1-CN10
15.0
A01
0V
A02
0V
CN10
RIFERIMENTO VELOCITA LAMA
BLADE SPEED REFERENCE
COMUNE USCITA ANALOGICA
COMMON ANALOG OUTPUT
SCORTA
SPARE
COMUNE USCITA ANALOGICA
COMMON ANALOG OUTPUT
-Z1
TOROID
115
116
13.9
13.9
CU1-CN12
15.8
+V
0V
H
L
CN12
ALIMENTAZIONE
POWER SUPPLY
COMUNE
COMMON
CANOPEN
CANOPEN
5V


Foglio/Page 24
Segue/Follow 25
Ultimo/Last 211
Ordine/Requisition
Commessa/Order H-11A
Esecutore/Executor Solfanelli
Impianto/Plant Schematic H-11A_240/60Hz
Denominazione/Title ALIMENTAZIONE E ENCODER PANNELLO
Power Supplay and Panel Encoder
Dis. N. H11A
CAD SPAC
File H11A\1.dwg
Data 07/02/2015
REV. MODIFICA DATA FIRME
-R-M21
REGOLAZIONE VELOCITA AVANZ.
FEED RATE ADJUSTMENT
-R-M20
REGOLAZIONE VELOCITA LAMA
BLADE SPEED ADJUSTMENT
ENC
B
Com
A
2B GRIGIO GREY
2C GRIGIO GREY
2A ROSSO/GRIGIO RED/GREY
1B GRIGIO GREY
1C GRIGIO GREY
1A ROSSO/GRIGIO RED/GREY
ALIMENTAZIONE POWER SUPPLY
24VCC
0VCC
CN21
CN20
CN7
E1
E2
A+
A-
B+
B-
CU1-CN21
CU1-CN20
CU1-CN7
15.4
15.5
15.1
10.1
60
61

0	1	2	3	4	5	6	7	8	9



OPTIONAL RULLIERE MOTORIZZATE
OPTIONAL POWER CONVEYOR

OPTIONAL LUBRIFICAZIONE MINIMALE
OPTIONAL MICRO-LUBRIFICATION

REV.	MODIFICA	DATA	FIRME

Dis. N. H11A
CAD SPAC
File H11A\1.dwg
Data 07/02/2015

Impianto/Plant
Schematic H-11A_240/60Hz

Denominazione/Title
OPTIONAL
Optional

Ordine/Requisition

Commessa/Order
H-11A

Esecutore/Executor
Solfanelli

MEP

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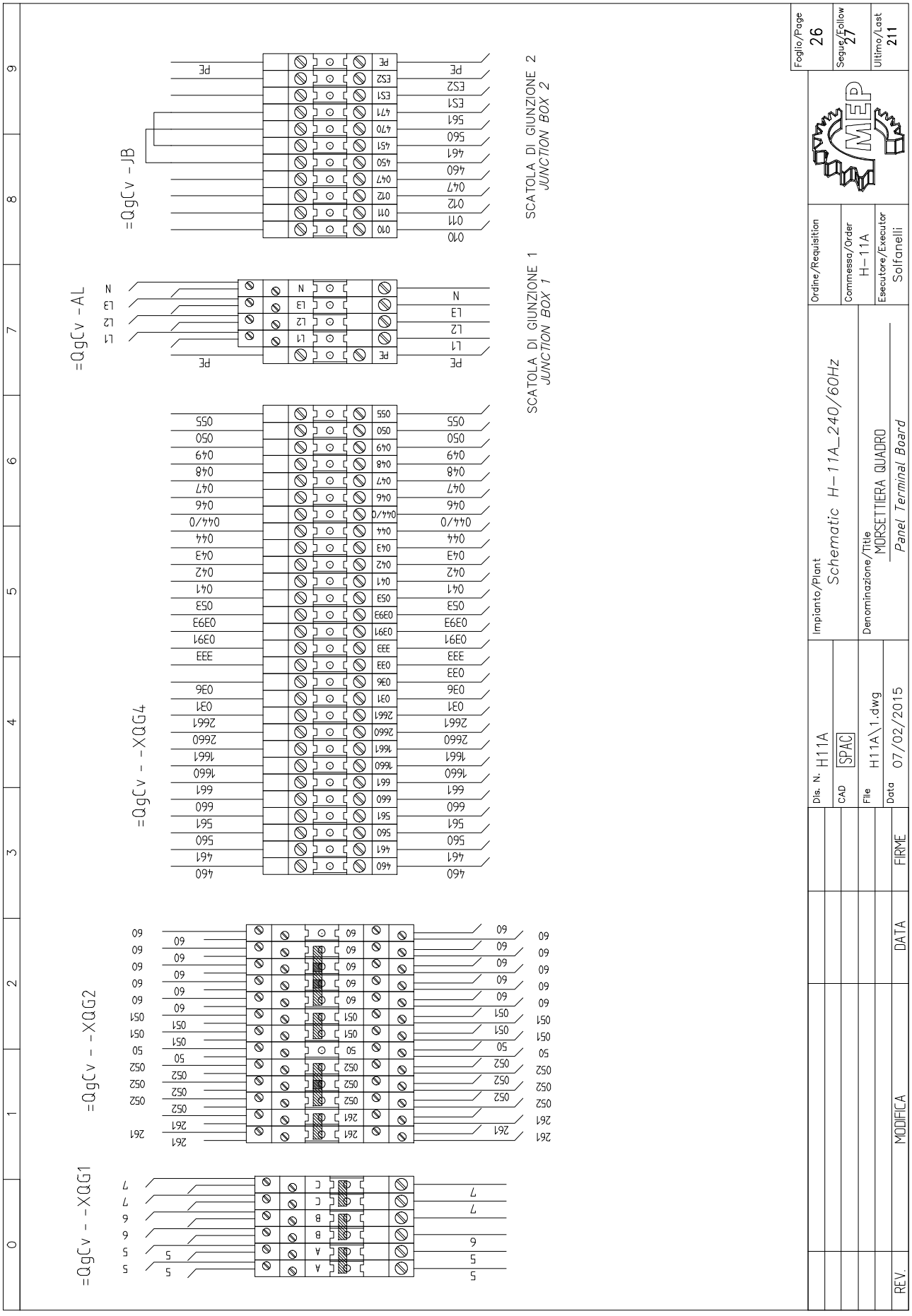
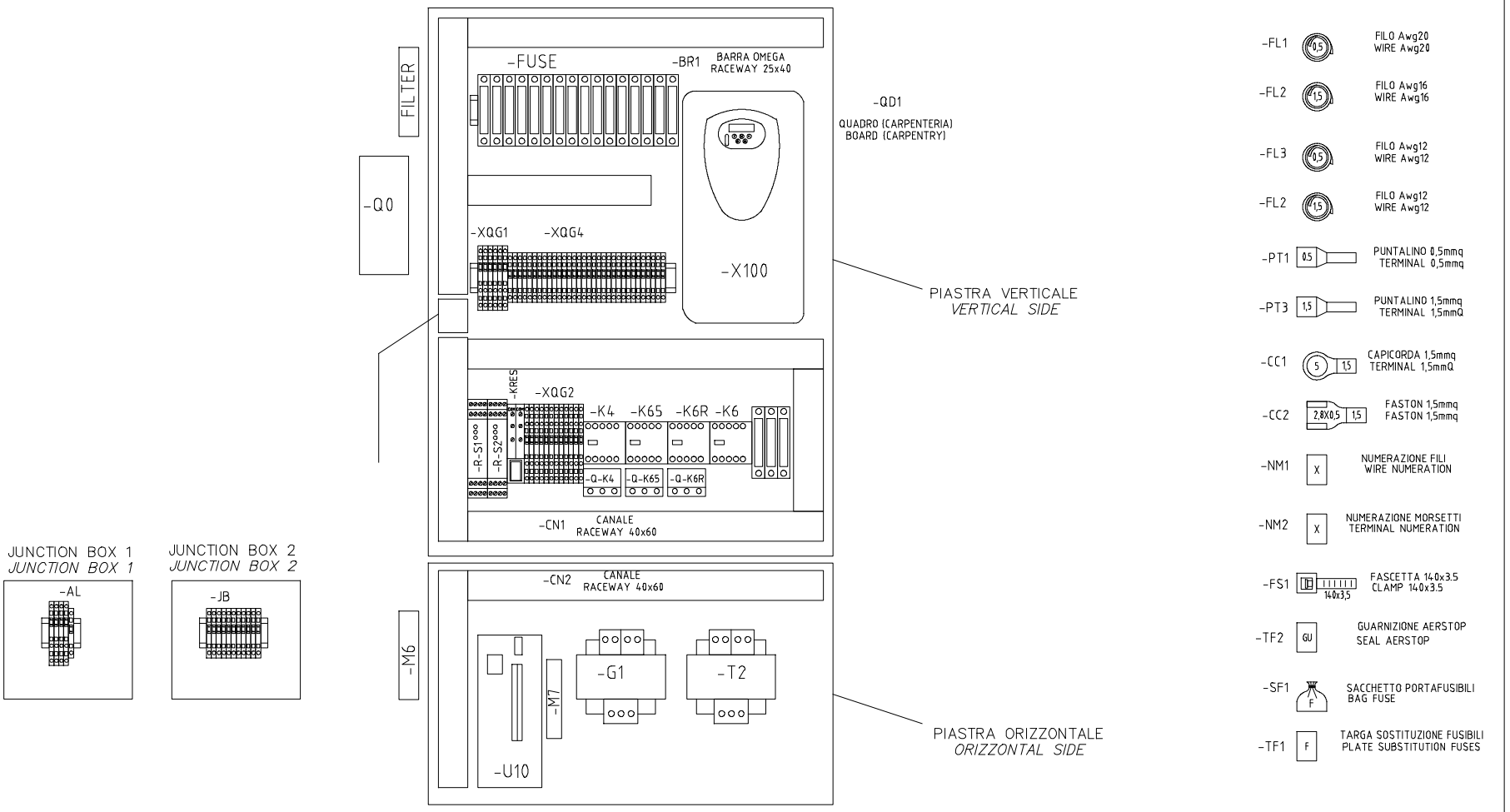

=QgCv - -XQG1
=QgCv - -XQG2
=QgCv - -XQG4
=QgCv -AL
=QgCv -JB
SCATOLA DI GIUNZIONE 1
JUNCTION BOX 1
SCATOLA DI GIUNZIONE 2
JUNCTION BOX 2
Foglio/Page 26
Segue/Follow 27
Ultimo/Last 211
Ordine/Requisition
Commessa/Order H-11A
Esecutore/Executor Solfanelli
Impianto/Plant Schematic H-11A_240/60Hz
Denominazione/Title MORSETTIERA QUADRO
Panel Terminal Board
Dis. N. H11A
CAD SPAC
File H11A\1.dwg
Data 07/02/2015
REV.
MODIFICA
DATA
FIRME



REV.	MODIFICA	DATA	FIRME

Dis. N. H11A
CAD SPAC
File H11A\1.dwg
Data 07/02/2015

Impianto/Plant
Schematic H-11A_240/60Hz

Denominazione/Title
INTERNO QUADRO
Board Inside

Ordine/Requisition

Commessa/Order
H-11A

Esecutore/Executor
Solfanelli

Foglio/Page
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Segue/Follow
28

Ultimo/Last
211

0	1	2	3	4	5	6	7	8	9

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 -AL	5/2	— ○	1	BK1	-W1 022.1964	5.00Mt		BK1	1	1	5/4	=QgCv -Q0
=QgCv -AL	5/2	— ○	2	BK2	General supply cable			BK2	2	3	5/4	=QgCv -Q0
=QgCv -AL	5/3	— ○	3	BK3				BK3	3	5	5/4	=QgCv -Q0
=QgCv -AL	5/3	— ○	PE	GNYE				GNYE	PE	○ 5_1	5/4	=QgCv -XQGPE
		—		Sch				Sch				
=QgCv -Q-K65	6/7	T1	018	BK1	-W11 022.1981	4.00Mt		BK1	018	U	6/7	=BmMep -M20
=QgCv -Q-K65	6/8	T2	019	BK2	Hydraulic motor cable			BK2	019	V	6/8	=BmMep -M20
=QgCv -Q-K65	6/8	T3	020	BK3				BK3	020	W	6/8	=BmMep -M20
=QgCv -XQGPE	6/8	5_6 ○	PE	GNYE				GNYE	PE	PE	6/8	=BmMep -M20
				BK				BK				
=QgCv -XQG4	19/2	041 ○	041	BN	-W117 022.1906	1,5Mt		BN	041	CN4	19/2	OUT08
				GY	Output controller cable			GY				
=QgCv -XQG4	18/4	053 ○	053	BU				BU	053	CN2	18/4	OUT03
=QgCv -XQG4	19/6	043 ○	043	GN				GN	043	CN5	19/6	OUT12
=QgCv -XQG4	19/7	044 ○	044	YE				YE	044	CN5	19/7	OUT13
=QgCv -XQG4	19/2	042 ○	042	WH				WH	042	CN4	19/2	OUT09
=QgCv -XQG4	19/5	044/0 ○	044	VT				VT	044	CN5	19/7	OUT13
=QgCv -R- S1	11/7	CS AR-24	1261	RD				RD	1261	CN2	18/2	24VDC
=QgCv -XQG4	18/8	050 ○	050	OG				OG	050	CN3	18/8	OUT07
				RD-BU				RD-BU				
=QgCv -XQG4	19/4	047 ○	047	WH-BU				WH-BU	047	CN4	19/4	OUT11
				Sch				Sch				

REV.	MODIFICA	DATA	FIRME

Dis. N.	H11A
CAD	SPAC
File	H11A\1.dwg
Data	07/02/2015

Impianto/Plant	Schematic H-11A_240/60Hz
Denominazione/Title	RIASSUNTIVO CAVI Cable summary
Ordine/Requisition	
Commessa/Order	H-11A
Esecutore/Executor	Solfanelli

MEP

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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
			049	BK				BK	049			
=QgCv -XQG4	18/7	049 ○	055	BN				BN	055	CN3	18/7	OUT05
=QgCv -XQG4	18/7	055 ○	360	GY				GY	360	CN3	18/7	OUT06
=QgCv -XQG4	11/1	360 ○	352	BU				BU	352	2	11/1	
=QgCv -F19	19/8			GN				GN		CN5	19/8	OUT15
			048	YE				YE	048			
=QgCv -XQG4	18/6	048 ○	051	WH	-W117/1 022.1906	1,5Mt		WH	051	CN3	18/6	OUT04
=QgCv -XQG4	17/3	051 ○	0360	VT	Output controller cable			VT	0360	○ 051	16/6	=QgCv -XQG2
=QgCv -XQG4	11/2	0360 ○	052	RD				RD	052	1	11/1	
=QgCv -XQG2	13/7	052_2 ○	351	OG				OG	351	○ 052	16/3	=QgCv -XQG2
=QgCv -F18	19/7			RD-BU				RD-BU		CN5	19/7	OUT14
				WH-BU				WH-BU				
				Sch				Sch				
			036	BK				BK	036			
=QgCv -XQG4	16/7	036 ○	0393	BN				BN	0393	CN15	16/7	IN06
=QgCv -XQG4	16/6	0393 ○	031	GY				GY	031	CN15	16/6	IN05
=QgCv -XQG4	16/2	031 ○	051	BU				BU	051	CN15	16/2	IN00
=QgCv -XQG4	17/3	051 ○	333	GN				GN	333	051	17/9	
=QgCv -XQG4	17/4	333 ○		YE				YE		CN18	17/4	IN11
			0391	WH	-W118 022.1906	1,5Mt		WH	0391			
=QgCv -XQG4	17/4	0391 ○		VT	Input-output cable			VT		CN18	17/4	IN10
			052	RD				RD	052			
=QgCv -XQG4	17/3	052 ○	033	OG				OG	033	CN17	17/1	24VCC
=QgCv -XQG4	16/3	033 ○		RD-BU				RD-BU		CN15	16/3	IN01
				WH-BU				WH-BU				
				Sch				Sch				

REV.	MODIFICA	DATA	FIRME

Dis. N. H11A
CAD SPAC
File H11A\1.dwg
Data 07/02/2015

Impianto/Plant: *Schematic H-11A_240/60Hz*
Denominazione/Title: RIASSUNTIVO CAVI
Cable Summary

Ordine/Requisition:
Commessa/Order: H-11A
Esecutore/Executor: Solfanelli

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Segue/Follow: 30
Ultimo/Last: 211

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
			663	BK				BK	663			
=QgCv -R-S2	12/6	CS AR-24	461	BN				BN	461	3	12/4	=QgCv -S3
=QgCv -XQG4	11/1	461 ○	460	GY				GY	460			
=QgCv -S4	11/1	2	60	BU				BU	60	○ 460	11/1	=QgCv -XQG4
=QgCv -XQG2	10/1	60_1 ○	563	GN				GN	563	1	11/1	=QgCv -S4
=QgCv -S3	11/4	3	564	YE				YE	564	CS AR-24	11/6	=QgCv -R- S1
=QgCv -S3	11/4	4	664	WH	-W119 022.1906	3.0Mt		WH	664	CS AR-24	11/6	=QgCv -R- S1
=QgCv -R-S2	12/6	CS AR-24	766	VT	Junction cable			VT	766	4	12/4	=QgCv -S3
=QgCv -R-S2	12/6	CS AR-24	261	RD				RD	261	4	12/6	=BmCv -S3
=QgCv -XQG2	10/3	_1 ○		OG				OG				
				RD-BU				RD-BU				
			02	WH-BU				WH-BU	02			
=QgCv -R- S1	11/9	CS AR-24		Sch				Sch		CN15	16/4	IN02
			116	GN				GN	116			
=QgCv -X100	13/2	ACM	115	BN				BN	115	CN10	23/2	0V
=QgCv -X100	13/2	AVI	57	BK				BK	57	CN10	23/1	AO1
=QgCv -X100	13/1	MI1	553	BU				BU	553	CN2	18/1	OUT00
=QgCv -X100	13/2	MI2	052	RD	-W120 022.1905	2.50Mt		RD	052	CN2	18/1	24VDC
=QgCv -XQG2	13/7	052_2 ○		YE	Auxiliary inverter cable			YE		KEYPAD	13/2	=QgCv -X100
			117	WH				WH	117			
=QgCv -X100	13/2	KEYPAD	038	OG				OG	038	CN24	20/7	AI1a
=QgCv -X100	13/3	M01	PE	Sch				Sch	PE	CN15	16/5	IN04
=QgCv -XQGPE	5/4	5_1 ○										
			333	BK				BK	333			
=QgCv -XQG4	17/4	333 ○	052	BU	-W121 022.0398	10.00Mt		BU	052		17/4	=BmMep -S47
=QgCv -XQG4	17/3	052 ○		BN	Zero setting shuttle limit switch			BN			17/4	=BmMep -S47
				WH				WH				
			036	BK				BK	036			
=QgCv -XQG4	16/7	036 ○	052	BK2	-W122 022.1980	5.00Mt		BK2	052		16/7	
=QgCv -XQG2	16/7	052 ○			Minimal lubrification optional cable						16/7	
			043	BK				BK	043			
=QgCv -XQG4	19/6	043 ○	60	BK2	-W123 022.1980	3.00Mt		BK2	60	2	19/6	=QgCv -X012
=QgCv -XQG2	19/8	_1 ○			SV head up cable					1	19/6	=QgCv -X012

REV.	MODIFICA	DATA	FIRME

Dis. N. H11A
CAD SPAC
File H11A\1.dwg
Data 07/02/2015

Impianto/Plant: Schematic H-11A_240/60Hz
Denominazione/Title: RIASSUNTIVO CAVI / Cable Summary
Ordine/Requisition
Commessa/Order: H-11A
Esecutore/Executor: Solfanelli

MEP

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Segue/Follow: 31
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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
=QgCv -XQG4	19/7	044	044	BK	-W124 022.1980	3.00Mt		BK	044	1	19/7	=QgCv -X014
=QgCv -XQG2	19/3	1	60	BK2	SV head down cable			BK2	60	2	19/7	=QgCv -X014
=QgCv -XQG4	18/8	050	050	BK	-W125 022.1980	4.00Mt		BK	050		18/8	
=QgCv -XQG2	10/3	60_2	60	BK2	Minimal lubrification cable			BK2	60		18/8	
=QgCv -X100	6/2	U	124	BK1				BK1	124	U	6/1	=BmMep -M1
=QgCv -X100	6/2	V	126	BK2				BK2	126	V	6/1	=BmMep -M1
=QgCv -X100	6/3	W	128	BK3	-W2 022.1964	5.00Mt		BK3	128	W	6/1	=BmMep -M1
=QgCv -XQGPE	6/2	5_2	PE	GNYE	Blade motor cable			GNYE	PE	PE	6/1	=BmMep -M1
=QgCv -X100	6/2	PE	PE	Sch				Sch	PE	PE	6/1	=BmMep -M1
=QgCv -XQGPE	5/4	5_1	PE	GN-RD				GN-RD	PE	PE	21/7	=QgMep -XS7
=QgCv -XQG2	13/7	052_2	052	BN -BU				BN -BU	052	1	21/7	=QgMep -XS7
0V	21/7	CN27	051	WH-BK	-W20 022..1905	7.00Mt		WH-BK	051	3	21/7	=QgMep -XS7
AI4a	21/8	CN27	027	YE-OG	Strain gauge cable			YE-OG	027	2	21/8	=QgMep -XS7
=QgCv -XQGPE	5/4	5_1	PE	Sch				Sch	PE	PE	21/7	=QgMep -XS7
=QgMep -XR0	20/3	4	sh	GN-RD				GN-RD	sh	CN11	20/4	Sh
=QgMep -XR0	20/2	1	023	BN -BU				BN -BU	023	CN11	20/1	+VRf
=QgMep -XR0	20/2	3	025	WH-BK	-W21 022..1905	3.00Mt		WH-BK	025	CN11	20/2	0V
=QgMep -XR0	20/2	2	024	YE-OG	Head potentiometer cable			YE-OG	024	CN11	20/3	AI0
=QgMep -XR0	20/3	4	sh	Sch				Sch	sh	CN11	20/4	Sh
=BmMep -S0	16/2	1	052	BN				BN	052			
=QgCv -XQG4	16/2	031	031	BK	-W27 022.0422	10.00Mt		BK	031	4	16/2	=BmMep -S0
=BmMep -S0	16/2	3	051	BU	Blade proximity cable			BU	051			
				WH				WH				
=SaCv	22/1		314	GN-RD				GN-RD	314	CN6	22/1	B+
=SaCv	22/2		311	BN -BU				BN -BU	311	CN6	22/3	A+
=SaCv	22/2		312	WH-BK	-W28 022..1905	3.00Mt		WH-BK	312	CN6	22/3	A-
=SaCv	22/1		313	YE-OG	Stepper head cable			YE-OG	313	CN6	22/2	B-
SCH	22/1	CN6	SCR	Sch				Sch	SCR			

REV.	MODIFICA	DATA	FIRME

Dis. N. H11A
CAD SPAC
File H11A\1.dwg
Data 07/02/2015

Impianto/Plant: *Schematic H-11A_240/60Hz*
Denominazione/Title: RIASSUNTIVO CAVI
Cable Summary

Ordine/Requisition:
Commessa/Order: H-11A
Esecutore/Executor: Solfanelli

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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
=QgCv -U10	9/3	A1	221	BK				BK	221	BIA/GIA	9/3	=BmMep -M8
=QgCv -U10	9/3	A1	222	BK1				BK1	222	GIALLO	9/3	=BmMep -M8
=QgCv -U10	9/3	B1	223	BK2	-W29 022.1979	5.00Mt		BK2	223	ARANCIO	9/4	=BmMep -M8
=QgCv -U10	9/3	B2	224	BK3	Power stepper motor cable			BK3	224	BIA/ARA	9/4	=BmMep -M8
=QgCv -XQGPE	9/2	5_9 ○	PE	GNYE				GNYE	PE		9/4	=BmMep -M8
				GN-RD				GN-RD				
=QgCv	14/2	14	0314	BN -BU				BN -BU	0314	CN8	22/8	ST+
=QgCv	14/2	20	0320	WH-BK	-W29/1 022..1905	2.00Mt		WH-BK	0320	CN8	22/5	SCH
=QgCv	14/2	15	0315	YE-OG	Drive step motor cable			YE-OG	0315	CN8	22/7	DR+
SCH	22/5	CN8	U8-SHIELD	Sch				Sch	U8-SHIELD			
				GN-RD				GN-RD				
=QgCv -JB	14/5	010 ○	010	BN -BU				BN -BU	010	10	14/2	=QgCv
=QgCv -JB	14/5	011 ○	011	WH-BK	-W29/2 022..1905	2.00Mt		WH-BK	011	11	14/2	=QgCv
=QgCv -JB	14/5	012 ○	012	YE-OG	Powered conveyor cable			YE-OG	012	12	14/2	=QgCv
=QgCv -JB	14/5	PE ○	13	Sch				Sch	13			
24VDC	18/4	CN2	261	BK	-W30 022.1980	4,00Mt		BK	261	3	18/5	=QgMep -S23
=QgCv -K6	18/5	21	1055	BK2	Reverse run chip-conveyour cable			BK2	1055	4	18/5	=QgMep -S23
=QgCv -XQG2	13/7	052_2 ○	052	BN				BN	052	1	21/4	=BmMep -B1
AI3a	21/5	CN26	028	BK	-W32 022.0355	5.00Mt		BK	028	4	21/5	=BmMep -B1
0V	21/4	CN26	051	BU	Blade deviation sensor cable			BU	051	3	21/5	=BmMep -B1
=QgCv -XQG4	18/4	053 ○	053	BK	-W37 022.1980	5.00Mt		BK	053		18/4	=BmMep -H3
=QgCv -XQG2	10/3	60_2 ○	60	BK2	Flashing cable			BK2	60		18/4	=BmMep -H3
=QgCv -Q-K4	6/4	T1	015	BK1				BK1	015	U	6/4	=BmMep -M2
=QgCv -Q-K4	6/4	T2	016	BK2	-W4 022.1981	5.00Mt		BK2	016	V	6/4	=BmMep -M2
=QgCv -Q-K4	6/4	T3	017	BK3	Coolant pump cable			BK3	017	W	6/4	=BmMep -M2
=QgCv -XQGPE	6/5	5_4 ○	PE	GNYE				GNYE	PE	PE	6/4	=BmMep -M2

REV.	MODIFICA	DATA	FIRME

Dis. N. H11A
CAD SPAC
File H11A\1.dwg
Data 07/02/2015

Impianto/Plant: Schematic H-11A_240/60Hz
Denominazione/Title: RIASSUNTIVO CAVI / Cable Summary
Ordine/Requisition:
Commessa/Order: H-11A
Esecutore/Executor: Solfanelli

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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
=QgCv -XQG2	10/3	60_2	60	GN-RD			GN-RD	60	11	12/0	=BmMep -S1
=QgCv -XQG4	12/1	661	661	BN -BU			BN -BU	661	22	12/1	-S1
=QgCv -XQG4	12/0	660	660	WH-BK	-W56 022..1905	5.00Mt	WH-BK	660	12	12/0	=BmMep -S1
=QgCv -XQG2	10/3	_1	261	YE-OG	FC right guard cable		YE-OG	261	21	12/1	-S1
				Sch			Sch				
=QgCv -XQG4	12/1	1660	1660	GN-RD			GN-RD	1660	12	12/0	=BmMep -S2
=QgCv -XQG4	12/1	661	661	BN -BU			BN -BU	661	21	12/1	-S2
=QgCv -XQG4	12/0	660	660	WH-BK	-W57 022..1905	5.00Mt	WH-BK	660	11	12/0	=BmMep -S2
=QgCv -XQG4	12/1	1661	1661	YE-OG	FC left guard cable		YE-OG	1661	22	12/1	-S2
				Sch			Sch				
=QgCv -XQG4	12/1	1660	1660	GN-RD			GN-RD	1660	22	12/2	-S3
=QgCv -XQG4	12/2	2661	2661	BN -BU			BN -BU	2661	11	12/2	=BmMep -S8
=QgCv -XQG4	12/2	2660	2660	WH-BK	-W58 022..1905	5.00Mt	WH-BK	2660	21	12/2	-S3
=QgCv -XQG4	12/1	1661	1661	YE-OG	FC blade tens. guard cable		YE-OG	1661	12	12/2	=BmMep -S8
				Sch			Sch				
=QgCv -R-S2	12/5	CS AR-24	3660	GN-RD			GN-RD	3660	21	12/2	-S1
=QgCv -XQG4	12/2	2661	2661	BN -BU			BN -BU	2661	12	12/2	=BmMep -S9
=QgCv -XQG4	12/2	2660	2660	WH-BK	-W58/2 022..1905	5.00Mt	WH-BK	2660	22	12/2	-S1
=QgCv -R-S2	12/5	CS AR-24	3661	YE-OG	FC shuttle guard cable		YE-OG	3661	11	12/2	=BmMep -S9
				Sch			Sch				
				BN			BN				
=QgCv -XQG4	17/4	0391	0391	BK	-W59 022.0422	5.00Mt	BK	0391		17/4	=BmMep -S10
=QgCv -XQG4	17/3	052	052	BU	Bar in infeed vice limit switch		BU	052		17/4	=BmMep -S10
				WH			WH				
=QgCv -XQG4	19/5	044/0	54	BK	-W65 022.1980	5.00Mt	BK	54	1	19/5	=QgCv -X40
=QgCv -XQG2	19/3	_1	60	BK2	S.V Block head		BK2	60	2	19/5	=QgCv -X40

REV.	MODIFICA	DATA	FIRME

Dis. N. H11A
CAD SPAC
File H11A\1.dwg
Data 07/02/2015

Impianto/Plant: Schematic H-11A_240/60Hz
Denominazione/Title: RIASSUNTIVO CAVI / Cable Summary

Ordine/Requisition:
Commessa/Order: H-11A
Esecutore/Executor: Solfanelli

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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
=QgCv -XFET	7/3	1	1021	BK1				BK1	1021	T1	7/3	=QgCv -Q-K6R
=QgCv -XFET	7/3	2	1022	BK2	-W7 022.1981	5.00Mt		BK2	1022	T2	7/3	=QgCv -Q-K6R
=QgCv -XFET	7/3	3	1023	BK3	Chip conveyour cable			BK3	1023	T3	7/3	=QgCv -Q-K6R
=QgCv -XFET	7/3	PE	7	GNYE				GNYE	7	5_8	7/4	=QgCv -XQGPE
=QgEtMep XMET	7/3	1	1024	BK1				BK1	1024	U	7/3	=QgEtMep -M5
=QgEtMep XMET	7/3	2	1025	BK2	-W7/1 022.1981	2.00Mt		BK2	1025	V	7/3	=QgEtMep -M5
=QgEtMep XMET	7/3	3	1026	BK3	Chip conveyour cable			BK3	1026	W	7/3	=QgEtMep -M5
=QgEtMep XMET	7/3	PE	7	GNYE				GNYE	7	PE	7/3	=QgEtMep -M5
=QgCv -XQG4	19/2	042	042	BK	-W90 022.1980	3.00Mt		BK	042	1	19/2	=QgCv -X009
=QgCv -XQG2	10/3	60_2	60	BK2	SV cutting vice closing cable			BK2	60	2	19/3	=QgCv -X009
=QgCv -XQG4	19/4	047	047	BK	-W91 022.1980	3.00Mt		BK	047	1	19/4	=QgCv -X011
=QgCv -XQG2	19/3	_1	60	BK2	SV shuttle vice closing cable			BK2	60	2	19/4	=QgCv -X011
=QgCv -XQG4	19/2	041	041	BK	-W92 022.1980	3.00Mt		BK	041	2	19/2	=QgCv -X008
=QgCv -XQG2	19/3	_1	60	BK2	SV cutting vice opening cable			BK2	60	1	19/1	=QgCv -X008
=QgCv -XQG4	19/3	046	046	BK	-W93 022.1980	3.00Mt		BK	046	2	19/3	=QgCv -X010
=QgCv -XQG2	19/3	_1	60	BK2	SV shuttle vice opening cable			BK2	60	1	19/3	=QgCv -X010
=QgCv -F19	19/8		1352	BK	-W95 022.1980	5.00Mt		BK	1352		19/8	=BmMep -H2
=QgCv -XQG2	19/8	_1	60	BK2	Work zone lamp cable			BK2	60		19/8	=BmMep -H2
=QgCv -XTL	19/7	3	1351	BK	-W96 022.1980	5.00Mt		BK	1351		19/7	=QgCv -F18
=QgCv -XTL	19/7	1	60	BK2	Laser cable			BK2	60	_1	19/8	=QgCv -XQG2

REV.	MODIFICA	DATA	FIRME

Dis. N. H11A
CAD SPAC
File H11A\1.dwg
Data 07/02/2015

Impianto/Plant: Schematic H-11A_240/60Hz
Denominazione/Title: RIASSUNTIVO CAVI / Cable Summary
Ordine/Requisition:
Commessa/Order: H-11A
Esecutore/Executor: Solfanelli

MEP

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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
=QgCv -XQG4	11/1	460	560	BK				BK	560	450	11/1	=QgCv -JB
=QgCv -XQG4	11/1	461	561	BN				BN	561	451	11/1	=QgCv -JB
=QgCv -XQG4	11/1	360	360	GY				GY	360	ES1	11/1	=QgCv -JB
=QgCv -XQG2	19/8	1	60	BU				BU	60	60	19/9	=QgCv -JB
=QgCv -XQG4	11/2	560	560	GN				GN	560	470	11/1	=QgCv -JB
=QgCv -XQG4	11/2	561	561	YE				YE	561	471	11/1	=QgCv -JB
=QgCv -XQG4	19/4	047	471	WH	-WS12 022.1906	4.00Mt		WH	471	047	19/4	=QgCv -JB
=QgCv -XQG4	11/2	0360	0360	VT	P.conveyor emergency			VT	0360	ES2	11/2	=QgCv -JB
				RD				RD				
				OG				OG				
				RD-BU				RD-BU				
				WH-BU				WH-BU				
				Sch				Sch				

REV.	MODIFICA	DATA	FIRME

Dis. N. H11A
CAD SPAC
File H11A\1.dwg
Data 07/02/2015

Impianto/Plant: *Schematic H-11A_240/60Hz*
Denominazione/Title: RIASSUNTIVO CAVI
Cable Summary

Ordine/Requisition:
Commessa/Order: H-11A
Esecutore/Executor: Solfanelli

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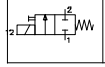
Nome/ Name	Mep_Italy_code	Mep_China_code	Description EN	Quadro/ Board	Fg/Sh	Q.ta/Q.ty	Costruttore/Supplier
-OLM	090.1601	A000069	Spray mist oil system for Shark	=BmLmCv	25	1	Mep
-K27		E001002	Hydraulic electrovalve 4/3 close center CETOP3 24Vdc	=BmMep	19	1	Mep
-K29		E001002	Hydraulic electrovalve 4/3 close center CETOP3 24Vdc	=BmMep	19	1	Mep
-K31		E001002	Hydraulic electrovalve 4/3 close center CETOP3 24Vdc	=BmMep	19	1	Mep
-K40		H000026	Hydraulic electrovalve 2/2 NC 1/4"G 24Vdc	=BmMep	19	1	Mep
-M1		P00002-240	Motor 4.0KW, 133/240V, 25,1/14,5A	=BmMep	6	1	Mep
-M2		P00003-240	Electropump 120W, V=2800rpm, 240V/60Hz	=BmMep	6	1	Mep
-M5		P000008	Motor 0,37KW, 240/480V, 1,77/0,89A	=QgEt-Mep	7	1	Mep
-M20		P000004-240	Motor oil unit 1.3KW, 240/480V, 5,0/2,5A	=BmMep	6	1	Mep
-M8	019.3408	P000001	Stepper Motor 21Nm 13A 1,8° FL110STH150-1304A-H-1	=BmMep	9	1	FULLING
-M9	019.3555	P000007	Stepper motor 1,9Nmt 2,8A 1,8°	=BmMep	22	1	FULLING
-XEV		E000400	Fixed connector ILME (CK03VS + CKF04) 5 poles	=BmMep		1	ILME
-XEV1		E000399	Mobile connector ILME (CK03VS + CKM04) 5 poles	=BmMep		1	ILME
-S0		E000013	Proximity PNP (long) with connector M12	=BmMep	16	1	Mep
-S52		E000013	Proximity PNP (long) with connector M12	=BmMep	16	1	Mep
-B1		E000015	Inductive sensor 0-16mA / 1-2,5mm	=BmMep	21	1	Mep
-S10		E000004	Limit Switch with roll 1NO+1NC	=BmMep	17	1	Mep
-S47		E000004	Limit Switch with roll 1NO+1NC	=BmMep	17	1	Mep
-S1		E000018	Limit Switch with fork 2NC	=BmMep	12	1	EATON
-S2		E000018	Limit Switch with fork 2NC	=BmMep	12	1	EATON
-S8		E000018	Limit Switch with fork 2NC	=BmMep	12	1	EATON
-S9		E000018	Limit Switch with fork 2NC	=BmMep	12	1	EATON
-V1		E000011	Laser Line Sign	=BmMep	19	1	Mep
-R5		E000003	Linear potentiometer 500mm	=BmMep	20	1	NOVO-TECNIK
-H3		E000012	Flashing 24Vac x SH NC	=BmMep	18	1	Mep
-H2		E000010	Led Lamp 24Vcc	=BmMep	19	1	Mep
-Q0		E003053-240	Disconnect switch three-poles 50A	=QgCv	5	1	Mep
-QD1		A000048	Carpentry general electric panel	=QgCv	27	1	Mep
-R10		E001000	Resistor 1W 680ohm	=QgCv	21	1	RS
-X100		E000014-240	Variable frequency drive DELTA 5.5KW,200-240V	=QgCv	6		DELTA
-Z1		E002903	Ferrites Toroids N30 r40	=QgCv	23	1	RS
-R-M20	010.3749	E003749	Anthracite Knob with HydMech Icon	=QgCv	24	1	Mep
-R-M21	010.3749	E003749	Anthracite Knob with HydMech Icon	=QgCv	24	1	Mep
-R-M25	010.3753	E003753	Silver Knob with HydMech Icon	=QgCv	21	1	Mep
-M7		M000080	Support for driver fan cooler	=QgCv	10	1	Mep
-M6		E005220	Cover for fan cooler 120x120	=QgCv	10	1	Mep
-M7		E005221	Cover for fan cooler 80x80	=QgCv	10	1	Mep
-M6		E005220	Fan cooling 120x120 24Vdc	=QgCv	10	1	Mep
-M7		E005221	Fan cooling 80x80 - 24Vdc	=QgCv	10	1	Mep
-FS1		E000226	Plastic clamp 140x3,5	=QgCv	27	1	Mep
-R-M25		E001816	Potentiometer 10K single turn	=QgCv	21	1	Mep
-FL1		E000133	Single wire AWG20 CSA (0.5mmq)	=QgCv	27	1	Mep
-FL2		E000134	Single wire AWG16 CSA (1.5mmq)	=QgCv	27	1	Mep
-XFET		E004001	Fixed connector ILME (CK03VS + CKF03) 4 poles	=QgCv		1	ILME
-NM1		E000290	Cable maker and wire	=QgCv	27	1	Mep
-NM2		E000290	Cable maker and wire	=QgCv	27	1	Mep
-CC1		E000218	Wire Terminal Connection Red	=QgCv	27	1	Mep
-CC2		E000214	Wire Terminal Connection Red	=QgCv	27	1	Mep
-PT1		E000394	Wire Terminal Connection White	=QgCv	27	1	Mep
-PT3		E000395	Wire Terminal Connection Black	=QgCv	27	1	Mep
-XTL	022.0376		'Connettore F303N5000	=QgCv		1	Mep
-X008		E000429	Connector for solenoid valve DC	=QgCv	19	1	Mep

-X009		E000429	Connector for solenoid valve DC	=QgCv	19	1	Mep
-X010		E000429	Connector for solenoid valve DC	=QgCv	19	1	Mep
-X011		E000429	Connector for solenoid valve DC	=QgCv	19	1	Mep
-X012		E000429	Connector for solenoid valve DC	=QgCv	19	1	Mep
-X014		E000429	Connector for solenoid valve DC	=QgCv	19	1	Mep
-X40		E000429	Connector for solenoid valve DC	=QgCv	19	1	Mep
-BR1		E000222	Omega guide	=QgCv	27	1	Mep
-CN1		E000157	Cable holding plastic channel	=QgCv	27	1	Mep
-CN2		E000157	Cable holding plastic channel	=QgCv	27	1	Mep
-G1	022.0908	E000016	Switching power supply Vi 240-400-500VAC Vu 24Vcc 14A	=QgCv	8	1	Adelsy-stem
-S3		E000911	Carrier for pushbutton	=QgCv	17	1	Mep
-S4		E000911	Carrier for pushbutton	=QgCv	11	1	Mep
-S18		E000911	Carrier for pushbutton	=QgCv	17	1	Mep
-S54		E000932	Normally open contact	=QgCv	17	4	Mep
-S4		E000936	Normally close contact	=QgCv	11	3	Mep
-S3		E000937	Normally open contact	=QgCv	17	4	Mep
-S18		E000937	Normally open contact	=QgCv	17	1	Mep
-KRES		E002393	Relay 24 VCC - 2 exchange contacts + base	=QgCv	12	1	FINDER
-S4		E001245	Emergency push button	=QgCv	11	1	Mep
-R-M20	022.1322	E001322	Panel encoder Mep 50	=QgCv	24	1	Mep
-R-M21	022.1322	E001322	Panel encoder Mep 50	=QgCv	24	1	Mep
-U10	022.1330	E001230	Driver for step motor (60VAC.10A) + modbus	=QgCv	9	1	SHS
-S18		E001405	Black push button	=QgCv	17	1	Mep
-S3		E001408	Blue push button	=QgCv	17	1	Mep
-T2		E000020-240	Transformer UL/CSA 500VA, Vin 0-240-480/ Vout 0-60,0-220V	=QgCv	8	1	Mep
-FL3		E001995	Cable 1AWG12 NERO	=QgCv	27	1	Mep
-FL2		E001996	Cable 1AWG12 GN/YE	=QgCv	27	1	Mep
-R0		E000005	Electronic tensioner 3,5T (strain gauge)	=QgCv	21	1	DELTA-TECK
-AL		E000229	Terminal 6mmq for 3 wires - PHOENIX	=QgCv			Mep
-F5 -F6 -F7		E002239	Fuse holding terminal 3 x (10,3x38) 690V 32A	=QgCv	6	1	BUSS-MANN
-F8 -F9 -F10		E002239	Fuse holding terminal 3 x (10,3x38) 690V 32A	=QgCv	6	1	BUSS-MANN
-F20 -F21 -F22	022.2228	E002228	Fuse holding terminal 3 x (14x51) - 690V 50A	=QgCv	6	1	BUSS-MANN
-F1 -F2		E002240	Fuse holding terminal 2 x (10,3x38) 690V 32A	=QgCv	8	1	BUSS-MANN
-F3 -F4		E002240	Fuse holding terminal 2 x (10,3x38) 690V 32A	=QgCv	8	1	BUSS-MANN
-XQG2		E000144	Terminal 2,5mmq for 4 wires - PHOENIX	=QgCv			Mep
-F14		E000139	Fuse holding terminal 1 x (10,3x38) 690V 32A	=QgCv	8	1	BUSS-MANN
-F15		E000139	Fuse holding terminal 1 x (10,3x38) 690V 32A	=QgCv	8	1	BUSS-MANN
-F16		E000139	Fuse holding terminal 1 x (10,3x38) 690V 32A	=QgCv	8	1	BUSS-MANN
-F17		E000139	Fuse holding terminal 1 x (10,3x38) 690V 32A	=QgCv	8	1	BUSS-MANN
-F18		E000139	Fuse holding terminal 1 x (10,3x38) 690V 32A	=QgCv	19	1	BUSS-MANN
-F19		E000139	Fuse holding terminal 1 x (10,3x38) 690V 32A	=QgCv	19	1	BUSS-MANN
-JB		E000142	Single pole spring terminal ST 2.5	=QgCv			PHOENIX
-XQG1		E000229	Triple pole spring terminal ST4	=QgCv			PHOENIX
-XQG4		E000142	Single pole spring terminal ST 2.5	=QgCv			PHOENIX
-XQPE		E000146	Double pole spring terminal 4,0mmq PE	=QgCv			PHOENIX
-XQPE		E002263	Quadruple pole spring PE terminal 6,0mmq	=QgCv		3	PHOENIX
-XQG4		E002270	Clousure plate single-terminal	=QgCv			PHOENIX
JB		E002270	Clousure plate single-terminal	=QgCv			PHOENIX
-XQG1		E000147	Clousure plate triple-terminal	=QgCv			PHOENIX
-XQG2		E000149	Clousure plate quadruple-terminal	=QgCv		1	PHOENIX
-CU1	022.2825	E000002	Controller Mep50C	=QgCv	15	1	ISAC
-K6		E003011	Contactor 3KW NC (24 V Dc)	=QgCv	18	1	Shilhin electric
-K6R		E003011	Contactor 3KW NC (24 V Dc)	=QgCv	18	1	Shilhin electric

-K4		E003012	Contactor 3KW NO (24 V Dc)	=QgCv	18	1	Shilhin electric
-K65		E003012	Contactor 3KW NO (24 V Dc)	=QgCv	18	1	Shilhin electric
-R- S1	022.3811	E000009	Safety relay 4NO, 1NC cat.3	=QgCv	11	1	PIZZATO
-R-S2	022.3811	E000009	Safety relay 4NO, 1NC cat.3	=QgCv	12	1	PIZZATO
-Q-K65		E002542	Termal overload 5-8A	=QgCv	6	1	Shilhin electric
-Q-K6R		E000612	Termal overload 1,6-2,6A	=QgCv	7	1	Shilhin electric
-Q-K4		E000610	Termal overload 0.7-1,1A	=QgCv	6	1	Shilhin electric
-S54		E003920	Joystic 4 positions unstable with unlocking	=QgCv	17	1	Mep
-K6R		E003924	Kit for contactor reversing	=QgCv	18	1	Shilhin electric
-CU1	022.4091	E004091	Cable USB for command panel with connector	=QgCv	15	1	EATON
-R-M20		E000235	Ring 'NI-18-25-4.5	=QgCv	24	1	Mep
-R-M21		E000235	Ring 'NI-18-25-4.5	=QgCv	24	1	Mep
-R-M25		E000235	Ring 'NI-18-25-4.5	=QgCv	21	1	Mep
-TF2		E000209	Control panel gasket	=QgCv	27	1	Mep
-M6		E005220	Fan filter 120x120	=QgCv	10	1	Mep
-TF1	031.2622		Replace fuse adhesive sign	=QgCv	27	1	Mep
-M6		E005220	Fan filter 120x120	=QgCv	10	1	Mep
-M6		E005220	Base for fan cooling 120x120	=QgCv	10	1	Mep
-F1 -F2		E004538	Fuse Time delay 10.3x38 - 5A UL/ CSA	=QgCv	8	2	Mep
-F5 -F6 -F7		E004538	Fuse Time delay 10.3x38 - 5A UL/ CSA	=QgCv	6	3	Mep
-F15		E004538	Fuse Time delay 10.3x38 - 5A UL/ CSA	=QgCv	8	1	Mep
-F16		E004538	Fuse Time delay 10.3x38 - 5A UL/ CSA	=QgCv	8	1	Mep
-F18		E004659	Fuse Time delay10.3x38 - 0.5A UL/ CSA	=QgCv	19	1	Mep
-F14		E004664	Fuse Time delay 10.3x38 - 7.5A UL/ CSA	=QgCv	8	1	Mep
-F17		E004673	Fuse Time delay 10.3x38- 1A UL/ CSA	=QgCv	8	1	Mep
-F19		E004675	Fuse Time delay 10.3x38 - 2A UL/ CSA	=QgCv	19	1	Mep
-F3 -F4		E004663	Fuse Time delay 10.3x38 - 7A UL/ CSA	=QgCv	8	2	Mep
-F8 -F9 -F10		E004663	Fuse Time delay 10.3x38 - 7A UL/ CSA	=QgCv	8	3	Mep
-F20 -F21 -F22		E004678	Fuse Fast act. 10.3x38 - 50A UL/ CSA	=QgCv	6	3	Mep
XMET		E004002	Mobile connector ILME (CK03VS + CKM03) 4 poles	=QgEt-Mep		1	ILME
-XR0		E000369	Connector 3 poles for strain gauge	=QgMep		1	Mep
-XS7		E000369	Connector 3 poles for strain gauge	=QgMep		1	Mep
-S23		E000911	Carrier for pushbutton	=QgMep	18	1	Mep
-S23		E000937	Normally open contact	=QgMep	18	1	Mep
-S23		E001405	Black push button	=QgMep	18	1	Mep
-PT1		E000150	Bridge for 2 terminals	=QgCv		6	Mep
-PT1		E000151	Bridge for 3 terminals	=QgCv		2	Mep
-W7/B1		E001397	Cable with M12 90° connector: lenght 5Mt	=BmCv		2	Mep
-W120		E001905	Cable shielded 4x2 Awg24 CSA	=BmCv		2.5	Mep
-W118		E001906	Cable shielded 6x2 Awg24 CSA	=QgCv			Mep
-W7/1		E001981	Cable 4G AWG18 OIL RESISTANT UL 2587 CSA	=BmCv		2	Mep
-W20		E001905	Cable shielded 4x2StA-wg24(0.20mmq) UL 2587 CSA	=QgCv		7	Mep
-W28		E001905	Cable shielded 4x2StA-wg24(0.20mmq) UL 2587 CSA	=QgCv		3	Mep
-W29/1		E001905	Cable shielded 4x2StA-wg24(0.20mmq) UL 2587 CSA	=QgCv		2	Mep
-W29/2		E001905	Cable shielded 4x2StA-wg24(0.20mmq) UL 2587 CSA	=QgCv		2	Mep
-W56		E001905	Cable shielded 4x2StA-wg24(0.20mmq) UL 2587 CSA	=QgCv		5	Mep

-W57		E001905	Cable shielded 4x2StA-wg24(0.20mmq) UL 2587 CSA	=QgCv		5	Mep
-W58		E001905	Cable shielded 4x2StA-wg24(0.20mmq) UL 2587 CSA	=QgCv		5	Mep
-W58/2		E001905	Cable shielded 4x2StA-wg24(0.20mmq) UL 2587 CSA	=QgCv		5	Mep
-W32		E000393	Cable with straight connector M8. L=5Mt	=QgCv		5	Mep
-W121		E000398	Straight connector M12 10MT cable 4x0.34mmq	=QgCv		10	Mep
-W27		E000397	Cable with M12 90° connector; Lenght: 10Mt	=QgCv		10	Mep
-W59		E000397	Cable with M12 90° connector; Lenght: 10Mt	=QgCv			Mep
-W117		E001906	Cable shielded 6x2 Awg24 CSA	=QgCv		1	Mep
-W117/1		E001906	Cable shielded 6x2 Awg24 CSA	=QgCv		1	Mep
-W119		E001906	Cable shielded 6x2 Awg24 CSA	=QgCv		3	Mep
-WS12		E001906	Cable shielded 6x2 Awg24 CSA	=QgCv		4	Mep
-W29		E001979	Cable 5G AWG16 UL 2587 CSA	=QgCv		5	Mep
-W30		E001980	Cable 2X AWG18 OIL RESISTANT UL 2587 CSA	=QgCv		4	Mep
-W37		E001980	Cable 2X AWG18 OIL RESISTANT UL 2587 CSA	=QgCv		5	Mep
-W39		E001980	Cable 2X AWG18 OIL RESISTANT UL 2587 CSA	=QgCv		5	Mep
-W65		E001980	Cable 2X AWG18 OIL RESISTANT UL 2587 CSA	=QgCv		5	Mep
-W90		E001980	Cable 2X AWG18 OIL RESISTANT UL 2587 CSA	=QgCv		3	Mep
-W91		E001980	Cable 2X AWG18 OIL RESISTANT UL 2587 CSA	=QgCv		3	Mep
-W92		E001980	Cable 2X AWG18 OIL RESISTANT UL 2587 CSA	=QgCv		3	Mep
-W93		E001980	Cable 2X AWG18 OIL RESISTANT UL 2587 CSA	=QgCv		3	Mep
-W95		E001980	Cable 2X AWG18 OIL RESISTANT UL 2587 CSA	=QgCv		5	Mep
-W96		E001980	Cable 2X AWG18 OIL RESISTANT UL 2587 CSA	=QgCv		5	Mep
-W122		E001980	Cable 2X AWG18 OIL RESISTANT UL 2587 CSA	=QgCv		5	Mep
-W123		E001980	Cable 2X AWG18 OIL RESISTANT UL 2587 CSA	=QgCv		3	Mep
-W124		E001980	Cable 2X AWG18 OIL RESISTANT UL 2587 CSA	=QgCv		3	Mep
-W125		E001980	Cable 2X AWG18 OIL RESISTANT UL 2587 CSA	=QgCv		4	Mep
-W4		E001981	Cable 4G AWG18 OIL RESISTANT UL 2587 CSA	=QgCv		5	Mep
-W7		E001981	Cable 4G AWG18 OIL RESISTANT UL 2587 CSA	=QgCv		5	Mep
-W11		E001981	Cable 4G AWG18 OIL RESISTANT UL 2587 CSA	=QgCv		4	Mep
-W7/B		E001982	Cable 3xAWG18ST OIL RESISTANT UL 2587 CSA	=QgCv		5	Mep
-W1		E001983	Cable 4G X AWG10	=QgCv		5	Mep
-W2		E001983	Cable 4G X AWG10	=QgCv		5	Mep
FL1		E000133	Single pole wire Awg20 CSA	=QgCv			Mep
FL2		E000134	Single pole wire Awg16 CSA	=QgCv			Mep
FL3		E001995	Single pole wire Awg12 CSA	=QgCv			Mep
FL4		E001963	Single pole wire Awg10 CSA	=QgCv			Mep

Sim.\Sym.	File	Descrizione\Description
	BLK106	Raccordo *Union*
	FFLH53	Valvola di massima *Maximum valve*
	FFLH97	Valvola direz. 4/3 centri chiusi *Maximum valve*
	FFLP40	Valvola di esclusione *Maximum valve*
	FFLP42	Manometro *Maximum valve*
	FFLP53	Motore elettrico *Maximum valve*
	FFLP54	Valvola controllo flusso *Maximum valve*
	FFLP62A	Valvola unidirezionale *Maximum valve*
	FFLP62B	Valvola apertura reg. *Maximum valve*
	FFLP75A	Cilindro a doppio effetto *Maximum valve*
	FFLP154	Elettrovalvola 2/2 ritorno a molla meccanica *Maximum valve*

Sim.\Sym.	File	Descrizione\Description
	CIL-VERT	Cilindro a doppio effetto
	FILTROID	Filtro
	POMPAID	Pompa idraulica
	REG-IDM	Blocco controllo pressione e flusso

Sim.\Sym.	File	Descrizione\Description

REV.	MODIFICA	DATA	FIRME

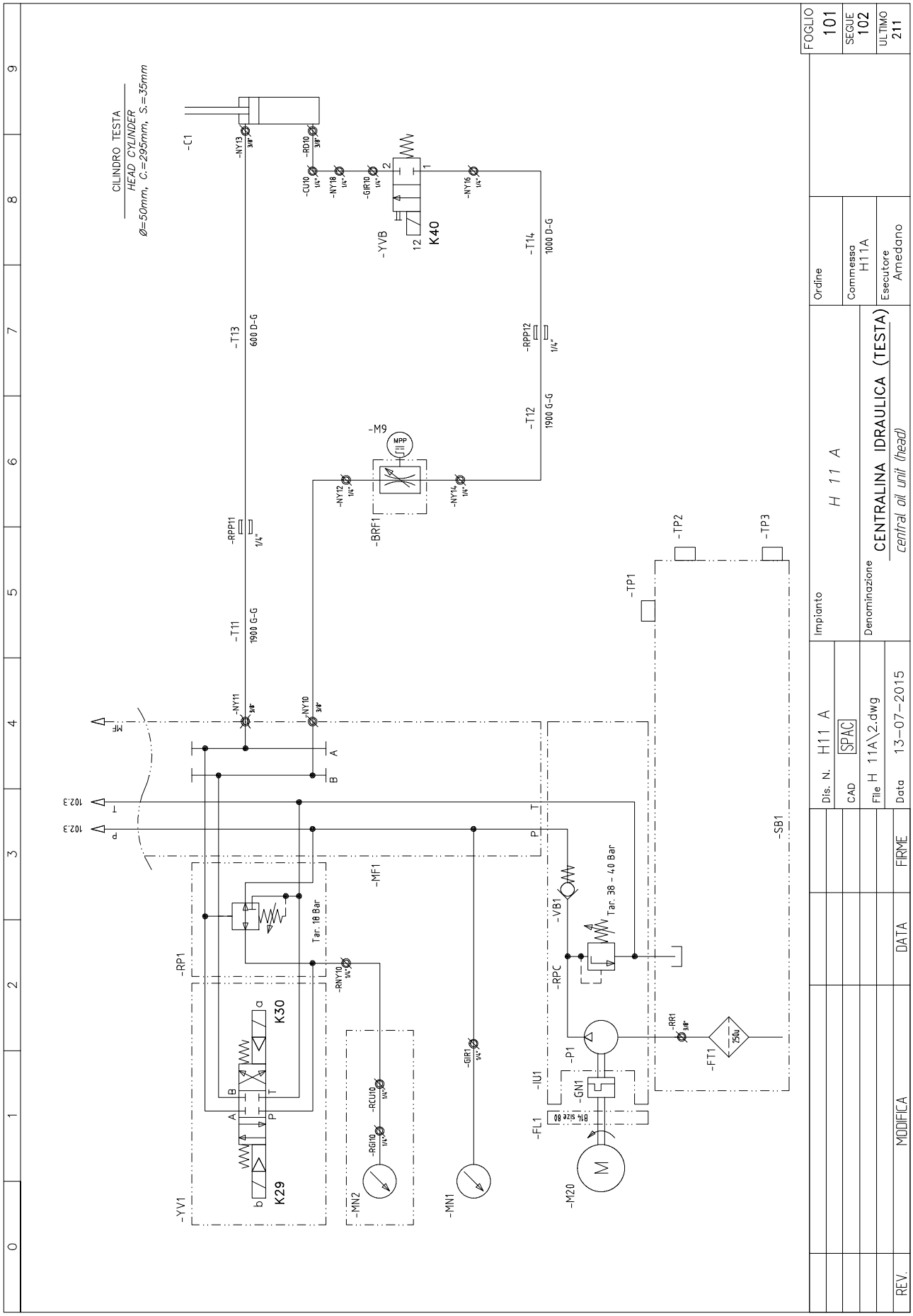
Dis. N. H11 A
CAD SPAC
File H 11A\2.dwg
Data 13-07-2015

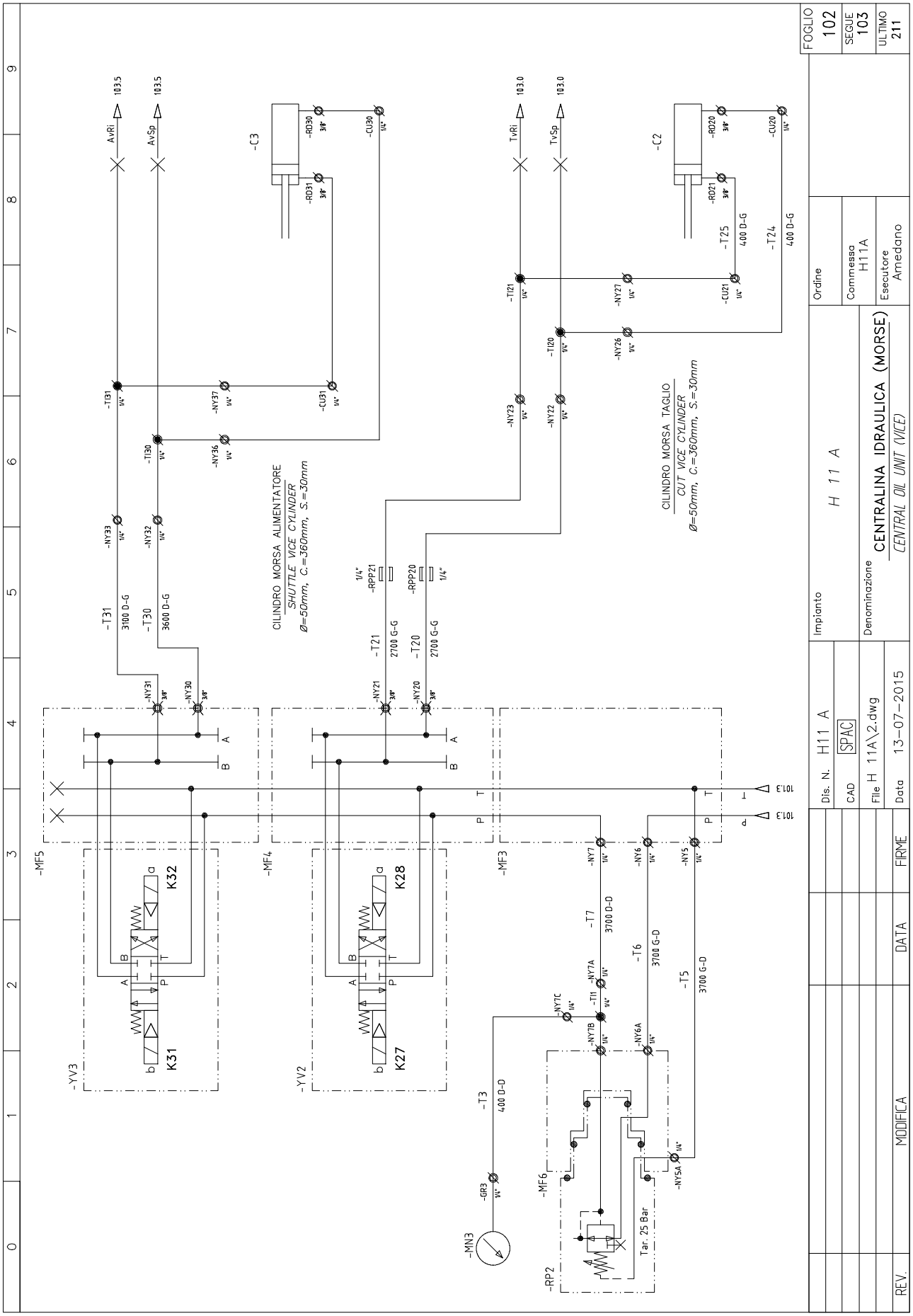
Impianto
H 11 A

Denominazione
LEGENDA SIMBOLI
SYMBOL KEY

Ordine
Commessa H11A
Esecutore Amedano

FOGLIO 100
SEGUE 101
ULTIMO 211


CILINDRO TESTA
HEAD CYLINDER
Ø=50mm, c.295mm, S.=35mm
-C1
-NY13
-RD10
-CU10
-NY18
-GIR10
-NY16
-YVB
K40
-T13
600 D-G
-T14
1000 D-G
-RPP12
-T12
1900 G-G
-M9
MPP
-BRF1
-NY12
-NY14
-RPP11
-T11
1900 G-G
-NY11
-NY10
-TP2
-TP3
-TP1
-SB1
-MF1
-RP1
Tar. 18 Bar
-RNY10
-YV1
K30
K29
-MN2
-RCU10
-RGI10
-MN1
-GIR1
-VB1
Tar. 38 - 40 Bar
-RPC
-P1
-GN1
-IU1
-FL1
-M20
-RR1
-FT1
-SB1
FOGLIO 101
SEGUE 102
ULTIMO 211
Ordine
Commessa H11A
Esecutore Amedano
Impianto H 11 A
Denominazione CENTRALINA IDRAULICA (TESTA)
central oil unit (head)
Dis. N. H11 A
CAD SPAC
File H 11A\2.dwg
Data 13-07-2015
REV.
MODIFICA
DATA
FIRME

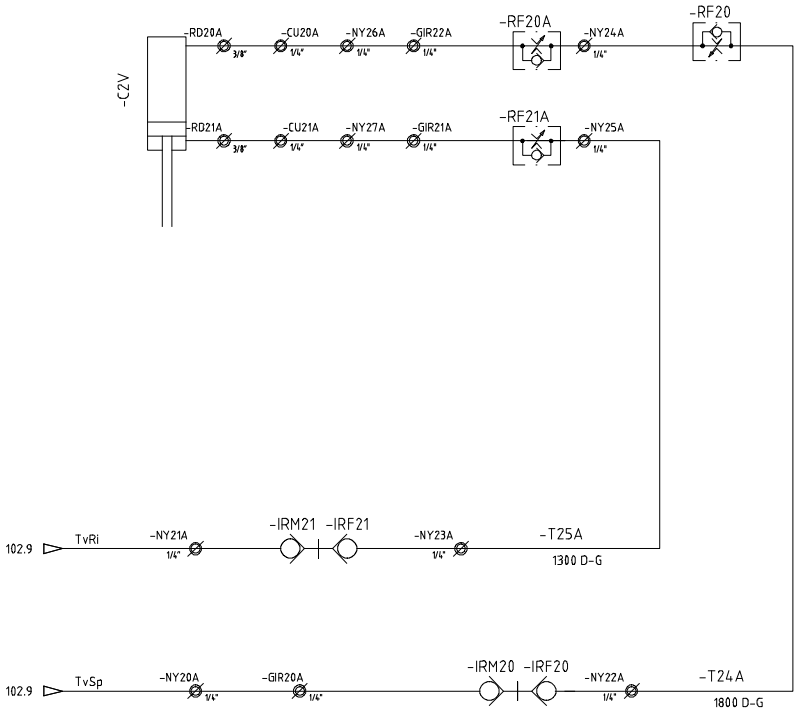

FOGLIO 102
SEGUE 103
ULTIMO 211
Impianto
H 11 A
Denominazione
CENTRALINA IDRAULICA (MORSE)
CENTRAL OIL UNIT (VICE)
Ordine
Commessa H11A
Esecutore Amedano
Dis. N. H11 A
CAD SPAC
File H 11A\2.dwg
Data 13-07-2015
REV. MODIFICA DATA FIRME
CILINDRO MORSA ALIMENTATORE
SHUTTLE VICE CYLINDER
Ø=50mm, C.=360mm, S.=30mm
CILINDRO MORSA TAGLIO
CUT VICE CYLINDER
Ø=50mm, C.=360mm, S.=30mm
-MF5
-MF4
-MF3
-MF6
-YV3
-YV2
-RP2
-MN3
-C3
-C2
K31
K32
K27
K28
-T31 3100 D-G
-T30 3600 D-G
-T21 2700 G-G
-T20 2700 G-G
-T3 400 D-D
-T7 3700 D-D
-T6 3700 G-D
-T5 3700 G-D
-T25 400 D-G
-T24 400 D-G
Tar. 25 Bar
AvRi
AvSp
TvRi
TvSp
103.5
103.0
101.3

0	1	2	3	4	5	6	7	8	9

CILINDRO MORSA TAGLIO VERTICALE

VERTICAL CUT VICE CYLINDER

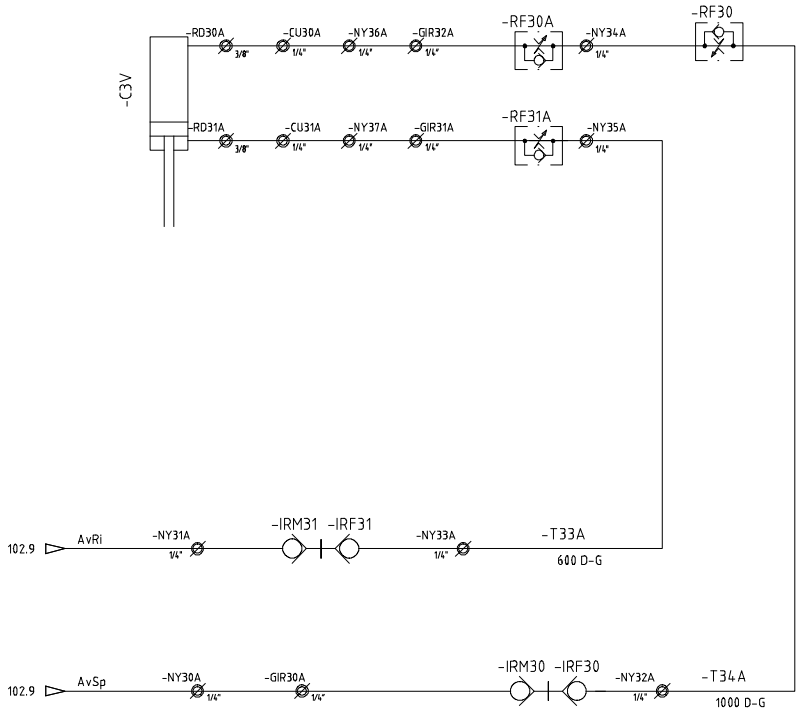
Ø=40mm, C.=400mm, S.=25mm



CILINDRO MORSA ALIMENTATORE VERTICALE

VERTICAL SHUTTLE VICE CYLINDER

Ø=40mm, C.=400mm, S.=25mm



REV.	MODIFICA	DATA	FIRME

Dis. N. H11 A

CAD SPAC

File H 11A\2.dwg

Data 13-07-2015

Impianto

H 11 A

Denominazione

OPTIONAL MORSE VERTICALI

VERTICAL VICE OPTIONAL

Ordine

Commessa H11A

Esecutore Amedano

FOGLIO 103

SEGUE 104

ULTIMO 211

Nome/Item	Tipo/Type	Descrizione IT (Db)	Descrizione EN (Db)	Codice Interno	Q.ta/Q.ty	Quadro/Board	Fg/Sh
-C1	A000029	Cilindro Testa Ø=50mm, C.=295mm, S.=35mm	head cylinder Ø=50mm, C.=295mm, S.=35mm	A000029	1	=CiBmMep	101
-C2	H000004	Cilindro Morsa di Taglio/Alimentatore Ø=50mm, C.=360mm, S.=30mm	vice cylinder cutting/feeder Ø=50mm, C.=360mm, S.=30mm	H000004	1	=CiBmMep	102
-C3	H000004	Cilindro Morsa di Taglio/Alimentatore Ø=50mm, C.=360mm, S.=30mm	vice cylinder cutting/feeder Ø=50mm, C.=360mm, S.=30mm	H000004	1	=CiBmMep	102
-CU10	H000041	Raccordo a Curva	90° fitting	H000041	1	=CiBmMep	101
-CU20	H000041	Raccordo a Curva	90° fitting	H000041	1	=CiBmMep	102
-CU21	H000041	Raccordo a Curva	90° fitting	H000041	1	=CiBmMep	102
-CU30	H000041	Raccordo a Curva	90° fitting	H000041	1	=CiBmMep	102
-CU31	H000041	Raccordo a Curva	90° fitting	H000041	1	=CiBmMep	102
-GIR1	H000039	Raccordo girevole 1/4	alive fitting 1/4	H000039	1	=CiBmMep	101
-GIR10	H000039	Raccordo girevole 1/4	alive fitting 1/4	H000039	1	=CiBmMep	101
-GR3	H000039	Raccordo girevole 1/4	alive fitting 1/4	H000039	1	=CiBmMep	102
-MF6					1	=CiBmMep	102
-MN3	H000031	Manometro	gauge	H000031	1	=CiBmMep	102
-NY5A	H000052	Raccordo Nipplo Idraulico 1/4	fitting 1/4	H000052	1	=CiBmMep	102
	H000043	Raccordo 3/8 - 1/4	fitting 3/8 - 1/4	H000043	1		
-NY6A	H000052	Raccordo Nipplo Idraulico 1/4	fitting 1/4	H000052	1	=CiBmMep	102
-NY7A	H000052	Raccordo Nipplo Idraulico 1/4	fitting 1/4	H000052	1	=CiBmMep	102
-NY7B	H000052	Raccordo Nipplo Idraulico 1/4	fitting 1/4	H000052	1	=CiBmMep	102
-NY7C	H000052	Raccordo Nipplo Idraulico 1/4	fitting 1/4	H000052	1	=CiBmMep	102
-NY13	H000043	Raccordo 3/8 - 1/4	fitting 3/8 - 1/4	H000043	1	=CiBmMep	101
-NY16	H000052	Raccordo Nipplo Idraulico 1/4	fitting 1/4	H000052	1	=CiBmMep	101
-NY18	H000052	Raccordo Nipplo Idraulico 1/4	fitting 1/4	H000052	1	=CiBmMep	101
-NY22	H000052	Raccordo Nipplo Idraulico 1/4	fitting 1/4	H000052	1	=CiBmMep	102
-NY23	H000052	Raccordo Nipplo Idraulico 1/4	fitting 1/4	H000052	1	=CiBmMep	102
-NY26	H000052	Raccordo Nipplo Idraulico 1/4	fitting 1/4	H000052	1	=CiBmMep	102
-NY27	H000052	Raccordo Nipplo Idraulico 1/4	fitting 1/4	H000052	1	=CiBmMep	102
-NY32	H000052	Raccordo Nipplo Idraulico 1/4	fitting 1/4	H000052	1	=CiBmMep	102
-NY33	H000052	Raccordo Nipplo Idraulico 1/4	fitting 1/4	H000052	1	=CiBmMep	102
-NY36	H000052	Raccordo Nipplo Idraulico 1/4	fitting 1/4	H000052	1	=CiBmMep	102
-NY37	H000052	Raccordo Nipplo Idraulico 1/4	fitting 1/4	H000052	1	=CiBmMep	102
-RD10	H000043	Raccordo 3/8 - 1/4	fitting 3/8 - 1/4	H000043	1	=CiBmMep	101
-RD20	H000043	Raccordo 3/8 - 1/4	fitting 3/8 - 1/4	H000043	1	=CiBmMep	102
-RD21	H000043	Raccordo 3/8 - 1/4	fitting 3/8 - 1/4	H000043	1	=CiBmMep	102
-RD30	H000043	Raccordo 3/8 - 1/4	fitting 3/8 - 1/4	H000043	1	=CiBmMep	102
-RD31	H000043	Raccordo 3/8 - 1/4	fitting 3/8 - 1/4	H000043	1	=CiBmMep	102
-RP2					1	=CiBmMep	102
-RPP11	H000052	Raccordo Nipplo Idraulico 1/4	fitting 1/4	H000052	1	=CiBmMep	101
	H000040	Manicotto 1/4	long fitting	H000040	1		
-RPP12	H000052	Raccordo Nipplo Idraulico 1/4	fitting 1/4	H000052	1	=CiBmMep	101
	H000040	Manicotto 1/4	long fitting	H000040	1		
-RPP20	H000052	Raccordo Nipplo Idraulico 1/4	fitting 1/4	H000052	2	=CiBmMep	102
	H000040	Manicotto 1/4	long fitting	H000040	1		
-RPP21	H000052	Raccordo Nipplo Idraulico 1/4	fitting 1/4	H000052	2	=CiBmMep	102
	H000040	Manicotto 1/4	long fitting	H000040	1		
-T3	H000006	Idraulic pipe 400 D-G		H000006	1	=CiBmMep	102

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FOGLIO 104
SEGUE 105
ULTIMO 211

Name/Item	Tipo/Type	Descrizione IT (Db)	Descrizione EN (Db)	Codice Interno	Q.ta/Q.ty	Quadro/Board	Fg/Sh
-T5	H000024	Tubo Idraulico 3700 D-G	Idraulic pipe 3700 D-G	H000024	1	=CiBmMep	102
-T6	H000024	Tubo Idraulico 3700 D-G	Idraulic pipe 3700 D-G	H000024	1	=CiBmMep	102
-T7	H000024	Tubo Idraulico 3700 D-G	Idraulic pipe 3700 D-G	H000024	1	=CiBmMep	102
-T11	H000025	Tubo Idraulico 1900 G-G	Idraulic pipe 1900 G-G	H000025	1	=CiBmMep	101
-T12	H000025	Tubo Idraulico 1900 G-G	Idraulic pipe 1900 G-G	H000025	1	=CiBmMep	101
-T13	H000014	Tubo Idraulico 600 D-G	Idraulic pipe 600 D-G	H000014	1	=CiBmMep	101
-T14	H000013	Tubo Idraulico 1000 D-G	Idraulic pipe 1000 D-G	H000013	1	=CiBmMep	101
-T20	H000005	Tubo Idraulico 2700 G-G	Idraulic pipe 2700 G-G	H000005	1	=CiBmMep	102
-T21	H000005	Tubo Idraulico 2700 G-G	Idraulic pipe 2700 G-G	H000005	1	=CiBmMep	102
-T24	H000006	Idraulic pipe 400 D-G		H000006	1	=CiBmMep	102
-T25	H000006	Idraulic pipe 400 D-G		H000006	1	=CiBmMep	102
-T30	H000007	Tubo Idraulico 3600 D-G	Idraulic pipe 3600 D-G	H000007	1	=CiBmMep	102
-T31	H000008	Tubo Idraulico 3100 D-G	Idraulic pipe 3100 D-G	H000008	1	=CiBmMep	102
-TI20	H000037	Raccordo a "T"	3 way fitting	H000037	1	=CiBmMep	102
-TI21	H000037	Raccordo a "T"	3 way fitting	H000037	1	=CiBmMep	102
-TI30	H000037	Raccordo a "T"	3 way fitting	H000037	1	=CiBmMep	102
-TI31	H000037	Raccordo a "T"	3 way fitting	H000037	1	=CiBmMep	102
-YVB	H000026	Elettrovalvola idraulica 2/2 NC 1/4"G 24Vdc	Hydraulic solenoid valve 2/2 NC 1/4"G 24Vdc		1	=CiBmMep	101

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FOGLIO 105
SEGUE 106
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Nome/Item	Tipo/Type	Descrizione IT (Db)	Descrizione EN (Db)	Codice Interno	Q.ta/Q.ty	Quadro/Board	Fg/Sh
-BRF1	H000029	Valvola Proporzionale	flow control valve	H000029	1	=CiCv	101
-FT1	H000034	Filtro	Strainer	H000034	1	=CiCv	101
-M9	P000007	Motore stepper 1.9Nm, 2.8A, 1.8°	Stepper motor 1.9Nm, 2.8A, 1.8°	019.3555	1	=CiCv	101
-M20	P000004-480	Motore centralina idraulica 1.3KW, 240V/480V.60Hz, 5.0/2.5A	Motor oil unit 1.3KW, 240V/480V.60Hz, 5.0/2.5A	P000004-480	1	=CiCv	101
-MF1	H000045	blocco in allumino valvola archetto	bow block	H000045	1	=CiCv	101
-MF4	H000046	blocco in allumino valvola morsa di taglio	cutting vice block	H000046	1	=CiCv	102
-MF5	H000047	blocco in allumino valvola morsa alimentatore	fedeer valve	H000047	1	=CiCv	102
-MN1	H000031	Manometro	gauge	H000031	1	=CiCv	101
-MN2	H000031	Manometro	gauge	H000031	1	=CiCv	101
-NY5	H000043	Raccordo 3/8 - 1/4	fitting 3/8 - 1/4	H000043	1	=CiCv	102
-NY6	H000043	Raccordo 3/8 - 1/4	fitting 3/8 - 1/4	H000043	1	=CiCv	102
-NY7	H000043	Raccordo 3/8 - 1/4	fitting 3/8 - 1/4	H000043	1	=CiCv	102
-NY10	H000043	Raccordo 3/8 - 1/4	fitting 3/8 - 1/4	H000043	1	=CiCv	101
-NY11	H000043	Raccordo 3/8 - 1/4	fitting 3/8 - 1/4	H000043	1	=CiCv	101
-NY12	H000052	Raccordo Nipplo Idraulico 1/4	fitting 1/4	H000052	1	=CiCv	101
-NY20	H000043	Raccordo 3/8 - 1/4	fitting 3/8 - 1/4	H000043	1	=CiCv	102
-NY21	H000043	Raccordo 3/8 - 1/4	fitting 3/8 - 1/4	H000043	1	=CiCv	102
-NY30	H000043	Raccordo 3/8 - 1/4	fitting 3/8 - 1/4	H000043	1	=CiCv	102
-NY31	H000043	Raccordo 3/8 - 1/4	fitting 3/8 - 1/4	H000043	1	=CiCv	102
-P1	H000032	Pompa	oil pump	H000032	1	=CiCv	101
-RGI10	H000039	Raccordo girevole 1/4	alive fitting 1/4	H000039	1	=CiCv	101
-RNY10	H000052	Raccordo Nipplo Idraulico 1/4	fitting 1/4	H000052	1	=CiCv	101
-RP1	H000038	Valvola di Regolazione Pressione discesa archetto	Adjust pressure valve for the bow	H000038	1	=CiCv	101
-RPC	H000042	Valvola di Massima	system adjust pressure valve	H000042	1	=CiCv	101
-SB1	H000033	Serbatoio	oil tank	H000033	1	=CiCv	101
-TP1	H000035	Tappo 1/4	fitting stop cap 1/4	H000035	1	=CiCv	101
-TP2	H000036	Tappo livello olio 1/4	oil level fitting window	H000036	1	=CiCv	101
-TP3	H000035	Tappo 1/4	fitting stop cap 1/4	H000035	1	=CiCv	101
-VB1					1	=CiCv	101
-YV1	H000048	valvola archetto	bow valve	H000048	1	=CiCv	101
-YV2	H000050	valvola morsa di taglio	cutting valve	H000050	2	=CiCv	102
-YV3	H000049	valvola alimentatore	feeder valve	H000049	2	=CiCv	102

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ULTIMO 211

Nome/Item	Tipo/Type	Descrizione IT (Db)	Descrizione EN (Db)	Codice Interno	Q.ta/Q.ty	Quadro/Board	Fg/Sh
-C2V	H000003	Cilindro Morse Verticali Ø=40mm, C.=400mm, S.=25mm	vertical vice cylinder cutting/feeder Ø=40mm, C.=400mm, S.=25mm	H000003	1	=CiMvBm	103
-C3V	H000003	Cilindro Morse Verticali Ø=40mm, C.=400mm, S.=25mm	vertical vice cylinder cutting/feeder Ø=40mm, C.=400mm, S.=25mm	H000003	1	=CiMvBm	103
-CU20A	H000041	Raccordo a Curva	90° fitting	H000041	1	=CiMvBm	103
-CU30A	H000041	Raccordo a Curva	90° fitting	H000041	1	=CiMvBm	103
-GIR20A	H000039	Raccordo girevole 1/4	alive fitting 1/4	H000039	1	=CiMvBm	103
-GIR21A	H000039	Raccordo girevole 1/4	alive fitting 1/4	H000039	1	=CiMvBm	103
-GIR22A	H000039	Raccordo girevole 1/4	alive fitting 1/4	H000039	1	=CiMvBm	103
-GIR30A	H000039	Raccordo girevole 1/4	alive fitting 1/4	H000039	1	=CiMvBm	103
-GIR31A	H000039	Raccordo girevole 1/4	alive fitting 1/4	H000039	1	=CiMvBm	103
-GIR32A	H000039	Raccordo girevole 1/4	alive fitting 1/4	H000039	1	=CiMvBm	103
-IRF20					1	=CiMvBm	103
-IRF21					1	=CiMvBm	103
-IRF30					1	=CiMvBm	103
-IRF31					1	=CiMvBm	103
-IRM20					1	=CiMvBm	103
-IRM21					1	=CiMvBm	103
-IRM30					1	=CiMvBm	103
-IRM31					1	=CiMvBm	103
-NY20A	H000052	Raccordo Nipplo Idraulico 1/4	fitting 1/4	H000052	1	=CiMvBm	103
-NY21A	H000052	Raccordo Nipplo Idraulico 1/4	fitting 1/4	H000052	1	=CiMvBm	103
-NY26A	H000052	Raccordo Nipplo Idraulico 1/4	fitting 1/4	H000052	1	=CiMvBm	103
-NY27A	H000052	Raccordo Nipplo Idraulico 1/4	fitting 1/4	H000052	1	=CiMvBm	103
-NY30A	H000052	Raccordo Nipplo Idraulico 1/4	fitting 1/4	H000052	1	=CiMvBm	103
-NY31A	H000052	Raccordo Nipplo Idraulico 1/4	fitting 1/4	H000052	1	=CiMvBm	103
-NY32A	H000052	Raccordo Nipplo Idraulico 1/4	fitting 1/4	H000052	1	=CiMvBm	103
-NY33A	H000052	Raccordo Nipplo Idraulico 1/4	fitting 1/4	H000052	1	=CiMvBm	103
-NY36A	H000052	Raccordo Nipplo Idraulico 1/4	fitting 1/4	H000052	1	=CiMvBm	103
-NY37A	H000052	Raccordo Nipplo Idraulico 1/4	fitting 1/4	H000052	1	=CiMvBm	103
-RF20					1	=CiMvBm	103
-RF20A					1	=CiMvBm	103
-RF21A					1	=CiMvBm	103
-RF30					1	=CiMvBm	103
-RF30A					1	=CiMvBm	103
-RF31A					1	=CiMvBm	103
-T24A	H000015	Tubo Idraulico 1800 D-G	Idraulic pipe 1800 D-G	H000015	1	=CiMvBm	103
-T25A	H000016	Tubo Idraulico 1300 D-G	Idraulic pipe 1300 D-G	H000016	1	=CiMvBm	103
-T33A	H000014	Tubo Idraulico 600 D-G	Idraulic pipe 600 D-G	H000014	1	=CiMvBm	103
-T34A	H000013	Tubo Idraulico 1000 D-G	Idraulic pipe 1000 D-G	H000013	1	=CiMvBm	103

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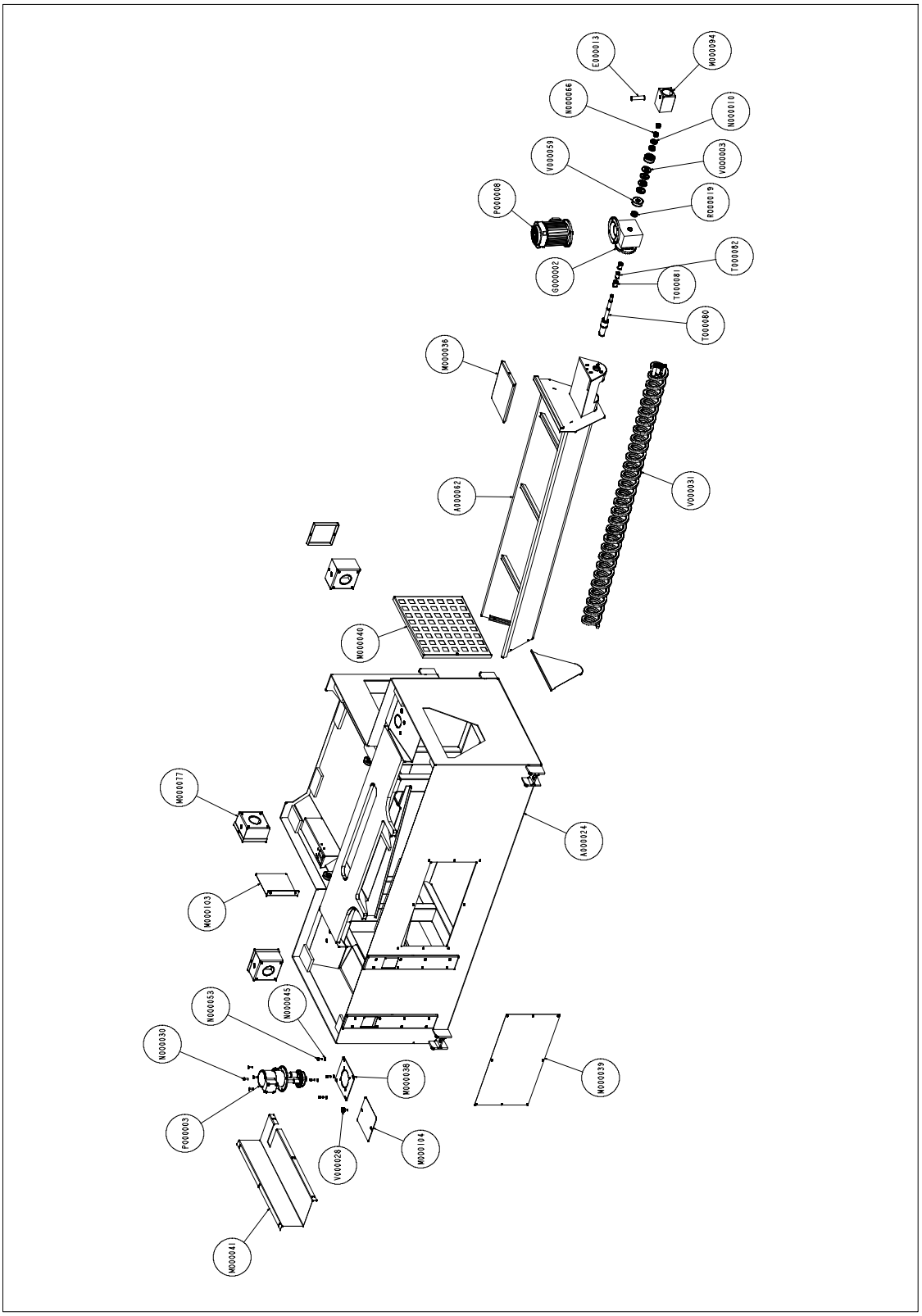
FOGLIO 107
SEGUE
ULTIMO 211

Exploded views

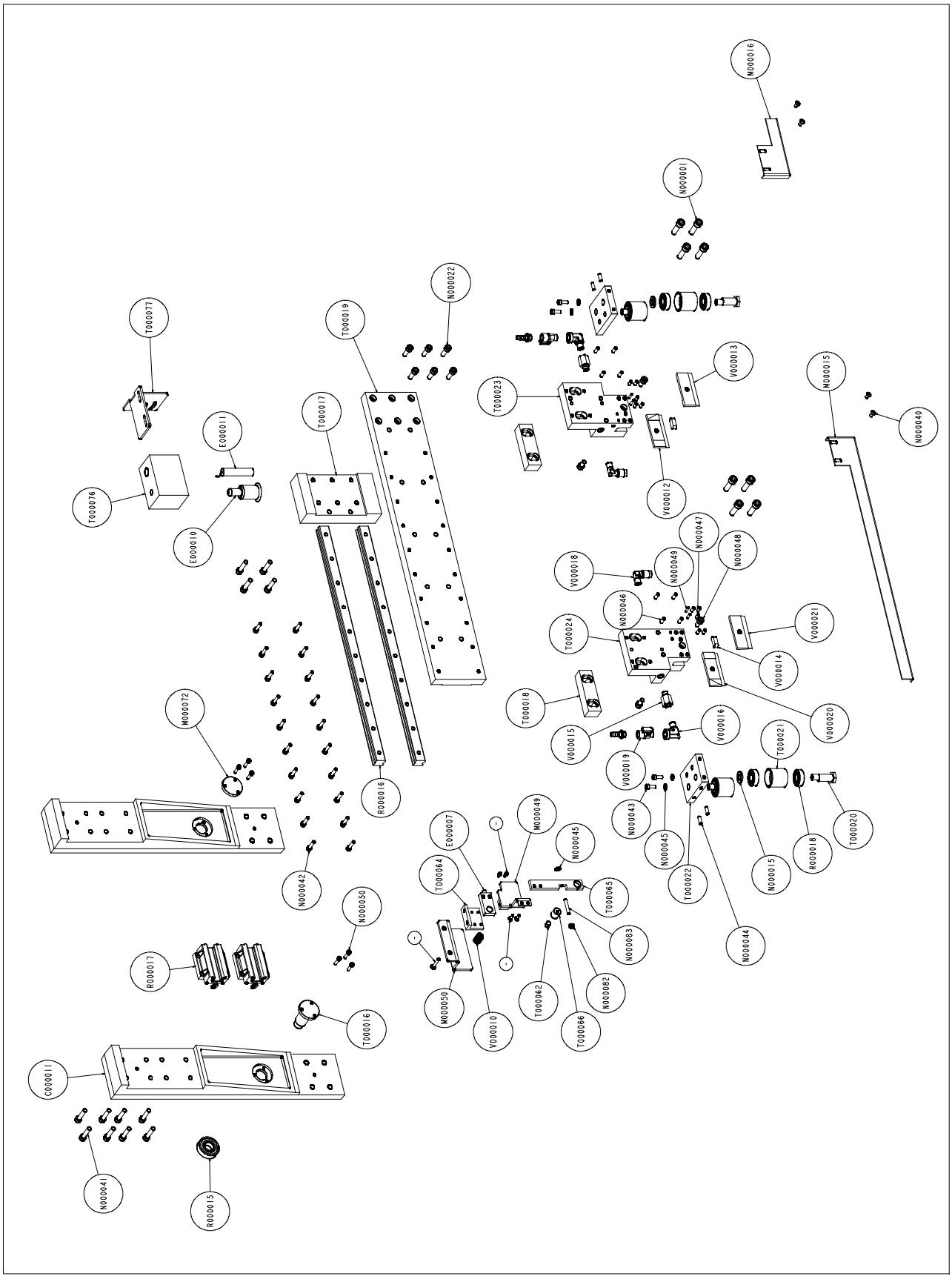
This part of the manual contains detailed exploded views of the machine which can help to gain a deeper knowledge of how it is made.

Base assembly



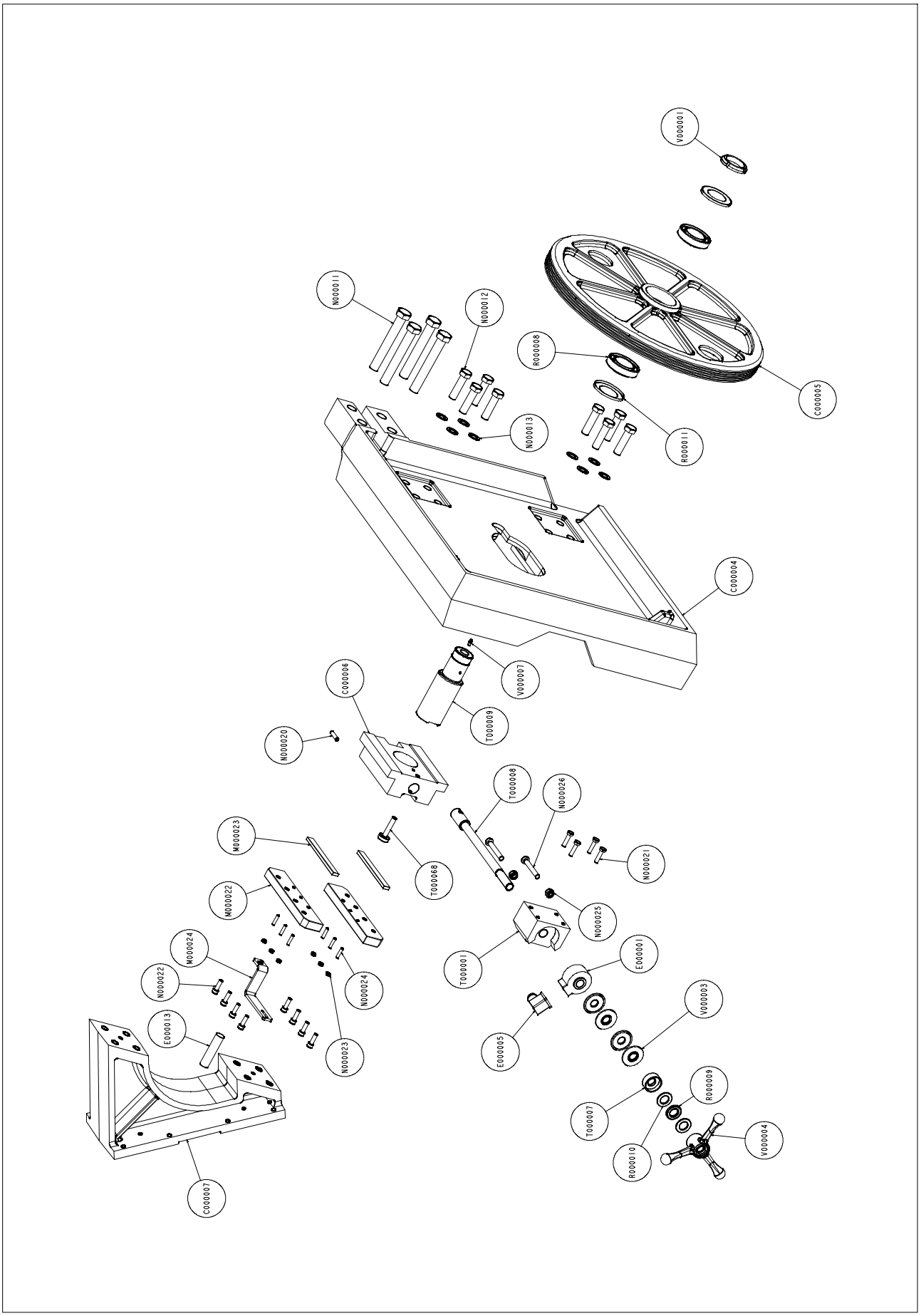
Code	Ref.	Description	Description	Q.ty
	M000103	STAFFA- PER- LUBRIFICATORE- MIN- H1	STAFFA- PER- LUBRIFICATORE- MIN- H2	1.0000
034.1107	V000028	VOLANTINO- DIAM30M6X20	O 30 M6 X 20 HANDWHEEL	2.0000
010.7951	N000030	M6X20- TE	TE 6 X 20 SCREW (010.7951)	4.0000
010.7603	N000045	ROSETTA- 6_4X12_5	0 6 WASHER (010.7603)	4.0000
010.7871	N000053	M6X20- TCEI	TCEI 6 X 20 SCREW (010.7871)	4.0000
	G000002	RIDUTTORE- EVC- TRUC- H11	RIDUTTORE- EVC- TRUC- H12	1.0000
	T000080	ALBERO- EVAC- TRUCIOLI- H11	ALBERO- EVAC- TRUCIOLI- H12	1.0000
	T000081	IR_20X25X30_2_03	IR_20X25X30_2_04	2.0000
	T000082	DISTANZIALE- RIDUT- FRIZ- EVAC- H11	DISTANZIALE- RIDUT- FRIZ- EVAC- H12	1.0000
	R000019	CUSCINETTO- ASSIALE- H11	CUSCINETTO- ASSIALE- H12	2.0000
	V000059	SUPPORTO- MOLLA- FRIZ- EVAC- H11	SUPPORTO- MOLLA- FRIZ- EVAC- H12	2.0000
010.0915	V000003	MOLLA- A- TAZZA- 18- 50- 3	BELLEVILLE SPRING WASHERS 50X18,4X3 SH	4.0000
010.7616	N000010	ROSETTA- 21X37	0 21 WASHER	1.0000
010.7208	N000066	DADO- M16	M16 SCREW NUT (010.7208)	2.0000
	M000094	CARTER- FRIZIONE- EVACUATORE- H11	CARTER- FRIZIONE- EVACUATORE- H12	1.0000
	E000013	PROXIMITY- H11	PROXIMITY- H12	1.0000

Cutting mobile head group



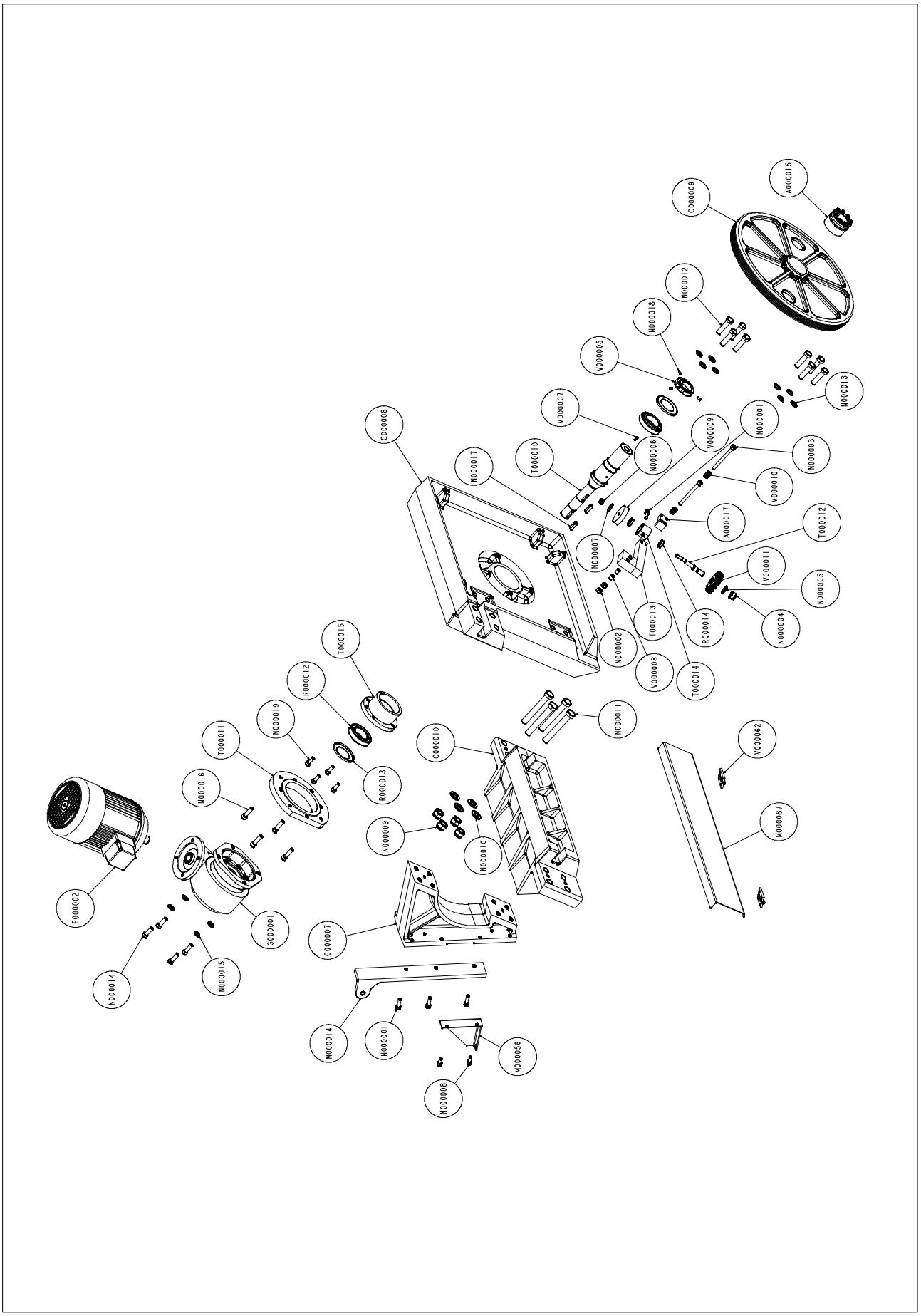
Code	Ref.	Description	Description	Q.ty
010.7861	N000050	VITE TCEI 5 X 20 (010.7861)	TCEI 5 X 20 SCREW (010.7861)	6.0000
025.0963	R000015	CUSCINETTO 6204 2Z	BEARING 6204 2Z	1.0000
010.4308	T000018	STAFFA REGOLAZIONE TESTINE GUI-DALAMA	BANDGUIDE REGUL.BRACKET	2.0000
010.7872	N000042	VITE TCEI 6 X 25 (010.7872)	TCEI 6 X 25 SCREW (010.7872)	20.0000
010.7896	N000041	VITE TCEI 8 X 35	TCEI 8 X 35 SCREW	16.0000
010.7894	N000022	VITE TCEI 8 X 25 (010.7894)	TCEI 8 X 25 SCREW (010.7894)	6.0000
010.7912	N000001	VITE TCEI 10 X 35	TCEI 10 X 35 SCREW	8.0000
010.7832	N000040	VITE BUTON 6 X 12	BUTON SCREW 6 X 12	4.0000
	T000077	STAFFA- SUPPORTO- LASER- LAMP	STAFFA- SUPPORTO- LASER- LAMP	1.0000
	T000076	SUPPORTO- LASER- LAMPADA- H12	SUPPORTO- LASER- LAMPADA- H13	1.0000
	E000010	LAMPADA- CINA	LAMPADA- CINA	1.0000
	E000011	EMETTITORE- LASER- ELM63- 05A	EMETTITORE- LASER- ELM63- 05A	1.0000
010.1731	V000014	CHIAVETTA PREMILAMA TESTINA	CARBIDE PAD KEY SH 500- 310- H- 14A	2.0000
010.1726	V000020	GUIDALAMA DUE INSERTI ANTERIORE FISSACON SMUSSO	2 INSERTS FIXING FRONT BAND GUIDE	1.0000
010.1724	V000021	PLACCHETTA GUIDALAMA ANTERIORE MOBILECON SMUSSO	MOVING FRONT BAND GUIDE	1.0000
043.0196	V000018	RACCORDO A GOMITO MF 8X1/4 CL 1020	MF 8X1/4 CL 1020 ELBOW JOINT	2.0000
044.0651	V000015	PROLUNGA 1/4' M.F. ESAGONALE 25MM.	1/4" M.F. EXTENSION 20 MM	2.0000
044.0552	V000016	RACCORDO A GOMITO IDRAULICO MF 1/4 ALTAPRESSIONE	HYDR. ELBOW JOINT M/F 1/4 HIGH PRE-SSURE	2.0000
043.0652	V000019	RUBINETTO 1/4 F.M.	1/4 F. M. TAP	2.0000
028.0130		RACCORDO 1/4- 9 CL 2601	JOINT 1/4- 9 CL 2601	2.0000
010.7891	N000048	VITE TCEI 8 X 16 (010.7891)	TCEI 8 X 16 SCREW (010.7891)	4.0000
010.7467	N000047	GRANO VCE PUNTA PIANA 6 X 12	6 X 12 FLAT POINT VCE GRUB SCREW	10.0000
010.9106	N000049	GRANO VCE PUNTA PIANA 4 X 16	4X 16 FLAT POINT GRUB SCREW	4.0000
010.7466	N000046	GRANO VCE PUNTA PIANA 6 X 16	6 X 16 FLAT POINT VCE GRUB SCREW	8.0000
010.0860	T000022	SUPPORTO PERNI ECCENTRICI TE-STINA GUID.	ECCENTRIC PIN HEAD BAND GUIDE SUP.	2.0000
010.3734	T000020	PERNO ECCENTRICO CUSCINETTI PRE-MILAMA	BLADEPUSHER BEARING ECCENTRIC PIN	4.0000
025.0087	R000018	CUSCINETTO 6202 2Z	BEARING 6202 2Z PH 100	8.0000
010.0859	T000021	RULLO PREMILAMA	BAND PUSHER ROLLER	4.0000
010.7603	N000045	RONDELLA 0 6 (010.7603)	0 6 WASHER (010.7603)	4.0000
010.7452	N000044	GRANO VCE PUNTA CONICA 6 X 16	6 X 16 CONICAL POINT VCE GRUB SC-REW	4.0000
010.7870	N000043	VITE TCEI 6 X 16 (010.7870)	TCEI 6 X 16 SCREW (010.7870)	4.0000
010.7606	N000015	RONDELLA 0 12 (010.7606)	0 12 WASHER (010.7606)	4.0000
010.1723	V000013	PLACCHETTA GUIDALAMA POSTE-RIORE MOBILECON SMUSSO	MOVING REAR BAND GUIDE SH 400	1.0000
010.1725	V000012	GUIDALAMA DUE INSERTI POSTERIORE FISSACON SMUSSO	2 INSERTS FIXING RAER BAND GUIDE	1.0000
010.0902	V000010	MOLLA PUNTO FISSO TESTA MOD. 95	HEAD FIXED POINT SPRING	1.0000
010.4758	T000064	STAFFA FISSAGGIO SENSORE DE-VIAZIONE LAMA	DEFLECTION BAND SENSOR FIX BRACKT	1.0000
022.0537	E000007	SENSORE INDUTTIVO DCALX/4919B	INDUCTVE SENSOR DCALX/4919B	1.0000
010.7603	N000045	RONDELLA 0 6 (010.7603)	0 6 WASHER (010.7603)	1.0000
010.7226	N000082	DADO AUTOBLOCCANTE M6 (010.7226)	M6 SELF- LOCKING SCREW NUT	1.0000
010.7470	N000083	GRANO VCE PUNTA PIANA 6 X 35	6X35 FLAT POINT VCE GRUB SCREW	1.0000
010.1721	T000062	PREMILAMA	TOP CARBIDE	1.0000
010.7993	-	VITE TSPEI 5 X 12 (010.7993)	TSPEI 5 X 12 SCREW (010.7993)	2.0000
010.7996	-	VITE TSPEI 6 X 30 (010.7996)	TSPEI 6 X 30 SCREW (010.7996)	1.0000
010.7850	-	VITE TCEI 4 X 8 (010.7850)	TCEI 4 X 8 SCREW	2.0000

Idler pulley unit



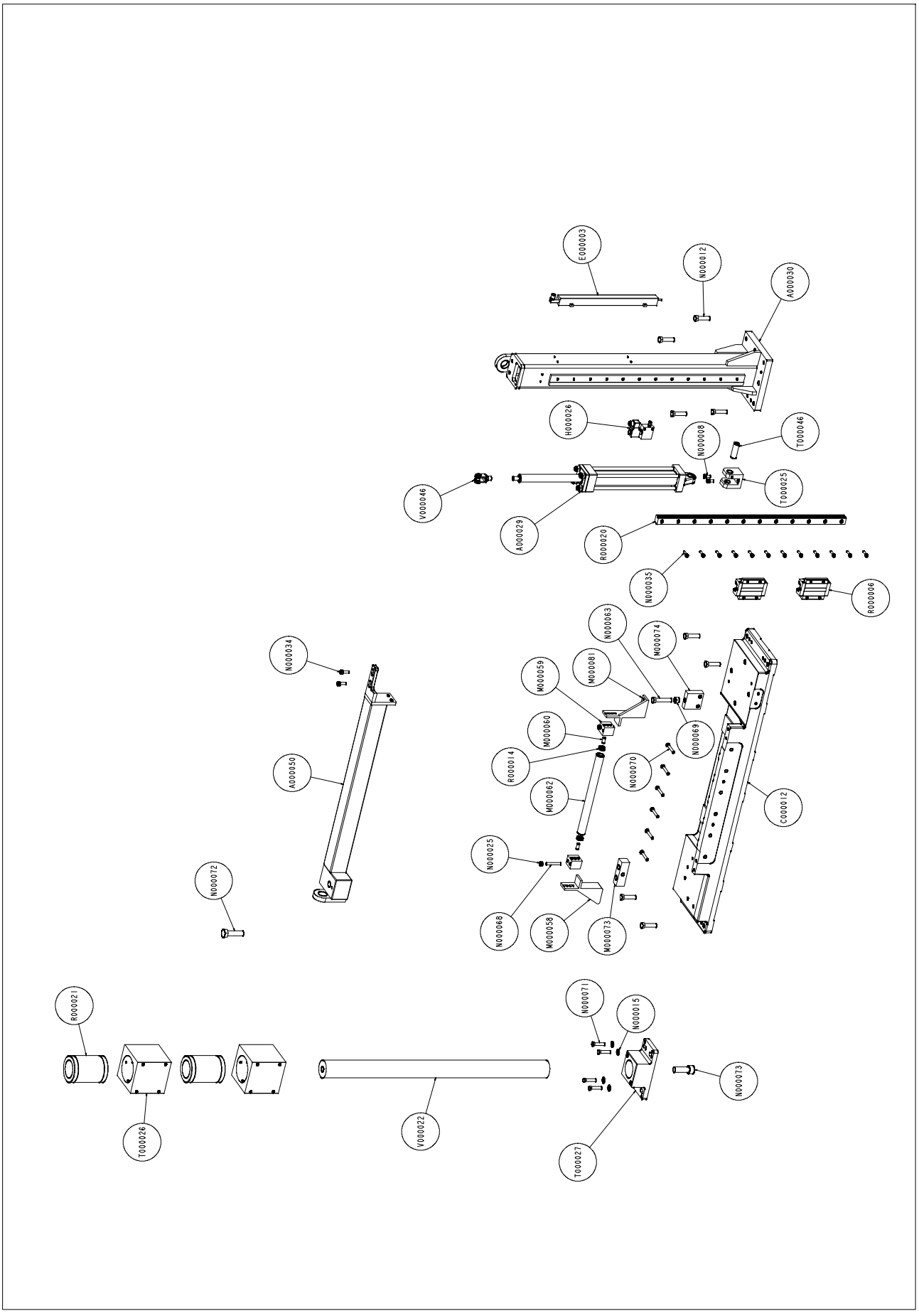
Code	Ref.	Description	Description	Q.ty
001.4412	C000006	SLITTA TENDILAMA SH 400- 420- 422	BAND TENSION SLIDE *	1.0000
025.0275	R000011	ANELLO DI PROTEZIONE NILOS 32009X	NILOS GUARD RING 32009X	2.0000
025.0075	R000008	CUSCINETTO 32009X	BEARING 32009X	2.0000
010.0356	V000001	GHIERA AUTOBLOCCANTE 45X1,5 SH	SELF- LOCKING RING NUT 45X1,5 SH	1.0000
010.1201	N000011	VITERIA E BULLONERIA	SCREWS AND BOLTS	4.0000
010.7642	N000013	RONDELLA GROOVER M16	WASHER GROOVER M16	8.0000
010.7972	N000012	VITE TE 16X60	TE 16 X 60 SCREW	8.0000
010.7461	N000024	GRANO VCE PUNTA PIANA 6 X 25	6 X 25 FLAT POINT VCE GRUB SCREW	6.0000
010.8152	N000023	DADO M6 BASSO	M16 NUT	6.0000
010.7894	N000022	VITE TCEI 8 X 25 (010.7894)	TCEI 8 X 25 SCREW (010.7894)	8.0000
010.7964	N000021	VITE TE 8 X 30	TE 8 X 30 SCREW	4.0000
010.1204	V000007	INGRASSATORE M 6	M 6 LUBRICATOR	1.0000
010.7480	N000020	GRANO VCE PUNTA PIANA 8 X 30	8 X 30 FLAT POINT VCE GRUB SCREW	1.0000
	E000013	PROXIMITY- H12	PROXIMITY- H13	1.0000
010.0915	V000003	MOLLA A TAZZA 50X18,4X3 SH	BELLEVILLE SPRING WASHERS 50X18,4X3	4.0000
025.0084	R000010	RALLA GS 81104	WASHER GS 81104	2.0000
025.0934	R000009	GABBIA ASSIALE K81104	AXIAL CAGE K81104	1.0000
034.0212	V000004	VOLANTINO TENSIONAMENTO LAMA S 20 3 BRACCI D.220 CON INSERTO M18X1,5	BLADE TENSIONING HANDWHEEL	1.0000
010.8905	N000026	VITE TE 10 X 65	10 X65 TE SCREW	2.0000
010.7205	N000025	DADO M10 (010.7205)	M10 SCREW NUT (010.7205)	2.0000
022.2152	E000001	TENSIONATORE ELETTRONICO TR-SA/3T.00	ELECTRONIC TENSIONER TRSA/3T.00	1.0000
022.0369	E000005	CONNETTORE PER BOBINA U2 E TEN-SIONATORETRSA/3T.00	CONNECTOR F.U2 COIL AND TEN-SIONER	1.0000

Driving pulley unit



Code	Ref.	Description	Description	Q.ty
007.6607	T000015	TAMPONE RIDUTTORE	BUFFER REDUCTER	1.0000
010.7923	N000019	VITE TCEI 10 X 25 (010.7923)	TCEI 10 X 25 SCREW (010.7923)	4.0000
025.0979	R000012	CUSCINETTO 32011 CEMENTATO	TAPERED ROLLER BEARING 32011	2.0000
025.0276	R000013	ANELLO DI PROTEZIONE NILOS 32011	NILOS GUARD RING 32011	2.0000
010.0360	V000005	GHIERA BLOCC.ALBERO RIDUTTORE	DRIVE SHAFT LOCKNUT	1.0000
010.7451	N000018	GRANO VCE PUNTA CONICA 6 X 12	6 X 12 CONICAL POINT VCE GRUB SC-REW	3.0000
010.7117	N000017	CHIAVETTA 10 X 8 X 35 (010.7117)	10 X 8 X 35 KEY (010.7117)	2.0000
010.2326	T000011	FLANGIA AGGANCIO RIDUTTORE-FCDPK85 FIXED STAR	REDUC.FLANGE COUPLE FCDPK85 FIX.STAR	1.0000
010.7942	N000016	VITE TCEI 12 X 40 (010.7942)	TCEI 12 X 40 SCREW	4.0000
025.0770	G000001	RIDUTTORE FCPDKO 85 FC IEC 112B14	GEARBOX	1.0000
010.7606	N000015	RONDELLA 0 12 (010.7606)	0 12 WASHER (010.7606)	4.0000
010.7986	N000014	VITE TE 12 X 35 (010.7986)	TE 12 X 35 SCREW (010.7986)	4.0000
010.7642	N000013	RONDELLA GROOVER M16	WASHER GROOVER M16	8.0000
010.7972	N000012	VITE TE 16X60	TE 16 X 60 SCREW	8.0000
025.0863	A000015	CALETTATORE TLK 130 50X80 SH 400 / H- 14A	LOCKING SET TLK 130 50X80 SH 400 / H- 14A	1.0000
010.1204	V000007	INGRASSATORE M 6	M 6 LUBRICATOR	1.0000
019.2002	P000002	KW 4 4P.B.14 GR112 S6 60% V.230- 400/240- 415/265- 460.60/277- 480. 60	KW 4 4P.B.14 GR112 S6 60% V.230- 400/240-	1.0000
010.1201	N000011	VITERIA E BULLONERIA	SCREWS AND BOLTS	4.0000
010.7616	N000010	RONDELLA 0 21	0 21 WASHER	4.0000
010.8111	N000009	DADO AUTOBLOCCANTE M20	SELF BLOCKING NUT M 20	4.0000
010.7911	N000008	VITE TCEI 10 X 20 (010.7911)	TCEI 10 X 20 SCREW (010.7911)	2.0000
010.7912	N000001	VITE TCEI 10 X 35	TCEI 10 X 35 SCREW	3.0000
	M000087	CARTER- LAMA- TRAVE- ARCH- H12	CARTER- LAMA- TRAVE- ARCH- H13	1.0000
025.0088	R000014	CUSCINETTO 6001 2Z PH 100	BEARING 6001 2Z PH 100	2.0000
025.0555	V000011	SPAZZOLA PULILAMA 3103 0 100	BAND BRUSH 3103 0 100 SH 400 / H- 14A	1.0000
010.7674	N000007	RONDELLA SPESSORE DIAM. 10,5 X 30	THICKNESS WASHER DIAM. 10,5 X 30	1.0000
010.7230	N000006	DADO AUTOBLOCCANTE M10	M10 SELF- LOCKING SCREW NUT	1.0000
010.7607	N000005	RONDELLA 0 16 (010.7607)	0 16 WASHER (010.7607)	1.0000
010.7233	N000004	DADO AUTOBLOCCANTE M16	M16 SELF- LOCKING SCREW NUT	1.0000
007.6635	A000017	PIASTRINO REGISTRAZIONE SPAZZO-LAPULILAMA	BRUSH REGULATING PLATE	1.0000
025.0802	V000008	BOCCOLA GRAFITATA L. 15 DIAM. 10	GRAPHITIZED BUSHING L. 15 DIA M. 10	2.0000
010.0902	V000010	MOLLA PUNTO FISSO TESTA MOD. 95	HEAD FIXED POINT SPRING	2.0000
010.7932	N000003	VITE TCEI 10 X 110	TCEI 10 X 110 SCREW	2.0000
010.8160	N000002	DADO M10 ALTO	M10 HIGH NUT	2.0000
010.7912	N000001	VITE TCEI 10 X 35	TCEI 10 X 35 SCREW	1.0000

Cradle unit


E000003
N000012
A000030
H000026
N000008
T000046
V000046
T000025
A000029
R000029
N000035
R000006
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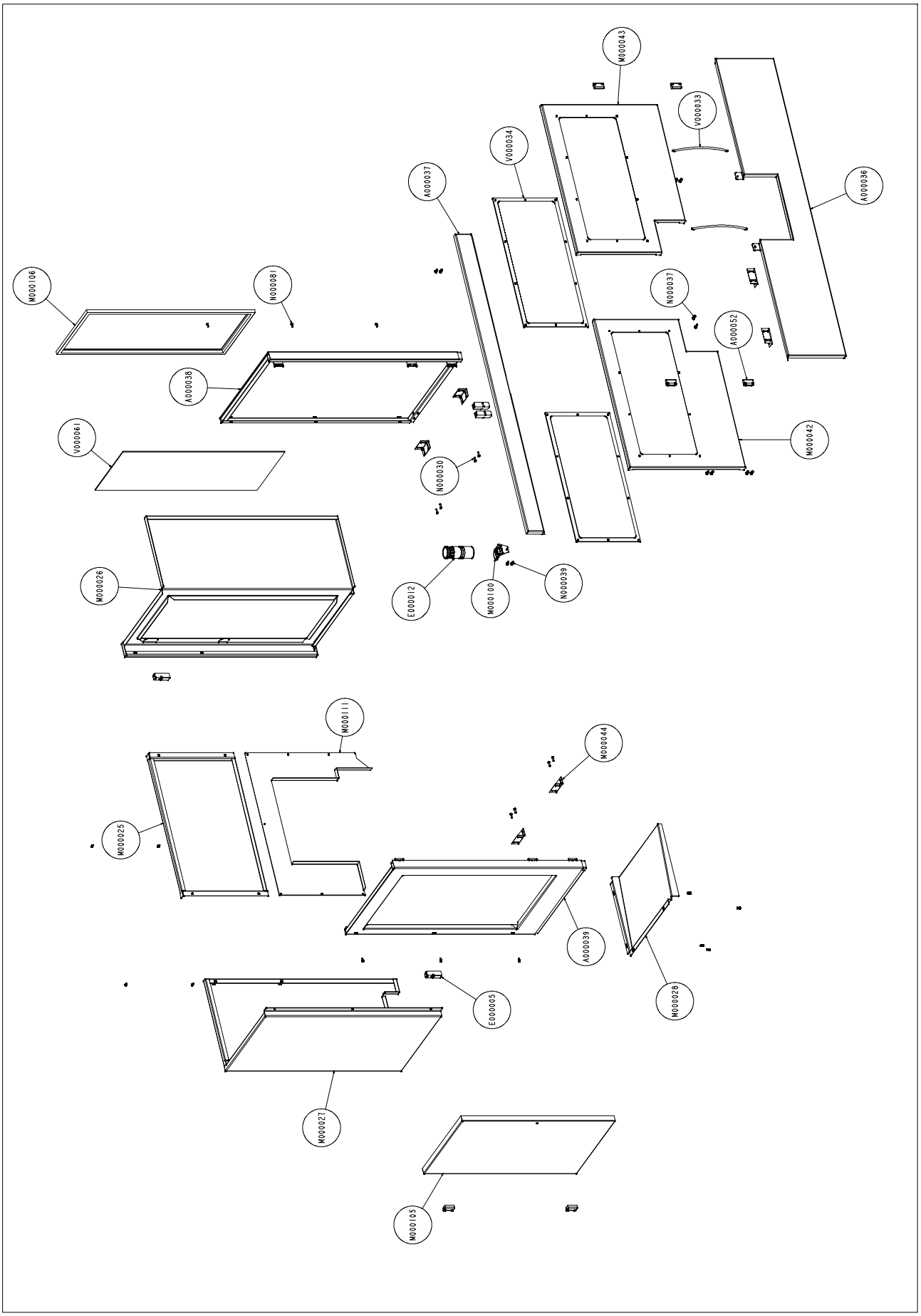
N000063
M000074
M000059
M000081
M000060
N000069
R000014
N000070
A000050
M000062
C000012
N000072
N000025
N000068
M000058
M000073
R000021
N000071
N000015
N000073
T000026
V000022
T000027

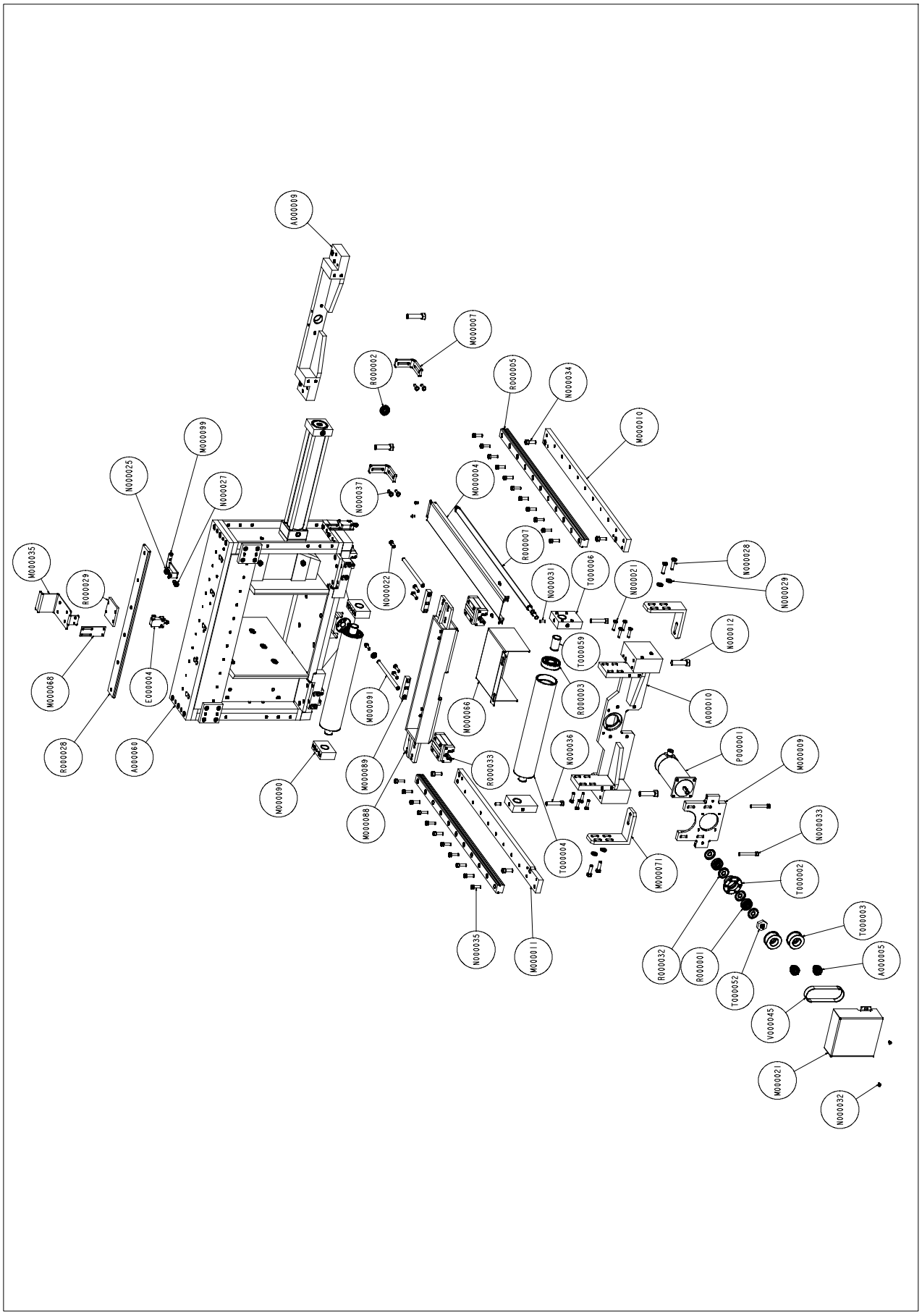
Code	Ref.	Description	Description	Q.ty
010.1201	N000073	M24X70- TCEI	M24X70- TCEI	1.0000
010.1201	N000072	M24X80- TE	M24X80- TE	1.0000
010.7972	N000012	VITE TE 16X60	TE 16 X 60 SCREW	8.0000
010.7895	N000035	VITE TCEI 8 X 30	TCEI 8 X 30 SCREW	12.0000
010.7606	N000015	RONDELLA 0 12 (010.7606)	0 12 WASHER (010.7606)	4.0000
010.8916	N000071	VITE TE 12 X 50	12 X 50 TE SCREW	4.0000
010.7980	N000070	VITE TE 10 X 60	TE 10 X 60 SCREW	6.0000
010.7911	N000008	VITE TCEI 10 X 20 (010.7911)	TCEI 10 X 20 SCREW (010.7911)	2.0000
010.7924	N000034	VITE TCEI 10 X 30 (010.7924)	TCEI 10 X 30 SCREW (010.7924)	2.0000
010.8163	N000069	DADO M16 ALTO	M16 HIGH NUT	1.0000
044.1250	H000026	VALVOLA BLOCCAGGIO PIANO GI-REVOLE V3 AC V. 24	ROTATING TABLE LOCKING VALVE V. 24	1.0000
010.7205	N000025	DADO M10 (010.7205)	M10 SCREW NUT (010.7205)	2.0000
010.9080	N000068	GRANO VCE PUNTA PIANA 10 X 70	10X70 FLAT POINT GRUB SCREW	2.0000
025.0088	R000014	CUSCINETTO 6001 2Z PH 100	BEARING 6001 2Z PH 100	2.0000

Protection group



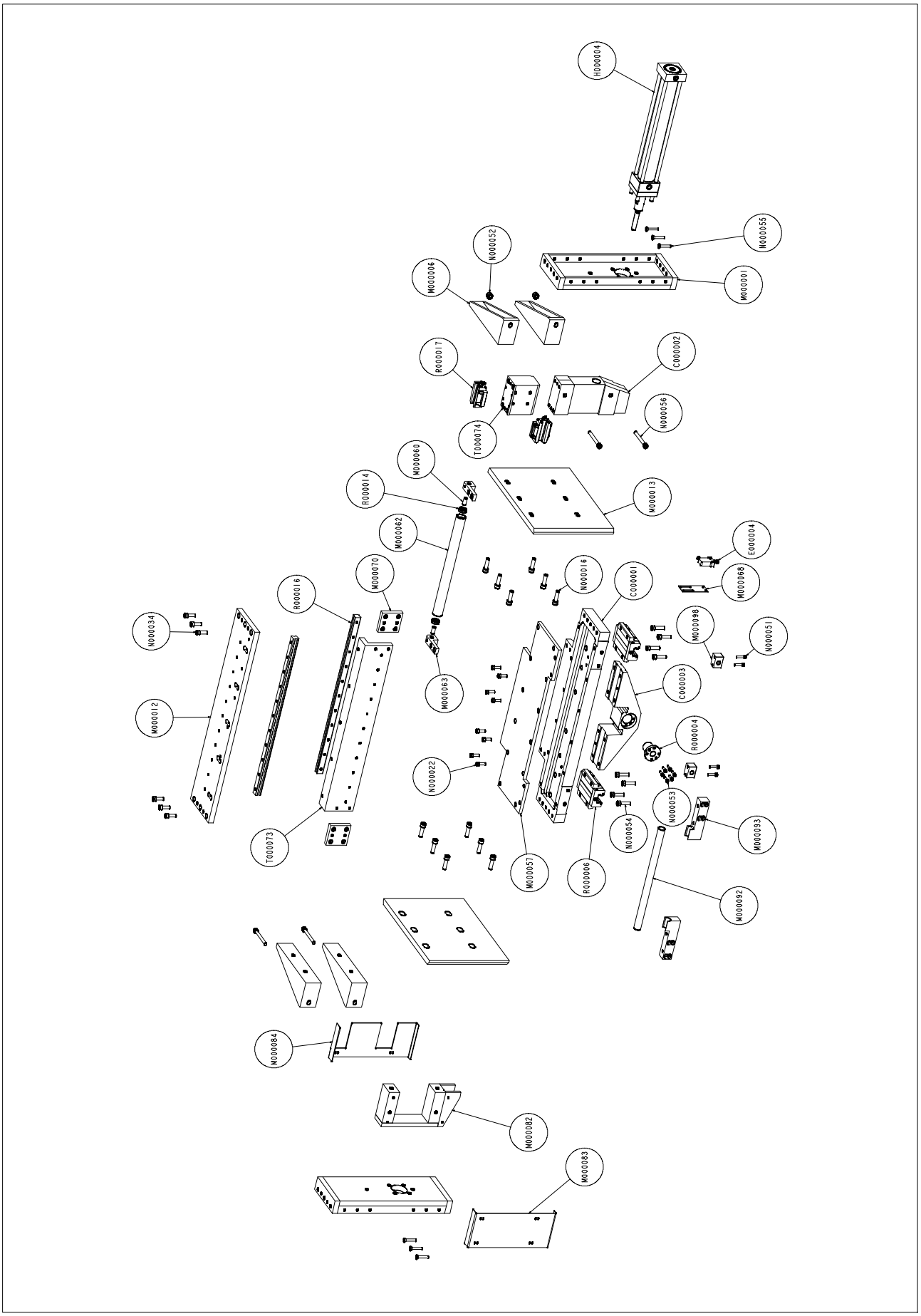
Code	Ref.	Description	Description	Q.ty
010.7960	N000039	VITE TE 8 X 16	TE 8 X 16 SCREW	12.0000
010.7951	N000030	VITE TE 6 X 20 (010.7951)	TE 6 X 20 SCREW (010.7951)	8.0000
010.7868	N000081	VITE TCEI 6 X 12 (010.7868)	TCEI 6 X 12 SCREW	14.0000
010.7961	N000037	VITE TE 8 X 20 (010.7961)	TE 8 X 20 SCREW (010.7961)	4.0000
	M000111	CARTER- POSTERIORE- PROT- H11-	CARTER- POSTERIORE- PROT- H11-	1.0000
	M000106	TELAIO- SPORTELLO- POSTER- H12	TELAIO- SPORTELLO- POSTER- H12	1.0000
	V000061	PLEXIGLASS- SPORTELLO- POSTER	PLEXIGLASS- SPORTELLO- POSTER	1.0000

Feeder group



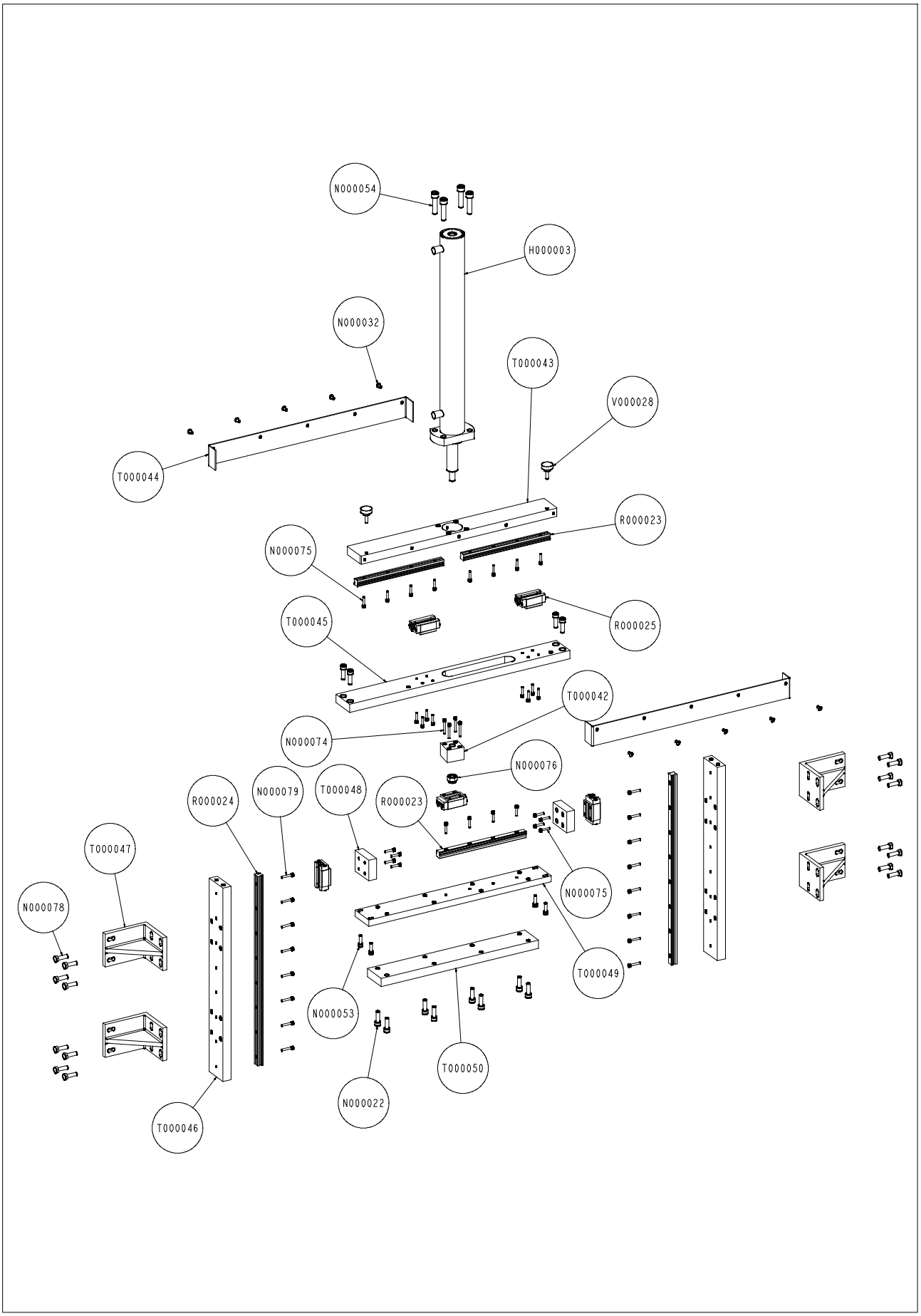
Code	Ref.	Description	Description	Q.ty
019.3407	P000001	MOTORE P/P FL86STH156- 5708AL	FEEDINGMOTOR	1.0000
025.0278	R000032	ANELLO DI PROTEZIONE NILOS 30302 AV	NILOS SEAL RING 30302 AV	4.0000
025.0970	R000001	CUSCINETTO 30302J2	BEARING	2.0000
025.0185	T000003	PULEGGIA DENTATA METR. PASSO 8 22 DENTILARGHEZZA CINGHIA 20	WHEEL 22 8M 20	2.0000
025.0867	A000005	CALETTATORE TLK 110 12X18	KEY TLK 110 SH 652 SXI EVO	2.0000
010.0380	T000052	GHIERA FISSAGGIO VITE RICIRCOLO ALIMENTATORE SH N.T.	FIXING RING NUT FOR FEEDER	1.0000
025.0034	V000045	CINGHIA DENTATA METRICA PASSO 8 LARGH.20SVILUPPO 376	TIMING BELT 8M 20 376	1.0000
025.0921	R000002	CUSCINETTO 6003 2Z	BEARING 6003 2Z	1.0000
010.7972	N000012	VITE TE 16X60	TE 16 X 60 SCREW	4.0000
010.7988	N000036	VITE TE 12 X 60	TE 12 X 60 SCREW	2.0000
010.7895	N000035	VITE TCEI 8 X 30	TCEI 8 X 30 SCREW	22.0000
010.7924	N000034	VITE TCEI 10 X 30 (010.7924)	TCEI 10 X 30 SCREW (010.7924)	4.0000
010.7910	N000033	VITE TCEI 8 X 70	TCEI 8 X 70 SCREW	2.0000
010.7830	N000032	VITE BUTON 5 X 10 (010.7830)	5 X 10 BUTON SCREW (010.7830)	6.0000
010.7964	N000021	VITE TE 8 X 30	TE 8 X 30 SCREW	12.0000
010.9120	N000031	GRANO VCE PUNTA PIANA 8 X 20	8X20 FLAT POINT GRUB SCREW	2.0000
010.7961	N000037	VITE TE 8 X 20 (010.7961)	TE 8 X 20 SCREW (010.7961)	4.0000
	M000066	PROTEZIONE- STEPMOTOR- H12	PROTEZIONE- STEPMOTOR- H13	1.0000
	M000071	STAFFA- POST- AGG- ALIM- H12	STAFFA- POST- AGG- ALIM- H13	2.0000
010.7605	N000029	RONDELLA 0 10 (010.7605)	0 10 WASHER (010.7605)	6.0000
010.7977	N000028	VITE TE 10 X 35	TE 10 X 35 SCREW	4.0000
	M000099	STAFFA- APPOGGIO- FINECORSA- BAR-RA	STAFFA- APPOGGIO- FINECORSA- BAR-RA	1.0000
010.7922	N000027	VITE TCEI 10 X 15	TCEI 10 X 15 SCREW	1.0000
010.7205	N000025	DADO M10 (010.7205)	M10 SCREW NUT (010.7205)	1.0000
	R000033	HGH35CA	HGH35CA	2.0000
	M000088	GRUP- SUPPO- RULLO- MOBIL- ALIM	GRUP- SUPPO- RULLO- MOBIL- ALIM	1.0000
	M000090	STAFFA- RULLO- MOBILE- ALIM- H12	STAFFA- RULLO- MOBILE- ALIM- H13	2.0000
	M000089	STAFFA- PERNO- MOBILE- ALIM- H12	STAFFA- PERNO- MOBILE- ALIM- H13	2.0000
	M000091	PERNO- TRASCINAMENTO- RULLO-MOB	PERNO- TRASCINAMENTO- RULLO-MOB	2.0000
010.7894	N000022	VITE TCEI 8 X 25 (010.7894)	TCEI 8 X 25 SCREW (010.7894)	2.0000
025.0996	R000003	CUSCINETTO 6306 2Z	BEARING 6306 2Z	2.0000
	M000035	STAFFA- FINEC- PRESENZA- BARRA	STAFFA- FINEC- PRESENZA- BARRA	1.0000
	M000068	STAFFA- FINECORSA- A- ROTELLA- ALIM	STAFFA- FINECORSA- A- ROTELLA- ALIM	1.0000
022.0543	E000004	FINECORSA A ROTELLA	LIMIT SWITCH	1.0000
	R000028	GUIDA- FINECORSA- PRES- BARRA- H11	GUIDA- FINECORSA- PRES- BARRA- H11	1.0000
	R000029	PATTINO- GUIDA- FIN- BARRA- H11	PATTINO- GUIDA- FIN- BARRA- H11	1.0000

Feed carriage unit



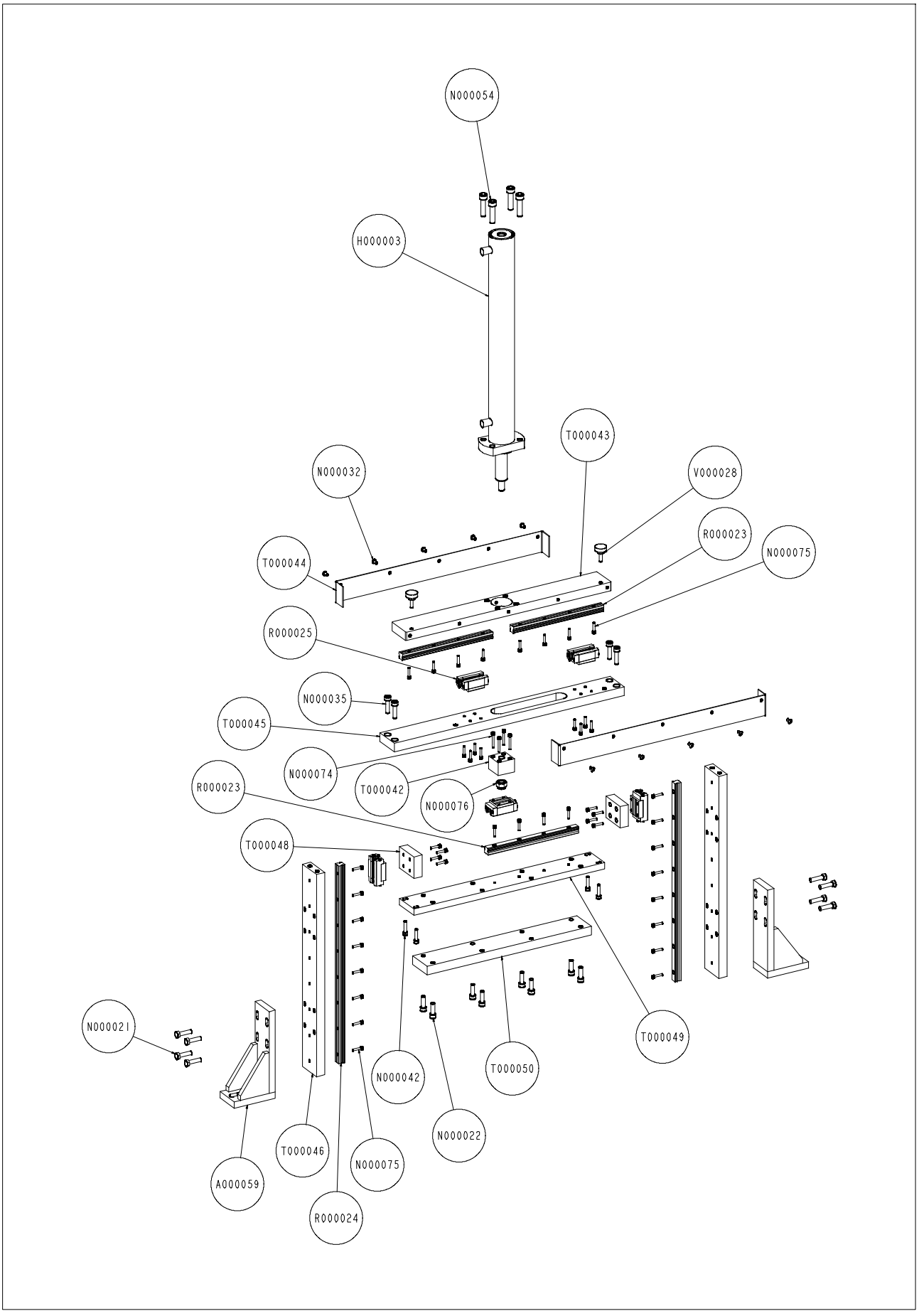
Code	Ref.	Description	Description	Q.ty
	M000082	SPESSORE- GANASCIA- ALIM- H12	SPESSORE- GANASCIA- ALIM- H13	1.0000
	T000074	SPESSORE- MORSA- ALIM- H12	SPESSORE- MORSA- ALIM- H13	1.0000
010.3036	R000004	CHIOCCIOLA R2010T2FSI C7A10UC1A1 XALIMENTATORI	FE. SCREW R2010T2FSI C7A10UC1A1 X FEEDER	1.0000
010.7924	N000034	VITE TCEI 10 X 30 (010.7924)	TCEI 10 X 30 SCREW (010.7924)	6.0000
010.7930	N000056	VITE TCEI 10 X 90	TCEI 10 X 90 SCREW	4.0000
010.7967	N000055	VITE TE 8 X 40	TE 8 X 40 SCREW	6.0000
010.7894	N000022	VITE TCEI 8 X 25 (010.7894)	TCEI 8 X 25 SCREW (010.7894)	8.0000
010.7925	N000054	VITE TCEI 10 X 40	TCEI 10 X 40 SCREW	8.0000
010.7871	N000053	VITE TCEI 6 X 20 (010.7871)	TCEI 6 X 20 SCREW (010.7871)	6.0000
010.8161	N000052	DADO M12 ALTO	M12 HIGH NUT	2.0000
010.7942	N000016	VITE TCEI 12 X 40 (010.7942)	TCEI 12 X 40 SCREW	12.0000
	M000070	STAFFA- REGOLAZ- TRAVE- ALIM- H12	STAFFA- REGOLAZ- TRAVE- ALIM- H13	2.0000
	M000083	CARTER- POST- GANASCIA- ALIM- H12	CARTER- POST- GANASCIA- ALIM- H13	1.0000
	M000084	CARTER- ANT- GANASCIA- ALIM- H12	CARTER- ANT- GANASCIA- ALIM- H13	1.0000
	M000068	STAFFA- FINECORSA- A- ROTELLA- ALIM	STAFFA- FINECORSA- A- ROTELLA- ALIM	1.0000
022.0543	E000004	FINECORSA A ROTELLA	LIMIT SWITCH	1.0000
	M000098	SUPPORTO- MANIC- SCORR- RULLO	SUPPORTO- MANIC- SCORR- RULLO	2.0000
010.7873	N000051	VITE TCEI 6 X 30 (010.7873)	TCEI 6 X 30 SCREW (010.7873)	4.0000
	M000093	SUPP- CILIND- CARR- ALIM- H12	SUPP- CILIND- CARR- ALIM- H13	2.0000
	M000092	CILIND- CARR- ALIM- H12	CILIND- CARR- ALIM- H13	1.0000
025.0088	R000014	CUSCINETTO 6001 2Z PH 100	BEARING 6001 2Z PH 100	2.0000

Feeder vertical vice



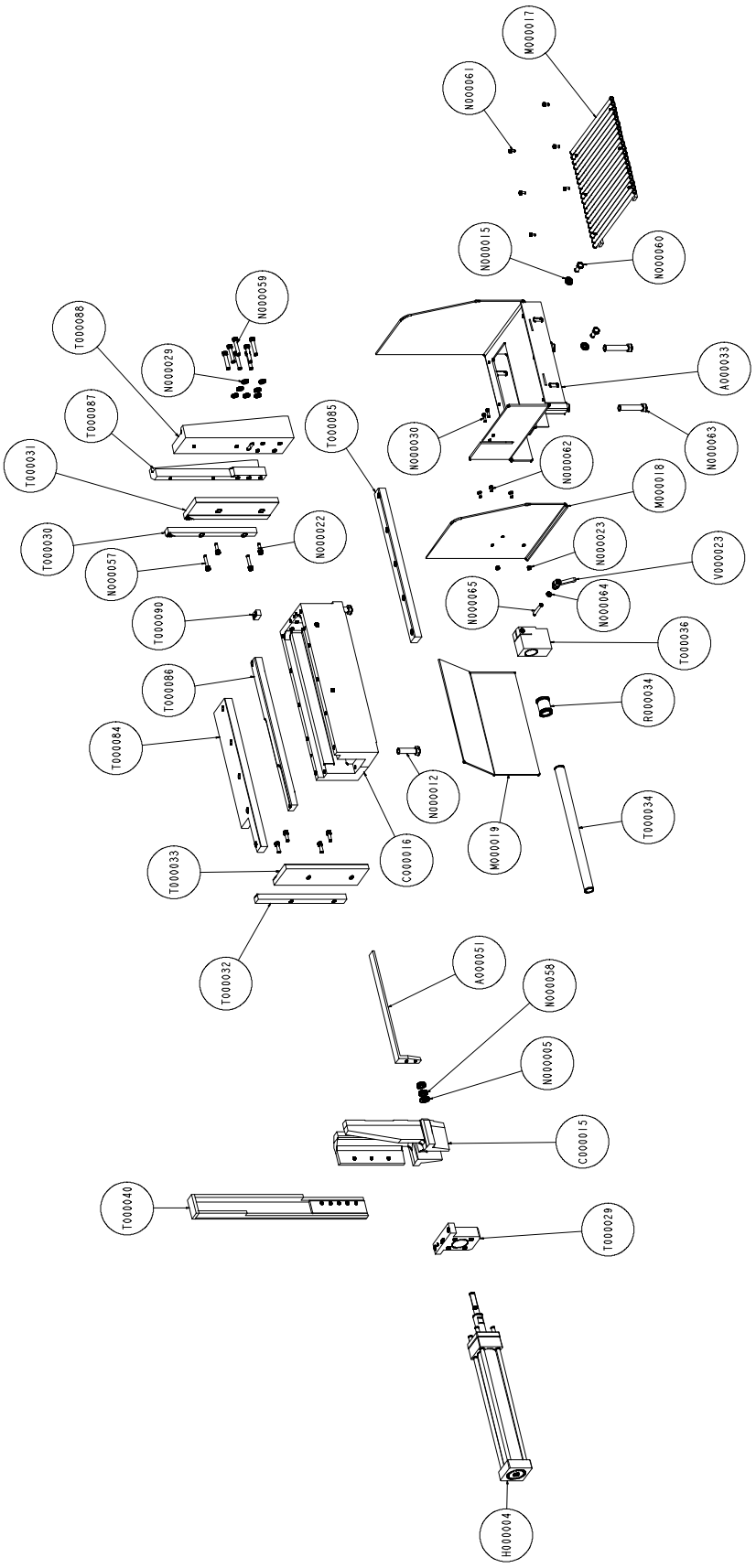
Code	Ref.	Description	Description	Q.ty
010.7894	N000022	TCEI 8 X 25 SCREW (010.7894)	VITE TCEI 8 X 25 (010.7894)	12.0000
010.7871	N000053	TCEI 6 X 20 SCREW (010.7871)	VITE TCEI 6 X 20 (010.7871)	4.0000
010.7853	N000075	TCEI 4 X 20 SCREW (010.7853)	VITE TCEI 4 X 20 (010.7853)	20.0000
010.7854	N000079	TCEI 4 X 25 SCREW	VITE TCEI 4 X 25	16.0000
010.7855	N000074	TCEI 4 X 30 SCREW (010.7855)	VITE TCEI 4 X 30 (010.7855)	4.0000
010.7963	N000078	TE 8 X 25 SCREW (010.7963)	VITE TE 8 X 25 (010.7963)	16.0000
010.7925	N000054	TCEI 10 X 40 SCREW	VITE TCEI 10 X 40	4.0000
010.7853	N000075	TCEI 4 X 20 SCREW (010.7853)	VITE TCEI 4 X 20 (010.7853)	8.0000
010.7830	N000032	5 X 10 BUTON SCREW (010.7830)	VITE BUTON 5 X 10 (010.7830)	10.0000
034.1107	V000028	O 30 M6 X 20 HANDWHEEL	VOLANTINO O 30 M6 X 20	2.0000

Cutting vertical vice



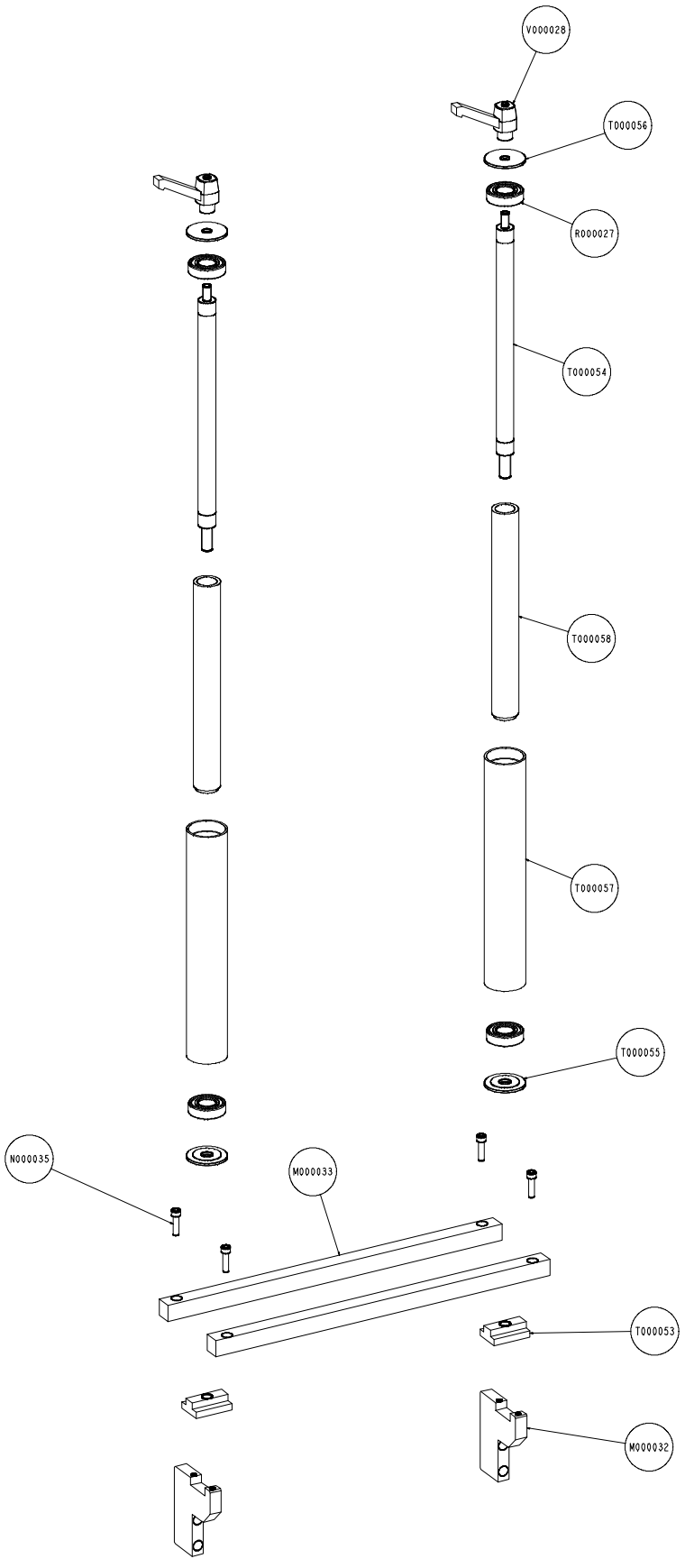
Code	Ref.	Description	Description	Q.ty
010.7231	N000076	DADO AUTOBLOCCANTE M12	M12 SELF- LOCKING SCREW NUT	1.0000
010.7894	N000022	VITE TCEI 8 X 25 (010.7894)	TCEI 8 X 25 SCREW (010.7894)	8.0000
010.7872	N000042	VITE TCEI 6 X 25 (010.7872)	TCEI 6 X 25 SCREW (010.7872)	4.0000
010.7853	N000075	VITE TCEI 4 X 20 (010.7853)	TCEI 4 X 20 SCREW (010.7853)	36.0000
010.7895	N000035	VITE TCEI 8 X 30	TCEI 8 X 30 SCREW	4.0000
010.7964	N000021	VITE TE 8 X 30	TE 8 X 30 SCREW	8.0000
010.7855	N000074	VITE TCEI 4 X 30 (010.7855)	TCEI 4 X 30 SCREW (010.7855)	4.0000
010.7925	N000054	VITE TCEI 10 X 40	TCEI 10 X 40 SCREW	4.0000
010.7853	N000075	VITE TCEI 4 X 20 (010.7853)	TCEI 4 X 20 SCREW (010.7853)	8.0000
010.7830	N000032	VITE BUTON 5 X 10 (010.7830)	5 X 10 BUTON SCREW (010.7830)	10.0000
034.1107	V000028	VOLANTINO O 30 M6 X 20	O 30 M6 X 20 HANDWHEEL	2.0000

Fixed vice group



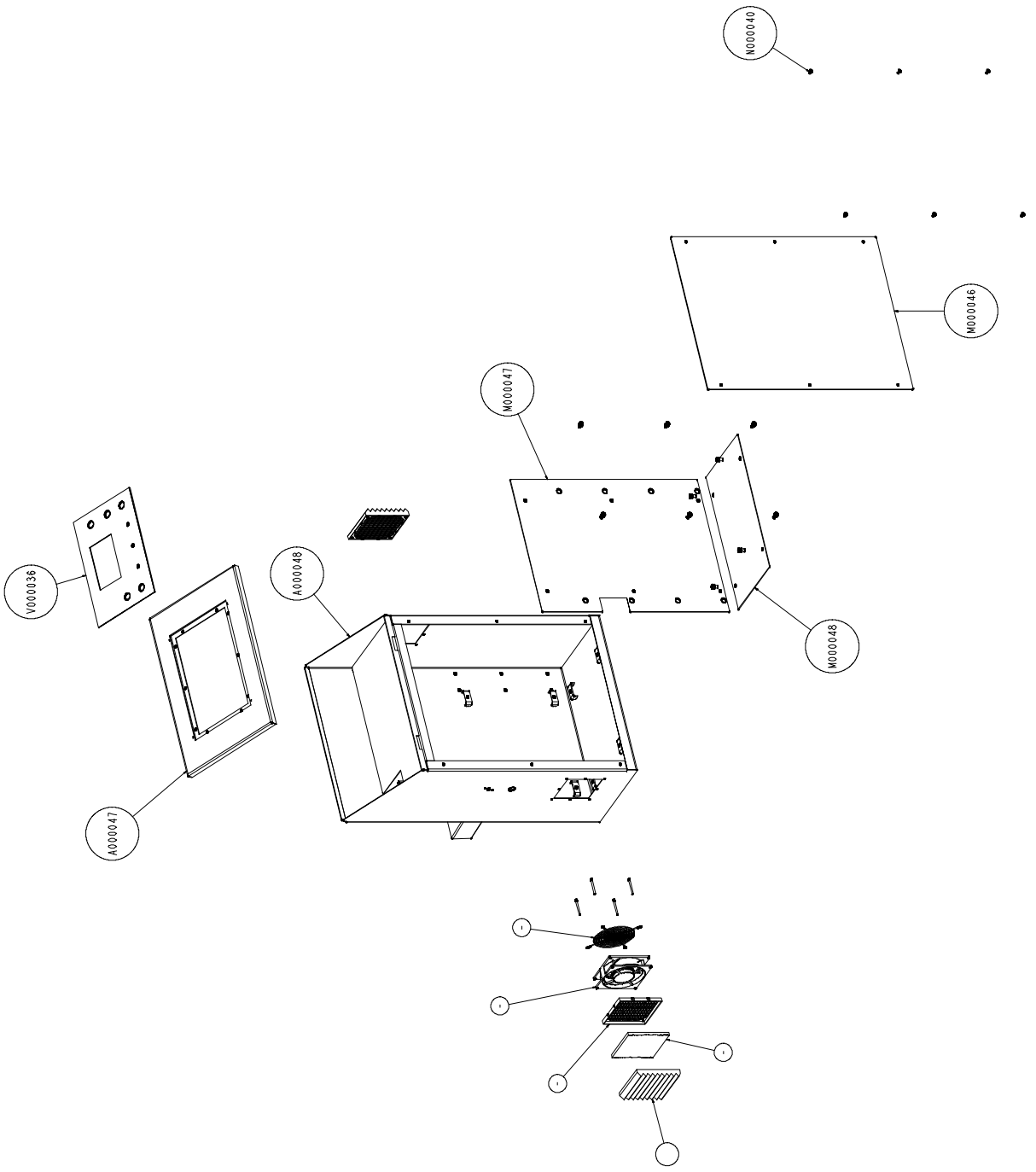
Code	Ref.	Description	Description	Q.ty
	T000088	MORSA- FISSA- LATO- SCARICO	MORSA- FISSA- LATO- SCARICO	1.0000
010.7972	N000012	VITE TE 16X60	TE 16 X 60 SCREW	2.0000
	T000040	TRASC- TEST- LAMA	TRASC- TEST- LAMA	1.0000
	A000051	PIANO- SCORREVOLE- MORSA	PIANO- SCORREVOLE- MORSA	1.0000
010.7894	N000022	VITE TCEI 8 X 25	TCEI 8 X 25 SCREW	6.0000
010.7606	N000015	RONDELLA 0 12	0 12 WASHER	2.0000
010.8914	N000060	VITE TE 12 X 25	12 X 25 TE SCREW	2.0000
010.7605	N000029	RONDELLA 0 10	0 10 WASHER	7.0000
010.7979	N000059	VITE TE 10 X 50	TE 10 X 50 SCREW	7.0000
010.7607	N000005	RONDELLA 0 16 (010.7607)	0 16 WASHER	1.0000
010.7221	N000058	DADO M16 BASSO	M16 LOW SCREW NUT	2.0000
	T000087	MORSA- FISSA- LATO- CARICO	MORSA- FISSA- LATO- CARICO	1.0000
010.7897	N000057	VITE TCEI 8 X 40	TCEI 8 X 40 SCREW	2.0000
	T000090	SPESSORE- PIANO- SCORREVOLE	SPESSORE- PIANO- SCORREVOLE	1.0000
007.4116	T000036	SUPPORTO GUIDA SCARICA PEZZI	GUIDE SUPPORT	1.0000
025.0047	T000035	MANICOTTO A SFERA KH 3050 LL	BALL SLEEVE 0658.030.00 AL. TI	1.0000
010.9125	N000065	GRANO VCE PUNTA PIANA 8 X 60	8X60 FLAT POINT GRUB SCREW	1.0000
010.7604	N000064	RONDELLA 0 8 (010.7604)	0 8 WASHER (010.7604)	1.0000
034.1001	V000023	LEVA A SCATTO 8 MA PK55	LEVER 8 MA PK55	1.0000
010.7994	N000062	VITE TSPEI 6 X 12	TSPEI 6 X 12 SCREW	3.0000
010.8152	N000023	DADO M6 BASSO	M16 NUT	2.0000
010.7951	N000030	VITE TE 6 X 20	TE 6 X 20 SCREW	2.0000
	M000112	PIANO- SCARICAPEZZI	PIANO- SCARICAPEZZI	1.0000

Vertical rolls group



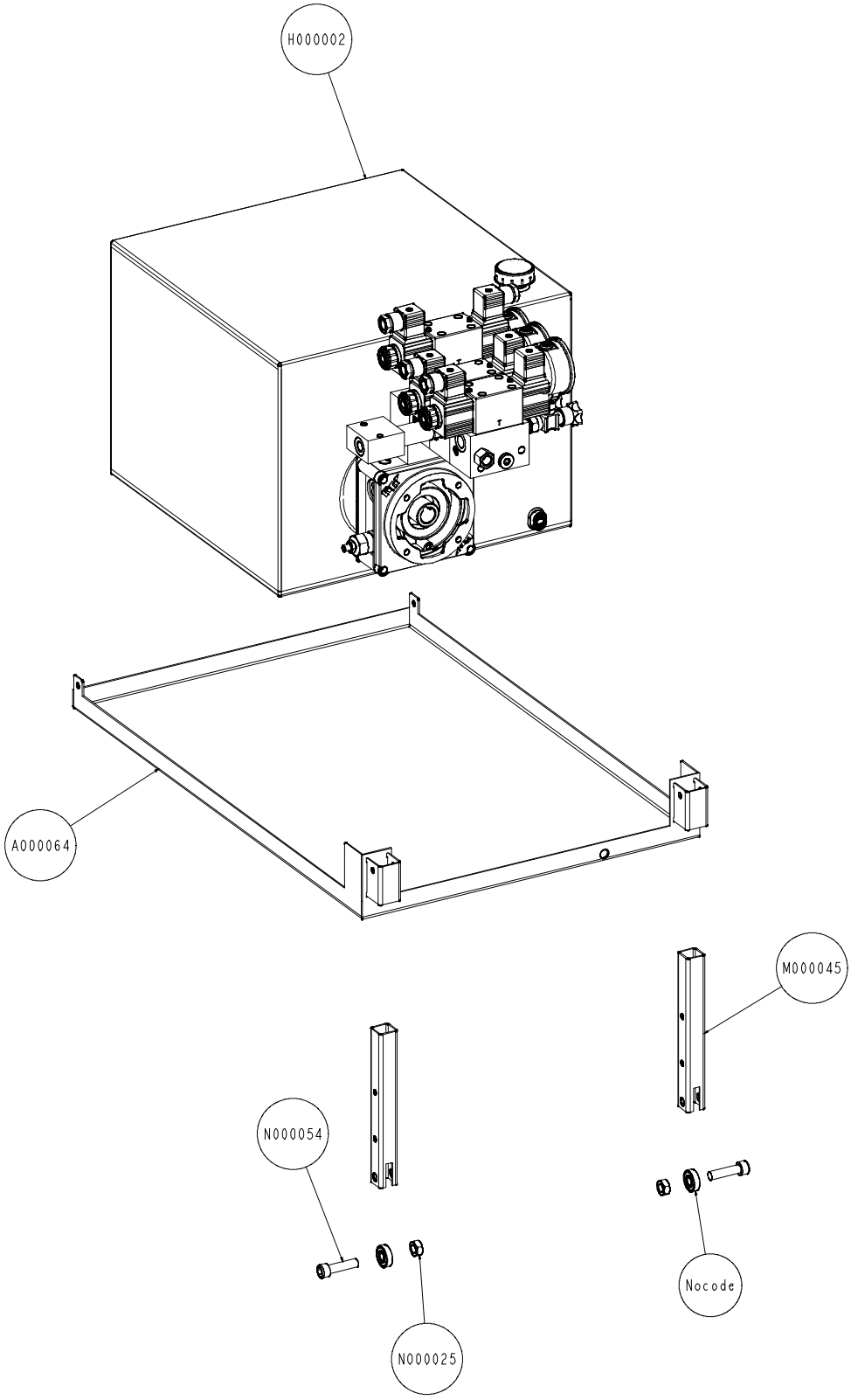
Code	Ref.	Description	Description	Q.ty
007.5062	T000053	TASSELLO FISSAGGIO RULLO VERTICALE ALIMENTATORE	FIXING PLATE F.VERT.ROLLER	2.0000
034.1003	V000028	LEVA A SCATTO 12 MA	LEVER 12 MA	2.0000
010.7895	N000035	VITE TCEI 8 X 30	TCEI 8 X 30 SCREW	4.0000
025.0055	R000027	CUSCINETTO 62.05 2Z C3	BEARING 62.05 2Z C3	2.0000

Control board



Code	Ref.	Description	Description	Q.ty
010.7890	N000080	TCEI 8 X 12 SCREW	VITE TCEI 8 X 12	10.0000
010.7832	N000040	BUTON SCREW 6 X 12	VITE BUTON 6 X 12	6.0000
031.2081	V000036	PROGRAMMING CONSOLLE MEP50 TS 7INCH	CONSOLLE DI PROGRAMMAZIONE MEP 50 TOUCH- SCREEN 7 INCH	1.0000
-	-	BASE- VENTOLA- RAFF- CINA	BASE- VENTOLA- RAFF- CINA	1.0000
-	-	FILTRO- VENTOLA- RAFF- CINA	FILTRO- VENTOLA- RAFF- CINA	1.0000
-	-	COP- ALETTATORE- VENT- CINA	COP- ALETTATORE- VENT- CINA	1.0000

Hydraulic unit



Code	Ref.	Description	Description	Q.ty
	A00064	SUB- ASSEMBLY	GRUPPO- CASSETTO- CENTRAL	1
	M000045	PART	PIEDINO- CASSETTO- CENTR	2
025.0060		PART	6000- 2Z	2
010.7925	N000054	PART	M10X40- TCEI	2
010.7205	N000025	PART	DADO- M10	2
	H000002	SUB- ASSEMBLY	CENTRALINA- IDRAULICA	1

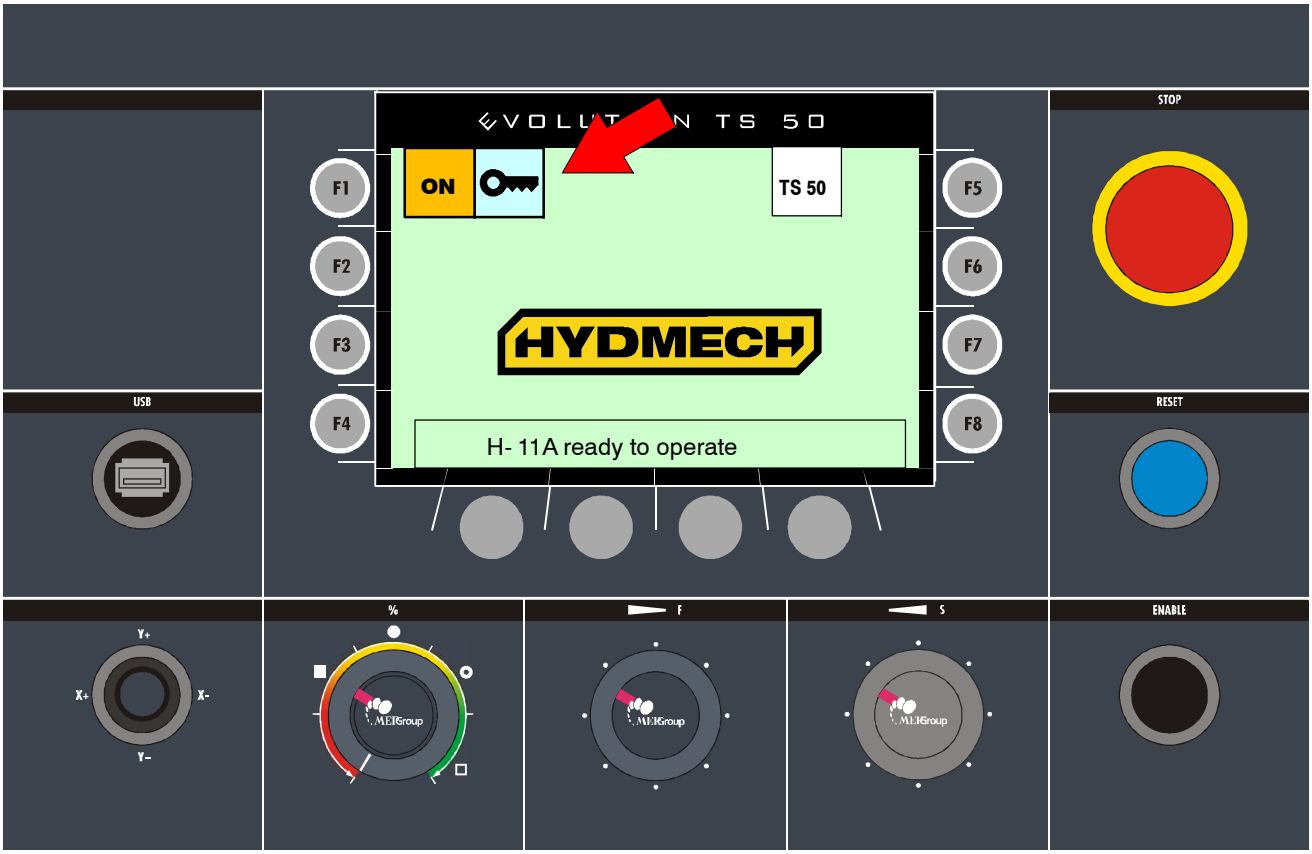
Adjustments

This chapter describes the operations required to adjust the electronic, mechanical and the hydraulic systems. By following these instructions, you can “customise” your machine to suit the type of cut required, thereby optimising cutting times.

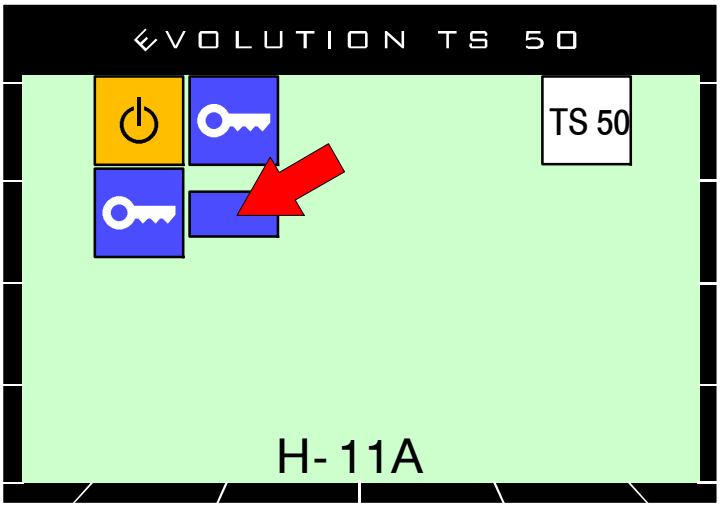
Displaying and editing the set- up parameters

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

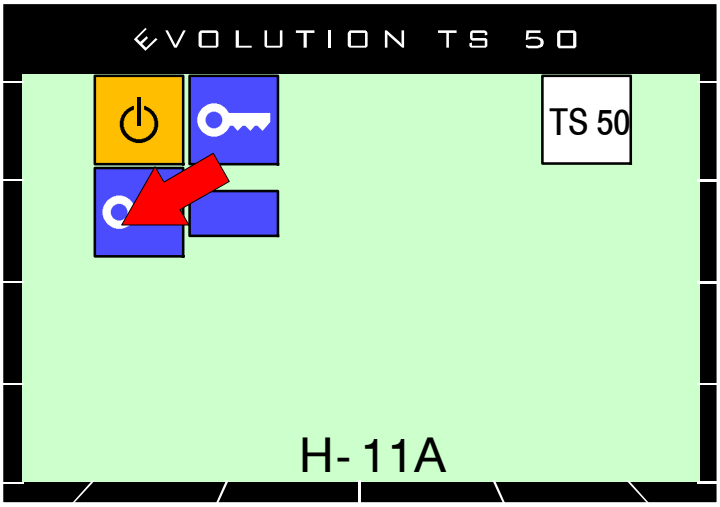
- ▶ Power the machine by turning the main switch on the left of the control board.
- ▶ Tap on the box on the touchscreen shown in the figure.



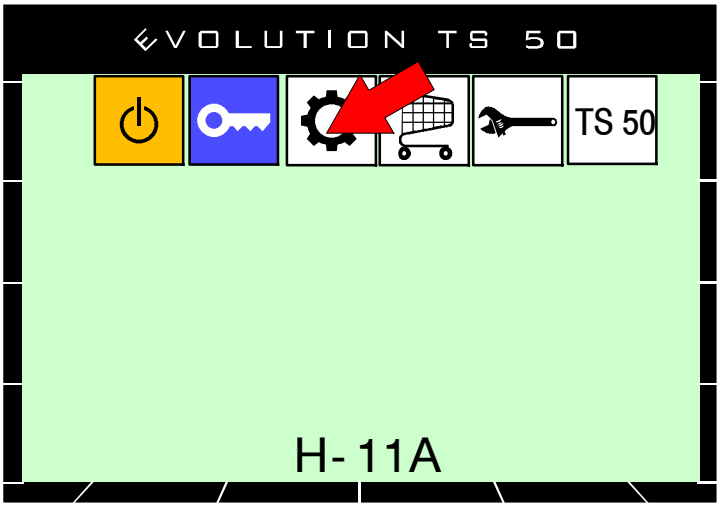
▶ The password entry box will open. Tap the box to open the keypad. Enter 734533.



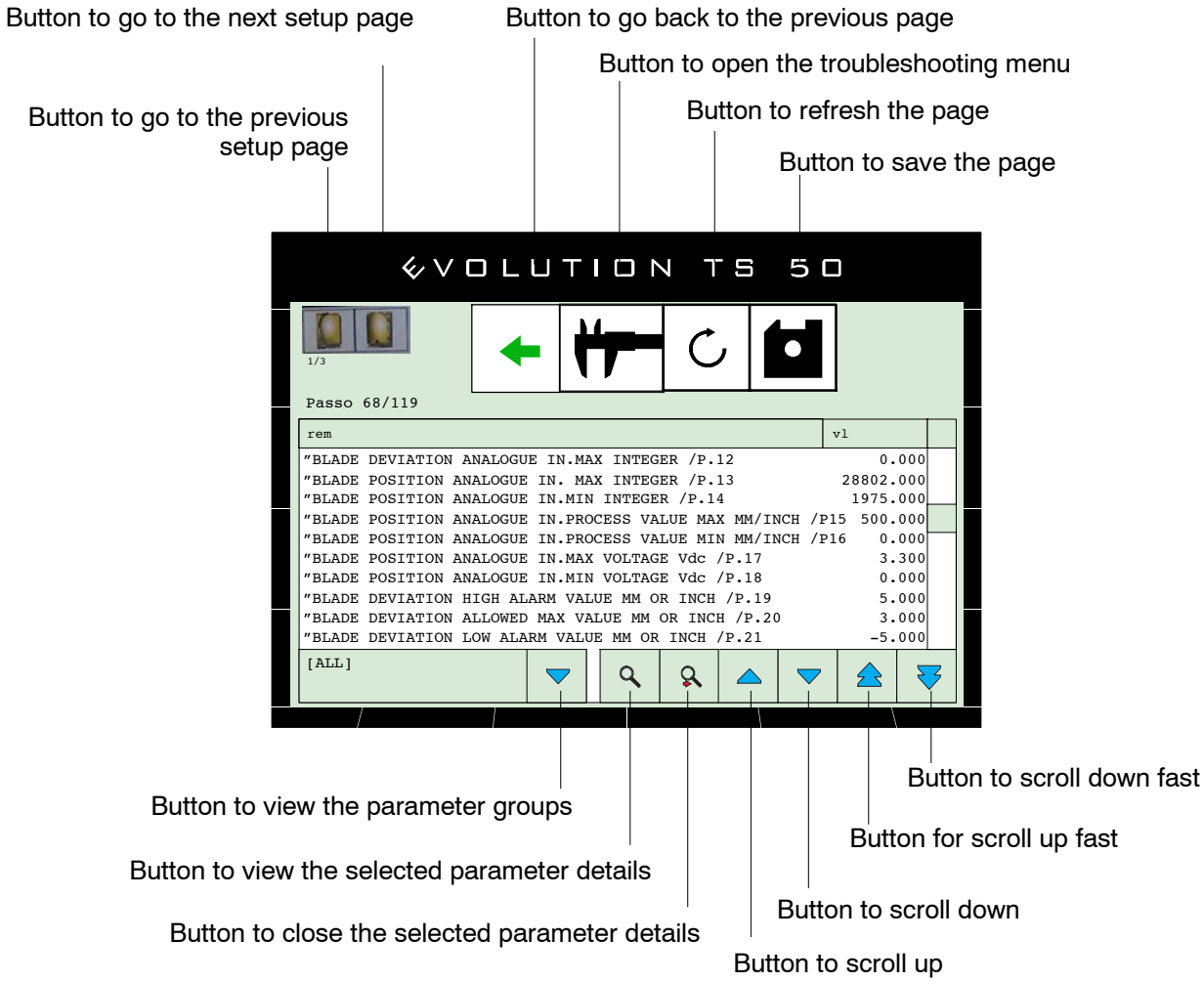
▶ Tap on the box shown in the figure.



▶ Tap on the box shown in the figure.



▶ Once inside the SET- UP menu, use the following three keys to navigate through the different menu screens:



Setup parameters

The machine setup parameters divided by topic are shown below.

BLADE MOTOR:

- **Blade Ampere Analogue In Max Integer /P0:** Analogue input counter value corresponding to the maximum ampere**(5504.0000).**
- **Blade Ampere Analogue In Min Integer /P1:** Analogue input counter value corresponding to the minimum ampere **(32,0000).**
- **Blade Ampere Analogue In Process Value Max Ampere /P2:** Ampere corresponding to maximum analogue input value **(5,5000).**
- **Blade Ampere Analogue In Process Value Min Ampere /P3:** Ampere corresponding to minimum analogue input value **(0.0000).**
- **Blade Ampere Analogue In Process Max Voltage /P4:** Voltage corresponding to maximum analogue input value **(10.0).**
- **Blade Ampere Analogue In Process Min Voltage /P5:** Voltage corresponding to minimum analogue input value **(0,0).**
- **Blade Ampere Control Check Time Period sec /P23:** Control execution time (sec) **(1).**
- **Blade Ampere Control Before Enabling On Delay sec /P24:** Activation delay in seconds (if 0 is off) **(3,000).**

- **Blade Ampere Control Feed Reduction Step M/min /P25:** Correction step **(25,0000).**
- **Blade Ampere Control Max Allowed Ampere /P26:** Maximum allowed current **(24.0000).**
- **Blade Ampere Control Max Ampere Alarm On Delay sec /P27:** Maximum motor current alarm filter (sec) **(1.0).**
- **Blade Speed Control Max Allowed M/min /P29:** Speed set point maximum value **(115,0000).**
- **Blade Speed Control Min Allowed M/min /P30:** Speed set point minimum value **(15).**
- **Blade Speed Control An In Max Integer Value /P31:** Speed reference maximum value (analogue input maximum value) **(32767.0).**
- **Blade Speed Control An In Min Integer Value /P32:** Speed reference minimum value (analogue input minimum value) **(0.0).**
- **Blade Speed Control Before Stopping On Delay sec /P33:** Stop delay for cleaning cut (sec) **(2).**
- **Blade Speed Encoder Counting Direction Inverting /P34:** Blade speed encoder counter inversion **(1.0000).**
- **Blade Speed Encoder Max Counter Value M/min /P35:** Blade speed maximum value **(115,0000).**
- **Blade Speed Encoder Min Counter Value M/min /P36:** Blade speed minimum value **(15).**
- **Blade Speed Encoder Pulse Scaling Resolution MM or INCH/Pulse :** Blade speed encoder resolution scale factor **(1).**
- **Blade Motor Status On Man Cycle End Motor On = 1.0 /P37:** Blade motor on time at end of manual cycle **(1.000).**
- **Current treshold for max feed correction /P113:** Max. correction threshold when the blade motor overcurrent intervenes during the cut **(3.000)**.
- **Speed encoder type /P139** (0 = Linear; 1 = logarithmic): Setting the encoder speed as linear or logarithmic (0 = linear; 1 = logarithmic) **(0.0000)**.
- **Speed encoder logarithmic X1 threshold (count) /P140:** X1 correction factor for managing the band speed encoder in logarithmic mode **(4.0000)**.
- **Speed encoder logarithmic X2 threshold (count) /P141:** X2 correction factor for managing the band speed encoder in logarithmic mode **(8.000)**.
- **Speed encoder logarithmic X1 multiplier /P142:** X1 correction multiplier for managing the band speed encoder in logarithmic mode **(10,0000)**.
- **Speed encoder logarithmic X2 multiplier /P143:** X2 correction multiplier for managing the band speed encoder in logarithmic mode **(0.0000)**.

SHUTTLE AXIS:

- **Blade speed monitoring before enabling on delay /P43:** Delay in controlling the min. speed.
- **Blade speed monitoring wheel diameter mm or inch /P44:** Pulley diameter. **(530.0000)**
- **Blade speed monitoring number of pick- up pulses per round /P45:** Number of impulses/pulley turn. **(13)**
- **Blade speed monitoring watch dog on delay /P46:** Delay in controlling single impulses. **(0.500)**

- **Blade speed monitoring min speed watch dog value m or ft/min :** Min. speed in m/min or ft/min. **(10)**
- **X positive software limit (mm - inch) /P116:** Feeder max. stroke. **(450)**
- **X negative software limit (mm - inch) /P117:** Feeder min. stroke. **(0,0000)**
- **X joystick feed slow (mm/min or inch/min) /P118:** Slow feeding. **(800,0000)**
- **X joystick feed fast (mm/min or inch/min) /P119:** Fast feeding. **(1500)**
- **Over stroke x /P120:** Zeroing offset. **(0,3938)**
- **Micro engagement speed mm or in/min /P121:** Speed of search for microswitch while the trolley is zeroed. **(1500)**
- **Micro disengagement speed mm or in/min /P122:** Speed of release from the search while the trolley is zeroed. **(1500)**
- **Speed X on cycle mm/min or inch/min /p133: (157.4804).**

BLADE DEVIATION:

- **Blade Deviation Enable /P9** (1 = Enabled): Blade deviation enabling (1 = enabled). **(0)**
- **Blade Deviation count at zero position /P10:** Levels at zero blade deviation **(16320.0000).**
- **Blade Deviation count for division /P11:** Levels for dividing the blade deviation bar **(500.0000).**
- **Blade Deviation for scan time /P12:** Blade deviation reading time **(0.5000).**

HEAD ENCODER:

- **Blade Position Analogue In. Max Integer /P13:** Maximum counter value **(29337,0000).**
- **Blade Position Analogue In. Min Integer /P14:** Minimum counter value **(7205,0000).**
- **Blade Position Analogue In. Process Value Max MM or INCH /P15:** Maximum value in mm or inch **(333,0000).**
- **Blade Position Analogue In. Process Value Min MM or INCH /P16:** Minimum value in mm or inch **(0,0000).**
- **Blade Position Analogue In. Max Voltage Vdc /P17:** Voltage value corresponding to maximum counter value **(10,0000).**
- **Blade Position Analogue In. Min Voltage Vdc /P18:** Voltage value corresponding to minimum counter value **(0.0).**

BLADE TENSION:

- **Blade tension control large pulse width sec./P48: (20.0000).**
- **Blade tension control off between pulses awaiting sec./P49 (0.7000).**
- **Blade tension control small pulse width sec./P50: (0.0250).**
- **Blade Tension Control Max Alarm Tension KN /P51:** Maximum voltage allowed to apply adjustment **(3000.0000).**
- **Blade Tension Control Min Alarm Tension KN /P52:** Minimum voltage allowed to apply adjustment **(600,0000).**
- **Blade tension control error large to small pulse changeover/P53: (100.0000).**
- **Blade tension control max error tolerance kn/P54: (50.0000).**
- **Blade tension control min error tolerance kn/P55: (-50.0000).**

- **Blade tension control setpoint kn/P56: (3700.0000)**
- **Blade Tension Control An. In. Load Cell Max Integer Value /P57:** Maximum counter value from load cell analogue input **(4912,0000).**
- **Blade Tension Control An. In. Load Cell Min Integer Value /P58:** Minimum counter value from load cell analogue input **(32,0000).**
- **Blade Tension Control An. In. Load Cell Process Value Max KN /P59:** Load cell analogue input maximum value allowed for acquisition **(900,0000).**
- **Blade Tension Control An. In. Load Cell Process Value Min KN /P60:** Load cell analogue input minimum value allowed for acquisition **(0.0000).**
- **Blade Tension Control Enabling /P61:** Automatic blade tension adjustment enable **(1).**
- **Blade Tension Control An. In. Load Cell Voltage Value Max Vdc:** Load cell analogue input voltage maximum value **(10.0000).**
- **Blade Tension Control An. In. Load Cell Voltage Value Min Vdc:** Load cell analogue input voltage minimum value **(0,0000).**

CLAMPS ENCODER:

- **Clamps Locking Status Rises After Specified Secs From Command:** Time needed to allow clamp closed **(3).**
- **Clamps Unlocking Status Rises After Specified Secs From Command:** Time needed to allow clamp open **(3).**

VARIUS:

- **Time shuttle vise position setting (short remnant) sec.: (6.0000).**
- **MKS Imperial Unit System Switchover Enabling:** Imperial = 0.0: sets measuring system MKS (0) or IMPERIAL (1) **(1,0000).**
- **Type machine (0=H14-A; 1=H11-A; 2=H230-A) /P101: (0).**
- **Type logo (0=HYDMECH; 1= ZEPH; 2=S&F) /P146: (0).**

CUT HEAD:

- **Feed Encoder Counting Direction Inverting = 1.0 /P67: (0,0000).**
- **Feed Encoder Max Counter Value M/Min or Inch/Min /P68: (450,0000).**
- **Feed Encoder Min Counter Value M/Min or Inch/Min /P69: (0,0000).**
- **Feed Encoder Pulses Scaling Resolution MM or Inch/Pulse /P70: (2,5).**
- **Feed Encoder Counter Retention Enabling = 1.0 /P75: (1.000).**
- **U Y Feed Axis Full Stroke Width MM or Inch /P82:** U axis maximum stroke (mm or inch) **(300.0000).**
- **Y Cutting Axis Maximum Position MM or Inch /P86:** Y axis maximum limit switch (mm or inch) **(330).**
- **Y Cutting Axis Minimum Position MM or Inch /P87:** Y axis minimum limit switch (mm or inch) **(0.0000).**
- **Y Cutting Axis Auto Cycling Slow Down From Target MM or Inch:** Deceleration space (mm or inch): distance from target position at which slow descent is set **(10,0000).**
- **Y Cutting Axis Cutting Feed PID Control Error MM or Inch /P90: (2,0000).**
- **Y Cutting Axis Mode Downgoing Feed MM or Inch /P92:** Y descent speed in jog mode (mm/min or inch/min) **(2000,0000).**

- **Y Cutting Axis Auto Cycling Slow Down Feed MM or Inch /P93:** Slow Y position speed (mm/min or inch/min) **(1000,0000).**
- **Y Cutting Axis All Mode Upgoing Feed MM or Inch /P94:** Y upward speed (mm/min or inch/min) **(2500,0000).**
- **Y Cutting Axis U Opening @ Y Feed Curve Bypass = 1.0 /P95:** Descent speed linearizing curve enable (F) **(0,0000).**
- **Y Cutting Axis Cutting Feed PID Control Increase Correction (degree):** F correction factor **(1.0000).**
- **Y Cutting Axis Cutting Feed PID Control Time (sec) /P114:** Time between one correction and the next **(0,3000).**
- **H encoder max counter value % /P123:** Max. displayed value of H **(100.0)**.
- **H encoder min counter value % /P124:** Min. displayed value of H **(0.000)**.
- **H potentiometer analogue input fs max /P125:** Max. levels of the H potentiometer **(32496,0000)**.
- **H potentiometer analogue input fs min /P126:** Min. levels of the H potentiometer **(16.000)**.
- **Feed force current control max (Ampere) /P127:** Max. set current of blade motor **(12)**.
- **Feed force current control min (Ampere) /P128:** Min. set current of blade motor **(5)**.
- **Y joystick feed slow (mm/min or inch/min) /P130:** Slow manual head lowering **(500)**.
- **Y joystick feed fast (mm/min or inch/min) /P131:** Fast manual head lowering **(2400,0000)**.
- **Offset fcti mm or inch /P132:** Offset for rear head limit switch **(0.0552)**.
- **Feed encoder type** (0 = linear; 1 = logarithmic): Setting the encoder feeding as linear or logarithmic (0 = linear; 1 = logarithmic) .**(0.000).**
- **Feed encoder logarithmic X1 threshold (count) /P135:** X1 correction factor for managing the head lowering speed encoder in logarithmic mode **(4.000)**.
- **Feed encoder logarithmic X2 threshold (count) /P136:** X2 correction factor for managing the head lowering speed encoder in logarithmic mode **(0.000)**.
- **Feed encoder logarithmic X1 mulitplier /P137:** X1 correction multiplier for managing the head lowering speed encoder in logarithmic mode **(1000.000)**.
- **Feed encoder logarithmic X2 mulitplier /P138:** X2 correction multiplier for managing the head lowering speed encoder in logarithmic mode **(0.000)**.

OPTIONAL:

- **Minimal Lubrification Enabling = 1.0 /P78:** Minimum lubrication enable **(1.000).**
- **Y Raise Up On Manual Cycle (1=Enabled) /P103:** Y axis upward stroke enabled at end of manual cycle (1=enabled; 0=disabled). Y axis returns to RHLS at the end of the manual cycle **(1.0000).**
- **Chip Conveyor Enabled (1=Enabled) /P105:** Chip ejector enable **(1.000).**
- **Enabled Blade Minimum Speed Control (1=Enabled) /P104:** Blade speed proximity enable **(1.0000).**
- **Type of blade tensioning (2 = electromechanical, 1 = hydraulics):** Setting the type of blade tensioning **(2.0000)**.
- **Open front vise at manual cycle end (1 = enabled):** Setting the vice opening at cutting cycle end **(1.0000)**.

- **Type chipconveyor (0=micro; 1=phonic whell)/P161: (1.0000).**
- **Enabling debug (1=enabled)**: (0.0000).

TIMER:

- **Hydraulic Pump Off Delay Awaited Before Stopping Sec /P96:** Hydraulic pump off delay before stopping (seconds) **(50.000).**
- **Chip Conveyor Time On In Auto (M in) /P107: (0.500).**
- **Chip Conveyor Time Off In Auto (M in) /P108: (0.500).**
- **Period microchip conveyor (sec) (phonic whell)/P151:** (1).

PASSWORD:

- **User password value /P99:** Password value setting **(7210721.000)**.

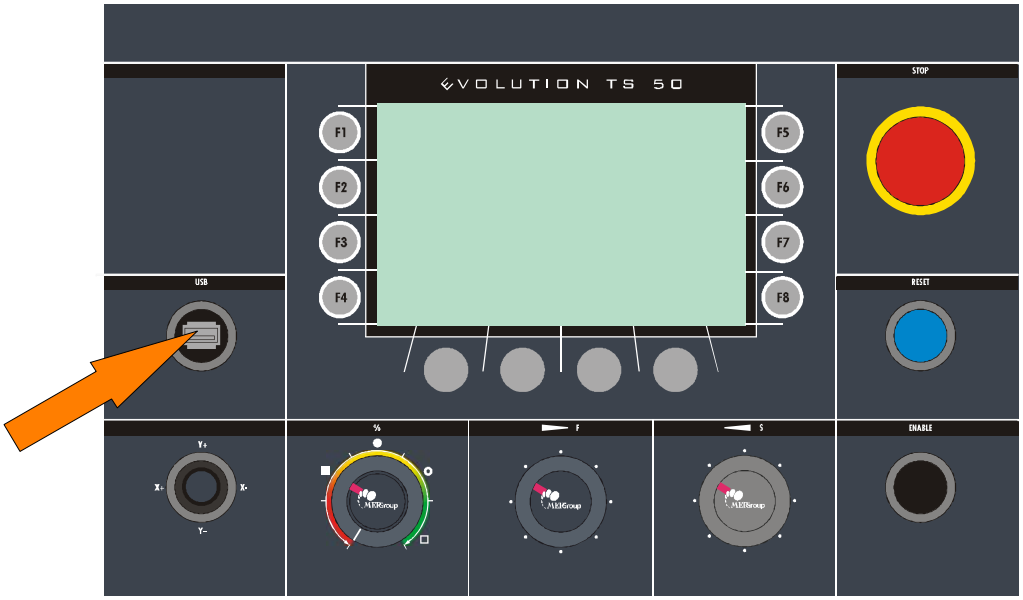
Software update procedure through USB - H-11A

The operations to update the software through a memory card are described here below.

Attention

The operations described below will delete all data of the cutting programs and of the customized settings.

▶ Take the sawing machine off and insert the USB stick containing the update in the port shown in the figure.

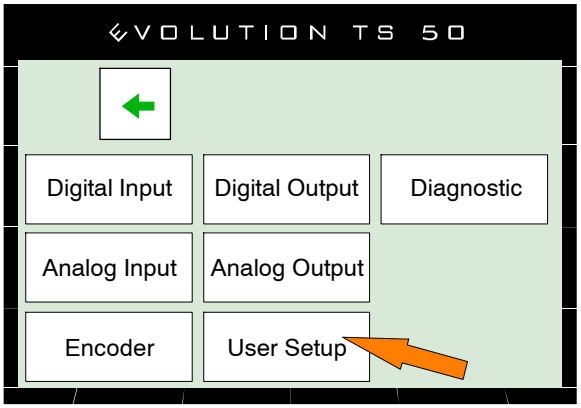


▶ Switch the machine on and wait for the message informing that the update has been completed. Then switch the machine off and on again to run the update.

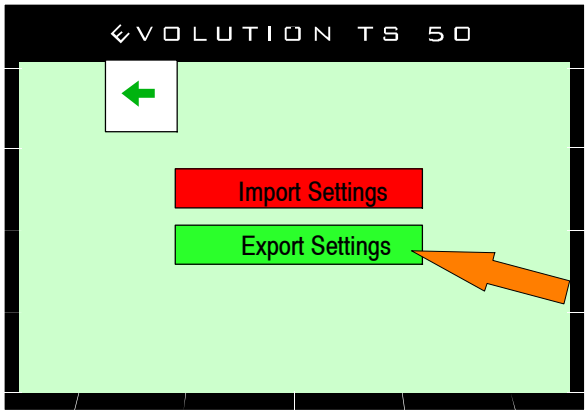
N.B. If the operator wants to keep the customized settings, he needs to make a backup following the operations described below before running the update.

The operations needed for the backup are listed below.

▶ From the Set- Up main menu select the box “User Setup” shown in the figure.

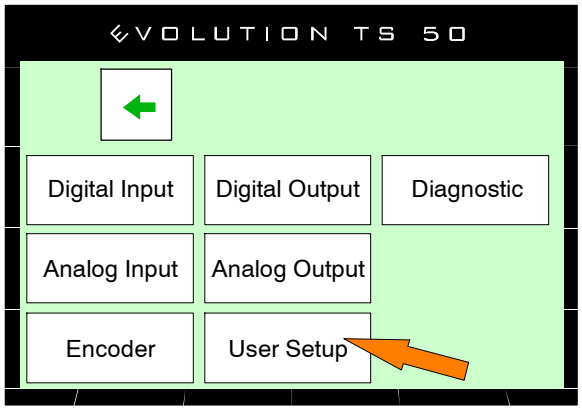


▶ Then, insert an empty USB stick in the suitable port: the box “Export settings” becomes green, press to save the settings.

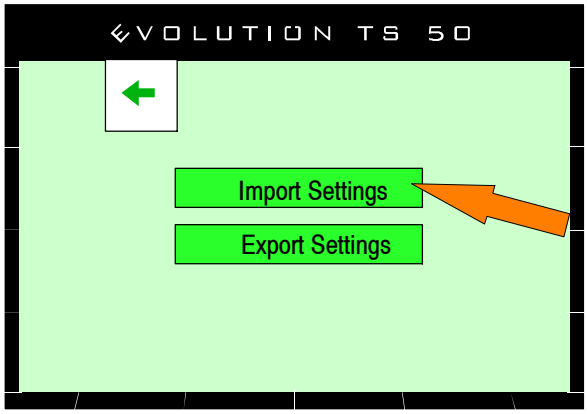


The operations needed for the restore are listed below.

▶ To restore the settings saved in the backup, after the update access the screen “User Set- Up” from the Set- up menu.



▶ Insert the USB stick in the suitable port, the boxes “Import Settings” and “Export Settings” become green. Press the box “Import Settings” to import the previously saved settings.

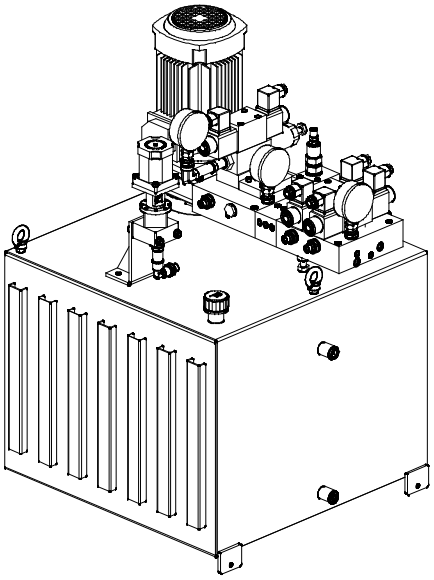


Now the customized settings and the data are again available and the machine is operational.

Hydraulic systems

Machine working pressures

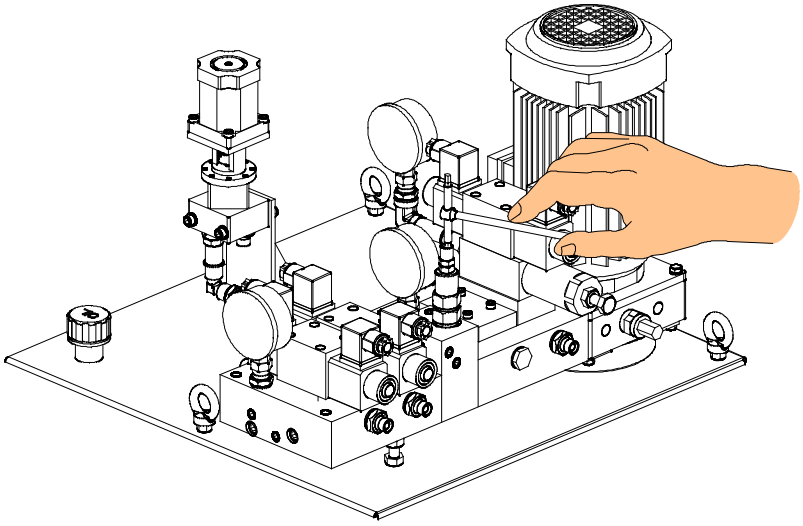
This section describes the procedures for vice tightening pressures by operating on the hydraulic power pack.



N.B. The vice working pressure is tightly bound to the type of material being worked and can be set if the material could be deformed or results unstable during cutting.

Both pressures can be adjusted by intervening on the relief valves of the power pack as indicated in the procedure described here below.

▶ Loosen the hexagonal lock nut for adjusting the pressure of the cutting and feeding vices and increase (clockwise) or decrease (counter- clockwise) the pressure displayed on the pressure gauge with an Allen wrench.



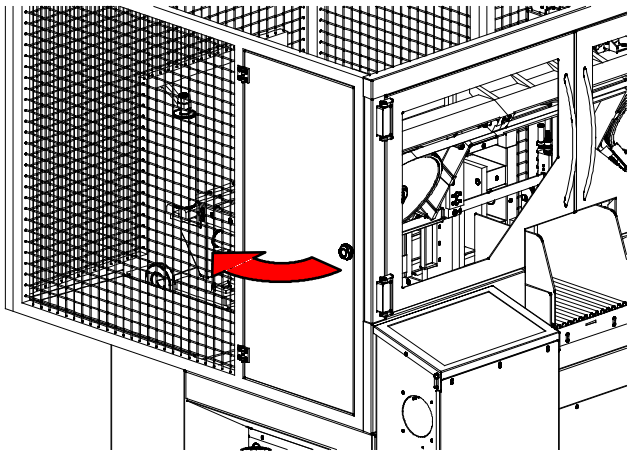
▶ This done, tighten the lock nut.

Warning The power pack pressure gauges are installed on the delivery only; thus, to display the pressure on the return an additional pressure gauge must be connected in the monitoring fitting.

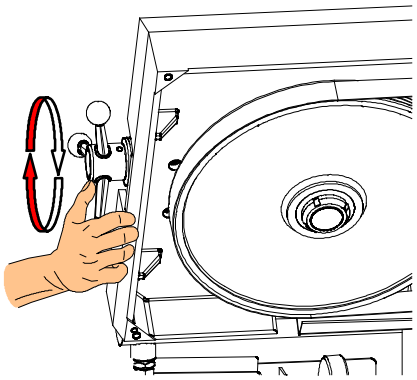
Blade tensioner slide play adjustment

To reduce the play which may develop over time between the blade tensioner slide and slide gibs, adjust the grub screws between the gibs and slide as follows:

- disconnect the machine from the power supply;
- Open the door on the left side of the machine.

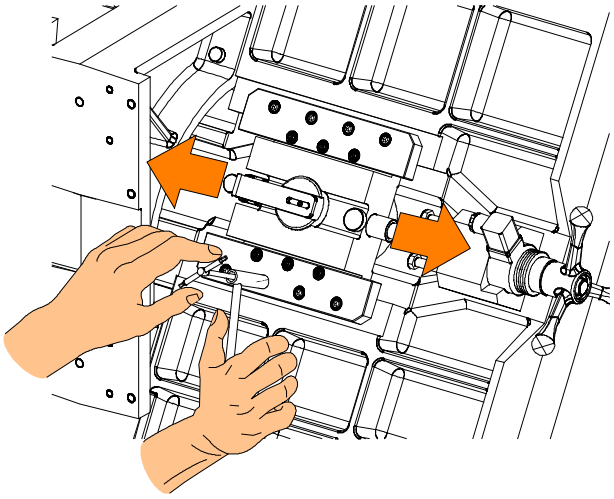


- slacken the blade tension using the handwheel;



- Remove the blade from the flywheels;
- remove the plug connecting the slideway to the cylinder rod;
- Move the slide back and forwards to locate any friction or excessive play;

▶ Slacken the nuts, using a tubular nut driver to hold the grub screws firm;



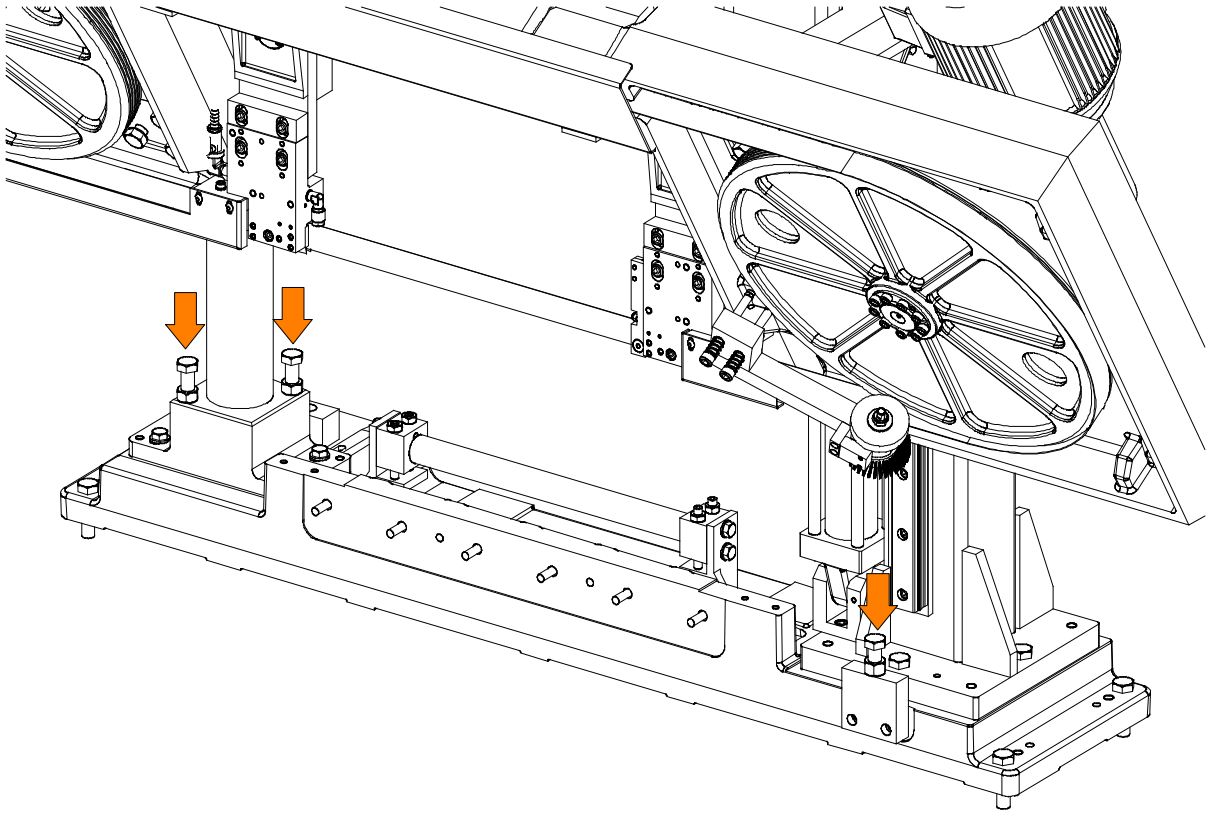
▶ Finally, tighten the grub screws to take up any play or otherwise, slacken them to reduce any friction.

▶ tension the blade and power up the machine again.

Cutting head stroke

The stroke of the operating head during the cutting cycle depends on the RHLS (rear head limit switch) and FHLS (forward head limit switch) points set electronically from the control console. The operating head is anyway equipped with a mechanical limit switch determining the stroke lower limit:

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



Blade guide components

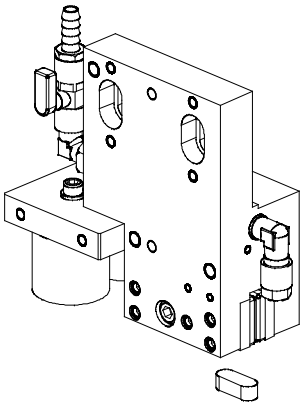
Band saw blades offer enormous advantages to cutting applications, without requiring any special skills by the operator. A description follows of the blade guide adjustments required to ensure correct operation of the saw.

Blade guide heads

The first blade adjustment involves adjustment of the heads. The blade guide heads comprise the blade guide plates which ensure correct longitudinal alignment, the blade steady buttons which control vertical blade flexure and the coolant delivery cocks.

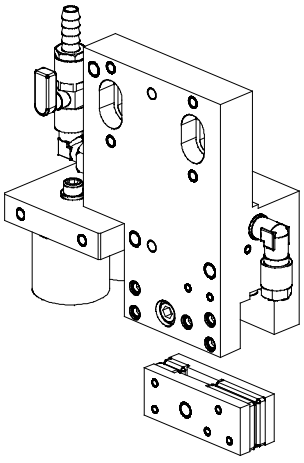
Blade- pressing tang

The blade- pressing tang prevents the blade from bending upwards due to the vertical component of the cutting force.
This device is a component of the front and rear heads and needs no adjustment.



Blade guide plates

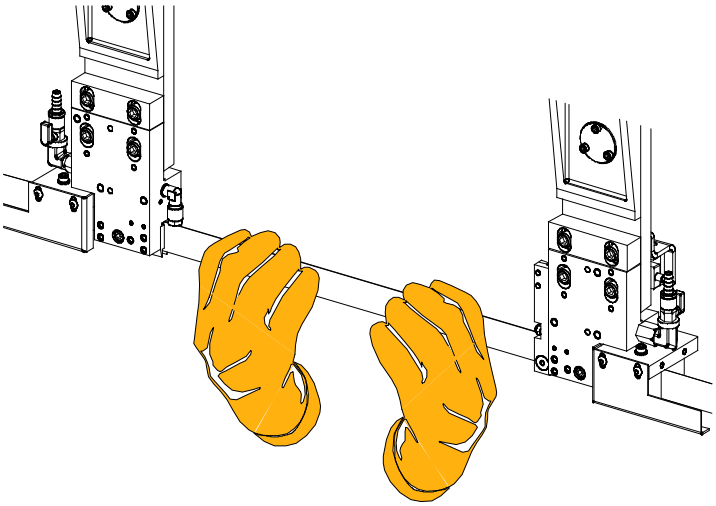
The plate contact points feature widia inserts which guide the blade longitudinally. A small amount of play must exist between the plates and blade to ensure that the blade runs smoothly and perpendicular to the work table.



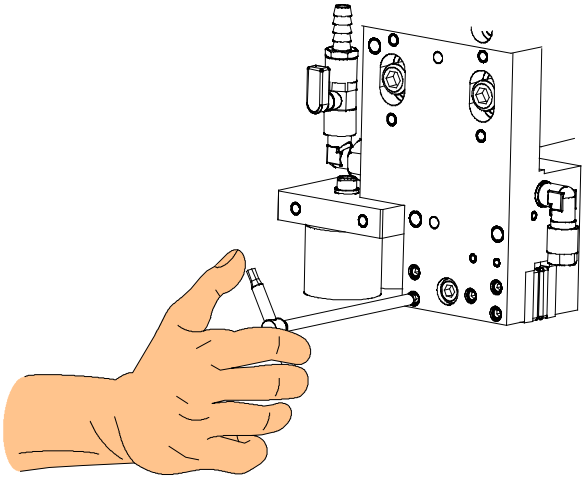
Thanks to the widia inserts, the working life of the guide plates is practically the same as that of the machine itself. However, if due to wear or the assembly of a new blade with a different thickness, the following adjustments must be made:

▶ Take the head completely up to the mechanical stop.

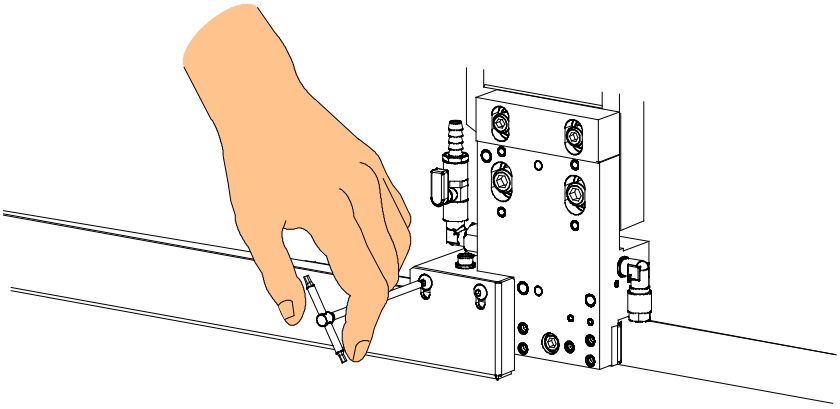
- Cut the machine off.
- slacken the blade tension using the handwheel;
- Open the front protection cover.
- Wear protective gloves when changing the blade;
- Make sure there is a small amount of play between the blade and guide plate inserts.



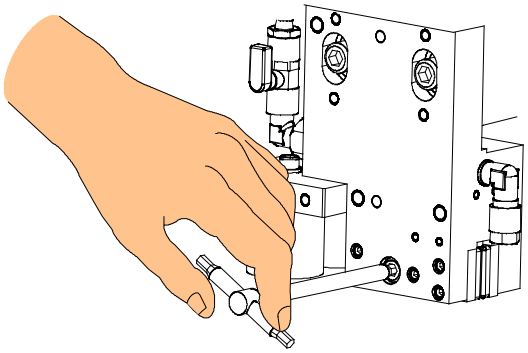
- Remove the blade protections from the heads by loosening the fastening screws.



- If the amount of play is not sufficient for the blade to run smoothly, adjust the locking torque of the two grub screws with a hex wrench.



- Replace any worn plates by replacing the plate fixing screw.



- Repeat the above sequence on the front blade guide head;
- Restore the blade protections of the front and rear heads.
- close the cutting head guard, correctly tension the blade and power up the machine.

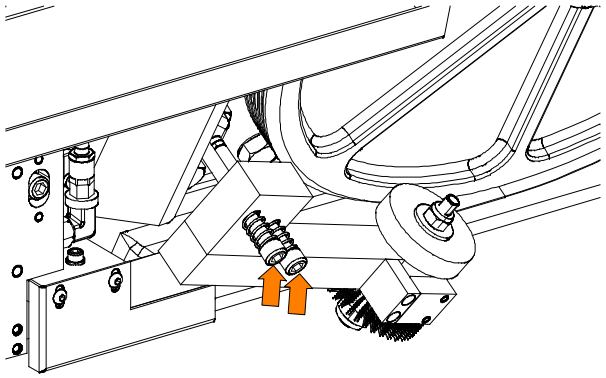
Blade

The adjustments required to ensure correct operation of the blade are described below. For further information regarding band saw blades, refer to Chapter 9 which provides a more detailed description of the different types of blade.

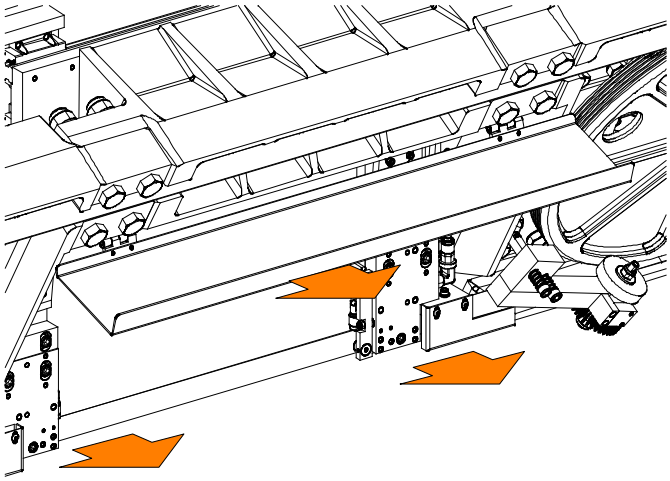
Tool changeover

Optimum working conditions both enhance operator safety and extend the tool service life. The cutting tool should in any case be replaced when poor cutting performance starts to affect productivity. The tool changeover procedure is described as follows:

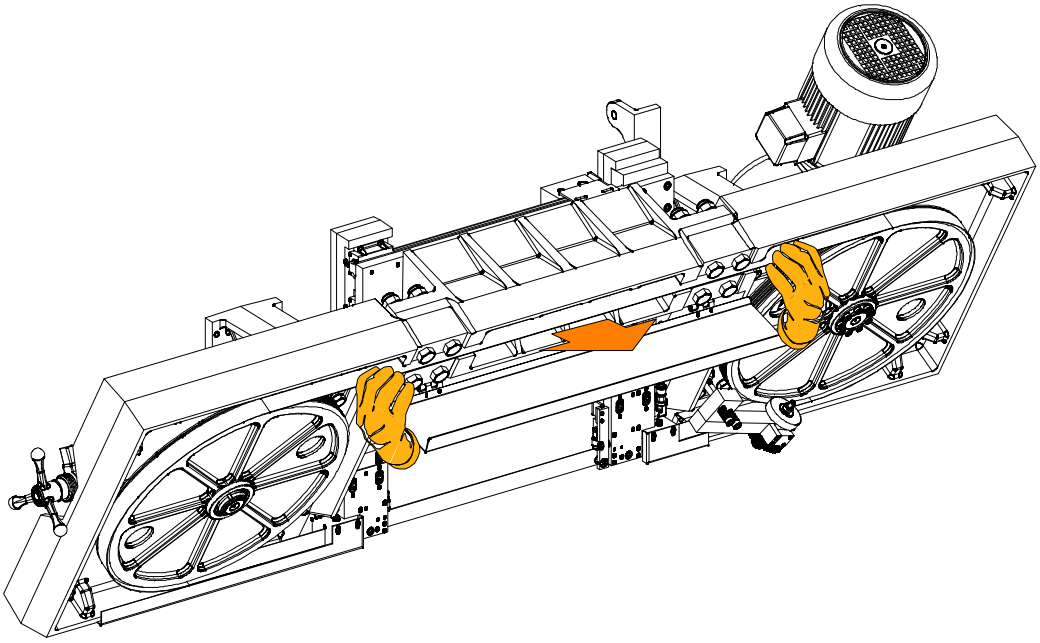
- Take the head completely up to the mechanical stop.
- disconnect the machine from the power supply;
- slacken the blade tension using the handwheel;
- open the front protection cover.
- Wear protective gloves when changing the blade;
- move the blade cleaning brush away by loosening the knob and pulling it outwards;



- remove the blade protections from the heads by loosening the fastening screws.



- Remove the worn blade by sliding it off the flywheels and front and rear heads;



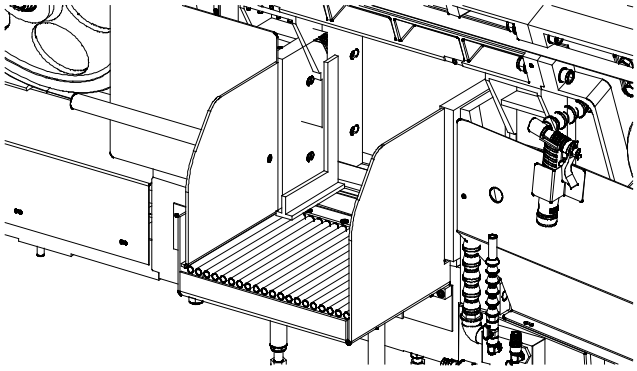
- fit the new blade into the blade guide heads and make sure there is a minimum amount of play between the blade and the plates;
- restore the blade protections of the front and rear heads and position again the blade- cleaning brush correctly.
- close the cutting head guard, correctly tension the blade and power up the machine.

Blade perpendicularity

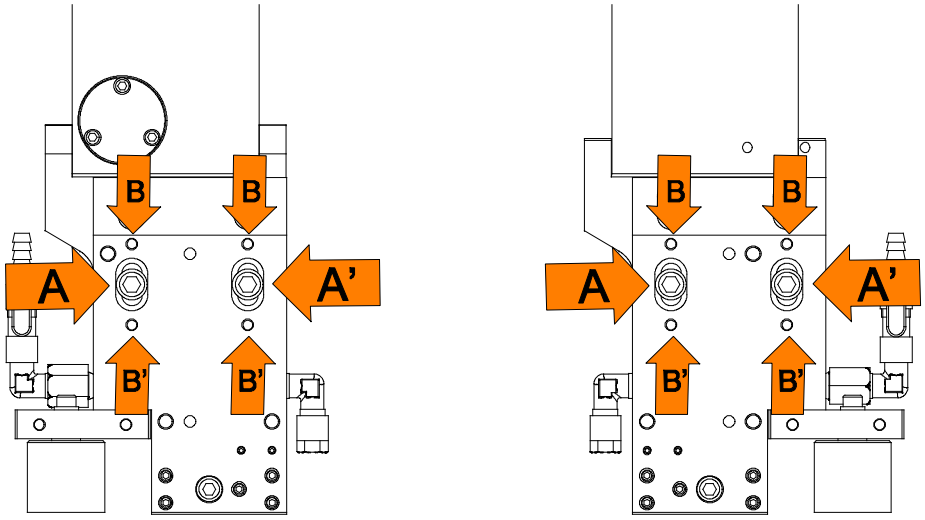
The perpendicularity of the blade to the work surface plus the blade tension are vital for achieving straight cuts. This adjustment is carried out with the help of a goniometer and a workshop square which should be placed adjacent to the blade resting on the work surface.

- Open the cutting vice;
- position the head so that the band is above the vice jaws;

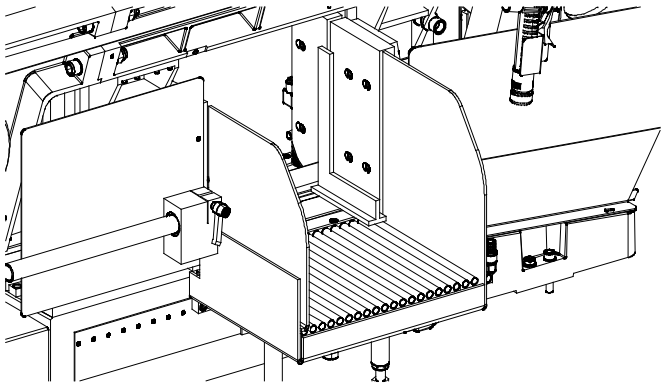
▶ position the square on the well cleaned reference plane and rest it on the blade, close to the movable vice square and head, in a position where teeth do not hinder the contact.



▶ If the band has the contact point in the upper part of the square: loosen the socket head screws (A and A') fastening the head, loosen the two dowels (B' and B') and tighten the two dowels (B and B). If instead the contact point is in the lower part, loosen the socket head screws (A and A'), loosen the two dowels (B and B) and tighten the dowels (B' and B') until the band is perpendicular to the square.



▶ Position the square on the working table close to the fixed vice square and head.



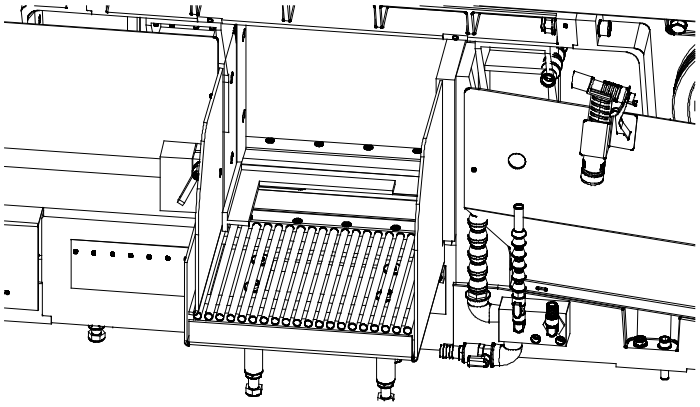
▶ Repeat the squaring operations as for the rear head.

Blade orthogonality

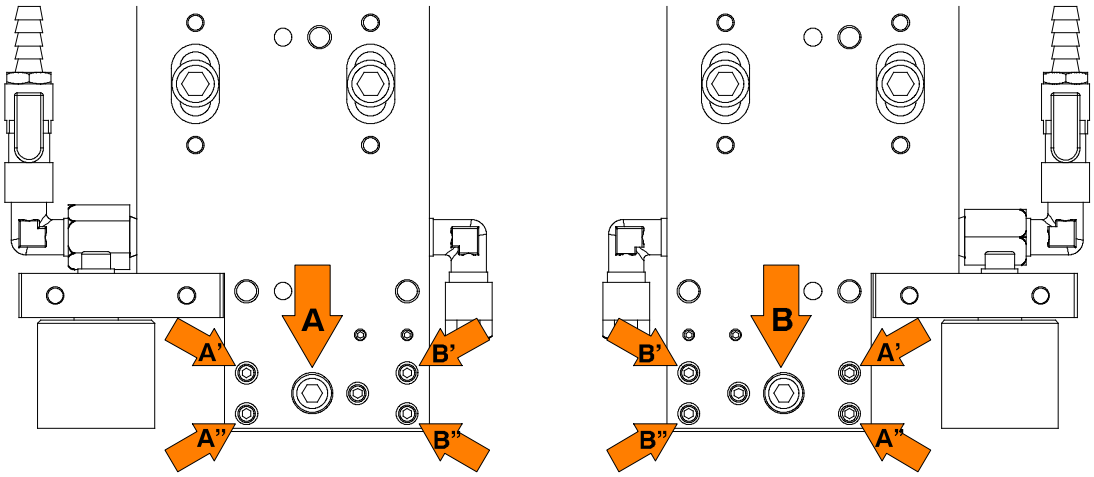
The procedure for correcting and adjusting the blade to 0 degrees in order to make cuts at right angles to the fxed vice jaw.

To make orthogonal adjustments at 0°, use a workshop goniometer or a simple 90° square. Operation sequence:

- ▶ Lay a grounded plate on the feeder rollers;
- ▶ lower the head to HDL;
- ▶ position the square, resting it on the movable vice square, close to the band;



- ▶ loosen the socket head screws (A and B) fastening the head, and adjust the dowels (A', A", B' and B') evenly until the band is perpendicular to the piece-supporting shoulder.

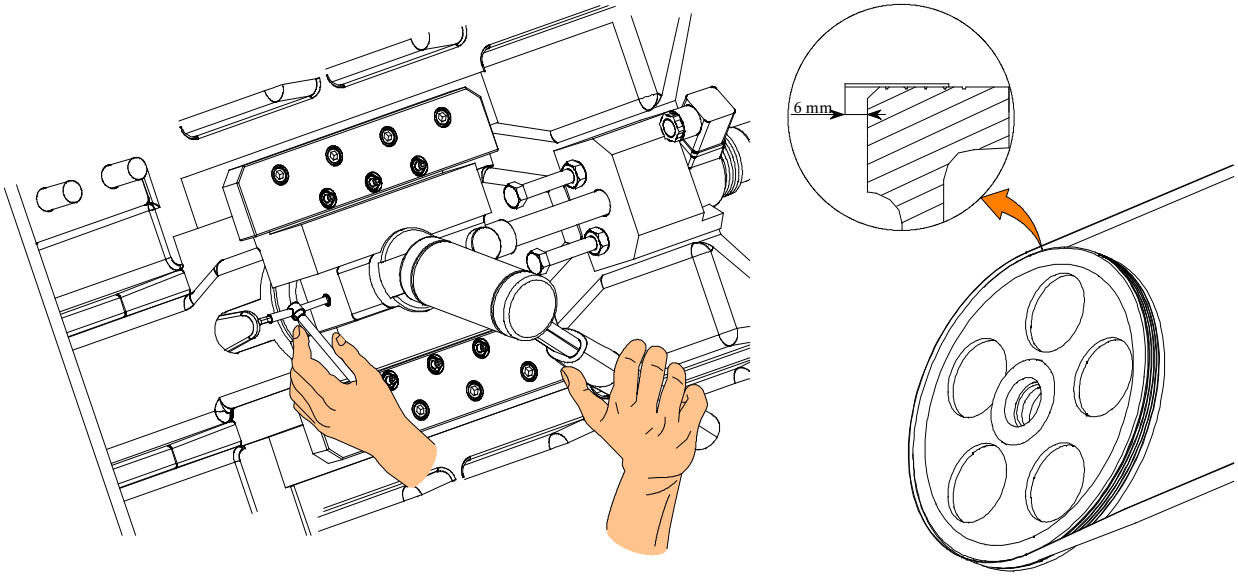


- ▶ After adjusting, check and restore blade perpendicularity.

Rotation axis control

Pulleys must be adjusted in their coplanarity. The adjustment is aimed at ensuring the belt rotation, keeping approx. 6 mm (0.24 in) of distance from the point of the belt teeth to the pulley machined surface. This prevents an early wear of the belt.

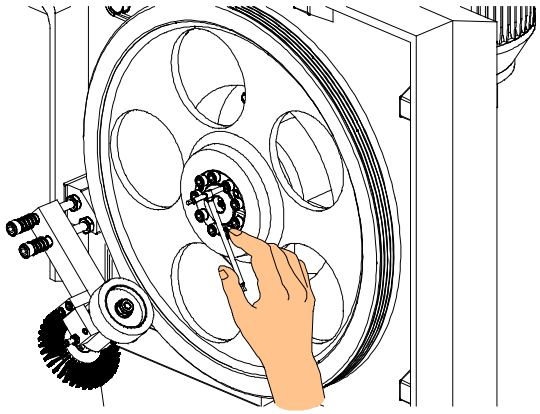
- ▶ De- tension the band and remove the blade protection;
- ▶ slacken the grub screw and, using a mallet, tap the shaft in or out;
- ▶ Position again the blade protection and make the blade turn;
- ▶ check the distance between the blade and edge of the wheels;



- ▶ if necessary, repeat the operation till getting the correct position.

Rear flywheel alignment is closely linked to adjustment of the front flywheel.

- ▶ Adjust by loosening all pulley locking screws and moving the pulley manually inwards or outwards according to the distance of the blade from the pulley machined surface. Tighten the screws again and check the coplanarity making the belt turn a few times.

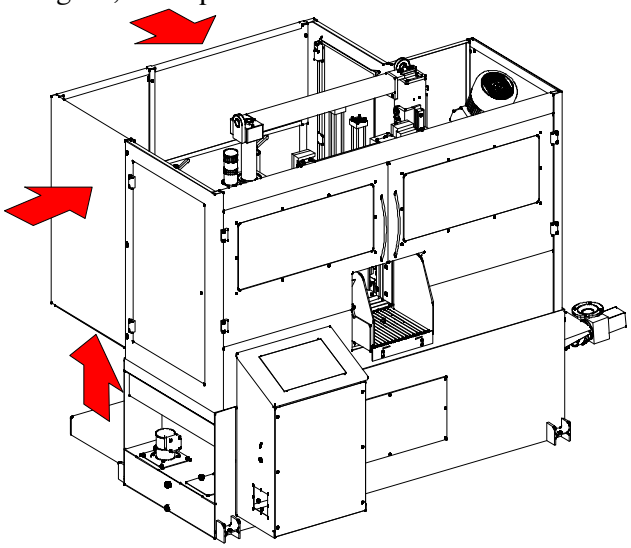


Feeder

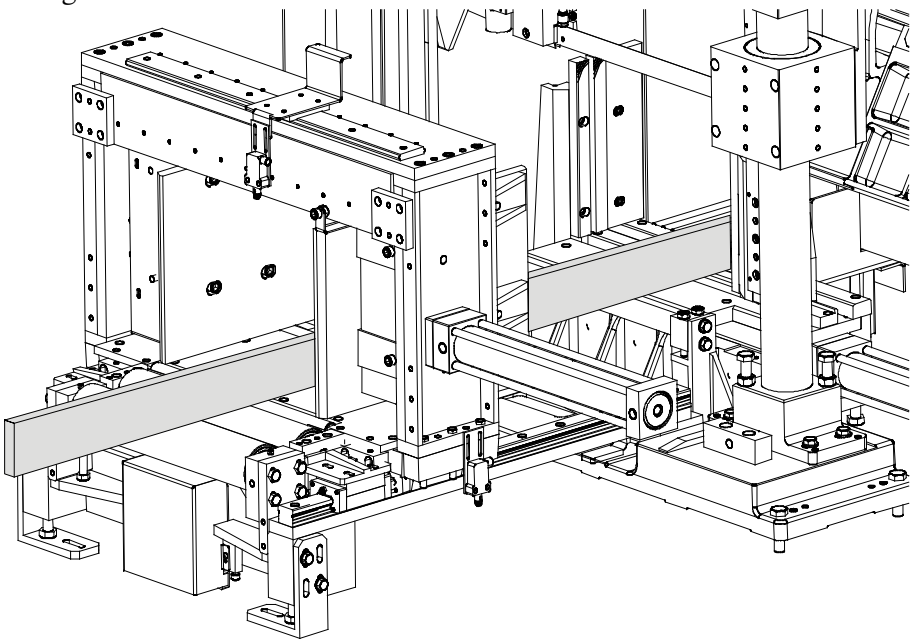
Should the feeder at a later stage in time become misaligned with the cutting table, then use the levelling devices located on the side of the machine and the loading table to restore. Misalignment can be measured using a workshop standard ruler or a straight bar section.

- ▶ In order to facilitate making this adjustment, it is necessary to fully open the jaws and cutting power, then remove the caps on the rear of the machine

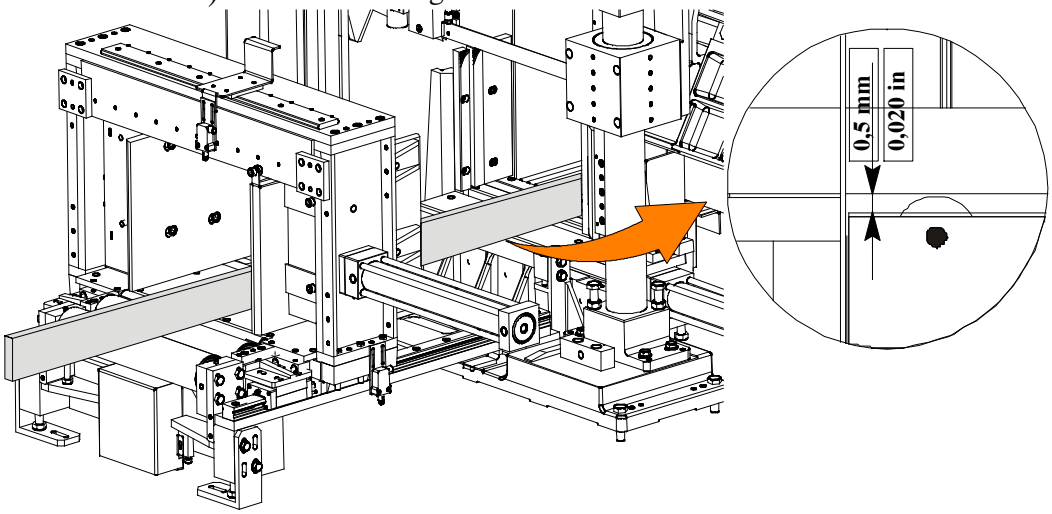
shown in the figure, and open the side door.



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

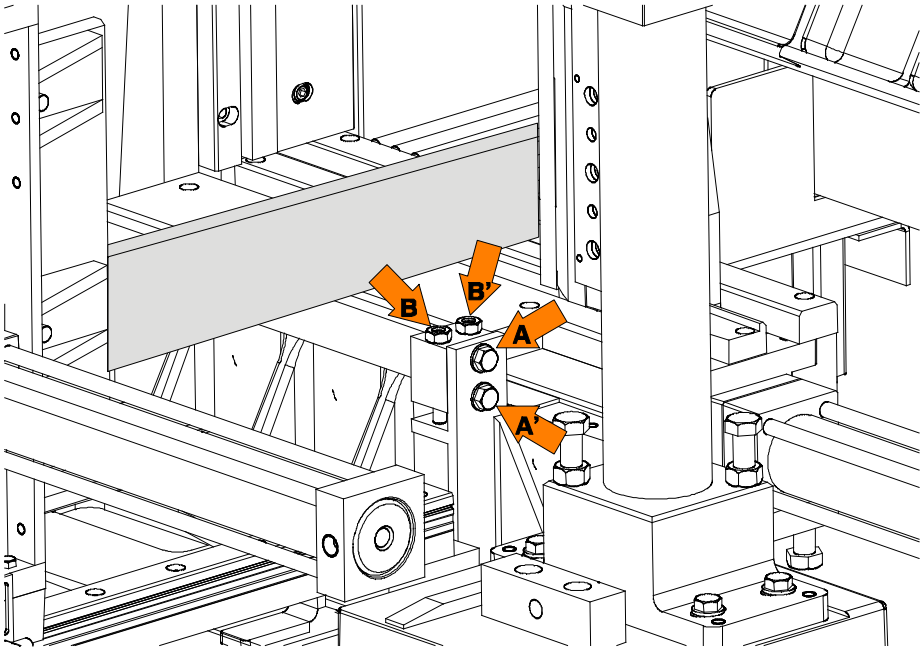


▶ The material to be cut should touch and not rub along the machine work table, make sure that the height of the feeder is at least 0,2÷0,5 mm (0.008 ÷0.020 in) above the cutting table.



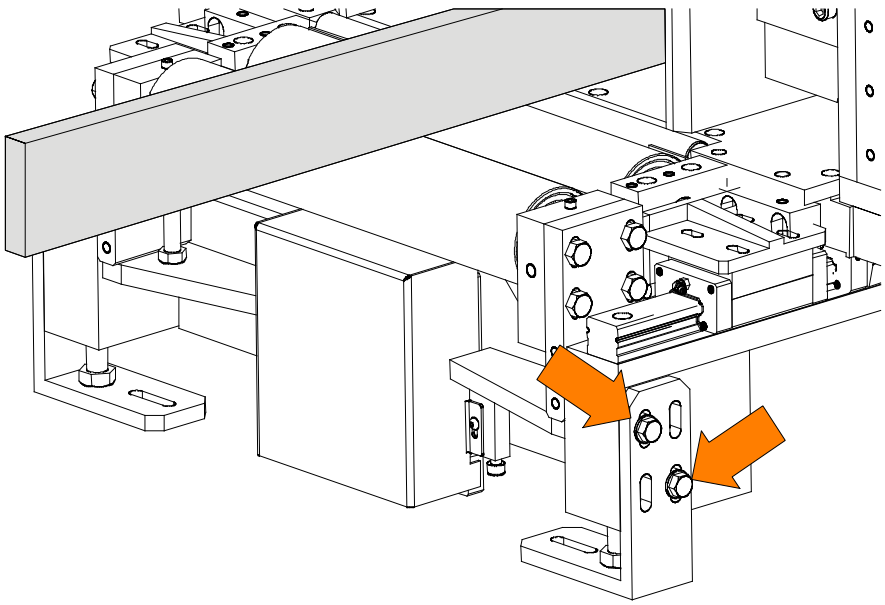
In the case reveal anomalies of coplanarity, proceed before intervening on the fixed roller of the cutting plane and then on the fixed rear of the feeder.

- Put the truck feeder all the way forward;
- positioning a row Workshop on front roller of the carriage and the fixed roller feeder of the cutting plane, in order to evaluate the distance (light) between the line and the cutting plane (the optimum height is from 0,2 to 0, 5 mm or from 0.008 to 0.020 in).
- Loosen from both sides of the two screws shown in figure A and A ', then raise or lower the roller through the grains B and B' until reaching the optimal share. At the end tighten the fixing screws of A and A '.

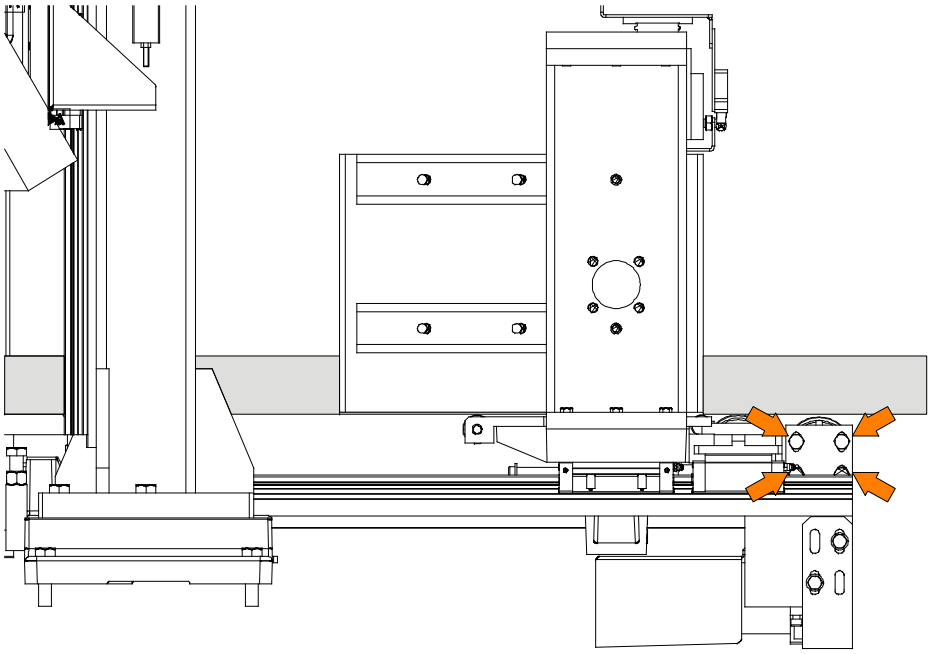


Leaving the line workshop on the rollers, proceed with the adjustment of the coplanarity of the entire feeder:

- Put the truck feeder completely backward.
- After having set the height next to the fixed platform, always with the ground ruler, adapt the rest of the feeder adjusting the height of the supporting brackets by the suitable slots.

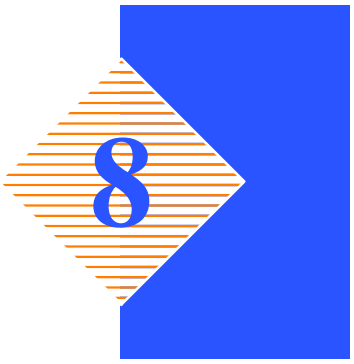


▶ Assess the height of the last feed roller through the line to the workshop.



▶ In the case where it was necessary to align also this roller must loosen the screws from both sides and adjust the height up to touch the line workshop

Maintenance and choice of consumables



H- 11A 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 ordinary and extraordinary maintenance must be carried out with the power switched off and the machine in emergency condition.
- To guarantee perfect operation, all spare parts must be Hyd- Mech 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

This section lists the various routine maintenance procedures:

Daily

- remove all swarf from the machine (preferably with a non- fibrous cloth);
- empty the swarf drawer (this is located on the right side of the base);
- top up the lubricant/coolant level;
- check state of blade wear and replace if necessary;
- Check the blade for wear and, if necessary, replace;
- control the oil level of the hydraulic unit and top up whenever necessary. Check for oil leaks in the hydraulic couplings and that no pipes have been badly bent by accident;

Weekly

- Remove all swarf from the machine;
- Clean the vice and lubricate all the articulated joints and sliding surfaces with a good quality oil.
- Check the vice sliding; if it is not accurate and shows a cross clearance, adjust as indicated in Chapt. 7.

Monthly

- Make sure the blade is perpendicular to the work surface and; if necessary, adjust as described in Chapter 7.
- Make sure the blade is orthogonal to the workpiece rest shoulder and if necessary, adjust as described in Chapter 7.
- Make sure that the 0° notch on the fixed work table is aligned with the graduated scale on the turntable. If necessary, adjust by regulating the 0° stop; This done, make sure the blade is perpendicular to the work surface and orthogonal to the shoulder.
- Clean the air duct to the switchboard, remove the fan and clean the air filter with compressed air.
- Control the plane alignment of the feeder with the cutting table; if it requires adjustment, refer to Chapter 7).
- Check the state of the widia inserts and the blade steady button, if worn or chipped, replace. Also check their position and, if necessary, adjust (see Chapter 7).

▶ Thoroughly clean the bottom of the water tank and the filter on the electric pump.

Maintenance of working parts

Maintenance personnel working on the **H- 11A** must pay particular attention to operating components such as the blade tensioning cylinder (already dealt with in Chapter 7), loading, the air treatment unit and the pneumatic vice. No maintenance is required for the worm screw reduction gear fitted on the machine.

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 hydraulic circuit

The machine hydraulic system is supplied with oil FOX YE 32, used by the head cylinder, the vice cylinders and the hydraulic control unit; the compatible oils, or with equivalent features, are indicated here below:

API Cis 32 - ARAL Vitam GF 32 - CASTROL Hyspin AWS 32
ESSO Nuto H 32 / HP 32 - IP Hydrus oil 32 - TOTAL Azolla ZS 32
VALVOLINE Hydraulic HLP 32 - MOBIL DTE 24 / 25 / 26
MOBIL Vacuoline Oil 1405 - FIAT HTF 32 - Q8 Haydn 32
SHELL Tellus oil 32 - BP Energol HLP 32

Hydraulic power pack:
- reservoir capacity litres 36,0

Oils for lubricant/coolant fluid

The lubricant/coolant fluid used by the machine is CASTROL Syntolin TFX. In the absence of specific standards regulating this type of oil, we have selected this product on the basis of its excellent quality- price ratio. The following oils may also be regarded as compatible or having equivalent specifications:

AGIP NB 200 - SHELL Lutem TT - IP Utens Fluid- F

Another lubricant/coolant oil guaranteed and distributed by LENOX, a band saw blade manufacturer, is BAND- ADE SAWING FLUID LENOX.

- tank capacity litres 200
- oil concentration 5- 6 %

Oils for worm reduction gear

The machine is equipped with a worm reduction gear which is permanently lubricated and therefore maintenance- free. The unit in fact has no filler cap, level plug or drain plug since it already contains the quantity of synthetic oil required to permanently lubricate the helical worm gear and worm screw. A brief list of synthetic oils for permanent lubrication is given below:

BP Energol SG XP220 - KLUBER Syntheso D220EP
ESSO Glycolube Range 220 - IP CT614 - SHELL Tivela Oil SC 320
FINA Girans.

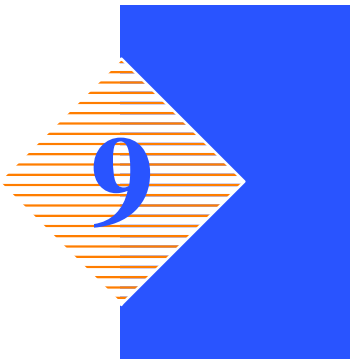
- reduction gear capacity litres 0,320

Oils for spray mist system (optional)

The oil type used for the machine spray mist system is the cutting oil: Blaser Vascomill F 22.
Though there are no specific standards for these types of oils, Hyd- Mech considers that the above product has the best price/quality rapport. The following oils can also be said to have similar characteristics and are therefore compatible:

SHELL MACROM 401 F22 - AGIP ESTRAMET F20

Cutting speed and choice of tools



The cutting speed is determined by the blade rotation speed and head feed speed. While the latter depends on head movement, the blade rotation speed may be either fixed or variable. This chapter indicates the cutting speeds obtainable on the standard machine version, and also the speeds obtained using the optional electronic speed control (inverter). When using the **H- 11A** the correct blade must always be selected for the type of material being cut.This chapter explains the limitations and specific applications of the different types of blade available.

Cutting speed

Standard machine

The standard version with 4- pole motor, has a speed range from 15 to 115 m/min (49÷377 ft/min). The inverter is an electronic instrument installed on the **H- 11A** , to control the rpm of the spindle motor. This instrument simplifies special cutting jobs by adjusting the blade rotation speed to suit the kind of material being cut. It thus optimises blade usage, since you can adapt a blade not designed for a specific type of material and avoid premature blade wear.
The inverter's specifications are set out below as listed earlier in the *"Machine specifications"* table in Chapter 1.

Inverter technical specifications	
Protection rating	IP 54
Vibration and shock resistance (EN50178)	fup to 5.9 m/sec2
Max. relative humidity	from 20% to 95%
Acceptable Temperature Range (EN 50178)	For working from - 10° C to + 50° C (remove fan cover if temperature exceeds 40 C°)
Max. altitude	1000 mt. (3242.5 ft) without derating
Supply	- single phase: 230V
	- three phase: 400V
Frequency	50/60 Hz
Output voltage	Maximum voltage equal to supply voltage
Output frequency range	from 50 to 400 Hz with increase of 1 Hz
Max. transients	150% of electronic speed control rated current for 60 secs.
Frequency resolution	- Display: 0,1 Hz - Analogue inputs: 0,003 Hz per 100 Hz max.
Switching frequency	Adjustable from 0 to 15 Hz max.

Inverter technical specifications	
Electronic speed control protection and safety devices **Motor protections** **Motor protections**	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
	Thermal protection against overheating and overcurrents
	Mains undervoltage and overvoltage safety devices
	Braking overvoltage safety devices
Motor protections	Built- in electronic speed control protection with I2t calculation

Choice of blade

When using band saws to cut metals, an important factor is the choice of pitch, i.e. the number of teeth per inch (25.4 mm.), which must be suitable for the workpiece material. The following recommendations may be taken as general guidelines:

- thin- walled materials, such as sheet steel, tubes and profiles require a fine pitch frequency. 3 to 6 teeth should be engaged in the breadth of the material at any one time;
- large section cutting requires a coarse pitch to cope with the higher volume of swarf and optimal tooth penetration;
- soft materials (aluminium alloys, soft bronze etc.) also require a coarse tooth pitch.

Saw tooth pitch

The choice of teeth per inch, therefore, depends on various factors:

- the size of the section;
- the hardness of the material;
- workpiece wall breadth.

Very large dimensions require coarse teeth, while small dimensions require finer teeth. Whatever the case, ensure that there are always at least six teeth engaged in the cut, with reference to the thinnest vertical walls positioned transversally to the blade. Concerning the type of H machine, a first broad distinction can be made according to the hardness of materials:

	Mild steels < 61 HRB	Hard steels > 65 HRB
	NR. TEETH/INCH	**NR. TEETH/INCH**
MINIMUM	3 / 4	5 / 8
OPTIMUM	4 / 6	6 / 10
MAXIMUM	8 / 12	10 / 14

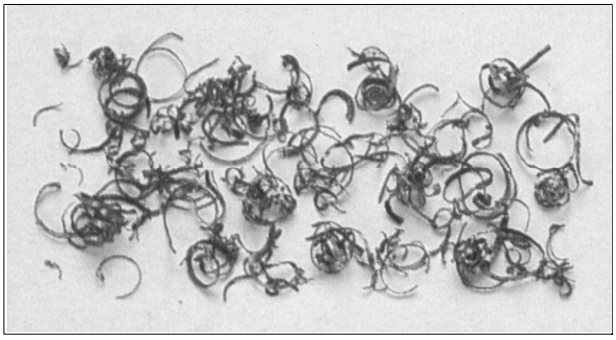
Cutting speed and downstroke speed

The cutting speed (m/min or ft/min) and the downstroke speed (cm^2/min or in^2/min) are limited by the heat generated around the points of the teeth. If the downstroke speed is too high, the cut will not be straight, either vertically or horizontally. The cutting speed depends, as indicated above, on the tensile

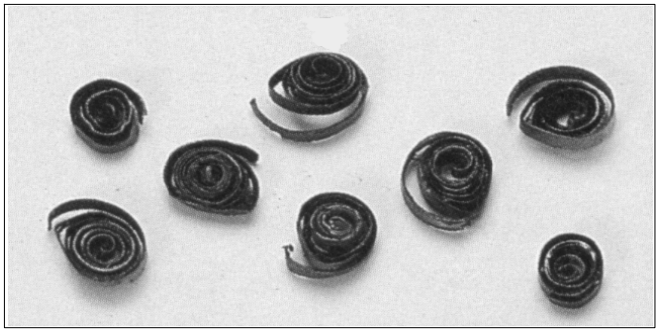
strength of the material (kg/mm^2), its hardness (HRB) and the thickness of largest sections. The downstroke speed depends on the material thickness. Therefore, large- section, solid or thick- walled materials (s > 5 mm or 0.20 in), can be cut at high speeds, providing there is sufficient swarf removal from the blade; thin- walled materials, such as slim piping or profiles, must be cut using low and especially constant downstroke speeds. A new blade must be worn in, which in effect means lowering the downstroke speed to about half that of normal (from 60 to 70 cm^2/min or 9.3 to 10.85 in^2/min on normal steels), equal to a removed surface area of about 300 - 600 cm^2 (46.50- 93 in^2).

Types of swarf:

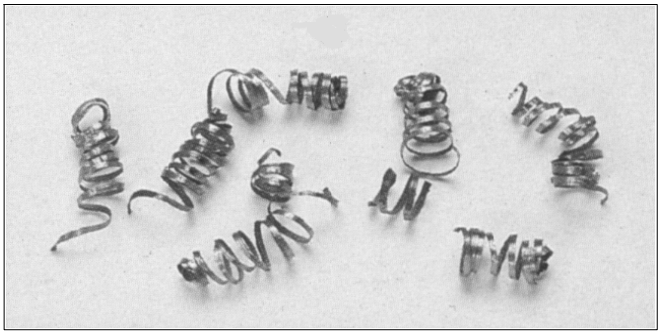
- Very fine or fragmented swarf indicates that the downstroke speed and/or cutting pressure is too low.



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



- Long coils of swarf indicate ideal cutting conditions.



Lubricant/coolant fluid

The lubricant/coolant fluid must ensure so that neither the saw teeth nor the work piece material in the cutting zone overheat. Furthermore, there must be a sufficient quantity and pressure of lubricant/coolant to remove swarf from the cutting zone. The lubricant/coolant fluid must be of the highest quality in order to prevent tooth abrasion and welding of swarf to the teeth themselves (seizing).

Blade structure

The most commonly used blades are the bimetal types, i.e. manufactured with a silicon steel body and having a high fatigue strength, and super high- speed steel teeth; the two parts are welded by electronic or laser- welding.
Standardised teeth types are termed M2 and M42; the difference being that M42 teeth are harder due to the addition of cobalt to the steel used to make the teeth.

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

TYPE OF BLADE	*C*	*Mn*	*Si*	*Cr*	*W*	*Mo*	*V*	*Ni*	*Co*	*Al*	*HRC*
	0,47	0,75	0,22	1,00		1,00	0,12	0,52		0,08	45- 50
HSS M2 HRC 65- 66 / HRC 45- 50	0,85	0,25	0,30	4,15	6,37	5,00	1,92				64- 66
HSS M42 HRC 67- 68 / HRC 45- 50	1,07	0,25	0,20	3,75	1,50	9,50	1,15		8,00		67- 69

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

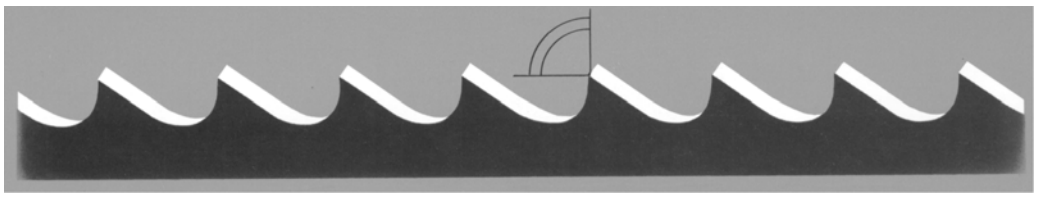
Blade types

The blades fitted on the **H- 11A** , are 4500 x 41 x 1,3 mm. (177.16x1.34x0.04 in); in addition to their size and number of teeth per inch, blades also have other geometric characteristics that vary depending on their particular application:

- tooth cutting angle (rake), can be 0° or positive;
- the tooth pitch can be constant or variable;
- the set, i.e. the various teeth alignments, have many possible configurations.

Conventional rake

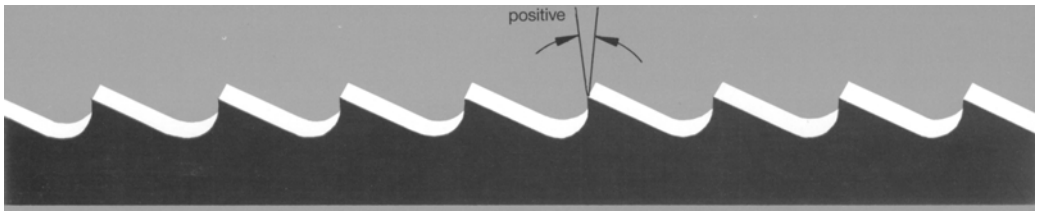
Cutting angle 0°, constant pitch.



In general use, for small or medium section cast iron or steels and rolled materials, for straight or angled cuts.

Positive rake

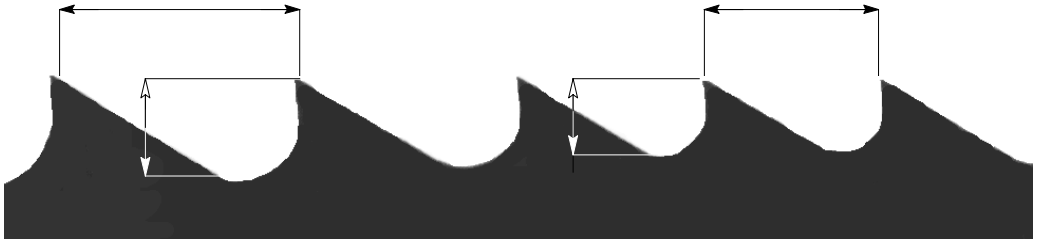
Positive cutting angle 9- 10°, constant pitch.



Can be used for cutting all types of materials, and is particularly suited to low- carbon and non- ferrous steels. Used for cutting very large sections and diameters.

Variable pitch

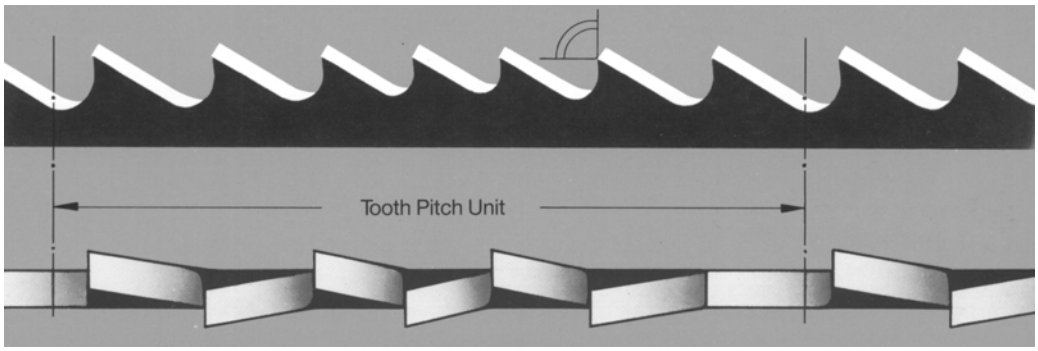
These blades have groups of teeth having different pitches and, as a consequence, have various tooth dimensions and differing relief angles. These are also available in M2 and M42 types with zero and positive rakes. The alternation of the different types of teeth helps to prevent vibration and noise. Elimination of vibration increases the useful life of the tool and improves the cut surface finish.



A further advantage in using these types of blades lies in the fact that a wide range of different material types and dimensions can be cut with the same blade.

Variable pitch blades with 0° cutting angle

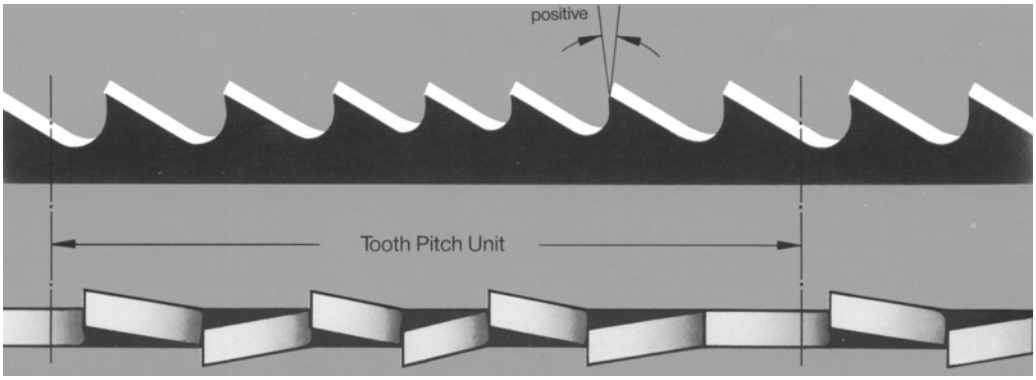
This type of tooth formation is ideal for cutting single pipes or medium size bundles, in accordance with the capacity of the machine.



Pitches available: 3- 4 / 4- 6 / 5- 7 / 5- 8 / 6- 10 / 8- 12 / 10- 14.

Variable pitch with positive rake (from 9 to 10 degrees)

This toothing type is the most suitable for cutting large dimension pipes and profiles, including large sections, as well as for cutting solid sections up to the machine capacity limit.



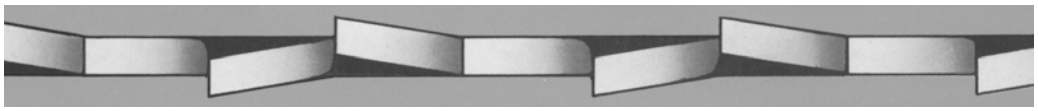
Pitches available: 3- 4 / 4- 6.

Set:

The term set refers to the section of material removed by the blade during the cutting operation, i.e. relating to width of cut and the offset position of the teeth with respect to the blade back.

Standard or splayed set

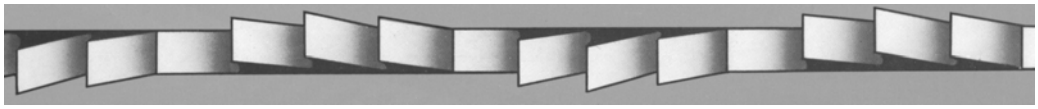
This term is used to describe an alternated angling of the teeth: one to the right, one to the left and one straight.



For general use on materials over 5 mm. (0.20 in) thick. Suitable for cutting steels, castings and non- ferrous hard materials.

Undulated set

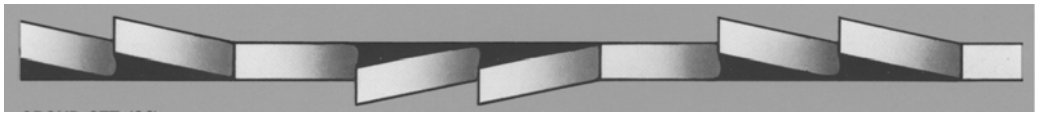
Used to describe groups of teeth undulating alternatively to the right and left.



This type of set is used with very fine teeth for cutting thin pipe walls and small- section profiles (from 1 to 3 mm or from 0.04 to 0.12 in).

Alternating grouped sets

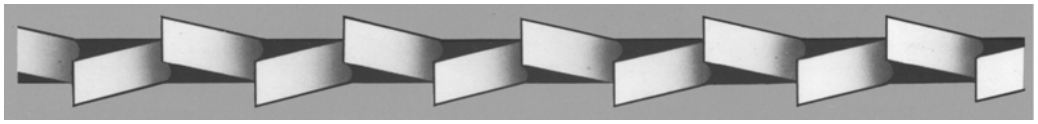
These are groups of teeth angled to the right, one straight tooth, then a further group angled to the left.



This set is used for very fine teeth for cutting very thin sections (less than 1 mm or 0.04 in).

Alternating set

This set is one tooth to the right followed by one to the left.



This set is used for soft non- ferrous materials, plastics and wood.

Blade selection table relating to cutting speed and downstroke speed

Cutting material	Cutting speed mt./min	Dimensions of the cutting section S (mm) S<10		10<S<30		30<S<50		50<S<80		80<S<120		120<S<230		Lubrication	sq. mt./min. cut
Structural steel Casehardened steel Steel for turning Mild steel	50 / 70	14	10 / 14	10	10 / 14	8	6 / 10	6	5 / 8	4	4 / 6	3	3 / 4	Emulsible oil Cutting fluid	60 - 70
High- duty cast iron Rolled steel Spring steel	40 / 50	14	10 / 14	10	10 / 14	8	6 / 10	6	5 / 8	4	4 / 6	3	3 / 4	Emulsible oil	50 - 60
Alloy steel Tool steel Valve steel	30 / 40	14	10 / 14	10	10 / 14	8	6 / 10	6	5 / 8	4	4 / 6	3	3 / 4	Emulsible oil Cutting fluid	15 - 20
Stainless steel Nodular cast iron	30 / 40	14	10 / 14	10	10 / 14	8	6 / 10	6	5 / 8	4	4 / 6	3	3 / 4	Emulsible oil	15 - 20
Copper Soft bronze	90 / 150	14	10 / 14	10	10 / 14	6	5 / 8	4	4 / 6	3	3 / 4	3	3 / 4	Emulsible oil	75 - 90
Brass	90 / 300	14	10 / 14	10	10 / 14	6	5 / 8	4	4 / 6	3	3 / 4	3	3 / 4	Emulsible oil	80 - 90
Hard bronze	20 / 40	14	10 / 14	10	10 / 14	6	5 / 8	4	4 / 6	3	3 / 4	3	3 / 4	Emulsible oil	25 - 40
Aluminium	80 / 800	14	10 / 14	6	10 / 14	4	4 / 6	3	3 / 4	3	3 / 4	3	3 / 4	Emulsible oil	70 - 80
Plastics	90 / 400	14	10 / 14	6	10 / 14	4	4 / 6	4	4 / 6	3	3 / 4	3	3 / 4	Emulsible oil	80 - 90

Blade pitch **Number of teeth per inch**

Classification of steels

This page provides a table giving the user specific information on the cutting materials, in order that they can be classified on the basis of their hardness, and thus the correct tool can be selected for the task in hand.

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

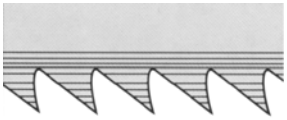
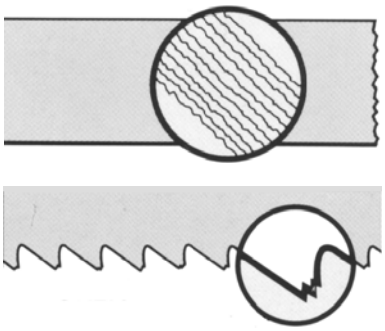
Material	SS Svezia	AISI U.S.A.	DIN Germania	BS Inghilterra	UNI Italia	AFNOR Francia
Carbon steels	1311 1572	1015 - 1035	C 22 - C 35 20 Mn 5 - 28 Mn 6 CK 22 - CK 50	050 A 20 080 M 46 - 50 120 M 19 150 M 28	C 15 - C 35 C 22 Mn C 28 Mn	XC 18 XC 38 H 1 20 M 5
Carbon steels	1650 1880	1040 - 1064 1770 - 1880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

Troubleshooting

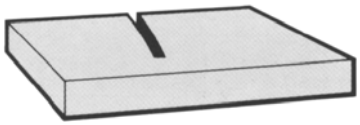
10

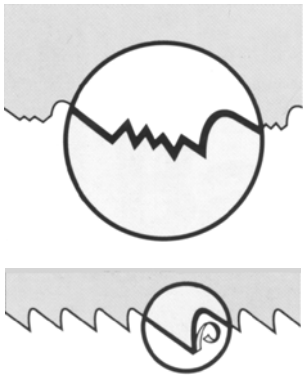
This chapter describes the inspection and troubleshooting procedures for the **H- 11A** . Regular inspections and efficient maintenance are essential to ensure your machine gives you a long, trouble- free service life. The chapter is divided into two sections: the first being dedicated specifically to 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.

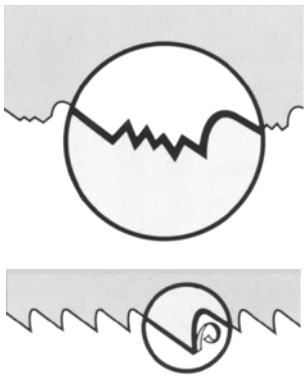
Troubleshooting blade and cutting problems

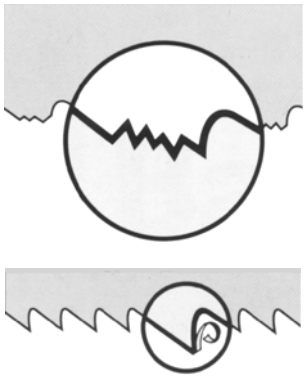
PROBLEM	PROBABLE CAUSE	SOLUTION
Blade scored or scratched 	◗ Widia inserts chipped or worn	☞Replace
	◗ Widia inserts loose or tight	☞Adjust
	◗ Widia inserts dirty	☞Clean and re- adjust correctly
Cutting surfaces scored 	◗ Blade teeth worn	☞Replace blade
	◗ Head downstroke speed too fast	☞Reduce downstroke speed
	◗ Cutting speed too slow	☞Increase cutting speed
	◗ Blade teeth too wide	☞Change for wider teeth
	◗ Free blade guide head too far away	☞Move blade guide head closer so as to leave only that part of the blade free which is needed to effect the cut
	◗ Blade tension low	☞Reset tension to rated tension
	◗ Broken teeth on blade	☞Check and replace blade

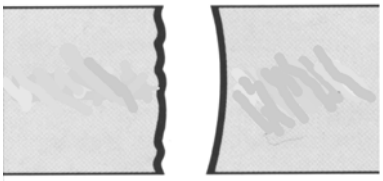
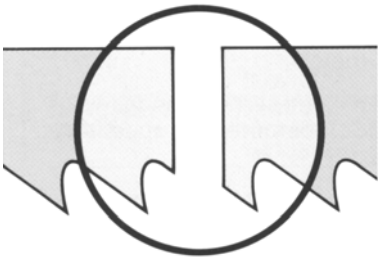
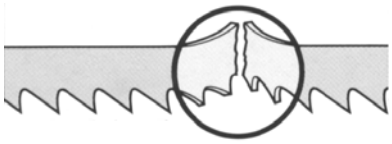
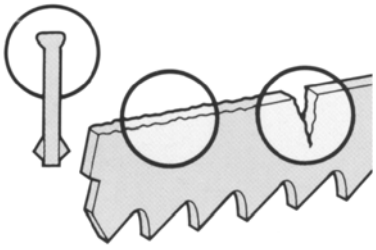
PROBLEM	PROBABLE CAUSE	SOLUTION
Rapid tooth wear 	◗ Teeth pointing in the wrong direction	☞Set teeth in correct direction
	◗ Blade worn in wrongly	☞With a new blade cutting should be done at half-speed and with downstroke speed also at half normal speed. After the blade has been worn in (about 300 cm^2 of work for hard cutting materials and about 1000 cm^2 for soft cutting materials) the cutting and downstroke speeds can be brought up to rated levels
	◗ Material too hard	☞Check cutting speed, downstroke speed and blade pressure, as well as type of band saw being used
	◗ Material defective	☞Surface defects: oxides, sand, surface hardening. Hardened inclusions in section. Reduce cutting and downstroke speeds or clean surface.
	◗ Cutting speed too high	☞The teeth slide on the material without cutting: reduce cutting speed
	◗ Head downstroke speed too slow	☞The band saw runs over the material without removing it: increase downstroke speed
	◗ Insufficient coolant	☞Check coolant level and clean pipes and jets
	◗ Incorrect fluid concentration	☞Check and use the correct concentration
	◗ New blade inserted into a partially- made cut	☞The cutting surface might have been subject to a localised heat- induced alteration, making it harder: recommence cut using a slower cutting and downstroke speed. There may be a broken tooth from the old blade lodged in the cut: check and remove before recommencing work
	◗ Flutter	☞Blade tension too low: tighten. Tooth shape or pitch unacceptable: change type of blade used. Widia blade steady buttons too far from the blade back: adjust guide heads, rotating them slightly to bring them closer to the blade back.

PROBLEM	PROBABLE CAUSE	SOLUTION
Cuts not orthogonal or inclined 	◗ Head downstroke speed too fast	☞Reduce head downstroke speed
	◗ Widia inserts worn	☞Replace
	◗ Inserts loose	☞Adjust width
	◗ Blade guide head positioned wrongly	☞Move mobile head up to the workpiece using the guide plate to leave free only that part of the blade actually needed to make the cut
	◗ Orthogonality of blade to workpiece rest shoulder	☞Check and realign the blade guide heads, then reset the blade orthogonality with the shoulder using the adjustment pin at 0 ; then set the stops at 45 right and left by means of the appropriate screws
	◗ Perpendicularity of the blade to the work surface	☞Check and realign the blade guide heads then adjust the blade using the appropriate screws so that it is perpendicular to the work surface
	◗ Blade tension incorrect	☞Bring pressure up to 60 Bar
	◗ Blade worn	☞Replace blade
	◗ Tooth pitch unsuitable	☞Probably a blade with too many teeth per inch is being used; change for a coarser blade
	◗ Cutting speed too slow	☞Increase the cutting speed
	◗ Wrong coolant	☞Check the water and oil emulsion; check that none of the holes or hoses are blocked; direct the jets correctly
	◗ Broken teeth	☞Check the hardness of the material being cut

Broken teeth 	◗ Cutting speed too high	☞Reduce cutting speed
	◗ Downstroke speed too high	☞Reduce downstroke speed

PROBLEM	PROBABLE CAUSE	SOLUTION
Broken teeth 	◗ Cutting pressure too high	☞Check and set to correct pressure
	◗ Tooth pitch unsuitable	☞Teeth too close together: change blade for one with a coarser tooth pitch
	◗ Tooth gullets full of swarf	☞Check blade- cleaning brush
	◗ Swarf welded to teeth and gullets	☞Check blade- cleaning fluid jets. Check blade- cleaning brush. If the swarf is not removed from the blade it will be drawn back into the cut and weld to the teeth, causing the teeth to break.
	◗ Material defects	☞The material may have altered surface areas, such as oxides or sand, or subcooled inclusions in the section. These areas are much harder than the blade and will cause the teeth to break: scrap or clean these materials.
	◗ Workpiece not clamped	☞The blade may break if the workpiece moves during cutting: check the vice, jaws and clamping pressure
	◗ The blade stops in the cut	☞Cutting pressure too high: check and restore to rated pressure. Downstroke speed too fast: reduce speed. Cutting speed too slow: increase. The blade slips on the flywheels: either the wheels are worn and need to be replaced or the blade tension is incorrect (too low) and must be re- adjusted.
	◗ New blade inserted in a partially made cut	☞The cutting surface may have been subjected to a localised heat- induced alteration, making it harder: recommence cut using a slower cutting and downstroke speed. A tooth from the old blade may be left in the cut: check and remove before restarting work.

PROBLEM	PROBABLE CAUSE	SOLUTION
Broken teeth 	◗ Widia inserts positioned incorrectly	☞Adjust the position of the inserts, especially the width, since blade thicknesses can exceed the manufacturer's declared tolerance ratings
	◗ Widia blade steady buttons	☞Two widia blade steady buttons are located in the top of the blade guide heads which press on the back of the blade to transmit cutting pressure. If these buttons are too far from the blade, the blade may be prone to an up and down undulating action or abnormal vibrations, liable to cause the teeth to break: adjust the position of the heads by rotating them downwards so as to bring the blade steady buttons up against the back of the blade
	◗ Sections with large thickness variations	☞The cutting speed and downstroke speed must be chosen to suit the most critical part of the cut
	◗ Teeth angled in the wrong direction	☞Fit blade so that teeth point in the right direction
	◗ Blade run in wrongly	☞When using a new blade, the cutting and downstroke speeds must be reduced to half the normal operating speed. After the blade has been worn in (about 300 cm2 for hard materials and about 1000 cm2 for soft materials) the cutting and downstroke speeds may be returned to their rated levels
	◗ Insufficient coolant	☞Check coolant level and clean fluid lines and jets
	◗ Incorrect fluid concentration	☞Check and use the correct concentration
	◗ Blade tension too high or too low	☞Check and reset to rated tension

PROBLEM	PROBABLE CAUSE	SOLUTION
Blade path fault 	◗ Front flywheel position incorrect	☞Check that the band saw is correctly positioned on the flywheel. Adjust the position of the flywheel under the blade, moving the shaft of the flywheel
	◗ Flywheels worn	☞Replace
	◗ Gaps full of swarf	☞Clean inside machine using blown air.
	◗ Blade guide head alignment	☞Check and adjust
Blade broken    	◗ Cutting speed too high	☞Reduce cutting speed
	◗ Head downstroke too fast	☞Reduce head downstroke speed
	◗ Cutting pressure too high	☞Check and set to correct pressure
	◗ Tooth pitch unsuitable	☞Teeth too close together: change the blade for one with coarser tooth spacings
	◗ Workpiece not clamped properly	☞The blade may break if the workpiece moves during cutting: check the vice, jaws and clamping pressure.
	◗ Widia inserts positioned incorrectly	☞Adjust inserts position, especially the width, since blade thickness can exceed the manufacturer's declared tolerance ratings
	◗ Widia blade steady buttons	☞Can have a milling action on the back of the blade if worn or chipped, causing cracks from the back towards the teeth.
	◗ Position of blade on flywheels incorrect	☞The blade may be scraping on the edges of the flywheels: this problem is generally caused by blades which are deformed or wrongly welded (conical) Adjust the position of the front flywheel by moving the pin, or change the blade
	◗ Blade tension incorrect	☞If the blade tension is too high or too low, the blade will be subjected to abnormal stress: set the tension back to the rated value.

PROBLEM	PROBABLE CAUSE	SOLUTION
	◗ Blade weld fault	☞The point at which a blade is welded is its most critical point; problems could be caused by welds which are not aligned perfectly or have inclusions or blowholes
	◗ Free blade guide head	☞The head is too far away from the workpiece: move the head closer, leaving free only that part of the blade actually needed to make the cut
	◗ Teeth in contact with the material before starting the cut	☞Always check the position of the blade before starting a new job, especially for the semi- automatic cycle
	◗ Widia inserts	☞If worn, the inserts can score the blade, weakening it even to breaking point. If the inserts are too far apart, the blade will whip, striking both the inserts and the material. Replace or adjust
	◗ Insufficient coolant	☞Check coolant fluid level; clean pipes and jets
	◗ Incorrect fluid concentration	☞Check and use the correct concentration
	◗ The blade stops in the cut	☞Cutting pressure too high: check pressure and reset to rated pressure. Head downstroke speed too fast: reduce. Head downstroke speed too slow: increase. The blade slips on the flywheels: incorrect or low blade tension; readjust or increase.

Troubleshooting

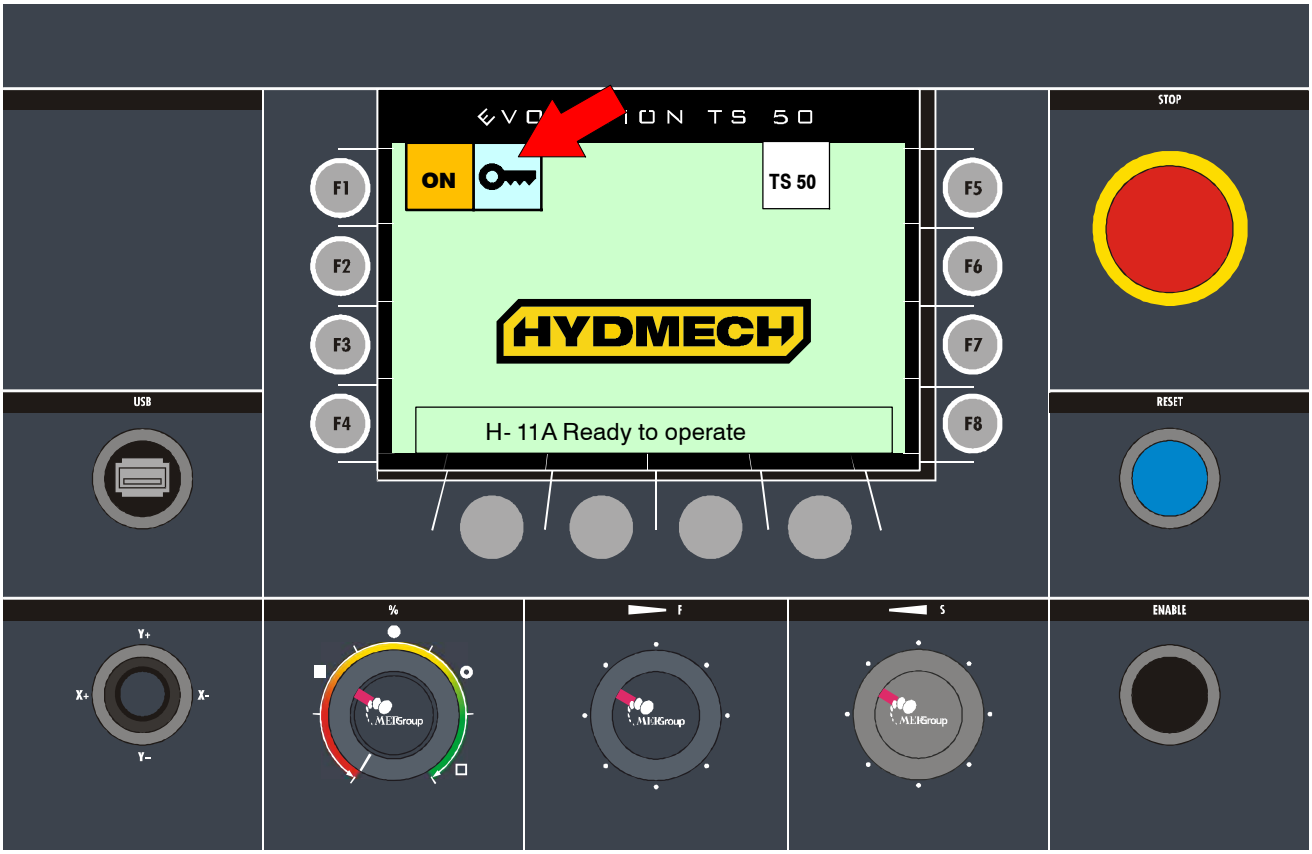
This section deals with the problems which may occur during machine operation. The M50 controller allows you to test all the machine's electric and electronic devices by checking the status of the input and output signals on the IUD/IUV card (see Chapter 6).

The board IUD/IUV is inside the electric board.

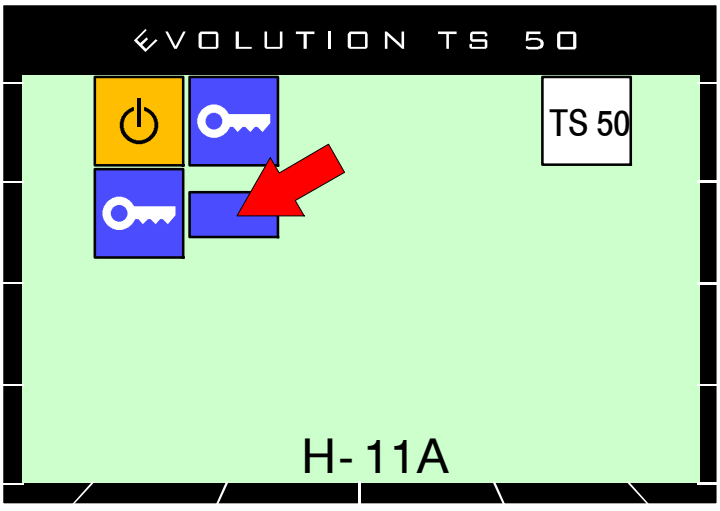
Displaying the diagnostics menu

▶ Power the machine by turning the main switch on the left of the control board.

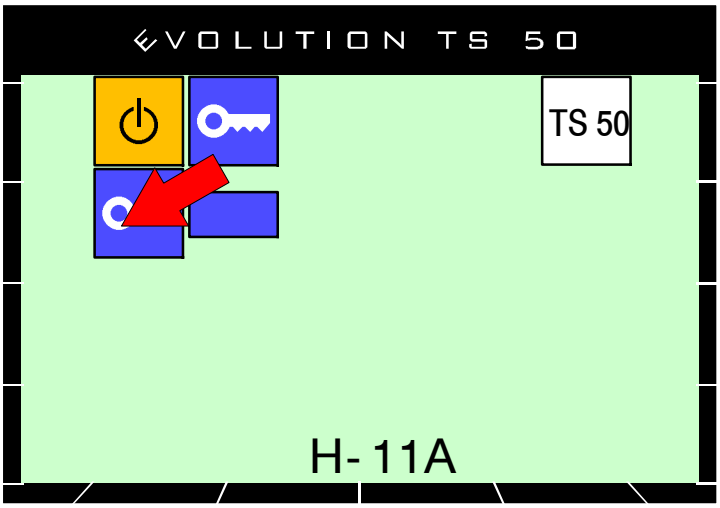
▶ Tap on the box on the touchscreen shown in the figure.



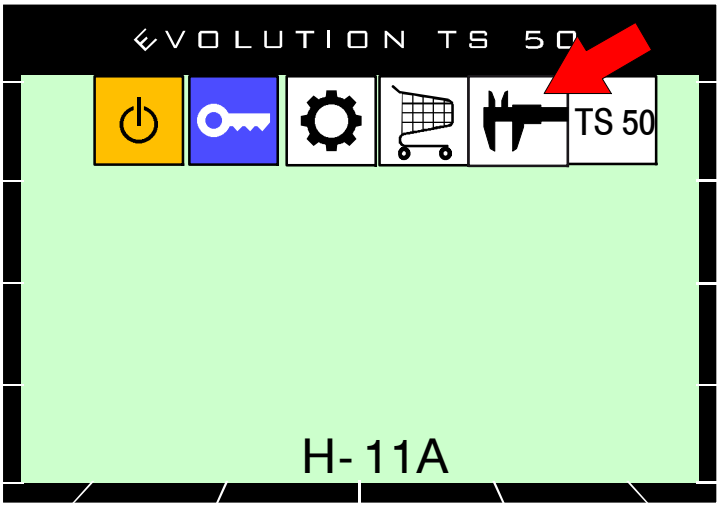
▶ The password entry box will open. Tap the box to open the keypad. Enter 734533.



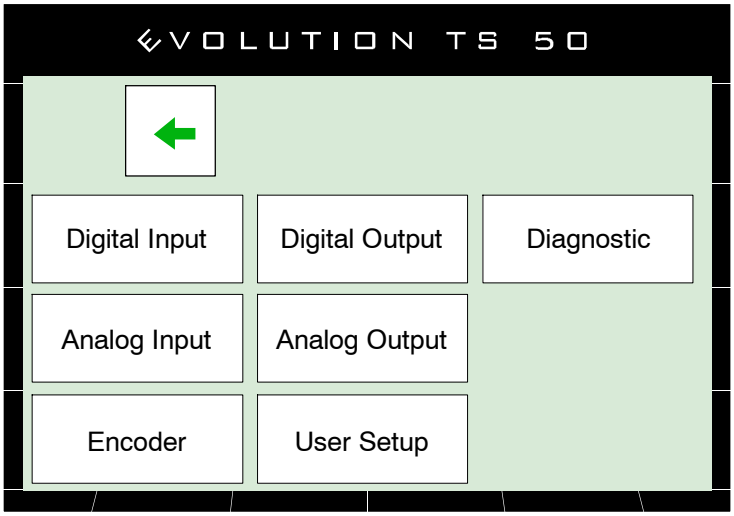
▶ Tap on the box shown in the figure.



▶ Tap on the box shown in the figure.



▶ In the Troubleshooting menu, select the type of input/output to be checked by tapping on the corresponding box:

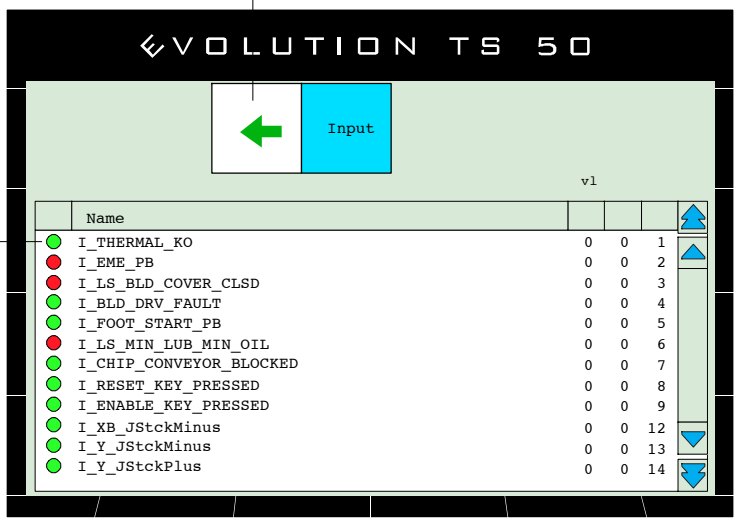


Digital Input

This page can be used to check the state of digital inputs. Information is organised in a table:

Box to go back to the initial list of all inputs and outputs

The icon indicates whether the respective output is on (green) or off (red)

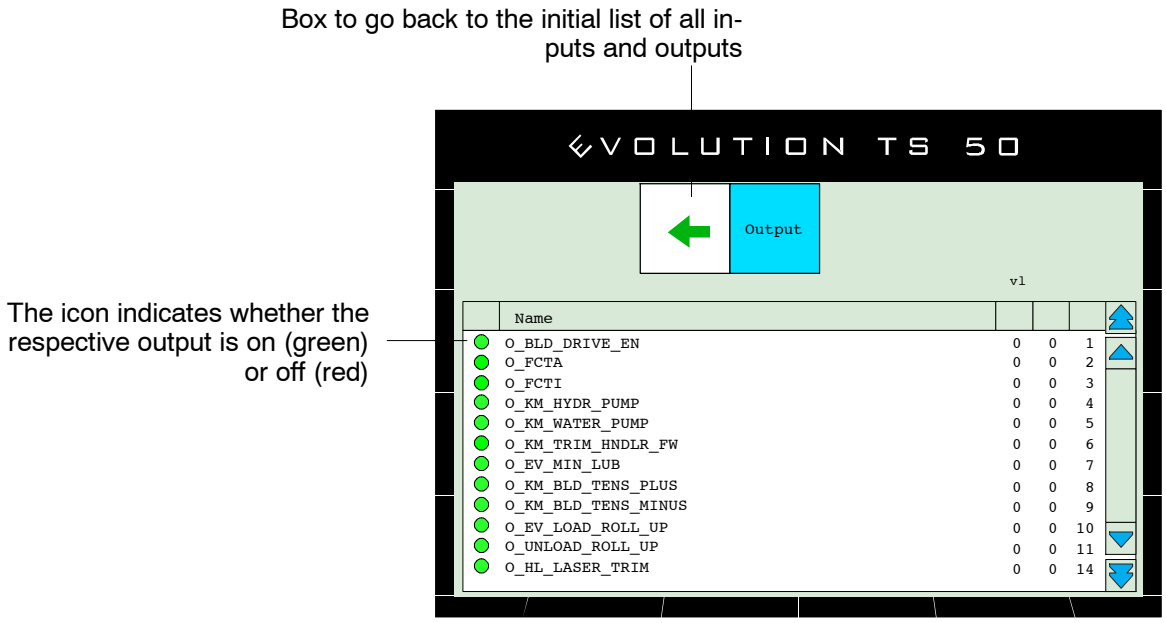


Digital INPUT list

CN13- ALL	**+ 24 VDC**
CN15- ALL	**0 VDC**
CN14- 1 INP 0	**SPARE**
CN14- 2 INP 1	**THERMAL SWITCHES TRIPPED**
CN14- 3 INP 2	**EMERGENCY STOP BUTTON OK**
CN14- 4 INP 3	**BLADE GUARD CLOSED LIMIT SWITCH**
CN14- 5 INP 4	**ALARM INVERTER**
CN14- 6 INP 5	**START FROM PEDAL BOARD**
CN14- 7 INP 6	**LOW OIL LEVEL**
CN14- 8 INP 7	**EVTR BLOCKED**
CN16- ALL	**+ 24 VDC**
CN19- ALL	**0 VDC**
CN17- 1 INP 8	**RESET BUTTON**
CN17- 2 INP 9	**ENABLE BUTTON**
CN17- 3 INP 10	**SPARE**
CN17- 4 INP 11	**SPARE**
CN17- 5 INP 12	**JOYSTICK X-**
CN17- 6 INP 13	**JOYSTICK Y-**
CN17- 7 INP 14	**JOYSTICK Y+**
CN17- 8 INP 15	**OYSTICK Y+**

Digital Output

This page can be used to check the state of digital outputs. Information is organised in a table:

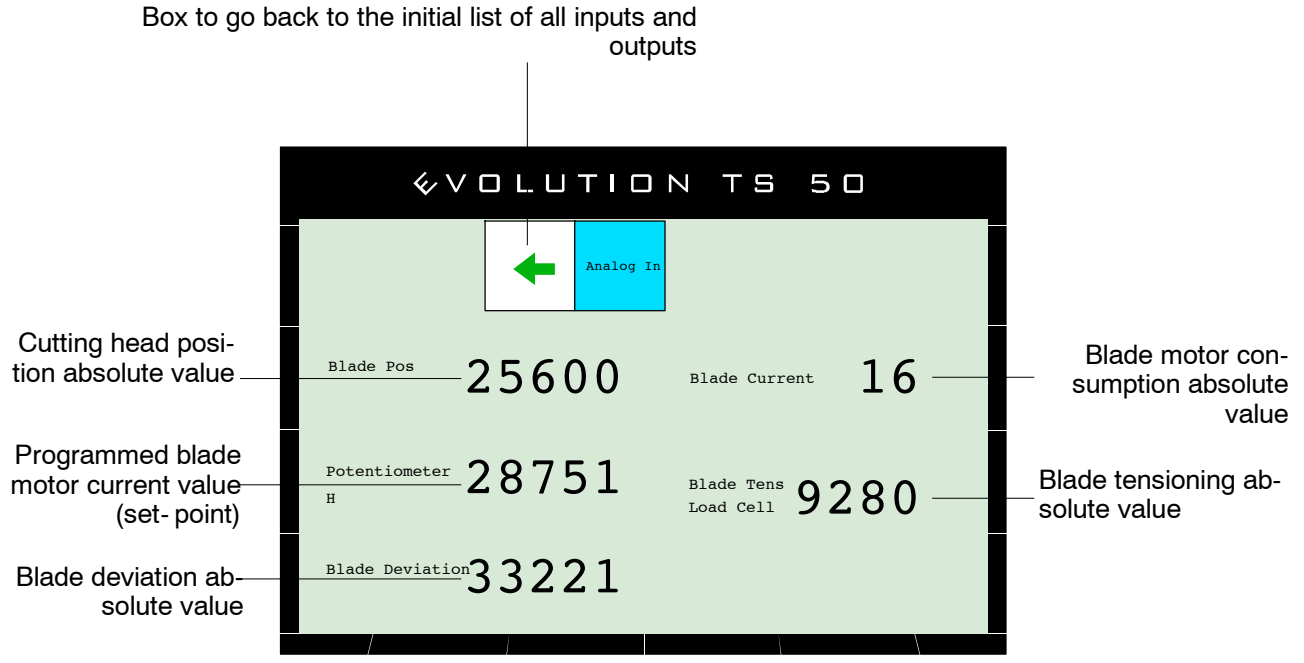


Digital OUTPUT list

CN21- 1 OUT 0	**START INVERTER**
CN21- 2 COM	**+24 VDC**
CN21- 3 OUT 1	**RHLS**
CN21- 4 COM	**+24 VDC**
CN21- 5 OUT 2	**FHLS**
CN21- 6 COM	**+24 VDC**
CN21- 7 OUT 3	**SPARE**
CN21- 8 COM	**+24 VDC**
CN22- 1 OUT 4	**UNIT START KM**
CN22- 2 OUT 5	**WATER PUMP START KM**
CN22- 3 OUT 6	**EVTR FORWARD KM**
CN22- 4 OUT 7	**LOW LUBRICATION SOLENOID VALVE**
CN22- 5 COM	**+24 VDC**
CN23- 1 OUT 8	**TENSIONING + KM**
CN23- 2 OUT 9	**TENSIONING - KM**
CN23- 3 OUT 10	**LOADING ROLLER UP SOLENOID VALVE**
CN23- 4 OUT 11	**UNLOADING ROLLER UP SOLENOID VALVE**
CN23- 5 COM	**+24 VDC**
CN24- 1 OUT 12	**SPARE**
CN24- 2 OUT 13	**SPARE**
CN24- 3 OUT 14	**LASER PROJECTOR**
CN24- 4 OUT 15	**CUTTING ZONE LIGHT**
CN24- 5 COM	**+24 VDC**

Analog Input

This page can be used to check the state of analogue inputs. Information is organised in a table:

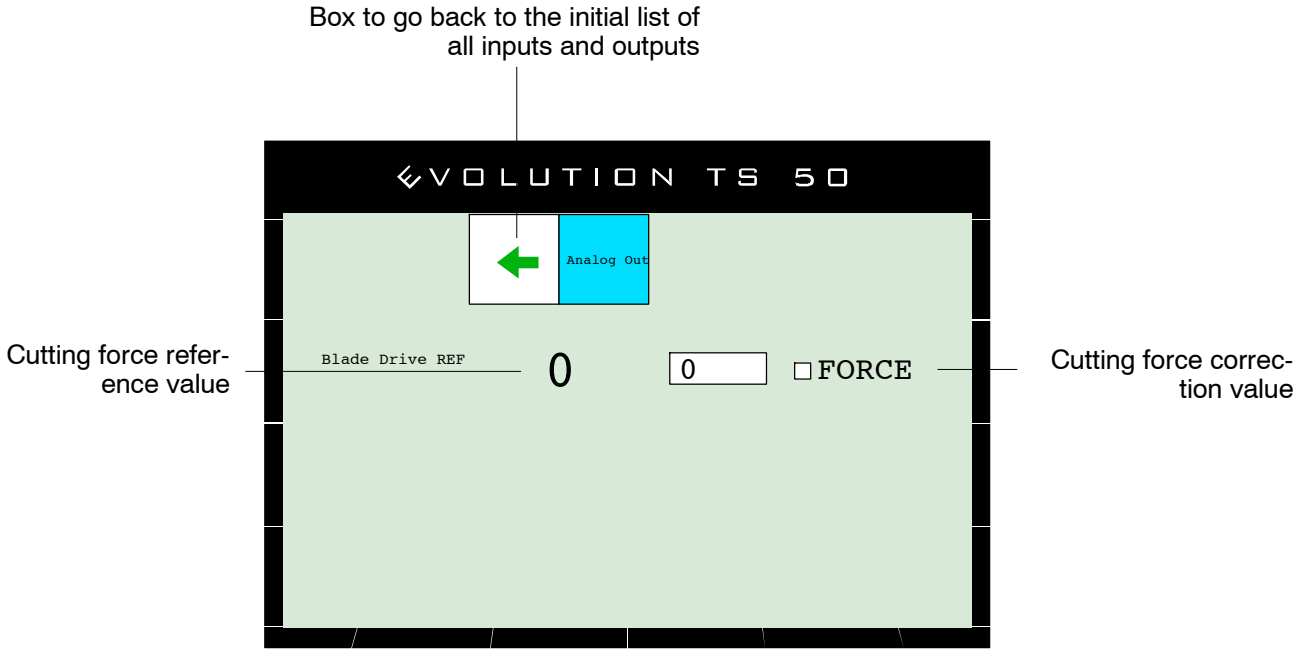


Analog INPUT list

CN26 INP 1 (16B)	**HEAD POSITIONING POTENTIOMETER**
CN27 INP 2	**BLADE MOTOR CONSUMPTION**
CN28 INP 3	**SPARE**
CN29 INP 4	**SPARE**
CN30 INP 5	**SPARE**

Analog Output

This page can be used to check the state of analogue outputs. Information is organised in a table:



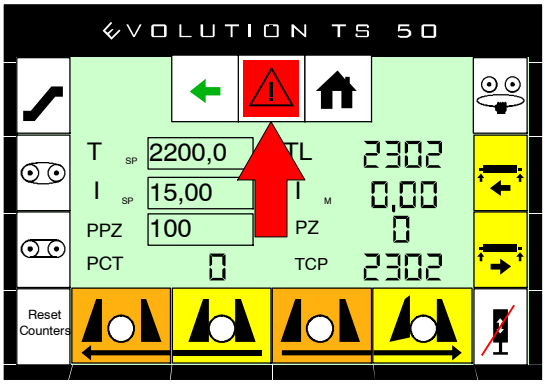
Analogue output list

CN25 OUT 1	**BLADE SPEED REFERENCE**
CN25 OUT 2	**SPARE**

Machine alarms and warning messages

Alarms

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.

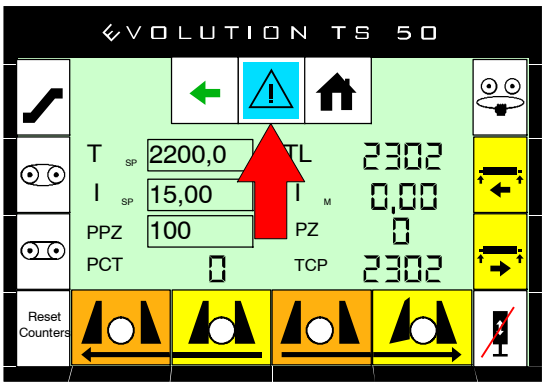


AL1: EMERGENCY: ONE OR MORE ALARMS HAVE TRIPPED	This appears in case of a generic emergency. A specific message follows
AL2: BLADE TENSIONING OUT OF MIN-MAX LIMITS	It is displayed when a mechanical problem occurs in the blade tensioning
AL3: BLADE MOTOR OVERCURRENT	It is displayed during the cutting when the value of the motor absorption is too high
AL4: INSUFFICIENT BLADE REVOLUTION SPEED	This appears when the blade jams in the cut or breaks ▶ Check blade integrity ▶ Check cutting parameters
AL5: HMI EMERGENCY - LOGO OR RESERVED PAGE	This appears in case of controller malfunction
AL6: EMERGENCY STOP BUTTON OR UNIT OPERATED	It is displayed when the emergency mushroom button is pressed
AL7: U AXIS NOT AVAILABLE OR FAULTY OR NOT REFERENCED: CLOSE THE LOGO PAGE AND GO BACK TO THE OPERATIVE PAGE	This appears when the head descent speed adjustment valve is not reset
AL8: XB AXIS NOT AVAILABLE OR FAULTY	This is shown when the pop- up rollers interfere with head revolution ▶ Position the pop- up rollers correctly as shown in Chapter 5
AL9: U AXIS DRIVE FAULTY	This appears in case of head descent adjustment valve malfunction
AL10: XB AXIS DRIVE FAULTY	This appears when there is a head revolution drive malfunction

AL11: LOW MINIMUM LUBRICATION	It is displayed when the oil level in the min. lubrication system lowers. ▶ Top the oil up in the tray till restoring the level.
AL12: BLADE GUARD OPEN @ BLADE CHANGE SEQUENCE DEACTIVATED	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.
AL13: XB AXIS ENCODER REVOLUTION BLOCKED	This appears in case of head revolution problem
AL14: BLADE DRIVE OR MOTOR FAULTY	This is shown when the blade motor inverter does not work correctly
AL15: CUTTING HEAD VICE VERTICAL INTERFERENCE LIMIT SWITCH	This appears when an attempt is made to close the vice must be head is not all up ▶ Take the head all up This appears when an attempt is made to move the head down and the vice is not all up ▶ Open the vices completely
AL16: FORWARD SOFTWARE LIMIT SWITCH UNDER STARTING POSITION (RHLS < YPOS)	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.
AL17: PARAMETER LOADING FAILED: RESTART THE MACHINE	This appears when the parameter reading procedure is not successful
AL18: BLADE POSITION ERROR: CHECK ANALOGUE INPUT	This appears when the potentiometer is broken or sends a message which is not compatible with the machine
AL19: LASER ENGAGED AT START OF CYCLE	This is shown when the cutting cycle is started and the fast approach laser is busy

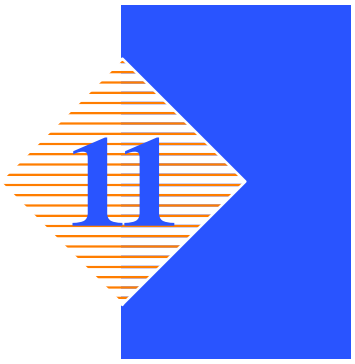
Warning messages

Tap on the box shown on the figure to see warning messages:



WR1: MANUAL CUTTING UNDERWAY	This appears when the manual cycle is underway
WR2: SEMI-AUTOMATIC CUTTING UNDERWAY	This appears when the semi- automatic cycle is underway
WR3: POSITIONING UNDERWAY	This appears when the head positioning is underway
WR4: MINIMUM LUBRICATION: MINIMUM OIL LEVEL REACHED	This appears when there is no oil for minimum lubrication
WR5: SOFTWARE LIMIT SWITCH FORWARD UNDER REVERSE POSITION (RHLS > RHLS)	This appears when the RHLS and RHLS are not coherent
WR6: HYDRAULIC PUMP AUTO-OFF	This appears when the machine switches to power save mode after a given time
WR7: COMMAND INHIBITED	This appears when an incorrect operation is attempted
WR8: CHECK START CUT CONDITIONS: NO ALARMS, BLADE ENABLED, BENCH BRAKED, VICES CLOSED, RHLS < RHLS	This appears when an attempt is made to start the cutting cycle without having checked that the cutting conditions are correct
WR9: AUTOMATIC DESCENT SPEED REDUCTION FOR HIGH CURRENT	This appears when the blade motor current exceeds the setting and correction is applied
WR10: BLADE AT ZERO CUTTING FEED SPEED: CANNOT CUT	This appears when the blade setting is too low
WR11: THERMAL SWITCHES NOK	This appears when a thermal switch trips in the control panel
WR12: CHIP EJECTOR BLOCKED	This appears when the chip ejector is blocked

Accessory Installation



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

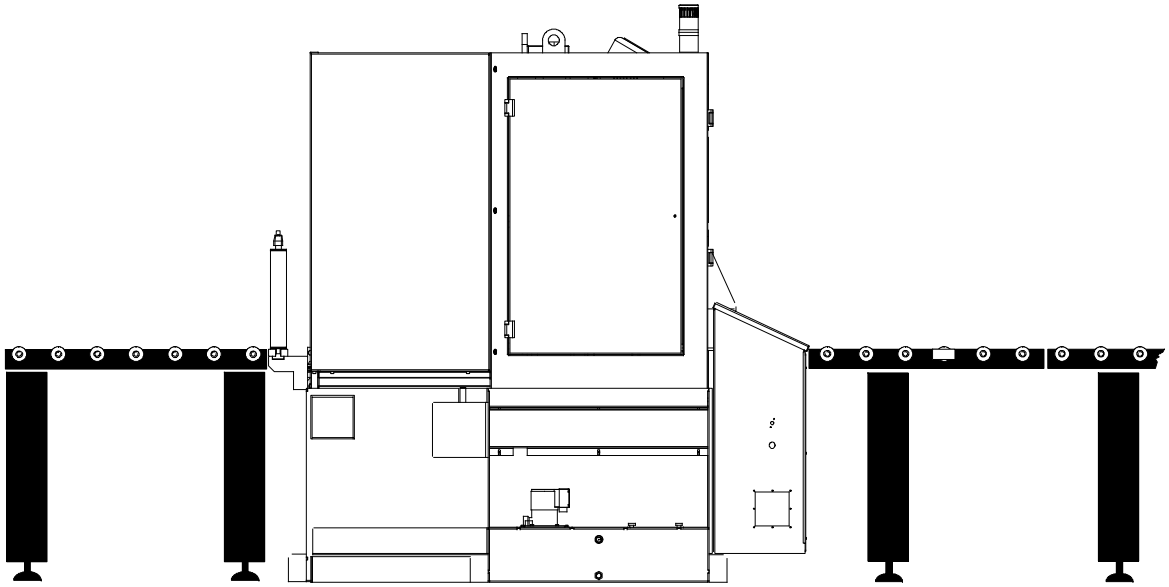
Blade

The blades that can be used on this machine include:

- 4500 x 34 x 1,1 mm (177.16x1.34x0.04 in) bimetal blade M42 for solid and section materials;
- Blade with electro-welded hard metal teeth 4500 x 34 x 1,1 mm (177.16x1.34x0.04 in).

Roller table

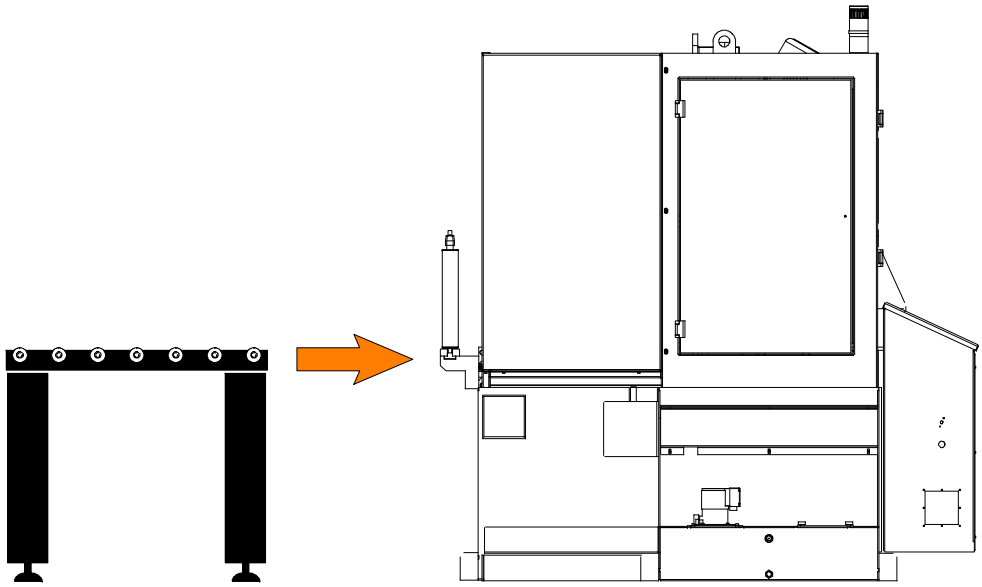
- roller table module for feed/discharge side, 1500 mm (59.05 in);



Installation of the roller plane, loading side

To fit the roller table on the loading side, carry out the following operations:

- put the roller table close to the unloading adapter.

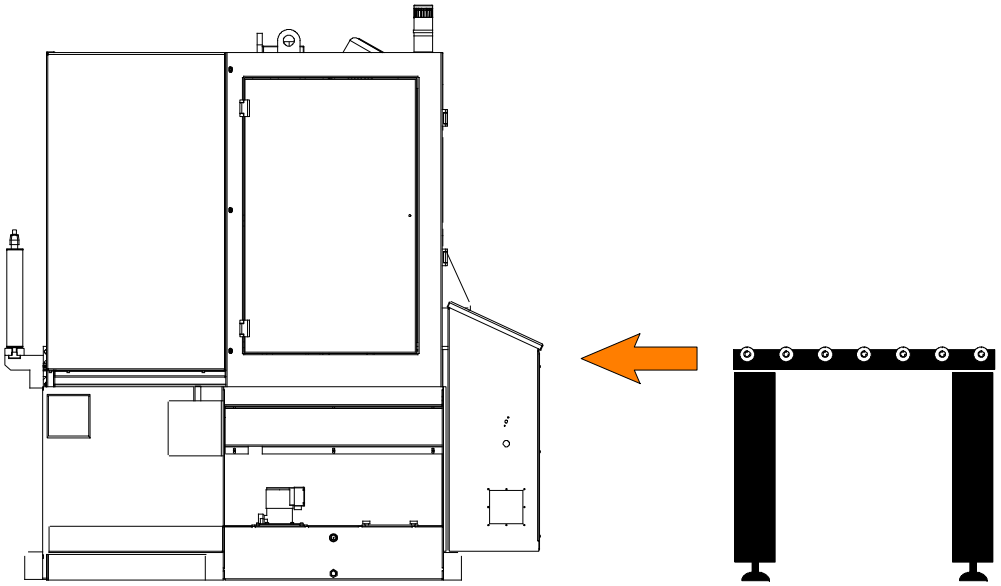


- Position the roller table making the fixing holes coincide with the adapter slots.
- Align the roller table with the machine working table using the supporting feet of the roller table.
- Fit the screws in the slots and tighten the nuts to lock the roller table in the obtained position.

Installation of the roller plane, unloading side

The installation operations are given below:

- put the roller table close to the unloading adapter.



- Position the roller table making the fixing holes coincide with the adapter slots.
- Align the roller table with the machine working table using the supporting feet of the roller table.
- Fit the screws in the slots and tighten the nuts to lock the roller table in the obtained position.

Installation of couple of vertical rollers for roller plane

For installing the vertical rollers operate as follows:

- Remove the shaped sheet covering the plane by removing the 4 fastening screws.
- Fit the couple of vertical rollers in the arranged slots and fasten them with the supplied socket head screws.
- Adjust the distance of the vertical rollers according to the dimensions of the material being machined.

Installation of the hydraulic vertical vices

For installing the hydraulic vertical vices follow the instructions enclosed to the installation kit.

For installing the hydraulic vertical vices follow the instructions enclosed to the installation kit.

Can of emulsible oil

5 l can of emulsible oil.

Minimal lubrication system

This device was designed to improve lubrication of the tool during cutting.

▶ An instruction book is supplied with the kit to explain how to install this optional unit.

Warranty

Hydmech Group warrants each new sawing machine to be free from failure resulting from defective material and workmanship under proper use and service for a period of one year following the date of shipment to the user. Hydmech's sole obligation under this warranty is limited to the repair or replacement without charge, at Hydmech's factory, warehouse, or approved repair shop, of any part or parts which Hydmech's inspection shall disclose to be defective. Return freight must be prepaid by the user.

This warranty, in its entirety, does not cover maintenaince items, including but not limited to lubricating grease and oils, filters, V- belts, saw blades, etc, nor any items herein which show sign of neglect, overloading, abuse, accident, inadequate maintenance or unauthorized altering.

Liability or obligation on the part of Hydmech for damages, whether general, special or for negligence and expressly including any incidental and consequential damages is hereby disclaimed. Hydmech's obligation to repair or replace shall be the limit of its liability under this warranty and the sole and exclusive right and remedy of the user.

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