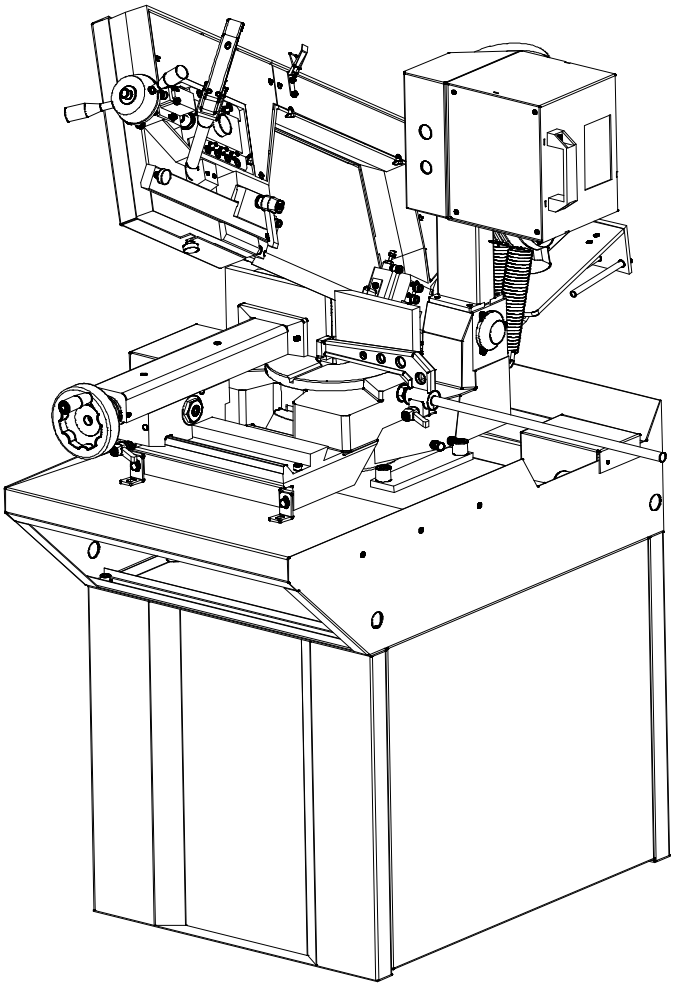


USE AND MAINTENANCE MANUAL

EN PH 262–CCS

YEAR OF MANUFACTURE: _____

CE

EN

Translation of the original instructions

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

The manufacturer:

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

Hereby declares that the sawing machine:

Machine Type:	**SAWING MACHINE**
Machine model:	**PH 262 CCS**
Serial number:	
Year of manufacture:	

is in specification with the following directives:

- **EEC MACHINES DIRECTIVE 2006/42/CE**
  - **EN 16093:2017**
- **DIRECTIVE 2014/30/UE EMC**
  - **EN 50370–1:2005**
  - **EN 50370–2:2003 Immuni**

Responsible of a Technical File
(Walter Di Giacinto)

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

Managing Director
(William Giacchetti)

Pergola, lì _____

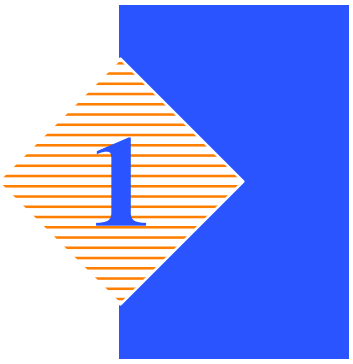
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Introduction and technical specifications



Foreword

MEP S.p.A.,in response to modern production techniques, has developed the new **PH 262–CCS**.

This work tool has been designed to satisfy the wide range of cutting needs of a modern workshop with simplicity and reliability, while at the same time complying with all EEC safety standards.

The **PH 262–CCS** is structurally rigid, silent and safe: it produces a minimum of waste (1.2 mm) while its great versatility makes it suitable for cutting various materials such as stainless steel light alloys, aluminium, copper and bronze at high speed and with high precision.

Its high cutting capacity, combined with the possibility of making inclined cuts from 60° left to 45° right, make this model the ideal solution for satisfying the wide strange of cutting needs of machine shops, turneries, structural steel shops and engineering workshops.

We congratulate our clients on having chosen this product, which will give effective and faithful service for many years, especially if the instructions contained in this use and maintenance manual are carefully followed.

Warning

This cutting machine has been designed and made specifically for cutting metallic materials.

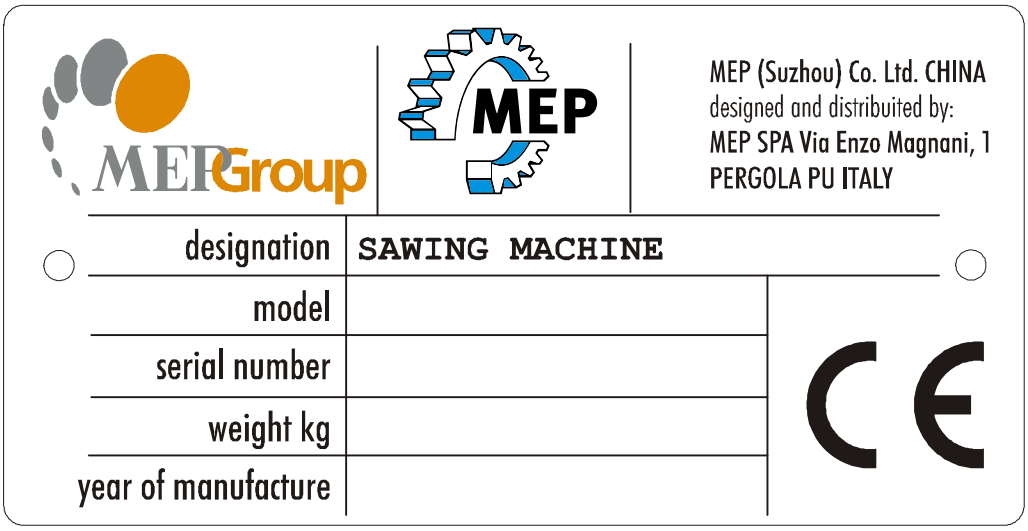
Machine presentation

This machine is equipped with CCS, which is a devicethat consents a cut for each bow fall,with controlled descent speed: after having positioned the head in the initial cutting point, the operator fastens the material in the vice and presses the start button on the control board to start the band up. The band begins to rotate and the head begins to descend. Its speed is adjustable using the head descent speed adjuster positioned on the control board.
The head determines cutting of the material. Once the cut has been made, an end run stops the cutting cycle, after which the head is raised manually.
After having fed the material again a new cutting cycle can be started by pressing the button on the control board.

Machine specification

Name plate

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 man-
ual.



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

CUTTING SPEEDS		
1st Slow Speed	mt/min	46
2nd Fast Speed	mt/min	92

BAND SAW		
Rated size	mm	2450 x 27 x 0,9
Max/min blade length	mm	2440÷2460
Blade height	mm	27
Blade width	mm	0,9
Band saw tension	Kgs/cm^2 – Lbs/in^2	1580 – 22500

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	0,70/0,81
Electric coolant pump motor	KW	0,1
Max installed power	KW	0,91

LUBRICANT/COOLANT FLUID AND OIL		
Oil for transmission box		0,32
Lubricant/coolant fluid (oil concentration 5–6%)		15
Cut Control System cylinder oil	capacità Lt.	0,7

VICE		
Vice max. opening	mm	245

SPINDLE MOTOR					
No.of poles	**Current (Volts)**	**Absorption (Amps)**	**Power (Kw)**	**rpm**	**Band saw speed**
2	380	2,14	0,81	2800	92 mt/min
4	380	2,1	0,7	1400	46 mt/min
Stator wound with enamelled copper wire, class H 200°C.					
Class F insulation (limit temperature TL 155°C).					
IP 55 protection rating (total against contact with live parts, water sprayed from all directions, with shaft oil seal).					
Conforming to CEI–EN 60034–1:2011					

N.B. Example of class F insulation: in air–cooled machines at an ambient temperature of 40° C , the allowable overtemperature is 100° C (where 100¿C represents the allowable DT).

Warning

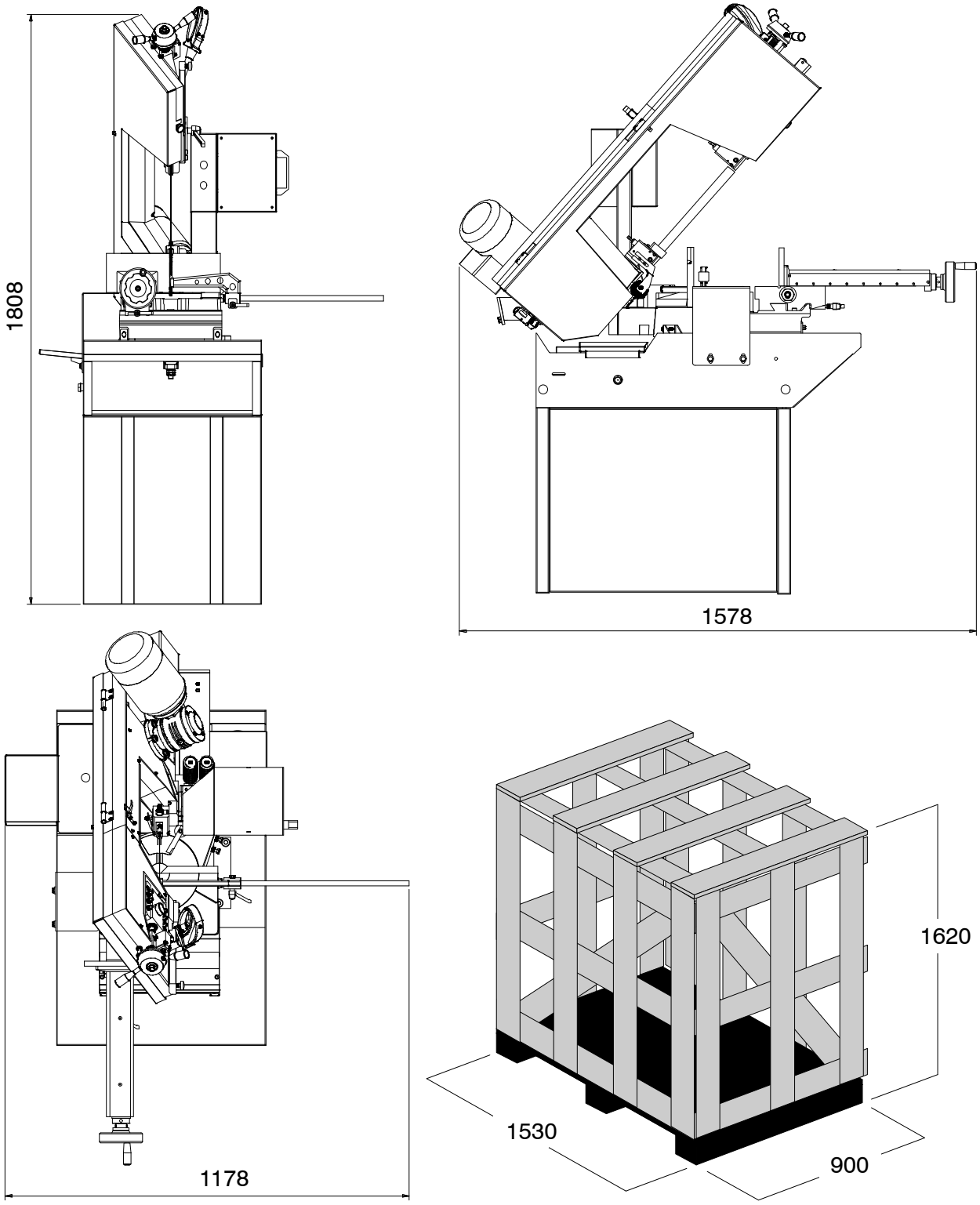
The machine is supplied with a 2/4 pole three phase motor giving 2 band saw speeds:
– 1ª speed (4 poles) = 30 mt/min
– 2ª speed (2 poles)= 60 mt/min;

ELECTROPUMP MOTOR Single phase; Frequency 50 Hz.					
Voltage (Volts)	**Absorption (Amps)**	**Power (Kw)**	**rpm**	**Delivery rate lt/min**	**Head (mt.)**
230	0,3	0,1	2840	11	1,5
400	0,17	0,1	2840	11	1,5
Protection rating IP 55.					
Conforming to CEI–EN 60034–1:2011					

CUTTING CAPACITY			
Section			
0°	225	200	240 x 160
45° ◆	160	140	155 x 115
60° ◆	90	90	90 x 90
45° ◆	145	125	150 x 100

Dimensions

MACHINE INSTALLED		
Work table height	mm	950
Weight	Kg	265



PACKED WEIGHT		
Wooden cage and pallet	Kg	70
Wooden pallet	Kg	20

Functional parts

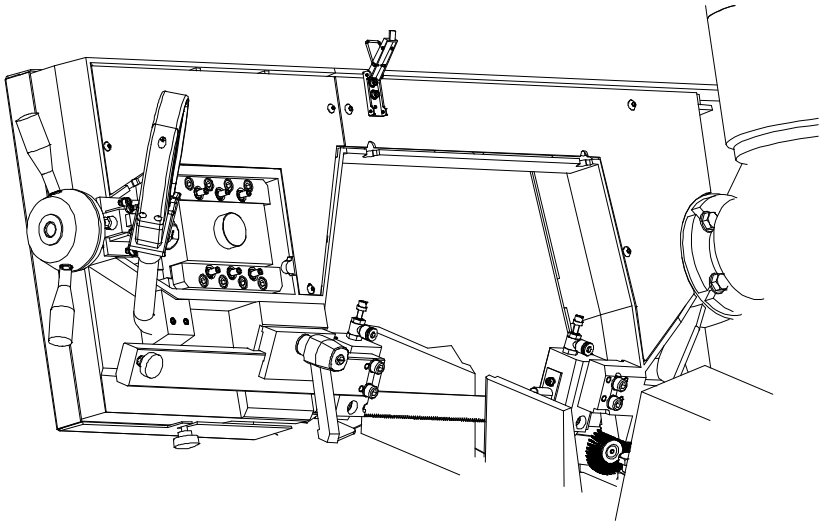
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PH 262–CCS model

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

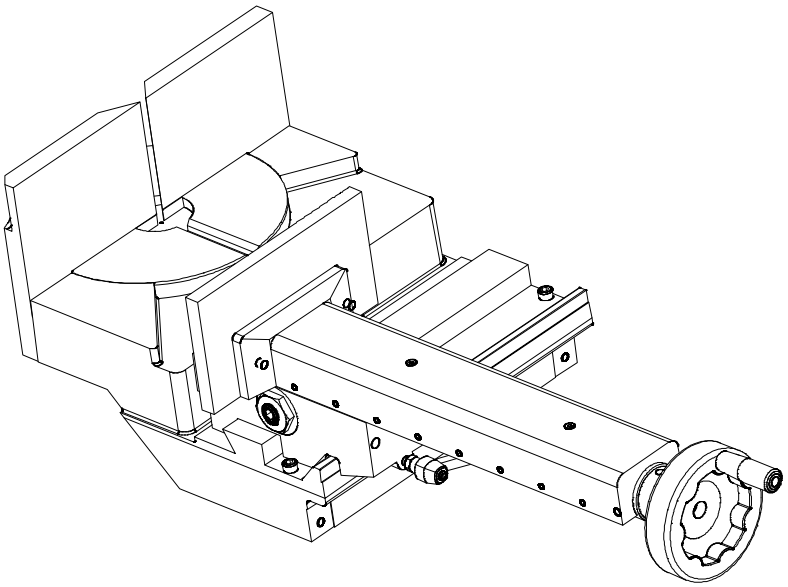
Cutting head

The cutting head is the unit that cuts the material. It consists of a cast iron head on which the following are mounted: the band saw, the blade guide components, the blade tensioner components, the transmission box and the spindle motor.



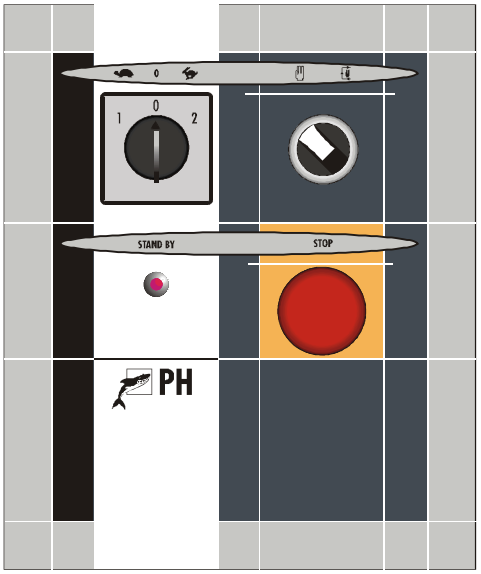
Vice

The vice is the unit that clamps the workpiece in place during cutting; it consists of a vice support, commonly known as a lead nut, fixed to the work table, and a lead screw with a slideway on which the mobile jaw is mounted.

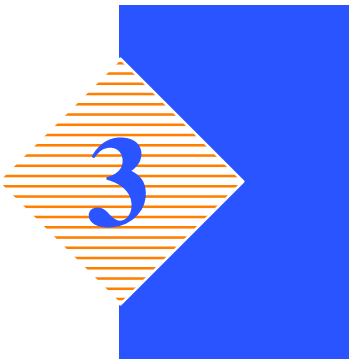


Control Panel

The control panel has a protection rating of IP 54 and contains the electrical equipment. Access is gained by removing the screws fastening a safety panel, while the operator's safety is guaranteed by a key−operated safety switch, designed to prevent any intentional interference with the unit. In order to remove the panel from its mounting, the main switch has to be shifted to 0 (OFF), which automatically cuts off the electrical supply.



Safety and accident prevention



The **PH 262–CCS** 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 **PH 262–CCS** 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 **MACHINES DIRECTIVE 2006/42/CE**

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

Attention

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

General recommendations

LIGHTING

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

CONNECTIONS

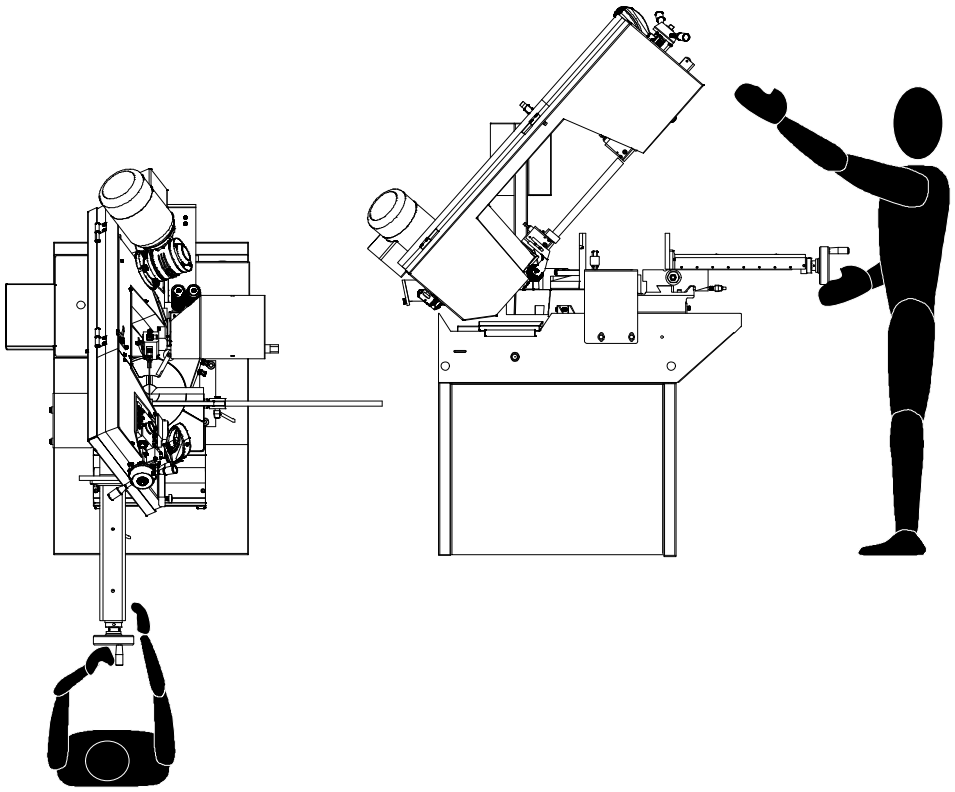
Check that the power supply cables and pneumatic feed systems comply with the maximum machine absorption values listed in the “Machine Specification” tables; replace if necessary.

EARTHING

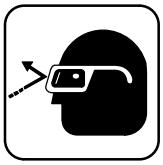
The installation of the earthing system must comply with the requirements set out in EN 60204−1:2006/AC:2010.

OPERATOR POSITION

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



Recommendations to the operator



Always wear proper goggles or protective glasses.



Do not use the machine without the guards in position.



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



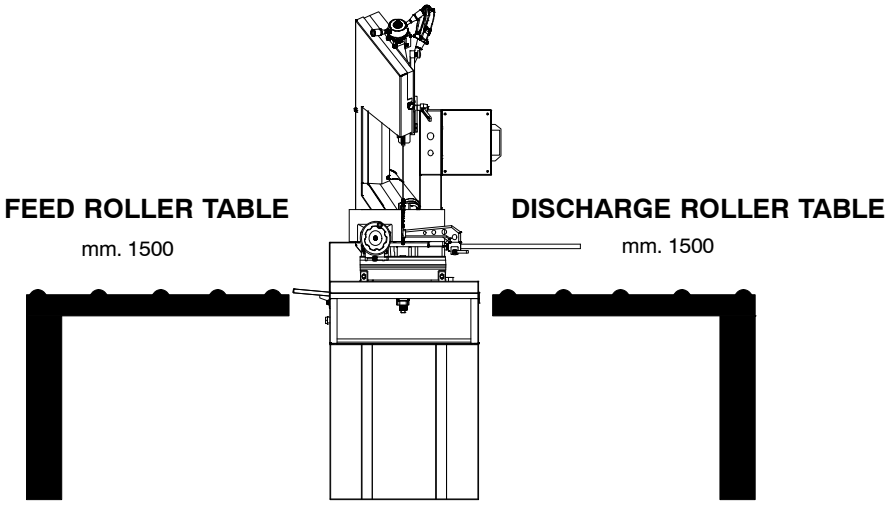
Do not wear oversize clothing with long sleeves, oversize gloves, bracelets, necklaces or any other object that may become entangled in the machine during working; long hair must be tied back and bunched.



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



Before starting cutting operations, support the material at both ends of the machine using the support arm – standard, or OPTIONAL accessories such as the feed and discharge roller tables shown in the diagram below. Before removing the devices supporting and moving the material, fasten the latter in place using the machine's clamping devices or other suitable equipment.



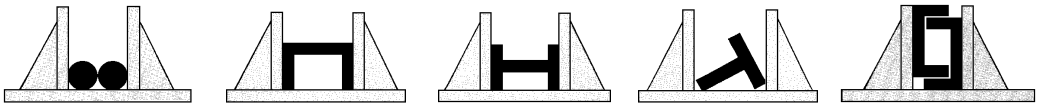


Any maintenance work on the hydraulic or pneumatic systems must be carried out only after the pressure in the system has been released.

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 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 MEP Technical Assistance Service: this can be done through a representative in the country of use of the machine.

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 **PH 262–CCS** band saw.

Reference standardsrr

MACHINE SAFETY

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

HEALTH AND SAFETY AT WORK

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

PERSONAL PROTECTION

- Directive89/656/CE and Regulation 2016/425/UE on the use of personal protection devices.

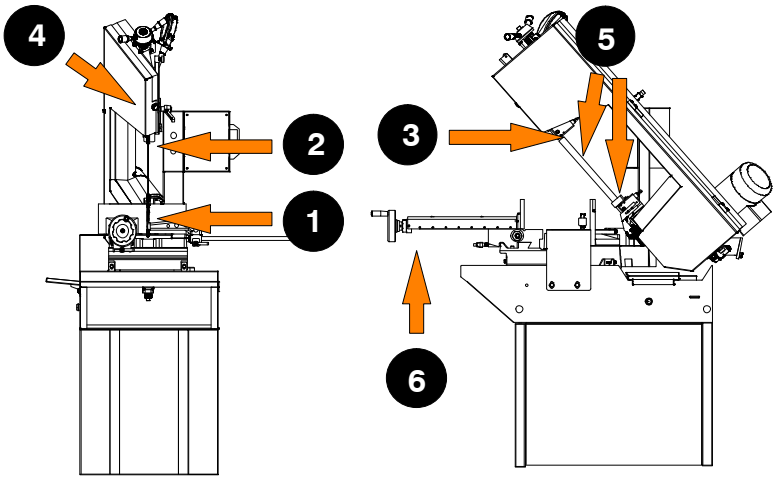
ENVIRONMENTAL PROTECTION

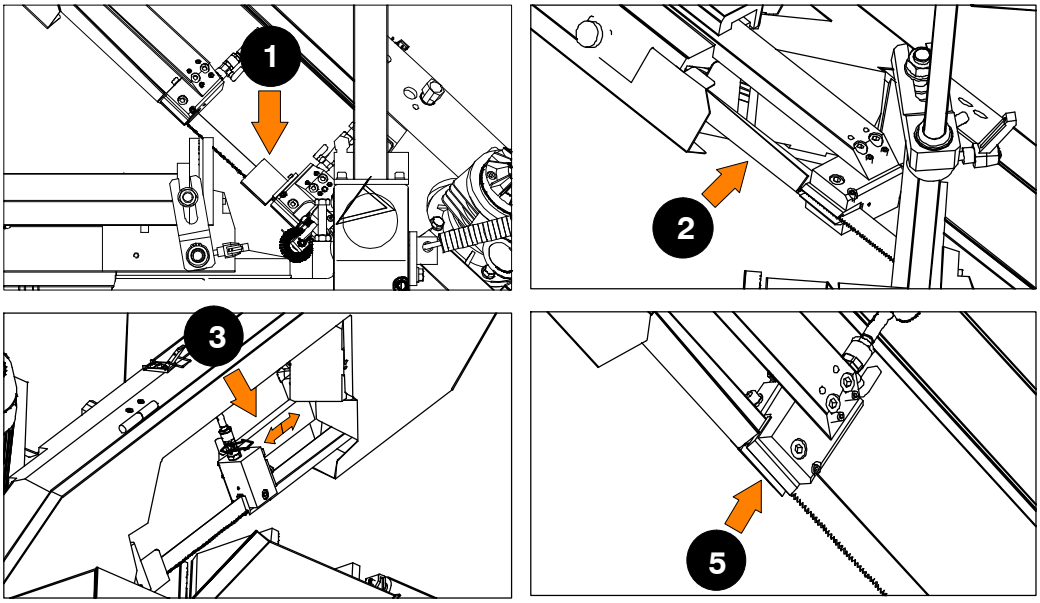
- Directive 2006/12/CE on waste disposal;
- Directive 2008/98/CE on the disposal of used oil.
- Directive 2015/863/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS III).

Protection against accidental contact with the blade

1. Metal guard screwed to the rear blade guide head (machine side);
2. metal guard screwed to the front blade guide head (operator side);
3. 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 EN 16093:2017 ;
4. hinged protective cover over blade, fitted with "removable" closing devices;Annex V, Part II, point 5.5.2 of D.lgs 81/08 and Subsequent amendment D.lgs 106/09.

5. blade guide plates completely covering the blade teeth;
6. Electric limit switch for stopping the band at the cutting head stroke end.





Electrical equipment

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

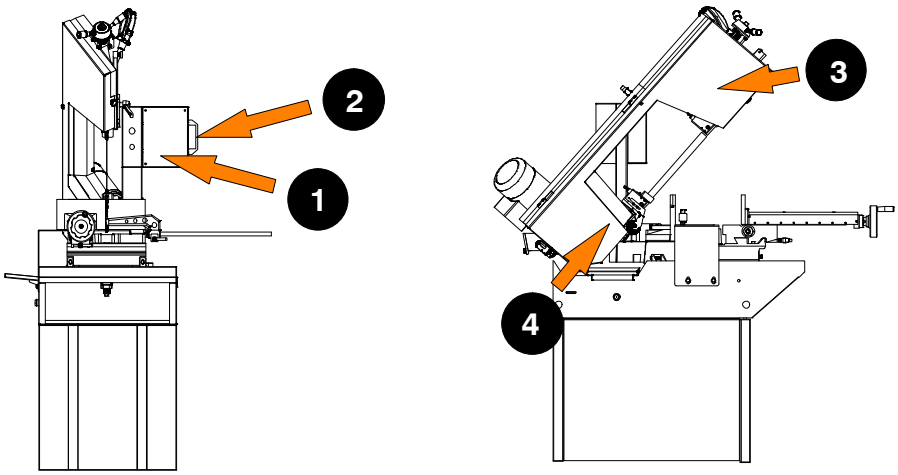
Emergency devices

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 PH 262–CCS:

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, located on the control panel, 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. **Pressure contact for monitoring blade tension:** the machine stops immediately if the blade breaks or if the tensioner cylinder pressure drops.
4. **Protective guard for blade:** a coded key microswitch is operated if the blade cover is accidentally or intentionally opened during the machine operating cycle, immediately shutting down all functions.



Noise level of the machine

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

Noise level measurement

Noise levels are measured using an instrument known as an Integrator noise–meter which registers the equivalent continuous acoustic pressure level at the work station.The damage caused by noise depends on three parameters: level, frequency and duration. The equivalent level concept Leq combines the three parameters and supplies just one indication. The Leq is based on the principle of equal energy, and represents the continuous stationary level containing the same amount of energy, expressed in dBA, as that actually fluctuating over the same period of time.This calculation is made automatically by the integrator noise–meter. The measurements are taken every 60 seconds, in order to obtain a stabilised value. The reading stays on the display for a sufficient time to enable a reading to be taken by the operator.Measurements are taken by holding the instrument at approximately 1 metre from the machine at a height of 1.60 metres above the platform at the operator's work station.
Two measurements are taken: the first while the machine operates without cutting anything, the second while cutting in manual mode.

Noise level values

Identification	
Machine type	Band saw for metal applications
Model	**PH 262–CCS**
Reference standard	EN ISO 3746:2010

Results		
Test 1st	**Description**	C 40 steel cut – pipe 50x82 mm Bimetal band 2085x20x09 S.VGLB Z 5/8
	Results	**Mean sound level (Leq) 76,42 dB (A)** Environmental correction (K) 3,54 dB(A) Peak sound power (Lw) 87,34 dB(A)
Test 2nd	**Descriprion**	C 40 steel cut – solid rod 150 mm dia. Ø Bimetal band 2085x20x09 S.VGLB Z 5/8
	Results	**Mean sound level (Leq) 76,50 dB(A)** Environmental correction (K) 3,54 dB(A) Peak sound power (Lw) 87,42 dB(A)
Test 3rd	**Description**	34CND6 material cut –pipe 140x130 mm Bimetal band 2085x20x09 S.VGLB Z 5/8
	Results	**Mean sound level (Leq) 76,19 dB(A)** Environmental correction (K) 3,54 dB(A) Peak sound power (Lw) 87,12 dB(A)

Vibration emission

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

Electromagnetic compatibility

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

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

The following text contains a list of the applied standards and the results of the electromagnetic compatibility testing of machine model **PH 262–CCS**.

Emissions

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

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

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

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

Immunity

- CEI EN 61000−6−2:2005 + AC:2005 Electromagnetic Compatibility (EMC) – Generic standard on immunity. Part 6–2: Industrial Environment.
- EN 50370−2:2003 Electromagnetic compatibility (EMC) – Product family standard for machine tools – Part 2: Immunity

The EUT is deemed to fulfil the immunity requirements without testing, because it contains no electonic control circuitry.

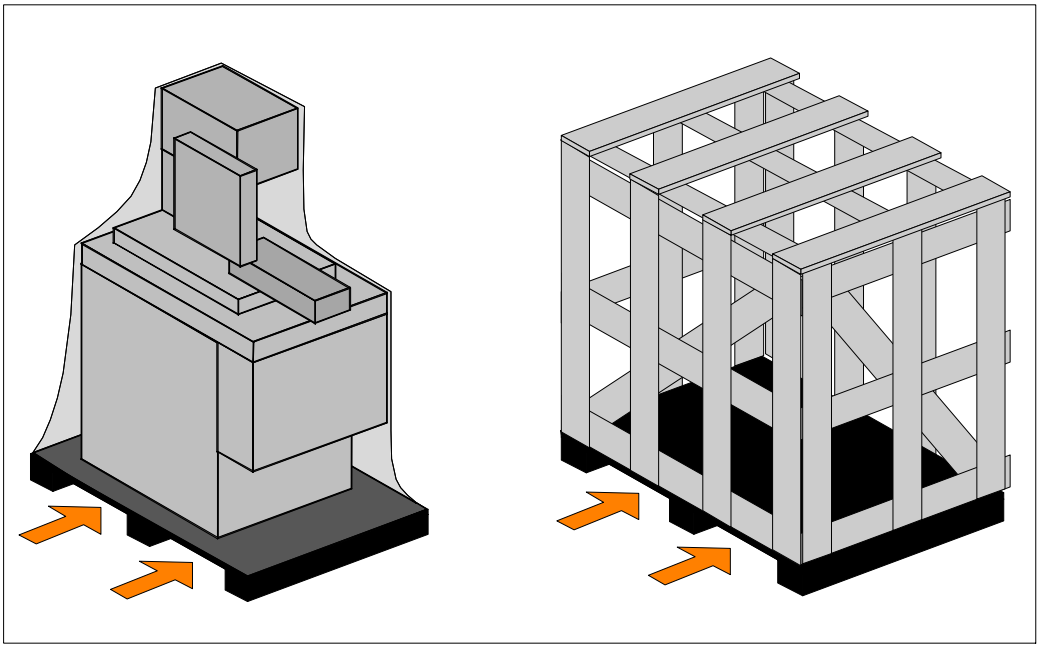
Machine installation

4

Packaging and storage

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

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



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

Warning

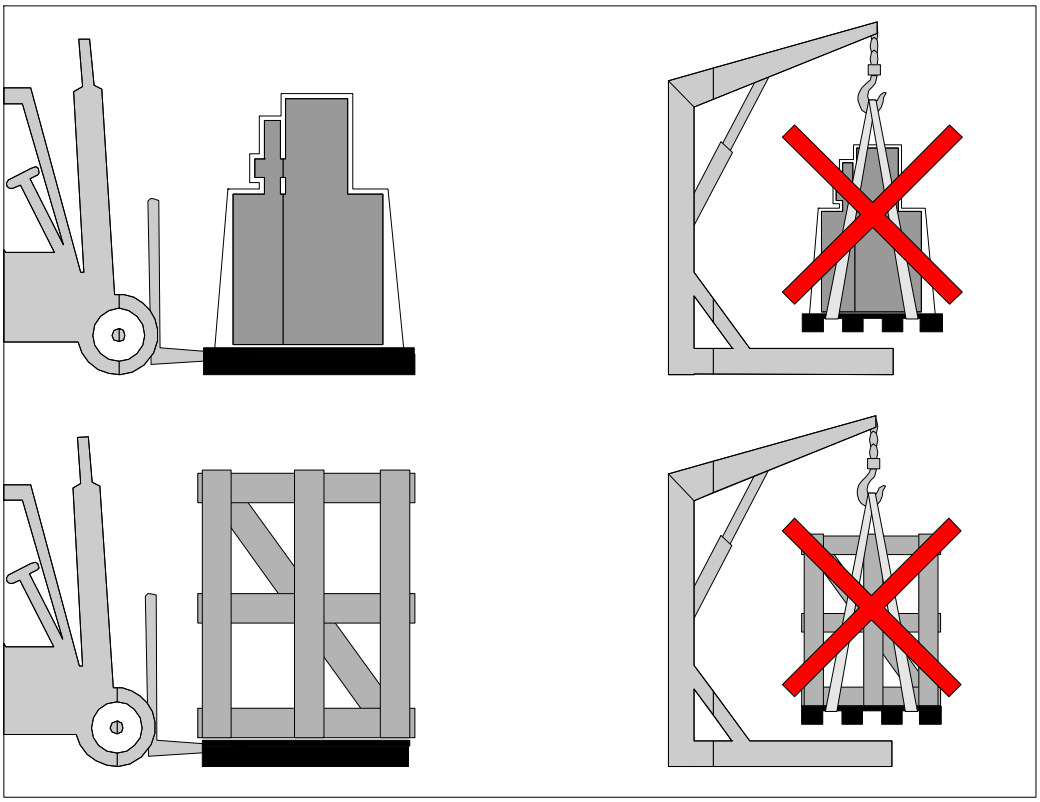
In both cases, for correct balancing the machine must be handled using a fork−lift truck, inserting the tines at the points indicated by the arrows, using the reference marks on the crate itself.

Attention

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

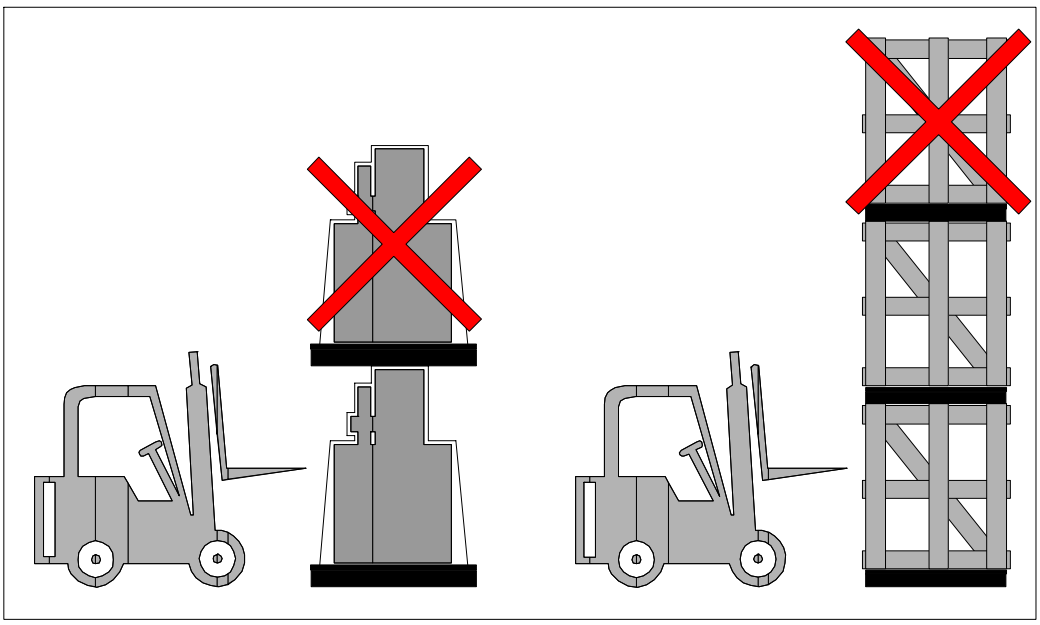
Attention

Do not handle the packed machine using slings.



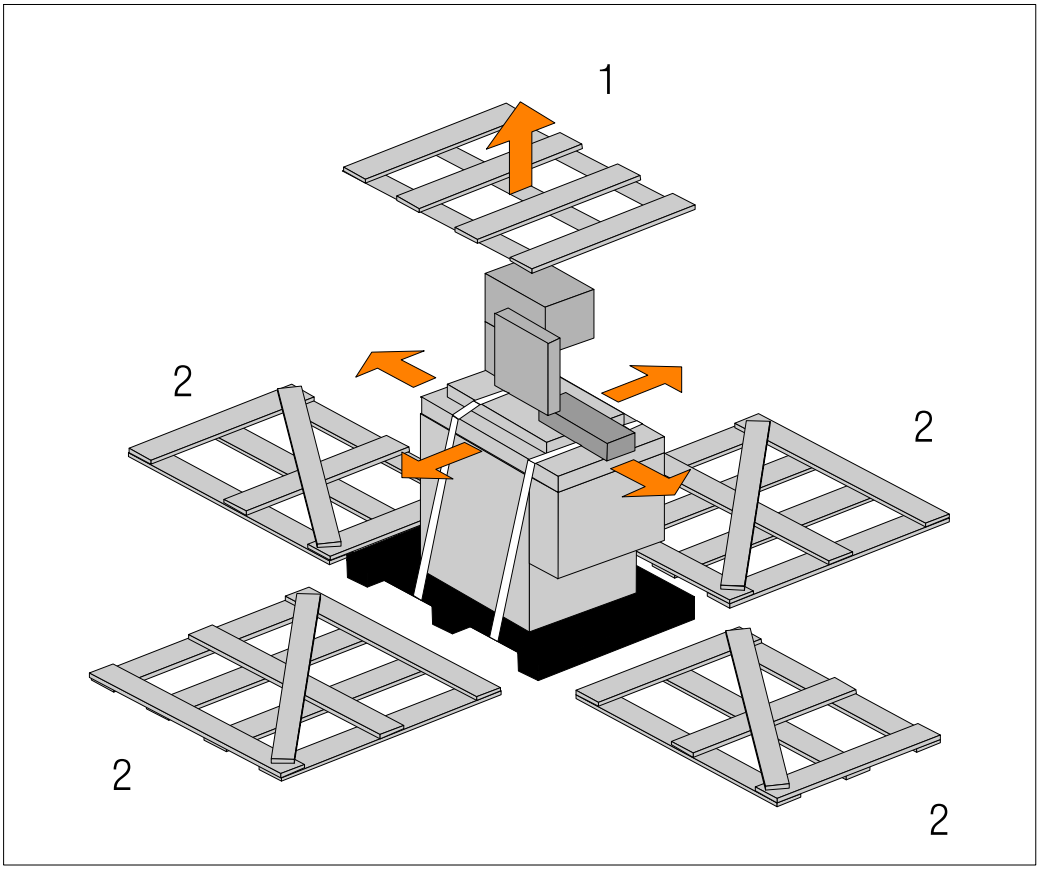
Attention

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

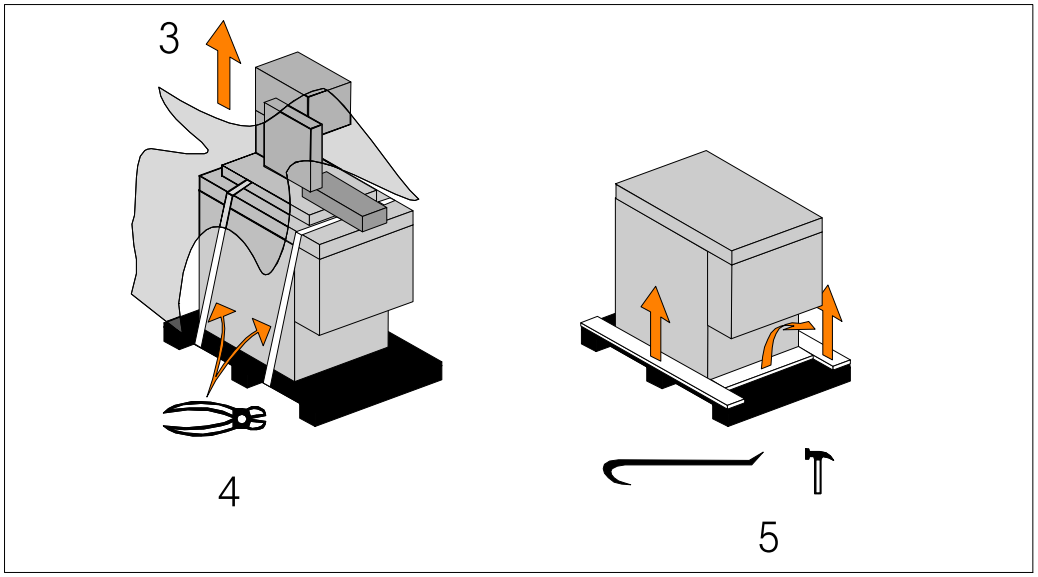


To install the machine, first remove the packing, paying particular attention not to cut any electric wires or hydraulic hoses; if necessary use pliers, a hammer and a cutter.
Open crate in the illustrated order:

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



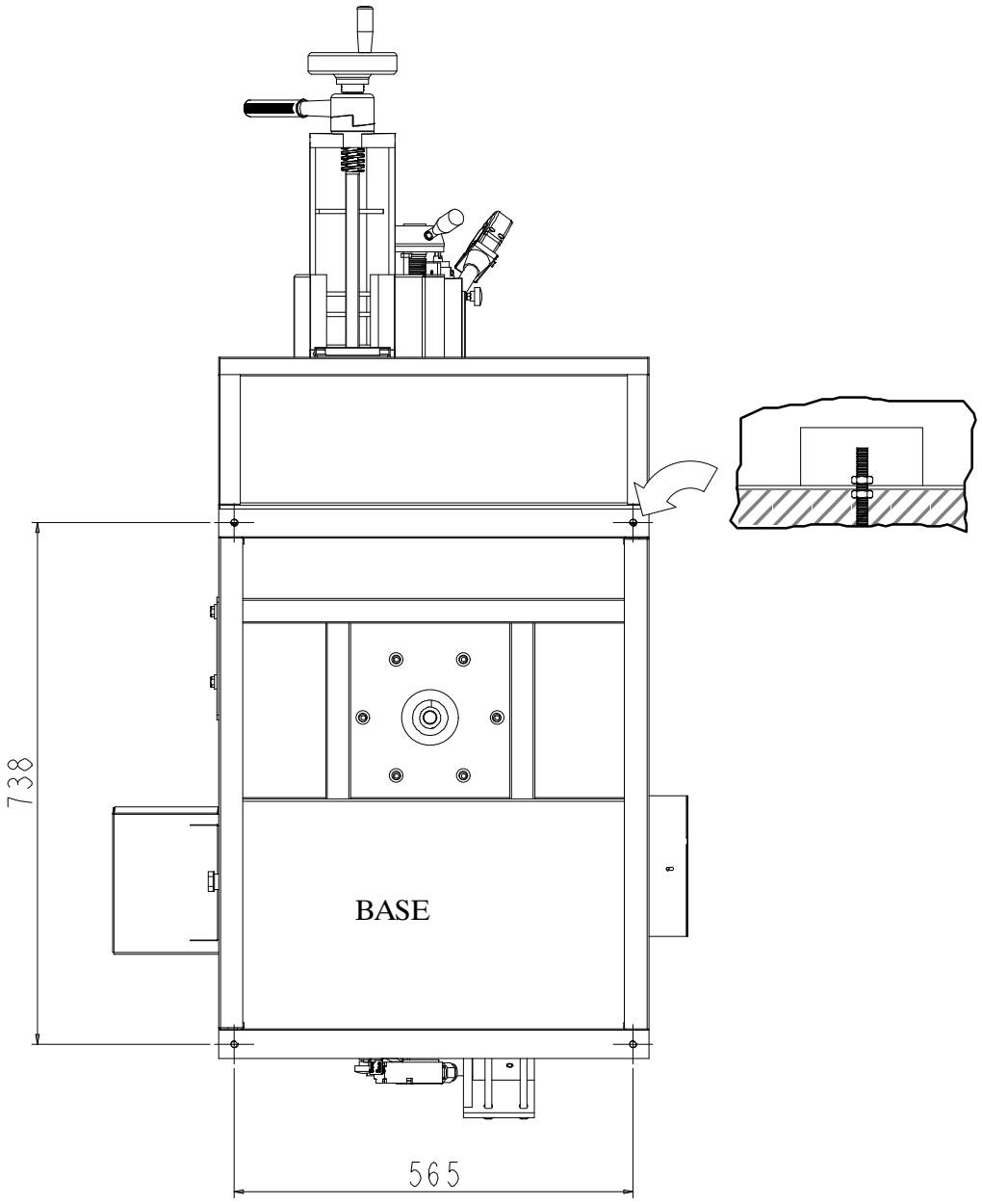
3. remove heat−shrink covering;
4. remove the straps;
5. remove nails from pallet securing planks and remove planks.



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

Anchoring the machine

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



Minimum requirements

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

- power supply voltage/frequency: refer to the values on the rating plate;
- 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

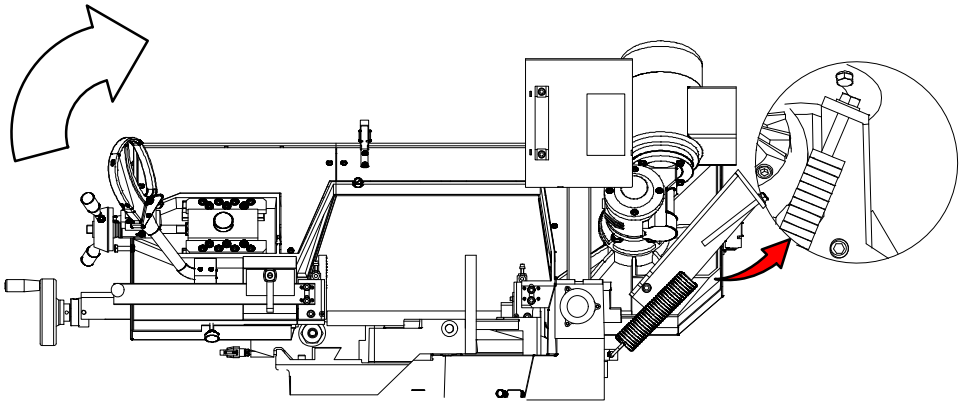
Before starting installation, check that all the accessories, whether standard or optional, supplied with the machine are present. The basic version of the **PH 262–CCS** 2–SPEED machine is supplied complete with:

CHARACTERISTICS	STANDARD	OPTIONAL
Steel base with coolant tank and electric pump for band lubricating and cooling	✓	
Bimetal blade for solid and section materials	✓	
Vice with quick clamping lever	✓	
Blade cleaning brush	✓	
Electric control panel (totally identifiable cabling, stand–by, main switch with lockable panel–closing device, speed switch, emergency device, thermal–magnetic overload cutout, minimum voltage relay, voltage drop protection, 24 V low–voltage plant)	✓	
IP 55 handgrip	✓	
Head pivoting with pre–loaded taper bearings	✓	
Precision stops for cuts at 0°, 45° , 60° left and 45° right	✓	
Accessory kit	✓	
2450x20x0.9 M42 bimetal band saw		✓
Kit torque vertical rollers for flat		✓
Loading table K110		✓
5 l can of emulsible oil		✓

The bag of accessories is enclosed in the machine before being packed.

Balancing the cutting head

Before making the electrical connections, the head return springs must be tensioned to balance the cutting head weight. Using a 10 mm. wrench, tighten the screws until the distance between the first coil of the spring and the bracket is 8 mm.



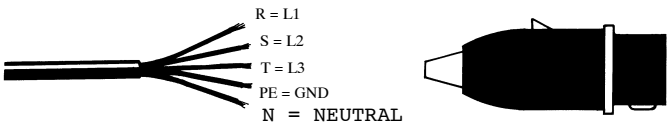
Connection to the power supply

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.

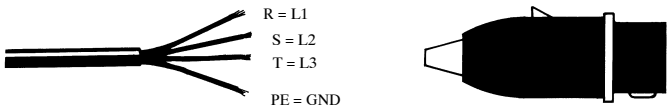
To connect the machine to the power supply, proceed as follows:

▶ 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



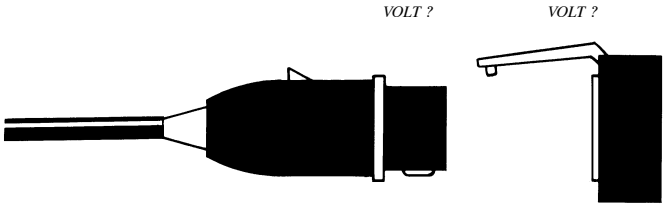
CONNECTION FOR **"4−CORE"** WIRE SYSTEMS WITH NEUTRAL



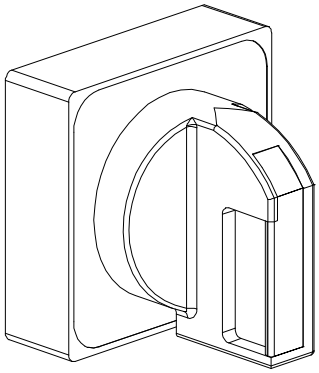
Attention

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.

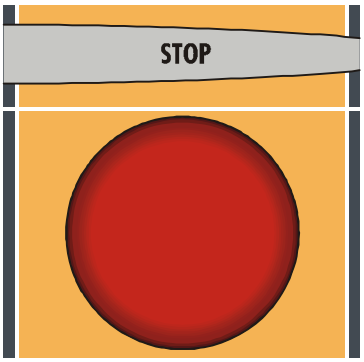


- Power up machine by rotating the main switch located on the right side of the control panel (The STAND BY LED lights up).

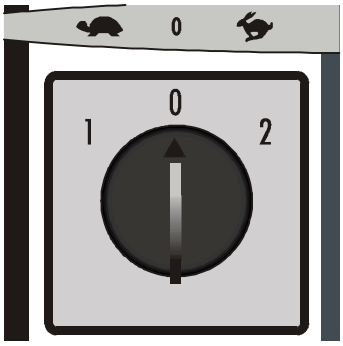


Check that the motor is rotating in the correct direction. For this check the following operations must be carried out:

- set the blade tension to 70 BAR;
- make sure the cover is properly closed: at the back of the cutting head there is a bayonet limiter for correct cover closure;
- make sure that the machine is not in an emergency condition (red mush-room−head pushbutton released);



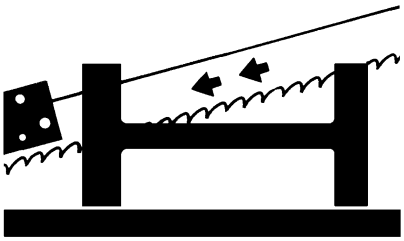
- select a cutting speed using the polarity change switch;



▶ operate the jog button on the manual head control lever;



▶ if all the above operations have been carried out correctly, the blade motor will start up and the blade will start rotating.



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.

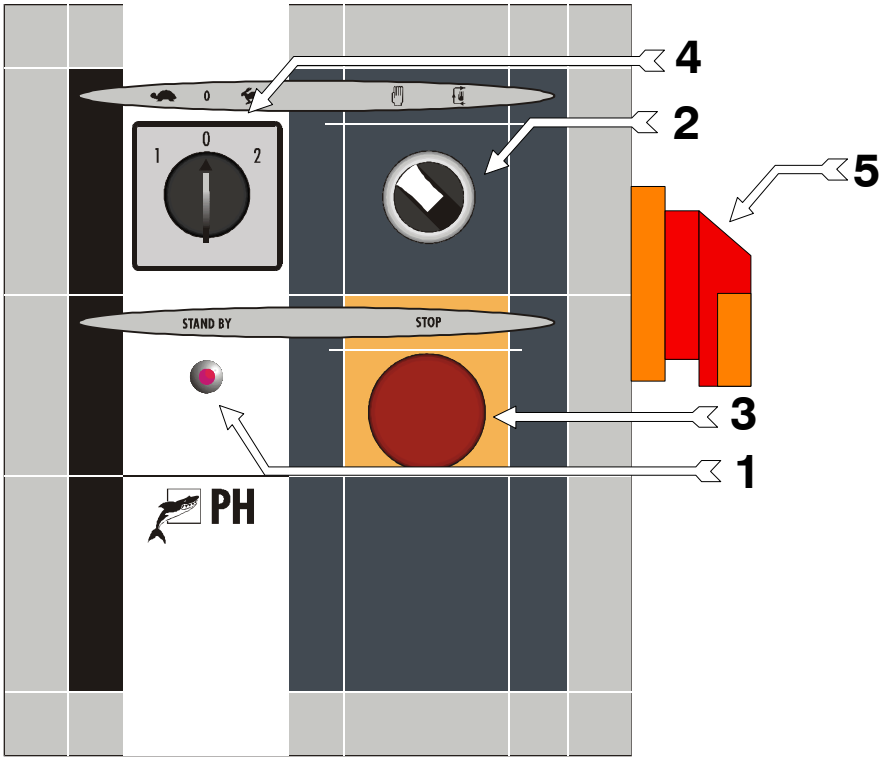
Description of machine operation



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 components of the **PH 262–CCS** control panel are shown in the diagram below. Each arrow has a number which corresponds to the descriptions that follow.



1 – LED STAND BY

This either confirms machine start up or indicates an emergency state to the operator.

2 – MANUAL OR SEMI–AUTOMATIC/DYNAMIC SELECTOR

Allows the selection of the functioning mode in manual or with CCS cycle (semi–automatic/dynamic).

3 – EMERGENCY STOP MUSHROOM BUTTON

Pressing this button immediately stops machine operation. The emergency button, designed to conform to all safety standards, is positioned so that it is easily accessible at any time and is clearly visible – being a red button on a yellow

background. To reset the emergency button, rotate actuator by 45°.

4 – POLARITY CHANGE SWITCH

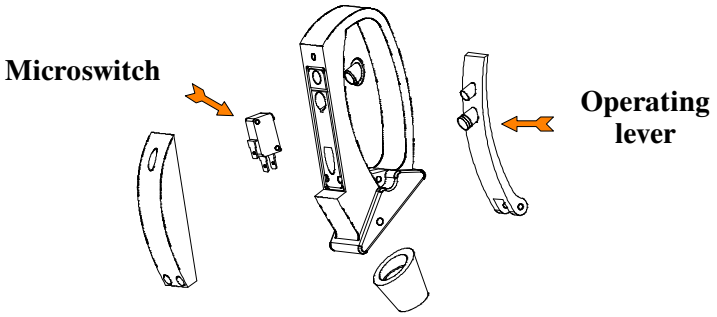
This selects the blade cutting speed, 46/92 mt/min. on the standard 2–speed machine.

5 – AUTOMATIC THERMAL–MAGNET CUTOUT WITH MINIMUM VOLTAGE RELAY AND HATCH LOCKING DEVICE

The machine is provided on the right of the control panel with a main switch with a locking device which, when set in the ON position (1), powers up the machine by resetting the minimum–voltage relay and the blade motor thermal magnet cutout. This device has three protection systems against power failure. When there is a power failure the electrical devices are all shut down, instantly shutting down the machine and preventing automatic restoring of power on power return. A further function is to reset the thermal relay, which protects against overcurrents.

HEAD CONTROL LEVER MICROSWITCH (for manual version only)

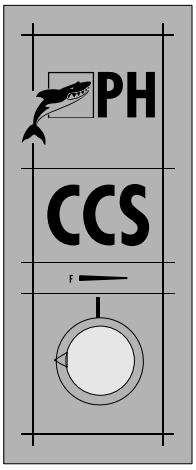
The grip of the manual head control lever incorporates a microswitch for manual control of the blade motor.



The microswitch is enabled when the machine is not in emergency state. In compliance with the relevant existing standards, voltage is 24V and the microswitch is installed in a housing (blue knob) sealed against external agents such as dust or moisture, with a protection rating of IP 55.

HYDRAULIC CONTROL PANEL (for the HB version only)

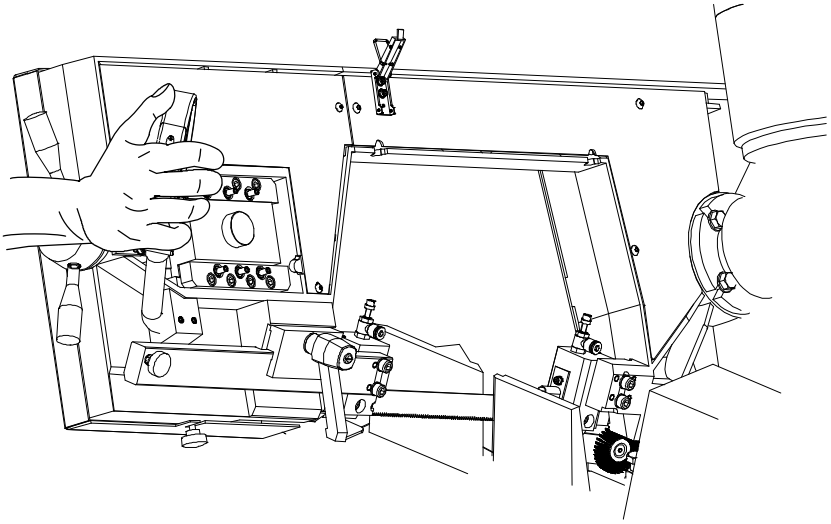
The hydraulic control panel is positioned on the supporting rod of the control board; it integrates the flow adjuster to set the head lowering speed in the CCS working cycle.



Basic instructions for carrying out a cutting operation cycle

Manoeuvring the cutting head

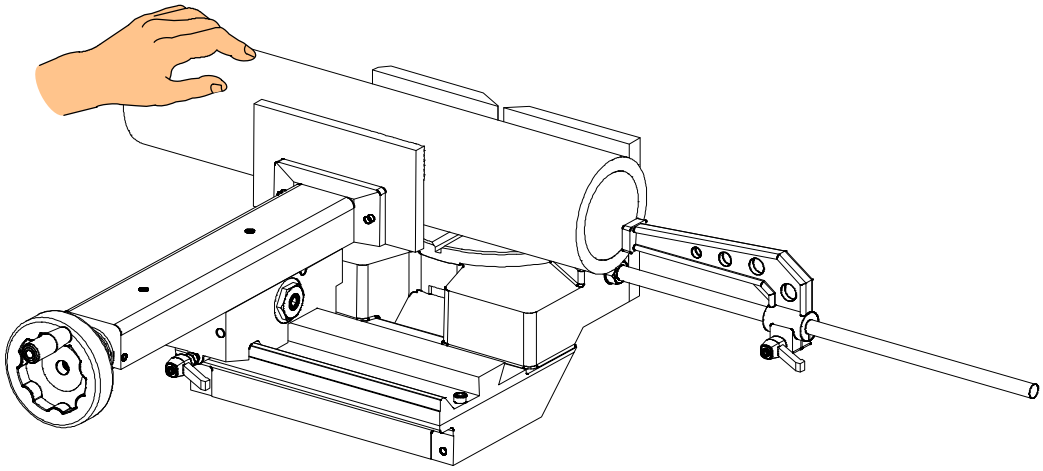
Cutting head movement is facilitated by perfect balancing of the head weight, thanks to the traction force exerted by the two return springs located at the back of the machine. Also, the grip on the head control lever enables the operator to achieve a firm grip in order to start up band saw rotation by pressing the micro-switch start lever, located in the handle itself.



Clamping the work piece in the vice

In the basic version, the work piece is clamped in the vice by rotating the opening/closing handwheel (in a clockwise/anticlockwise direction), as shown:

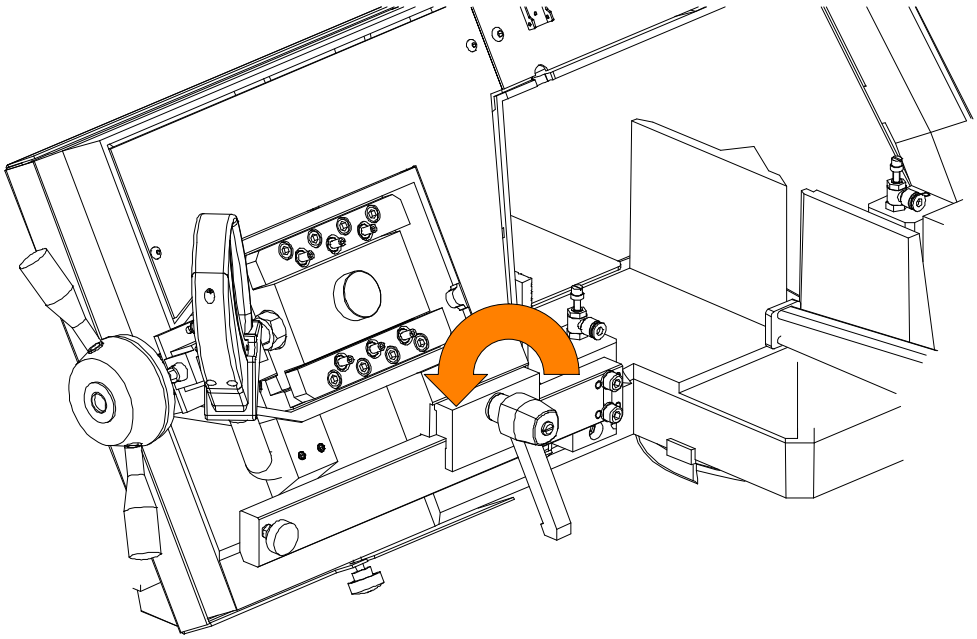
▶ each time the vice is closed make certain that the work piece is solidly clamped. This can be done manually.



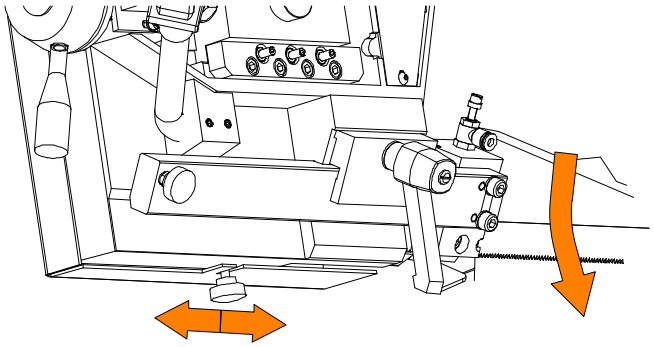
Width of cut

The machine is fitted with protections which protect the entire blade stroke, leaving exposed only the part of the blade required to make the cut itself as specified by current standards. The width of the cut is determined by the longitudinal section of the workpiece, so that only the part of the blade required to make the cut is actually exposed.

- Position the workpiece on the work table in proximity to the blade downstroke trajectory and clamp it in the vice.
- loosen the ratchet lever on the sliding shaft of the front blade guide head;



- the mobile front guide head must be positioned near to the material, leaving the downstroke trajectory free to reach beyond the sliding vice jaw;



- Tighten the ratchet lever to lock the head slide.

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 blade guide head bracket is locked in the correct position;
- that the widia inserts are correctly adjusted;
- that the cutting angle is correct and the cutting head is locked;

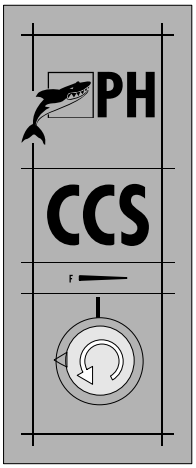
- that the work piece is properly clamped in place;
- that the blade teeth are correct for the job to be begun;
- that the speed selected is right for the kind of piece to be cut;
- that all protections are in place and correctly locked;
- the level of lubricant/coolant and that the electropump is activated;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

Manual operating cycle

Sequence of operations for performing a cut:

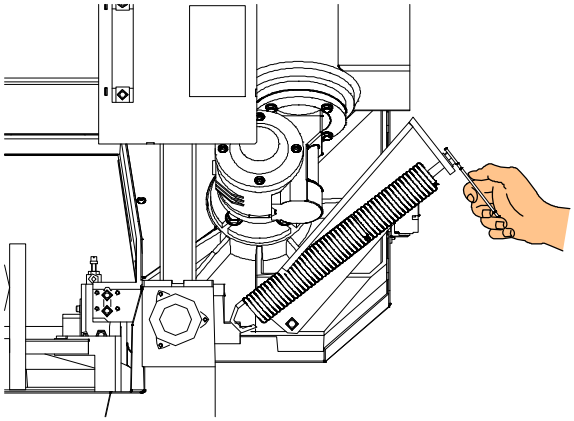
Warning

In the hydraulic control panel on the board supporting rod, check that the knob is completely open rotating it counter–clockwise.



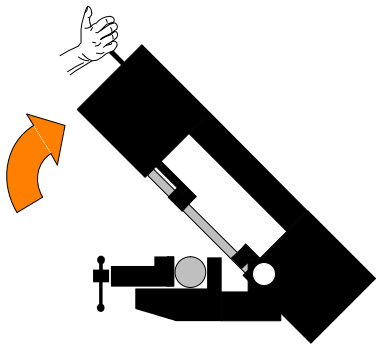
Warning

Completely tension the head return spring on the backside of the sawing machine.

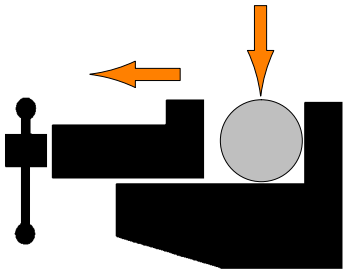


- power up the machine by pressing the reset button.

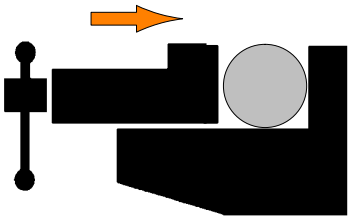
▶ Take the head totally up.



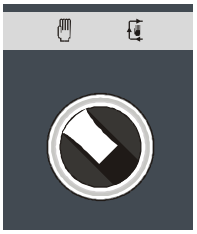
▶ Position the workpiece in the vice and calculate the length of cut (using the measuring rod for cuts to measure).



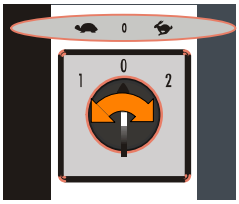
▶ Clamp the workpiece in the vice;



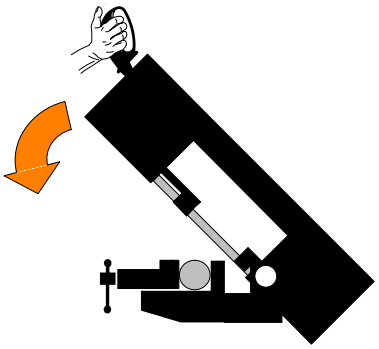
▶ Make sure the operating mode switch is set on manual.



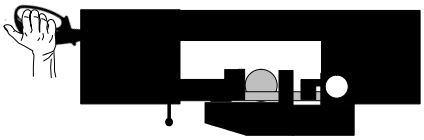
▶ Select the cut using the **polarity change switch** according to the type of the material to be cut (shape, thickness, hardness, etc.).



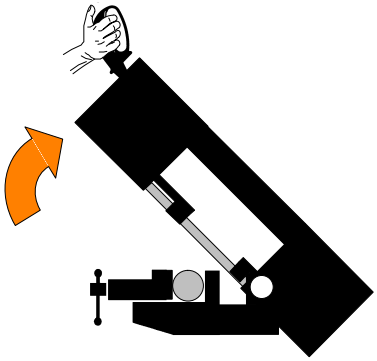
- Grip the head control lever and start the blade rotating by pressing the microswitch on the handgrip; the downstroke speed of the head is manually controlled by the operator.



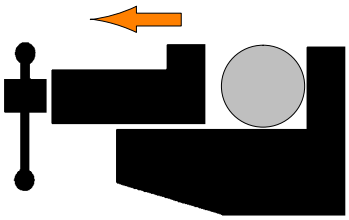
- The motor starts up and sets the blade in rotary motion; the lubricant/coolant pump starts up at the same time.



- At the end of the cutting operation, the head can be raised.



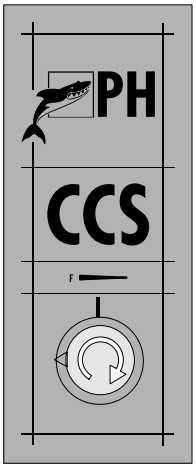
- Remove the piece from the vice;



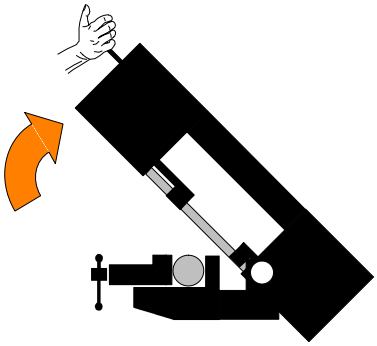
Operating cycle with CCS device

Sequence of operations for performing a cut:

- power up the machine by pressing the reset button.
- In the hydraulic control panel on the board supporting rod close the upper knob completely rotating it clockwise, to prevent any head accidental start.

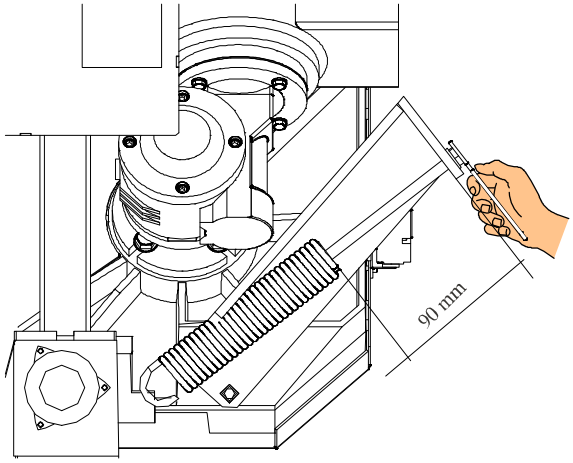


▶ Take the head totally up.

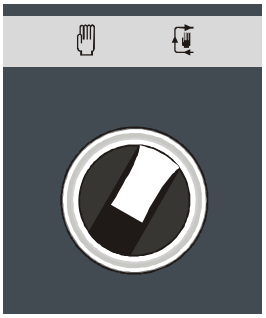


Warning

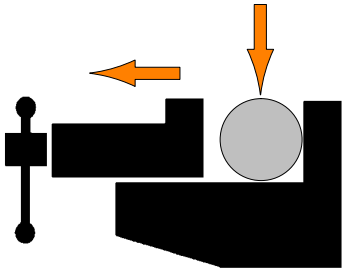
When starting to cut in CCS cycle, de−tension the head return spring till measuring a 9085−mm distance between first spring turn and spring engaging bracket.



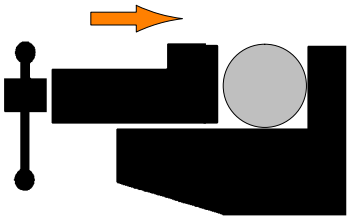
▶ Select the operation type: semiautomatic/dynamic through the selector on the control board.



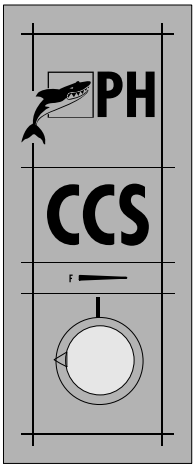
▶ Position the workpiece in the vice and calculate the length of cut (using the measuring rod for cuts to measure).

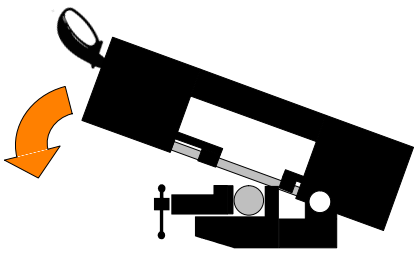


▶ Clamp the workpiece in the vice;

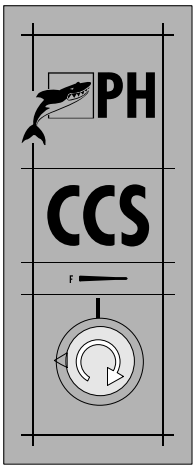


▶ Approach the blade to the material to be cut gradually opening the upper knob to adjust the head lowering speed.

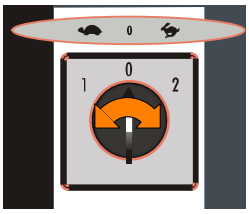




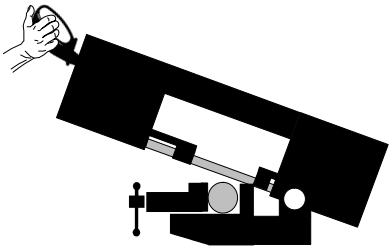
▶ When the blade is at a distance of about 10 mm close the knob.



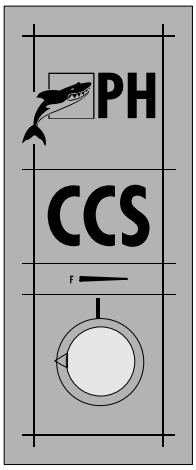
▶ Select the cut using the **polarity change switch** according to the type of the material to be cut (shape, thickness, hardness, etc.).

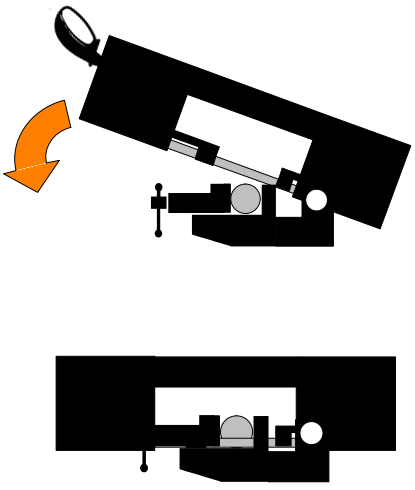


▶ Start the band rotation by pressing the micro−switch on the grip.

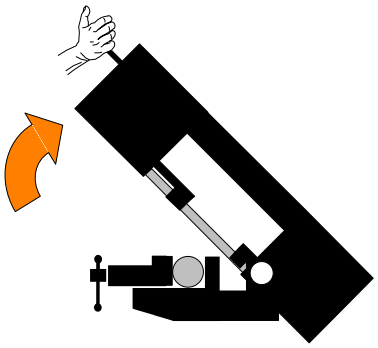


▶ Slowly open the flow adjuster till setting the correct cutting supply.

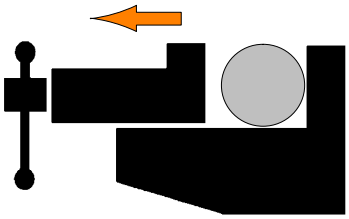




▶ The head lowers till the cut end: an electric limit switch stops the motor rotation. Close the head lowering adjuster and take the head manually again in the cut start position.



▶ Remove the piece from the vice;

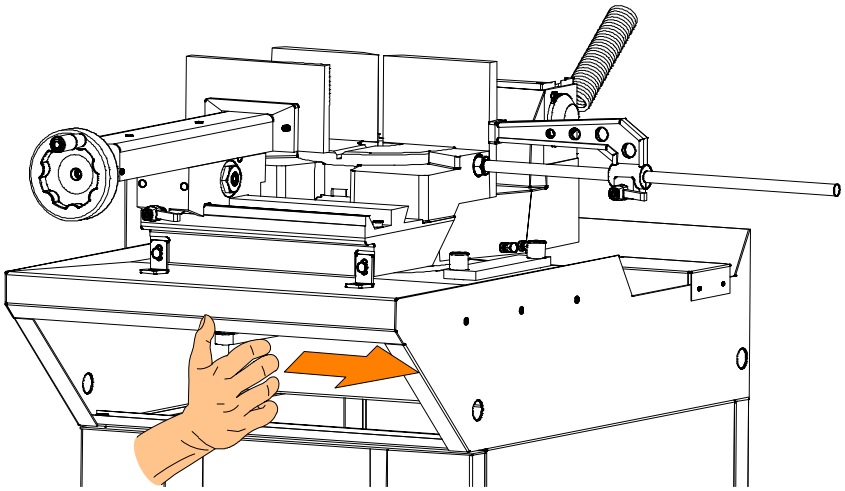


Angled cuts

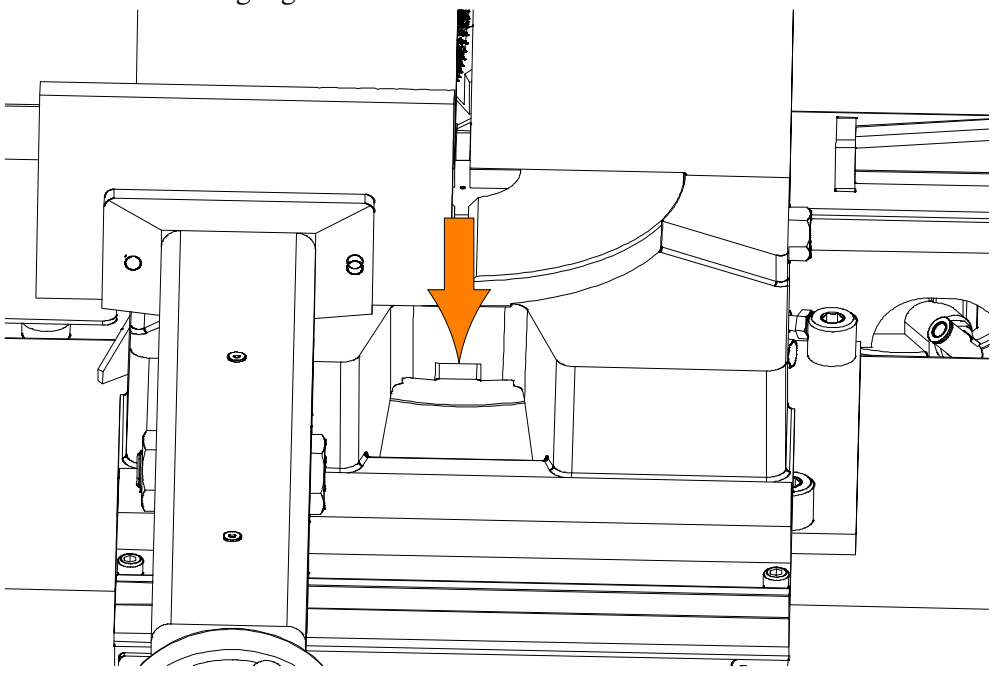
The machine can make angled cuts from 60° left to 45° right. Reference stops are mounted on the sides of the turntable to facilitate rapid 0°, 45° and 60° cuts to the left and 45° cuts to the right.

Angled cuts 60° to the left

▶ slacken the turntable lock/release lever.



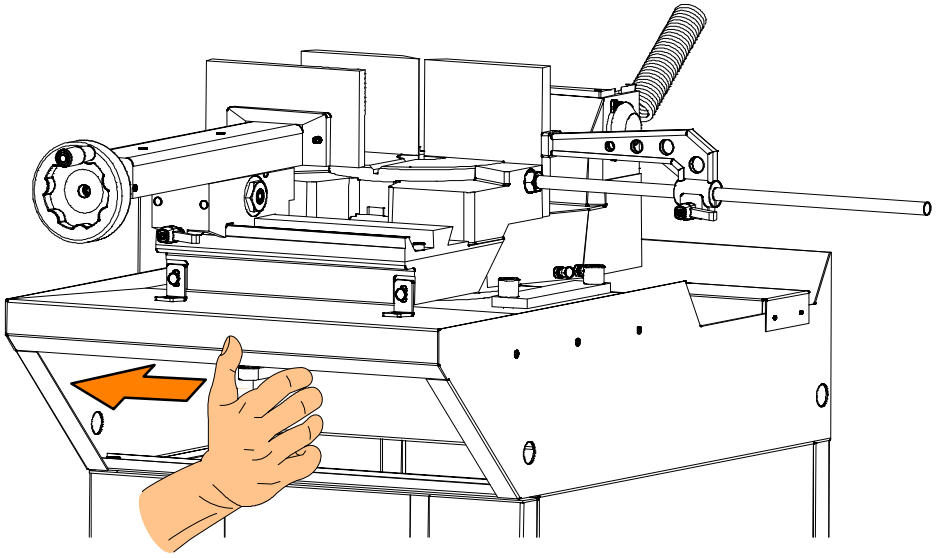
▶ rotate the head from left to right, until it reaches the desired angle, which is shown on the angle graduations on the turntable.



Attention

Always rotate the head when it is in the upper position to avoid blade collision with the moving jaw on the clamp.

▶ Relock the turntable lock/release lever.

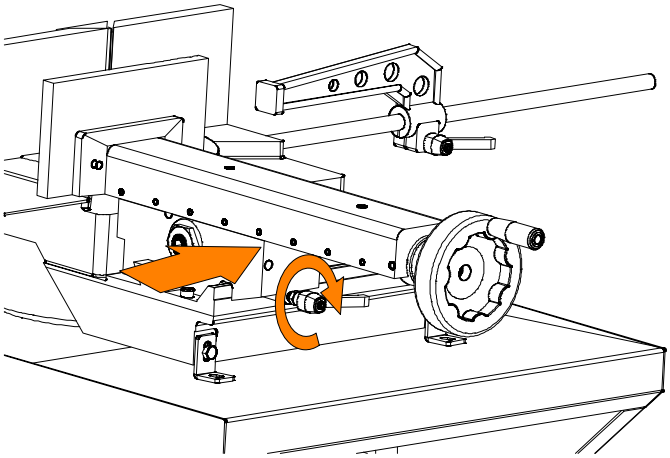


▶ Make the cut in the required operating mode, following the preliminary safety instructions set out in this chapter.

Angled cuts 45° to the right

▶ Remove the cutting stop at 0°;

▶ Make sure the vice is positioned to the right of the 0° cutting slot.

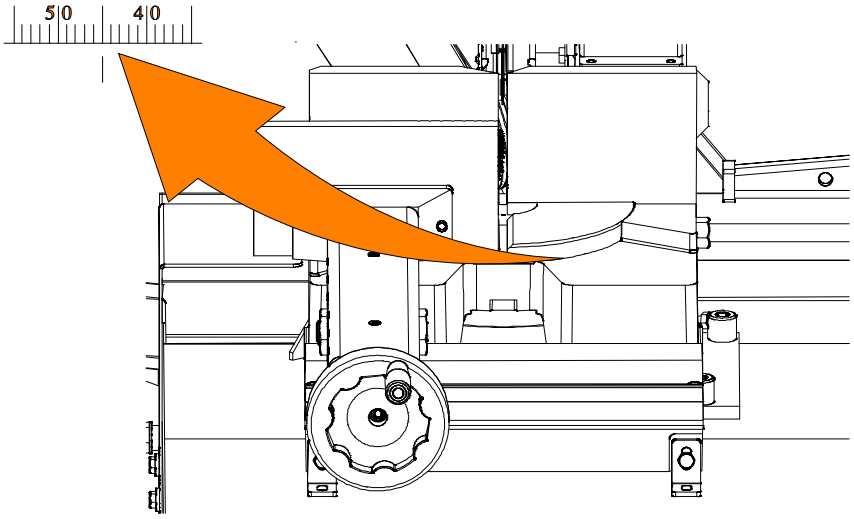


Attention

When positioning the vice to the left or right, make sure the moving jaw is beyond the 0° cutting slot to avoid any risk of collision with the blade downstroke.

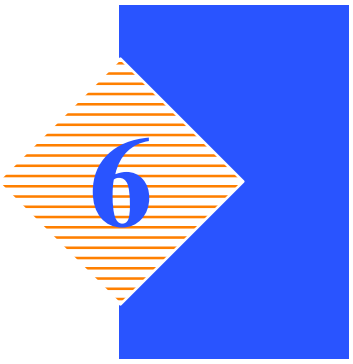
Following the same procedure described above for 45° cuts to the left, now position the head for 45° cuts to the right:

▶ slacken the turntable lock/release lever;



- swing the head from left to right until it is positioned at the required angle, as indicated by the graduated scale on the turntable;
- relock the turntable lock/release lever;
- make the cut in the required operating mode, following the preliminary safety instructions set out in this chapter.

Diagrams, exploded views and replace–ment parts



This chapter contains functional diagrams and exploded views of the **PH 262–CCS**. 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.

0	1	2	3	4	5	6	7	8	9

LISTA FOGLI \ INDEX

Foglio Sheet	Descrizione Description	Revisione \ Revision 0	1	2	3	4	5	6	7	8	9
1	INDICE CONTENUTI										
	CONTENT INDEX										
2	LEGENDA SIMBOLI										
	SYMBOL KEY										
3	ALIMENTAZIONE										
	POWER SUPPLY										
4	ALIMENTAZIONE MOTORI 380V										
	MOTOR POWER SUPPLY 380 V										
5	ALIMENTAZIONE TRASFORMATORI										
	TRANSFORMER POWER SUPPLY										
6	AUSILIARI										
	AUXILIARY										
7	MORSETTIERA										
	TERMINAL STRIP										
8	INTERNO QUADRO										
	BOARD INSIDE										
9	GUAINE E ACCESSORI										
	SHEATHS AND ACCESSORIES										
10	GUAINE E ACCESSORI										
	SHEATHS AND ACCESSORIES										
11	RIASSUNTIVO CAVI										
	CABLE SUMMARY										
12	DISTINTA MATERIALI										
	MATERIAL LIST										
13	DISTINTA MATERIALI										
	MATERIAL LIST										

Foglio Sheet	Descrizione Description	Revisione \ Revision 0	1	2	3	4	5	6	7	8	9
14	DISTINTA MATERIALI										
	MATERIAL LIST										

Note :

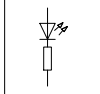
REV.	MODIFICA	DATA	FIRME

Dis. N. PH CCS
CAD SPAC
File PH CCS
Data 12–05–2019

Impianto: PH 211–261 CCS
Denominazione: INDICE CONTENUTI / *CONTENT INDEX*

Ordine
Commessa
Esecutore: Mep S.p.A.

FOGLIO 1
ULTIMO 2

Sim.\Sym.	File	Descrizione\Description
	H12	LED con resistenza *LED WITH RESISTOR*
	M2	Motore asincrono trifase *THREE PHASE INDUCTION MOTOR*
	Q1360	Int. automatico magnetotermico sezionatore tripolare *THREE PHASE AUTOMATIC SWITCH*
	S2	Comando a Pulsante NO *PUSH BUTTON NO*
	S4C	Pulsante di emergenza NC *EMERGENCY PUSH BUTTON NC*
	S8	Pressostato NO *PRESSURE SWITCH NO*
	S13C	Fine corsa NC *LIMIT SWITCH NC*
	S104C	Selettore a due posizioni stabili NC *SELECTOR TWO STABLE POSITION*
	Y1	Elettrovalvola *SOLENOID VALVE*
	KA1	Bobina rele' Aux *AUXILIARY RELAY COIL*
	KM1	Bobina contattore *CONTACTOR COIL*

Sim.\Sym.	File	Descrizione\Description
	BLK5	Motore asincrono trifase 6 poli *SIX PHASE INDUCTION MOTOR*
	BLK10	Trasformatore per ausiliari *TRANSFORMER FOR AUXILIARY*
	SEL_VEL	Selettore a tre posizioni stabili NO riposo 0 *SELECTOR THREE STABLE ZERO CENTRAL POSITION*
	BLK41	Raccordo SX *CONNECTOR SX*
	BLK42	Raccordo DX *CONNECTOR DX*
	BLK43	Tubo corrugato *CORRUGATED PIPE*
	BLK45	Riduzione PG *PG ADAPTER*
	BLK49	Pressacordone *FAIRLEAD*
	BLK51	Dado PG *NUT PG*
	BLK56	Capicorda a puntale *TERMINAL*
	BLK57	Filo unipolare *WIRE*

Sim.\Sym.	File	Descrizione\Description
	BLK58	Fascette plastiche di fissaggio *CLAMP*
	BLK60	Capicorda a occhiello *TERMINAL*
	BLK66	Sacchetto portafusibile *BAG FUSE*

REV.	MODIFICA	DATA	FIRME

Dis. N.	PH CCS
CAD	SPAC
File	PH CCS
Data	12-05-2019

Impianto: *PH 211-261 CCS*

Denominazione: LEGENDA SIMBOLI / *SYMBOL KEY*

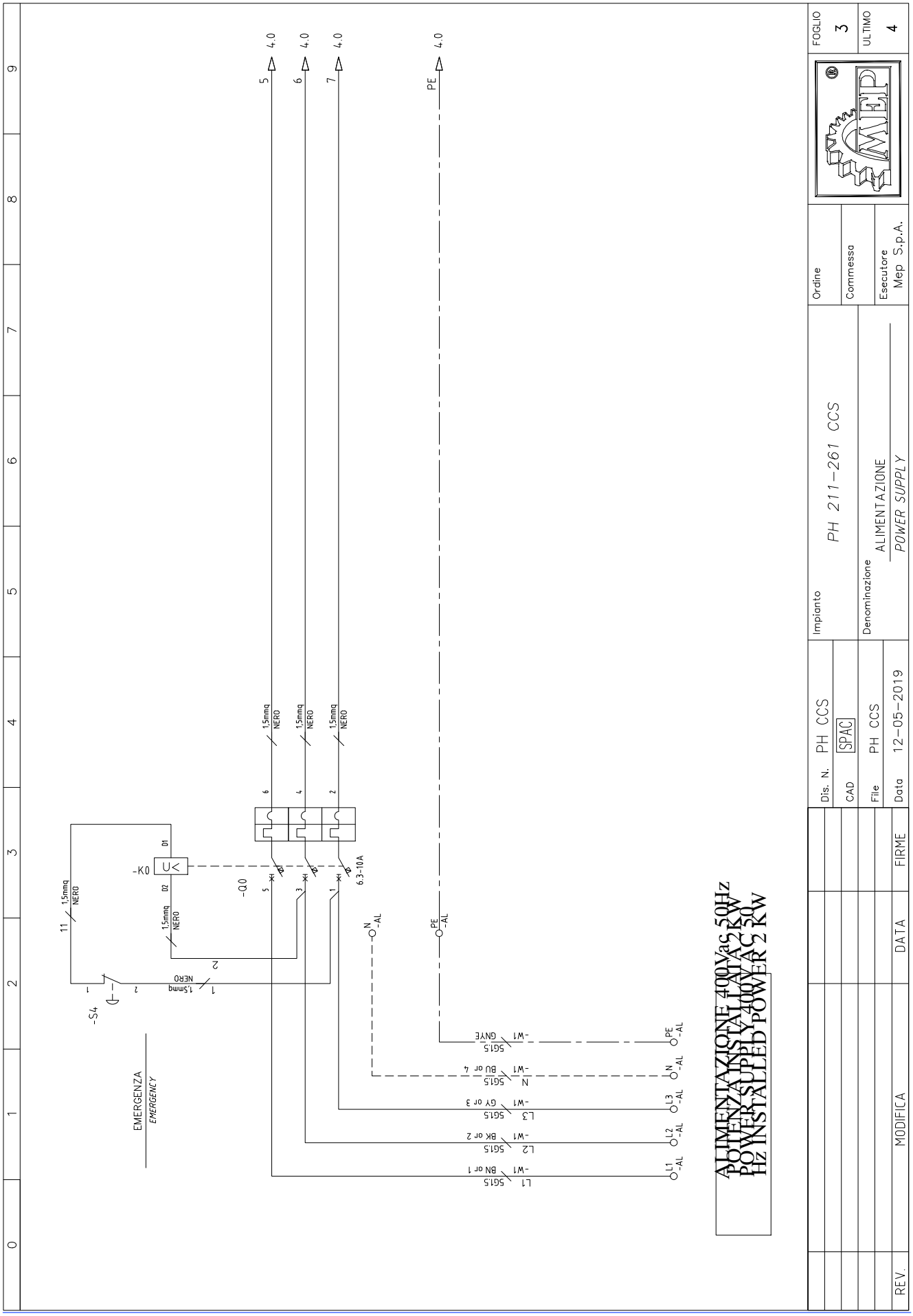
Ordine

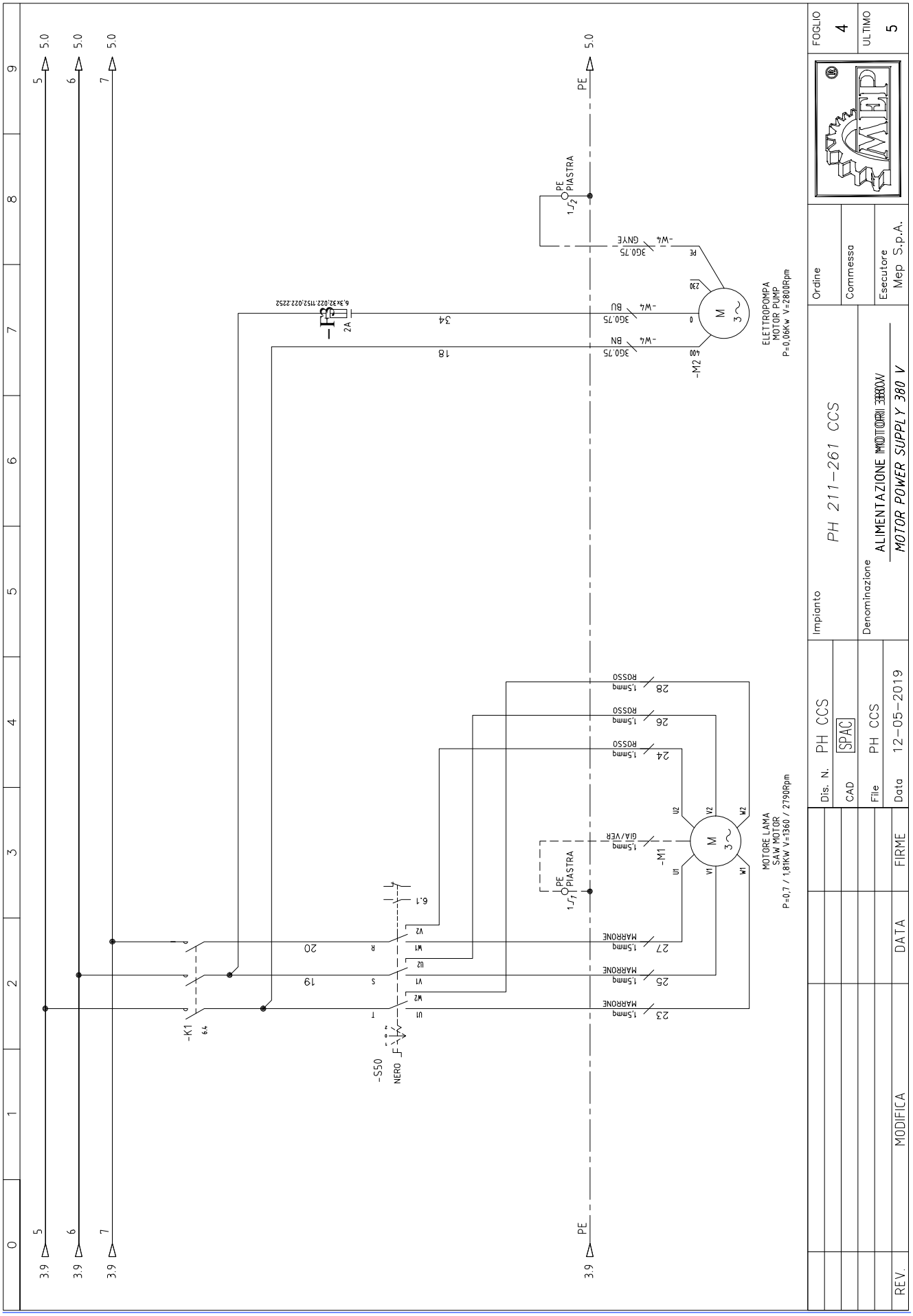
Commessa

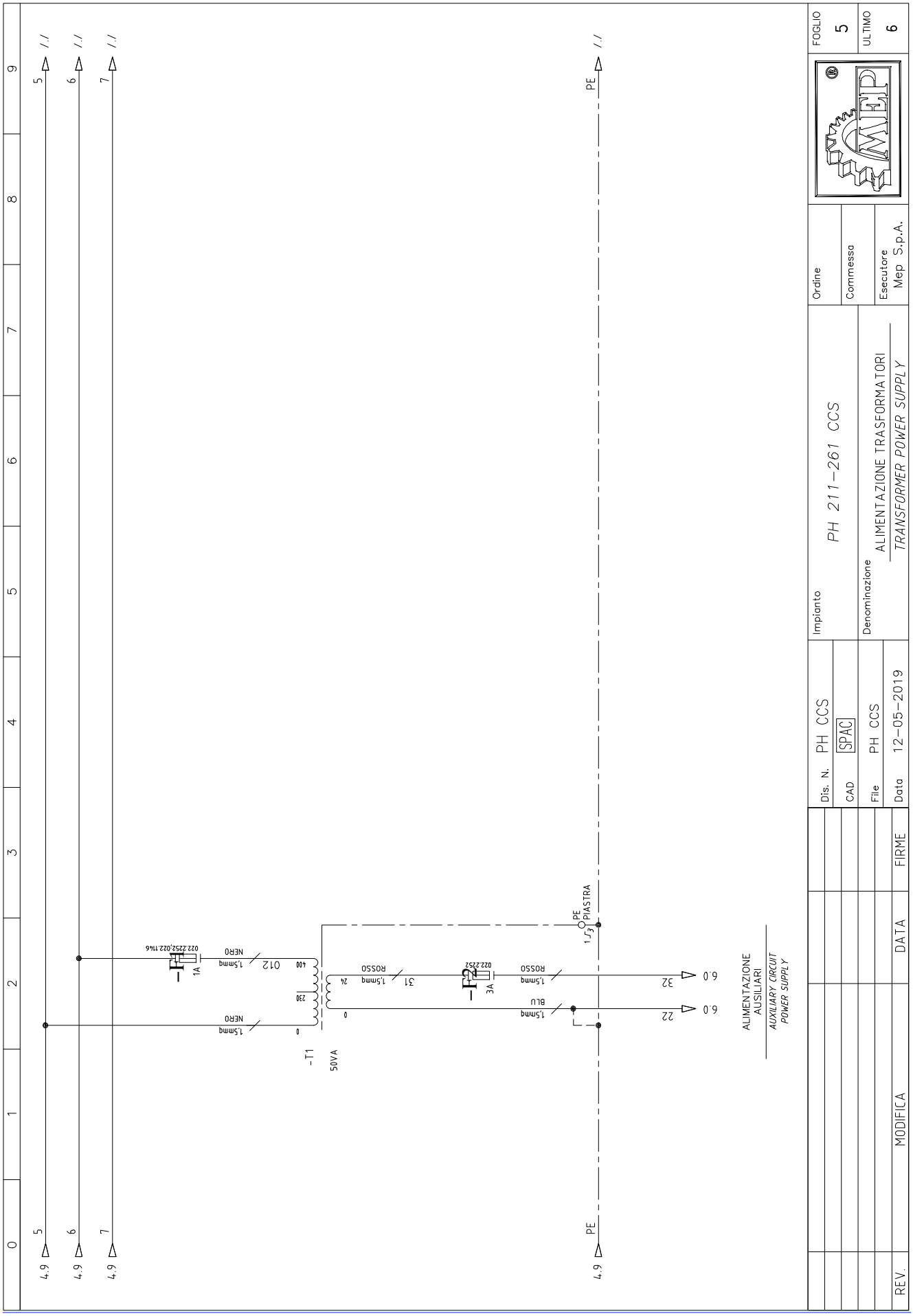
Esecutore: Mep S.p.A.

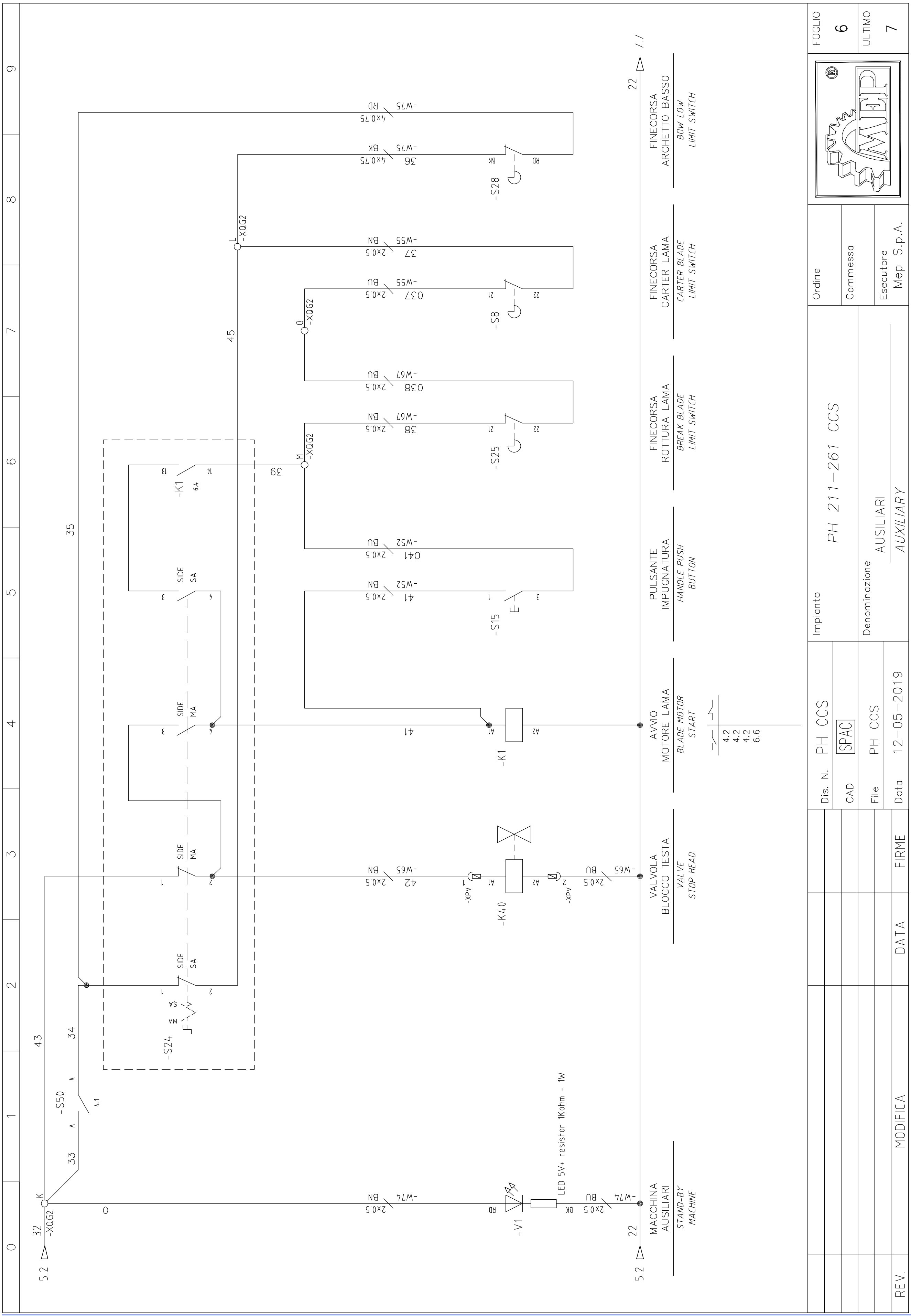
FOGLIO 2

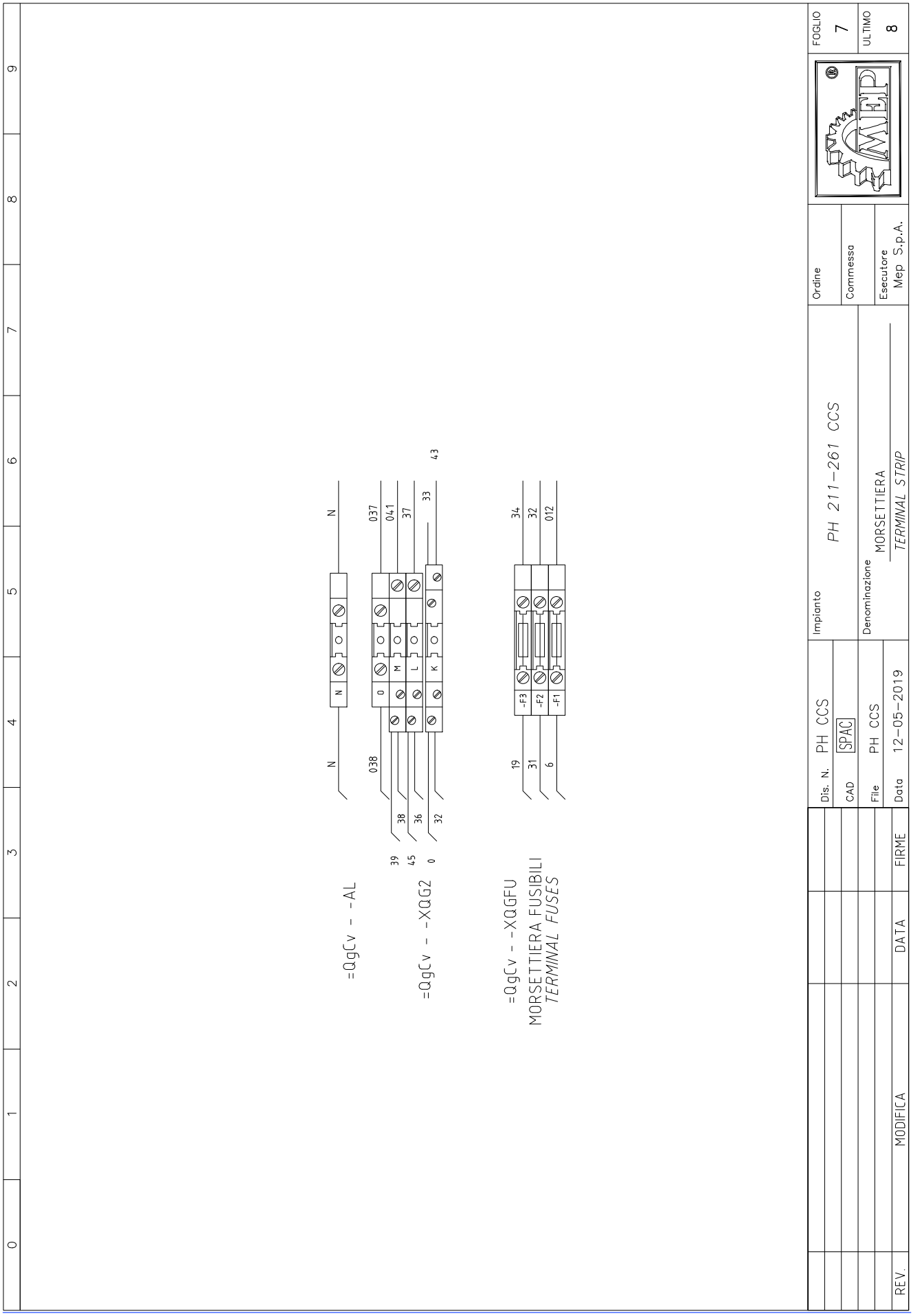
ULTIMO 3

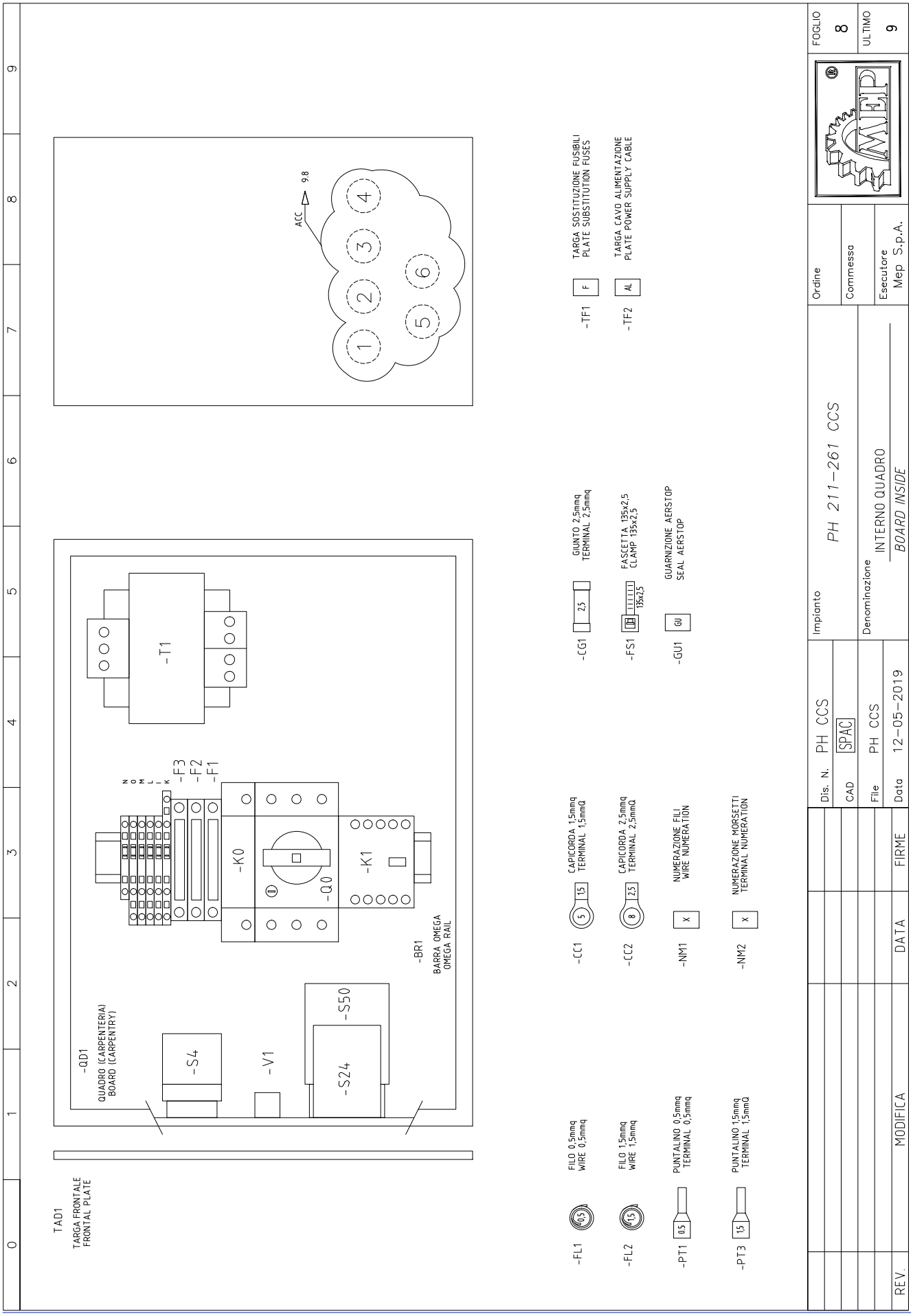

ALIMENTAZIONE 400Vac 50Hz
POWER SUPPLY 400V AC 50 Hz INSTALLED POWER 2 KW
EMERGENZA
EMERGENCY
-S4
-K0
-Q0
-AL
-W1
PE
N
L1
L2
L3
1,5mmq NERO
6.3-10A
4.0
Impianto
PH 211-261 CCS
Denominazione
ALIMENTAZIONE
POWER SUPPLY
Ordine
Commessa
Esecutore
Mep S.p.A.
FOGLIO
3
ULTIMO
4
Dis. N.
PH CCS
CAD
SPAC
File
PH CCS
Data
12-05-2019
REV.
MODIFICA
DATA
FIRME

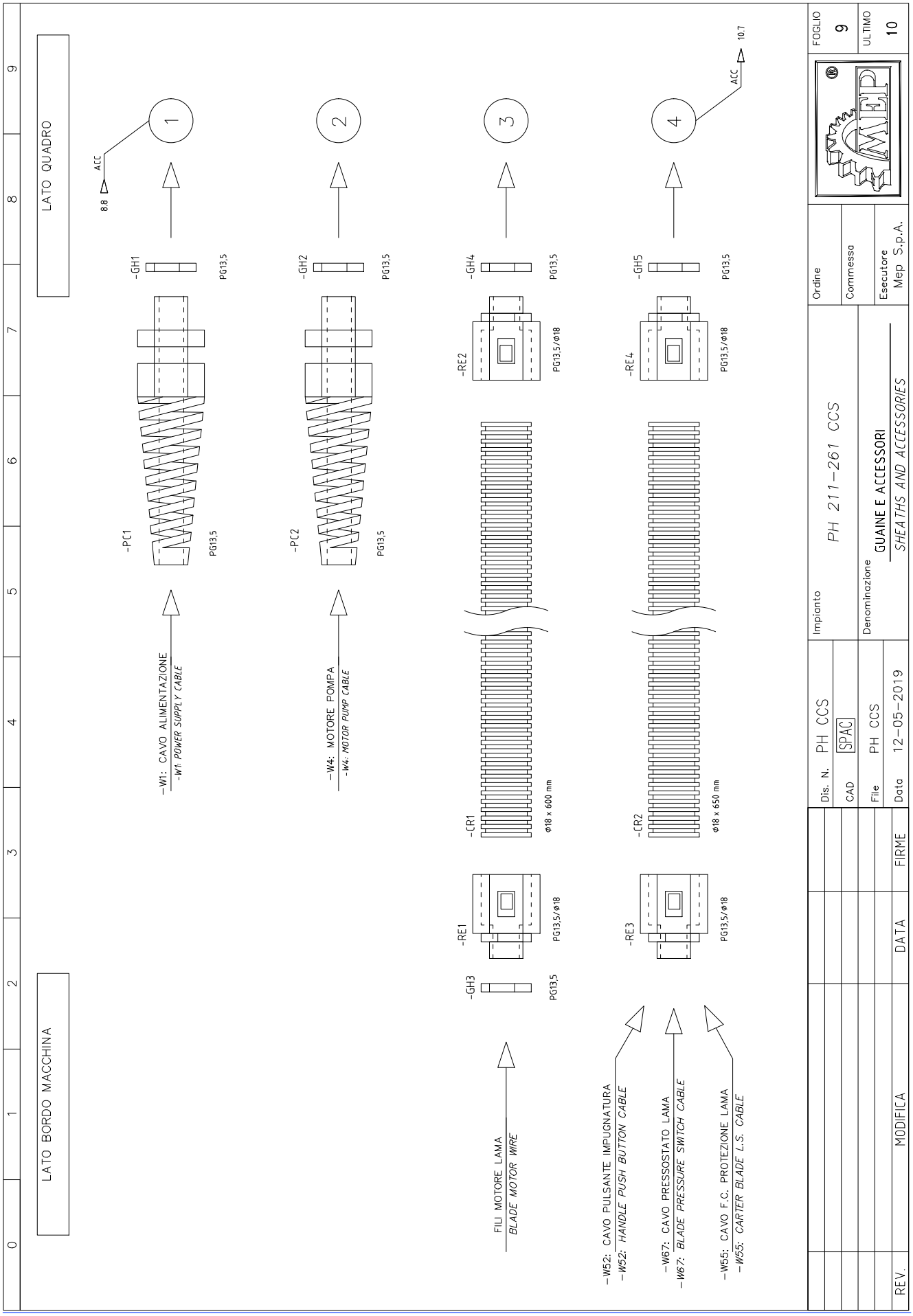

FOGLIO 4
ULTIMO 5
Impianto
PH 211-261 CCS
Denominazione
ALIMENTAZIONE MOTORI 3000W/
MOTOR POWER SUPPLY 380 V
Ordine
Commessa
Esecutore
Mep S.p.A.
Dis. N. PH CCS
CAD SPAC
File PH CCS
Data 12-05-2019
REV.
MODIFICA
DATA
FIRME
ELETTROPOMPA
MOTOR PUMP
P=0,06KW V=2800Rpm
MOTORE LAMA
SAW MOTOR
P=0,7 / 1,8KW V=1360 / 2790Rpm
-M1
-M2
-K1
-S50
NERO
-F3
2A
6.3x32.022.1152.022.2252
3GO.75
-W4
GNYE
BU
BN
MARRONE
ROSSO
GIA/VER
PE
PIASTRA

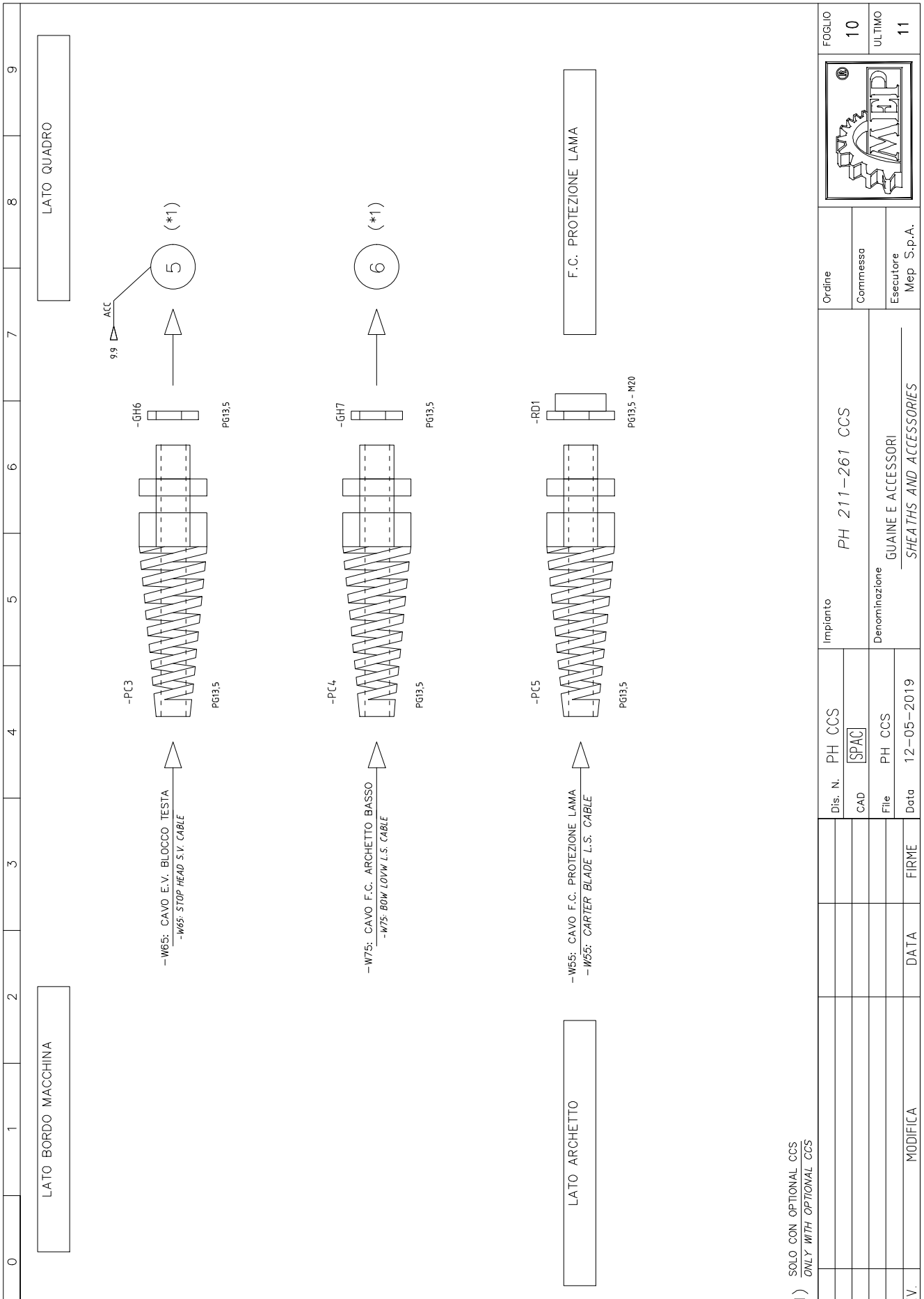

FOGLIO 5
ULTIMO 6
Ordine
Commessa
Esecutore Mep S.p.A.
Impianto PH 211–261 CCS
Denominazione ALIMENTAZIONE TRASFORMATORI
TRANSFORMER POWER SUPPLY
Dis. N. PH CCS
CAD SPAC
File PH CCS
Data 12-05-2019
REV. MODIFICA DATA FIRME
ALIMENTAZIONE AUSILIARI
AUXILIARY CIRCUIT POWER SUPPLY
-T1
50VA
-F1
-F2
PE PIASTRA
PE
NERO
ROSSO
BLU


MACCHINA AUSILIARI
STAND-BY MACHINE
VALVOLA BLOCCO TESTA
VALVE STOP HEAD
AVVIO MOTORE LAMA
BLADE MOTOR START
PULSANTE IMPUGNATURA
HANDLE PUSH BUTTON
FINECORSA ROTTURA LAMA
BREAK BLADE LIMIT SWITCH
FINECORSA CARTER LAMA
CARTER BLADE LIMIT SWITCH
FINECORSA ARCHETTO BASSO
BOW LOW LIMIT SWITCH
LED 5V+ resistor 1Kohm - 1W
-V1
-K40
-K1
-S15
-S25
-S8
-S28
-S24
-S50
-XQG2
-XPV
FOGLIO
6
ULTIMO
7
MEP
Ordine
Commessa
Esecutore
Mep S.p.A.
Impianto
PH 211-261 CCS
Denominazione
AUSILIARI
AUXILIARY
Dis. N.
PH CCS
CAD
SPAC
File
PH CCS
Data
12-05-2019
REV.
MODIFICA
DATA
FIRME


=QgCv - -AL
=QgCv - -XQG2
=QgCv - -XQGFU
MORSETTIERA FUSIBILI
TERMINAL FUSES
N
038
039
038
041
045
037
036
043
032
033
034
019
031
032
006
012
-F3
-F2
-F1
Impianto
PH 211-261 CCS
Denominazione
MORSETTIERA
TERMINAL STRIP
Ordine
Commessa
Esecutore
Mep S.p.A.
Dis. N.
PH CCS
CAD
SPAC
File
PH CCS
Data
12-05-2019
FOGLIO
7
ULTIMO
8
REV.
MODIFICA
DATA
FIRME


TAD1
TARGA FRONTALE
FRONTAL PLATE
-QD1
QUADRO (CARPENTERIA)
BOARD (CARPENTRY)
-S4
-V1
-S24
-S50
-T1
-F3
-F2
-F1
-K0
-Q0
-K1
-BR1
BARRA OMEGA
OMEGA RAIL
ACC
9.8
1
2
3
4
5
6
-TF1
TARGA SOSTITUZIONE FUSIBILI
PLATE SUBSTITUTION FUSES
-TF2
TARGA CAVO ALIMENTAZIONE
PLATE POWER SUPPLY CABLE
-CG1
GIUNTO 2,5mmq
TERMINAL 2,5mmq
-FS1
FASCETTA 135x2,5
CLAMP 135x2,5
-GU1
GUARNIZIONE AERSTOP
SEAL AERSTOP
-CC1
CAPICORDA 1,5mmq
TERMINAL 1,5mmQ
-CC2
CAPICORDA 2,5mmq
TERMINAL 2,5mmQ
-NM1
NUMERAZIONE FILI
WIRE NUMERATION
-NM2
NUMERAZIONE MORSETTI
TERMINAL NUMERATION
-FL1
FILO 0,5mmq
WIRE 0,5mmq
-FL2
FILO 1,5mmq
WIRE 1,5mmq
-PT1
PUNTALINO 0,5mmq
TERMINAL 0,5mmq
-PT3
PUNTALINO 1,5mmq
TERMINAL 1,5mmQ
REV.
MODIFICA
DATA
FIRME
Dis. N. PH CCS
CAD SPAC
File PH CCS
Data 12-05-2019
Impianto
PH 211-261 CCS
Denominazione
INTERNO QUADRO
BOARD INSIDE
Ordine
Commessa
Esecutore
Mep S.p.A.
FOGLIO 8
ULTIMO 9


LATO BORDO MACCHINA
LATO QUADRO
0 1 2 3 4 5 6 7 8 9
ACC
8.8
1
2
3
4
ACC
10.7
-GH1
-GH2
-GH4
-GH5
-GH3
PG13,5
-PC1
-PC2
-W1: CAVO ALIMENTAZIONE
-W1: POWER SUPPLY CABLE
-W4: MOTORE POMPA
-W4: MOTOR PUMP CABLE
-RE1
-RE2
-RE3
-RE4
PG13,5/Φ18
-CR1
-CR2
Φ18 x 600 mm
Φ18 x 650 mm
FILI MOTORE LAMA
BLADE MOTOR WIRE
-W52: CAVO PULSANTE IMPUGNATURA
-W52: HANDLE PUSH BUTTON CABLE
-W67: CAVO PRESSOSTATO LAMA
-W67: BLADE PRESSURE SWITCH CABLE
-W55: CAVO F.C. PROTEZIONE LAMA
-W55: CARTER BLADE L.S. CABLE
REV.
MODIFICA
DATA
FIRME
Dis. N. PH CCS
CAD SPAC
File PH CCS
Data 12-05-2019
Impianto
PH 211-261 CCS
Denominazione
GUAINE E ACCESSORI
SHEATHS AND ACCESSORIES
Ordine
Commessa
Esecutore Mep S.p.A.
FOGLIO 9
ULTIMO 10


LATO BORDO MACCHINA
LATO QUADRO
LATO ARCHETTO
F.C. PROTEZIONE LAMA
-W65: CAVO E.V. BLOCCO TESTA
-W65: STOP HEAD S.V. CABLE
-W75: CAVO F.C. ARCHETTO BASSO
-W75: BOW LOVW L.S. CABLE
-W55: CAVO F.C. PROTEZIONE LAMA
-W55: CARTER BLADE L.S. CABLE
-PC3
-PC4
-PC5
-GH6
-GH7
-RD1
PG13,5
PG13,5 - M20
ACC
9,9
5
6
(*1)
(*1) SOLO CON OPTIONAL CCS
ONLY WITH OPTIONAL CCS
REV.
MODIFICA
DATA
FIRME
Dis. N. PH CCS
CAD SPAC
File PH CCS
Data 12-05-2019
Impianto
PH 211-261 CCS
Denominazione
GUAINE E ACCESSORI
SHEATHS AND ACCESSORIES
Ordine
Commessa
Esecutore
Mep S.p.A.
FOGLIO 10
ULTIMO 11

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	3/1	L1	L1	BN or 1				BN or 1	L1	5	3/3	=QgCv -Q0
=QgCv -AL	3/1	L2	L2	BK or 2				BK or 2	L2	3	3/3	=QgCv -Q0
=QgCv -AL	3/1	N	N	BU or 4	-W1 022.0158 5G1.5			BU or 4	N	N	3/2	=QgCv -AL
=QgCv -AL	3/1	L3	L3	GY or 3	Cavo alimentazione			GY or 3	L3	1	3/3	=QgCv -Q0
=QgCv -AL	3/2	PE	PE	GNYE				GNYE	PE	PE	3/2	=QgCv -AL
=QgCv -XQGFU	4/7	-F3	018	BN				BN	018	400	4/7	=BmMep -M2
=QgCv -XQGFU	4/7	-F4	019	BU	-W4 022.1904 3G0.75			BU	019	0	4/7	=BmMep -M2
=QgCv PIASTRA	4/8	1_2	PE	GNYE	Cavo motore pompa			GNYE	PE	PE	4/8	=BmMep -M2
=QgCv -K1	6/4	A1	41	BN	-W52 022.0160 2x0.5			BN	41	1	6/5	=QgCv -S15
=QgCv -XQG2	6/6	M	041	BU	Colleg. pulsante impugnatura			BU	041	3	6/5	=QgCv -S15
=QgCv -XQG2	6/8	L	37	BN	-W55 022.0160 2x0.5			BN	37	22	6/7	=QgCv -S8
=QgCv -XQG2	6/7	0	037	BU	Colleg. FC carter lama			BU	037	21	6/7	=QgCv -S8
=QgCv -XPV	6/3	1	42	BN	-W65 022.0160 2x0.5			BN	42	2	6/3	
=QgCv -XPV	6/3	2	22	BU	Colleg. valvola blocco			BU	22	19	5/2	=QgCv -T1
=QgCv -XQG2	6/6	M	38	BN	-W67 022.0160 2x0.5			BN	38		6/6	=QgCv -S25
=QgCv -XQG2	6/7	0	038	BU	Colleg. FC Rottura Lama			BU	038		6/6	=QgCv -S25
=QgCv -XQG2	6/0	K	0	BN	-W74 SWITCH IMPUGNATURA 2x0.5			BN	0	RD	6/0	=QgCv -V1
=QgCv -T1	5/2	19	22	BU	Colleg. presenza tensione			BU	22	BK	6/0	=QgCv -V1
=QgCv -XQG2	6/8	L	36	BK				BK	36	BK	6/8	=QgCv -S28
=QgCv -XQG2	6/2	I	35	RD	-W75 CAVO FINECORSA 4x0.75			RD	35	RD	6/8	=QgCv -S28
				WH	Colleg. FCTA			WH				
				GN				GN				

REV.	MODIFICA	DATA	FIRME

Dis. N. PH CCS
CAD SPAC
File PH CCS
Data 12-05-2019

Impianto: PH 211-261 CCS
Denominazione: RIASSUNTIVO CAVI / CABLE SUMMARY

Ordine
Commessa
Esecutore Mep S.p.A.

FOGLIO 11
ULTIMO 12

0	1	2	3	4	5	6	7	8	9

NOME/ITEM	TIPO/TYPE	DESCRIZIONE/DESCRIPTION	QUADRO/BOARD	FG/SH	Q.TA/Q.TY
'-RE1	'022.0211	Raccordo rapido dritto SEM PG13,5/Ø19	'=BmCv	9	1
'-RE2		Raccordo rapido dritto SEM PG13,5/Ø19	'=BmCv	9	1
'-RE3		Raccordo rapido dritto SEM PG13,5/Ø19	'=BmCv	9	1
'-RE4		Raccordo rapido dritto SEM PG13,5/Ø19	'=BmCv	9	1
'-PC1	'022.0234	Pressacordone 3246 nero PG13,5	'=BmCv	9	1
'-PC2		Pressacordone 3246 nero PG13,5	'=BmCv	9	1
'-GH1	'022.0244	Dado grigio PG13,5	'=BmCv	9	1
'-GH2		Dado grigio PG13,5	'=BmCv	9	1
'-GH3		Dado grigio PG13,5	'=BmCv	9	1
'-GH4		Dado grigio PG13,5	'=BmCv	9	1
'-GH5		Dado grigio PG13,5	'=BmCv	9	1
'-XPV	'022.0369	Connettore 3 poli per tensionatore elettronico	'=BmCv	6	1
PIASTRA	'022.0377	Morsetto PE da 2.5 mm singolo per 2 fili a molla WK4 SLU	'=BmCv	4	1
'-CR1	'022.2602	Guaina POLIFLEX NW 14-1200143 (corrugato diam. 18)	'=BmCv	9	0,60
'-CR2		Guaina POLIFLEX NW 14-1200143 (corrugato diam. 18)	'=BmCv	9	0,65
'-S28	'022.0506	Finecorsa D4C-1901 2M ALIM. AX-AXI	'=BmCvCcs	6	1
'-K40	V.d.P.	Vedi distinta pneumatica	'=BmCvCcs	6	1
'-S15	'010.0928	Molla per impugnatura MEP dis.1189559	'=BmMep	6	1
'-M1	'019.1706	Motore KW 1,5/1,87 2/4P B14 FC90L V400.50	'=BmMep	4	1
'-S8	'022.0037	Finecorsa di sicurezza con chiave 1NO + 1NC	'=BmMep	6	1
'-PC5	'022.0234	Pressacordone 3246 nero PG13,5	'=BmMep	10	1
'-RD1	'022.0349	Riduzione M/F M20/PG13,5	'=BmMep	10	1
'-S15	'022.0515	Microinteruttore V-21-1C6	'=BmMep	6	1
'-S15	'025.0691	Serie guernizioni per impugnatura	'=BmMep	6	1
'-M2	'028.0271	Elettropompa EZ/C monofase SAP SA FH2 230/400V 50/60Hz	'=BmMep	4	1
'-S15	'034.1221	Impugnatura MEP	'=BmMep	6	1
'-S25	'043.0142	Pressostato idraulico montag. linea 20-50bar	'=BmMep	6	1
'-QD1	'016.0708	Quadro comandi TI 260-280 LVD	'=QgCv	8	1
'-FS1	'019.5353	Fascetta in plastica 135x2,5	'=QgCv	8	30
'-S50	'022.0023	Selettore 2 velocita 16A SC 40871	'=QgCv	4	1
'-K1	'022.0087	Contattore 3TF3010-0AC2 (24 V. 50.60 HZ)	'=QgCv	6	1
'-Q0	'022.0118	Blocco porta luch. EP898 9-0HY2AJM +E0 0714-0XS5X85+EP 894 8 - ADAT ABB	'=QgCv	3	1
'-FL1	'022.0171	Cordicella unipolare 1 X 0,5	'=QgCv	8	1,50
'-FL2	'022.0172	Cordicella unipolare 1x1,50	'=QgCv	8	8,50
'-NM1	'022.0290	Etichetta segnafilo	'=QgCv	8	115
'-NM2		Etichetta segnafilo	'=QgCv	8	12

REV.	MODIFICA	DATA	FIRME

Dis. N. PH CCS
CAD SPAC
File PH CCS
Data 12-05-2019

Impianto: *PH 211-261 CCS*
Denominazione: DISTINTA MATERIALI / *MATERIAL LIST*

Ordine
Commessa
Esecutore: Mep S.p.A.

FOGLIO 12
ULTIMO 13

0	1	2	3	4	5	6	7	8	9

NOME/ITEM	TIPO/TYPE	DESCRIZIONE/DESCRIPTION	QUADRO/BOARD	FG/SH	Q.TA/Q.TY
'-CG1	'022.0297	Terminale a giunto da 2,5mmq (Blu)	'=QgCv	8	1
'-CC2	'022.0303	Terminale a occhiello Ø8 da 2,5mmq (Blu)	'=QgCv	8	1
'-CC1	'022.0308	Terminale a occhiello Ø5 da 1,5mmq (Rosso)	'=QgCv	8	3
'-PT1	'022.0311	Terminale a puntale da 0,5mmq (Bianco)	'=QgCv	8	10
'-PT3	'022.0312	Terminale a puntale da 1,5mmq (Nero)	'=QgCv	8	44
'-T1	'022.0453	Trasformatore 100VA V.230-400 S0.24 50/60Hz	'=QgCv	5	1
'-K0	'022.0626	Bobina minima V380-400 50 /440-460 60 EP107.5.UA1-400 ABB	'=QgCv	3	1
'-V1	'022.0862	Scheda mono led 24V Ø8 (led 5V+ Res 1Kohm)	'=QgCv	6	1
'-BR1	'022.0900	Barra omega	'=QgCv	8	0,200
'-S4	'022.1244	Emergenza RT065RV40 Breter	'=QgCv	3	1
'-Q0	'022.1264	Magnetotermico 6,3-10A EP-090 3-MS116-10 ABB	'=QgCv	3	1
'-XQGFU	022.2246 + 022.1128 + 022.1128	Morsetto portafusibile 5x20 a molla + N° 2 fusibili da 500V 5A	'=QgCv	5	1
'-AL	'022.2256	Morsetto da 2.5 mm singolo per 2 fili a molla 56.703.0055.0	'=QgCv	3	1
'-XQG2		Morsetto da 2.5 mm singolo per 2 fili a molla 56.703.0055.0	'=QgCv	6	1
'-XQG2	'022.2257	Morsetto da 2.5 mm singolo per 3 fili a molla 56.703.5055.0	'=QgCv	6	1
'-XQG2		Morsetto da 2.5 mm singolo per 3 fili a molla 56.703.5055.0	'=QgCv	6	1
'-XQG2		Morsetto da 2.5 mm singolo per 3 fili a molla 56.703.5055.0	'=QgCv	6	1
'-XQG2	'022.2258	Morsetto da 2.5 mm singolo per 4 fili a molla 56.703.5155.0	'=QgCv	6	1
'-XQGFU	022.2260 + 022.1136 + 022.1136	Morsetto portafusibile 6,3x32 a molla	'=QgCv	4	1
'-XQGFU		Morsetto portafusibile 6,3x32 a molla	'=QgCv	5	1
'-XQGFU		Morsetto portafusibile 6,3x32 a molla	'=QgCv	5	1
'-XQGFU		Morsetto portafusibile 6,3x32 a molla	'=QgCv	4	1
'-XQG2	'022.2287	Piastra di chiusura x morsetto a 3 fili 07.312.6955.0	'=QgCv		1
'-XQG2	'022.2288	Piastra di chiusura x morsetto a 4 fili 07.312.7155.0	'=QgCv		1
'-GU1	'025.0604	Guarnizione aerstop	'=QgCv	8	2,00
'-TF1	'031.2622	Targa sostituzione fusibili	'=QgCv	8	1
'-TF2	'031.2648	Targa cavo alimentazione 5 fili	'=QgCv	8	1
-TAD1	'031.3328	Targa frontale quadro SH260.280 LVD	'=QgCv	8	1
'-PC3	'022.0234	Pressacordone 3246 nero PG13,5	'=QgCvCcs	10	1
'-PC4		Pressacordone 3246 nero PG13,5	'=QgCvCcs	10	1
'-GH6	'022.0244	Dado grigio PG13,5	'=QgCvCcs	10	1
'-GH7		Dado grigio PG13,5	'=QgCvCcs	10	1
'-S24	'022.0936	Blocchetto NC M22-K01 cod. 216678	'=QgCvCcs	6	1
'-S24		Blocchetto NC M22-K01 cod. 216678	'=QgCvCcs	6	1
'-S24	'022.0937	Blocchetto NA M22-K10 cod. 216376	'=QgCvCcs	6	1
'-S24		Blocchetto NA M22-K10 cod. 216376	'=QgCvCcs	6	1

REV.	MODIFICA	DATA	FIRME

Dis. N. PH CCS
CAD SPAC
File PH CCS
Data 12-05-2019

Impianto: *PH 211-261 CCS*
Denominazione: DISTINTA MATERIALI / *MATERIAL LIST*

Ordine
Commessa
Esecutore: Mep S.p.A.

FOGLIO 13
ULTIMO 14

0	1	2	3	4	5	6	7	8	9

NOME/ITEM	TIPO/TYPE	DESCRIZIONE/DESCRIPTION	QUADRO/BOARD	FG/SH	Q.TA/Q.TY
'-S24	'022.1226	Selettore stabile 2 pos. M22-WKV cod.216874 + portacontatti M22-A cod 216374	'=QgCvCcs	6	1

Nome/Item	Tipo/Type	Descrizione/Description	Costruttore/Marke	Quadro/Board	Fg/Sh	Q.ta/Q.ty
-F1	022.2252	Morsetto portafusibile 6,3x32	Mep	=QgCv	5	1
	022.1146	Fusibile 1A 6,3x32 GT ritardato	Mep	=QgCv	4	1
-F2	022.2252	Morsetto portafusibile 6,3x32	Mep	=QgCv	5	1
	no code	Fusibile 3A 6,3x32 GT ritardato	Mep	=QgCv	4	1
-F3	022.1152	Fusibile 2A 6,3x32 GT ritardato	Mep	=QgCv	4	1
	022.2252	Morsetto portafusibile 6,3x32	Mep			1

Tipo/Type	Formaz./Format.	Descrizione/Description	Lungh./Lenght
022.0158	5G1.5	Cavo 5x1,5mmq 450/750V	3.00
022.0160	2x0.5	Cavo 2x0.5mmq 450/750V	11.00
022.1904	3G0.75	Cavo 3x0.75mmq 450/750V	4.00

REV.	MODIFICA	DATA	FIRME

Dis. N. PH CCS
CAD SPAC
File PH CCS
Data 12-05-2019

Impianto: PH 211-261 CCS
Denominazione: DISTINTA MATERIALI / MATERIAL LIST

Ordine
Commessa
Esecutore: Mep S.p.A.

FOGLIO 14
ULTIMO /

LISTA FOGLI \ INDEX

Foglio Sheet	Descrizione Description	Revisione \ Revision 0 1 2 3 4 5 6 7 8 9	Foglio Sheet	Descrizione Description	Revisione \ Revision 0 1 2 3 4 5 6 7 8 9
1	INDICE CONTENUTI		14	DISTINTA MATERIALI	
	CONTENT INDEX			MATERIAL LIST	
2	LEGENDA SIMBOLI				
	SYMBOL KEY				
3	ALIMENTAZIONE				
	POWER SUPPLY				
4	ALIMENTAZIONE MOTORI 380V				
	MOTOR POWER SUPPLY 380 V				
5	ALIMENTAZIONE TRASFORMATORI				
	TRANSFORMER POWER SUPPLY				
6	AUSILIARI				
	AUXILIARY				
7	MORSETTIERA				
	TERMINAL STRIP				
8	INTERNO - ESTERNO QUADRO				
	BOARD INSIDE - OUTSIDE				
9	GUAINE E ACCESSORI				
	SHEATHS AND ACCESSORIES				
10	GUAINE E ACCESSORI				
	SHEATHS AND ACCESSORIES				
11	RIASSUNTIVO CAVI				
	CABLE SUMMARY				
12	DISTINTA MATERIALI				
	MATERIAL LIST				
13	DISTINTA MATERIALI				
	MATERIAL LIST				

Note :

REV.	MODIFICA	DATA	FIRME
R0.4	Aggiornamento taratura fusibili	08/04/2019	Bartoli
R0.3	Sost. trasf da 30VA con trasf da 50VA	12/06/2012	Amedano
R0.2	Sost. Int.magnetotermico con Taratura da 4 a 6,3A	11/06/2012	Amedano
R0.1	Aggiunta numerazione cavo alimentazione Pg.3, 11	24/01/2011	Bartoli

Dis. N. PH-SERIES
CAD SPAC
File PH-SERIES
Data 20/04/2008

Impianto: PH SERIES
Denominazione: INDICE CONTENUTI / CONTENT INDEX
Ordine:
Commessa:
Esecutore: Bartoli

FOGLIO 1
ULTIMO 14

Sim.\Sym.	File	Descrizione\Description
	H12	LED con resistenza *LED WITH RESISTOR*
	M2	Motore asincrono trifase *THREE PHASE INDUCTION MOTOR*
	Q1360	Int. automatico magnetotermico sezionatore tripolare *THREE PHASE AUTOMATIC SWITCH*
	S2	Comando a Pulsante NO *PUSH BUTTON NO*
	S4C	Pulsante di emergenza NC *EMERGENCY PUSH BUTTON NC*
	S13	Fine corsa NO *LIMIT SWITCH NO*
	S13C	Fine corsa NC *LIMIT SWITCH NC*
	S25	Selettore a 2 posizioni stabili *SELECTOR TWO STABLE POSITIONS*
	KA1	Bobina rele' Aux *AUXILIARY RELAY COIL*
	KM1	Bobina contattore *CONTACTOR COIL*
	BLK5	Motore asincrono trifase 6 poli *SIX PHASE INDUCTION MOTOR*

Sim.\Sym.	File	Descrizione\Description
	BLK10	Trasformatore per ausiliari *TRANSFORMER FOR AUXILIARY*
	SEL_VEL	Selettore a tre posizioni stabili 0 centrale *SELECTOR THREE STABLE ZERO CENTRAL POSITIONS*
	BLK46	Pressa-cavo PG *PG STOP CABLE*
	BLK47	Pressa-cavo PG *PG STOP CABLE*
	BLK49	Pressa-cordone PG *PG FLEXIBLE CORD STOP*
	BLK51	Dado PG *PG NUT*
	BLK56	Terminale a puntale *TERMINAL*
	BLK57	Filo unipolare *WIRE*
	BLK58	Fascette plastiche di fissaggio *PLASTIC CLAMP*
	BLK60	Terminale a occhiello *TERMINAL*
	BLK66	Sacchetto portafusibile *BAG FUSE*

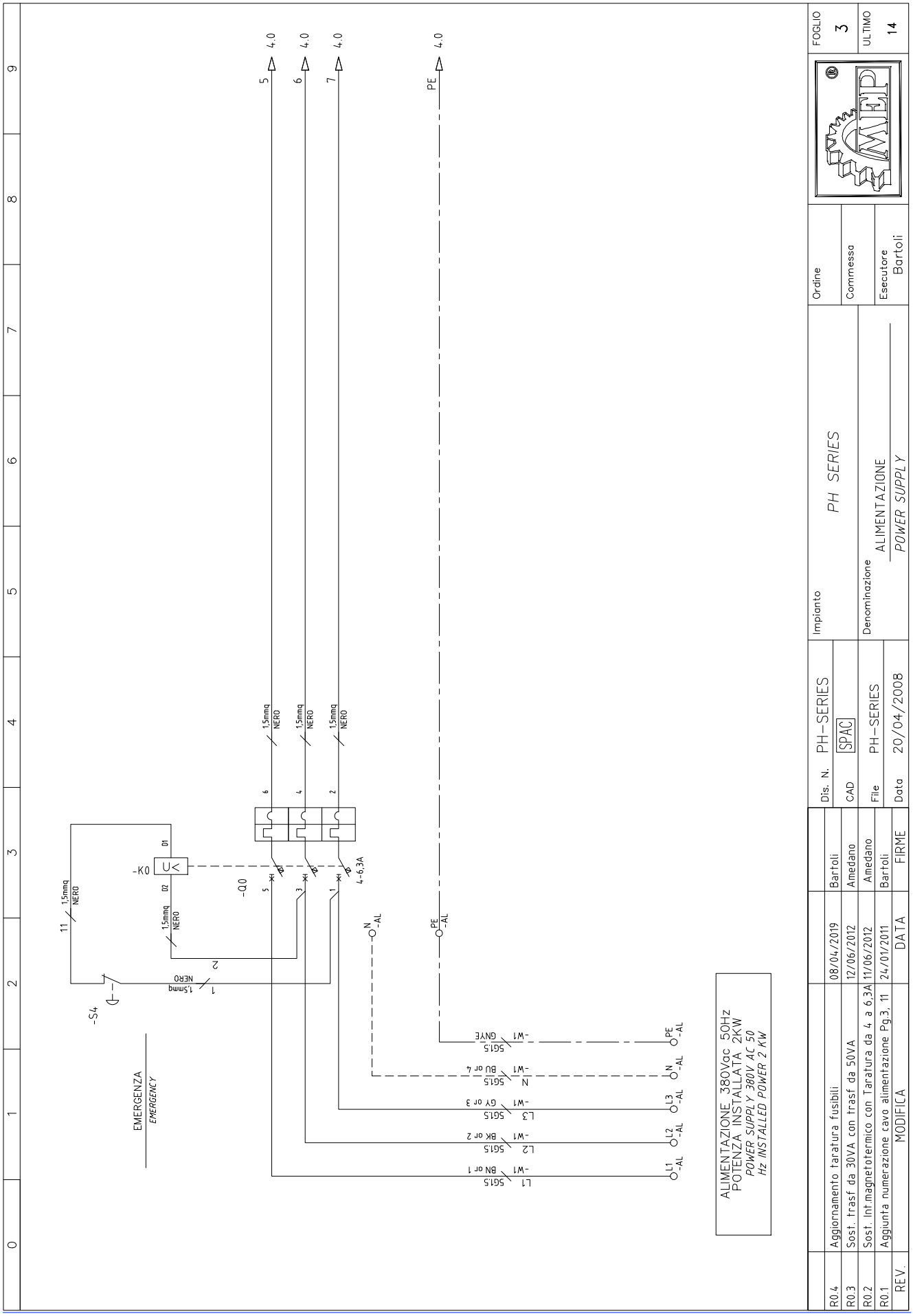
Sim.\Sym.	File	Descrizione\Description

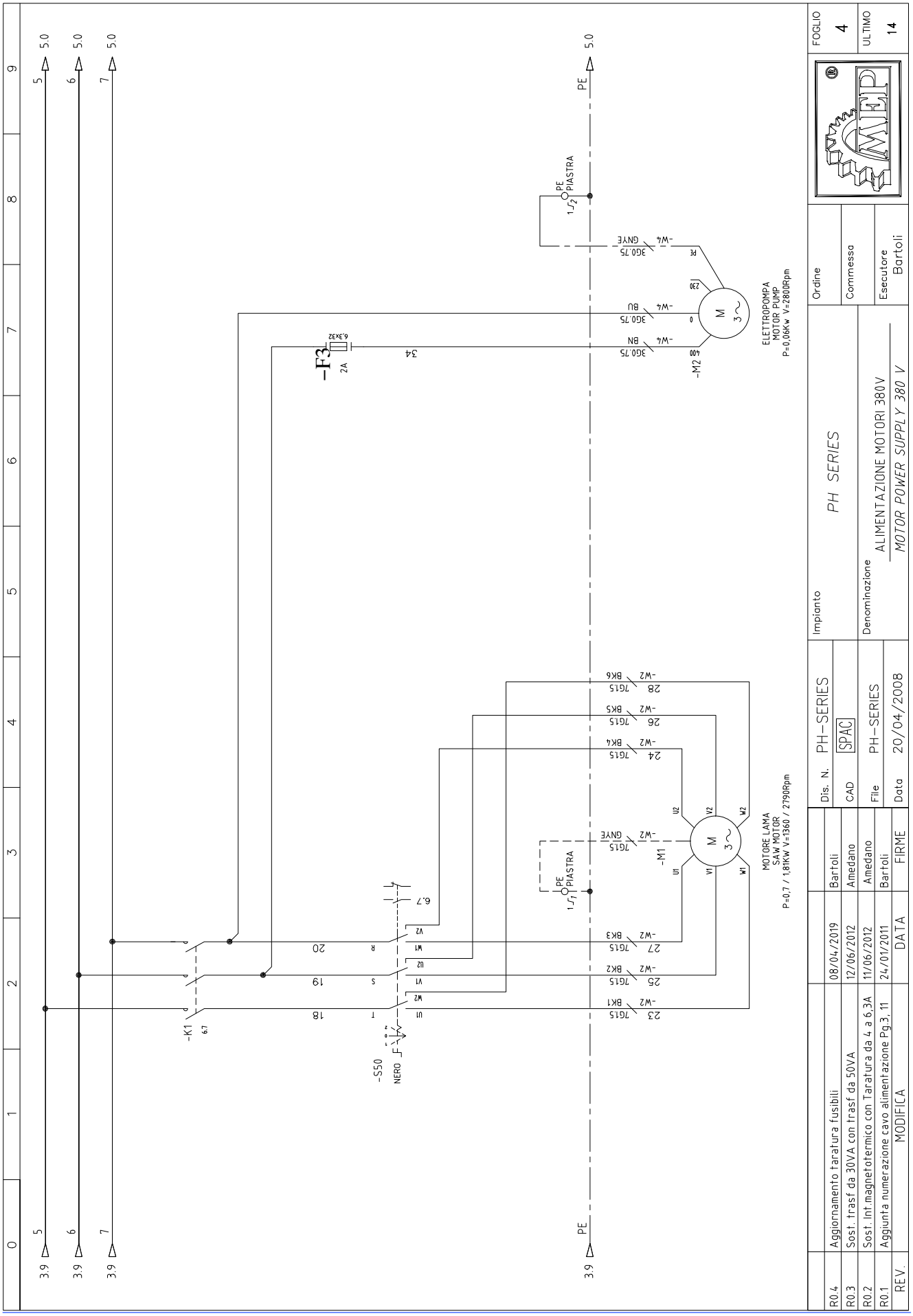
REV.	MODIFICA	DATA	FIRME
R0.4	Aggiornamento taratura fusibili	08/04/2019	Bartoli
R0.3	Sost. trasf da 30VA con trasf da 50VA	12/06/2012	Amedano
R0.2	Sost. Int.magnetotermico con Taratura da 4 a 6,3A	11/06/2012	Amedano
R0.1	Aggiunta numerazione cavo alimentazione Pg.3, 11	24/01/2011	Bartoli

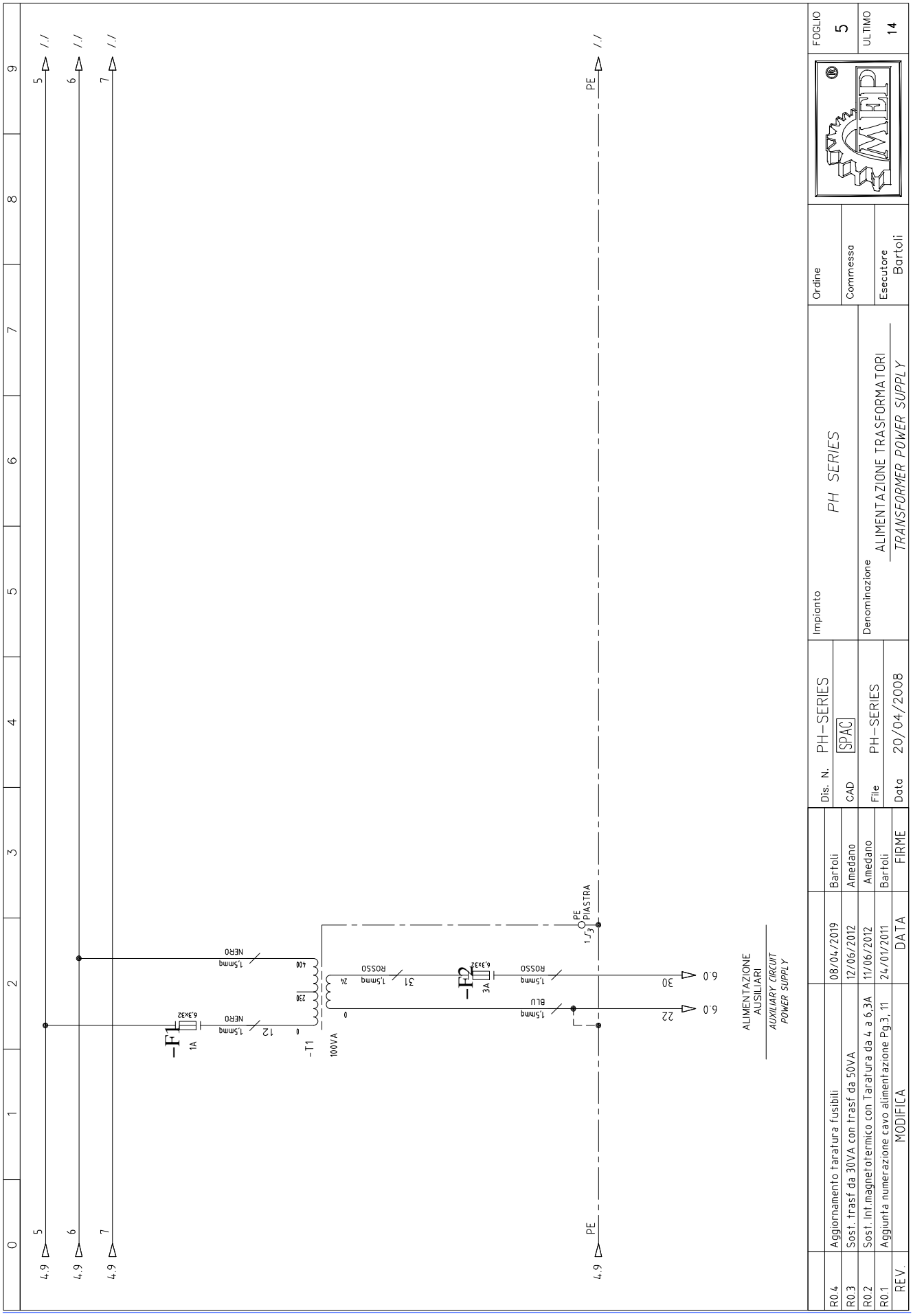
Dis. N. PH–SERIES
CAD SPAC
File PH–SERIES
Data 20/04/2008

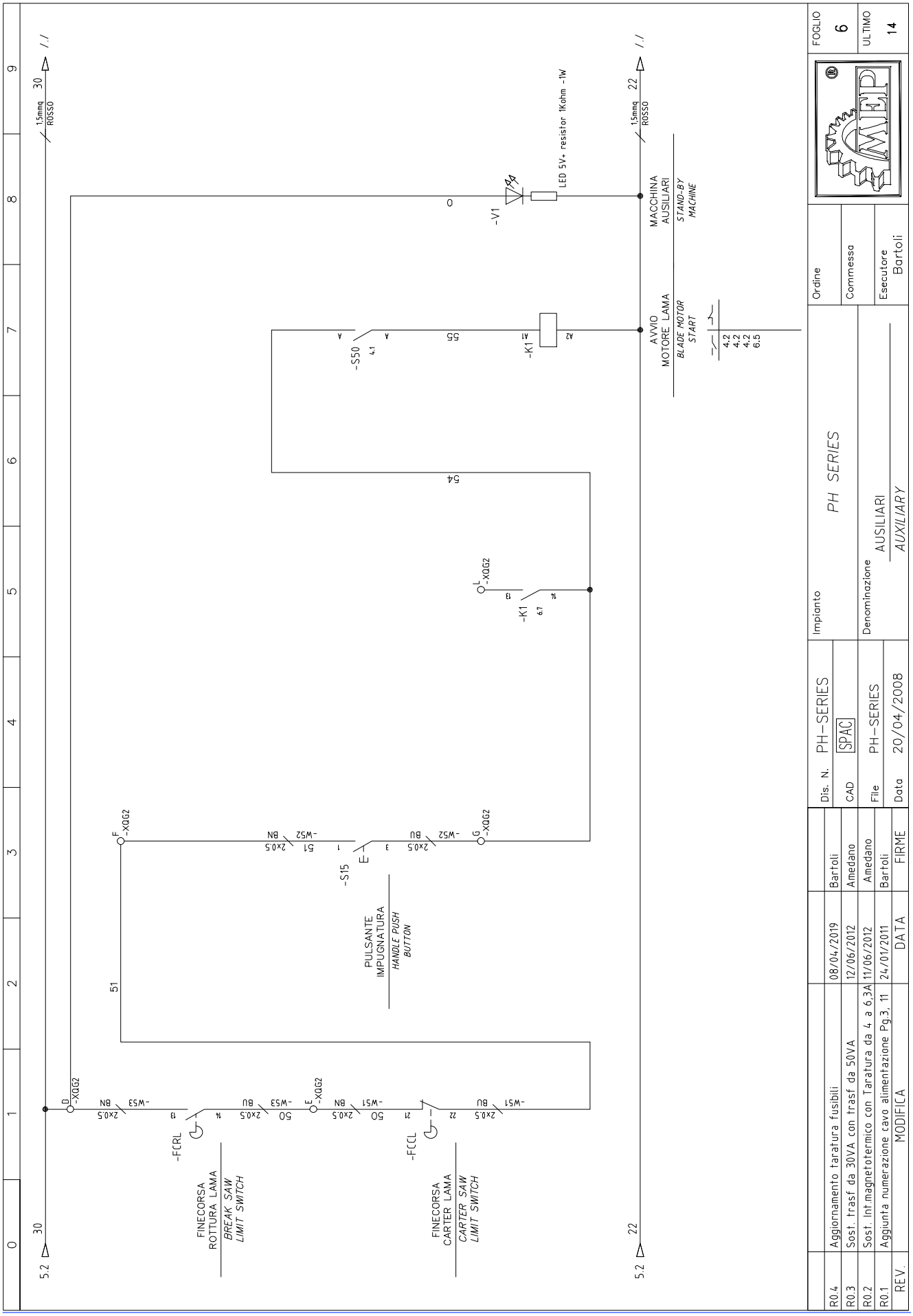
Impianto: *PH SERIES*
Denominazione: LEGENDA SIMBOLI / *SYMBOL KEY*
Ordine
Commessa
Esecutore: Bartoli

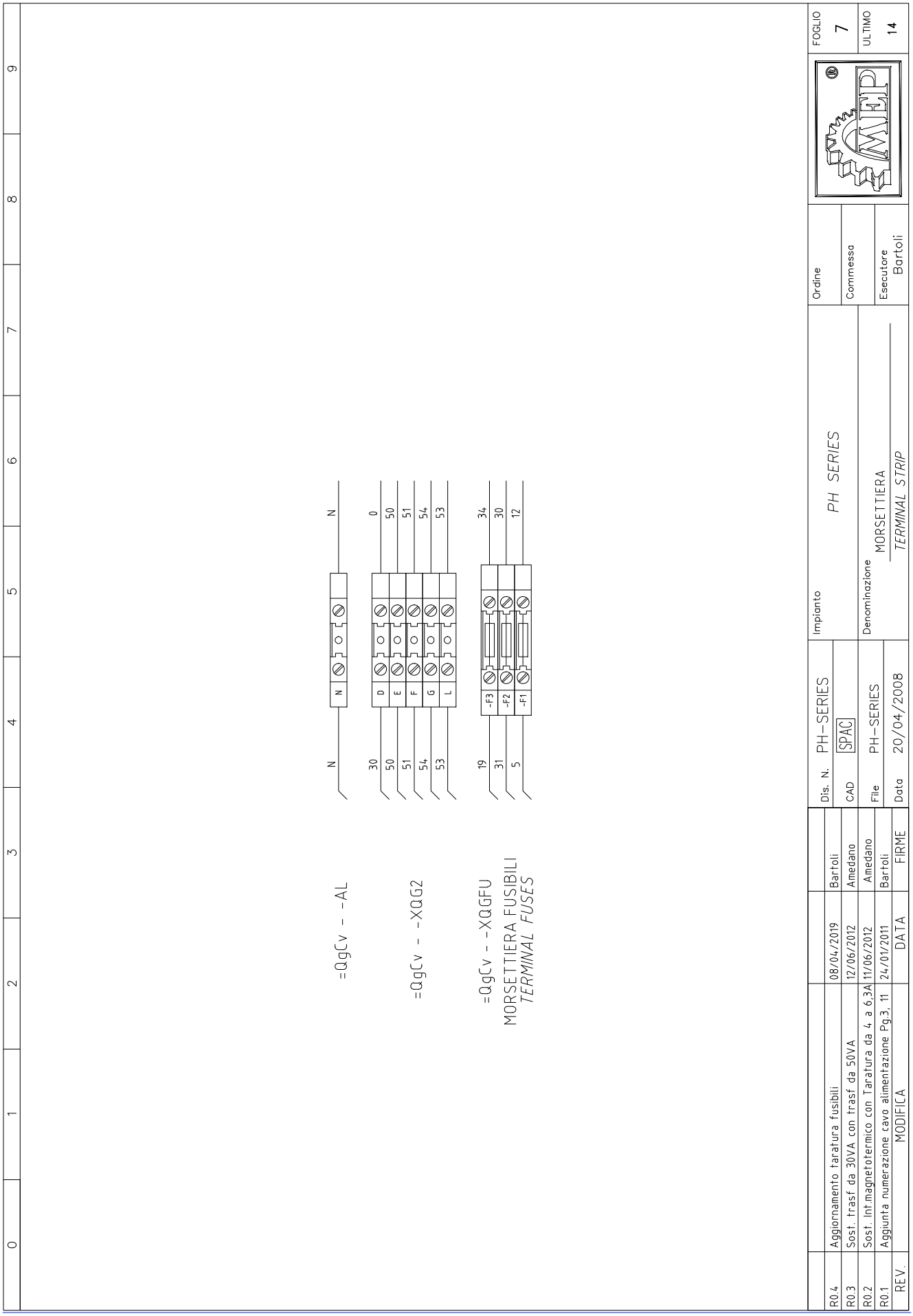
FOGLIO 2
ULTIMO 14

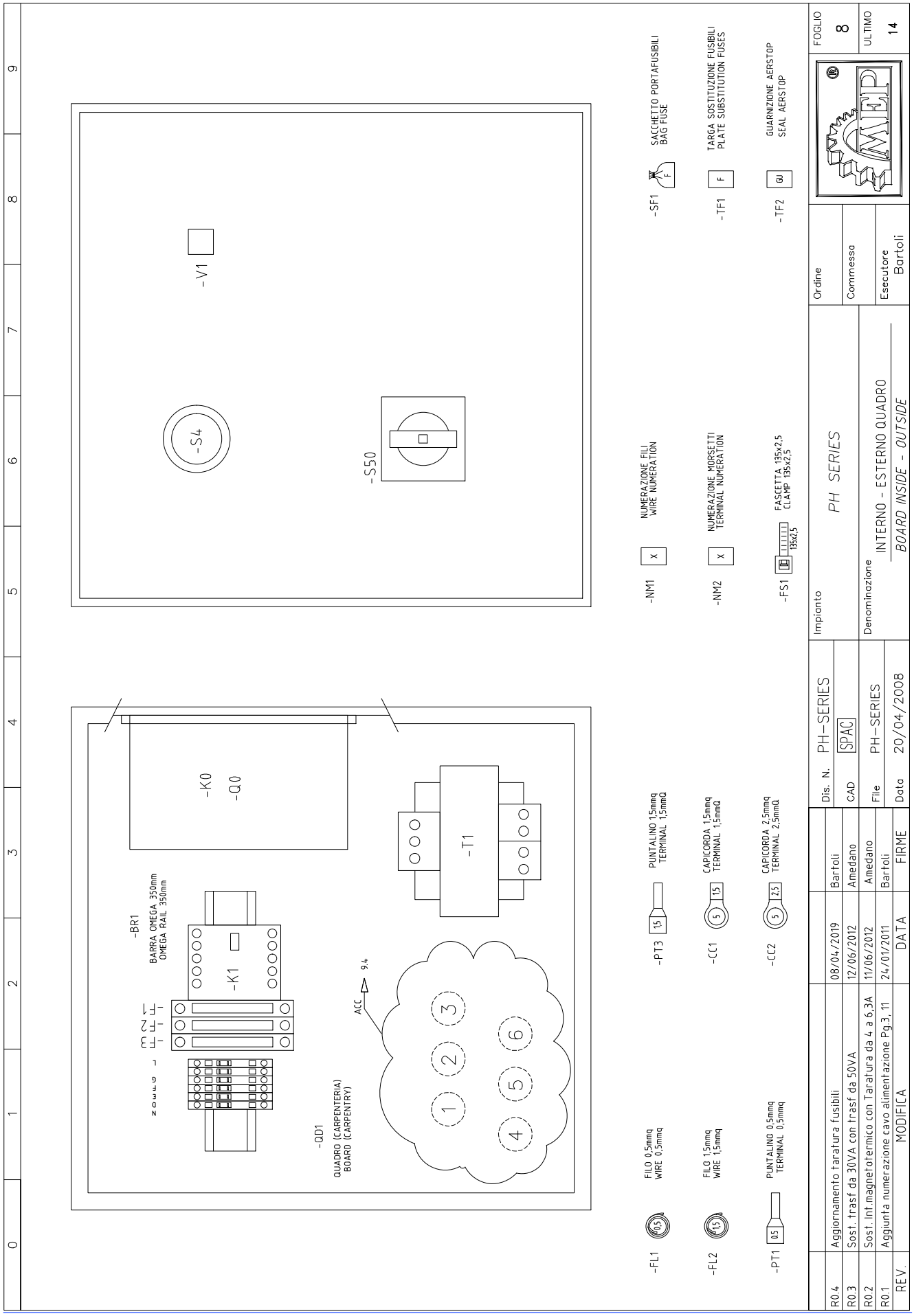

ALIMENTAZIONE 380Vac 50Hz
POTENZA INSTALLATA 2KW
POWER SUPPLY 380V AC 50
Hz INSTALLED POWER 2 KW
EMERGENZA
EMERGENCY
-S4
-K0
-Q0
4-6,3A
1,5mmq NERO
4.0
PE
L1 -AL
L2 -AL
L3 -AL
N -AL
PE -AL
PH SERIES
ALIMENTAZIONE
POWER SUPPLY
PH-SERIES
SPAC
Bartoli
Amedano
20/04/2008
FOGLIO 3
ULTIMO 14

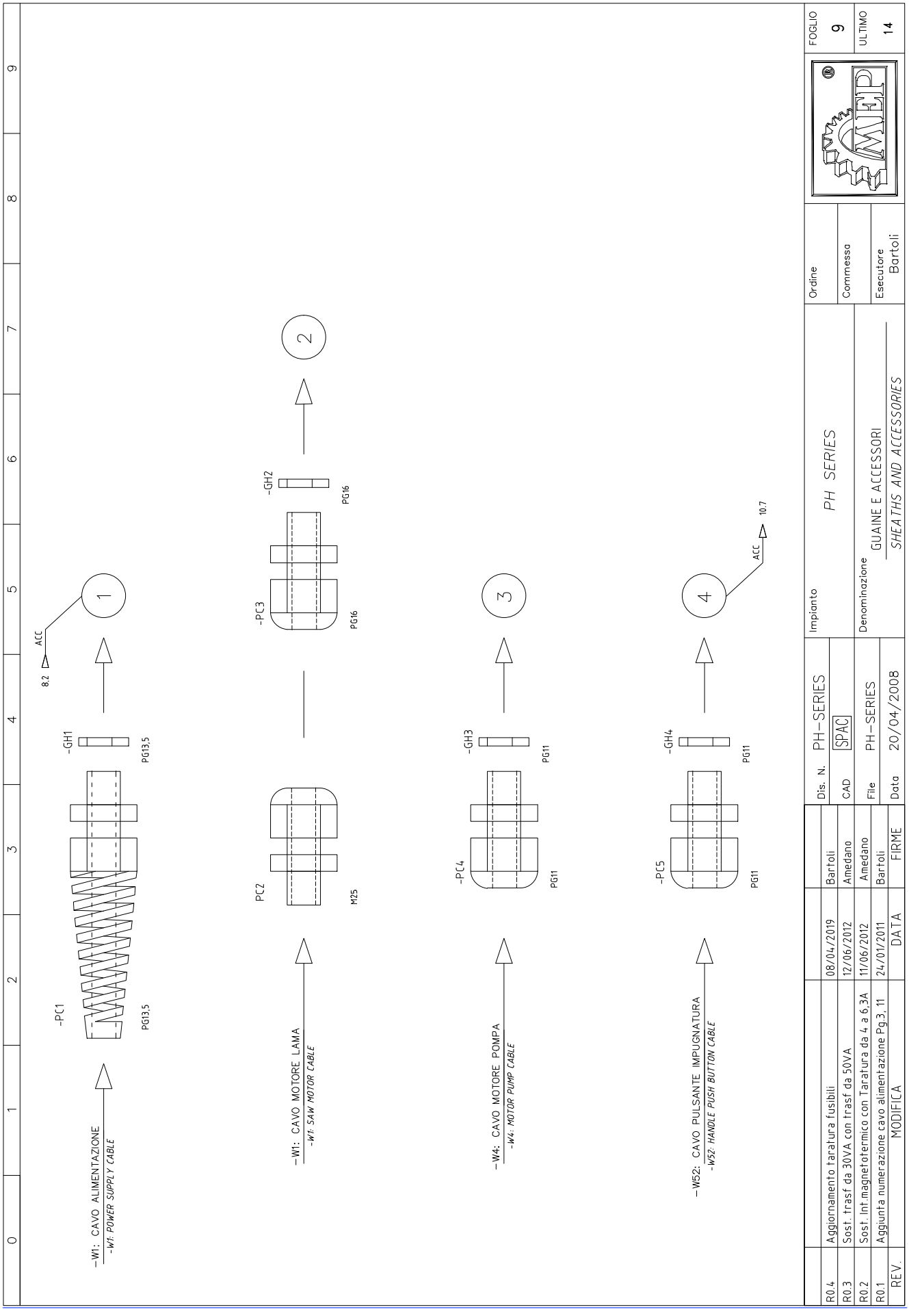

-F3
2A
6,3X32
-M1
-M2
-K1
-S50
NERO
PE PIASTRA
MOTORE LAMA
SAW MOTOR
P=0,7 / 1,8KW V=1360 / 2790Rpm
ELETTROPOMPA
MOTOR PUMP
P=0,06KW V=2800Rpm
PH SERIES
ALIMENTAZIONE MOTORI 380V
MOTOR POWER SUPPLY 380 V
PH-SERIES
20/04/2008
Bartoli
Esecutore
Commessa
Ordine
FOGLIO 4
ULTIMO 14
R0.4 Aggiornamento taratura fusibili 08/04/2019 Bartoli
R0.3 Sost. trasf da 30VA con trasf da 50VA 12/06/2012 Amedano
R0.2 Sost. Int.magnetotermico con Taratura da 4 a 6,3A 11/06/2012 Amedano
R0.1 Aggiunta numerazione cavo alimentazione Pg.3, 11 24/01/2011 Bartoli
REV. MODIFICA DATA FIRME

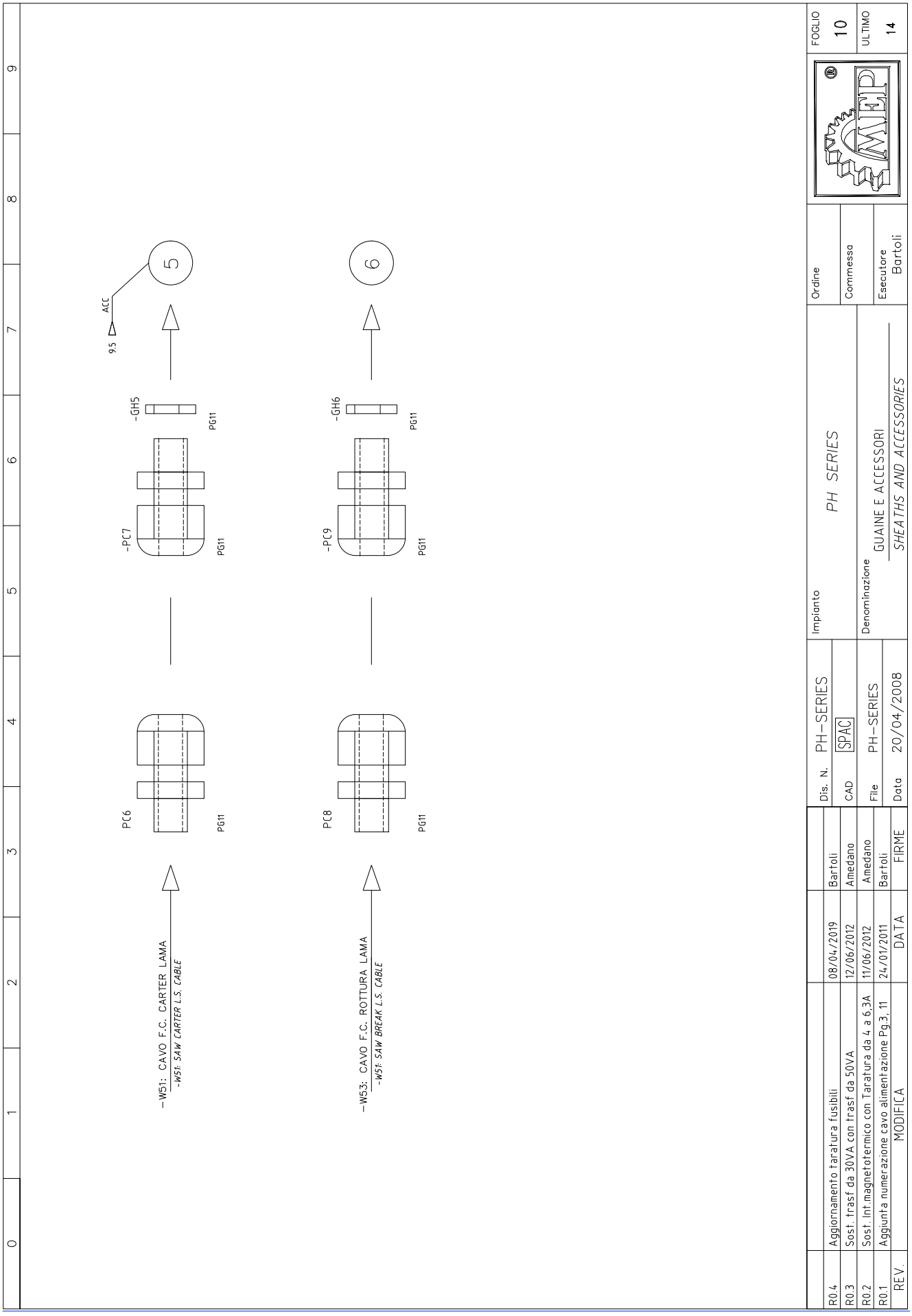

0 1 2 3 4 5 6 7 8 9
4.9
5
6
7
PE
PIASTRA
-F1
1A
-F2
3A
-T1
100VA
230
400
12
24
30
31
22
NERO
ROSSO
BLU
1,5mmq
6,3x32
ALIMENTAZIONE AUSILIARI
AUXILIARY CIRCUIT POWER SUPPLY
REV.
MODIFICA
DATA
FIRME
R0.4 Aggiornamento taratura fusibili 08/04/2019 Bartoli
R0.3 Sost. trasf da 30VA con trasf da 50VA 12/06/2012 Amedano
R0.2 Sost. Int.magnetotermico con Taratura da 4 a 6,3A 11/06/2012 Amedano
R0.1 Aggiunta numerazione cavo alimentazione Pg3, 11 24/01/2011 Bartoli
Dis. N. PH-SERIES
CAD SPAC
File PH-SERIES
Data 20/04/2008
Impianto PH SERIES
Denominazione ALIMENTAZIONE TRASFORMATORI
TRANSFORMER POWER SUPPLY
Ordine
Commessa
Esecutore Bartoli
FOGLIO 5
ULTIMO 14


15mmq ROSSO
30
22
LED 5V+ resistor 1Kohm -1W
-V1
MACCHINA AUSILIARI
STAND-BY MACHINE
AVVIO MOTORE LAMA
BLADE MOTOR START
-S50
-K1
55
54
4.2
4.2
4.2
6.5
-XAG2
-W52
-W53
-W51
-S15
-FCRL
-FCCL
PULSANTE IMPUGNATURA
HANDLE PUSH BUTTON
FINECORSA ROTTURA LAMA
BREAK SAW LIMIT SWITCH
FINECORSA CARTER LAMA
CARTER SAW LIMIT SWITCH
51
5.2
Impianto
PH SERIES
Denominazione
AUSILIARI
AUXILIARY
Ordine
Commessa
Esecutore
Bartoli
Dis. N. PH-SERIES
CAD SPAC
File PH-SERIES
Data 20/04/2008
FOGLIO 6
ULTIMO 14
R0.4 Aggiornamento taratura fusibili 08/04/2019 Bartoli
R0.3 Sost. trasf da 30VA con trasf da 50VA 12/06/2012 Amedano
R0.2 Sost. Int.magnetotermico con Taratura da 4 a 6,3A 11/06/2012 Amedano
R0.1 Aggiunta numerazione cavo alimentazione Pg3, 11 24/01/2011 Bartoli
REV. MODIFICA DATA FIRME


=QgCv - -AL
=QgCv - -XQG2
=QgCv - -XQGFU
MORSETTIERA FUSIBILI
TERMINAL FUSES
N
N
30
50
51
54
53
19
31
5
0
50
51
54
53
34
30
12
-F3
-F2
-F1
D
E
F
G
L
R0.4 Aggiornamento taratura fusibili 08/04/2019 Bartoli
R0.3 Sost. trasf da 30VA con trasf da 50VA 12/06/2012 Amedano
R0.2 Sost. Int.magnetotermico con Taratura da 4 a 6,3A 11/06/2012 Amedano
R0.1 Aggiunta numerazione cavo alimentazione Pg3, 11 24/01/2011 Bartoli
REV. MODIFICA DATA FIRME
Dis. N. PH-SERIES
CAD SPAC
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Data 20/04/2008
Impianto
PH SERIES
Denominazione
MORSETTIERA
TERMINAL STRIP
Ordine
Commessa
Esecutore Bartoli
FOGLIO 7
ULTIMO 14


-S4
-S50
-V1
-K0
-Q0
-K1
-T1
-BR1
BARRA OMEGA 350mm
OMEGA RAIL 350mm
-QD1
QUADRO (CARPENTERIA)
BOARD (CARPENTRY)
ACC
9.4
-FL1 FILO 0,5mmq WIRE 0,5mmq
-FL2 FILO 1,5mmq WIRE 1,5mmq
-PT1 PUNTALINO 0,5mmq TERMINAL 0,5mmq
-PT3 PUNTALINO 1,5mmq TERMINAL 1,5mmQ
-CC1 CAPICORDA 1,5mmq TERMINAL 1,5mmQ
-CC2 CAPICORDA 2,5mmq TERMINAL 2,5mmQ
-NM1 NUMERAZIONE FILI WIRE NUMERATION
-NM2 NUMERAZIONE MORSETTI TERMINAL NUMERATION
-FS1 FASCETTA 135x2,5 CLAMP 135x2,5
-SF1 SACCHETTO PORTAFUSIBILI BAG FUSE
-TF1 TARGA SOSTITUZIONE FUSIBILI PLATE SUBSTITUTION FUSES
-TF2 GUARNIZIONE AERSTOP SEAL AERSTOP
REV. MODIFICA DATA FIRME
R0.4 Aggiornamento taratura fusibili 08/04/2019 Bartoli
R0.3 Sost. trasf da 30VA con trasf da 50VA 12/06/2012 Amedano
R0.2 Sost. Int.magnetotermico con Taratura da 4 a 6,3A 11/06/2012 Amedano
R0.1 Aggiunta numerazione cavo alimentazione Pg.3, 11 24/01/2011 Bartoli
Dis. N. PH-SERIES
CAD SPAC
File PH-SERIES
Data 20/04/2008
Impianto PH SERIES
Denominazione INTERNO - ESTERNO QUADRO
BOARD INSIDE - OUTSIDE
Ordine
Commessa
Esecutore Bartoli
FOGLIO 8
ULTIMO 14


-W1: CAVO ALIMENTAZIONE
-W1: POWER SUPPLY CABLE
-PC1
PG13,5
PG13,5
-GH1
PG13,5
8.2
ACC
1
-W1: CAVO MOTORE LAMA
-W1: SAW MOTOR CABLE
PC2
M25
-PC3
PG16
PG16
-GH2
2
-W4: CAVO MOTORE POMPA
-W4: MOTOR PUMP CABLE
-PC4
PG11
PG11
-GH3
3
-W52: CAVO PULSANTE IMPUGNATURA
-W52: HANDLE PUSH BUTTON CABLE
-PC5
PG11
PG11
-GH4
4
ACC
10.7
REV.
MODIFICA
DATA
FIRME
R0.4 Aggiornamento taratura fusibili 08/04/2019 Bartoli
R0.3 Sost. trasf da 30VA con trasf da 50VA 12/06/2012 Amedano
R0.2 Sost. Int.magnetotermico con Taratura da 4 a 6,3A 11/06/2012 Amedano
R0.1 Aggiunta numerazione cavo alimentazione Pg3, 11 24/01/2011 Bartoli
Dis. N. PH-SERIES
CAD SPAC
File PH-SERIES
Data 20/04/2008
Impianto
PH SERIES
Denominazione
GUAINE E ACCESSORI
SHEATHS AND ACCESSORIES
Ordine
Commessa
Esecutore Bartoli
FOGLIO 9
ULTIMO 14


-W51: CAVO F.C. CARTER LAMA
-W51: SAW CARTER L.S. CABLE
-W53: CAVO F.C. ROTTURA LAMA
-W53: SAW BREAK L.S. CABLE
PC6
PC8
-PC7
-PC9
-GH5
-GH6
PG11
5
6
9,5
ACC
REV.
DATA
FIRME
MODIFICA
R0.4 Aggiornamento taratura fusibili 08/04/2019 Bartoli
R0.3 Sost. trasf da 30VA con trasf da 50VA 12/06/2012 Amedano
R0.2 Sost. Int.magnetotermico con Taratura da 4 a 6,3A 11/06/2012 Amedano
R0.1 Aggiunta numerazione cavo alimentazione Pg.3, 11 24/01/2011 Bartoli
Dis. N. PH-SERIES
CAD SPAC
File PH-SERIES
Data 20/04/2008
Impianto
PH SERIES
Denominazione
GUAINE E ACCESSORI
SHEATHS AND ACCESSORIES
Ordine
Commessa
Esecutore Bartoli
FOGLIO 10
ULTIMO 14

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	3/1	L1 ○	L1	BN or 1				BN or 1	L1			
=QgCv -AL	3/1	L2 ○	L2	BK or 2				BK or 2	L2	5	3/3	=QgCv -Q0
=QgCv -AL	3/1	N ○	N	BU or 4	-W1 022.0158 5G1.5	3,00		BU or 4	N	3	3/3	=QgCv -Q0
=QgCv -AL	3/1	L3 ○	L3	GY or 3	Cavo alimentazione			GY or 3	L3	○ N	3/2	=QgCv -AL
=QgCv -AL	3/1	PE ○	PE	GNYE				GNYE	PE	1	3/3	=QgCv -Q0
=QgCv -AL	3/2									○ PE	3/2	=QgCv -AL
=QgCv -S50	4/2	U1	23	BK1				BK1	23	W1	4/3	=BmCv -M1
=QgCv -S50	4/2	V1	25	BK2				BK2	25	V1	4/3	=BmCv -M1
=QgCv -S50	4/2	W1	27	BK3				BK3	27	U1	4/3	=BmCv -M1
=QgCv -S50	4/2	V2	24	BK4	-W2 022.0154 7G1.5	1,50 Mt		BK4	24	U2	4/3	=BmCv -M1
=QgCv -S50	4/2	U2	26	BK5	Cavo motore lama			BK5	26	V2	4/3	=BmCv -M1
=QgCv -S50	4/2	W2	28	BK6				BK6	28	W2	4/3	=BmCv -M1
=BmCv PIASTRA	4/3	1_1 ⎍	PE	GNYE				GNYE	PE		4/3	=BmCv -M1
=QgCv -XQGFU	4/7	-F3 ○	34	BN				BN	34	400	4/7	=BmMep -M2
=QgCv -K1	4/2		20	BU	-W4 022.1904 3G0.75	1,50 Mt		BU	20	0	4/7	=BmMep -M2
=QgCv PIASTRA	4/8	1_2 ⎍	7	GNYE	Cavo motore pompa			GNYE	PE	PE	4/8	=BmMep -M2
=QgCv -XQG2	6/1	E ○	50	BN				BN	50	21	6/1	=QgCv -FCCL
=QgCv -XQG2	6/3	F ○	51	BU	-W51 022.0160 2x0.5	1,50 Mt		BU	51	22	6/1	=QgCv -FCCL
=QgCv -XQG2	6/3	F ○	51	BN				BN	51	1	6/3	=QgCv -S15
=QgCv -XQG2	6/3	G ○	54	BU	-W52 022.0160 2x0.5	2,50 Mt		BU	54	3	6/3	=QgCv -S15
=QgCv -XQG2	6/1	D ○	0	BN				BN	0	13	6/1	=QgCv -FCRL
=QgCv -XQG2	6/1	E ○	50	BU	-W53 022.0160 2x0.5	2,50 Mt		BU	50	14	6/1	=QgCv -FCRL
					Colleg. finecorsa rottura lama							

REV.	MODIFICA	DATA	FIRME
R0.4	Aggiornamento taratura fusibili	08/04/2019	Bartoli
R0.3	Sost. trasf da 30VA con trasf da 50VA	12/06/2012	Amedano
R0.2	Sost. Int.magnetotermico con Taratura da 4 a 6,3A	11/06/2012	Amedano
R0.1	Aggiunta numerazione cavo alimentazione Pg.3, 11	24/01/2011	Bartoli

Dis. N. PH-SERIES
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File PH-SERIES
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Impianto: *PH SERIES*
Denominazione: RIASSUNTIVO CAVI / *CABLE SUMMARY*
Ordine
Commessa
Esecutore: Bartoli

FOGLIO 11
ULTIMO 14

0	1	2	3	4	5	6	7	8	9

NOME/ITEM	TIPO/TYPE	DESCRIZIONE/DESCRIPTION	QUADRO/BOARD	FG/SH	Q.TA/Q.TY
'-M1	'019.2305	Motore KW 0,81/0,7 2/4P. C80 B14 V. 380/ Motor KW 0,81/0,7 2/4P. C80 B14 V. 380	'=BmMep	4	1
'-PC3	'022.0229	Pressacavo PG16/ Cable Gland PG16	'=BmCv	9	1
'-PC1	'022.0234	Pressacordone 3246 nero PG13,5 / Cable Gland Strain Relief PG13,5	'=BmCv	9	1
'-PC4	'022.0237	Pressacavo PG11 BS03/ Cable Gland PG11	'=BmCv	9	1
'-PC5		Pressacavo PG11 BS03/ Cable Gland PG11	'=BmCv	9	1
'-PC6		Pressacavo PG11 BS03/ Cable Gland PG11	'=BmCv	10	1
'-PC7		Pressacavo PG11 BS03/ Cable Gland PG11	'=BmCv	10	1
'-PC8		Pressacavo PG11 BS03/ Cable Gland PG11	'=BmCv	10	1
'-PC9		Pressacavo PG11 BS03/ Cable Gland PG11	'=BmCv	10	1
'-GH2	'022.0239	Dado nero PG16/ Black nut PG16	'=BmCv	9	1
'-GH1	'022.0244	Dado grigio PG13,5 / Nut grey PG13,5	'=BmCv	9	1
'-GH3	'022.2701	Dado BL03 PG11 / Nut PG11	'=BmCv	9	1
'-GH4		Dado BL03 PG11 / Nut PG11	'=BmCv	9	1
'-GH5		Dado BL03 PG11 / Nut PG11	'=BmCv	10	1
'-GH6		Dado BL03 PG11 / Nut PG11	'=BmCv	10	1
'-PC2	Proprio del motore	Motore asincrono trifase	'=BmCv	9	1
'-M2	'028.0271	Elettropompa EZ/C monofase SAP SA FH2 230/400V 50/60Hz / Electropump EZ.C SAP SA	'=BmMep	4	1
'-S15	'010.0928	Molla per impugnatura MEP dis.1189559 / Spring for start-switch MEP	'=QgCv	6	1
'-QD1	'016.0705	Quadro comandi TI 300-350 LVD / Command panel for TI 300-350 LVD	'=QgCv	8	1
'-FS1	'019.5353	Fascetta in plastica 135x2,5 / Plastic clamp 140x3,5	'=QgCv	8	30
'-FCCL	'022.0037	Finecorsa di sicurezza con chiave 1NO + 1NC / Safety Switch with key 1NO + 1NC	'=QgCv	6	1
'-Q0	'022.0124	Custodia isolante E-PKZO-GR con manopola rossa / Housing with red handle E-PKZO-GR	'=QgCv	3	1
'-Q0	'022.0125	Blocco luchettabile SBV-PKZO-E cod.35127 / Lockable block SVB-PKZO-E cod.35127	'=QgCv	3	1
'-Q0	'022.0126	Barretta per neutro N-PKZO cod. 82160 / Bar conductor for neutral N-PKZO cod. 82160	'=QgCv	3	1
'-FL1	'022.0171	Cordicella unipolare 1 X 0,5 / Single wire 1x0,5mmq	'=QgCv	8	1,50
'-FL2	'022.0172	Cordicella unipolare 1x1,50 / Single wire 1x1,50 mmq	'=QgCv	8	26,00
'-NM1	'022.0290	Etichetta segnafilo / Cable maker and wire	'=QgCv	8	10
'-NM2		Etichetta segnafilo / Cable maker and wire	'=QgCv	8	90
'-CC2	'022.0296	Terminale a occhiello Ø5 da 2,5mmq (Blu) / Wire Terminal Connection Blue Ø5 2,5mmq	'=QgCv	8	1
'-CC1	'022.0308	Terminale a occhiello Ø5 da 1,5mmq (Rosso) / Wire Terminal Connection Red Ø5 1,5mmq	'=QgCv	8	11
'-PT1	'022.0311	Terminale a puntale da 0,5mmq (Bianco) / Wire Terminal Connection White 0.5mmq	'=QgCv	8	15
'-PT3	'022.0312	Terminale a puntale da 1,5mmq (Nero) / Wire Terminal Connection Black 1.5mmq	'=QgCv	8	45

REV.	MODIFICA	DATA	FIRME
R0.4	Aggiornamento taratura fusibili	08/04/2019	Bartoli
R0.3	Sost. trasf da 30VA con trasf da 50VA	12/06/2012	Amedano
R0.2	Sost. Int.magnetotermico con Taratura da 4 a 6,3A	11/06/2012	Amedano
R0.1	Aggiunta numerazione cavo alimentazione Pg.3, 11	24/01/2011	Bartoli

Dis. N. PH–SERIES
CAD SPAC
File PH–SERIES
Data 20/04/2008

Impianto: PH SERIES
Denominazione: DISTINTA MATERIALI / MATERIAL LIST

Ordine
Commessa
Esecutore: Bartoli

FOGLIO 12
ULTIMO 14

NOME/ITEM	TIPO/TYPE	DESCRIZIONE/DESCRIPTION	QUADRO/BOARD	FG/SH	Q.TA/Q.TY
'-T1	'022.1681	Trasformatore 50 VA 230-400 0-24 50.60 / Trasformer 50 VA 230-400 0-24 50.60	'=QgCv	5	1
'-FCRL	'022.0510	Finecorsa a rotella 1NO + 1NC / Limit Switch with roll 1NO+1NC	'=QgCv	6	1
'-S15	'022.0515	Microinteruttore V-21-1C6 / Micro Switch V-21-1C6	'=QgCv	6	1
'-K0	'022.0626	Bobina minima V380-400 50 /440-460 60 EP107.5.UA1-400 ABB / Releaser V380-400. 50	'=QgCv	3	1
'-V1	'022.0862	Scheda mono led 24V Ø8 / Mono led board 24V Ø8 (Led + Res. 1Kohm, 1W)	'=QgCv	6	1
'-BR1	'022.0900	Barra omega DIN / Omega guide DIN	'=QgCv	8	0,30
'-S4	'022.1245	Emergenza M22-PVT cod.263467 + M22-A 216374 + M22-K01 216378 / Emergency push button	'=QgCv	3	1
'-Q0	'022.1286	Interruttore PKZM0-6,3 (termica) cod. 72738 / Magneto-termal overload 4-6,3A. PKZM0-6,3	'=QgCv	3	1
'-XF1	022.2256 + 022.1136 + 022.1136	Morsetto portafusibile a molla + N° 2 fusibili da 500V 5A / Fuse holder terminal + n.2 fuses 5A	'=QgCv	5	1
'-XF2	022.2256 + 022.1136 + 022.1136	Morsetto portafusibile a molla + N° 2 fusibili da 500V 5A / Fuse holder terminal + n.2 fuses 5A	'=QgCv	5	1
'-XF3	022.2256 + 022.1136 + 022.1136	Morsetto portafusibile a molla + N° 2 fusibili da 500V 5A / Fuse holder terminal + n.2 fuses 5A	'=QgCv	5	1
'-XQG2	'022.2257	Morsetto da 2.5 mm singolo per 3 fili a molla 56.703.5055.0 / Terminal spring 2.5mm for 3 wires	'=QgCv	6	1
'-XQG2		Morsetto da 2.5 mm singolo per 3 fili a molla 56.703.5055.0 / Terminal spring 2.5mm for 3 wires	'=QgCv	6	1
'-XQG2		Morsetto da 2.5 mm singolo per 3 fili a molla 56.703.5055.0 / Terminal spring 2.5mm for 3 wires	'=QgCv	6	1
'-XQG2		Morsetto da 2.5 mm singolo per 3 fili a molla 56.703.5055.0 / Terminal spring 2.5mm for 3 wires	'=QgCv	6	1
'-XQG2		Morsetto da 2.5 mm singolo per 3 fili a molla 56.703.5055.0 / Terminal spring 2.5mm for 3 wires	'=QgCv	6	1
'-XQG2		Morsetto da 2.5 mm singolo per 3 fili a molla 56.703.5055.0 / Terminal spring 2.5mm for 3 wires	'=QgCv	6	1
'-K1	'022.3002	Contattore DILM9-10 (24 V. 50.60 HZ) cod.276694 / Contactor 4KW (24 V. 50.60 HZ)	'=QgCv	6	1
'-S50	'022.3054	Selettore 2 velocita 20A T0-5-70331 GB/E / Switch 2 Speed 20A T0-5-70331 GB/E	'=QgCv	4	1
'-TF2	'025.0604	Guarnizione aerstop / Control panel gasket	'=QgCv	8	2,50
'-S15	'025.0691	Serie guernizioni per impugnatura / Gasket for Mep handle	'=QgCv	6	1
'-TF1	'031.2622	Targa sostituzione fusibili	'=QgCv	8	1
'-S15	'034.1221	Impugnatura MEP / Handle MEP	'=QgCv	6	1
'-SF1	'047.0182	Sacchetto portafusibili / Printed envelopes	'=QgCv	8	1

Nome/Item	Tipo/Type	Descrizione/Description	Costruttore/Marke	Quadro/Board	Fg/Sh	Q.ta/Q.ty
-F1	022.2252	Morsetto portafusibile 6,3x32	Mep	=QgCv	5	1
	022.1146	Fusibile 1A 6,3x32 GT ritardato	Mep	=QgCv	4	1
-F2	022.2252	Morsetto portafusibile 6,3x32	Mep	=QgCv	5	1
	no code	Fusibile 3A 6,3x32 GT ritardato	Mep	=QgCv	4	1
-F3	022.1152	Fusibile 2A 6,3x32 GT ritardato	Mep	=QgCv	4	1
	022.2252	Morsetto portafusibile 6,3x32	Mep			1

REV.	MODIFICA	DATA	FIRME
R0.4	Aggiornamento taratura fusibili	08/04/2019	Bartoli
R0.3	Sost. trasf da 30VA con trasf da 50VA	12/06/2012	Amedano
R0.2	Sost. Int.magnetotermico con Taratura da 4 a 6,3A	11/06/2012	Amedano
R0.1	Aggiunta numerazione cavo alimentazione Pg.3, 11	24/01/2011	Bartoli

Dis. N. PH-SERIES
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Impianto: PH SERIES
Denominazione: DISTINTA MATERIALI / MATERIAL LIST

Ordine
Commessa
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FOGLIO 13
ULTIMO 14

0	1	2	3	4	5	6	7	8	9

Formaz./Format.	Descrizione/Description	Diam./Diam.	Lungh./Lenght
7G1.5	Cavo 7x1,5mmq 450/750V / CABLE 7x1.5mmq 450/750V	12	1.50
5G1.5	Cavo 5x1,5mmq 450/750V / CABLE 5x1.5mmq 450/750V	9	3.00
2x0.5	Cavo 2x0.5mmq 450/750V / CABLE 2x0.5mmq 450/750V	4	6.50
3G0.75	Cavo 3x0.75mmq 450/750V / CABLE 3x0.75 mmq 450/750V	7	1.50

REV.	MODIFICA	DATA	FIRME
R0.4	Aggiornamento taratura fusibili	08/04/2019	Bartoli
R0.3	Sost. trasf da 30VA con trasf da 50VA	12/06/2012	Amedano
R0.2	Sost. Int.magnetotermico con Taratura da 4 a 6,3A	11/06/2012	Amedano
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Dis. N. PH–SERIES
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Impianto
PH SERIES

Denominazione
DISTINTA MATERIALI
MATERIAL LIST

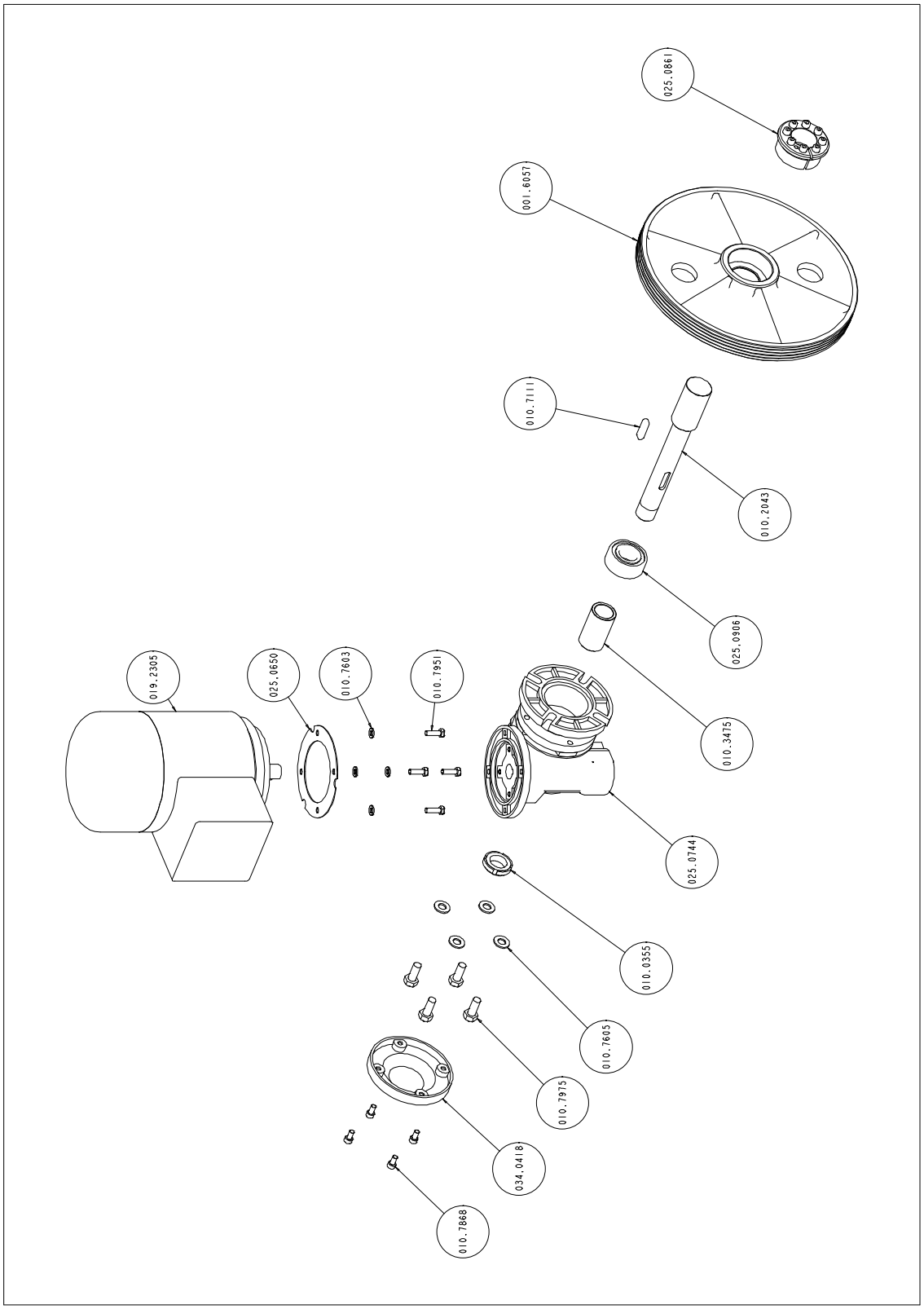
Ordine
Commessa
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FOGLIO 14
ULTIMO 14

Exploded views

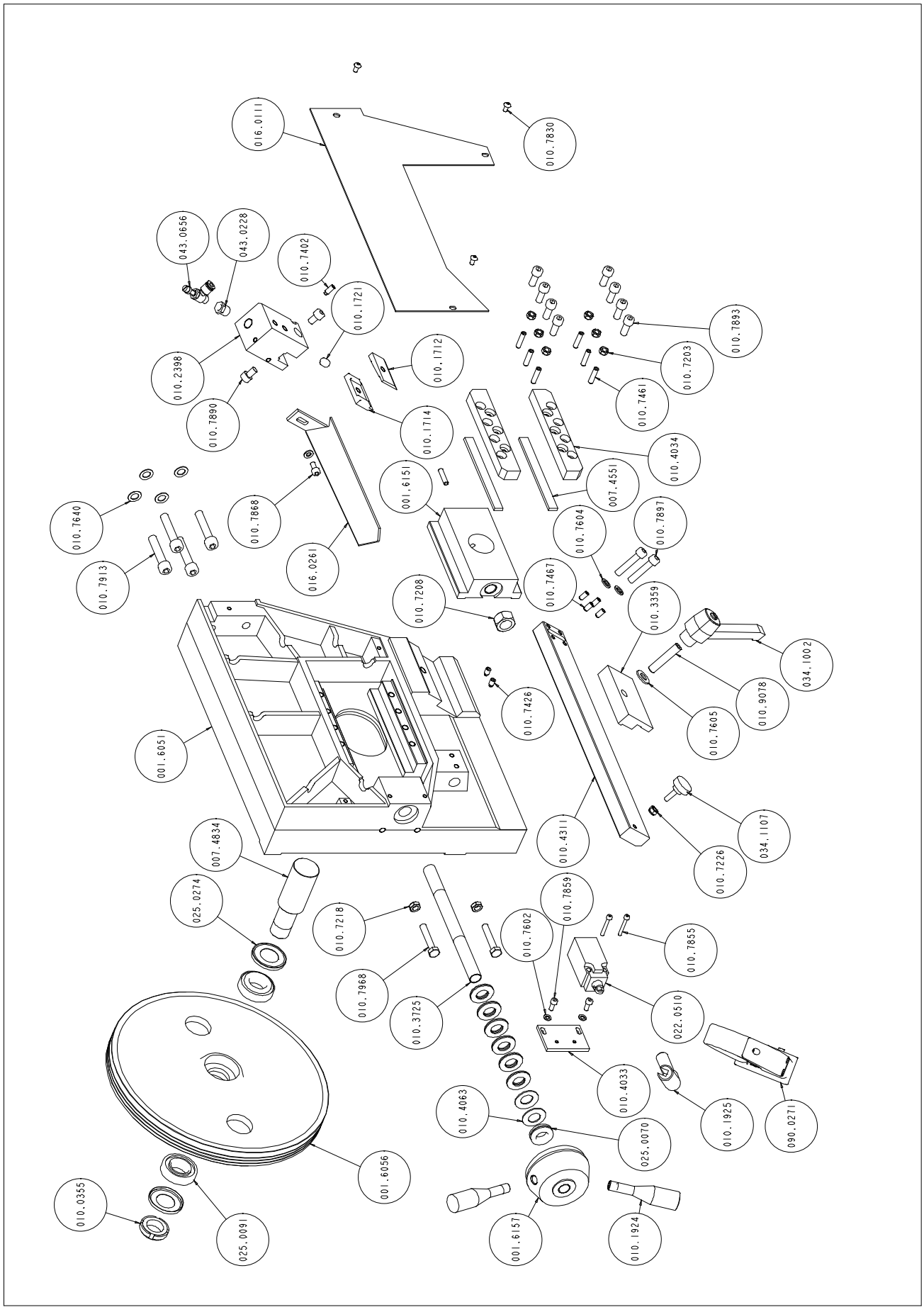
This part of the manual contains detailed exploded views of the machine which can help to gain a deeper knowledge of how it is made.

Motor assembly



Code	Description	Description	NR.	Quantity
001.6057	PULEGGIA MOTRICE PH261–1	PULLEY MOTOR SECTION PH261–1	PZ	1.000
010.0355	GHIERA AUTOBLOCCANTE 25X1,5 TI SH 260 –FC	SELF–LOCKING RING NUT 25X1,5 TI–SH260–FC	PZ	1.000
010.2043	ALBERO MOTORE PH261–1	MOTOR SHAFT PH261–1	PZ	1.000
010.3475	DISTANZIALE ALBERO RIDUTTORE PH 211–1	SHAFT RIDUC. SPACER PH211–1	PZ	1.000
010.7111	CHIAVETTA 8 X 7 X 32	8 X 7 X 32 KEY	PZ	1.000
010.7603	RONDELLA 0 6	0 6 WASHER	PZ	4.000
010.7605	RONDELLA 0 10	0 10 WASHER	PZ	4.000
010.7868	VITE TCEI 6 X 12	TCEI 6 X 12 SCREW	PZ	4.000
010.7871	VITE TCEI 6 X 20	TCEI 6 X 20 SCREW	PZ	8.000
010.7951	VITE TE 6 X 20	TE 6 X 20 SCREW	PZ	4.000
010.7975	VITE TE 10 X 25	TE 10 X 25 SCREW	PZ	4.000
019.2305	KW 0,81/0,7 B14 C80 2/4P.V.380.50 PH 211–261 'C'	KW 0,81/0,7 B14 C80 2/4P.V380.50 PH 211	PZ	1.000
025.0650	GUARNIZIONE MOTORE PH 211–1	MOTOR GASKET	PZ	1.000
025.0744	RIDUTTORE FCPDK050–28–80B14 PH 211 261	REDUCER FCPDK050–28–80B14 PH 211 261	PZ	1.000
025.0861	CALETTATORE 0 35X60	CONNECTOR 0 35X60	PZ	1.000
025.0906	CUSCINETTO 3205 2RS1	BEARING 3205 2RS1	PZ	1.000
034.0418	COPERCHIO RIDUTTORE PH 211–1	REDUCTOR COVER SH 260	PZ	1.000

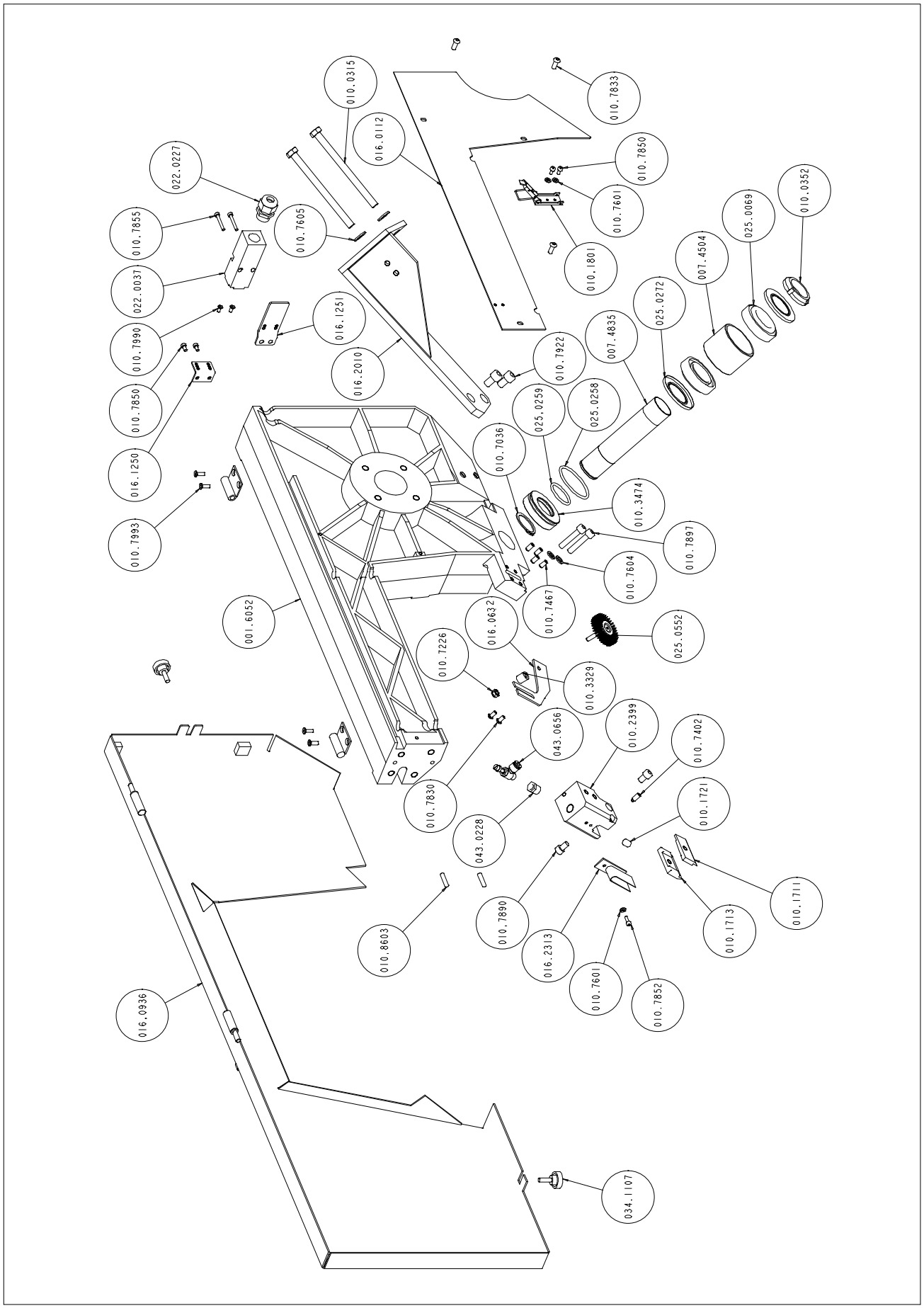
Front flywheel assembly



Code	Description	Description	NR.	Quantity
001.6051	ARCHETTO SEZIONE FOLLE PH261−1	BOW IDLE SECTION PH261−1	PZ	1.000
001.6056	PULEGGIA FOLLE PH261−1	PULLEY IDLE SECTION PH261−1	PZ	1.000
001.6151	SLITTA TENSIONAMENTO LAMA PH 211−1	BAND TENSION SLIDE PH 211	PZ	1.000
001.6157	CORPO VOLANTINO TENS.LAMA PH 211−1	BAND TENSION HANDWEEL PH 211 SH	PZ	1.000
007.4551	LARDONE SLITTA TENDILAMA SH 200/PH261−1	BAND GUIDE SLIDE GIB SH 200	PZ	2.000
007.4834	PERNO PULEGGIA FOLLE PH261−1	IDLER PULLEY PIVOT PH261−1	PZ	1.000
010.0355	GHIERA AUTOBLOCCANTE 25X1,5 TI SH 260−FC	SELF−LOCKING RING NUT 25X1,5 TI−SH260−FC	PZ	1.000
010.0928	MOLLA X IMPUGNATURA MEP DIS.1189559	MEP HANDLE SPRING	PZ	1.000
010.1712	GUIDALAMA 1 INSERTO ANTERIORE SH260	1 INSERT FRONT BAND GUIDE SH 260	PZ	1.000
010.1714	GUIDALAMA 2 INSERTI ANTERIORE SH260	2 INSERTS FRONT BAND GUIDE SH 260	PZ	1.000
010.1721	PREMILAMA SHARK	TOP CARBIDE SHARK	PZ	1.000
010.1924	LOBO VOLANTINO PH 211−1	HANDWHEEL LOBE PH 211−1	PZ	2.000
010.1925	LEVA COMANDO TESTA PH 211−1	HEAD COMMAND LIVER PH211−1	PZ	1.000
010.2398	TESTINA GUIDALAMA ANTERIORE SH 281− 282	REAR HEAD BLADE GUIDE SH 281−282	PZ	1.000
010.3359	STAFFA BLOCC. TESTINA ANTE-RIORE PH 261−1	FRONT BAND GUIDE CLAMP BRAC-KET PH261−1	PZ	1.000
010.3725	PERNO TESATURA LAMA PH 211−1	BAND TENS.PIN PH211−1	PZ	1.000
010.4033	PIASTRINO FISSAGGIO FINECORSA PH 211−1	LIMIT SWITCH FIX PLATEPH 211−1	PZ	1.000
010.4034	PIASTRA REGOLAZIONE SLITTA TENDILAMAPH 211−1	BAND TENSI.SLIDEREGUL.PLATE PH211−1	PZ	2.000
010.4063	MOLLA A TAZZA 16,3X31,5X1,75 PH 211 P.14	SPRING	PZ	14.000
010.4311	STAFFA SUPPORTO TESTINA ANTE-RIOREPH261−1	FRONT BAND GUIDESUP BRACKET-PH 211−1	PZ	1.000
010.7203	DADO M6 (010.7203)	M6 SCREW NUT (010.7203)	PZ	6.000
010.7208	DADO M16 (010.7208)	M16 SCREW NUT (010.7208)	PZ	1.000
010.7218	DADO M8 BASSO	M8 LOW SCREW NUT	PZ	2.000
010.7226	DADO AUTOBLOCCANTE M6 (010.7226)	M6 SELF−LOCKING SCREW NUT	PZ	1.000
010.7402	GRANO VCE P.CILINDRICA 6X12 (010.7402)	6 X 12 CYLIND.POINT VCE GRUB SCREW	PZ	1.000
010.7409	GRANO VCE PUNTA CILINDRICA 8 X 10	8 X 10 CYLIND.POINT VCE GRUB SCREW	PZ	1.000
010.7426	GRANO VCE PUNTA CILINDRICA 6 X 8	6 X 8 CYLIND.POINT VCE GRUB	PZ	2.000
010.7461	GRANO VCE PUNTA PIANA 6 X 25	6 X 25 FLAT POINT VCE GRUB SC-REW	PZ	7.000
010.7467	GRANO VCE PUNTA PIANA 6 X 12 (010.7467)	6 X 12 FLAT POINT VCE GRUB SC-REW	PZ	4.000
010.7602	RONDELLA 0 5	0 5 WASHER	PZ	2.000
010.7603	RONDELLA 0 6 (010.7603)	0 6 WASHER (010.7603)	PZ	1.000
010.7604	RONDELLA 0 8 (010.7604)	0 8 WASHER (010.7604)	PZ	2.000
010.7605	RONDELLA 0 10 (010.7605)	0 10 WASHER (010.7605)	PZ	1.000
010.7640	RONDELLA GROOVER M10	WASHER GROOVER M10	PZ	4
010.7700	SPINA CILINDRICA DIAM. 4 X 24	CYLINDRICAL PIN DIAM. 4 X 24	PZ	1.000
010.7802	VITE AUTOFILETTANTE 3,9 X 16	3,9 X 16 SELF−THREADING SCREW	PZ	3.000
010.7830	VITE BUTON 5 X 10 (010.7830)	5 X 10 BUTON SCREW (010.7830)	PZ	3.000
010.7855	VITE TCEI 4 X 30 (010.7855)	TCEI 4 X 30 SCREW (010.7855)	PZ	2.000
010.7859	VITE TCEI 5 X 12 (010.7859)	TCEI 5 X 12 SCREW (010.7859)	PZ	2.000
010.7868	VITE TCEI 6 X 12 (010.7868)	TCEI 6 X 12 SCREW	PZ	1.000
010.7890	VITE TCEI 8 X 12 (010.7890)	TCEI 8 X 12 SCREW (010.7890)	PZ	2.000
010.7893	VITE TCEI 8 X 20 (010.7893)	TCEI 8 X 20 SCREW (010.7893)	PZ	8.000
010.7897	VITE TCEI 8 X 40	TCEI 8 X 40 SCREW	PZ	2.000
010.7913	VITE TCEI 10 X 50	TCEI 10 X 50 SCREW	PZ	4.000
010.7968	VITE TE 8 X 45	TE 8 X 45 SCREW	PZ	2.000
010.9078	GRANO VCE PUNTA PIANA 10 X 50 (010.9078)	10X50 FLAT POINT GRUB SCREW (010.9078)	PZ	1.000
016.0111	CARTER ARCHETTO ANTERIORE PH 261−1	BOW FRONT COVER PH 261−1	PZ	1.000

Code	Description	Description	NR.	Quantity
016.0261	PROTEZIONE LAMA ANTERIORE SH 260	FRONT BAND GUARD SH 260	PZ	1.000
022.0510	FINECORSA A ROTELLA FR515 PH211–261	LIMIT SWITCH	PZ	1.000
022.0515	MICROINTERRUTTORE V–21–1C6	MICROSWITCH V–21–1C6	PZ	1.000
025.0070	CUSCINETTO 51103	BEARING 51103	PZ	1.000
025.0091	CUSCINETTO 32005X	BEARING 32005X	PZ	2.000
025.0274	ANELLO DI PROTEZIONE NILOS 32005	NILOS GUARD RING 32005	PZ	2.000
025.0691	SERIE GUARNIZIONI X IMPUGNATURA MEP	GASKETS FOR MEP HANDLE	PZ	1.000
034.1002	LEVA A SCATTO 12 MA	LEVER 12 MA	PZ	1.000
034.1107	VOLANTINO O 30 M6 X 20	O 30 M6 X 20 HANDWHEEL	PZ	1.000
034.1221	IMPUGNATURA DISEGNO MEP	MEP HANDLE	PZ	1.000
034.1221	IMPUGNATURA DISEGNO MEP	MEP HANDLE	PZ	1.000
034.1221	IMPUGNATURA DISEGNO MEP	MEP HANDLE	PZ	1.000
043.0228	RIDUZIONE 1/4–1/8 – CL 2531	1/4–1/8 – CL 2531 REDUCTION	PZ	1.000
043.0656	RUBINETTO 1/8 TUBO 6	TAP 1/8 TUBE 6	PZ	1.000
090.0271	IMPUGNATURA COMPLETA TIPO MEP	COMPLETE MEP HANDLE	PZ	1.000

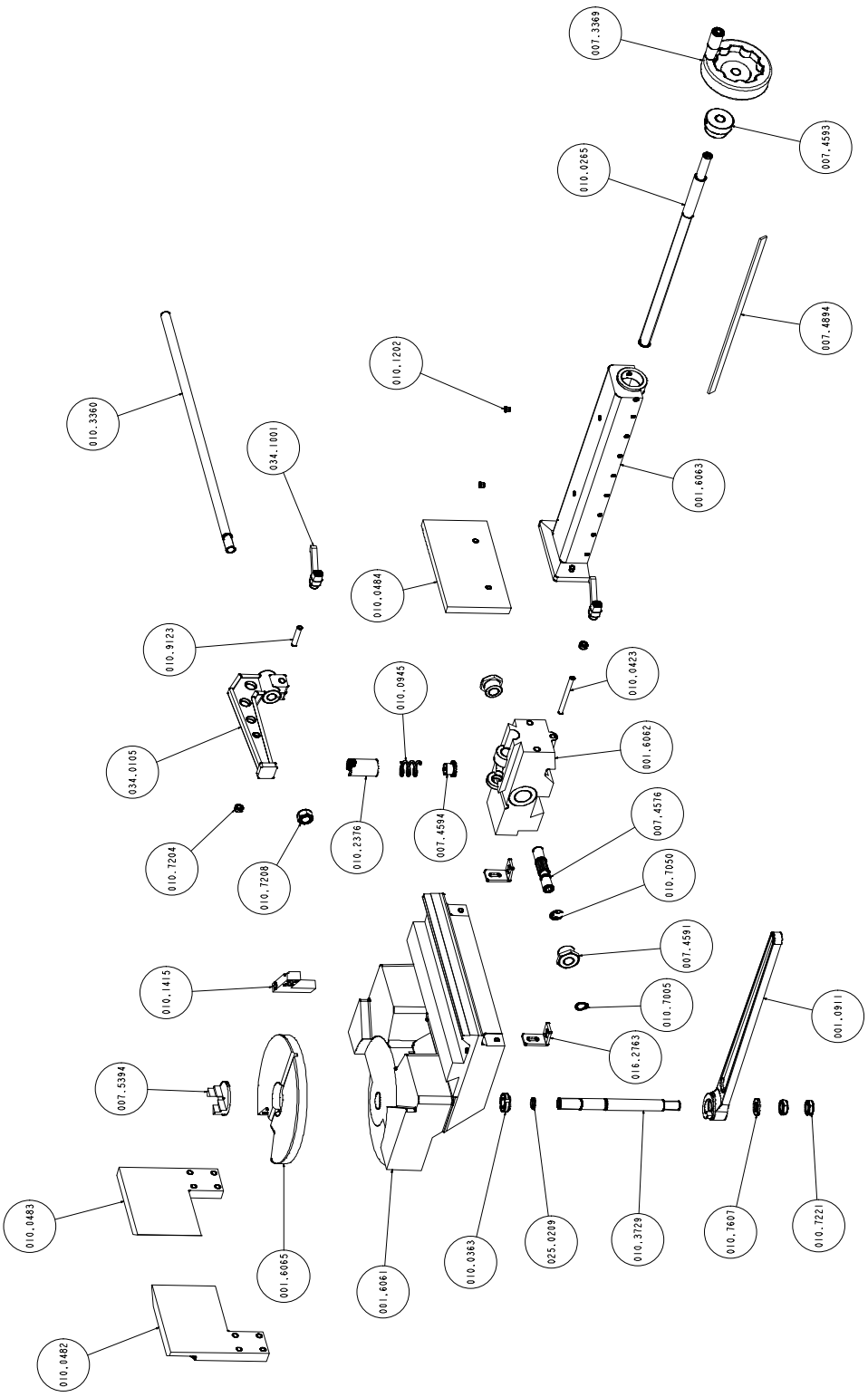
Motor flywheel assembly



Code	Description	Description	NR.	Quantity
001.6052	ARCHETTO SEZIONE MOTRICE PH261–1	BOW MOTOR SECTION PH261–1	PZ	1.000
007.4504	DISTANZIALE CUSCINETTI SNODO ARCHETTOPH261–1	BOW ARTICULATION BEARING SPACER PH261–1	PZ	1.000
007.4835	PERNO SNODO TESTA PH261–1	HEAD ARTICULATION PIVOT PH261–1	PZ	1.000
010.0315	VITE 8.8 TESTA ESAGONALE 10X140 TUTTOFILETTO ZINCATA 282–292–320–332	SCREW 8.8 10X140 SH 320	PZ	2.000
010.0352	GHIERA AUTOBLOCCANTE 35X1,5 CN–TI– SH–FC	SELF–LOCKING RING NUT 35X1,5 CN–TI–SH–FC	PZ	1.000
010.1711	GUIDALAMA 1 INSERTO POSTERIORE SH 260	1 INSERT REAR BAND GUIDE SH 260	PZ	1.000
010.1713	GUIDALAMA 2 INSERTI POSTERIORE SH 260	2 INSERTS REAR BAND GUIDE SH 260	PZ	1.000
010.1721	PREMILAMA SHARK	TOP CARBIDE SHARK	PZ	1.000
010.1801	CHIUSURA LEVA –D– ZINCATA SH	–D– ZINC LEVER CLOSURE SH	PZ	1.000
010.2399	TESTINA GUIDALAMA POSTERIORE SH 281 282	HINDER HEAD BLADE GUIDE SH 281–282	PZ	1.000
010.3329	BOCCOLA SPAZZOLA PULILAMA PH 211–1	BAND BRUSH INSERT PH211–1	PZ	1.000
010.3474	DISTANZIALE ARCHETTO PH 211–1	BOW SPACER PH211–1	PZ	1.000
010.7036	ANELLO SEEGER PER FORI DIAM. 35	SEEGER RING FOR 0 35 HOLES	PZ	1.000
010.7226	DADO AUTOBLOCCANTE M6 (010.7226)	M6 SELF–LOCKING SCREW NUT	PZ	1.000
010.7402	GRANO VCE P.CILINDRICA 6X12 (010.7402)	6 X 12 CYLIND.POINT VCE GRUB SCREW	PZ	1.000
010.7467	GRANO VCE PUNTA PIANA 6 X 12 (010.7467)	6 X 12 FLAT POINT VCE GRUB SCREW	PZ	4.000
010.7601	RONDELLA 0 4 (010.7601)	0 4 WASHER (010.7601)	PZ	3.000
010.7604	RONDELLA 0 8 (010.7604)	0 8 WASHER (010.7604)	PZ	2.000
010.7605	RONDELLA 0 10 (010.7605)	0 10 WASHER (010.7605)	PZ	2.000
010.7830	VITE BUTON 5 X 10 (010.7830)	5 X 10 BUTON SCREW (010.7830)	PZ	2.000
010.7833	VITE BUTON 6 X 16	BUTON SCREW 6 X 12	PZ	3.000
010.7850	VITE TCEI 4 X 8 (010.7850)	TCEI 4 X 8 SCREW	PZ	4.000
010.7852	VITE TCEI 4 X 12 (010.7852)	TCEI 4 X 12 SCREW (010.7852)	PZ	1.000
010.7855	VITE TCEI 4 X 30 (010.7855)	TCEI 4 X 30 SCREW (010.7855)	PZ	2.000
010.7890	VITE TCEI 8 X 12 (010.7890)	TCEI 8 X 12 SCREW (010.7890)	PZ	2.000
010.7897	VITE TCEI 8 X 40	TCEI 8 X 40 SCREW	PZ	2.000
010.7922	VITE TCEI 10 X 15	TCEI 10 X 15 SCREW	PZ	2.000
010.7990	VITE TSPEI 4 X 8 (010.7990)	TSPEI 4 X 8 SCREW (010.7990)	PZ	2.000
010.7993	VITE TSPEI 5 X 12 (010.7993)	TSPEI 5 X 12 SCREW (010.7993)	PZ	6.000
010.8603	SPINA CILINDRICA DIAM. 6 X 25	PARALLEL PIN DIAM.6 X 25	PZ	2.000
016.0112	CARTER ARCHETTO POSTERIORE PH 261–1	BOW REAR COVER PH 261–1	PZ	1.000
016.0632	SUPPORTO SPAZZOLA PULILAMA PH261–1	BRUSH SUPPORT PH261–1	PZ	1.000
016.0936	COPERCHIO ARCHETTO PH 261–1	COVER BOW	PZ	1.000
016.1250	PIASTRINO FIX INTERRUTTORE COPERCHIOARCHETTO SH N.T.	PLATE FIXING BOW COVER SAFETY SWITCH	PZ	1.000
016.1251	PIASTRA ATTACCO F.C. CHIUSURA COPERCHIOARCHETTO SH N.T.	PLATE FIXING SAFETY SWITCH	PZ	1.000
016.2010	STAFFA MOLLE ARCHETTO PH 211–1	BOW SPRING BRACKET PH 211–1	PZ	1.000
016.2313	PROTEZIONE LAMA POSTERIORE PH211–1/261–1	REAR BAND PROTEC.- PH211–1/261–1	PZ	1.000
022.0037	INTERRUTTORE DI SICUREZZA FR 690 SH	FR 690 SH SAFETY SWITCH	PZ	1.000
022.0227	PRESSACAVO PLASTICA TEC–SM 2006.3.9 M20	PLASTIC CABLE PRESSER TEC–SM2006.3.9 M20	PZ	1.000
025.0069	CUSCINETTO 32007X	BEARING 32007X	PZ	2.000
025.0258	ANELLO DI TENUTA OR 159 PH 211–1	HOLD RING OR 159 PH 211–1	PZ	1.000
025.0259	ANELLO DI TENUTA OR 4137 PH 211–1	HOLD RING OR 4137 PH 211–1	PZ	1.000
025.0272	ANELLO DI PROTEZIONE NILOS 32007	NILOS SEAL RING 32007	PZ	2.000
025.0552	SPAZZOLA PULILAMA 6X25 030 SHARK	BAND BRUSH 6X25 030 SHARK	PZ	1.000

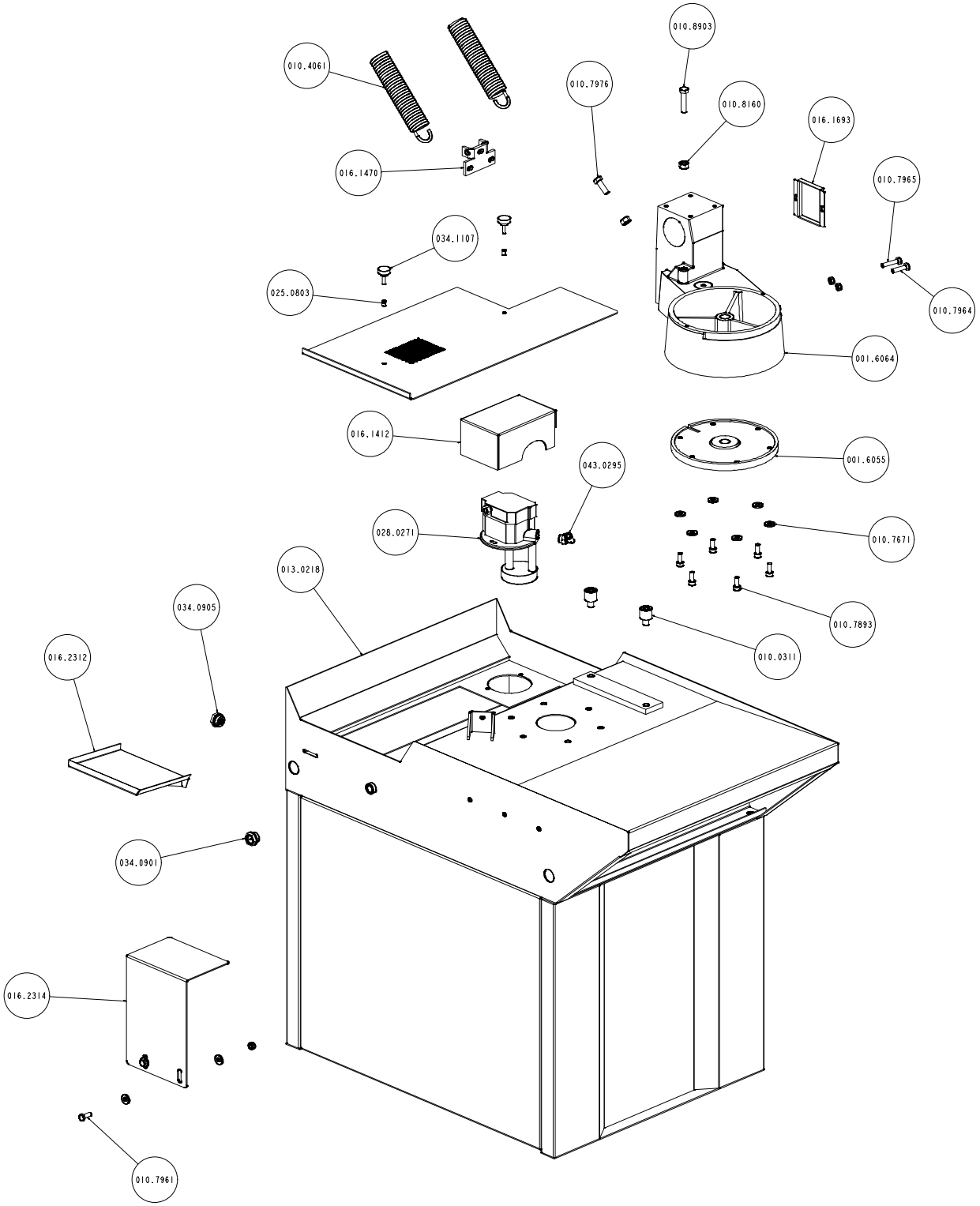
Code	Description	Description	NR.	Quantity
034.1107	VOLANTINO O 30 M6 X 20	O 30 M6 X 20 HANDWHEEL	PZ	2.000
043.0228	RIDUZIONE 1/4–1/8 – CL 2531	1/4–1/8 – CL 2531 REDUCTION	PZ	1.000
043.0656	RUBINETTO 1/8 TUBO 6	TAP 1/8 TUBE 6	PZ	1.000

Vice assembly



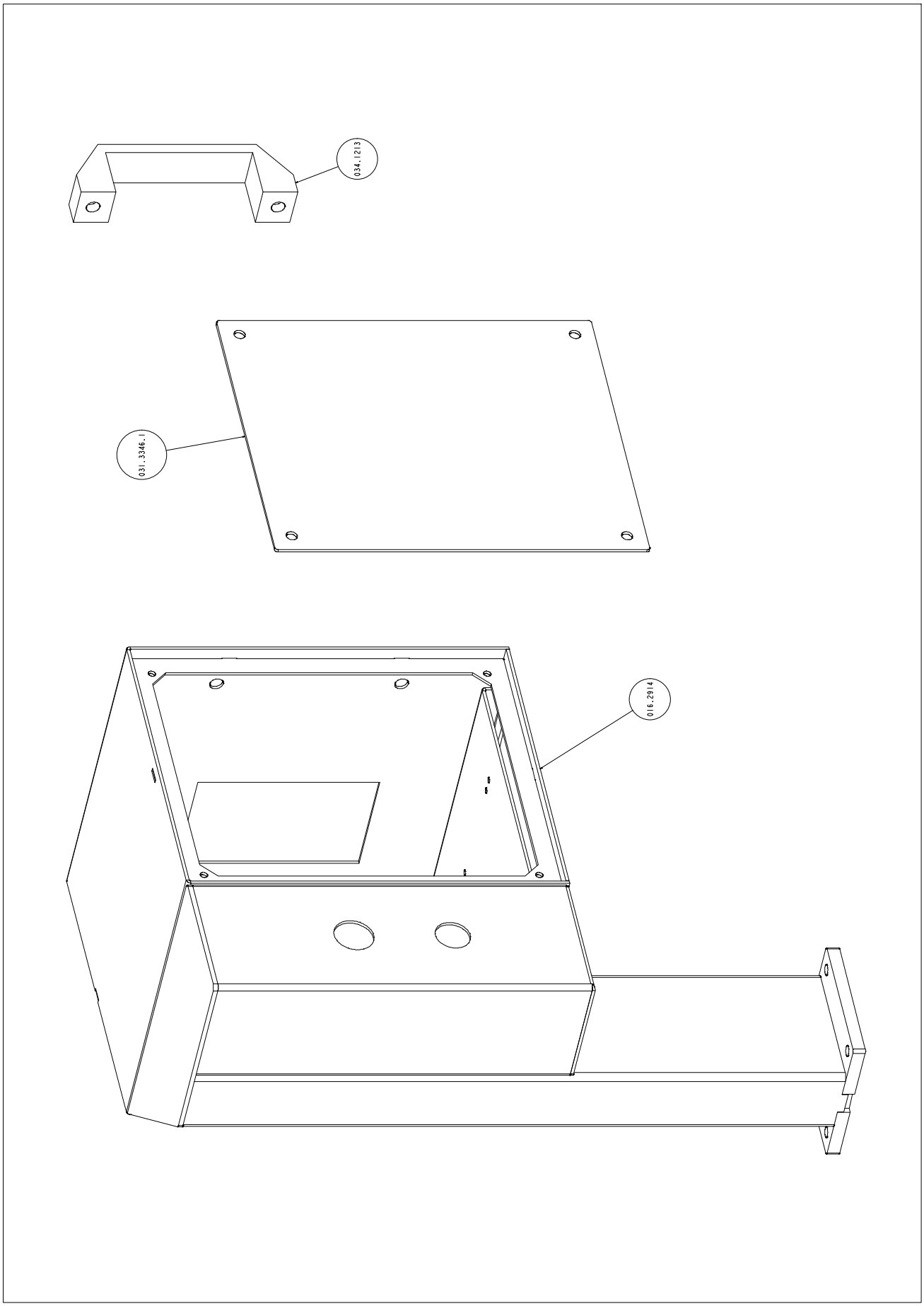
Code	Description	Description	NR.	Quantity
001.0911	LEVA BLOCCAGGIO MORSA SC 315–SH 260 SH 280–292 –PH 211–261–1 MOD. 164	VICE CLAMPING LEVER SC315–SH260–280	PZ	1.000
007.3369	VOLANTINO MORSA PH 211–1 / 261–1	VICE HANDWHEEL PH211–1	PZ	1.000
010.0363	GHIERA M20XP1 (AN04) PH 211 POS. 99 AUTOBLOCCANTE	SELF LOCKING NUT PH 211 POS. 99	PZ	1.000
010.3360	ASTA BATTUTA TAGLI A MISURA PH 261–1	MEASURE ROD PH261–1	PZ	1.000
010.3729	PERNO DI CENTRO PH261–1	CENTER PIN PH261–1	PZ	1.000
010.7204	DADO M8 (010.7204)	M8 SCREW NUT (010.7204)	PZ	1.000
010.7221	DADO M16 BASSO (010.7221)	M16 LOW SCREW NUT (010.7221)	PZ	2.000
010.7607	RONDELLA 0 16 (010.7607)	0 16 WASHER (010.7607)	PZ	1.000
010.9123	GRANO VCE PUNTA PIANA 8 X 45	8X45 FLAT POINT GRUB SCREW	PZ	1.000
025.0209	ANELLO TENUTA OR 119–15,08	O RING 119–15,08	PZ	1.000
034.1001	LEVA A SCATTO 8 MA PK55	LEVER 8 MA PK55	PZ	1.000
010.0482	GANASCIA FISSA SINISTRA PH 262	LEFT FIXED JAW PH 262	PZ	1.000
010.0483	GANASCIA FISSA DESTRA PH 262	RIGHT FIXED JAW PH 262	PZ	1.000
001.6065	PIANO DI TAGLIO ROTANTE PH 262	ROTATING CUTTING TABLE PH 262	PZ	1.000
001.6061	PIANO FISSAGGIO MORSA PH262		PZ	1.000
010.0363	GHIERA M20XP1 (AN04) PH 211 POS. 99 AUTO	SELF LOCKING NUT PH 211 POS. 99	PZ	1.000
025.0209	ANELLO TENUTA OR 119–15,08	O RING 119–15,08	PZ	1.000
010.3729	PERNO DI CENTRO PH261–1	CENTER PIN PH261–1	PZ	1.000
010.7607	RONDELLA 0 16	0 16 WASHER	PZ	1.000
010.7221	DADO M16 BASSO	M16 LOW SCREW NUT	PZ	1.000
007.5394	BUSSOLA GANASCE SQUADRI MORSA PH 262	BUSH JAWS SQUARES VICE PH262	PZ	1.000
010.1415	STAFFA FIX. PIANO GIREVOLE PH262	BRACKET TURNTABLE PH262	PZ	1.000
016.2763	STAFFA FISSAGGIO MORSA PH 262	VICE FIX. BRACKET PH 262	PZ	1.000
010.7005	ANELLO SEEGER 0 17	0 17 SEEGER RING	PZ	1.000
034.0105	BATTUTA TAGLI A MISURA PH 262	CUT TO MEASURE STOP PH 262	PZ	1.000
010.7208	DADO M16	M16 SCREW NUT	PZ	1.000
010.2376	CHIOCCIOLA VITE MORSA SH 200	VICE SCREW NUT SH 200	PZ	1.000
007.4594	BOCCOLA DI REGISTR.CHIOCCIOLA SH200	BUSHING F.SCREW NUT ADJUSTM.-SH 200	PZ	1.000
007.4591	BOCCOLA ECCENTRICA SH 200	ECCENTRIC BUSHING SH 200	PZ	1.000
010.7050	ANELLO BENZING 0 12	0 12 BENZING RING	PZ	1.000
007.4576	PIGNONE SBLOCC.SCORREVOLE SH 200	UPPER VICE LOCKING PINION SH 200	PZ	1.000
010.0945	MOLLA RICHIAMO CHIOCCIOLA VI-TE MORSA SH 200	VICE SCREW NUT RETURN SPRING SH 200	PZ	1.000
010.0484	GANASCIA MORSA SCORREVOLE PH 262	JAW SLIDE VICE PH 262	PZ	1.000
001.6062	SUPPORTO MORSA PH 262	VICE SUPPORT PH 262	PZ	1.000
010.0423	GRANO PUNTA PIANA 8X90 TI	GRUB SCREW 8X90 TI	PZ	1.000
010.1202	OLIATORE A SFERA DIAM. 8	OIL FILLER DIAM.8	PZ	1.000
001.6063	SCORREVOLE MORSA PH262	SLIDING VICE PH262	PZ	1.000
010.0265	VITE MORSA 518X20 PH 262	VISE SCREW 518X20 PH 262	PZ	1.000
007.4894	LARDONE MORSA PH262	VICE GIB PH262	PZ	1.000
007.4593	BOCCOLA VITE MORSA SH 200	VICE SCREW BUSHING SH 200	PZ	1.000

Base assembly



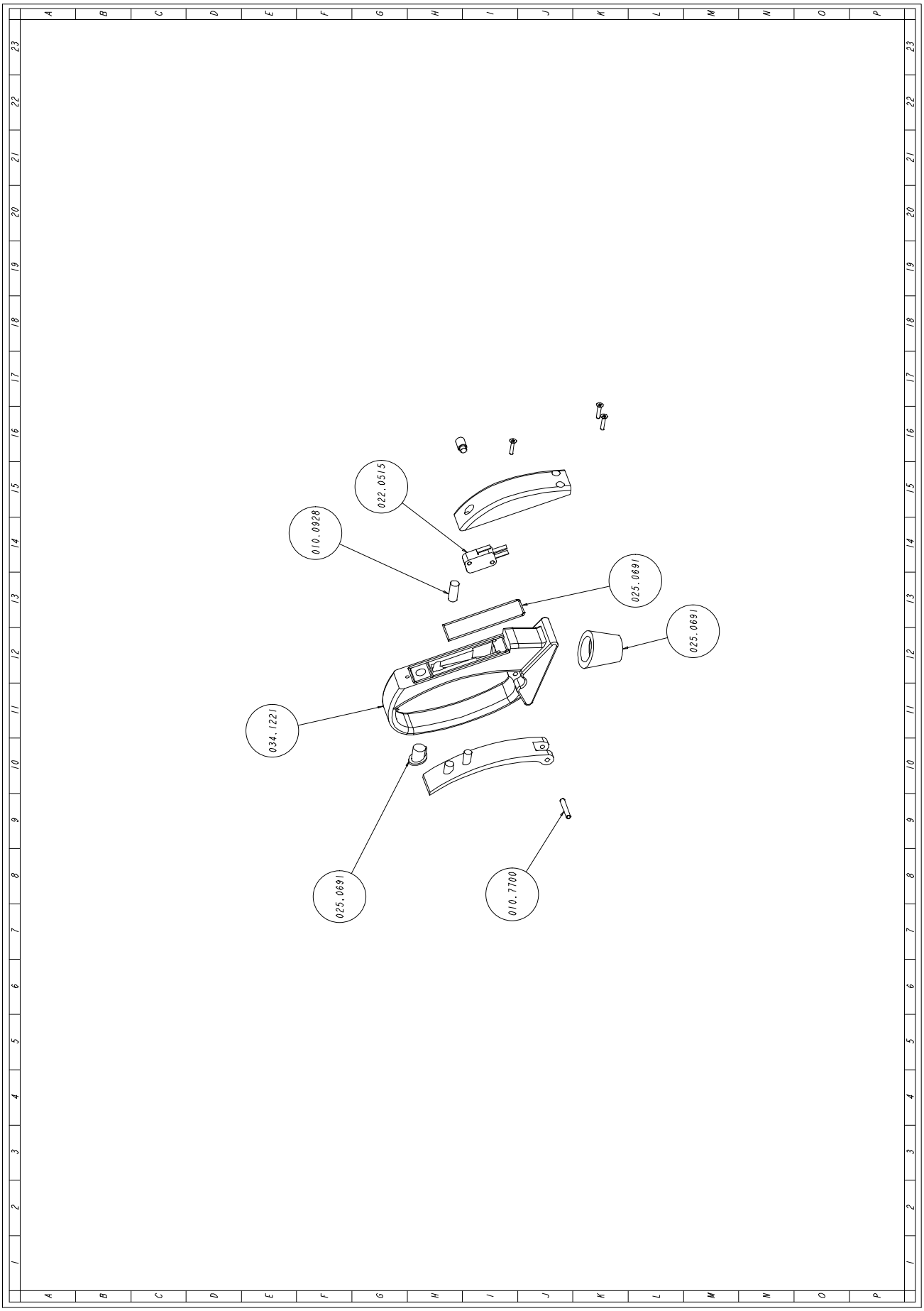
Code	Description	Description	NR.	Quantity
001.6055	DISCO BASAMENTO PH 261–1	BASE DISC PH 261–1	PZ	1.000
010.4061	MOLLA RICHIAMO TESTA PH 211–261 POS. 92PH 211–261–1	HEAD RETURN SPRING	PZ	2.000
010.7671	RONDELLA SPESSORE DIAM. 8 X 3 (010.7671)	THICKNESS WASHER DIAM. 8 X 3 (010.7671)	PZ	10.000
010.7893	VITE TCEI 8 X 20 (010.7893)	TCEI 8 X 20 SCREW (010.7893)	PZ	8.000
010.7961	VITE TE 8 X 20 (010.7961)	TE 8 X 20 SCREW (010.7961)	PZ	2.000
010.7965	VITE TE 8 X 35 (010.7965)	TE 8 X 35 SCREW (010.7965)	PZ	2.000
010.7976	VITE TE 10 X 30 (010.7976)	TE 10 X 30 SCREW (010.7976)	PZ	1.000
010.8160	DADO M10 ALTO	M10 HIGH NUT	PZ	2.000
010.8903	VITE TE 10 X 45	10 X45 TE SCREW	PZ	1.000
016.1470	STAFFA AGGANCIO MOLLE PIANO GIREVOLEPH 211–1	TURN TABLE SPRING COUPLER BRACKETPH211–1	PZ	1.000
016.2312	RACCOGLITORE ACQUA PH 211–1/261–1	WATER COLLEC.PH 211–1/261–1	PZ	1.000
016.2314	BRACCETTO APPOGGIA BARRA PH 261–1	ARM SUP.BAR PH 261–1	PZ	1.000
025.0803	BOCCOLA GRAFITATA L. 10 DIAM. 6	GRAPHITIZED BUSHING L. 10 DIA M. 6	PZ	2.000
028.0271	ELETTROPOMPA EZ/C V. 220–380 SA/85	ELECTROPUMP EZ/C V. 220–380	PZ	1.000
034.1107	VOLANTINO O 30 M6 X 20	O 30 M6 X 20 HANDWHEEL	PZ	2.000
034.0905	TAPPO OLIO TAO/3 1/2’ NERO	TAO/3 1/2” BLACK OIL CAP	PZ	1.000
013.0218	PIEDISTALLO PH262	PEDESTAL PH262	PZ	1.000
034.0901	TAPPO LIVELLO OLIO 1/2 ’GAS.	1/2” GAS. OIL LEVEL CAP	PZ	1.000
016.1412	COPERTURA ELETTROPOMPA SH 281	ELECTROPUMP COVER SH 281	PZ	1.000
043.0295	INNESTO RAPIDO TUBO 8 FIL. 3/8 EPL 8–G03	QUICK TUBE COUPLING 8 FIL. 3/8 EPL 8–G03	PZ	1.000
016.1693	COPERCHIO SNODO TESTA PH262	JOINT HEAD COVER PH262	PZ	1.000
010.7964	VITE TE 8 X 30	TE 8 X 30 SCREW	PZ	1.000
001.6064	PIANO GIREVOLE PH262	TURNTABLE PH262	PZ	1.000
010.0311	VITE TESTA CILINDRICA ESAGONO INCASSATO	SCREW M12X16 ROTATING TABLE STOP	PZ	1.000

Control panel



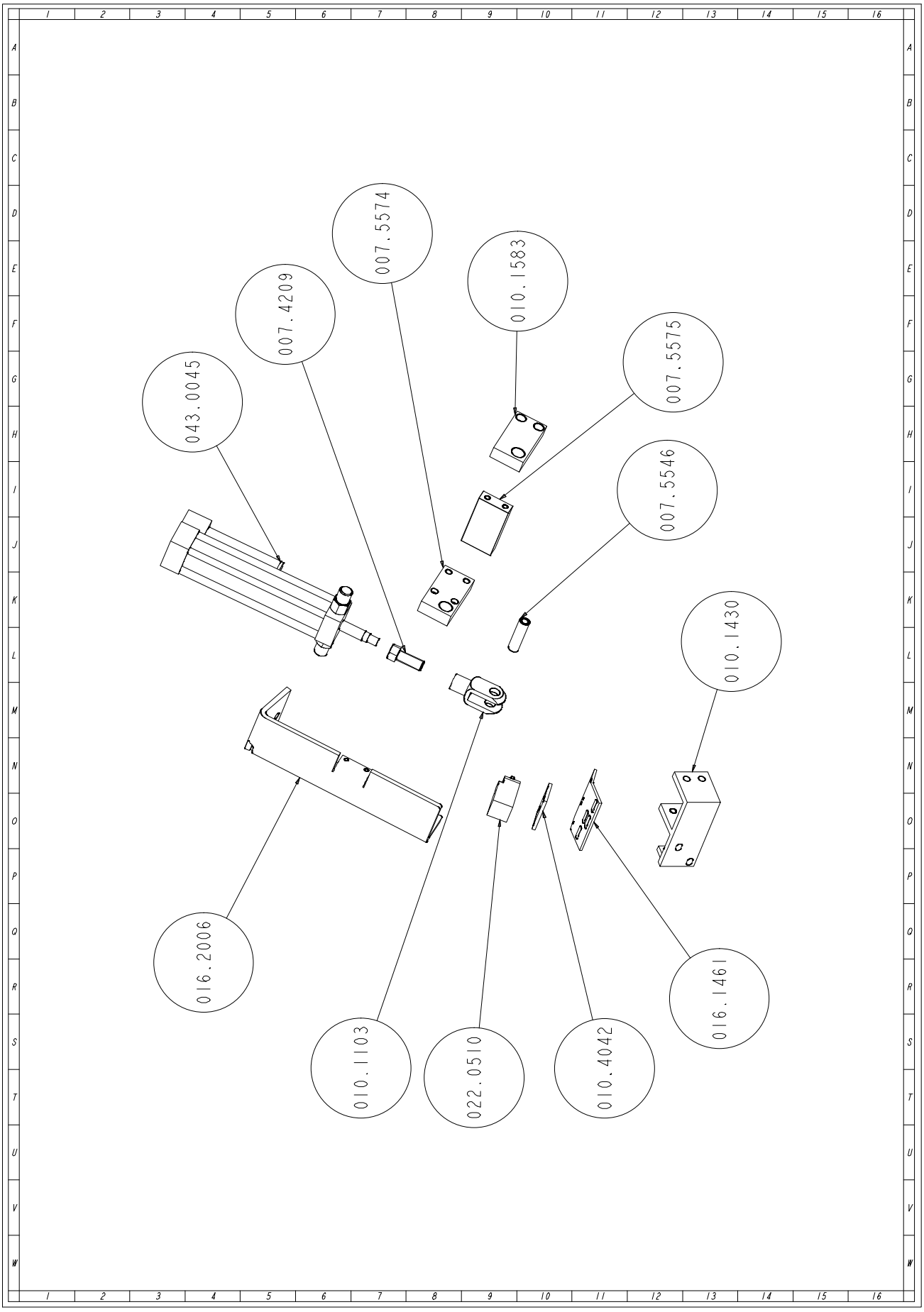
Code	Description	Description	NR.	Quantity
031.3346.1	TARGA INTERRUTTORE PH 262	SWICH ADHE PH 262	NR	1,0000
034.1213	MANIGLIA MEP X QUADRO ELETTRI-CO	MEP HANDLE F.ELECT.PANEL	NR	1,0000
016.2914	QUADRO COMANDI PH 262	CONTROL PANEL PH262	NR	1,0000

Handgrip



Code	Description	Description	NR.	Quantity
010.0928	MOLLA X IMPUGNATURA MEP DIS.1189559	MEP HANDLE SPRING	NR	1,000
010.7409	GRANO VCE PUNTA CILINDRICA 8 X 10	8 X 10 CYLIND.POINT VCE GRUB SCREW	NR	1,000
010.7700	SPINA CILINDRICA DIAM. 4 X 24	CYLINDRICAL PIN DIAM. 4 X 24	NR	1,000
010.7800	VITE AUTOFILETTANTE 2,9 X 15	2,9 X 15 SELF–THREADING SCREW	NR	3,000
022.0515	MICROINTERRUTTORE V–21–1C6	MICROSWITCH V–21–1C6	NR	1,000
025.0691	SERIE GUARNIZIONI X IMPUGNATURA MEP	GASKETS FOR MEP HANDLE	NR	1,000
034.1221	IMPUGNATURA DISEGNO MEP	MEP HANDLE	NR	1,000

Cylinder unit



Code	Description	Description	NR.	Quantity
007.4209	PROLUNGA CILINDRO SH	CYLINDER EXTENSION SH 330 HH	NR	1,000
007.5574	STAFFA INTERNA CILINDRO CCS PH 211–261–1	INTERNAL SHAFT FOR CYLINDER	NR	1,000
010.1583	STAFFA ESTERNA CILINDRO SH 452	EXTERNAL BRACKET CYLINDER SH 452	NR	1,000
007.5575	STAFFA CENTRALE CILINDRO CC-SPH 211–261–1	CYLINDER CENTRAL SHAFT CCS	NR	1,000
007.5546	PERNO BLOCCAGGIO STAFFA CILINDROPH 211–261–1 CCS	CYLINDER LOCKING SHAFT PH 211–261–1 CCS	NR	1,000
010.1430	STAFFA CILINDRO PIANO GIREVO-LEPH 211–261–1 HB	TURN TABLE CYL.BRACKET PH 211–1 HB	NR	1,000
016.1461	STAFFA FISSAGGIO INTERRUTTO-RE CCSPH 211–261–1	CCS SWITCH BRACKET PH 211–261–1	NR	1,000
010.4042	PIASTRINO FISSAGGIO FINECOR-SAPH 211–1/261–1 HB	LIMIT SWITCH FIX PLATE PH 211–1/261–1 HB	NR	1,000
022.0510	FINECORSA A ROTELLA FR515 PH211–261	LIMIT SWITCH	NR	1,000
010.1103	FORCELLA 16 X 1,5	16 X 1,5 FORK	NR	1,000
016.2006	STAFFA MOLLE ARCHETTO PH 211–261–1 CCS	BOW SPRING BRACKET PH 211–261–1 CCS	NR	1,000
043.0045	CILINDRO REGOLATORE DISCESA TESTA SH 260–280–282–292–332 CCS	HEAD DOWN STROKE CYLINDER SH260–280	NR	1,000

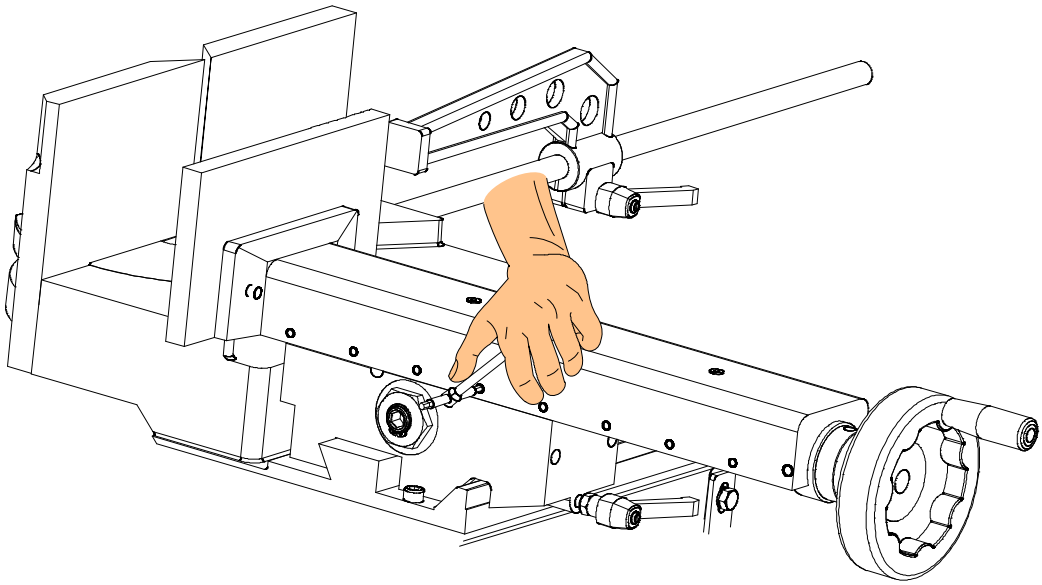
Adjustments

This chapter illustrates the regulations and adjustments of the mechanical systems for correct use of **PH 262–CCS**. These instructions will enable you to “customise” your machine to suit the type of cuts you want, optimising the time required to complete them.

Vice

Vice play adjustment

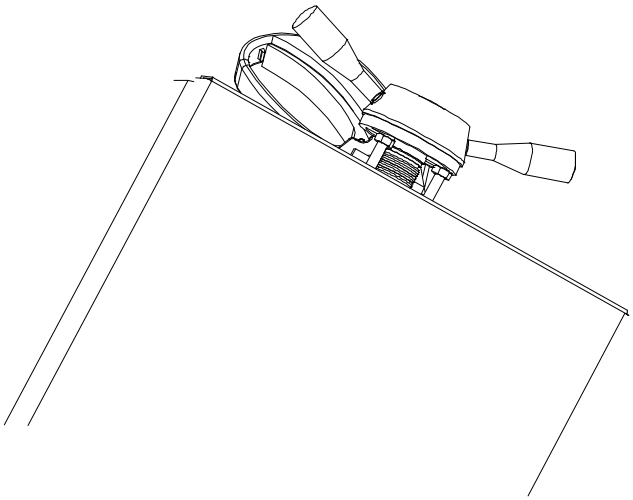
The vice jaws support has been calibrated in the ideal status. After a prolonged use, the vice jaws support might need to be adjusted in its sliding by an hexagonal wrench, as shown in the figure.



Cutting head

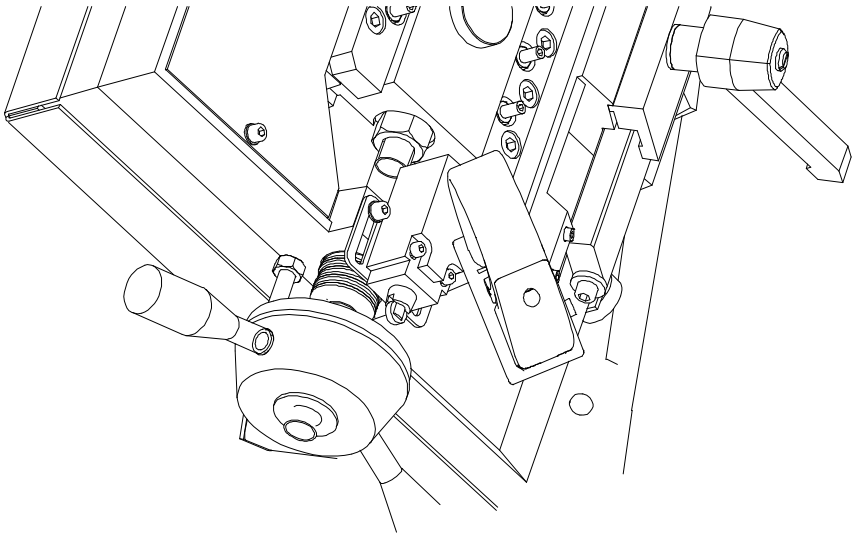
Blade tensioning unit

Before using the sawing machine, tension the blade, rotating the handwheel clockwise till it touches the reference screw.

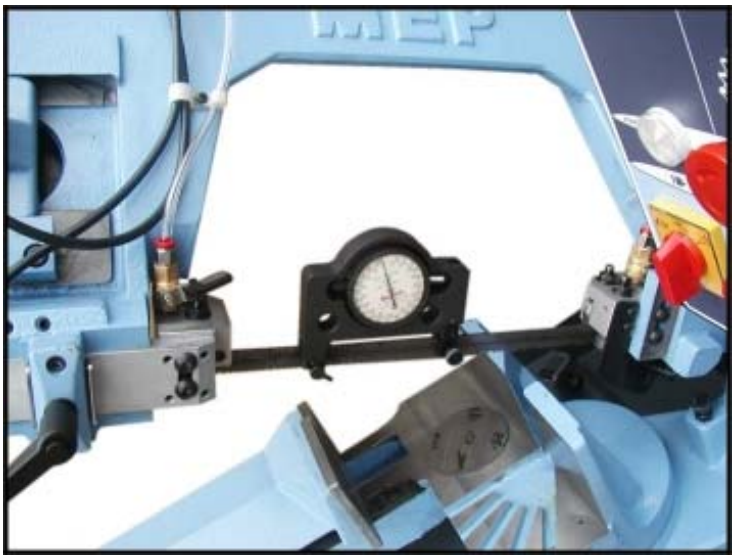


Attention

If the band tension is not correct or the handwheel does not press the safety limit microswitch, adjust as follows:



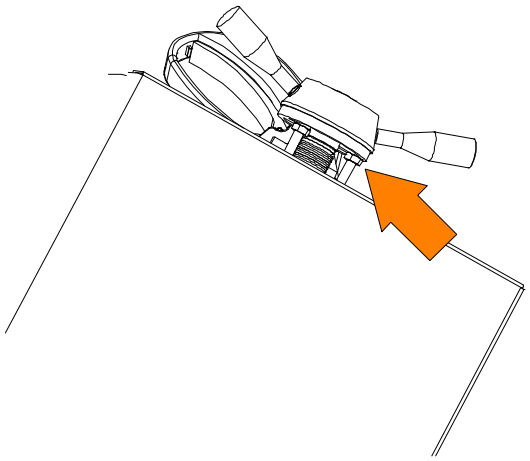
▶ Completely loosen the blade tension and position a tensioner on the free blade section.



▶ Tension the blade at 2250 kg/cm (32,000 lbs/in).



▶ When the specified tension is reached, adapt the handwheel reference screw.



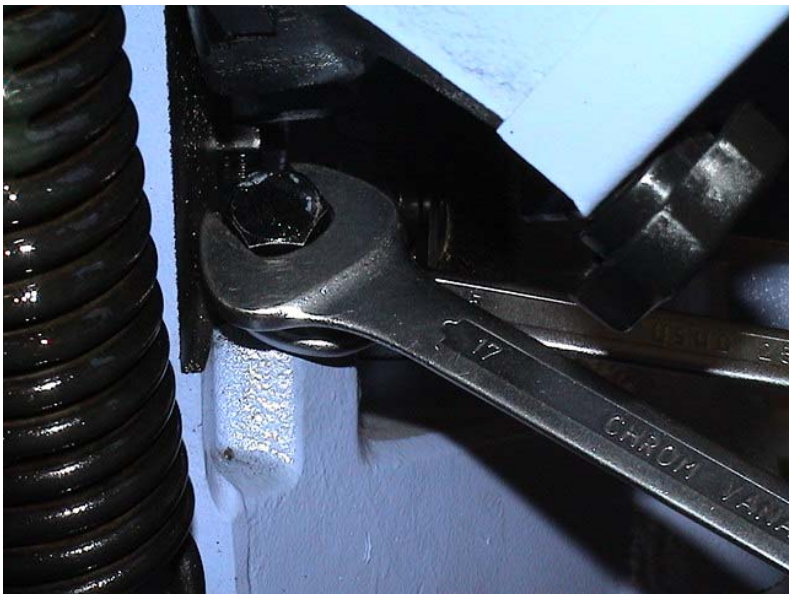
Attention

The machine sets in emergency if the band is de–tensioned. A pressure limit switch disables the band start, to prevent the band from exiting the pulleys, cutting badly or wearing earlier. Please consider these elements during your working operations.

Adjusting operating head travel

During the cutting cycle the cutting head stroke is limited by the FCTI (Head Upstroke Limit) and FCTA (Head Downstroke Limit). The cutting head has a mechanical limiting switch that determines its downstroke:

▶ to change this setting, two hexagonal spanners must be used, one to keep the nut in position, and the other to tighten and loosen the stop screw.



Blade guide parts

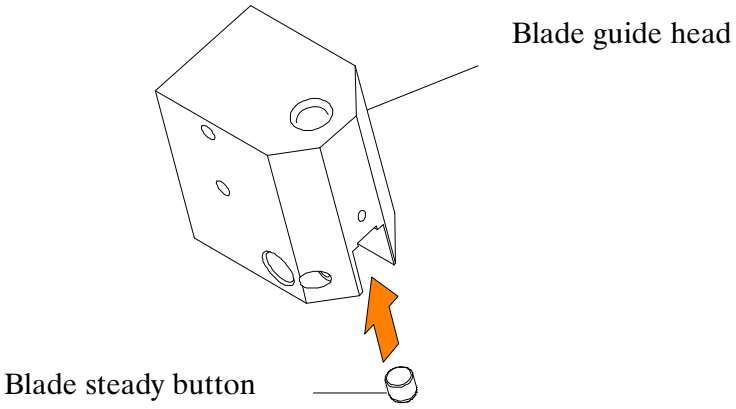
Band saw blades offer enormous advantages to cutting applications, without requiring any special skills by the operator. A description follows of the blade guide adjustments required to ensure correct operation of the saw.

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 supply cocks.

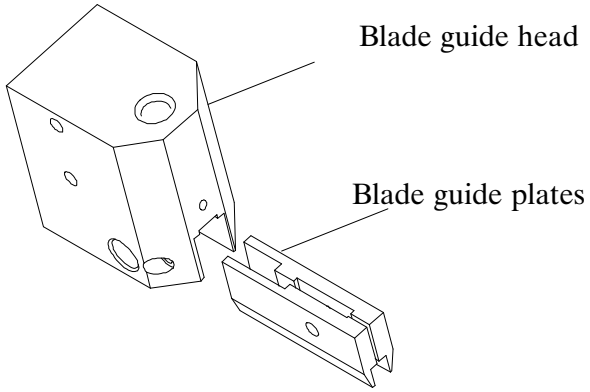
Blade steady buttons

The blade steady buttons prevent upward blade flexure caused by the vertical action of the cutting force. These buttons are fitted on both the front and rear heads, and need no adjustment.



Blade guide plates

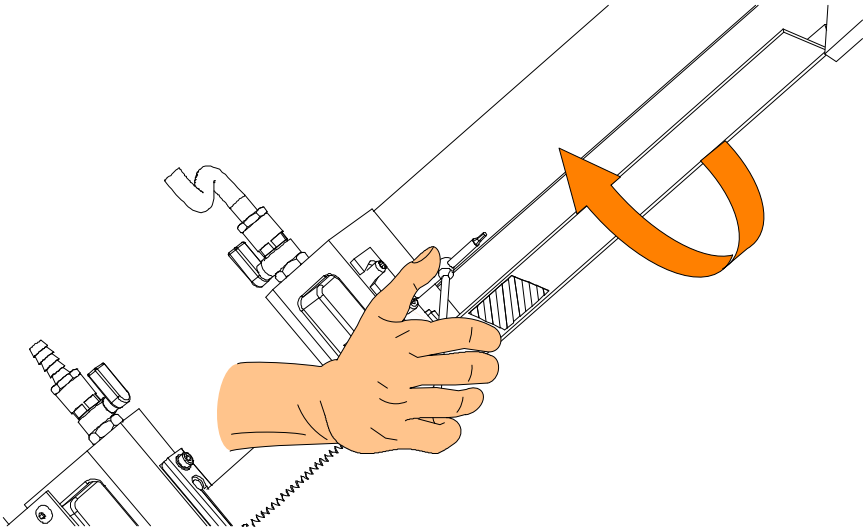
The plate contact points feature widia inserts which guide the blade longitudinally. A small amount of play must exist between the plates and blade to ensure that the blade runs smoothly and perpendicular to the work table.



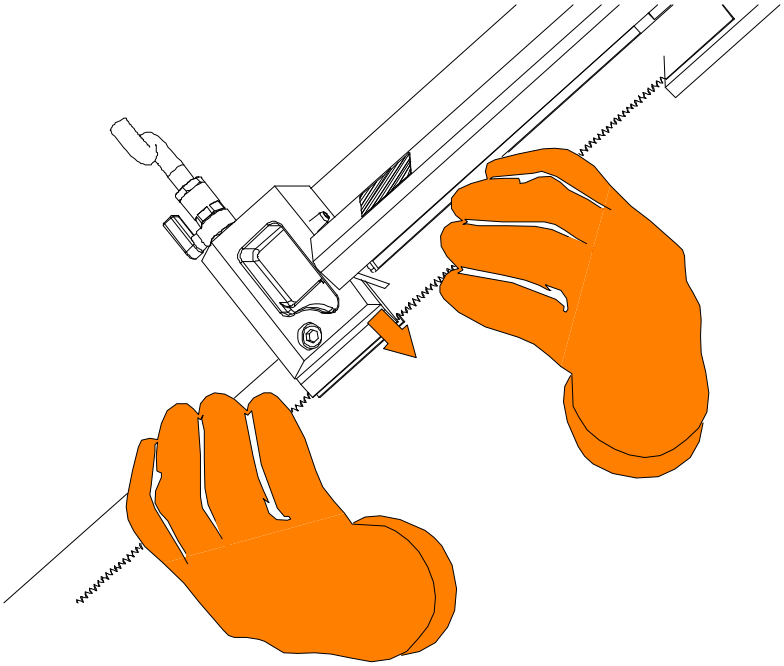
Thanks to the widia inserts, the working life of the guide plates is practically the same as that of the machine itself. However, if due to wear or the assembly of a new blade with a different thickness, the amount of play between the plates and blade changes, the plates must be adjusted as follows:

▶ disconnect the machine from the power supply;

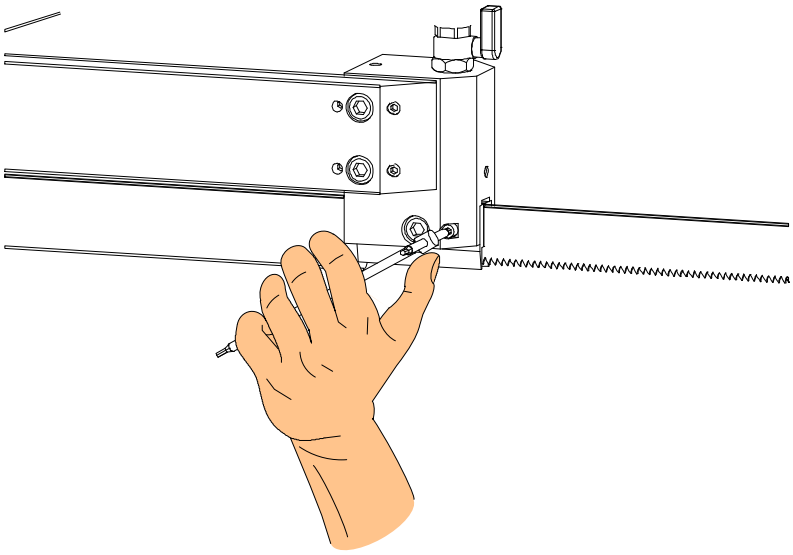
- slacken the blade tension using the handwheel;
- open the front blade guard by undoing the fixing screw and rotating it as illustrated in the figure below;



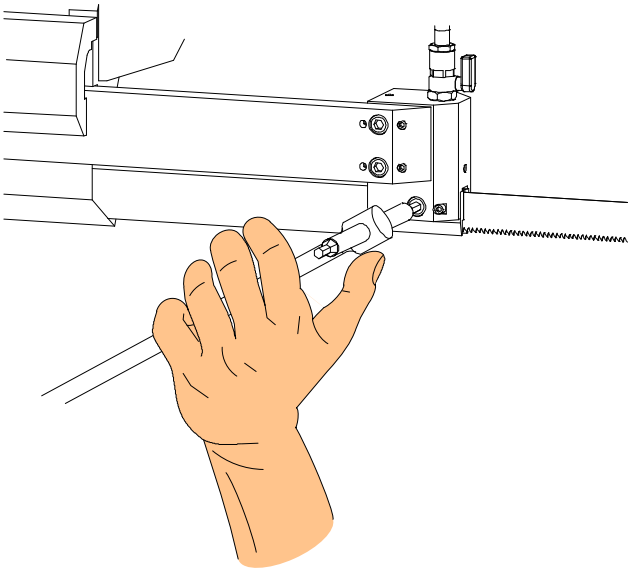
- wear protective gloves when making this adjustment;
- make sure there is a small amount of play between the blade and guide plate inserts;



- if the amount of play is not sufficient for the blade to run smoothly, adjust the locking torque of the two grub screws with an Allen key;



- replace any worn plates by removing the plate fixing screw;



- repeat the above sequence of steps on the rear blade guide head;
- refit the front blade guard;
- tension the blade and power up the machine again.

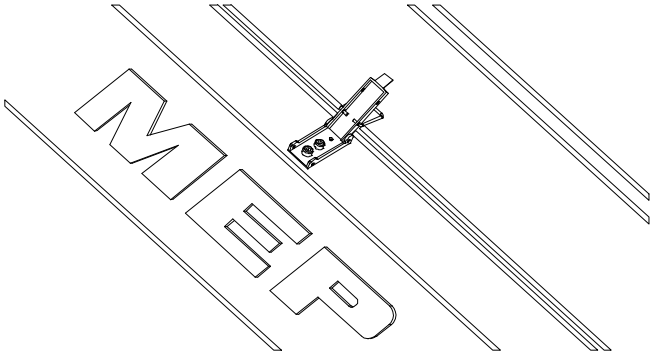
Blade

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

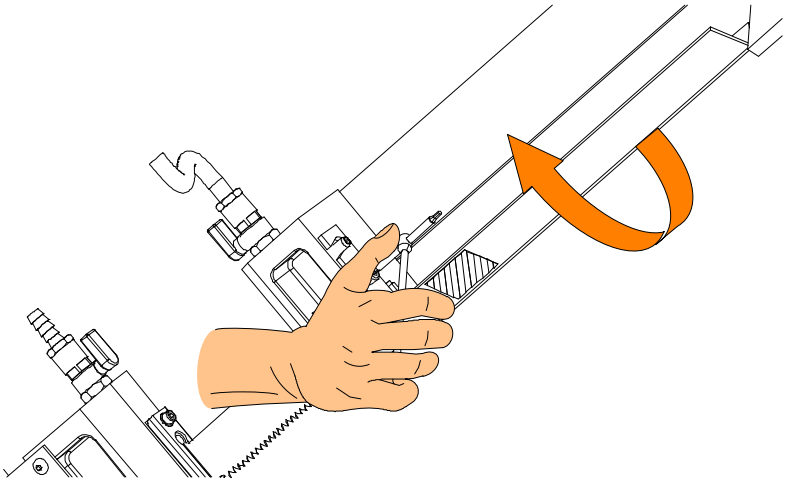
Tool change

Optimum working conditions both enhance operator safety and extend the tool's 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:

- disconnect the machine from the power supply;
- slacken the blade tension using the handwheel;
- open the cutting head cover by unscrewing the two knobs and hooking it onto the galvanised lever on the back of the head;

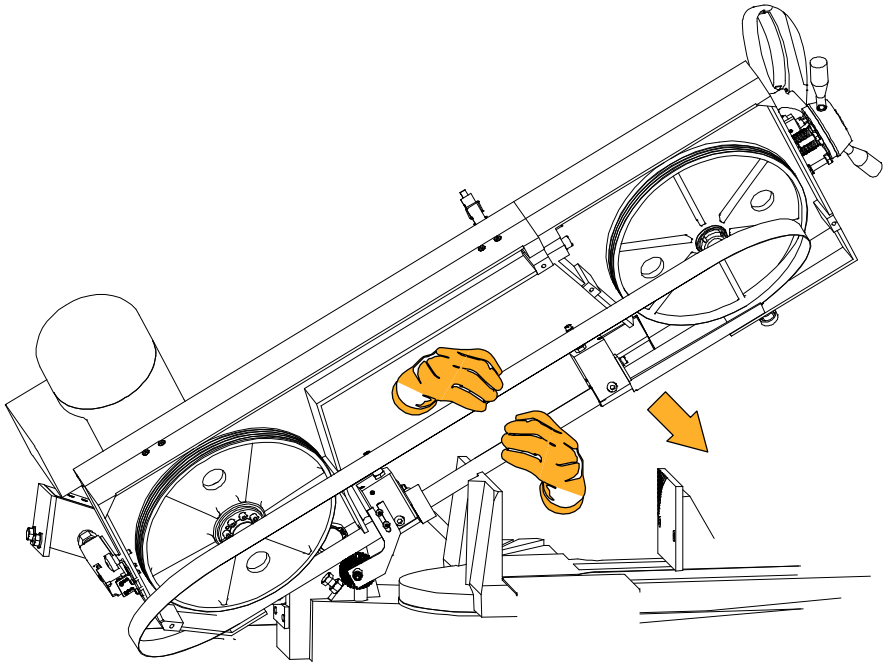


- open the front blade guard by undoing the fixing screw and rotating it as illustrated in the figure below;



- wear protective gloves when changing the blade;
- remove the worn blade by sliding it off the flywheels and front and rear heads;
- fit the new blade into the front blade guide head;
- make sure the back of the blade is facing the flywheel stop and that the teeth along the lower part of the blade are inclined towards the head pivot.

- Make sure there is a small amount of play between the blade and guide plate inserts;

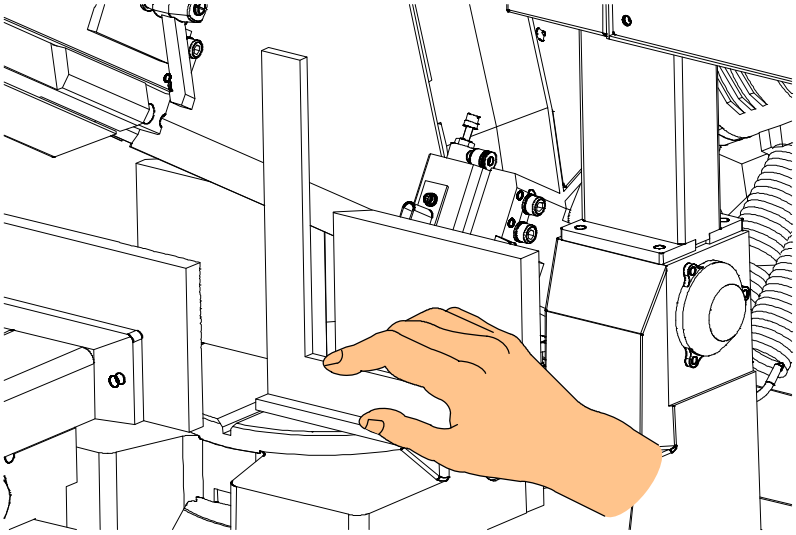


- repeat the above sequence of steps on the rear blade guide head;
- fit the blade on the flywheels and remount the front and rear blade guards;
- close the cutting head cover, correctly tension the blade and power up the machine.

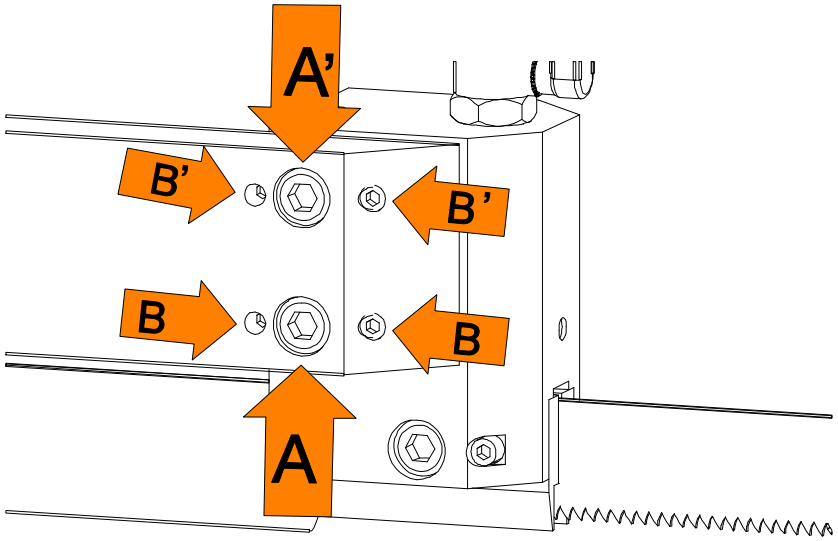
Blade perpendicularity

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

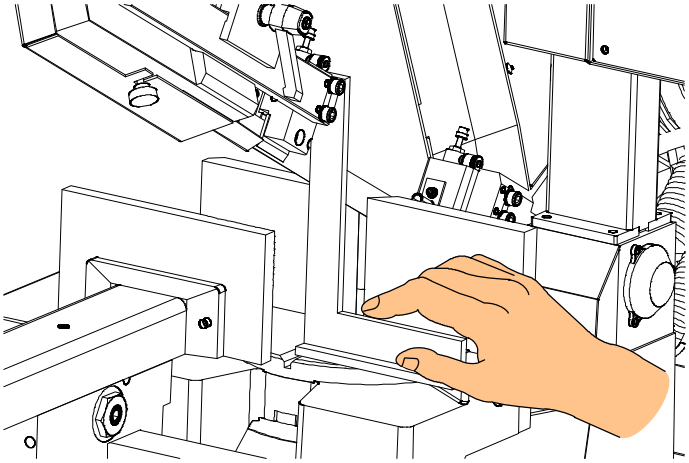
▶ Position the square on the cleaned work surface and rest it against the blade, close to the right vice jaw at a point where the blade teeth do not prevent contact.



▶ Slacken the TCEI head fixing screw (A) and adjust the two grub screws (B) if the blade touches the square at its lower part. If the point of contact is at the upper part, slacken the TCEI screw (A') and tighten grub screws (B') equally until the blade is perpendicular to the square.



▶ Position the square on the work surface close to the front head.

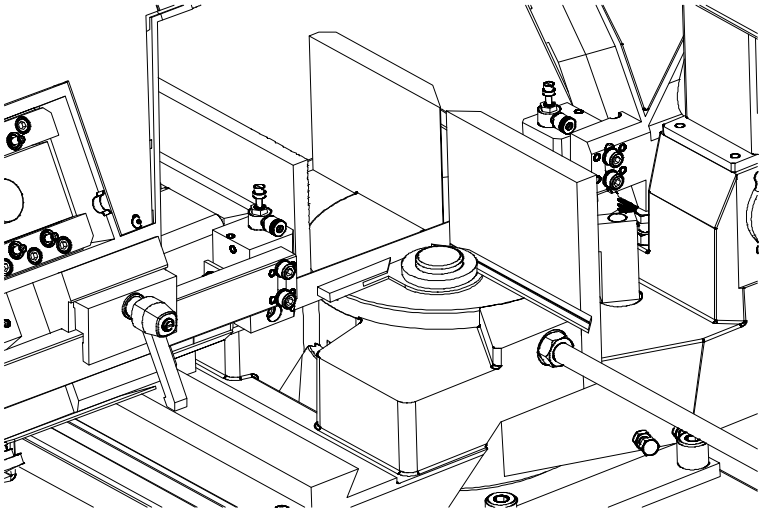


▶ Repeat the squaring operations as for the rear head.

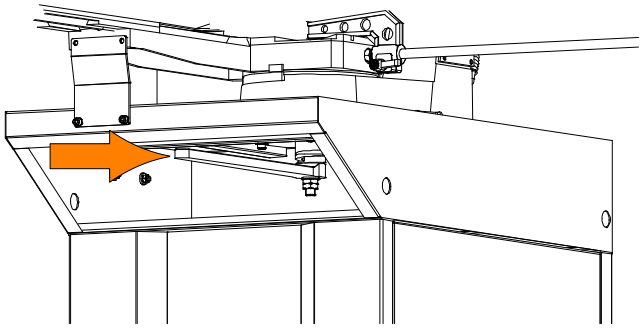
Orthogonality of the blade

The procedures for correcting and adjusting the band at 0°, 45° and 60° on the left, for cuts orthogonal to the vice square, are described here below.
To **make orthogonal adjustments at 0°**, use a workshop goniometer or a simple 90° square. Operation sequence:

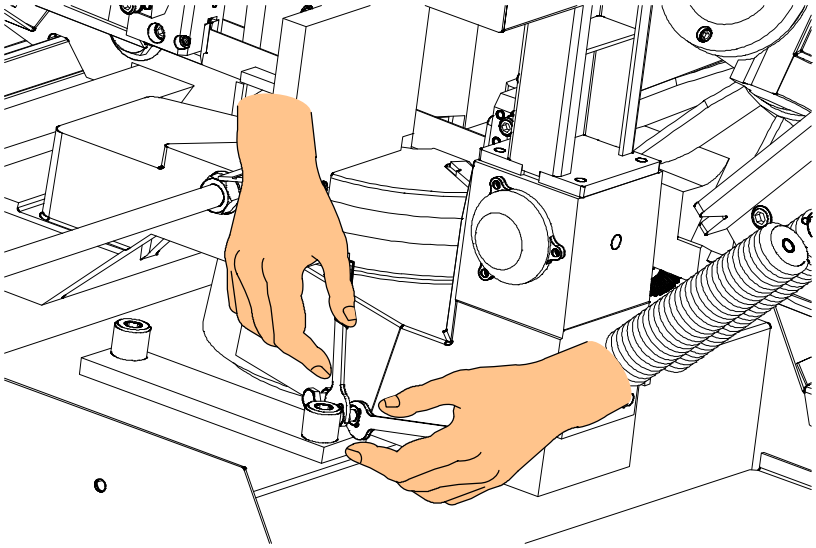
- lower the head;
- position the goniometer or square, resting it on the fixed vice jaw adjacent to the blade;



- Slacken the head locking lever, by gripping it from the operator side and pushing it forwards.



- Slacken the nut and, holding it firm with a hex wrench, adjust the stop screw until the right angle error shown on the goniometer is corrected.

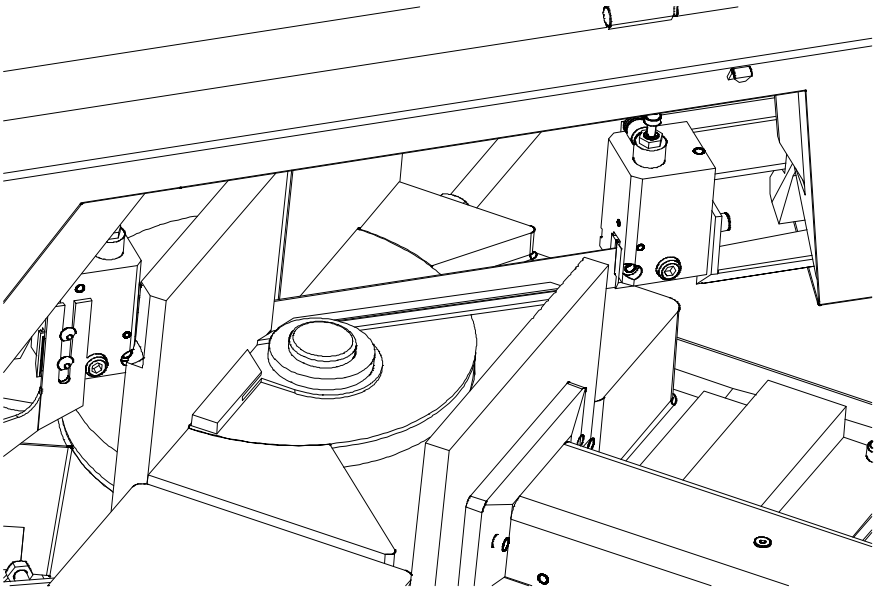


- Retighten the nut to lock the stop screw in the correct position.
- Finally, lock turntable and head rotation by pulling the locking lever back towards you.

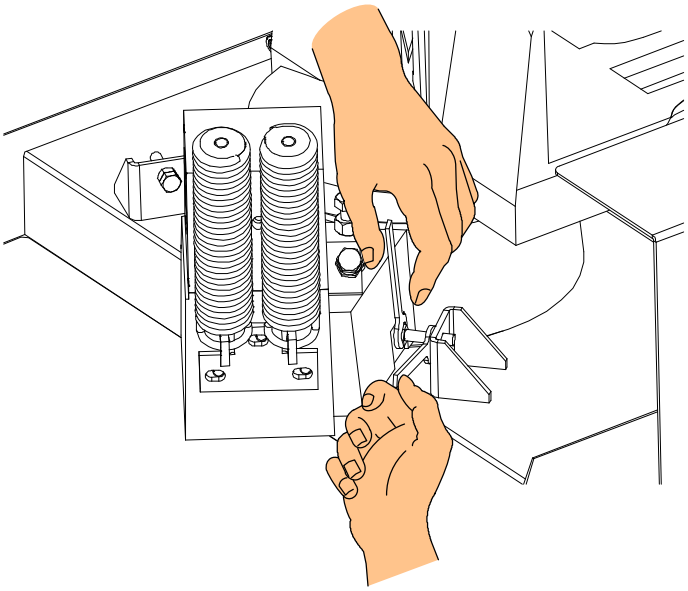
Warning

To **adjust the 45° and 60°** fixed points, you will need a workshop goniometer or an instrument that can measure the exact angle of the blade.

- Operation sequence:
- Slacken the head locking lever by pushing it forwards.
- **With the head raised**, rotate the unit to 45° or 60°.
- Lower the head.
- Position the goniometer or graduated square against the fixed vice jaw, adjacent to the blade.



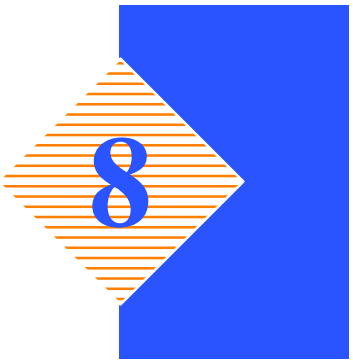
- Slacken the nut (opposite side to previous one) on the stop screw while holding it firm with a hex wrench.



- Adjust the stop screw until the angle error registered by the goniometer is corrected. This done, lock the nut while holding the screw steady.

▶ Make sure all the stops are secure and that the locking lever is pulled back (locked).

Maintenance and choice of consumables



PH 262–CCS 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

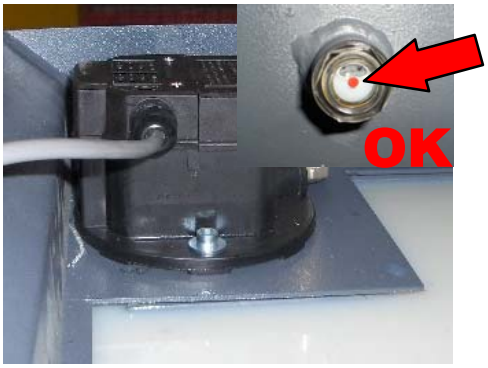
- All ordinary and extraordinary maintenance must be carried out with the power switched off and the machine in emergency condition.
- To guarantee perfect operation, all spare parts must be MEP S.p.A originals.
- On completion of maintenance works, ensure that the replaced parts or any tools used have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

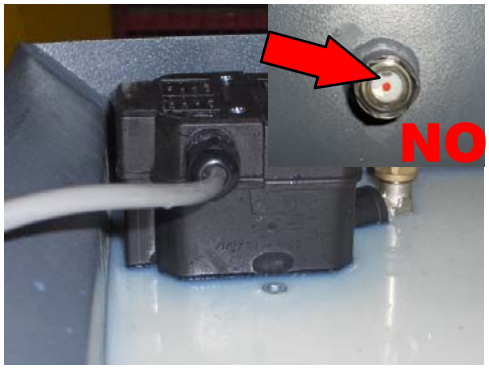
General maintenance

Daily

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

- ▶ remove all swarf from the machine (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 cleaning brush, clean and relocate; if worn, replace;
- ▶ at the end of the working day, slacken the blade to 5 Bar (70 Kg) tension to prevent unnecessary and damaging stress on the machine.

Weekly

The weekly maintenance operations are as follows:

- ▶ remove all swarf;
- ▶ clean the vice and lubricate all joints and sliding surfaces with a good quality oil;
- ▶ check vice sliding; if it is not precise and has transversal play, adjust as instructed in Chapter 7.

Monthly

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

- check the perpendicularity of the blade to the work surface; if it is necessary to adjust the blade setting, follow the instructions set out in Chapter 7;
- check on blade orthogonality with respect to the workpiece rest shoulder; if adjustment is necessary, proceed as instructed in Chapter 7;
- check that the 0° notch on the work table is in line with the graduation on the turntable; if not, readjust by regulating the 0° stop; then re−check that the blade is perpendicular and orthogonal;
- check the precision of the 45° left stop; if out−of−set, adjust following the steps indicated in Chapter 7;
- check the state of the widia inserts and the blade steady button; replace if worn or chipped; check their positions and adjust if necessary (see Chapter 7);
- thoroughly clean the bottom of the water tank and the electropump filter;

Maintenance of working parts

In particular, the maintenance operator of **PH 262−CCS**PH261−1, must be very careful with the operating components, such as the hydraulic cylinder of the CUT CONTROL SYSTEM. No maintenance intervention is required for the worm screw reducer installed on the machine.

Consumable materials

Only specified oils must be used for the hydraulic and pneumatic and for lubricant/coolant devices. Below is a list of compatible oils for each of these circuits.

Oils for CCS hydraulic circuit

The type of oil the machine works with is MOBIL DTE 11, ISO and UNI FD 22 symbol. It s application regarding the cylinder head

HB:
− tank capacity Lt. 0.2

Oil for transmission box

The machine is equipped with a worm gear which is permanently lubricated and therefore maintenance−free. The box has no filler cap, level checker and drain, as it already contains the correct quantity of synthetic oil, guaranteeing perpetual lubrication of the crown and worm gear. Below is a short list of synthetic oils for permanent lubrication:

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

– transmission box capacity Lt. 0.320

Oil for lubricant/coolant fluid

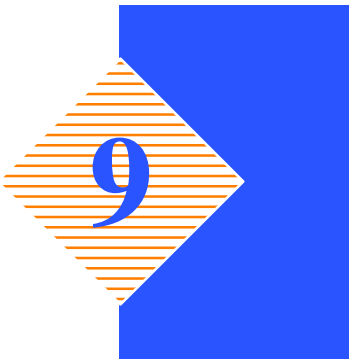
The oil used for the machine lubricant/coolant fluid is CASTROL Syntolin TFX. Though there are no specific standards for these types of oils, MEP considers that the above product has the best price/quality rapport. The following oils can also be said to have similar characteristics and are therefore compatible:

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

Finally, a lubricant/coolant guaranteed and distributed by a band saw manufacturer (LENOX) is BAND–ADE SAWING FLUID LENOX.

– tank capacity Lt. 13
– oil concentration 5–6 %

Cutting speed and choice of tools



The cutting speed is determined by the blade speed and the head feed speed. While the head speed is provided by the downstroke movement of the head, the blade rotation speed can either be fixed or variable. This chapter describes the cutting speeds the machine can operate at in the standard version, as well as the speeds for which the optional electronic speed controller (inverter) is necessary. When using the **PH 262–CCS**, it is important to select the correct type of blade for the material to be cut. This chapter explains the limitations and specific applications of the different types of blades.

Cutting speed

Standard machine

The basic version with 2/4 pole motor, is provided with the following cutting speeds:

- 1st speed = 30 m/min. (4 pole)
- 2nd speed = 60 m/min. (2 pole)

These speeds are selected using the polarity change switch situated on the control panel.

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 Shark machine, a first broad distinction can be made according to the hardness of materials:

	Mild steels < 61 HRB < 55 kg/mm^2	Hard steels > 65 HRB > 65 kg/mm^2
	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

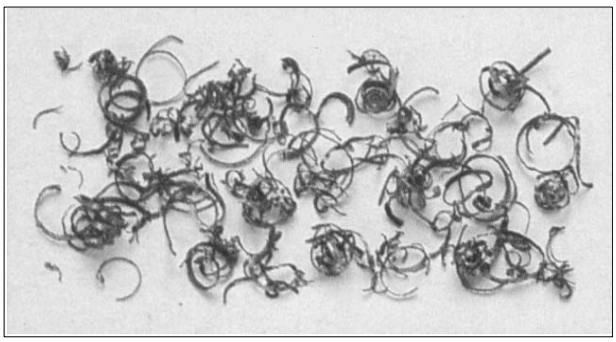
The cutting speed (m/min) and the downstroke speed (cm^2/min) are limited by the heat generated around the points of the teeth. If the downstroke speed is too high, the cut will not be straight, either vertically or horizontally.

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), 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.

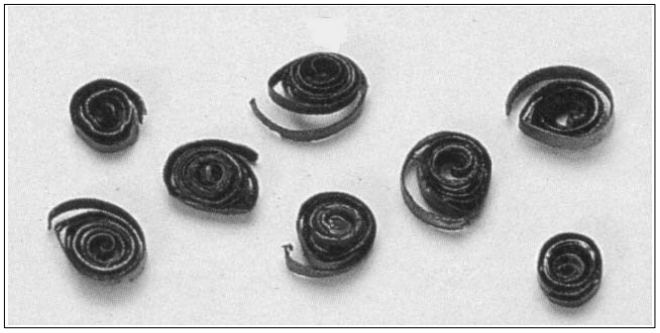
A new blade must be worn in, which in effect means lowering the downstroke speed to about half that of normal (from 60 to 70 cm^2/min on normal steels), equal to a removed surface area of about 300 − 600 cm^2.

Types of swarf:

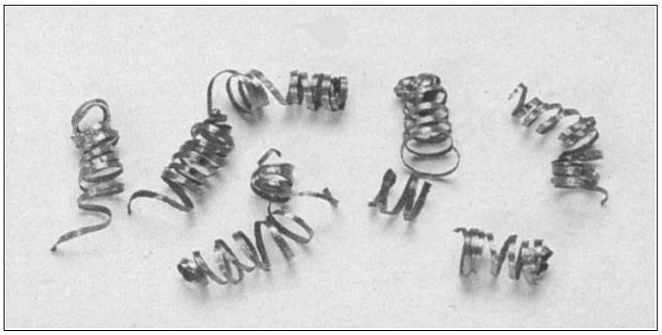
- Very fine or fragmented swarf indicates that the downstroke speed and/or cutting pressure is too low.



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

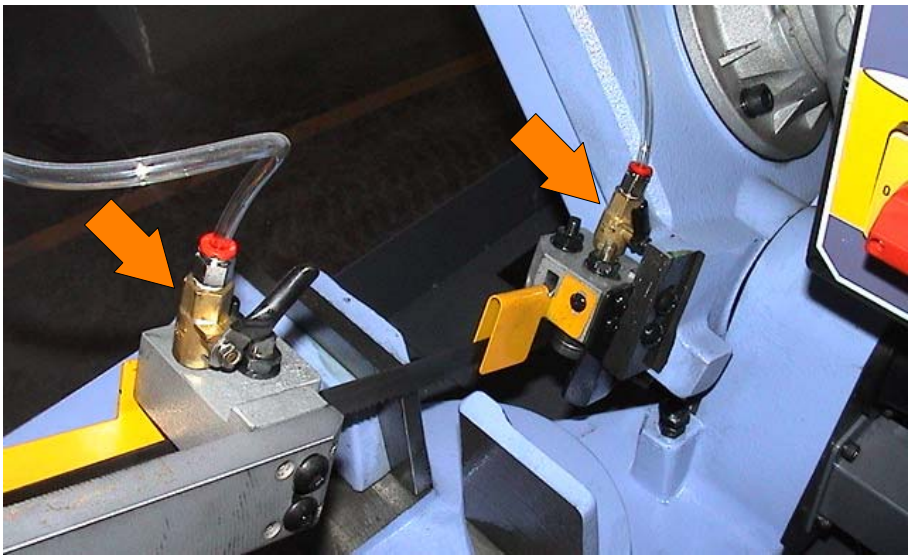


- Long coils of swarf indicate ideal cutting conditions.



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).

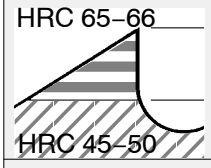
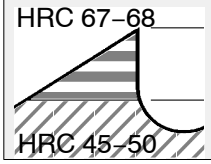


Blade structure

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 	0,85	0,25	0,30	4,15	6,37	5,00	1,92				64–66
HSS M42 	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.

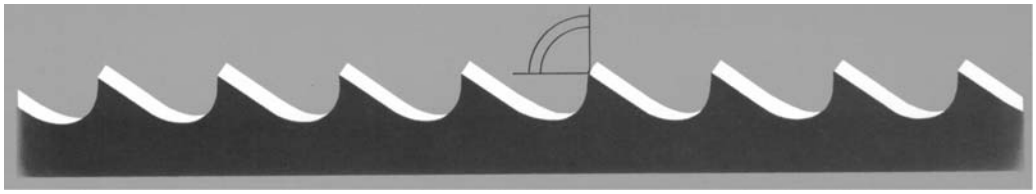
Blade types

The blades mounted on the **PH 262−CCS** are 2.450 x 27 x 0.9 mm.; the length can vary between 2.440 mm. and 2.460 mm., thanks to the blade tensioner device. The blades, however, apart from size and tooth pitch, are differentiated by other geometrical characteristics which determine their specialised uses:

- 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

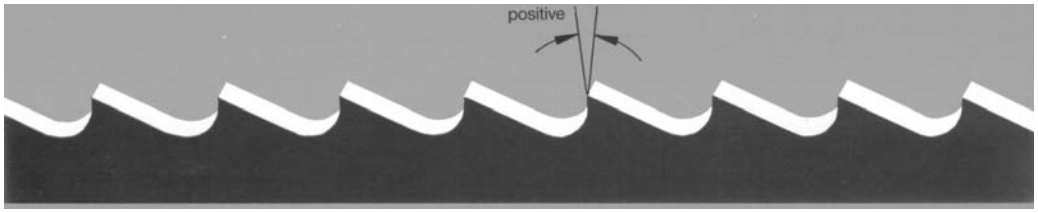
Cutting angle 0°, constant pitch.



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

Positive rake

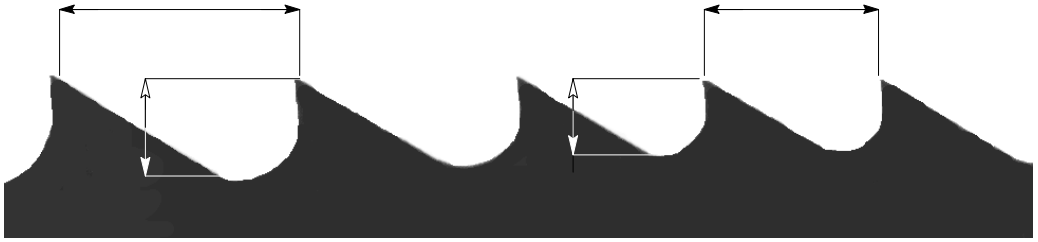
Positive cutting angle 9–10°, constant pitch.



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

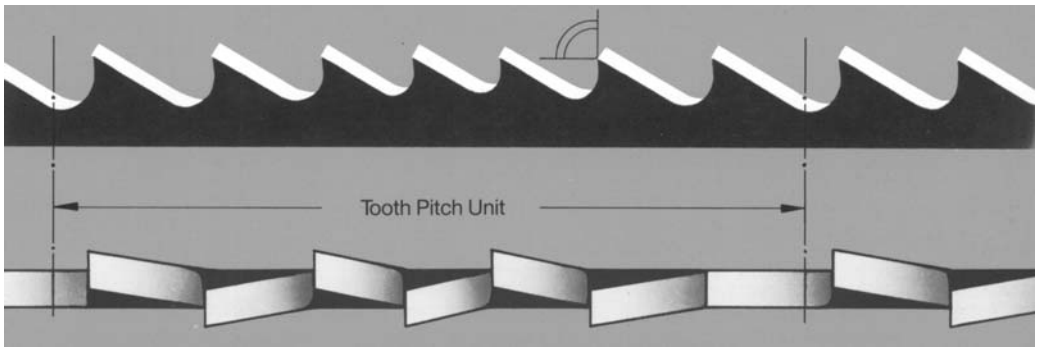
These blades have groups of teeth having different pitches and, as a consequence, have various tooth dimensions and differing relief angles. These are also available in M2 and M42 types with zero and positive rakes. The alternation of the different types of teeth helps to prevent vibration and noise.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

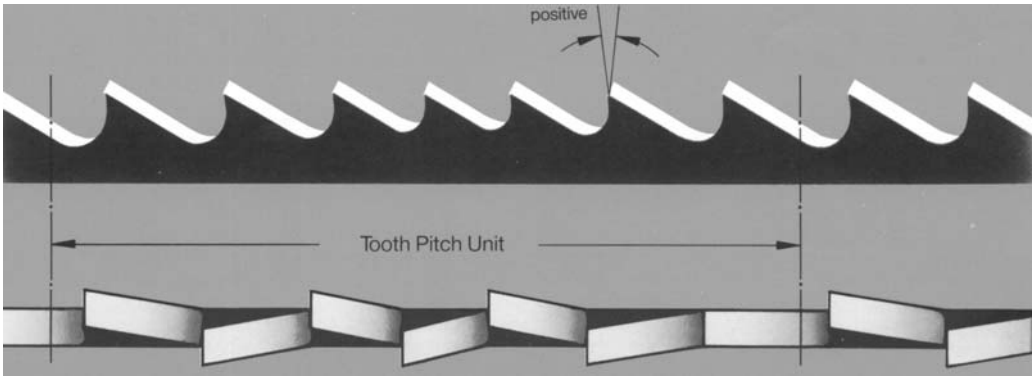
This type of tooth formation is ideal for cutting single pipes or medium size bundles, in accordance with the capacity of the machine.



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. thick. Suitable for cutting steels, castings and non–ferrous hard materials.

Undulated set

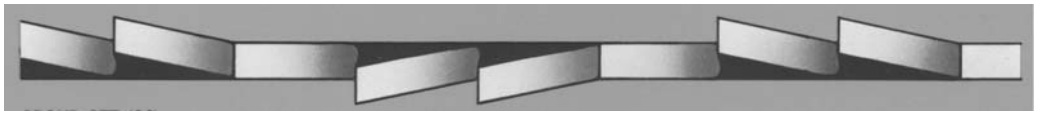
Used to describe groups of teeth undulating alternatively to the right and left.



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

Alternating grouped sets

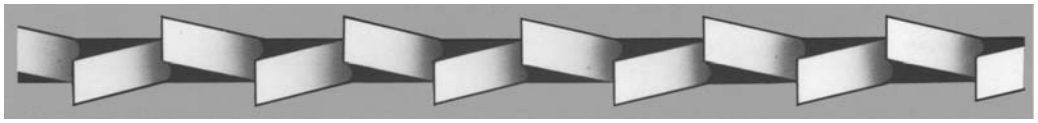
These are groups of teeth angled to the right, one straight tooth, then a further group angled to the left.



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

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) S10	10S30	30S50	50S80	80S120	120S230	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**

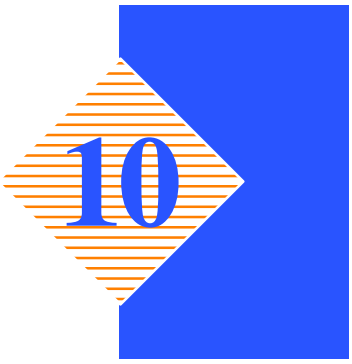
Classification of steels

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 C – 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

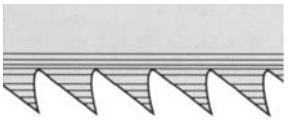
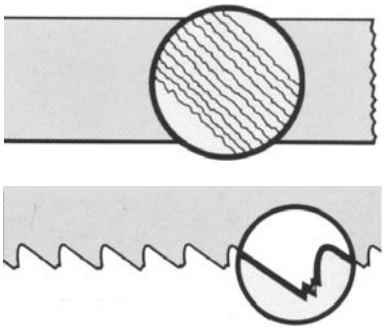
Material	SS Szwecja	AISI U.S.A.	DIN Niemcy	BS Anglia	UNI W□ochy	AFNOR Francja
Carbon steels	1311 1572	1015 – 1035	C 22 – C 35 20 Mn 5 – 28 Mn 6 CK 22 – CK 50	050 A 20 080 M 46 – 50 120 M 19 150 M 28	C 15 – C 35 C 22 Mn C 28 Mn	XC 18 XC 38 H 1 20 M 5
Carbon steels	1650 1880	1040 – 1064 1770 – 1880	CK 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 rodzaj 6, 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

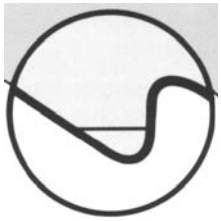
Troubleshooting

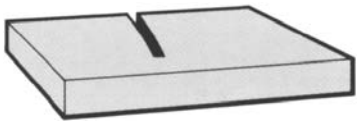


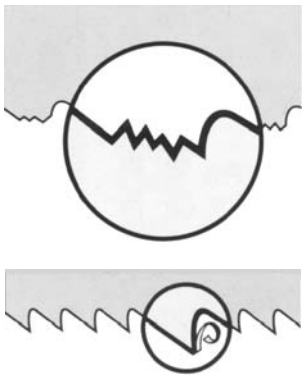
This chapter describes the inspection and troubleshooting procedures for the **PH 262–CCS**. Regular inspections and efficient maintenance are essential to ensure your machine gives you a long, trouble–free service life. The chapter is divided into two sections: the first being dedicated specifically 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.

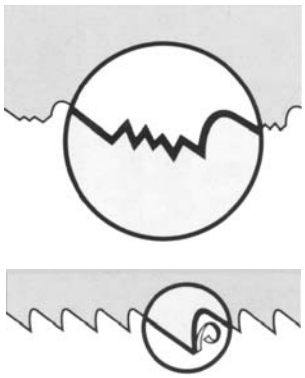
Troubleshooting blade and cutting problems

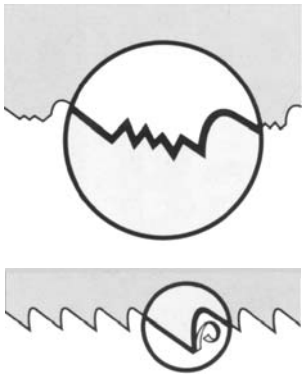
PROBLEM	PROBABLE CAUSE	SOLUTION
Blade scored or scratched 	◗ Widia inserts chipped or worn	☞Replace
	◗ Widia inserts loose or tight	☞Adjust
	◗ Widia inserts dirty	☞Clean and re–adjust correctly
Cutting surfaces scored 	◗ Blade teeth worn	☞Replace blade
	◗ Head downstroke speed too fast	☞Reduce downstroke 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

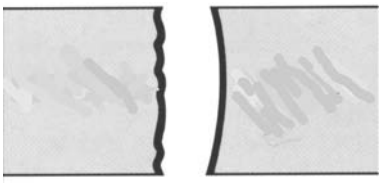
PROBLEM	PROBABLE CAUSE	SOLUTION
Rapid tooth wear 	◗ Teeth pointing in the wrong direction	☞Set teeth in correct direction
	◗ Blade worn in wrongly	☞With a new blade cutting should be done at half–speed and with downstroke speed also at half normal speed. After the blade has been worn in (about 300 cm^2 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.

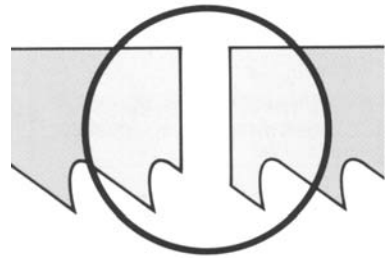
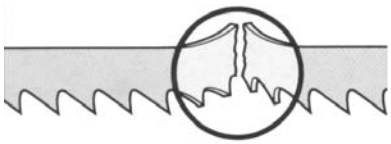
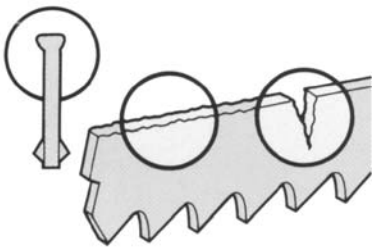
PROBLEM	PROBABLE CAUSE	SOLUTION
Cuts not orthogonal or inclined 	◗ Head downstroke speed too fast	☞Reduce head downstroke speed
	◗ Widia inserts worn	☞Replace
	◗ Inserts loose	☞Adjust width
	◗ Blade guide head positioned wrongly	☞Move mobile head up to the workpiece using the guide plate to leave free 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
	◗ Swarf welded to teeth and gullets	☞Check blade–cleaning coolant jets. Check the 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 tooth breakage
	◗ 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

PROBLEM	PROBABLE CAUSE	SOLUTION
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.
	◗ 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

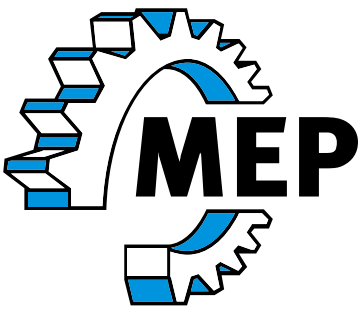
PROBLEM	PROBABLE CAUSE	SOLUTION
	◗ Widia inserts	☞If worn, the inserts can score the blade, weakening it even to breaking point. If the inserts are too far apart, the blade will whip, striking both the inserts and the material. Replace or adjust
	◗ Insufficient coolant	☞Check coolant fluid level; clean 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 machine faults

PROBLEM	PROBABLE CAUSE	SOLUTION
The main switch does not work	◗ Electrical supply	☞Check: phases, cables, plug, socket
	◗ Minimum voltage relay	☞Check that it is correctly supplied and not burnt out
The STAND BY LED does not come on	◗ LED burnt out	☞Replace
	◗ Electrical supply	☞Check: phases, cables, plug, socket
	◗ Minimum voltage relay	☞Check that it is correctly supplied and not burnt out
	◗ Transformer supply	☞Check transformer input fuses 1 and 2. Check transformer 24 V secondary output. Check 24V output fuse.
Spindle motor will not turn	◗ Electrical power supply	☞Check: the phases; the cables; the plug; the socket. Also check that the motor connections are in place.
	◗ Motor contactor	☞Check input and output phases and check whether when supplying A1 and A2 relay the contactor closes.
	◗ Polarity change switch	☞Check input and output phases
	◗ Head control lever microswitch	☞Check that it is functioning; if broken, replace
	◗ Blade tensioning	☞If the blade is not correctly tensioned to 60 Bar, the pressure contact does not close and the machine is in EMERGENCY state
	◗ Blade protection cover	☞Check that the closure is correct and the limit stop pressed
	◗ Current drop	☞Check connections on the handgrip switch, the blade protection limiter and the pressure gauge on the blade tensioner group

PROBLEM	PROBABLE CAUSE	SOLUTION
BMT not energised (Minimum Tension Coil)	◗ Electrical power supply	☞Check: the phases; the cables; the plug; the socket.
	◗ BMT Reset switch	☞Make sure that the minimum tension coil is energised when switch is turned from 0 to 1. If it is not, replace the switch.
	◗ Emergency stop pushbutton in	☞Make sure the emergency stop button is released: turn it clockwise through 1/4 of a turn to release it.
Electropump is not working	◗ Electrical supply	☞Check: phases, cables, plug, socket and fuse no. 5 in the electrical plant
	◗ No–return valve	☞Clean, if blocked replace
	◗ Filter	☞Clean

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


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